

Hunting Hawk Technology Park Traffic Impact Analysis

**Submitted to:
Hanover County,
Virginia**



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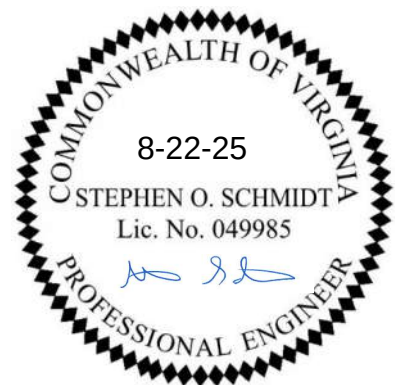


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1 EXECUTIVE SUMMARY

This report presents the findings of the traffic impact analysis (TIA) prepared for the proposed Hunting Hawk Technology Park development located in Hanover County, Virginia.

1.1 PROJECT OVERVIEW

The proposed development is generally located northeast of Route 271 (Pouncey Tract Road), southeast of Route 623 (Ashland Road) and southwest of Route 623 (Cauthorne Road) in Hanover County, Virginia as shown in Figure 1-1 (all figures are located at the end of their respective chapter).

This site is currently developed with the Hunting Hawk Golf Club. The Applicant is seeking to redevelop the site with 3,894,000 square feet of data center uses.

Access to the site will be provided via three access points, one at the existing Hunting Hawk Access and two additional entrances on Ashland Road. A site plan is shown on Figure 1-2.

For the purposes of this analysis, the development was assumed to be complete by 2035.

When complete, the proposed development will generate 2,921 daily trips, 350 AM peak hour trips (193 in and 158 out) and 117 PM peak hour trips (35 in and 82 out).

The purpose of this analysis is to determine the impact of the proposed development on the surrounding roadway network. The scope of this study was developed with Hanover County and VDOT. A copy of the scoping documents is included in Appendix A.

1.2 STUDY LIMITS

As agreed upon in the scoping documents, the study limits include the following four (4) existing intersections:

1. Ashland Road and Pouncey Tract Road (Signalized);
2. Ashland Road and Abner Church Road (Unsignalized);
3. Ashland Road and Cauthorne Road (Unsignalized); and
4. Ashland Road and US Route 33 (Signalized)

In accordance with the scoping agreement, analyses were completed for the following scenarios:

1. 2025 Existing Traffic Conditions;
2. 2035 Background Traffic Conditions (without the development of the site);
3. 2041 Background Traffic Conditions (without the development of the);
4. 2027 Future Traffic Conditions (with construction traffic);
5. 2035 Future Traffic Conditions (with the development of the site); and
6. 2041 Future Traffic Conditions (with development of the site).

The following steps were taken to determine the potential traffic impacts associated with this project:

1. Data Collection – AM and PM peak hour weekday traffic counts were completed for each of the study intersections and were conducted when public schools were in session.
2. Traffic Growth – As agreed upon in scoping, a 2% annual growth rate was applied to existing traffic volumes to account for development growth outside of the study area.
3. Trip Generation – Traffic generated by the proposed development was estimated using the AWS Data Center Trip Generation Assessment as detailed below. Construction traffic was estimated based on existing traffic counts at other data center developments in Virginia as detailed below.
4. Traffic Distributions – The distribution of trips generated by the proposed developed was based on the existing traffic volumes, the nature of the use, and local knowledge.
5. Site Traffic Projections – Future traffic volumes were determined by combining the total background traffic volumes with proposed new trips generated by the site to create the total future traffic volumes used in the analysis.
6. Traffic Capacity Analysis – Level of service calculations for existing, background, and future conditions were performed using Synchro Version 11 with SimTraffic for signalized and unsignalized intersections.
7. Queuing Analysis – The 95th percentile queue lengths (Synchro) and maximum queues (SimTraffic) were reviewed at the intersections listed above.

1.3 PRINCIPAL FINDINGS

When complete the proposed data center will generate 2,921 daily trips, 350 AM peak hour trips (193 in and 158 out) and 117 PM peak hour trips (35 in and 82 out).

Under 2025 existing conditions:

- The signalized intersection of Ashland Road and Pouncey Tract Road operates at an overall LOS E in the AM peak and LOS F in the PM peak. The eastbound and westbound approaches operate at LOS F during both peaks. The northbound approach operates at LOS D in the AM peak and LOS E in the PM peak. The southbound approach operates at LOS E in the AM peak and LOS D in the PM peak.
- At the unsignalized intersections of Ashland Road and Abner Church Road and Ashland Road and Cauthorne Road, all approaches operate at LOS C or better during both peaks.
- The signalized intersection of Ashland Road and Route 33 operates at an overall LOS D during both peaks and all approaches operate at LOS E or better during both peaks.
- Overall, there are no significant queueing issues present at any of the study intersections. All 95th percentile and maximum queues are contained within the available storage at the intersections.

Under 2035 background conditions:

- All intersections and approaches continue to operate in similar conditions to existing without significant changes in delay, LOS or queueing.
- The intersection of Ashland Road and Pouncey Tract Road continues to operate at an overall LOS E in the AM and LOS F in the PM peak hours.
- The intersection of Ashland Road and Route 33 continues to operate at an overall LOS D in both peak hours.

Under 2041 background conditions:

- At the signalized intersection of Ashland Road and Pouncey Tract Road, the overall intersection worsens to LOS F in the AM peak with increases in queue in the eastbound and northbound directions.
- At the unsignalized intersections of Ashland Road and Abner Church Road and Ashland Road and Cauthorne Road, all approaches operate at LOS C or better during both peaks with minimal queueing.
- The signalized intersection of Ashland Road and Route 33 degrades to operate at LOS E during both peaks. The northbound and southbound approaches continue to operate in similar conditions to 2035 background while the eastbound and westbound approaches experience increased delay and queueing.

Under 2027 construction conditions:

- The signalized intersection of Ashland Road and Pouncey Tract Road operates at LOS F during both peaks, worsening from LOS E in the AM peak in existing conditions. Signal timing adjustments are recommended during construction to help alleviate the increase in delay.
- At the unsignalized intersections of Ashland Road and Abner Church Road and Ashland Road and Cauthorne Road, all approaches operate at LOS C or better during both peaks.
- At the signalized intersection of Ashland Road and Route 33, the overall intersection continues to operate at LOS D during both peaks. All approaches continue to operate at LOS E or better with the exception of the eastbound and westbound approaches during the AM peak which operate at LOS F.
- At the unsignalized intersection of Ashland Road and Site Entrance 1, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach of Site Entrance 1 operates at LOS C during both peaks.
- At the unsignalized intersection of Ashland Road and Site Entrance 2, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach of Site Entrance 2 operates at LOS B during the AM peak and LOS C during the PM peak.
- At the unsignalized intersection of Ashland Road and Site Entrance 3, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach operates at LOS B during both peaks.

Under 2035 future conditions:

- The signalized intersection of Ashland Road and Pouncey Tract Road operates at LOS F during both peaks. All approaches operate in similar conditions to background in terms of delay; queueing for all approaches operates similar to background with the exception of the eastbound approach which experiences an increase in queueing. No geometric improvements are required at the intersection but signal timing adjustments are recommended to help alleviate the increase in delay.
- At the unsignalized intersections of Ashland Road and Abner Church Road and Ashland Road and Cauthorne Road, all approaches operate at LOS C or better during both peaks.
- At the signalized intersection of Ashland Road and Route 33, the overall intersection continues to operate at LOS D during the AM peak and operates at LOS E during the PM peak. All approaches continue to operate in similar condition to background in terms of delay; queueing for all approaches operates similar to background with the exception of the northbound through movement which experiences an increase in queueing during the PM peak.
- At the unsignalized intersection of Ashland Road and Site Entrance 1, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach of Site Entrance 1 operates at LOS B during both peaks.
- At the unsignalized intersection of Ashland Road and Site Entrance 2, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach of Site Entrance 2 operates at LOS B during both peaks.
- At the unsignalized intersection of Ashland Road and Site Entrance 3, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach operates at LOS B during both peaks.
- Right turn tapers are warranted at Site Entrance 1 and 2 and should be 200' in length.
- No other turn lanes or tapers are warranted at the site entrances.

Under 2041 future conditions:

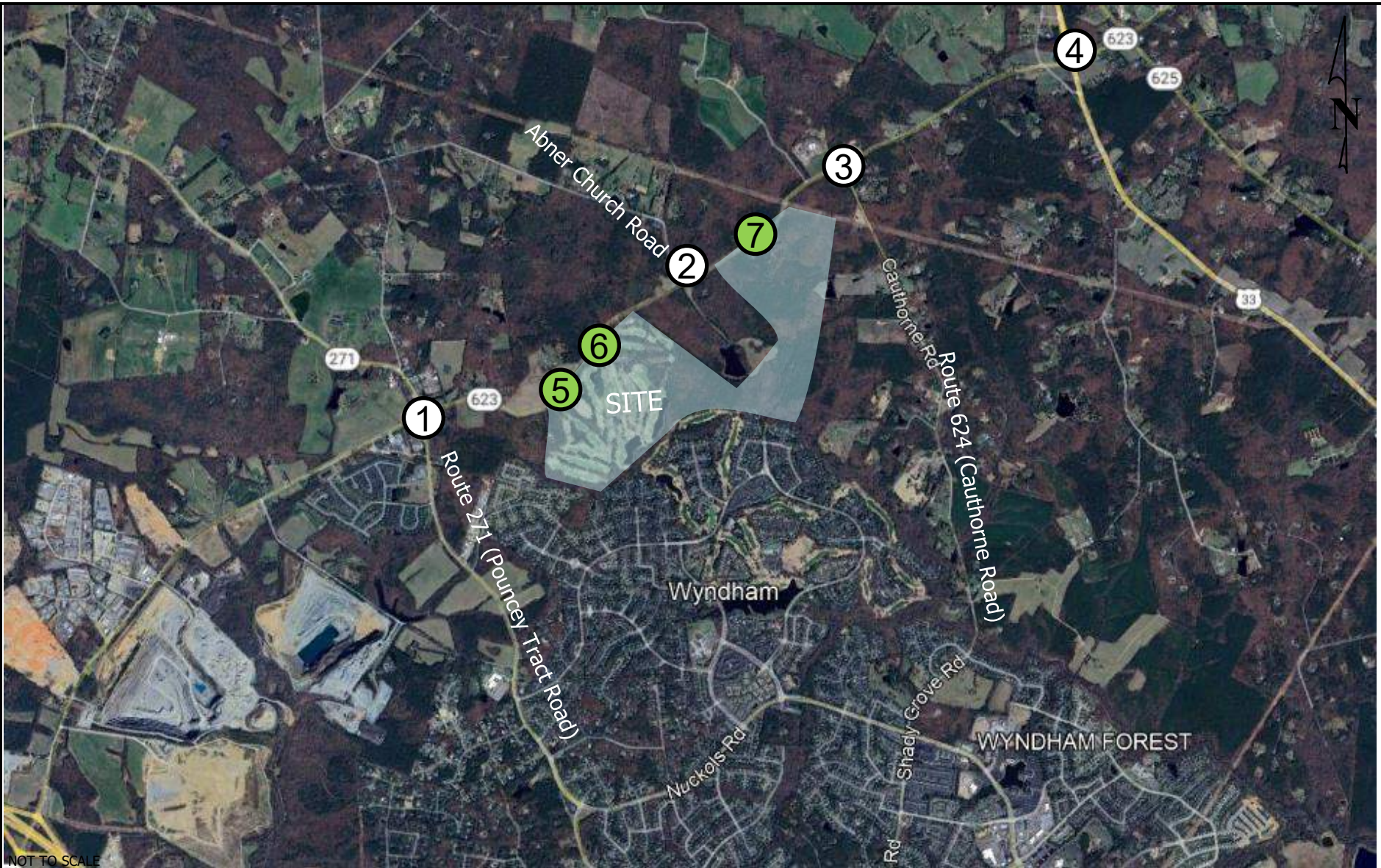
- The signalized intersection of Ashland Road and Pouncey Tract Road operates at LOS F during both peaks. All approaches operate in similar conditions to background in terms of delay; queueing for all approaches operates similar to background with the exception of the eastbound approach and the southbound through-right movement which experiences an increase in queueing.
- At the unsignalized intersections of Ashland Road and Abner Church Road and Ashland Road and Cauthorne Road, all approaches operate at LOS C or better during both peaks.
- At the signalized intersection of Ashland Road and Route 33, the overall intersection operates at LOS E during both peaks. All approaches continue to operate in similar condition to background in terms of delay and queueing.

- At the unsignalized intersection of Ashland Road and Site Entrance 1, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach of Site Entrance 1 operates at LOS C during both peaks.
- At the unsignalized intersection of Ashland Road and Site Entrance 2, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach of Site Entrance 2 operates at LOS B during the AM peak and LOS C during the PM peak.
- At the unsignalized intersection of Ashland Road and Site Entrance 3, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach operates at LOS B during the AM peak and LOS C during the PM peak.
- A right turn taper is warranted at Site Entrance 1 and should be 200' in length.
- A right turn lane and taper is warranted at Site Entrance 2 and should be constructed with 200' of taper and 200' of storage.
- No other turn lanes or tapers are warranted at the site entrances.

1.4 RECOMMENDATIONS

Based on the capacity analysis and turn lane warrant analyses results, the following is recommended:

- Signal timing adjustments at the Ashland Road/Pouncey Tract Road during both construction conditions and buildout conditions.
- A 200' right turn taper on Ashland Road at Site Entrance 1.
- A 200' right turn lane and 200' right turn taper on Ashland Road at Site Entrance 2.



 TIMMONS GROUP YOUR VISION ACHIEVED THROUGH OURS.	Surrounding Roadway Network and Study Intersections Hunting Hawk TIA Hanover County, Virginia	Figure 1-1
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HUNTING HAWK TECHNOLOGY PARK

410 + ACRES

SCALE 1" = 300'



VANDERWEIL
CELEBRATING 75 YEARS

75

TIMMONS GROUP
ENGINEERING | DESIGN | TECHNOLOGY

2 BACKGROUND INFORMATION

2.1 DESCRIPTION OF ON-SITE DEVELOPMENT

The proposed development is generally located northeast of Route 271 (Pouncey Tract Road), southeast of Route 623 (Ashland Road) and southwest of Route 623 (Cauthorne Road) in Hanover County, Virginia as shown in Figure 1-1 (all figures are located at the end of their respective chapter).

This site is currently developed with the Hunting Hawk Golf Club. The Applicant is seeking to redevelop the site with 3,894,000 square feet of data center uses.

Access to the site will be provided via three access points, one at the existing Hunting Hawk Access and two additional entrances on Ashland Road. A site plan is shown on Figure 1-2.

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When complete, the proposed development will generate 2,921 daily trips, 350 AM peak hour trips (193 in and 158 out) and 117 PM peak hour trips (35 in and 82 out).

The purpose of this analysis is to determine the impact of the proposed development on the surrounding roadway network. The scope of this study was developed with Hanover County and VDOT. A copy of the scoping documents is included in Appendix A.

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1. Ashland Road and Pouncey Tract Road (Signalized);
2. Ashland Road and Abner Church Road (Unsignalized);
3. Ashland Road and Cauthorne Road (Unsignalized); and
4. Ashland Road and US Route 33 (Signalized)

The existing intersection geometry can be found in Figure 2-1.

2.3 EXISTING ROADWAY NETWORK

Ashland Road is a two lane, undivided minor arterial roadway with a posted speed limit of 45 mph. According to 2022 VDOT AADT data, the most recent available, Ashland Road services 6,800 vehicles per day to the east of Pouncey Tract Road and 5,400 vehicles per day from Pouncey Tract Road to Abner Church Road, and 5,100 vehicles per day from Abner Church Road to US Route 33.

For purposes of this analysis, Ashland Road was assumed to run east-west through the study area.

Pouncey Tract Road is a two-lane, undivided minor arterial roadway with a posted speed limit of 45 mph. According to 2022 VDOT AADT data, the most recent available, Pouncey Tract Road services 2,400 vehicles per day in the vicinity of the site.

For purposes of this analysis, Pouncey Tract Road was assumed to run north-south through the study area.

Abner Church Road is a two lane, undivided, non VDOT classified roadway with a posted speed limit of 45 mph. According to 2014 VDOT AADT data, the most recent available, Abner Church Road services 640 vehicles per day.

For purposes of this analysis, Abner Church Road was assumed to run north-south through the study area.

Cauthorne Road a two-lane, undivided major collector roadway with a posted speed limit of 45 mph. According to 2022 VDOT AADT data, the most recent available, Cauthorne Road services 3,100 vehicles per day.

For purposes of this analysis, Cauthorne Road was assumed to run north-south through the study area.

US Route 33 (Mountain Road) is a two-lane, undivided minor arterial roadway with a posted speed limit of 55 mph. According to 2022 VDOT AADT data, the most recent available, US Route 33 services 8,500 vehicles per day in the vicinity of the site.

For purposes of this analysis, US Route 33 was assumed to run north-south through the study area.

2.4 FUTURE IMPROVEMENTS

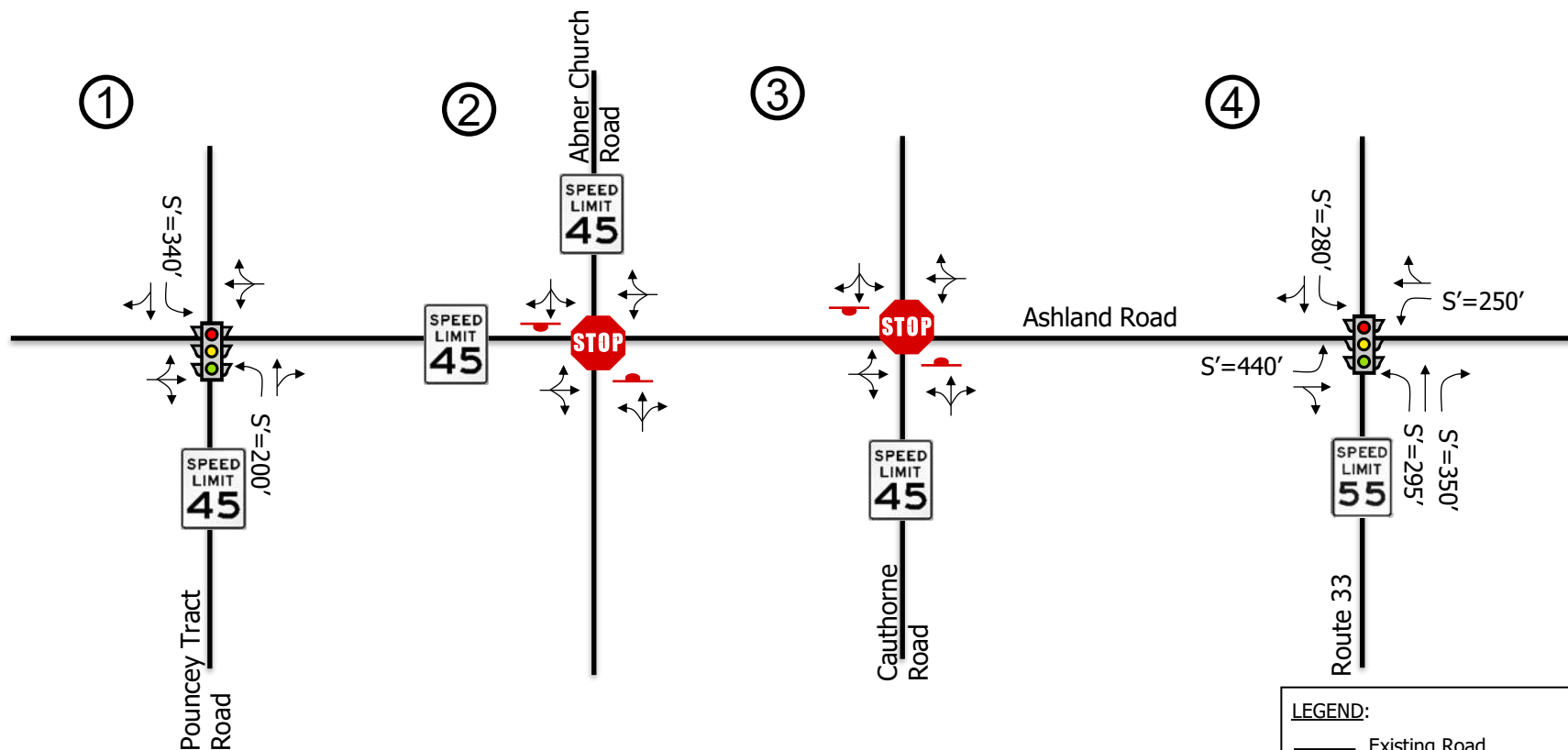
As per scoping agreements, there are no planned future improvements in the study area to be considered.

2.5 BACKGROUND DEVELOPMENTS

As per scoping agreements, there are no background developments to be considered. An annual growth rate of 2% (compounded annually) was applied to all movements to account for any growth in traffic.

2.6 OTHER MODES OF TRANSPORTATION

Given the nature of the site, all site generated traffic was assumed to be vehicular based, and no reductions were applied for other modes of transportation.



LEGEND:

- Existing Road
- Proposed Road
- Signalized Intersection
- Stop Controlled Intersection
- Stop Sign Location
- Lane Configuration
- Effective Storage (in feet)*

Per TOSAM guidelines, effective storage equals the full width storage length + 1/2 the taper length

NOT TO SCALE

3 2025 EXISTING CONDITIONS

3.1 EXISTING TRAFFIC VOLUMES

Existing AM (7-9 AM) and PM (4-6 PM) weekday peak hour turning movement counts were conducted on May 27, 2025 at three (3) of the study intersections and June 17, 2025 at the intersection of Ashland Road and Abner Church Road. The counts included heavy vehicles by movement, pedestrians, and bikes.

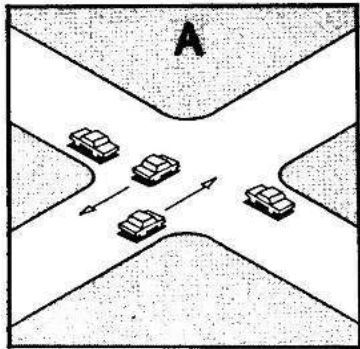
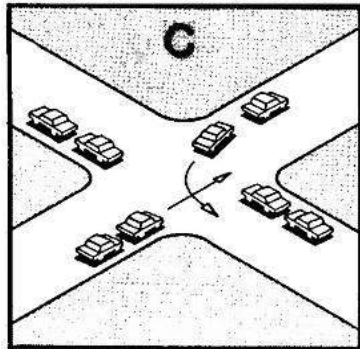
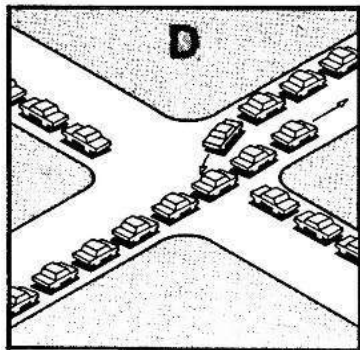
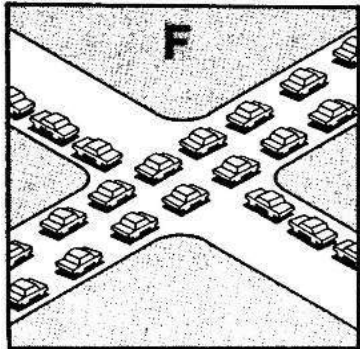
The common weekday AM peak hour was found to be 7:45 AM – 8:45 AM and the weekday PM peak hour was found to be 4:45 PM – 5:45 PM. The existing vehicle traffic counts are shown on Figure 3-1 and the complete traffic data is included in Appendix B.

Existing signal timings for the intersections of Ashland Road/Pouncey Tract Road and Ashland Road/US Route 33 were provided by VDOT and are included in Appendix C.

3.2 CAPACITY ANALYSIS

Capacity analysis allows traffic engineers to determine the impacts of traffic on the surrounding roadway network. The Transportation Research Board's (TRB) *Highway Capacity Manual* (HCM) methodologies govern how the capacity analyses are conducted and how the results are interpreted. There are six letter grades of Levels of Service (LOS) from A to F, with LOS A representing the best operating conditions and LOS F the worst operating conditions. Table 3-1 shows in detail how each of these levels of service are interpreted.

Table 3-1: Level of Service Definitions

Level of Service	Roadway Segments or Controlled Access Highways	Intersections	
A	Free flow, low traffic density.	No vehicle waits longer than one signal indication.	
B	Delay is not unreasonable, stable traffic flow.	On a rare occasion motorists wait through more than one signal indication.	
C	Stable condition, movements somewhat restricted due to higher volumes, but not objectionable for motorists.	Intermittently drivers wait through more than one signal indication, and occasionally backups may develop behind left turning vehicles, traffic flow still stable and acceptable.	
D	Movements more restricted, queues and delays may occur during short peaks, but lower demands occur often enough to permit clearing, thus preventing excessive backups.	Delays at intersections may become extensive with some, especially left-turning vehicles waiting two or more signal indications, but enough cycles with lower demand occur to permit periodic clearance, thus preventing excessive backups.	
E	Actual capacity of the roadway involves delay to all motorists due to congestion.	Very long queues may create lengthy delays, especially for left-turning vehicles.	
F	Forced flow with demand volumes greater than capacity resulting in complete congestion. Volumes drop to zero in extreme cases.	Backups from locations downstream restrict or prevent movement of vehicles out of approach creating a storage area during part or all of an hour.	

SOURCE: "A Policy on Design of Design of Urban Highways and Arterial Streets" - AASHTO, 1973 based upon material published in "Highway Capacity Manual", National Academy of Sciences, 1965.

For signalized and unsignalized intersections, level of service is defined in terms of **delay**, a measure of driver discomfort, frustration, fuel consumption and lost travel time. Table 3-2 summarizes the delay associated with each LOS category:

Table 3-2: Signalized and Unsignalized Intersection Level of Service Criteria

Signalized Intersections		Unsignalized Intersections	
Level of Service	Control Delay per Vehicle (sec/veh)	Level of Service	Average Control Delay (sec/veh)
A	≤ 10	A	0 to 10
B	> 10 to ≤ 20	B	> 10 to ≤ 15
C	> 20 to ≤ 35	C	> 15 to ≤ 25
D	> 35 to ≤ 55	D	> 25 to ≤ 35
E	> 55 to ≤ 80	E	> 35 to ≤ 50
F	> 80	F	> 50

Source: Exhibit 16-2 and Exhibit 17-2 from TRB's "Highway Capacity Manual 2000"

Capacity analyses were performed to assess existing (2025), background (2035 and 2041) and future (2027, 2035 and 2041) operational conditions. The signalized and unsignalized intersections were analyzed using SYNCHRO Version 11 based on HCM 2000 methodologies for the signalized intersections and HCM 6th edition methodologies for unsignalized intersections with the following assumptions:

- Level terrain;
- 12-foot lane widths;
- Existing peak hour factor as determined by the traffic counts (by intersection) for existing scenario;
- A minimum peak hour factor of 0.92 utilized for existing conditions;
- The higher of the existing peak hour factor as determined by traffic counts (by intersection) or a peak hour factor of 0.92 for the background and total future scenarios.
- Heavy vehicle percentage as determined by the traffic counts (by movement); and
- Traffic signals timing data provided by VDOT.

Queuing analyses were conducted using both the HCM 2000 Edition and HCM 6th edition methodology (as calculated by SYNCHRO) and SimTraffic simulations. The Synchro 95th percentile queue is the maximum back of queue for a particular lane within a lane group considering 95th percentile traffic volumes. The SimTraffic maximum queues are the average maximum queues after 10 runs of 60 minutes each.

Note that it is possible for the 95th percentile queue to be higher than the SimTraffic maximum queue due to the method in which each software calculates its respective value. The 95th percentile queue is based on an HCM formula while the SimTraffic maximum queue varies based on simulation results.

3.3 EXISTING CONDITIONS CAPACITY ANALYSIS RESULTS

Table 3-3 summarizes the 2025 existing intersection LOS, delay, 95th percentile queue lengths (Synchro), and maximum queue lengths (SimTraffic) based on the existing roadway geometry (Figure 2-1), peak hour traffic volumes shown on Figure 3-1 and the existing signal timings as provided by VDOT.

The corresponding SYNCHRO and SimTraffic reports are included in Appendix D. Note that the intersection numbers shown on the LOS, delay, and queue length summary tables correspond with the intersection node numbers used in the Synchro models and report figures.

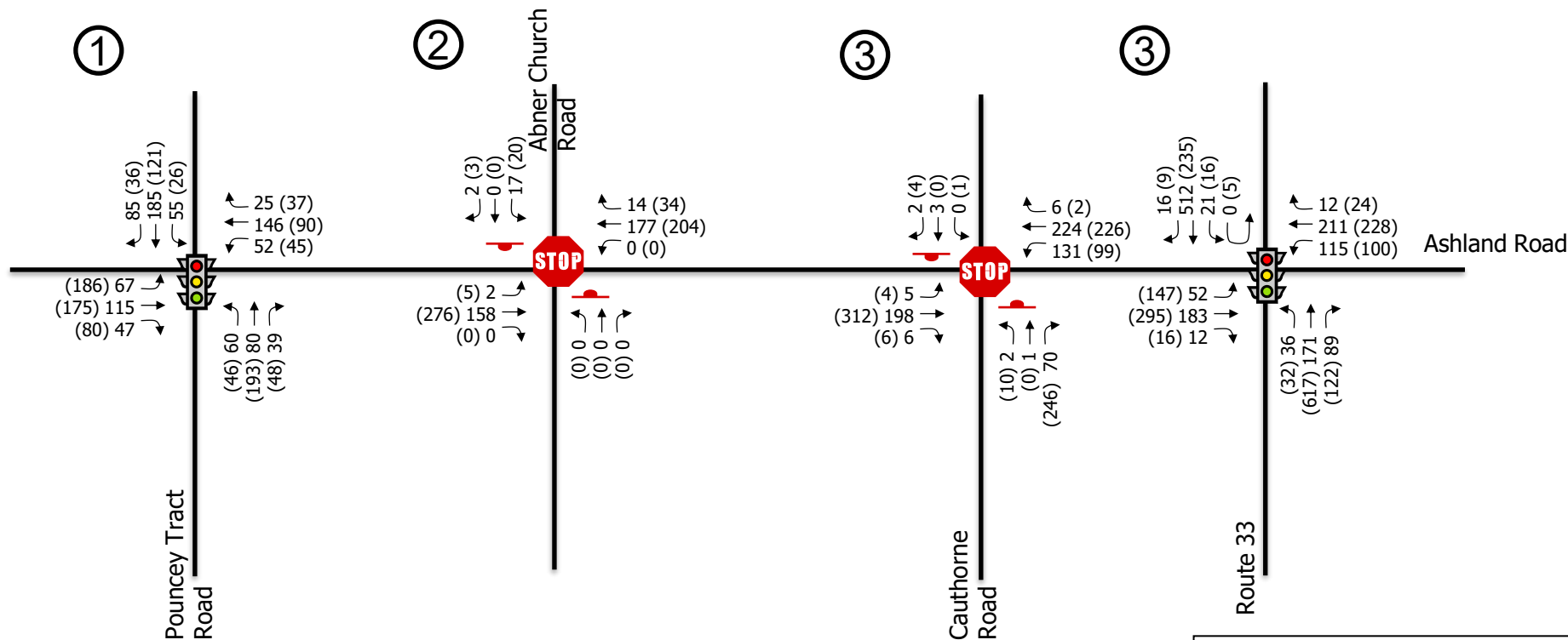
As shown in Table 3-3, under 2025 existing conditions:

- The signalized intersection of Ashland Road and Pouncey Tract Road operates at an overall LOS E in the AM peak and LOS F in the PM peak. The eastbound and westbound approaches operate at LOS F during both peaks. The northbound approach operates at LOS D in the AM peak and LOS E in the PM peak. The southbound approach operates at LOS E in the AM peak and LOS D in the PM peak.
- At the unsignalized intersection of Ashland Road and Abner Church Road, all approaches operate at LOS A during both peaks.
- At the unsignalized intersection of Ashland Road and Cauthorne Road, the mainline eastbound and westbound approaches of Ashland Road operate at LOS A during both peaks. The northbound approach of Cauthorne Road operates at LOS B during both peaks; the southbound approach of the cemetery access operates at LOS C during the AM peak and LOS B during the PM peak.
- The signalized intersection of Ashland Road and Route 33 operates at an overall LOS D during both peaks. The eastbound and westbound approaches operate at LOS E during both peaks. The northbound approach operates at LOS C during the AM peak and LOS E during the PM peak; the southbound approach operates at LOS E during the AM peak and LOS D during the PM peak.
- Overall, there are no significant queueing issues present at any of the study intersections. All 95th percentile and maximum queues are contained within the available storage at the intersections.

**Table 3-3: 2025 Existing Traffic
Intersection Level of Service and Delay Summary**

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
1. Ashland Road (E-W) Pouncey Tract Road (N-S) Signalized	EB L-T-R		59.3	F	#345	288	140.4	F	#767	430
	<i>EB Approach</i>		<i>59.3</i>	<i>F</i>	--	--	<i>140.4</i>	<i>F</i>	--	--
	WB L-T-R		77.9	F	#421	305	57.5	F	230	213
	<i>WB Approach</i>		<i>77.9</i>	<i>F</i>	--	--	<i>57.5</i>	<i>F</i>	--	--
	NB Left	200	33.4	D	68	96	30.9	D	58	93
	NB Thru-Right		39.9	E	139	136	44.3	E	289	232
	<i>NB Approach</i>		<i>37.7</i>	<i>E</i>	--	--	<i>42.2</i>	<i>E</i>	--	--
	SB Left	305	33.4	D	64	99	34.2	D	38	49
	SB Thru-Right		52.6	F	324	259	41.4	E	191	160
	<i>SB Approach</i>		<i>49.4</i>	<i>E</i>	--	--	<i>40.3</i>	<i>E</i>	--	--
	Overall		56.2	E	--	--	84.3	F	--	--
2. Ashland Road (E-W) Abner Church Road (S) and Driveway (N) Unsignalized	EB L-T-R		7.7	A	0	5	0.2	A	0	24
	<i>EB Approach</i>		<i>0.1</i>	<i>A</i>	--	--	<i>0.2</i>	<i>A</i>	--	--
	WB L-T-R		0.0	A	0	0	0.0	A	0	0
	<i>WB Approach</i>		<i>0.0</i>	<i>A</i>	--	--	<i>0.0</i>	<i>A</i>	--	--
	NB L-T-R		0.0	A	0	0	0.0	A	0	0
	<i>NB Approach</i>		<i>0.0</i>	<i>A</i>	--	--	<i>0.0</i>	<i>A</i>	--	--
	SB L-T-R		11.8	B	4	34	12.9	B	4	42
	<i>SB Approach</i>		<i>11.8</i>	<i>B</i>	--	--	<i>12.9</i>	<i>B</i>	--	--
3. Ashland Road (E-W) Cemetery Access (S) and Cauthorne Road (N) Unsignalized	EB L-T-R		0.2	A	0	32	0.1	A	0	7
	<i>EB Approach</i>		<i>0.2</i>	<i>A</i>	--	--	<i>0.1</i>	<i>A</i>	--	--
	WB L-T-R		3.5	A	8	88	2.9	A	6	76
	<i>WB Approach</i>		<i>3.5</i>	<i>A</i>	--	--	<i>2.9</i>	<i>A</i>	--	--
	NB L-T-R		10.1	B	8	58	12.2	B	34	116
	<i>NB Approach</i>		<i>10.1</i>	<i>B</i>	--	--	<i>12.2</i>	<i>B</i>	--	--
	SB L-T-R		15.5	C	1	46	13.3	B	1	26
	<i>SB Approach</i>		<i>15.5</i>	<i>C</i>	--	--	<i>13.3</i>	<i>B</i>	--	--
4. Ashland Road (E-W) Route 33 (N-S) Signalized	EB Left	440	28.1	D	54	87	29.1	D	110	133
	EB Thru-Right		44.3	E	216	256	42.7	E	#305	248
	<i>EB Approach</i>		<i>40.8</i>	<i>E</i>	--	--	<i>38.3</i>	<i>E</i>	--	--
	WB Left	250	29.3	D	101	174	28.4	D	78	111
	WB Thru-Right		39.6	E	240	248	42.5	E	232	206
	<i>WB Approach</i>		<i>36.1</i>	<i>E</i>	--	--	<i>38.5</i>	<i>E</i>	--	--
	NB Left	295	21.8	C	34	102	19.9	B	27	197
	NB Thru		23.3	C	160	164	45.4	E	#614	413
	NB Right	350	21.1	C	0	57	22.2	C	0	181
	<i>NB Approach</i>		<i>22.5</i>	<i>C</i>	--	--	<i>40.7</i>	<i>D</i>	--	--
	SB Left	280	19.4	C	23	167	23.2	C	24	56
	SB Thru-Right		41.0	E	#620	423	26.5	D	232	186
	<i>SB Approach</i>		<i>40.2</i>	<i>E</i>	--	--	<i>26.3</i>	<i>D</i>	--	--
	Overall		35.7	D	--	--	37.3	D	--	--

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.



NOT TO SCALE

4 2035 BACKGROUND CONDITIONS

The background 2035 volumes were analyzed assuming the existing roadway geometry in conjunction with projected background traffic volumes, which consists of general traffic growth and existing traffic volumes.

GENERAL TRAFFIC GROWTH

The background volumes were based on a 2% annual growth rate. The growth rate was compounded annually for the 10-year period from 2025 to 2035 and was applied to all movements at the external study intersections. The resulting 2035 vehicle background (existing + growth) volumes are shown on Figure 4-1.

4.1 BACKGROUND 2035 CAPACITY ANALYSIS RESULTS

Table 4-1 summarizes the 2035 background intersection LOS, delay, 95th percentile queue lengths (Synchro), and maximum queue lengths (SimTraffic) based on the existing roadway geometry (Figure 2-2), 2035 total background peak hour traffic volumes shown on Figure 4-1 and the existing signal timings as provided by VDOT.

The corresponding Synchro and SimTraffic reports are included in Appendix E. Note that the intersection numbers shown on the LOS, delay, and queue length summary tables correspond with the intersection node numbers used in the Synchro models and report figures.

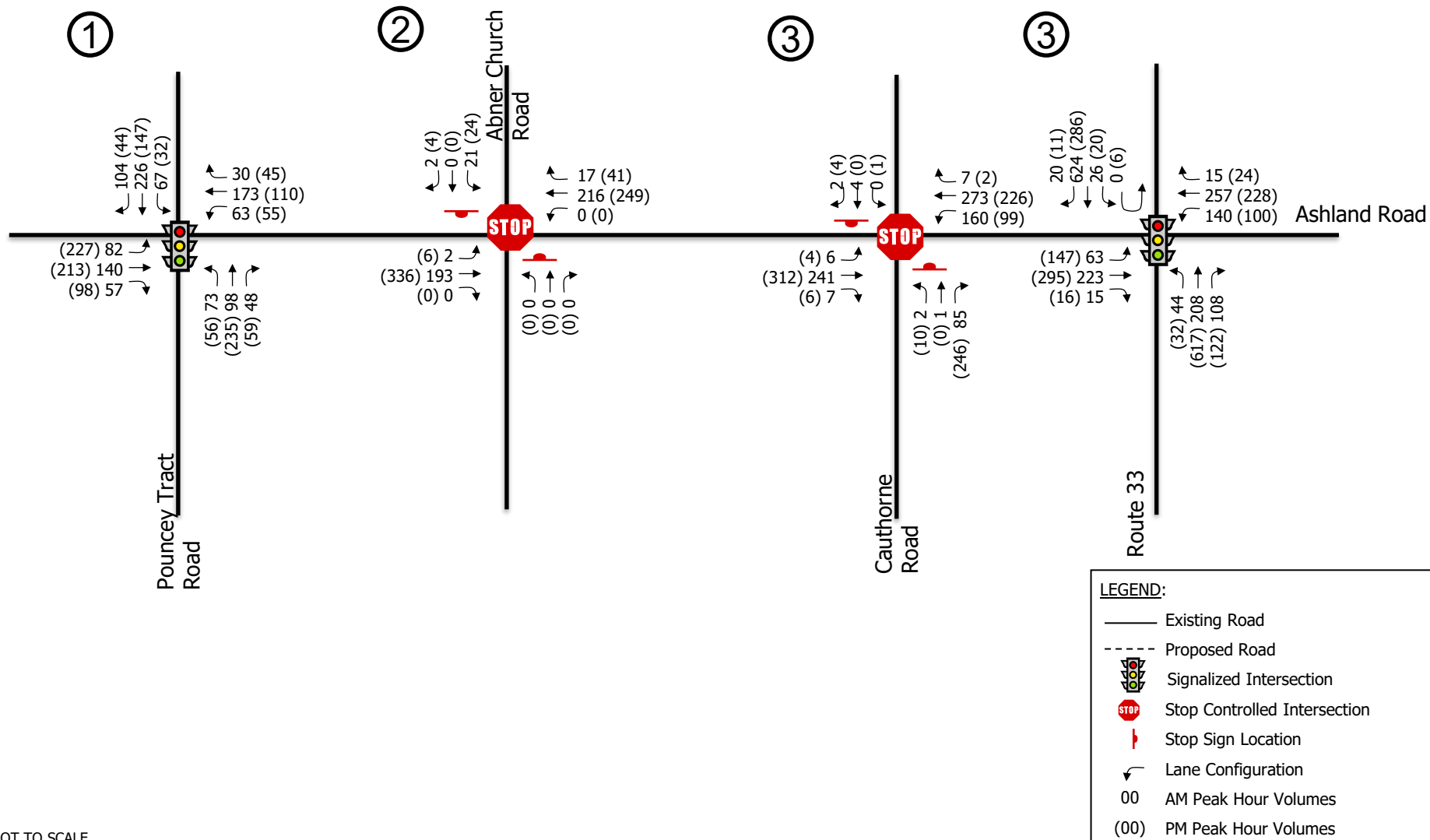
As shown in Table 4-1, under 2035 background conditions, there are no significant changes in queueing, LOS, or delay between 2025 existing conditions and 2035 background conditions.

- The intersection of Ashland Road and Pouncey Tract Road continues to operate at an overall LOS E in the AM and LOS F in the PM peak hours.
- The intersection of Ashland Road and Route 33 continues to operate at an overall LOS D in both peak hours.

**Table 4-1: 2035 Total Background Conditions
Intersection Level of Service and Delay Summary**

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
1. Ashland Road (E-W) Pouncey Tract Road (N-S) Signalized	EB L-T-R		91.5	F	#426	354	95.9	F	#855	517
	<i>EB Approach</i>		<i>91.5</i>	<i>F</i>	--	--	<i>95.9</i>	<i>F</i>	--	--
	WB L-T-R		102.1	F	#430	337	131.5	F	#408	279
	<i>WB Approach</i>		<i>102.1</i>	<i>F</i>	--	--	<i>131.5</i>	<i>F</i>	--	--
	NB Left	400	42.6	E	84	116	46.7	E	84	105
	NB Thru-Right		45.5	E	167	171	96.8	F	#502	334
	<i>NB Approach</i>		<i>44.6</i>	<i>E</i>	--	--	<i>88.8</i>	<i>F</i>	--	--
	SB Left	305	36.6	E	79	185	47.7	E	55	69
	SB Thru-Right		75.8	F	#455	361	62.2	F	270	260
	<i>SB Approach</i>		<i>69.2</i>	<i>F</i>	--	--	<i>60.1</i>	<i>F</i>	--	--
	Overall		77.6	E	--	--	93.6	F	--	--
2. Ashland Road (E-W) Abner Church Road (S) and Driveway (N) Unsignalized	EB L-T-R		7.8	A	0	13	7.9	A	0	39
	<i>EB Approach</i>		<i>0.1</i>	<i>A</i>	--	--	<i>0.1</i>	<i>A</i>	--	--
	WB L-T-R		0.0	A	0	0	0.0	A	0	0
	<i>WB Approach</i>		<i>0.0</i>	<i>A</i>	--	--	<i>0.0</i>	<i>A</i>	--	--
	NB L-T-R		0.0	A	0	0	0.0	A	0	0
	<i>NB Approach</i>		<i>0.0</i>	<i>A</i>	--	--	<i>0.0</i>	<i>A</i>	--	--
	SB L-T-R		13.1	B	6	31	14.5	B	6	32
	<i>SB Approach</i>		<i>13.1</i>	<i>B</i>	--	--	<i>14.5</i>	<i>A</i>	--	--
3. Ashland Road (E-W) Cemetery Access (S) and Cauthorne Road (N) Unsignalized	EB L-T-R		7.8	A	0	32	7.7	A	0	24
	<i>EB Approach</i>		<i>0.2</i>	<i>A</i>	--	--	<i>0.1</i>	<i>A</i>	--	--
	WB L-T-R		8.2	A	13	125	8.3	A	7.5	107
	<i>WB Approach</i>		<i>3.1</i>	<i>A</i>	--	--	<i>2.5</i>	<i>A</i>	--	--
	NB L-T-R		10.8	B	10	69	14.3	B	53	124
	<i>NB Approach</i>		<i>10.8</i>	<i>B</i>	--	--	<i>14.3</i>	<i>B</i>	--	--
	SB L-T-R		20.4	C	3	60	13.9	B	0	31
	<i>SB Approach</i>		<i>20.4</i>	<i>C</i>	--	--	<i>13.9</i>	<i>B</i>	--	--
4. Ashland Road (E-W) Route 33 (N-S) Signalized	EB Left	440	32.1	D	63	110	49.5	E	#140	207
	EB Thru-Right		55.6	F	#300	322	86.3	F	#426	407
	<i>EB Approach</i>		<i>50.7</i>	<i>F</i>	--	--	<i>74.5</i>	<i>F</i>	--	--
	WB Left	250	33.6	D	#130	237	44.6	E	#102	193
	WB Thru-Right		55.8	F	#352	384	61.3	F	#332	276
	<i>WB Approach</i>		<i>48.3</i>	<i>E</i>	--	--	<i>56.6</i>	<i>F</i>	--	--
	NB Left	295	23.8	C	31	89	17.8	C	27	107
	NB Thru		23.3	C	161	169	52.7	F	#692	447
	NB Right	350	19.9	C	0	54	20.2	C	3	312
	<i>NB Approach</i>		<i>22.3</i>	<i>C</i>	--	--	<i>46.1</i>	<i>E</i>	--	--
	SB Left	440	17.0	C	21	255	23.1	C	23	62
	SB Thru-Right		54.8	F	#664	615	25.0	C	247	185
	<i>SB Approach</i>		<i>53.4</i>	<i>F</i>	--	--	<i>24.9</i>	<i>C</i>	--	--
	Overall		45.3	D	--	--	51.3	D	--	--

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.



NOT TO SCALE

5 2041 BACKGROUND CONDITIONS

The background 2041 volumes were analyzed assuming the existing roadway geometry in conjunction with projected background traffic volumes, which consists of general traffic growth and existing traffic volumes.

GENERAL TRAFFIC GROWTH

The background volumes were based on a 2% annual growth rate. The growth rate was compounded annually for the 16-year period from 2025 to 2041 and was applied to all movements at the external study intersections. The resulting 2041 vehicle background (existing + growth) volumes are shown on Figure 4-1.

5.1 BACKGROUND 2041 CAPACITY ANALYSIS RESULTS

Table 5-1 summarizes the 2041 background intersection LOS, delay, 95th percentile queue lengths (Synchro), and maximum queue lengths (SimTraffic) based on the existing roadway geometry (Figure 2-2), 2041 total background peak hour traffic volumes shown on Figure 5-1 and the existing signal timings as provided by VDOT.

The corresponding Synchro and SimTraffic reports are included in Appendix F. Note that the intersection numbers shown on the LOS, delay, and queue length summary tables correspond with the intersection node numbers used in the Synchro models and report figures.

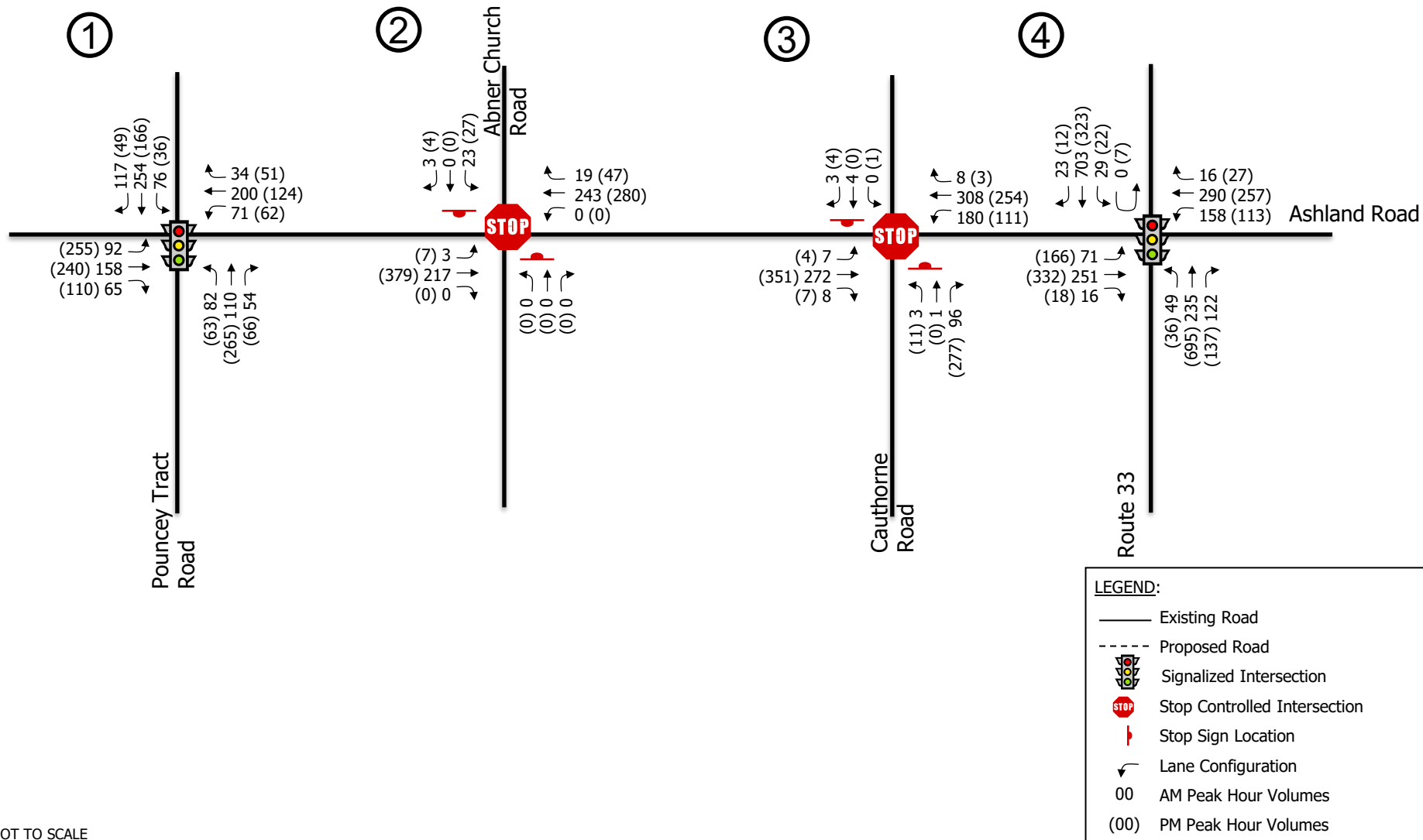
As shown in Table 5-1, under 2041 background conditions:

- At the signalized intersection of Ashland Road and Pouncey Tract Road, the overall intersection worsens to LOS F in the AM peak with increases in the eastbound and northbound directions.
- At the unsignalized intersections of Ashland Road and Abner Church Road and Ashland Road and Cauthorne Road, all approaches operate at LOS C or better during both peaks with minimal queueing.
- The signalized intersection of Ashland Road and Route 33 operates at LOS E during both peaks. The northbound and southbound approaches continue to operate in similar conditions to 2035 background, the eastbound and westbound approaches experience increased delay and queueing.

**Table 5-1: 2041 Total Background Conditions
Intersection Level of Service and Delay Summary**

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
1. Ashland Road (E-W) Pouncey Tract Road (N-S) Signalized	EB L-T-R		123.5	F	#548	475	161.2	F	#1028	745
	<i>EB Approach</i>		<i>123.5</i>	<i>F</i>	--	--	<i>161.2</i>	<i>F</i>	--	--
	WB L-T-R		133.9	F	#546	426	160.2	F	#468	328
	<i>WB Approach</i>		<i>133.9</i>	<i>F</i>	--	--	<i>160.2</i>	<i>F</i>	--	--
	NB Left	400	66.8	F	#127	139	47.5	E	92	268
	NB Thru-Right		53.6	F	213	198	126.4	F	#588	575
	<i>NB Approach</i>		<i>58.0</i>	<i>F</i>	--	--	<i>113.7</i>	<i>F</i>	--	--
	SB Left	305	41.5	E	99	341	49.0	E	60	71
	SB Thru-Right		101.1	F	#591	573	65.8	F	304	266
	<i>SB Approach</i>		<i>90.9</i>	<i>F</i>	--	--	<i>63.4</i>	<i>F</i>	--	--
	Overall		102.6	F	--	--	132.0	F	--	--
2. Ashland Road (E-W) Abner Church Road (S) and Driveway (N) Unsignalized	EB L-T-R		7.9	A	0	13	8.0	A	0	51
	<i>EB Approach</i>		<i>0.1</i>	<i>A</i>	--	--	<i>0.1</i>	<i>A</i>	--	--
	WB L-T-R		0.0	A	0	0	0.0	A	0	0
	<i>WB Approach</i>		<i>0.0</i>	<i>A</i>	--	--	<i>0.0</i>	<i>A</i>	--	--
	NB L-T-R		0.0	A	0	0	0.0	A	0	0
	<i>NB Approach</i>		<i>0.0</i>	<i>A</i>	--	--	<i>0.0</i>	<i>A</i>	--	--
	SB L-T-R		14.0	B	6	34	16.1	C	9	38
	<i>SB Approach</i>		<i>14.0</i>	<i>B</i>	--	--	<i>16.1</i>	<i>A</i>	--	--
3. Ashland Road (E-W) Cemetery Access (S) and Cauthorne Road (N) Unsignalized	EB L-T-R		7.9	A	0	55	7.8	A	0	24
	<i>EB Approach</i>		<i>0.2</i>	<i>A</i>	--	--	<i>0.1</i>	<i>A</i>	--	--
	WB L-T-R		8.4	A	15	149	8.4	A	9	139
	<i>WB Approach</i>		<i>3.2</i>	<i>A</i>	--	--	<i>2.5</i>	<i>A</i>	--	--
	NB L-T-R		11.5	B	13	64	16.6	C	73	131
	<i>NB Approach</i>		<i>11.5</i>	<i>B</i>	--	--	<i>16.6</i>	<i>C</i>	--	--
	SB L-T-R		21.8	C	3	59	16.2	C	3	33
	<i>SB Approach</i>		<i>21.8</i>	<i>C</i>	--	--	<i>16.2</i>	<i>C</i>	--	--
4. Ashland Road (E-W) Route 33 (N-S) Signalized	EB Left	440	38.3	E	75	363	100.4	F	#218	360
	EB Thru-Right		75.3	F	#371	505	124.7	F	#501	604
	<i>EB Approach</i>		<i>67.5</i>	<i>F</i>	--	--	<i>116.9</i>	<i>F</i>	--	--
	WB Left	250	49.2	E	#155	275	54.1	F	#129	263
	WB Thru-Right		70.6	F	#423	630	82.3	F	#392	479
	<i>WB Approach</i>		<i>63.3</i>	<i>F</i>	--	--	<i>74.3</i>	<i>F</i>	--	--
	NB Left	295	26.9	D	36	112	18.1	C	29	292
	NB Thru		23.3	C	187	205	83.4	F	#828	678
	NB Right	350	19.8	C	0	77	20.3	C	13	375
	<i>NB Approach</i>		<i>22.7</i>	<i>C</i>	--	--	<i>70.8</i>	<i>F</i>	--	--
	SB Left	440	17.5	C	24	300	26.0	D	25	62
	SB Thru-Right		65.0	F	#811	786	26.2	D	283	217
	<i>SB Approach</i>		<i>63.1</i>	<i>F</i>	--	--	<i>26.2</i>	<i>D</i>	--	--
	Overall		55.6	E	--	--	75.0	E	--	--

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.



NOT TO SCALE

6 TRIP GENERATION

This site is currently developed with the Hunting Hawk Golf Club. The Applicant is seeking to redevelop the site with 3,894,000 square feet of data center uses.

Access to the site will be provided via three access points, one at the existing Hunting Hawk Access and two additional entrances on Ashland Road. A site plan is shown on Figure 1-2.

6.1 SITE TRIP GENERATION

Data centers are relatively new uses and trip generation information is limited. Typically, trips are generated based on data contained in the 11th Edition of the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*. However, the ITE data contains studies for only two (2) similar uses both of which were studied in the 2010 timeframe and states *"caution should be used when applying trip generation rates for data centers, as the database contains a small number of sites with limited data"*.

VDOT Chapter 527 Administrative Guidelines states that if certain criteria are not met (at least three data points, standard deviation less than 110% of the average rate, etc.), *"a rate based upon the study of similar local sites should be considered."*

In March 2023, Bowman Consulting Group published a trip generation study of six (6) existing data centers in Virginia. The study analyzed the trips generated by each site over the course of a full year and averaged the trips to determine rates for the AM peak hour, PM peak hour, and average daily trips. The study was approved by VDOT Central Office and has become the standard for estimating data center trip generation.

The site-generated traffic volumes shown in Table 5-1 were estimated using Bowman Study with the size of the development (square feet) as the independent variable.

Table 6-1: Trip Generation Summary

				AM			PM			
				IN	OUT	TOTAL	IN	OUT	TOTAL	DAILY
Data Center Trip Generation										
Data Center	3,894,000	SF (GFA)		193	158	350	35	82	117	2,921
Total Trips				193	158	350	35	82	117	2,921

Note: (1) Trip generation based on AWS Data Center Trip Generation Assessment (Table 3 and Table 6) prepared by Bowman Consulting Group, March 2023.

As shown in Table 6-1, when complete, the development will generate a total of 2,921 daily trips, 350 AM peak hour trips (193 in and 158 out) and 117 PM peak hour trips (35 in and 812 out).

6.2 EXTERNAL TRIP DISTRIBUTIONS

The distribution of trips generated by the proposed developed was based on the existing traffic volumes, discussion during the scoping meeting, the nature of the use, and local knowledge.

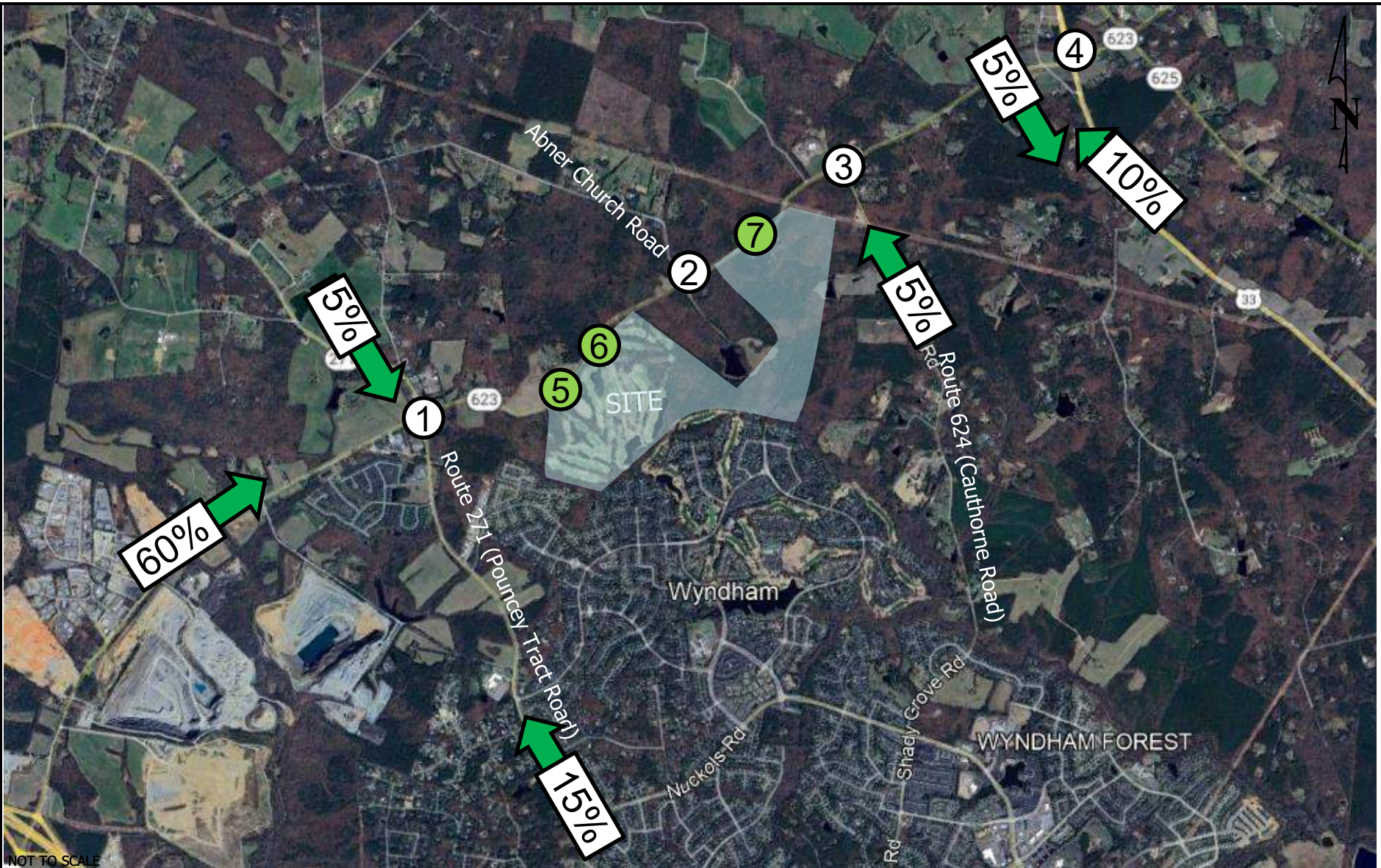
The following directional distributions were assumed for the site and are shown on Figure 6-1:

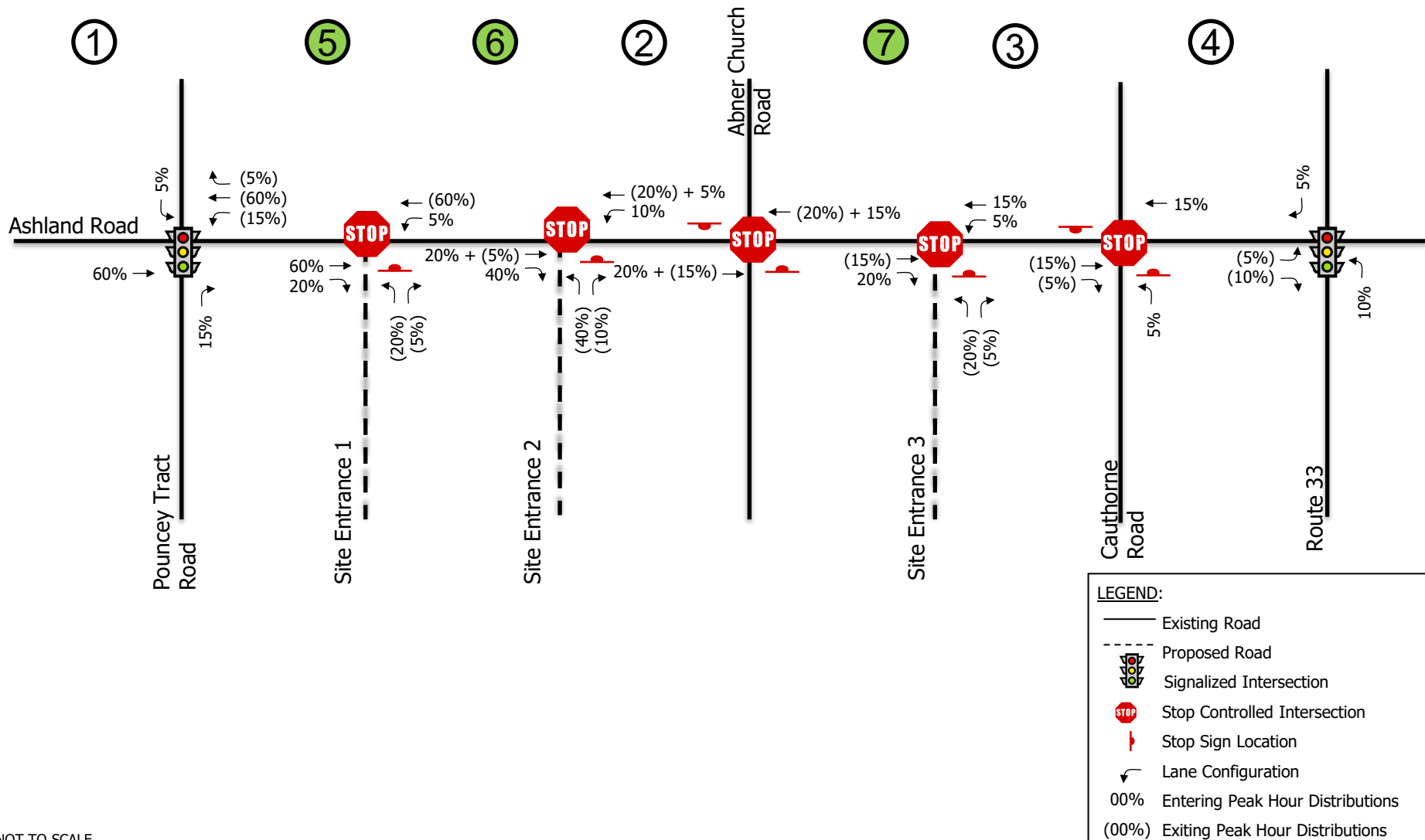
- 60% to/from the west on Ashland Road;
- 15% to/from the south on Pouncey Tract Road;
- 5% to/from the north on Pouncey Tract Road;
- 5% to/from the south on Cauthorne Road;
- 10% to/from the south on Route 33; and

- 5% to/from the north on Route 33.

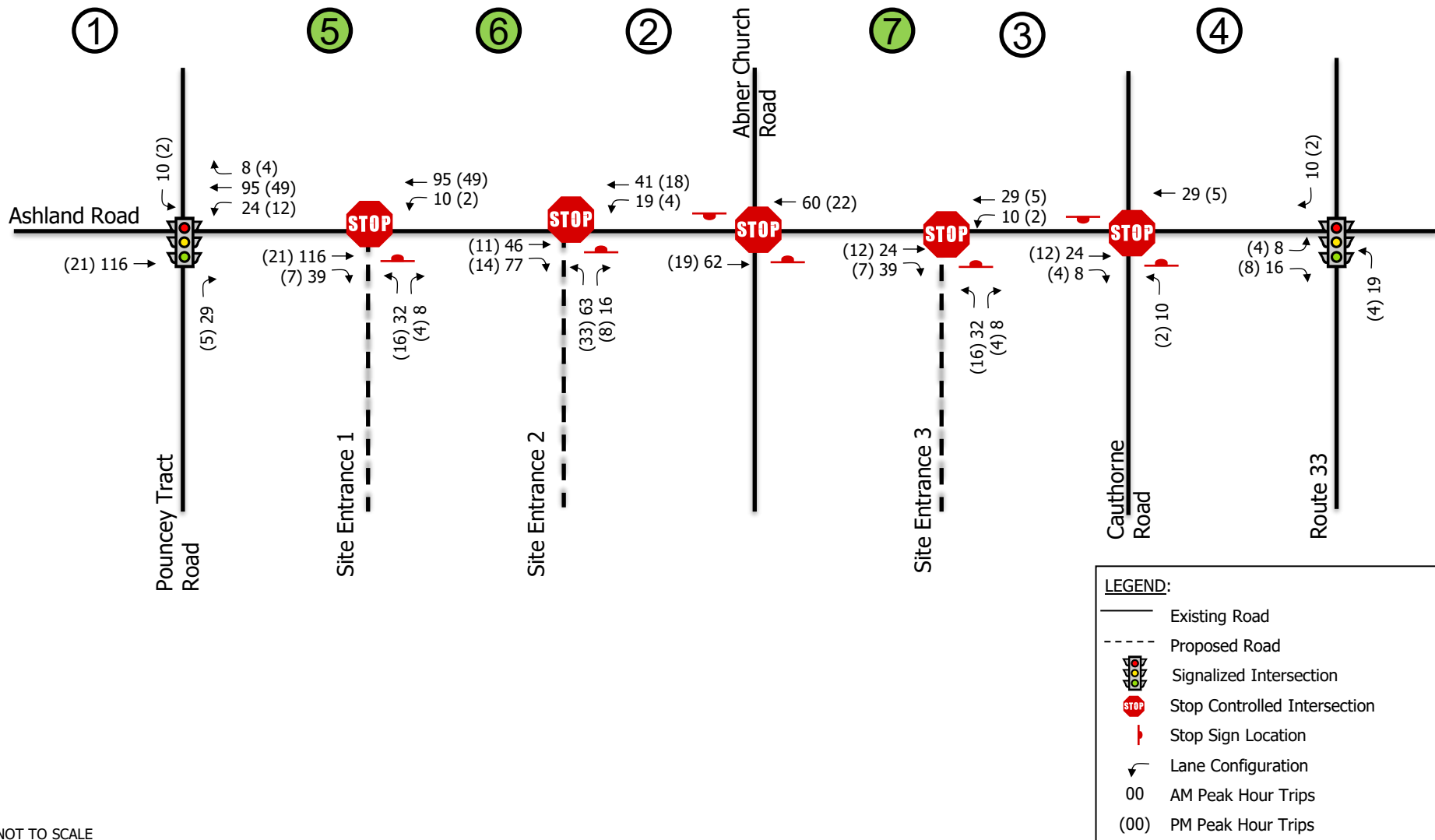
6.3 TRAFFIC ASSIGNMENT

The trip distribution percentages for the external trips from Figure 6-1 were applied to the trip generation table (Table 6-1) to distribute the external trips to the surrounding roadway network. The site trip distributions for the study intersections can be found in Figure 6-2 and the site trips can be found in Figure 6-3.





NOT TO SCALE



7 2027 TOTAL FUTURE CONDITIONS - CONSTRUCTION

At the request of VDOT, a construction scenario was included in the analysis to determine the impact of construction traffic on the study intersections. This traffic is temporary in nature and will only occur during the buildout of the site. Once construction is complete (assumed 2035), this traffic will cease and be replaced by the typical traffic noted above.

The construction traffic volumes were developed from construction traffic counts at a data center in Mecklenburg County, Virginia that was actively under construction at the time of the counts. The construction site trips are shown in Table 7-1 below.

It is noted the size of the data center under construction was similar to the proposed site and indicates that during construction 492 AM peak hour trips (471 in and 21 out) and 268 PM peak hour trips (16 in and 252 out) can be anticipated.

Table 7-1: Construction Traffic

				AM			PM		
				IN	OUT	TOTAL	IN	OUT	TOTAL
Data Center Trip Generation									
Data Center	3,894,000	SF (GFA)		471	21	492	16	252	268
Total Trips				471	21	492	16	252	268

Note: (1) Trip generation based on traffic counts from under construction data center in Mecklenburg County, Virginia, April 2023

The construction site trips were assigned to the study intersections based on the distributions noted above and can be found in Figure 7-1.

7.1 2027 TOTAL FUTURE TRAFFIC VOLUMES

The construction site generated trips shown on Figure 7-1 were added to 2025 existing traffic volumes (with 2% annual growth rate over 2 years) to yield the 2027 total future traffic volumes shown in Figure 7-2.

7.2 2027 FUTURE CONDITIONS ANALYSIS RESULTS

Table 7-2 summarizes the 2027 total future intersection LOS, delay, 95th percentile queue lengths (Synchro), and maximum queue lengths (SimTraffic) based on the existing roadway geometry (Figure 2-1), 2027 total future peak hour traffic volumes (Figure 7-2), and the existing signal timings as provided by VDOT.

The corresponding Synchro and SimTraffic reports are included in Appendix G. Note that the intersection numbers shown on the LOS, delay, and queue length summary tables correspond with the intersection node numbers used in the Synchro models and report figures.

As shown in Table 2, under 2027 construction traffic conditions:

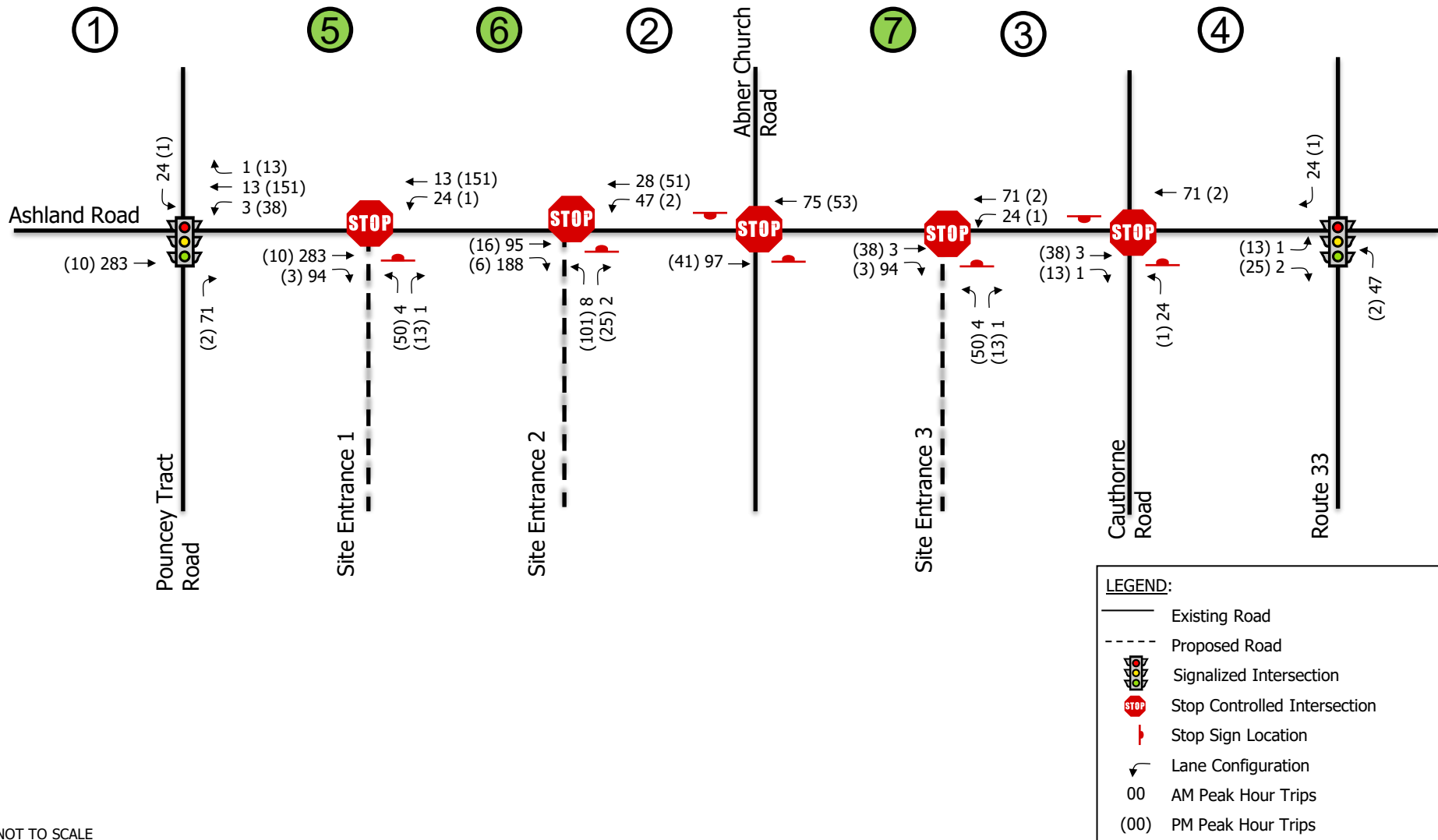
- The signalized intersection of Ashland Road and Pouncey Tract Road operates at LOS F during both peaks, worsening from LOS E in the AM peak in existing conditions. All approaches operate at LOS F during both peaks and the northbound left storage is filled or nearly filled during both peaks.
 - Signal timing adjustments are recommended during construction to help alleviate the increase in delay.
- At the unsignalized intersection of Ashland Road and Abner Church Road, all approaches continue to operate at LOS B or better during both peaks.
- At the unsignalized intersection of Ashland Road and Cauthorne Road, all approaches continue to operate similar to existing conditions at LOS C or better.
- At the signalized intersection of Ashland Road and Route 33, the overall intersection continues to operate at LOS D during both peaks. All approaches continue to operate at LOS E or better with the exception of the eastbound and westbound approaches during the AM peak which operate at LOS F. All queues fit within the existing provided storage.
- At the unsignalized intersection of Ashland Road and Site Entrance 1, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The westbound approach experiences a maximum queue of 95 feet in the AM peak (approximately 4 vehicles). The northbound approach of Site Entrance 1 operates at LOS C during both peaks.
- At the unsignalized intersection of Ashland Road and Site Entrance 2, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The westbound approach experiences a maximum queue of 107 feet in the AM peak (approximately 5 vehicles). The northbound approach of Site Entrance 2 operates at LOS B during the AM peak and LOS C during the PM peak.
- At the unsignalized intersection of Ashland Road and Site Entrance 3, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The westbound approach experiences a maximum queue of 63 feet in the AM peak. The northbound approach operates at LOS B during both peaks.

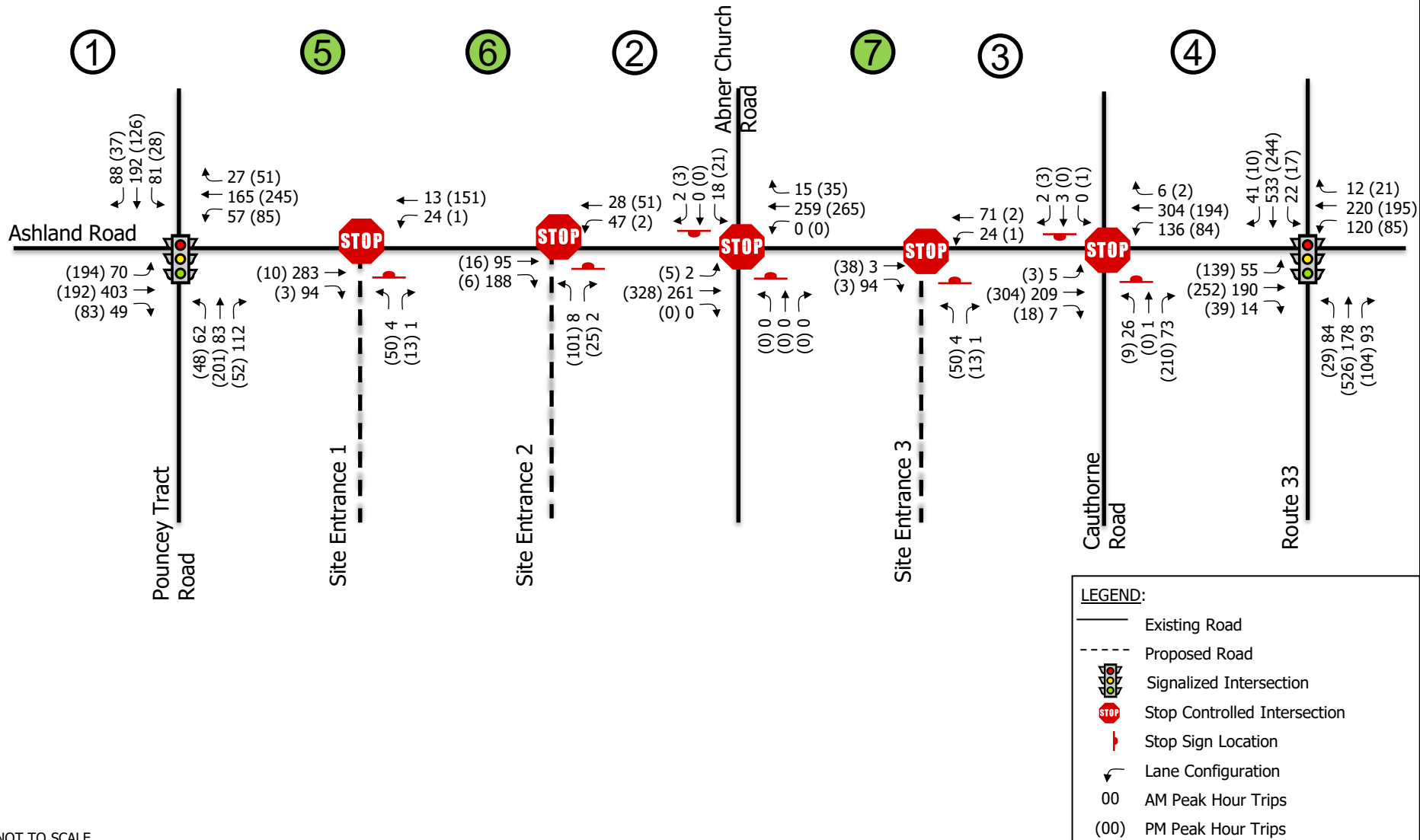
Table 2-2: 2027 Total Future Conditions
Intersection Level of Service and Delay Summary

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
1. Ashland Road (E-W) Pouncey Tract Road (N-S) Signalized	EB L-T-R		173.0	F	#912	922	150.1	F	#840	470
	<i>EB Approach</i>		<i>173.0</i>	<i>F</i>	<i>--</i>	<i>--</i>	<i>150.1</i>	<i>F</i>	<i>--</i>	<i>--</i>
	WB L-T-R		205.5	F	#510	360	151.1	F	#701	483
	<i>WB Approach</i>		<i>205.5</i>	<i>F</i>	<i>--</i>	<i>--</i>	<i>151.1</i>	<i>F</i>	<i>--</i>	<i>--</i>
	NB Left	200	60.7	F	#105	176	51.2	F	80	199
	NB Thru-Right		68.7	F	#269	277	97.1	F	#471	364
	<i>NB Approach</i>		<i>66.7</i>	<i>F</i>	<i>--</i>	<i>--</i>	<i>89.8</i>	<i>F</i>	<i>--</i>	<i>--</i>
	SB Left	305	55.3	F	119	298	53.6	F	52	69
	SB Thru-Right		130.2	F	#505	466	63.9	F	248	207
	<i>SB Approach</i>		<i>113.6</i>	<i>F</i>	<i>--</i>	<i>--</i>	<i>62.5</i>	<i>F</i>	<i>--</i>	<i>--</i>
	Overall		143.7	F	--	--	124.4	F	--	--
2. Ashland Road (E-W) Abner Church Road (S) and Driveway (N) Unsignalized	EB L-T-R		0.1	A	0	0	0.2	A	0	41
	<i>EB Approach</i>		<i>0.1</i>	<i>A</i>	<i>--</i>	<i>--</i>	<i>0.2</i>	<i>A</i>	<i>--</i>	<i>--</i>
	WB L-T-R		0.0	A	0	0	0.0	A	0	0
	<i>WB Approach</i>		<i>0.0</i>	<i>A</i>	<i>--</i>	<i>--</i>	<i>0.0</i>	<i>A</i>	<i>--</i>	<i>--</i>
	NB L-T-R		0.0	A	0	0	0.0	A	0	0
	<i>NB Approach</i>		<i>0.0</i>	<i>A</i>	<i>--</i>	<i>--</i>	<i>0.0</i>	<i>A</i>	<i>--</i>	<i>--</i>
	SB L-T-R		13.8	B	4	42	14.5	B	5	47
	<i>SB Approach</i>		<i>13.8</i>	<i>B</i>	<i>--</i>	<i>--</i>	<i>14.5</i>	<i>B</i>	<i>--</i>	<i>--</i>
3. Ashland Road (E-W) Cemetery Access (S) and Cauthorne Road (N) Unsignalized	EB L-T-R		0.2	A	0	28	0.1	A	0	6
	<i>EB Approach</i>		<i>0.2</i>	<i>A</i>	<i>--</i>	<i>--</i>	<i>0.1</i>	<i>A</i>	<i>--</i>	<i>--</i>
	WB L-T-R		3.2	A	9	95	2.9	A	6	94
	<i>WB Approach</i>		<i>3.2</i>	<i>A</i>	<i>--</i>	<i>--</i>	<i>2.9</i>	<i>A</i>	<i>--</i>	<i>--</i>
	NB L-T-R		13.5	B	18	78	13.2	B	39	122
	<i>NB Approach</i>		<i>13.5</i>	<i>B</i>	<i>--</i>	<i>--</i>	<i>13.2</i>	<i>B</i>	<i>--</i>	<i>--</i>
	SB L-T-R		17.3	C	1	59	14.3	B	1	24
	<i>SB Approach</i>		<i>17.3</i>	<i>C</i>	<i>--</i>	<i>--</i>	<i>14.3</i>	<i>B</i>	<i>--</i>	<i>--</i>
4. Ashland Road (E-W) Route 33 (N-S) Signalized	EB Left	440	31.5	D	52	96	29.9	D	114	144
	EB Thru-Right		58.9	F	#240	254	57.0	F	#360	258
	<i>EB Approach</i>		<i>53.1</i>	<i>F</i>	<i>--</i>	<i>--</i>	<i>48.3</i>	<i>E</i>	<i>--</i>	<i>--</i>
	WB Left	250	35.3	E	99	192	28.3	D	75	128
	WB Thru-Right		77.9	F	#281	280	41.7	E	#245	236
	<i>WB Approach</i>		<i>63.4</i>	<i>F</i>	<i>--</i>	<i>--</i>	<i>37.9</i>	<i>E</i>	<i>--</i>	<i>--</i>
	NB Left	295	19.0	C	49	142	17.9	C	23	110
	NB Thru		19.2	C	134	159	54.4	F	#538	414
	NB Right	350	16.9	C	0	62	19.9	C	0	241
	<i>NB Approach</i>		<i>18.5</i>	<i>C</i>	<i>--</i>	<i>--</i>	<i>47.4</i>	<i>E</i>	<i>--</i>	<i>--</i>
	SB Left	280	16.2	C	18	232	21.1	C	19	57
	SB Thru-Right		38.9	E	#552	536	23.0	C	196	177
	<i>SB Approach</i>		<i>38.1</i>	<i>E</i>	<i>--</i>	<i>--</i>	<i>22.8</i>	<i>C</i>	<i>--</i>	<i>--</i>
	Overall		41.9	D	--	--	41.8	D	--	--
5. Ashland Road (E-W) and Site Entrance 1 (N) Unsignalized	EB Thru-Right		0.0	A	0	9	0.0	A	0	0
	<i>EB Approach</i>		<i>0.0</i>	<i>A</i>	<i>--</i>	<i>--</i>	<i>0.0</i>	<i>A</i>	<i>--</i>	<i>--</i>
	WB Left-Thru		1.2	A	2	95	0.0	A	0	0
	<i>WB Approach</i>		<i>1.2</i>	<i>A</i>	<i>--</i>	<i>--</i>	<i>0.0</i>	<i>A</i>	<i>--</i>	<i>--</i>
	NB Left-Right		15.5	C	1	37	15.6	C	15	66
	<i>NB Approach</i>		<i>15.5</i>	<i>C</i>	<i>--</i>	<i>--</i>	<i>15.6</i>	<i>C</i>	<i>--</i>	<i>--</i>
6. Ashland Road (E-W) and Site Entrance 2 (N) Unsignalized	EB Thru		0.0	A	0	0	0.0	A	0	0
	EB Right	270	0.0	A	0	20	0.0	A	0	0
	<i>EB Approach</i>		<i>0.0</i>	<i>A</i>	<i>--</i>	<i>--</i>	<i>0.0</i>	<i>A</i>	<i>--</i>	<i>--</i>
	WB Left-Thru		2.0	A	4	107	0.0	A	0	0
	<i>WB Approach</i>		<i>2.0</i>	<i>A</i>	<i>--</i>	<i>--</i>	<i>0.0</i>	<i>A</i>	<i>--</i>	<i>--</i>
	NB Left-Right		13.2	B	2	12	16.1	C	32	70
	<i>NB Approach</i>		<i>13.2</i>	<i>B</i>	<i>--</i>	<i>--</i>	<i>16.1</i>	<i>A</i>	<i>--</i>	<i>--</i>
7. Ashland Road (E-W) and Site Entrance 3 (N) Unsignalized	EB Thru-Right		0.0	A	0	4	0.0	A	0	0
	<i>EB Approach</i>		<i>0.0</i>	<i>A</i>	<i>--</i>	<i>--</i>	<i>0.0</i>	<i>A</i>	<i>--</i>	<i>--</i>
	WB Left-Thru		0.8	A	2	63	0.0	A	0	0
	<i>WB Approach</i>		<i>0.8</i>	<i>A</i>	<i>--</i>	<i>--</i>	<i>0.0</i>	<i>A</i>	<i>--</i>	<i>--</i>
	NB Left-Right		12.7	B	1	28	14.5	B	14	64
	<i>NB Approach</i>		<i>12.7</i>	<i>B</i>	<i>--</i>	<i>--</i>	<i>14.5</i>	<i>B</i>	<i>--</i>	<i>--</i>

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

- 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.





NOT TO SCALE

8 2035 TOTAL FUTURE CONDITIONS

To complete the analysis of 2035 total conditions (total background volumes with the proposed development), the estimated site trips were added to the 2035 total background traffic volumes. The projected volumes were then used to complete the capacity analysis.

8.1 2035 TOTAL FUTURE TRAFFIC VOLUMES

The site generated trips shown on Figure 6-1 were added to the 2035 background traffic volumes (Figure 4-1) to yield the 2035 total future traffic volumes shown in Figure 8-1.

8.2 TURN LANE WARRANT ANALYSES

To determine the need for any roadway improvements to accommodate the new traffic patterns and site entrances, turn lane warrant analyses were completed for the proposed site entrances.

The turn lane warrant analyses were conducted using the 2035 total future (Figure 8-1) traffic volumes and the applicable nomographs from the VDOT *Road Design Manual*, Appendix F.

Under 2035 future conditions:

- Right turn tapers are warranted at Site Entrance 1 and 2. These tapers should be 200' in length.
- No other turn lanes or tapers are warranted at the site entrances.

The turn lane warrants can be found in Appendix H.

8.3 2035 FUTURE CONDITIONS ANALYSIS RESULTS

Table 8-1 summarizes the 2035 total future intersection LOS, delay, 95th percentile queue lengths (Synchro), and maximum queue lengths (SimTraffic) based on the existing roadway geometry (Figure 2-1), 2035 total future peak hour traffic volumes (Figure 8-1), and the existing signal timings as provided by VDOT.

The corresponding Synchro and SimTraffic reports are included in Appendix I. Note that the intersection numbers shown on the LOS, delay, and queue length summary tables correspond with the intersection node numbers used in the Synchro models and report figures.

As shown in Table 8-1, under 2035 total future conditions with development of the site there are no significant changes in queueing, LOS, or delay compared to 2035 future conditions. All intersections continue to operate at acceptable levels of service with no queuing issues. Specifically:

- The signalized intersection of Ashland Road and Pouncey Tract Road operates at LOS F during both peaks, worsening from LOS E in the AM peak in background conditions. All approaches operate in similar conditions to background in terms of delay; queueing for all approaches operates similar to background with the exception of the eastbound approach which experiences an increase in queueing.
 - No geometric improvements are required at the intersection but signal timing adjustments are recommended to help alleviate the increase in delay.
- At the unsignalized intersection of Ashland Road and Abner Church Road, all approaches operate at LOS C or better during both peaks with minimal queueing present.

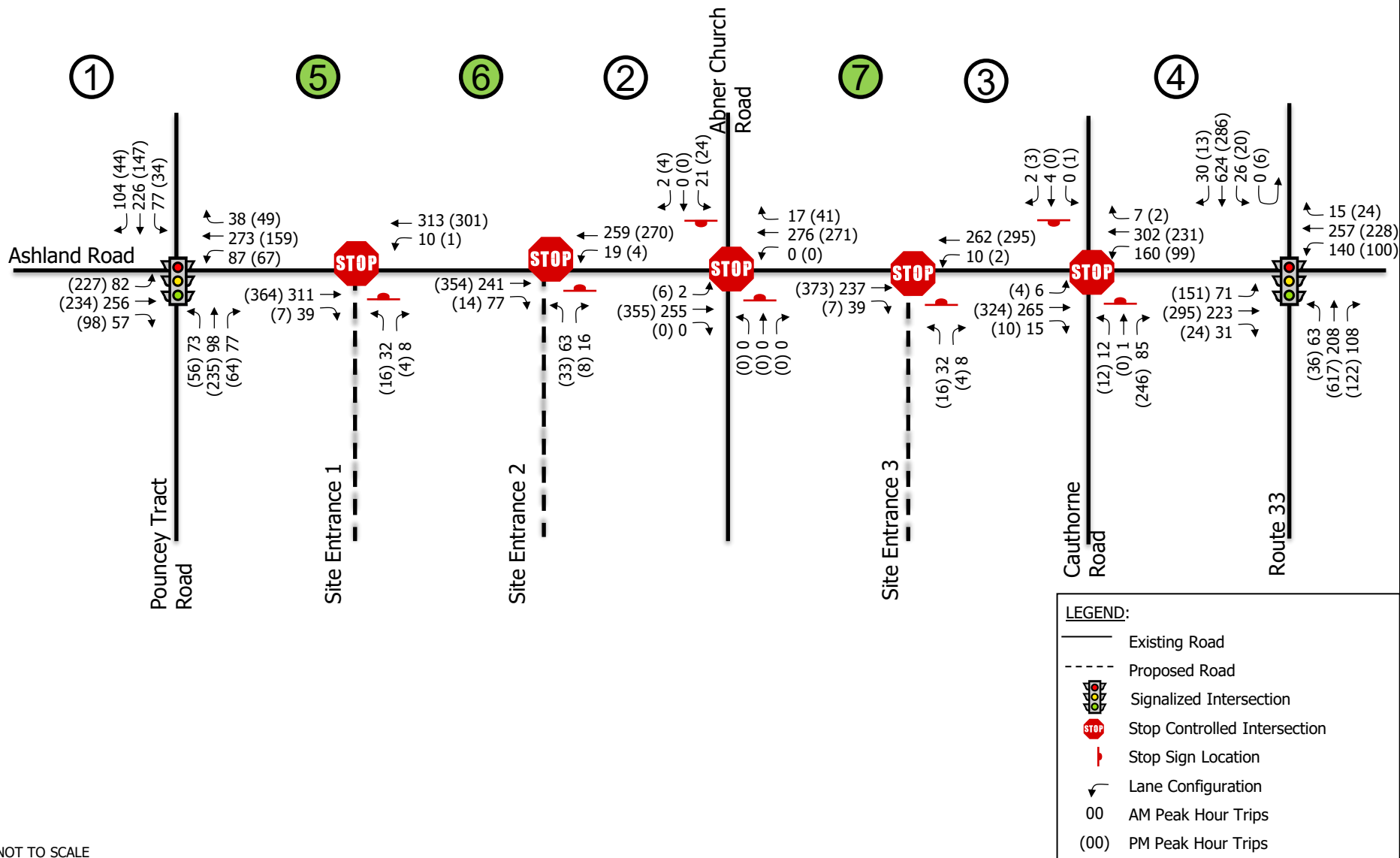
- At the unsignalized intersection of Ashland Road and Cauthorne Road, all approaches continue to operate similar to existing conditions at LOS C or better.
- At the signalized intersection of Ashland Road and Route 33, the overall intersection continues to operate at LOS D during the AM peak and operates at LOS E during the PM peak. All approaches continue to operate in similar condition to background in terms of delay; queueing for all approaches operates similar to background with the exception of the northbound through movement which experiences an increase in queueing during the PM peak.
- At the unsignalized intersection of Ashland Road and Site Entrance 1, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The westbound approach experiences a maximum queue of 38 feet in the AM peak (approximately 2 vehicles). The northbound approach of Site Entrance 1 operates at LOS B during both peaks.
- At the unsignalized intersection of Ashland Road and Site Entrance 2, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The westbound approach experiences a maximum queue of 69 feet in the AM peak (approximately 3 vehicles). The northbound approach of Site Entrance 2 operates at LOS B during both peaks.
- At the unsignalized intersection of Ashland Road and Site Entrance 3, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The westbound approach experiences a maximum queue of 23 feet in the AM peak (approximately one vehicle). The northbound approach operates at LOS B during both peaks.

**Table 8-1: 2035 Total Future Conditions
Intersection Level of Service and Delay Summary**

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
1. Ashland Road (E-W)	EB L-T-R		234.7	F	#760	888	182.0	F	#1023	601
Pouncey Tract Road (N-S)	<i>EB Approach</i>		234.7	F	--	--	182.2	F	--	--
Signalized	WB L-T-R		252.1	F	#780	496	85.7	F	#453	366
	<i>WB Approach</i>		252.1	F	--	--	85.7	F	--	--
	NB Left	200	67.8	E	#111	179	51.5	D	90	200
	NB Thru-Right		58.7	E	235	234	161.4	F	#587	467
	<i>NB Approach</i>		61.3	E	--	--	144.1	F	--	--
	SB Left	305	49.2	D	110	340	52.2	D	62	75
	SB Thru-Right		128.1	F	#576	673	67.9	E	#309	263
	<i>SB Approach</i>		113.2	F	--	--	65.6	E	--	--
	Overall		175.7	F	--	--	135.3	F	--	--
2. Ashland Road (E-W)	EB L-T-R		0.1	A	0	7	0.2	A	0	32
Abner Church Road (S) and Driveway (N)	<i>EB Approach</i>		0.1	A	--	--	0.2	A	--	--
Unsignalized	WB L-T-R		0.0	A	0	0	0.0	A	0	0
	<i>WB Approach</i>		0.0	A	--	--	0.0	A	--	--
	NB L-T-R		0.0	A	0	0	0.0	A	0	0
	<i>NB Approach</i>		0.0	A	--	--	0.0	A	--	--
	SB L-T-R		14.2	B	5	36	15.2	C	6	48
	<i>SB Approach</i>		14.2	B	--	--	15.2	C	--	--
3. Ashland Road (E-W)	EB L-T-R		0.2	A	0	41	0.1	A	0	19
Cemetery Access (S) and Cauthorne Road (N)	<i>EB Approach</i>		0.2	A	--	--	0.1	A	--	--
Unsignalized	WB L-T-R		3.7	A	11	146	3.1	A	7	113
	<i>WB Approach</i>		3.7	A	--	--	3.1	A	--	--
	NB L-T-R		12.7	B	16	75	14.9	B	55	133
	<i>NB Approach</i>		12.7	B	--	--	14.9	B	--	--
	SB L-T-R		20.8	C	2	55	15.4	C	1	24
	<i>SB Approach</i>		20.8	C	--	--	15.4	C	--	--
4. Ashland Road (E-W)	EB Left	440	32.8	C	70	155	37.5	D	#152	193
Route 33 (N-S)	EB Thru-Right		65.2	E	#327	344	70.9	E	#405	336
Signalized	<i>EB Approach</i>		58.1	E	--	--	60.2	E	--	--
	WB Left	250	39.3	D	#135	245	35.0	C	#92	147
	WB Thru-Right		57.8	E	#352	442	50.4	D	#302	253
	<i>WB Approach</i>		51.5	D	--	--	46.0	D	--	--
	NB Left	295	24.7	C	41	122	18.2	B	27	277
	NB Thru		22.8	C	161	169	114.3	F	#668	772
	NB Right	350	19.6	B	0	70	20.9	C	0	322
	<i>NB Approach</i>		22.2	C	--	--	95.1	F	--	--
	SB Left	280	17.1	B	21	279	22.7	C	22	48
	SB Thru-Right		57.1	E	#680	683	25.3	C	235	218
	<i>SB Approach</i>		55.6	E	--	--	25.1	C	--	--
	Overall		48.1	D	--	--	65.7	E	--	--
5. Ashland Road (E-W) and Site Entrance 1 (N)	EB Thru-Right		0.0	A	0	0	0.0	A	0	0
Unsignalized	<i>EB Approach</i>		0.0	A	--	--	0.0	A	--	--
	WB Left-Thru		0.3	A	1	38	0.0	A	0	19
	<i>WB Approach</i>		0.3	A	--	--	0.0	A	--	--
	NB Left-Right		14.9	B	9	64	14.3	B	4	35
	<i>NB Approach</i>		14.9	B	--	--	14.3	B	--	--
6. Ashland Road (E-W) and Site Entrance 2 (N)	EB Thru		0.0	A	0	0	0.0	A	0	0
Unsignalized	EB Right	270	0.0	A	0	7	0.0	A	0	0
	<i>EB Approach</i>		0.0	A	--	--	0.0	A	--	--
	WB Left-Thru		0.7	A	1	69	0.2	A	0	67
	<i>WB Approach</i>		0.7	A	--	--	0.2	A	--	--
	NB Left-Right		14.0	B	17	58	14.5	B	9	38
	<i>NB Approach</i>		14.0	B	--	--	14.5	B	--	--
7. Ashland Road (E-W) and Site Entrance 3 (N)	EB Thru-Right		0.0	A	0	0	0.0	A	0	0
Unsignalized	<i>EB Approach</i>		0.0	A	--	--	0.0	A	--	--
	WB Left-Thru		0.4	A	1	23	0.1	A	0	9
	<i>WB Approach</i>		0.4	A	--	--	0.1	A	--	--
	NB Left-Right		13.1	B	8	57	14.4	B	4	36
	<i>NB Approach</i>		13.1	B	--	--	14.4	B	--	--

[†] SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

- 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.



9 2041 TOTAL FUTURE CONDITIONS

To complete the analysis of 2041 total conditions (total background volumes with the proposed development), the estimated site trips were added to the 2041 total background traffic volumes. The projected volumes were then used to complete the capacity analysis.

9.1 2041 TOTAL FUTURE TRAFFIC VOLUMES

The site generated trips shown on Figure 6-1 were added to the 2041 background traffic volumes (Figure 5-1) to yield the 2041 total future traffic volumes shown in Figure 9-1.

9.2 TURN LANE WARRANT ANALYSES

To determine the need for any roadway improvements to accommodate the new traffic patterns and site entrances, turn lane warrant analyses were completed for the proposed site entrances.

The turn lane warrant analyses were conducted using the 2041 total future (Figure 9-1) traffic volumes and the applicable nomographs from the VDOT *Road Design Manual*, Appendix F.

Under 2041 future conditions:

- A Right turn taper is warranted at Site Entrance 1 and should be 200' in length.
- A right turn lane and taper is warranted at Site Entrance 2 and should be constructed with 200' of storage and 200' of taper.
- No other turn lanes or tapers are warranted at the site entrances.

The turn lane warrants can be found in Appendix H.

9.3 2041 FUTURE CONDITIONS ANALYSIS RESULTS

Table 9-1 summarizes the 2041 total future intersection LOS, delay, 95th percentile queue lengths (Synchro), and maximum queue lengths (SimTraffic) based on the existing roadway geometry (Figure 2-1), 2041 total future peak hour traffic volumes (Figure 9-1), and the existing signal timings as provided by VDOT.

The corresponding Synchro and SimTraffic reports are included in Appendix J. Note that the intersection numbers shown on the LOS, delay, and queue length summary tables correspond with the intersection node numbers used in the Synchro models and report figures.

As shown in Table 8-1, under 2041 total future conditions with development of the site there are no significant changes in queueing, LOS, or delay compared to 2035 future conditions. All intersections continue to operate at acceptable levels of service with no queuing issues. Specifically:

- The signalized intersection of Ashland Road and Pouncey Tract Road operates at LOS F during both peaks. All approaches operate in similar conditions to background in terms of delay; queueing for all approaches operates similar to background with the exception of the eastbound approach and the southbound through-right movement which experiences an increase in queueing.
 - No geometric improvements are required at the intersection but signal timing adjustments are recommended to help alleviate the increase in delay.
- At the unsignalized intersection of Ashland Road and Abner Church Road, all approaches operate at LOS C or better during both peaks with minimal queueing present.

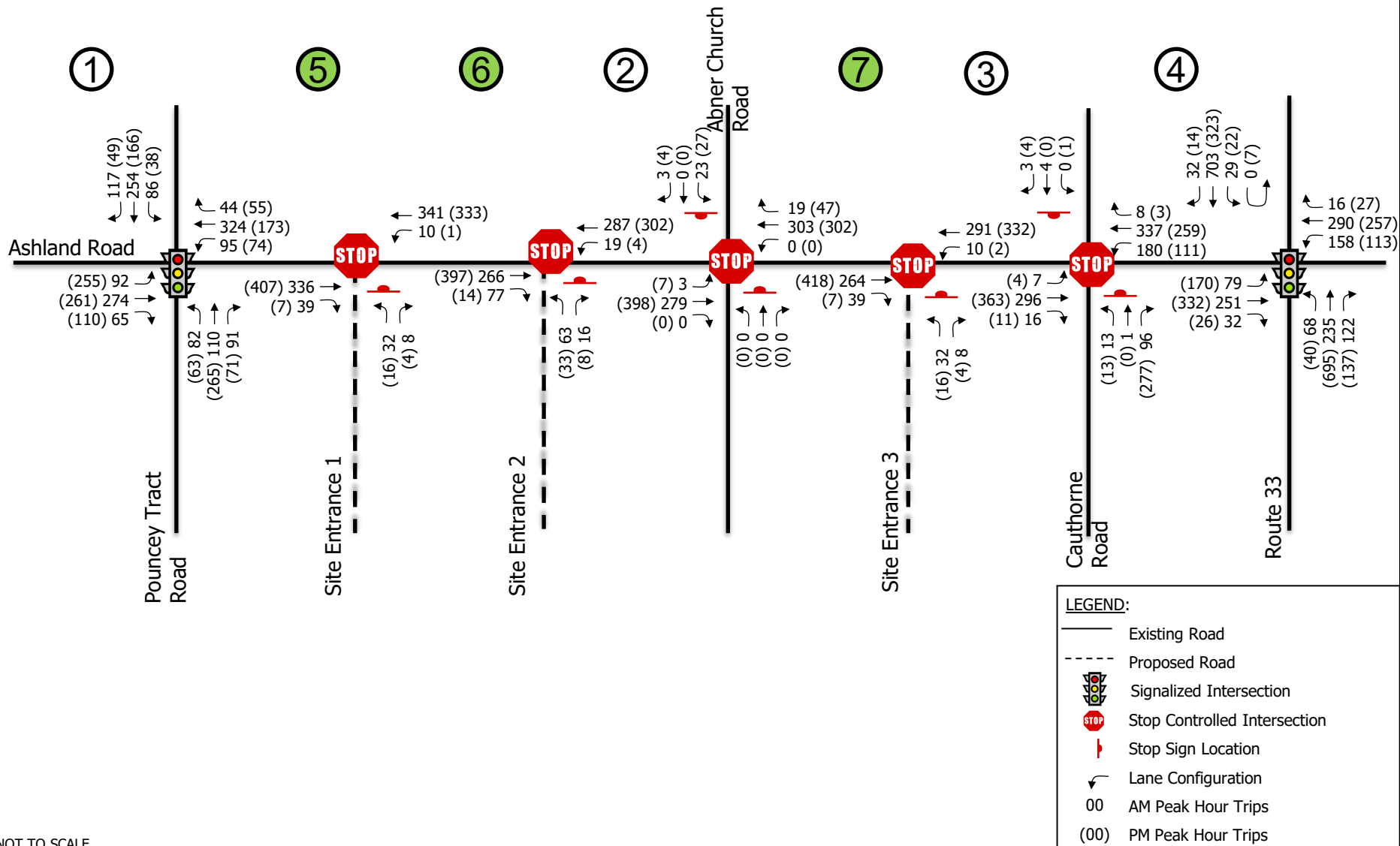
- At the unsignalized intersection of Ashland Road and Cauthorne Road, all approaches continue to operate similar to existing conditions at LOS C or better.
- At the signalized intersection of Ashland Road and Route 33, the overall intersection operates at LOS E during both peaks. All approaches continue to operate in similar condition to background in terms of delay and queueing.
- At the unsignalized intersection of Ashland Road and Site Entrance 1, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The westbound approach experiences a maximum queue of 53 feet in the AM peak (approximately 2 vehicles). The northbound approach of Site Entrance 1 operates at LOS C during both peaks.
- At the unsignalized intersection of Ashland Road and Site Entrance 2, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The westbound approach experiences a maximum queue of 81 feet in the AM peak (approximately 3 vehicles). The northbound approach of Site Entrance 2 operates at LOS B during the AM peak and LOS C during the PM peak.
- At the unsignalized intersection of Ashland Road and Site Entrance 3, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The westbound approach experiences a maximum queue of 54 feet in the AM peak (approximately 2 vehicles). The northbound approach operates at LOS B during the AM peak and LOS C during the PM peak.

**Table 9-1: 2041 Total Future Conditions
Intersection Level of Service and Delay Summary**

Intersection and Type of Control	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
1. Ashland Road (E-W) Pouncey Tract Road (N-S) Signalized	EB L-T-R		301.1	F	#852	1972	208.7	F	#1133	1058
	<i>EB Approach</i>		<i>301.1</i>	<i>F</i>	--	--	<i>208.7</i>	<i>F</i>	--	--
	WB L-T-R		292.8	F	#854	614	233.4	F	#625	458
	<i>WB Approach</i>		<i>292.8</i>	<i>F</i>	--	--	<i>233.4</i>	<i>F</i>	--	--
	NB Left	200	82.8	F	#139	196	49.3	D	94	200
	NB Thru-Right		61.0	E	263	278	134.0	F	#617	790
	<i>NB Approach</i>		<i>67.5</i>	<i>E</i>	--	--	<i>120.6</i>	<i>F</i>	--	--
	SB Left	305	50.9	D	120	340	51.2	D	64	82
	SB Thru-Right		175.7	F	#674	1618	62.8	E	312	272
	<i>SB Approach</i>		<i>152.3</i>	<i>F</i>	--	--	<i>61.1</i>	<i>E</i>	--	--
	Overall		216.0	F	--	--	167.6	F	--	--
2. Ashland Road (E-W) Abner Church Road (S) and Driveway (N) Unsignalized	EB L-T-R		0.1	A	0	26	0.2	A	0	51
	<i>EB Approach</i>		<i>0.1</i>	<i>A</i>	--	--	<i>0.2</i>	<i>A</i>	--	--
	WB L-T-R		0.0	A	0	0	0.0	A	0	0
	<i>WB Approach</i>		<i>0.0</i>	<i>A</i>	--	--	<i>0.0</i>	<i>A</i>	--	--
	NB L-T-R		0.0	A	0	0	0.0	A	0	0
	<i>NB Approach</i>		<i>0.0</i>	<i>A</i>	--	--	<i>0.0</i>	<i>A</i>	--	--
	SB L-T-R		15.1	C	6	42	16.9	C	8	44
	<i>SB Approach</i>		<i>15.1</i>	<i>C</i>	--	--	<i>16.9</i>	<i>C</i>	--	--
3. Ashland Road (E-W) Cemetery Access (S) and Cauthorne Road (N) Unsignalized	EB L-T-R		0.3	A	1	52	0.1	A	0	28
	<i>EB Approach</i>		<i>0.3</i>	<i>A</i>	--	--	<i>0.1</i>	<i>A</i>	--	--
	WB L-T-R		4.0	A	13	188	3.3	A	9	162
	<i>WB Approach</i>		<i>4.0</i>	<i>A</i>	--	--	<i>3.3</i>	<i>A</i>	--	--
	NB L-T-R		14.0	B	21	90	17.4	C	76	170
	<i>NB Approach</i>		<i>14.0</i>	<i>B</i>	--	--	<i>17.4</i>	<i>C</i>	--	--
	SB L-T-R		22.1	C	2	59	18.5	C	1	24
	<i>SB Approach</i>		<i>22.1</i>	<i>C</i>	--	--	<i>18.5</i>	<i>C</i>	--	--
4. Ashland Road (E-W) Route 33 (N-S) Signalized	EB Left	440	39.7	D	88	343	74.6	E	#241	255
	EB Thru-Right		85.0	F	#419	540	94.9	F	#553	397
	<i>EB Approach</i>		<i>75.1</i>	<i>E</i>	--	--	<i>88.4</i>	<i>F</i>	--	--
	WB Left	250	58.2	E	#170	250	73.6	E	#167	250
	WB Thru-Right		66.2	E	#436	544	85.9	F	#448	406
	<i>WB Approach</i>		<i>63.4</i>	<i>E</i>	--	--	<i>82.4</i>	<i>F</i>	--	--
	NB Left	295	38.5	D	#67	161	18.8	B	35	294
	NB Thru		23.4	C	192	203	59.7	E	#886	807
	NB Right	350	20.1	C	6	85	21.1	C	26	350
	<i>NB Approach</i>		<i>24.9</i>	<i>C</i>	--	--	<i>51.8</i>	<i>D</i>	--	--
	SB Left	280	17.6	B	25	256	29.2	C	28	55
	SB Thru-Right		59.0	E	#860	930	26.4	C	307	263
	<i>SB Approach</i>		<i>57.4</i>	<i>E</i>	--	--	<i>26.7</i>	<i>C</i>	--	--
	Overall		55.1	E	--	--	62.1	E	--	--
5. Ashland Road (E-W) and Site Entrance 1 (N) Unsignalized	EB Thru-Right		0.0	A	0	0	0.0	A	0	0
	<i>EB Approach</i>		<i>0.0</i>	<i>A</i>	--	--	<i>0.0</i>	<i>A</i>	--	--
	WB Left-Thru		0.3	A	1	53	0.0	A	0	5
	<i>WB Approach</i>		<i>0.3</i>	<i>A</i>	--	--	<i>0.0</i>	<i>A</i>	--	--
	NB Left-Right		15.8	C	10	59	15.4	C	5	42
	<i>NB Approach</i>		<i>15.8</i>	<i>C</i>	--	--	<i>15.4</i>	<i>C</i>	--	--
6. Ashland Road (E-W) and Unsignalized Site Entrance 2 (N) Unsignalized	EB Thru		0.0	A	0	2	0.0	A	0	0
	EB Right	270	0.0	A	0	0	0.0	A	0	0
	<i>EB Approach</i>		<i>0.0</i>	<i>A</i>	--	--	<i>0.0</i>	<i>A</i>	--	--
	WB Left-Thru		0.7	A	1	81	0.2	A	0	33
	<i>WB Approach</i>		<i>0.7</i>	<i>A</i>	--	--	<i>0.2</i>	<i>A</i>	--	--
	NB Left-Right		14.9	B	18	60	15.8	C	10	42
	<i>NB Approach</i>		<i>14.9</i>	<i>B</i>	--	--	<i>15.8</i>	<i>C</i>	--	--
7. Ashland Road (E-W) and Site Entrance 3 (N) Unsignalized	EB Thru-Right		0.0	A	0	2	0.0	A	0	0
	<i>EB Approach</i>		<i>0.0</i>	<i>A</i>	--	--	<i>0.0</i>	<i>A</i>	--	--
	WB Left-Thru		0.3	A	1	54	0.1	A	0	27
	<i>WB Approach</i>		<i>0.3</i>	<i>A</i>	--	--	<i>0.1</i>	<i>A</i>	--	--
	NB Left-Right		13.8	B	8	59	15.7	C	5	42
	<i>NB Approach</i>		<i>13.8</i>	<i>B</i>	--	--	<i>15.7</i>	<i>C</i>	--	--

[†] SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

- 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.



NOT TO SCALE

10 CONCLUSIONS

Analyses were performed for the 2025 existing volumes, the 2035 background conditions, 2041 background conditions, 2027 construction conditions, 2035 future conditions and 2041 future conditions for the proposed data center in Hanover County, Virginia.

10.1 PRINCIPAL FINDINGS

When complete the proposed data center will generate 2,921 daily trips, 350 AM peak hour trips (193 in and 158 out) and 117 PM peak hour trips (35 in and 82 out).

Under 2025 existing conditions:

- The signalized intersection of Ashland Road and Pouncey Tract Road operates at an overall LOS E in the AM peak and LOS F in the PM peak. The eastbound and westbound approaches operate at LOS F during both peaks. The northbound approach operates at LOS D in the AM peak and LOS E in the PM peak. The southbound approach operates at LOS E in the AM peak and LOS D in the PM peak.
- At the unsignalized intersections of Ashland Road and Abner Church Road and Ashland Road and Cauthorne Road, all approaches operate at LOS C or better during both peaks.
- The signalized intersection of Ashland Road and Route 33 operates at an overall LOS D during both peaks and all approaches operate at LOS E or better during both peaks.
- Overall, there are no significant queueing issues present at any of the study intersections. All 95th percentile and maximum queues are contained within the available storage at the intersections.

Under 2035 background conditions:

- All intersections and approaches continue to operate in similar conditions to existing without significant changes in delay, LOS or queueing.
- The intersection of Ashland Road and Pouncey Tract Road continues to operate at an overall LOS E in the AM and LOS F in the PM peak hours.
- The intersection of Ashland Road and Route 33 continues to operate at an overall LOS D in both peak hours.

Under 2041 background conditions:

- At the signalized intersection of Ashland Road and Pouncey Tract Road, the overall intersection worsens to LOS F in the AM peak with increases in queue in the eastbound and northbound directions.

- At the unsignalized intersections of Ashland Road and Abner Church Road and Ashland Road and Cauthorne Road, all approaches operate at LOS C or better during both peaks with minimal queueing.
- The signalized intersection of Ashland Road and Route 33 degrades to operate at LOS E during both peaks. The northbound and southbound approaches continue to operate in similar conditions to 2035 background while the eastbound and westbound approaches experience increased delay and queueing.

Under 2027 construction conditions:

- The signalized intersection of Ashland Road and Pouncey Tract Road operates at LOS F during both peaks, worsening from LOS E in the AM peak in existing conditions. Signal timing adjustments are recommended during construction to help alleviate the increase in delay.
- At the unsignalized intersections of Ashland Road and Abner Church Road and Ashland Road and Cauthorne Road, all approaches operate at LOS C or better during both peaks.
- At the signalized intersection of Ashland Road and Route 33, the overall intersection continues to operate at LOS D during both peaks. All approaches continue to operate at LOS E or better with the exception of the eastbound and westbound approaches during the AM peak which operate at LOS F.
- At the unsignalized intersection of Ashland Road and Site Entrance 1, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach of Site Entrance 1 operates at LOS C during both peaks.
- At the unsignalized intersection of Ashland Road and Site Entrance 2, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach of Site Entrance 2 operates at LOS B during the AM peak and LOS C during the PM peak.
- At the unsignalized intersection of Ashland Road and Site Entrance 3, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach operates at LOS B during both peaks.

Under 2035 future conditions:

- The signalized intersection of Ashland Road and Pouncey Tract Road operates at LOS F during both peaks. All approaches operate in similar conditions to background in terms of delay; queueing for all approaches operates similar to background with the exception of the eastbound approach which experiences an increase in queueing. No geometric improvements are required at the intersection but signal timing adjustments are recommended to help alleviate the increase in delay.
- At the unsignalized intersections of Ashland Road and Abner Church Road and Ashland Road and Cauthorne Road, all approaches operate at LOS C or better during both peaks.
- At the signalized intersection of Ashland Road and Route 33, the overall intersection continues to operate at LOS D during the AM peak and operates at LOS E during the PM peak. All approaches continue to operate in similar condition to background in terms of delay; queueing for all approaches operates similar to background with the exception of the northbound through movement which experiences an increase in queueing during the PM peak.

- At the unsignalized intersection of Ashland Road and Site Entrance 1, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach of Site Entrance 1 operates at LOS B during both peaks.
- At the unsignalized intersection of Ashland Road and Site Entrance 2, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach of Site Entrance 2 operates at LOS B during both peaks
- At the unsignalized intersection of Ashland Road and Site Entrance 3, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach operates at LOS B during both peaks.
- Right turn tapers are warranted at Site Entrance 1 and 2 and should be 200' in length.
- No other turn lanes or tapers are warranted at the site entrances.

Under 2041 future conditions:

- The signalized intersection of Ashland Road and Pouncey Tract Road operates at LOS F during both peaks. All approaches operate in similar conditions to background in terms of delay; queueing for all approaches operates similar to background with the exception of the eastbound approach and the southbound through-right movement which experiences an increase in queueing.
- At the unsignalized intersections of Ashland Road and Abner Church Road and Ashland Road and Cauthorne Road, all approaches operate at LOS C or better during both peaks.
- At the signalized intersection of Ashland Road and Route 33, the overall intersection operates at LOS E during both peaks. All approaches continue to operate in similar condition to background in terms of delay and queueing.
- At the unsignalized intersection of Ashland Road and Site Entrance 1, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach of Site Entrance 1 operates at LOS C during both peaks.
- At the unsignalized intersection of Ashland Road and Site Entrance 2, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach of Site Entrance 2 operates at LOS B during the AM peak and LOS C during the PM peak.
- At the unsignalized intersection of Ashland Road and Site Entrance 3, the mainline eastbound and westbound approaches operate at LOS A during both peaks. The northbound approach operates at LOS B during the AM peak and LOS C during the PM peak.
- A right turn taper is warranted at Site Entrance 1 and should be 200' in length.
- A right turn lane and taper is warranted at Site Entrance 2 and should be constructed with 200' of taper and 200' of storage.
- No other turn lanes or tapers are warranted at the site entrances.

10.2 RECOMMENDATIONS

Based on the capacity analysis and turn lane warrant analyses results, the following is recommended:

- Signal timing adjustments at the Ashland Road/Pouncey Tract Road during both construction conditions and buildout conditions.
- A 200' right turn taper on Ashland Road at Site Entrance 1.
- A 200' right turn lane and 200' right turn taper on Ashland Road at Site Entrance 2.

Appendix A Scoping



PRE-SCOPE OF WORK MEETING FORM

Information on the Project Traffic Impact Analysis Base Assumptions

The applicant is responsible for entering the relevant information and submitting the form to VDOT and the locality no less than three (3) business days prior to the meeting. If a form is not received by this deadline, the scope of work meeting may be postponed.

Contact Information

Consultant Name: Scott Dunn
Tele: 804.200.6955
E-mail: scott.dunn@timmons.com

Developer/Owner Name: Jonathan Ridout
Tele: 804.762.4800
E-mail: jridout@hhhunt.com

Project Information

Project Name: Hunting Hawk Locality/County: Hanover County

Project Location: (Attach regional and site specific location map) The site is generally located east of Route 271 (Pouncey Tract Road), south of Route 623 (Ashland Road) and west of Route 623 (Cauthorne Road) in Hanover County, Virginia as shown in Figure 1.

Submission Type: Comp Plan ☐ Rezoning ☐ Site Plan ☒ Subd Plat ☐

Project Description: (Including details on the land use, acreage, phasing, access location, etc. Attach additional sheet if necessary) The proposed development will consist of 5,111,200 SF of data center.
Access to the site is proposed via as shown in Figures 2a and 2b.

Proposed Use(s): (Check all that apply; attach additional pages as necessary) Residential ☐ Commercial ☐ Mixed Use ☐ Other ☒

Residential Uses(s)

Number of Units: _____
ITE LU Code(s): _____

Commercial Use(s)

ITE LU Code(s): _____

Square Ft or Other Variable: _____

Other Use(s)

ITE LU Code(s): _____

Independent Variable(s): _____

Total Peak Hour Trip Projection: Less than 100 ☐ 100 – 499 ☒ 500 – 999 ☐ 1,000 or more ☐

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Traffic Impact Analysis Assumptions			
Study Period	Existing Year: 2025	Build-out Year: 2035	Design Year: 2041
Study Area Boundaries (Attach map)	North: Ashland Road	South: Nuckols Road	
	East: US Route 33	West: Pouncey Tract Road	
External Factors That Could Affect Project (Planned road improvements, other nearby developments)	None that we are aware of		
Consistency With Comprehensive Plan (Land use, transportation plan)	Comprehensive Plan calls for zoning of suburban neighborhood residential		
Available Traffic Data (Historical, forecasts)	VDOT AADT Data, new traffic counts to be conducted.		
Trip Distribution (Attach sketch)	Road Name: Ashland Rd EB - 60%	Road Name: Route 33 NB - 10%, Route 33 SB - 5%	
	Road Name: Cauthorne Road NB - (5%)	Road Name: Pouncey Tract Road NB - 15%, Pouncey Tract Road SB - 10%	
Annual Vehicle Trip Growth Rate:	2%	Peak Period for Study (check all that apply)	☒ AM ☒ PM ☐ SAT
		Peak Hour of the Generator	
Study Intersections and/or Road Segments (Attach additional sheets as necessary)	1. Ashland Road (Route 623)/Pouncey Tract Road (Route 271)		6. Ashland Road (Route 623)/Site Entrance #3
	2. Ashland Road (Route 623)/Cauthorne Road (Route 624)		7. Ashland Road (Route 623)/Abner Church Road
	3. Ashland Road (Route 623)/Mountain Road (US Route 33)		8.
	4. Ashland Road (Route 623)/Site Entrance #1		9.
	5. Ashland Road (Route 623)/Site Entrance #2		10.
Trip Adjustment Factors	Internal allowance: ☐ Yes ☒ No Reduction: _____% trips		Pass-by allowance: ☐ Yes ☒ No Reduction: _____% trips
Software Methodology	☒ Synchro ☐ HCS (v.2000/+) ☐ aaSIDRA ☐ CORSIM ☐ Other _____		
Traffic Signal Proposed or Affected (Analysis software to be used,	Ashland Road (Route 623)/Pouncey Tract Road (Route 271) Ashland Road (Route 623)/Mountain Road (US Route 33)		

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

progression speed, cycle length)	
Improvement(s) Assumed or to be Considered	None that we are aware of.
Background Traffic Studies Considered	None that we are aware of
Plan Submission	☐ Master Development Plan (MDP) ☒ Generalized Development Plan (GDP) ☐ Preliminary/Sketch Plan ☐ Other Plan type (Final Site, Subd. Plan)
Additional Issues to be Addressed	☒ Queuing analysis ☐ Actuation/Coordination ☐ Weaving analysis ☐ Merge analysis ☐ Bike/Ped Accommodations ☒ Intersection(s) ☐ TDM Measures ☒ Other Turn Lane Warrant Analysis

NOTES on ASSUMPTIONS:

1.

SIGNED: _____ DATE: _____
Applicant or Consultant

PRINT NAME: _____
Applicant or Consultant

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

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Appendix B

Traffic Counts



TRAFFIC DATA COLLECTION

File Name : Hanover(Ashland and Pouncey)
 Site Code :
 Start Date : 5/27/2025
 Page No : 1

Groups Printed- Cars + - Trucks

	Pouncey Tract Road Southbound						Ashland Road Westbound						Pouncey Tract Road Northbound						Ashland Road Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	7	29	43	0	79	0	12	38	1	0	51	0	11	12	10	0	33	0	15	19	7	0	41	204
07:15 AM	0	4	36	33	0	73	0	13	40	4	0	57	0	13	16	4	0	33	0	22	22	9	0	53	216
07:30 AM	0	10	45	30	0	85	0	13	26	2	0	41	0	12	15	12	0	39	0	11	31	12	0	54	219
07:45 AM	0	20	42	19	0	81	0	15	40	7	1	63	0	18	20	5	0	43	0	13	28	15	0	56	243
Total	0	41	152	125	0	318	0	53	144	14	1	212	0	54	63	31	0	148	0	61	100	43	0	204	882
08:00 AM	0	16	47	30	0	93	0	11	34	6	0	51	0	16	21	16	0	53	0	20	28	12	0	60	257
08:15 AM	0	10	49	17	0	76	0	16	33	6	0	55	0	6	11	11	0	28	0	19	28	10	0	57	216
08:30 AM	0	9	47	19	0	75	0	10	39	6	0	55	0	20	28	7	0	55	0	15	31	10	0	56	241
08:45 AM	0	5	44	9	0	58	0	15	24	4	1	44	0	19	20	3	0	42	0	16	21	21	0	58	202
Total	0	40	187	75	0	302	0	52	130	22	1	205	0	61	80	37	0	178	0	70	108	53	0	231	916
Grand Total	0	81	339	200	0	620	0	105	274	36	2	417	0	115	143	68	0	326	0	131	208	96	0	435	1798
Apprch %	0	13.1	54.7	32.3	0		0	25.2	65.7	8.6	0.5		0	35.3	43.9	20.9	0		0	30.1	47.8	22.1	0		
Total %	0	4.5	18.9	11.1	0	34.5	0	5.8	15.2	2	0.1	23.2	0	6.4	8	3.8	0	18.1	0	7.3	11.6	5.3	0	24.2	
Cars +	0	73	338	193	0	604	0	98	244	32	2	376	0	105	141	61	0	307	0	123	172	79	0	374	1661
% Cars +	0	90.1	99.7	96.5	0	97.4	0	93.3	89.1	88.9	100	90.2	0	91.3	98.6	89.7	0	94.2	0	93.9	82.7	82.3	0	86	92.4
Trucks	0	8	1	7	0	16	0	7	30	4	0	41	0	10	2	7	0	19	0	8	36	17	0	61	137
% Trucks	0	9.9	0.3	3.5	0	2.6	0	6.7	10.9	11.1	0	9.8	0	8.7	1.4	10.3	0	5.8	0	6.1	17.3	17.7	0	14	7.6



TRAFFIC DATA COLLECTION

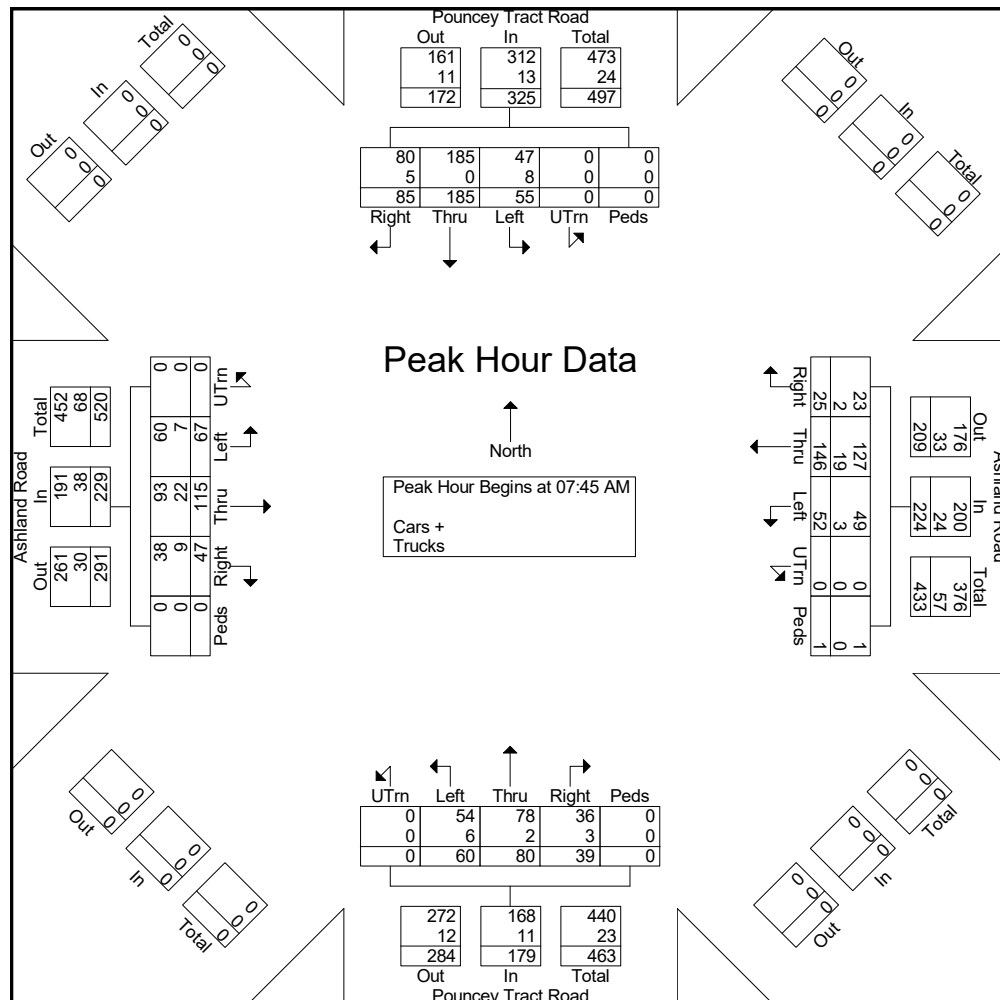
File Name : Hanover(Ashland and Pouncey)

Site Code :

Start Date : 5/27/2025

Page No : 2

	Pouncey Tract Road Southbound						Ashland Road Westbound						Pouncey Tract Road Northbound						Ashland Road Eastbound							
Start Time	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	Int. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 07:45 AM																										
07:45 AM	0	20	42	19	0	81	0	15	40	7	1	63	0	18	20	5	0	43	0	13	28	15	0	56	243	
08:00 AM	0	16	47	30	0	93	0	11	34	6	0	51	0	16	21	16	0	53	0	20	28	12	0	60	257	
08:15 AM	0	10	49	17	0	76	0	16	33	6	0	55	0	6	11	11	0	28	0	19	28	10	0	57	216	
08:30 AM	0	9	47	19	0	75	0	10	39	6	0	55	0	20	28	7	0	55	0	15	31	10	0	56	241	
Total Volume	0	55	185	85	0	325	0	52	146	25	1	224	0	60	80	39	0	179	0	67	115	47	0	229	957	
% App. Total	0	16.9	56.9	26.2	0		0	23.2	65.2	11.2	0.4		0	33.5	44.7	21.8	0		0	29.3	50.2	20.5	0			
PHF	.000	.688	.944	.708	.000	.874	.000	.813	.913	.893	.250	.889	.000	.750	.714	.609	.000	.814	.000	.838	.927	.783	.000	.954	.931	
Cars +	0	47	185	80	0	312	0	49	127	23	1	200	0	54	78	36	0	168	0	60	93	38	0	191	871	
% Cars +	0	85.5	100	94.1	0	96.0	0	94.2	87.0	92.0	100	89.3	0	90.0	97.5	92.3	0	93.9	0	89.6	80.9	80.9	0	83.4	91.0	
Trucks	0	8	0	5	0	13	0	3	19	2	0	24	0	6	2	3	0	11	0	7	22	9	0	38	86	
% Trucks	0	14.5	0	5.9	0	4.0	0	5.8	13.0	8.0	0	10.7	0	10.0	2.5	7.7	0	6.1	0	10.4	19.1	19.1	0	16.6	9.0	





TRAFFIC DATA COLLECTION

File Name : Hanover(Ashland and Pouncey)

Site Code :

Start Date : 5/27/2025

Page No : 1

Groups Printed- Cars + - Trucks

	Pouncey Tract Road Southbound						Ashland Road Westbound						Pouncey Tract Road Northbound						Ashland Road Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	0	10	20	10	0	40	0	16	13	8	0	37	0	18	46	13	0	77	0	35	31	12	0	78	232
04:15 PM	0	6	20	7	0	33	0	12	25	10	0	47	0	19	44	14	0	77	0	29	33	21	0	83	240
04:30 PM	0	7	24	8	0	39	0	9	13	14	0	36	0	7	37	15	0	59	0	43	40	21	0	104	238
04:45 PM	0	3	35	6	0	44	0	14	13	10	0	37	0	12	56	5	0	73	0	32	43	18	0	93	247
Total	0	26	99	31	0	156	0	51	64	42	0	157	0	56	183	47	0	286	0	139	147	72	0	358	957
05:00 PM	0	4	32	10	0	46	0	7	20	10	0	37	0	11	36	14	0	61	1	59	50	28	0	138	282
05:15 PM	0	9	29	11	0	49	0	10	29	11	0	50	0	11	48	14	0	73	0	56	48	24	0	128	300
05:30 PM	0	10	25	9	0	44	0	14	28	6	0	48	0	12	53	15	0	80	0	39	34	10	0	83	255
05:45 PM	0	1	20	11	0	32	0	9	25	9	0	43	0	9	48	13	0	70	0	28	36	16	0	80	225
Total	0	24	106	41	0	171	0	40	102	36	0	178	0	43	185	56	0	284	1	182	168	78	0	429	1062
Grand Total	0	50	205	72	0	327	0	91	166	78	0	335	0	99	368	103	0	570	1	321	315	150	0	787	2019
Apprch %	0	15.3	62.7	22	0		0	27.2	49.6	23.3	0		0	17.4	64.6	18.1	0		0.1	40.8	40	19.1	0		
Total %	0	2.5	10.2	3.6	0	16.2	0	4.5	8.2	3.9	0	16.6	0	4.9	18.2	5.1	0	28.2	0	15.9	15.6	7.4	0	39	
Cars +	0	49	204	70	0	323	0	90	164	75	0	329	0	94	366	99	0	559	1	320	310	144	0	775	1986
% Cars +	0	98	99.5	97.2	0	98.8	0	98.9	98.8	96.2	0	98.2	0	94.9	99.5	96.1	0	98.1	100	99.7	98.4	96	0	98.5	98.4
Trucks	0	1	1	2	0	4	0	1	2	3	0	6	0	5	2	4	0	11	0	1	5	6	0	12	33
% Trucks	0	2	0.5	2.8	0	1.2	0	1.1	1.2	3.8	0	1.8	0	5.1	0.5	3.9	0	1.9	0	0.3	1.6	4	0	1.5	1.6



TRAFFIC DATA COLLECTION

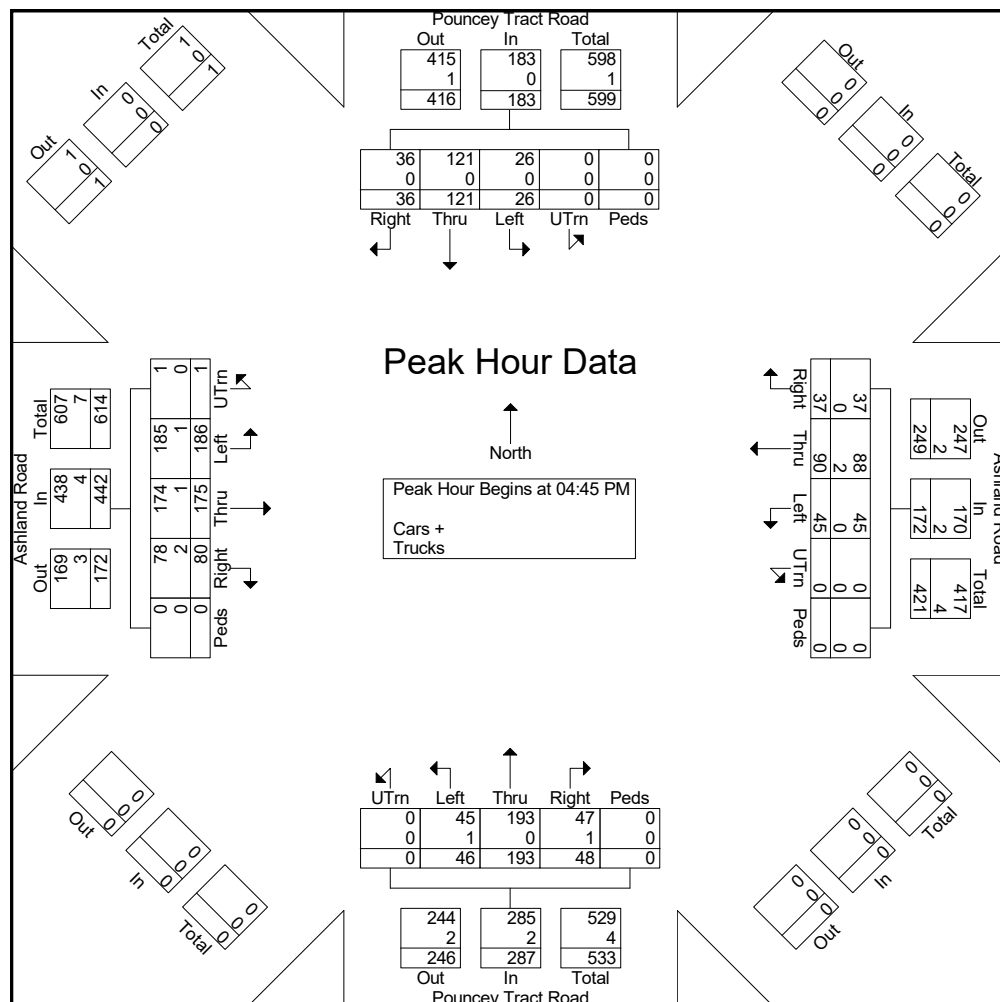
File Name : Hanover(Ashland and Pouncey)

Site Code :

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	Pouncey Tract Road Southbound						Ashland Road Westbound						Pouncey Tract Road Northbound						Ashland Road Eastbound							
Start Time	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	Int. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 04:45 PM																										
04:45 PM	0	3	35	6	0	44	0	14	13	10	0	37	0	12	56	5	0	73	0	32	43	18	0	93	247	
05:00 PM	0	4	32	10	0	46	0	7	20	10	0	37	0	11	36	14	0	61	1	59	50	28	0	138	282	
05:15 PM	0	9	29	11	0	49	0	10	29	11	0	50	0	11	48	14	0	73	0	56	48	24	0	128	300	
05:30 PM	0	10	25	9	0	44	0	14	28	6	0	48	0	12	53	15	0	80	0	39	34	10	0	83	255	
Total Volume	0	26	121	36	0	183	0	45	90	37	0	172	0	46	193	48	0	287	1	186	175	80	0	442	1084	
% App. Total	0	14.2	66.1	19.7	0		0	26.2	52.3	21.5	0		0	16	67.2	16.7	0		0.2	42.1	39.6	18.1	0			
PHF	.000	.650	.864	.818	.000	.934	.000	.804	.776	.841	.000	.860	.000	.958	.862	.800	.000	.897	.250	.788	.875	.714	.000	.801	.903	
Cars +	0	26	121	36	0	183	0	45	88	37	0	170	0	45	193	47	0	285	1	185	174	78	0	438	1076	
% Cars +	0	100	100	100	0	100	0	100	97.8	100	0	98.8	0	97.8	100	97.9	0	99.3	100	99.5	99.4	97.5	0	99.1	99.3	
Trucks	0	0	0	0	0	0	0	0	2	0	0	2	0	1	0	1	0	2	0	1	1	2	0	4	8	
% Trucks	0	0	0	0	0	0	0	0	2.2	0	0	1.2	0	2.2	0	2.1	0	0.7	0	0.5	0.6	2.5	0	0.9	0.7	





TRAFFIC DATA COLLECTION

File Name : Hanover (Ashland and Abner Church)
 Site Code :
 Start Date : 6/17/2025
 Page No : 1

Groups Printed- Cars + - Trucks

	Abner Church Road Southbound						Ashland Road Westbound						Driveway Northbound						Ashland Road Eastbound						
Start Time	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	3	0	0	0	3	0	0	39	1	0	40	0	0	0	0	0	0	0	0	26	0	0	26	69
07:15 AM	0	3	0	1	0	4	0	0	37	0	0	37	0	0	0	0	0	0	0	0	32	0	0	32	73
07:30 AM	0	3	0	0	0	3	0	0	55	0	0	55	0	0	0	0	0	0	0	0	50	0	0	50	108
07:45 AM	0	5	0	1	0	6	0	0	58	4	0	62	0	0	0	0	0	0	0	1	48	0	0	49	117
Total	0	14	0	2	0	16	0	0	189	5	0	194	0	0	0	0	0	0	0	1	156	0	0	157	367
08:00 AM	0	4	0	1	0	5	0	0	48	2	0	50	0	0	0	0	0	0	0	1	40	0	0	41	96
08:15 AM	0	3	0	0	0	3	0	0	44	6	0	50	0	0	0	0	0	0	0	0	39	0	0	39	92
08:30 AM	0	5	0	0	0	5	1	0	27	2	0	30	0	0	0	0	0	0	0	0	31	0	0	31	66
08:45 AM	0	1	0	1	0	2	0	0	68	2	0	70	0	0	0	0	0	0	0	0	35	0	0	35	107
Total	0	13	0	2	0	15	1	0	187	12	0	200	0	0	0	0	0	0	0	1	145	0	0	146	361
Grand Total	0	27	0	4	0	31	1	0	376	17	0	394	0	0	0	0	0	0	0	2	301	0	0	303	728
Apprch %	0	87.1	0	12.9	0		0.3	0	95.4	4.3	0		0	0	0	0	0		0	0.7	99.3	0	0		
Total %	0	3.7	0	0.5	0	4.3	0.1	0	51.6	2.3	0	54.1	0	0	0	0	0	0	0	0.3	41.3	0	0	41.6	
Cars +	0	27	0	4	0	31	1	0	344	17	0	362	0	0	0	0	0	0	0	2	262	0	0	264	657
% Cars +	0	100	0	100	0	100	100	0	91.5	100	0	91.9	0	0	0	0	0	0	0	100	87	0	0	87.1	90.2
Trucks	0	0	0	0	0	0	0	0	32	0	0	32	0	0	0	0	0	0	0	0	39	0	0	39	71
% Trucks	0	0	0	0	0	0	0	0	8.5	0	0	8.1	0	0	0	0	0	0	0	0	13	0	0	12.9	9.8



TRAFFIC DATA COLLECTION

File Name : Hanover (Ashland and Abner Church)
 Site Code :
 Start Date : 6/17/2025
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	Abner Church Road Southbound						Ashland Road Westbound						Driveway Northbound						Ashland Road Eastbound							
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 07:30 AM																										
07:30 AM	0	3	0	0	0	3	0	0	55	0	0	55	0	0	0	0	0	0	0	0	50	0	0	50	108	
07:45 AM	0	5	0	1	0	6	0	0	58	4	0	62	0	0	0	0	0	0	0	1	48	0	0	49	117	
08:00 AM	0	4	0	1	0	5	0	0	48	2	0	50	0	0	0	0	0	0	0	1	40	0	0	41	96	
08:15 AM	0	3	0	0	0	3	0	0	44	6	0	50	0	0	0	0	0	0	0	0	39	0	0	39	92	
Total Volume	0	15	0	2	0	17	0	0	205	12	0	217	0	0	0	0	0	0	0	2	177	0	0	179	413	
% App. Total	0	88.2	0	11.8	0		0	0	94.5	5.5	0		0	0	0	0	0		0	1.1	98.9	0	0			
PHF	.000	.750	.000	.500	.000	.708	.000	.000	.884	.500	.000	.875	.000	.000	.000	.000	.000	.000	.000	.500	.885	.000	.000	.895	.882	
Cars +	0	15	0	2	0	17	0	0	180	12	0	192	0	0	0	0	0	0	0	2	152	0	0	154	363	
% Cars +	0	100	0	100	0	100	0	0	87.8	100	0	88.5	0	0	0	0	0	0	0	100	85.9	0	0	86.0	87.9	
Trucks	0	0	0	0	0	0	0	0	25	0	0	25	0	0	0	0	0	0	0	0	25	0	0	25	50	
% Trucks	0	0	0	0	0	0	0	0	12.2	0	0	11.5	0	0	0	0	0	0	0	0	14.1	0	0	14.0	12.1	



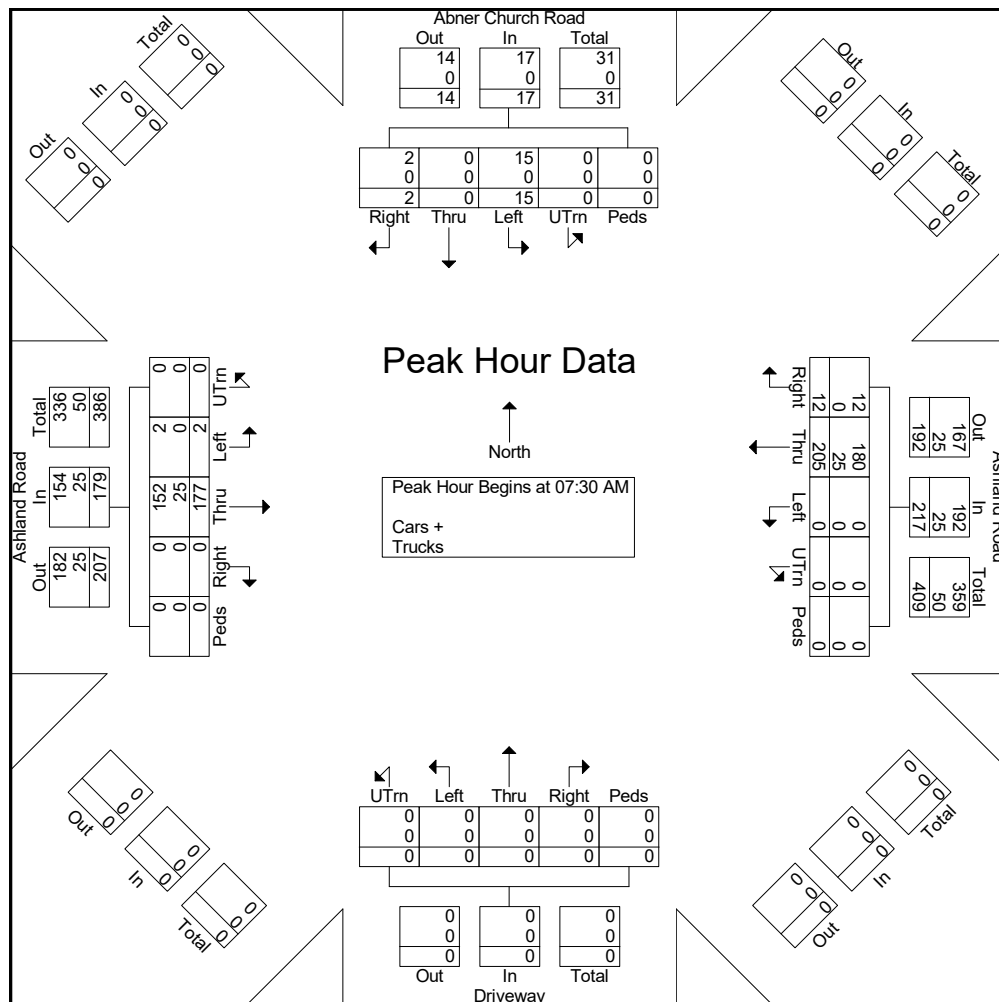
TRAFFIC DATA COLLECTION

File Name : Hanover (Ashland and Abner Church)

Site Code :

Start Date : 6/17/2025

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TRAFFIC DATA COLLECTION

File Name : Hanover (Ashland and Abner Church)
 Site Code :
 Start Date : 6/17/2025
 Page No : 1

Groups Printed- Cars + - Trucks

	Abner Church Road Southbound						Ashland Road Westbound						Driveway Northbound						Ashland Road Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	0	5	0	0	0	5	0	0	36	7	0	43	0	0	0	0	0	0	0	1	67	0	0	68	116
04:15 PM	0	3	0	0	0	3	0	0	52	7	0	59	0	0	0	0	0	0	0	1	58	0	0	59	121
04:30 PM	0	3	0	0	0	3	0	0	42	6	0	48	0	0	0	0	0	0	0	0	50	0	0	50	101
04:45 PM	0	3	0	1	0	4	0	0	40	9	0	49	0	0	0	0	0	0	0	1	75	0	0	76	129
Total	0	14	0	1	0	15	0	0	170	29	0	199	0	0	0	0	0	0	0	3	250	0	0	253	467
05:00 PM	0	6	0	0	0	6	0	0	43	11	0	54	0	0	0	0	0	0	0	3	65	0	0	68	128
05:15 PM	0	5	0	0	0	5	0	0	59	10	0	69	0	0	0	0	0	0	0	1	69	0	0	70	144
05:30 PM	0	6	0	2	0	8	0	0	62	4	0	66	0	0	0	0	1	1	0	0	67	0	0	67	142
05:45 PM	0	0	0	0	0	0	0	0	51	5	0	56	0	0	0	0	0	0	0	0	44	0	0	44	100
Total	0	17	0	2	0	19	0	0	215	30	0	245	0	0	0	0	1	1	0	4	245	0	0	249	514
Grand Total	0	31	0	3	0	34	0	0	385	59	0	444	0	0	0	0	1	1	0	7	495	0	0	502	981
Apprch %	0	91.2	0	8.8	0		0	0	86.7	13.3	0		0	0	0	0	100		0	1.4	98.6	0	0		
Total %	0	3.2	0	0.3	0	3.5	0	0	39.2	6	0	45.3	0	0	0	0	0.1	0.1	0	0.7	50.5	0	0	51.2	
Cars +	0	28	0	3	0	31	0	0	374	59	0	433	0	0	0	0	1	1	0	7	475	0	0	482	947
% Cars +	0	90.3	0	100	0	91.2	0	0	97.1	100	0	97.5	0	0	0	0	100	100	0	100	96	0	0	96	96.5
Trucks	0	3	0	0	0	3	0	0	11	0	0	11	0	0	0	0	0	0	0	0	20	0	0	20	34
% Trucks	0	9.7	0	0	0	8.8	0	0	2.9	0	0	2.5	0	0	0	0	0	0	0	0	4	0	0	4	3.5



TRAFFIC DATA COLLECTION

File Name : Hanover (Ashland and Abner Church)

Site Code :

Start Date : 6/17/2025

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	Abner Church Road Southbound						Ashland Road Westbound						Driveway Northbound						Ashland Road Eastbound							
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 04:45 PM																										
04:45 PM	0	3	0	1	0	4	0	0	40	9	0	49	0	0	0	0	0	0	0	1	75	0	0	76	129	
05:00 PM	0	6	0	0	0	6	0	0	43	11	0	54	0	0	0	0	0	0	0	3	65	0	0	68	128	
05:15 PM	0	5	0	0	0	5	0	0	59	10	0	69	0	0	0	0	0	0	0	1	69	0	0	70	144	
05:30 PM	0	6	0	2	0	8	0	0	62	4	0	66	0	0	0	0	1	1	0	0	67	0	0	67	142	
Total Volume	0	20	0	3	0	23	0	0	204	34	0	238	0	0	0	0	1	1	0	5	276	0	0	281	543	
% App. Total	0	87	0	13	0		0	0	85.7	14.3	0		0	0	0	0	100		0	1.8	98.2	0	0			
PHF	.000	.833	.000	.375	.000	.719	.000	.000	.823	.773	.000	.862	.000	.000	.000	.000	.250	.250	.000	.417	.920	.000	.000	.924	.943	
Cars +	0	20	0	3	0	23	0	0	199	34	0	233	0	0	0	0	1	1	0	5	267	0	0	272	529	
% Cars +	0	100	0	100	0	100	0	0	97.5	100	0	97.9	0	0	0	0	100	100	0	100	96.7	0	0	96.8	97.4	
Trucks	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	9	0	0	9	14	
% Trucks	0	0	0	0	0	0	0	0	2.5	0	0	2.1	0	0	0	0	0	0	0	0	3.3	0	0	3.2	2.6	



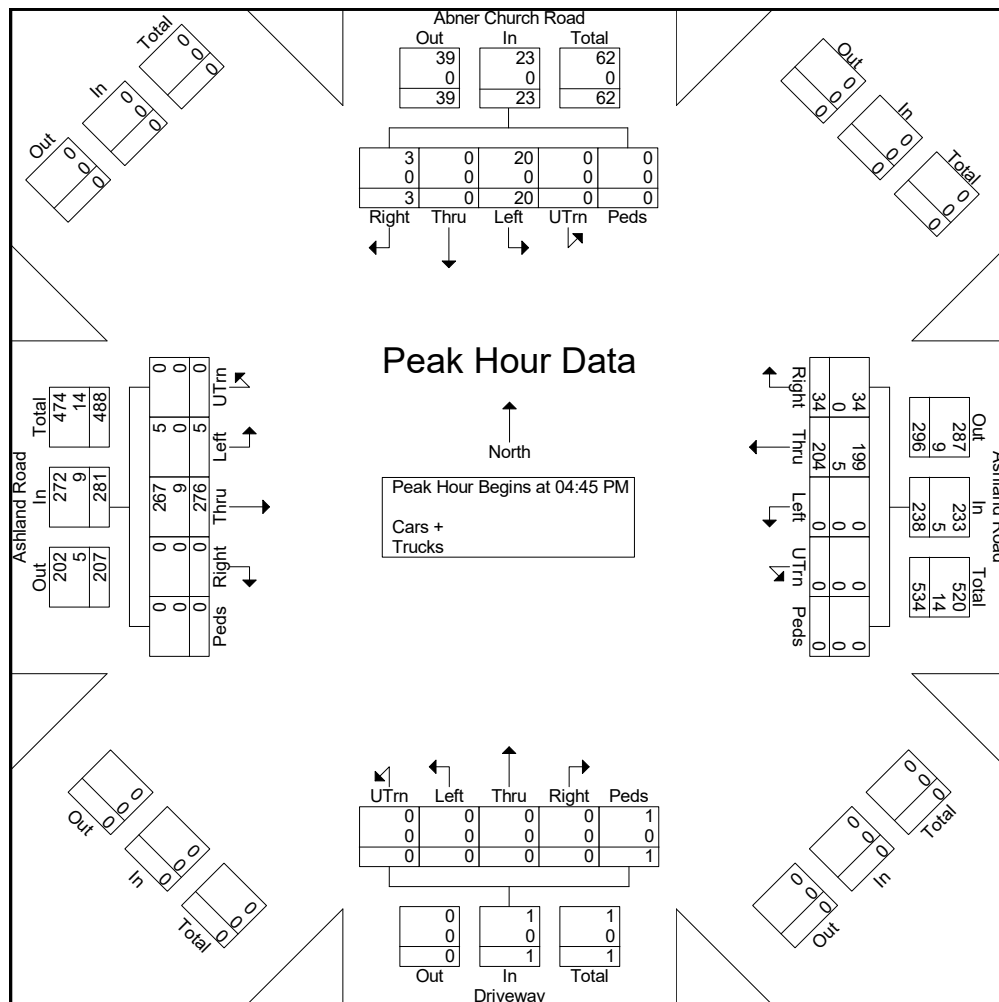
TRAFFIC DATA COLLECTION

File Name : Hanover (Ashland and Abner Church)

Site Code :

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TRAFFIC DATA COLLECTION

File Name : Hanover(Ashland and Cauthorne)
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 Start Date : 5/27/2025
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Groups Printed- Cars + - Trucks

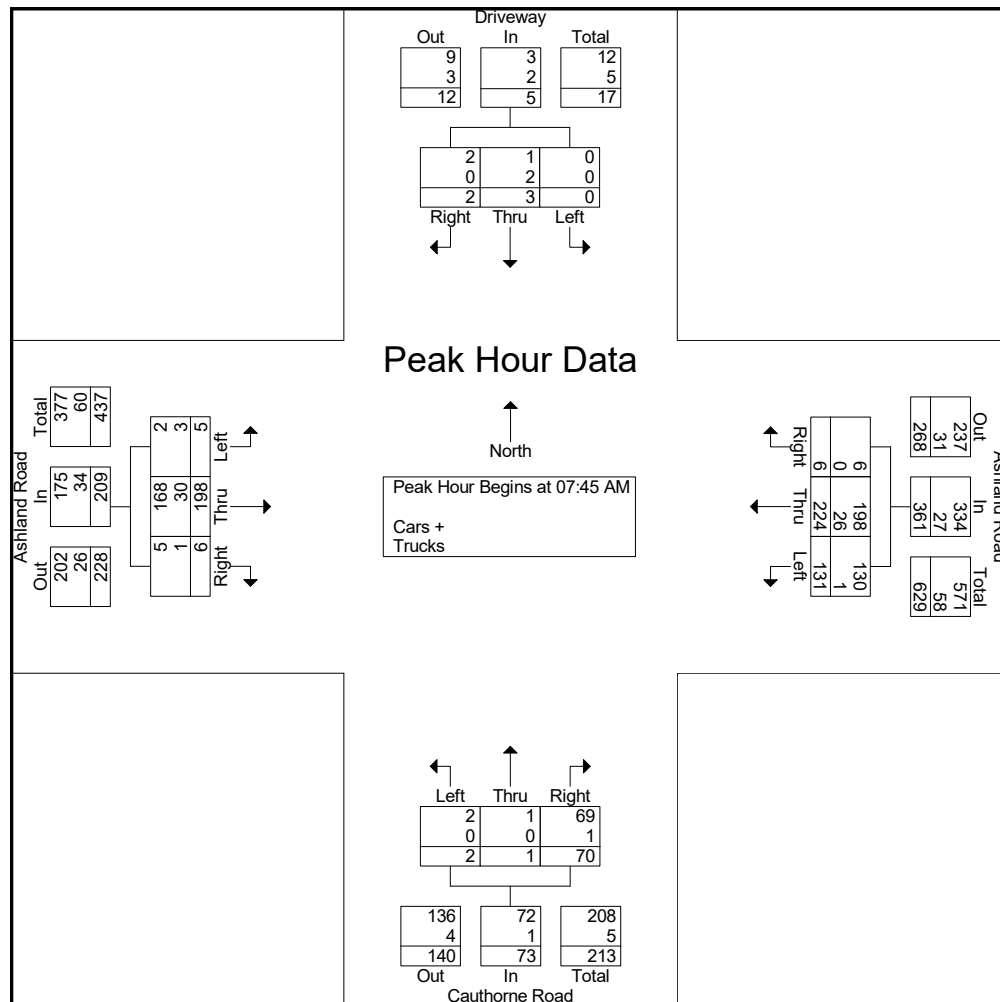
	Driveway Southbound				Ashland Road Westbound				Cauthorne Road Northbound				Ashland Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	39	47	0	86	2	0	13	15	0	39	0	39	140
07:15 AM	0	0	0	0	26	56	0	82	2	0	10	12	1	33	0	34	128
07:30 AM	1	0	0	1	45	51	1	97	0	0	19	19	0	40	1	41	158
07:45 AM	0	0	1	1	33	53	2	88	0	0	15	15	4	53	3	60	164
Total	1	0	1	2	143	207	3	353	4	0	57	61	5	165	4	174	590
08:00 AM	0	0	0	0	35	60	1	96	1	1	18	20	0	46	3	49	165
08:15 AM	0	0	1	1	26	52	3	81	0	0	19	19	1	49	0	50	151
08:30 AM	0	3	0	3	37	59	0	96	1	0	18	19	0	50	0	50	168
08:45 AM	0	0	0	0	27	47	0	74	2	0	13	15	0	26	0	26	115
Total	0	3	1	4	125	218	4	347	4	1	68	73	1	171	3	175	599
Grand Total	1	3	2	6	268	425	7	700	8	1	125	134	6	336	7	349	1189
Apprch %	16.7	50	33.3		38.3	60.7	1		6	0.7	93.3		1.7	96.3	2		
Total %	0.1	0.3	0.2	0.5	22.5	35.7	0.6	58.9	0.7	0.1	10.5	11.3	0.5	28.3	0.6	29.4	
Cars +	1	1	2	4	265	381	7	653	8	1	124	133	3	290	6	299	1089
% Cars +	100	33.3	100	66.7	98.9	89.6	100	93.3	100	100	99.2	99.3	50	86.3	85.7	85.7	91.6
Trucks	0	2	0	2	3	44	0	47	0	0	1	1	3	46	1	50	100
% Trucks	0	66.7	0	33.3	1.1	10.4	0	6.7	0	0	0.8	0.7	50	13.7	14.3	14.3	8.4



TRAFFIC DATA COLLECTION

File Name : Hanover(Ashland and Cauthorne)
 Site Code :
 Start Date : 5/27/2025
 Page No : 2

	Driveway Southbound				Ashland Road Westbound				Cauthorne Road Northbound				Ashland Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	1	1	33	53	2	88	0	0	15	15	4	53	3	60	164
08:00 AM	0	0	0	0	35	60	1	96	1	1	18	20	0	46	3	49	165
08:15 AM	0	0	1	1	26	52	3	81	0	0	19	19	1	49	0	50	151
08:30 AM	0	3	0	3	37	59	0	96	1	0	18	19	0	50	0	50	168
Total Volume	0	3	2	5	131	224	6	361	2	1	70	73	5	198	6	209	648
% App. Total	0	60	40		36.3	62	1.7		2.7	1.4	95.9		2.4	94.7	2.9		
PHF	.000	.250	.500	.417	.885	.933	.500	.940	.500	.250	.921	.913	.313	.934	.500	.871	.964
Cars +	0	1	2	3	130	198	6	334	2	1	69	72	2	168	5	175	584
% Cars +	0	33.3	100	60.0	99.2	88.4	100	92.5	100	100	98.6	98.6	40.0	84.8	83.3	83.7	90.1
Trucks	0	2	0	2	1	26	0	27	0	0	1	1	3	30	1	34	64
% Trucks	0	66.7	0	40.0	0.8	11.6	0	7.5	0	0	1.4	1.4	60.0	15.2	16.7	16.3	9.9





TRAFFIC DATA COLLECTION

File Name : Hanover(Ashland and Cauthorne)
 Site Code :
 Start Date : 5/27/2025
 Page No : 1

Groups Printed- Cars + - Trucks

	Driveway Southbound				Ashland Road Westbound				Cauthorne Road Northbound				Ashland Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	1	1	29	33	0	62	3	0	46	49	1	53	0	54	166
04:15 PM	0	0	0	0	25	40	0	65	3	0	45	48	0	52	3	55	168
04:30 PM	0	0	1	1	23	42	0	65	0	0	42	42	0	56	3	59	167
04:45 PM	0	0	2	2	24	37	0	61	2	0	44	46	0	51	0	51	160
Total	0	0	4	4	101	152	0	253	8	0	177	185	1	212	6	219	661
05:00 PM	0	0	0	0	21	49	1	71	4	0	53	57	0	71	4	75	203
05:15 PM	1	0	1	2	18	50	1	69	2	0	63	65	3	64	0	67	203
05:30 PM	0	0	0	0	18	49	0	67	0	0	42	42	0	70	1	71	180
05:45 PM	0	0	1	1	19	45	0	64	2	0	40	42	0	46	3	49	156
Total	1	0	2	3	76	193	2	271	8	0	198	206	3	251	8	262	742
Grand Total	1	0	6	7	177	345	2	524	16	0	375	391	4	463	14	481	1403
Apprch %	14.3	0	85.7		33.8	65.8	0.4		4.1	0	95.9		0.8	96.3	2.9		
Total %	0.1	0	0.4	0.5	12.6	24.6	0.1	37.3	1.1	0	26.7	27.9	0.3	33	1	34.3	
Cars +	1	0	6	7	175	338	2	515	15	0	372	387	4	453	14	471	1380
% Cars +	100	0	100	100	98.9	98	100	98.3	93.8	0	99.2	99	100	97.8	100	97.9	98.4
Trucks	0	0	0	0	2	7	0	9	1	0	3	4	0	10	0	10	23
% Trucks	0	0	0	0	1.1	2	0	1.7	6.2	0	0.8	1	0	2.2	0	2.1	1.6



TRAFFIC DATA COLLECTION

File Name : Hanover(Ashland and Mountain)
 Site Code :
 Start Date : 5/27/2025
 Page No : 1

Groups Printed- Cars + - Trucks

	Mountain Road Southbound						Ashland Road Westbound						Mountain Road Northbound						Ashland Road Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	2	125	5	0	132	0	17	45	2	0	64	0	6	47	8	0	61	0	9	35	1	0	45	302
07:15 AM	0	5	181	2	0	188	0	31	48	1	0	80	0	4	52	7	0	63	0	5	39	2	0	46	377
07:30 AM	0	2	154	4	0	160	0	38	45	0	0	83	0	8	59	11	0	78	0	3	40	3	0	46	367
07:45 AM	0	6	138	3	0	147	0	22	60	2	0	84	0	8	43	16	0	67	0	13	52	3	0	68	366
Total	0	15	598	14	0	627	0	108	198	5	0	311	0	26	201	42	0	269	0	30	166	9	0	205	1412
08:00 AM	0	5	128	4	0	137	0	33	48	3	0	84	0	11	47	24	0	82	0	11	42	3	0	56	359
08:15 AM	0	5	137	3	0	145	0	30	52	4	0	86	0	7	42	29	0	78	0	14	50	3	0	67	376
08:30 AM	0	5	109	6	0	120	0	30	51	3	0	84	0	10	39	20	0	69	0	14	39	3	0	56	329
08:45 AM	0	5	78	6	0	89	0	29	39	0	0	68	0	3	35	20	0	58	0	9	29	5	0	43	258
Total	0	20	452	19	0	491	0	122	190	10	0	322	0	31	163	93	0	287	0	48	160	14	0	222	1322
Grand Total	0	35	1050	33	0	1118	0	230	388	15	0	633	0	57	364	135	0	556	0	78	326	23	0	427	2734
Apprch %	0	3.1	93.9	3	0		0	36.3	61.3	2.4	0		0	10.3	65.5	24.3	0		0	18.3	76.3	5.4	0		
Total %	0	1.3	38.4	1.2	0	40.9	0	8.4	14.2	0.5	0	23.2	0	2.1	13.3	4.9	0	20.3	0	2.9	11.9	0.8	0	15.6	
Cars +	0	33	1023	28	0	1084	0	224	358	12	0	594	0	48	334	133	0	515	0	70	296	20	0	386	2579
% Cars +	0	94.3	97.4	84.8	0	97	0	97.4	92.3	80	0	93.8	0	84.2	91.8	98.5	0	92.6	0	89.7	90.8	87	0	90.4	94.3
Trucks	0	2	27	5	0	34	0	6	30	3	0	39	0	9	30	2	0	41	0	8	30	3	0	41	155
% Trucks	0	5.7	2.6	15.2	0	3	0	2.6	7.7	20	0	6.2	0	15.8	8.2	1.5	0	7.4	0	10.3	9.2	13	0	9.6	5.7



TRAFFIC DATA COLLECTION

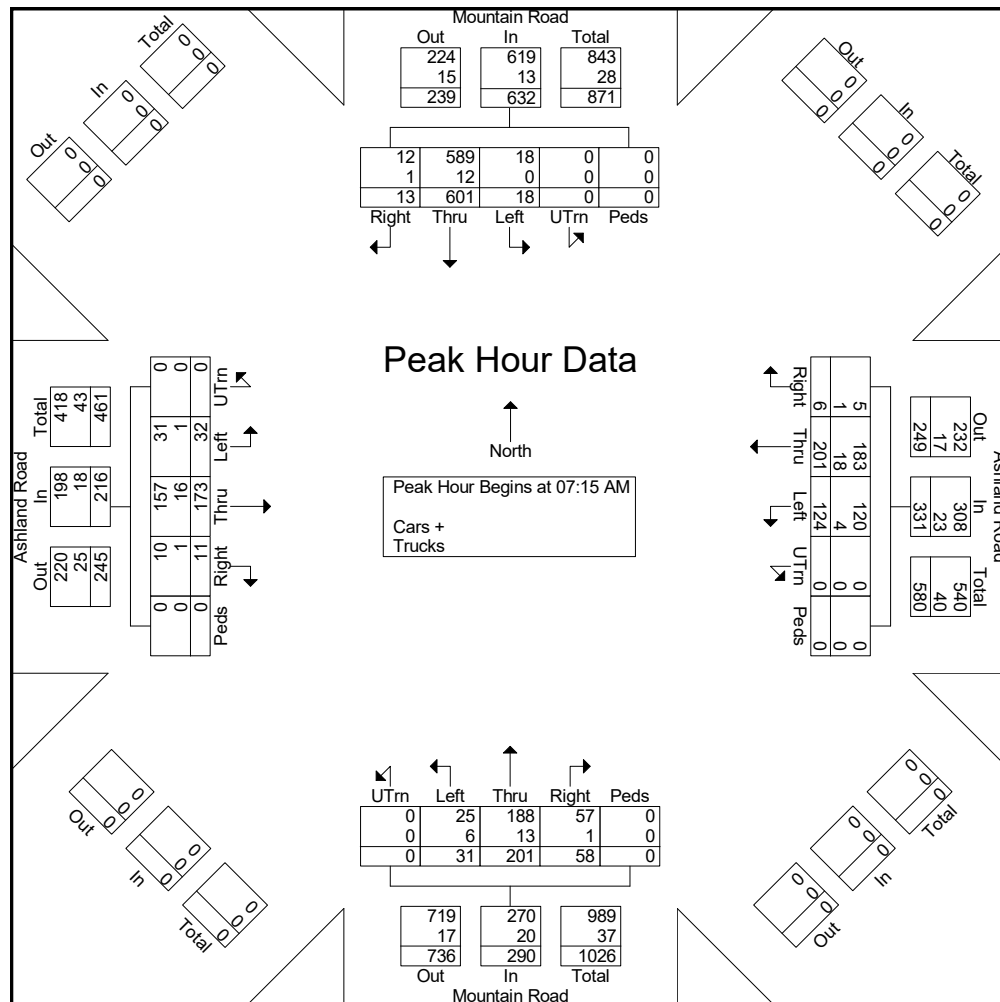
File Name : Hanover(Ashland and Mountain)

Site Code :

Start Date : 5/27/2025

Page No : 2

	Mountain Road Southbound						Ashland Road Westbound						Mountain Road Northbound						Ashland Road Eastbound						
Start Time	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 07:15 AM																									
07:15 AM	0	5	181	2	0	188	0	31	48	1	0	80	0	4	52	7	0	63	0	5	39	2	0	46	377
07:30 AM	0	2	154	4	0	160	0	38	45	0	0	83	0	8	59	11	0	78	0	3	40	3	0	46	367
07:45 AM	0	6	138	3	0	147	0	22	60	2	0	84	0	8	43	16	0	67	0	13	52	3	0	68	366
08:00 AM	0	5	128	4	0	137	0	33	48	3	0	84	0	11	47	24	0	82	0	11	42	3	0	56	359
Total Volume	0	18	601	13	0	632	0	124	201	6	0	331	0	31	201	58	0	290	0	32	173	11	0	216	1469
% App. Total	0	2.8	95.1	2.1	0		0	37.5	60.7	1.8	0		0	10.7	69.3	20	0		0	14.8	80.1	5.1	0		
PHF	.000	.750	.830	.813	.000	.840	.000	.816	.838	.500	.000	.985	.000	.705	.852	.604	.000	.884	.000	.615	.832	.917	.000	.794	.974
Cars +	0	18	589	12	0	619	0	120	183	5	0	308	0	25	188	57	0	270	0	31	157	10	0	198	1395
% Cars +	0	100	98.0	92.3	0	97.9	0	96.8	91.0	83.3	0	93.1	0	80.6	93.5	98.3	0	93.1	0	96.9	90.8	90.9	0	91.7	95.0
Trucks	0	0	12	1	0	13	0	4	18	1	0	23	0	6	13	1	0	20	0	1	16	1	0	18	74
% Trucks	0	0	2.0	7.7	0	2.1	0	3.2	9.0	16.7	0	6.9	0	19.4	6.5	1.7	0	6.9	0	3.1	9.2	9.1	0	8.3	5.0





TRAFFIC DATA COLLECTION

File Name : Hanover(Ashland and Mountain)
 Site Code :
 Start Date : 5/27/2025
 Page No : 1

Groups Printed- Cars + - Trucks

	Mountain Road Southbound						Ashland Road Westbound						Mountain Road Northbound						Ashland Road Eastbound						
Start Time	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	0	3	47	4	0	54	0	23	48	2	0	73	0	3	119	25	0	147	0	32	46	2	0	80	354
04:15 PM	0	5	42	2	3	52	0	20	38	3	0	61	0	1	99	22	0	122	0	20	40	4	4	68	303
04:30 PM	0	5	25	0	1	31	0	23	18	23	0	64	0	2	91	21	0	114	0	0	44	2	0	46	255
04:45 PM	2	0	54	0	3	59	0	26	40	7	0	73	0	4	71	33	0	108	0	2	48	1	0	51	291
Total	2	13	168	6	7	196	0	92	144	35	0	271	0	10	380	101	0	491	0	54	178	9	4	245	1203
05:00 PM	2	5	69	3	0	79	0	16	54	8	0	78	0	6	123	17	0	146	0	28	65	5	0	98	401
05:15 PM	1	5	57	5	0	68	0	23	50	3	0	76	0	8	146	23	0	177	0	49	73	4	0	126	447
05:30 PM	0	6	55	1	0	62	0	17	43	2	0	62	0	8	166	27	0	201	0	42	56	3	0	101	426
05:45 PM	0	1	57	5	0	63	0	6	32	7	0	45	0	16	124	20	0	160	0	31	55	2	0	88	356
Total	3	17	238	14	0	272	0	62	179	20	0	261	0	38	559	87	0	684	0	150	249	14	0	413	1630
Grand Total	5	30	406	20	7	468	0	154	323	55	0	532	0	48	939	188	0	1175	0	204	427	23	4	658	2833
Apprch %	1.1	6.4	86.8	4.3	1.5		0	28.9	60.7	10.3	0		0	4.1	79.9	16	0		0	31	64.9	3.5	0.6		
Total %	0.2	1.1	14.3	0.7	0.2	16.5	0	5.4	11.4	1.9	0	18.8	0	1.7	33.1	6.6	0	41.5	0	7.2	15.1	0.8	0.1	23.2	
Cars +	5	28	398	19	7	457	0	151	319	52	0	522	0	47	926	186	0	1159	0	200	424	23	4	651	2789
% Cars +	100	93.3	98	95	100	97.6	0	98.1	98.8	94.5	0	98.1	0	97.9	98.6	98.9	0	98.6	0	98	99.3	100	100	98.9	98.4
Trucks	0	2	8	1	0	11	0	3	4	3	0	10	0	1	13	2	0	16	0	4	3	0	0	7	44
% Trucks	0	6.7	2	5	0	2.4	0	1.9	1.2	5.5	0	1.9	0	2.1	1.4	1.1	0	1.4	0	2	0.7	0	0	1.1	1.6



TRAFFIC DATA COLLECTION

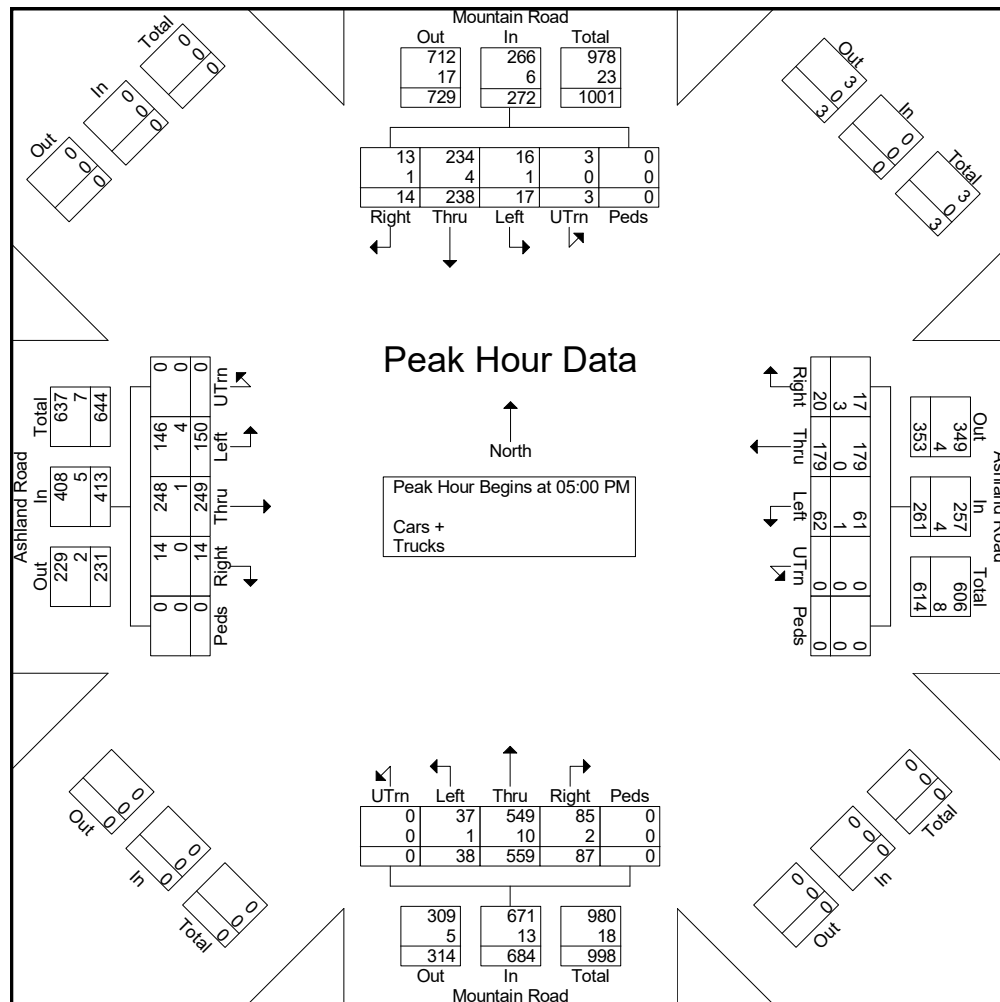
File Name : Hanover(Ashland and Mountain)

Site Code :

Start Date : 5/27/2025

Page No : 2

	Mountain Road Southbound						Ashland Road Westbound						Mountain Road Northbound						Ashland Road Eastbound							
Start Time	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	UTm	Left	Thru	Right	Peds	App. Total	Int. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 05:00 PM																										
05:00 PM	2	5	69	3	0	79	0	16	54	8	0	78	0	6	123	17	0	146	0	28	65	5	0	98	401	
05:15 PM	1	5	57	5	0	68	0	23	50	3	0	76	0	8	146	23	0	177	0	49	73	4	0	126	447	
05:30 PM	0	6	55	1	0	62	0	17	43	2	0	62	0	8	166	27	0	201	0	42	56	3	0	101	426	
05:45 PM	0	1	57	5	0	63	0	6	32	7	0	45	0	16	124	20	0	160	0	31	55	2	0	88	356	
Total Volume	3	17	238	14	0	272	0	62	179	20	0	261	0	38	559	87	0	684	0	150	249	14	0	413	1630	
% App. Total	1.1	6.2	87.5	5.1	0		0	23.8	68.6	7.7	0		0	5.6	81.7	12.7	0		0	36.3	60.3	3.4	0			
PHF	.375	.708	.862	.700	.000	.861	.000	.674	.829	.625	.000	.837	.000	.594	.842	.806	.000	.851	.000	.765	.853	.700	.000	.819	.912	
Cars +	3	16	234	13	0	266	0	61	179	17	0	257	0	37	549	85	0	671	0	146	248	14	0	408	1602	
% Cars +	100	94.1	98.3	92.9	0	97.8	0	98.4	100	85.0	0	98.5	0	97.4	98.2	97.7	0	98.1	0	97.3	99.6	100	0	98.8	98.3	
Trucks	0	1	4	1	0	6	0	1	0	3	0	4	0	1	10	2	0	13	0	4	1	0	0	5	28	
% Trucks	0	5.9	1.7	7.1	0	2.2	0	1.6	0	15.0	0	1.5	0	2.6	1.8	2.3	0	1.9	0	2.7	0.4	0	0	1.2	1.7	



Appendix C

Traffic Signal Timings

Rte. 271 (Pouncey Tract) & Ashland Rd

Phase Timing

6/10/2025 11:37:59 AM

[illegible]

Rte. 271 (Pouncey Tract) & Ashland Rd

Phase Options

6/10/2025 11:37:59 AM

[illegible]

Rte. 271 (Pouncey Tract) & Ashland Rd

Phase Startup Options

6/10/2025 11:37:59 AM

Startup Flash

Mode

Startup All Red

Yellow

Phases	1-8								9-16							
Startup Phases	2				6											
Startup Yellow																
Startup Red																
Startup No Walk																
Startup Next																
Startup Yel Fls																
Startup FYA																
No Veh Call																
No Ped Call																

Phase Startup Timing

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Start Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Max Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Unit

Red Revert

Ped Protect

AdvFls in Flash

Rte. 271 (Pouncey Tract) & Ashland Rd

Ring Sequence / Conflicting Phases

6/10/2025 11:37:59 AM

Ringgroup 1

[illegible]

Ringgroup 2

Custom Sequences

[illegible]

Conflicting Phases

1-8

9-16

[illegible]

Rte. 271 (Pouncey Tract) & Ashland Rd

MCE Options

6/10/2025 11:37:59 AM

Phases

1-8

9-16

MCE Ped Protect	1	2	3	4	5	6	7	8								
MCE Veh Call	1	2	3	4	5	6	7	8								
MCE Ped Call	1	2	3	4	5	6	7	8								
MCE Veh Omit																
MCE Ped Omit																
MCE Veh Sync	1	2	3	4	5	6	7	8								
MCE Ped Sync		2		4		6		8								
MCE Halt Don't Walk																

LRV Phases

1-8

MCE LRV Term Early								
--------------------	--	--	--	--	--	--	--	--

Rte. 271 (Pouncey Tract) & Ashland Rd

FYA/FRA

6/10/2025 11:37:59 AM

FYA	1	2	3	4	5	6	7	8
Prot Phs	1	0	0	0	5	0	0	0
Opp Thru	2	0	0	0	6	0	0	0
Start Phs	0	0	0	0	0	0	0	0
Opp Ped	0	0	0	0	0	0	0	0
Delay	3.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0
Min FYA	5.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0
Skip Prot Red	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Head Mode	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1

Ped Hawk 1

Veh Phase

Ped Phase

Flash Yel Dark Signal

Flash Delay Flash Carryover

Green Mode

Ped Hawk 2

Veh Phase

Ped Phase

Flash Yel Dark Signal

Flash Delay Flash Carryover

Green Mode

Ped Hawk 3

Veh Phase

Ped Phase

Flash Yel Dark Signal

Flash Delay Flash Carryover

Green Mode

Ped Hawk 4

Veh Phase

Ped Phase

Flash Yel Dark Signal

Flash Delay Flash Carryover

Green Mode

Rte. 271 (Pouncey Tract) & Ashland Rd

Coordination Options

6/10/2025 11:37:59 AM

Sync Time	00:00	RTC Set Time	00:00
Transition Mode	Best 2	Ped Adjust	None
Trans Short %	20	Trans Long %	35
Offset Reference	Lag FO	Short Cycles	0
Dual Entry	Normal	Overlap F/O	Disabled
Master Sync Mode	RTC	Master Sync Length	0
Adapt Thresh	0	Adapt Step	0
External Plan Max	0		
Hardwire No Match	Sched	Hardwire Sync Fail	0
Override Omit/Recall	No		
Phases	1-8	9-16	
No Trans Recall	☐	☐	☐
Trans Ped Recall	☐	☐	☐
Trans Phases	☐	☐	☐

Rte. 271 (Pouncey Tract) & Ashland Rd

Hardwire Plans

6/10/2025 11:37:59 AM

Hardwire	Plan Select	Pattern	Offset	Mode
Plan 1	☐	0	0	Hardwire
Plan 2	☐	0	0	Hardwire
Plan 3	☐	0	0	Hardwire
Plan 4	☐	0	0	Hardwire
Plan 5	☐	0	0	Hardwire
Plan 6	☐	0	0	Hardwire
Plan 7	☐	0	0	Hardwire
Plan 8	☐	0	0	Hardwire
Plan 9	☐	0	0	Hardwire
Plan 10	☐	0	0	Hardwire
Plan 11	☐	0	0	Hardwire
Plan 12	☐	0	0	Hardwire
Plan 13	☐	0	0	Hardwire
Plan 14	☐	0	0	Hardwire
Plan 15	☐	0	0	Hardwire
Plan 16	☐	0	0	Hardwire
Plan 17	☐	0	0	Hardwire
Plan 18	☐	0	0	Hardwire
Plan 19	☐	0	0	Hardwire
Plan 20	☐	0	0	Hardwire
Plan 21	☐	0	0	Hardwire
Plan 22	☐	0	0	Hardwire
Plan 23	☐	0	0	Hardwire
Plan 24	☐	0	0	Hardwire
Plan 25	☐	0	0	Hardwire
Plan 26	☐	0	0	Hardwire
Plan 27	☐	0	0	Hardwire
Plan 28	☐	0	0	Hardwire
Plan 29	☐	0	0	Hardwire
Plan 30	☐	0	0	Hardwire
Plan 31	☐	0	0	Hardwire
Plan 32	☐	0	0	Hardwire

Rte. 271 (Pouncey Tract) & Ashland Rd

Soft Interconnect

6/10/2025 11:37:59 AM

Mode	Slave
------	-------

Remote Int Number 0

Yield Delay Yield Duration

Permissive	0
------------	---

Local Hold Limit

Phases

1-8

9-16

Local Control Phases

Local Hold Phases

Local Perm Phases

Local Call Phases

Remote Perm Phases

Remote Hold Phases

Rte. 271 (Pouncey Tract) & Ashland Rd

Preempt Inputs

6/10/2025 11:37:59 AM

Preempt Input	1	2	3	4	5	6	7	8	9	10
Delay	0	0	0	0	0	0	0	0	0	0
Checkout Limit	0	0	0	0	0	0	0	0	0	0
Locked	No	No	No	No	No	No	No	No	No	No
Interlock	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Input Number	0	0	0	0	0	0	0	0	0	0
Input Priority	All	Low	Low	Low	Low	Low	Low	Low	All	All
Delay Mode	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp

Preempt Priority

Preempt	1	2	3	4	5	6	7	8	9	10
Priority	0	0	0	0	0	0	0	0	0	0

Remote Preemption

Remote Preempt	RM 1	RM 2	RM 3	RM 4	RM 5	RM 6	RM 7	RM 8
Int Number	0	0	0	0	0	0	0	0
PE Number	0	0	0	0	0	0	0	0
Mode	Dis	Dis	Dis	Dis	Dis	Dis	Dis	Dis
Slack	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0
Alt TT 1	0	0	0	0	0	0	0	0
Alt TT 2	0	0	0	0	0	0	0	0
Alt TT 3	0	0	0	0	0	0	0	0
Alt TT 4	0	0	0	0	0	0	0	0
Alt TT 5	0	0	0	0	0	0	0	0
Alt TT 6	0	0	0	0	0	0	0	0
Alt TT 7	0	0	0	0	0	0	0	0

Rte. 271 (Pouncey Tract) & Ashland Rd

Preempt 2 (Configuration)

6/10/2025 11:37:59 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8	
Enable Phases			LRV Disable		Max 0
Preempt Inputs	2		LRV Dwell Flash		
			LRV Omit		Delay 0
			LRV No Yel		

Preempt 2 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0
Omit Olap Grn Clr					Start Ped Clr	0
Phs EWlk to Grn			Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases			TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases			Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap			Exit Red	0.0		
TClr 1 Olap Ped			Min Dwell	12	Min Duration	0
TClr 2 Veh Phases			Dwell Extend	2		
TClr 2 Ped Phases			Max Dwell	80	Max Call	0
TClr 2 Olap			Reserve Inh Same	0		
TClr 2 Olap Ped			Reserve Inh All	0		
Init Dwell Phases			Delay	0		
Dwell Veh Phases	2	5	Phases/Overlaps	1-8	9-16	
Dwell Ped Phases			TClr 1 FR Olap			
Dwell Olap			TClr 2 FR Olap			
Dwell Olap Ped			Dwell FR Olap			
Exit Veh Phases			TClr 1 FYA			
Exit Ped Phases			TClr 2 FYA			
Exit Olap			Dwell FYA			
Exit Olap Ped						
Zero Phase Walk						
Zero Phase Ped Clr						
Zero Phase Green						
Zero Olap Walk						
Zero Olap Ped Clr						
Zero Olap Green						
Dwell-Phase Red						
Dwell-Phase Red Flash						
Dwell-Phase Yel Flash						
Dwell-Olap Red Flash						
Dwell-Olap Yel Flash						
Dwell-Ped Dark						
Dwell-Olap Ped Dark						

Rte. 271 (Pouncey Tract) & Ashland Rd

Preempt 3 (Configuration)

6/10/2025 11:37:59 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8																																																		
Enable Phases	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																	LRV Disable	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																	Max	0
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								LRV No Yel	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																																													

Preempt 3 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0																																																															
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TClr 1 Veh Phases	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																	TC1 Extend	0	TC1 Max	0																															
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Dwell-Olap Yel Flash	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																																																			
Dwell-Ped Dark	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																																																			
Dwell-Olap Ped Dark	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																																																			

Rte. 271 (Pouncey Tract) & Ashland Rd

Preempt 4 (Configuration)

6/10/2025 11:37:59 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8	
Enable Phases			LRV Disable		Max 0
Preempt Inputs	4		LRV Dwell Flash		
			LRV Omit		Delay 0
			LRV No Yel		

Preempt 4 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0
Omit Olap Grn Clr					Start Ped Clr	0
Phs EWlk to Grn			Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases			TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases			Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap			Exit Red	0.0		
TClr 1 Olap Ped			Min Dwell	12	Min Duration	0
TClr 2 Veh Phases			Dwell Extend	2		
TClr 2 Ped Phases			Max Dwell	80	Max Call	0
TClr 2 Olap			Reserve Inh Same	0		
TClr 2 Olap Ped			Reserve Inh All	0		
Init Dwell Phases			Delay	0		
Dwell Veh Phases	4	7	Phases/Overlaps	1-8	9-16	
Dwell Ped Phases			TClr 1 FR Olap			
Dwell Olap			TClr 2 FR Olap			
Dwell Olap Ped			Dwell FR Olap			
Exit Veh Phases			TClr 1 FYA			
Exit Ped Phases			TClr 2 FYA			
Exit Olap			Dwell FYA			
Exit Olap Ped						
Zero Phase Walk						
Zero Phase Ped Clr						
Zero Phase Green						
Zero Olap Walk						
Zero Olap Ped Clr						
Zero Olap Green						
Dwell-Phase Red						
Dwell-Phase Red Flash						
Dwell-Phase Yel Flash						
Dwell-Olap Red Flash						
Dwell-Olap Yel Flash						
Dwell-Ped Dark						
Dwell-Olap Ped Dark						

Rte. 271 (Pouncey Tract) & Ashland Rd

Preempt 6 (Configuration)

6/10/2025 11:37:59 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8	
Enable Phases			LRV Disable		Max 0
Preempt Inputs	6		LRV Dwell Flash		
			LRV Omit		Delay 0
			LRV No Yel		

Preempt 6 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0
Omit Olap Grn Clr					Start Ped Clr	0
Phs EWlk to Grn			Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases			TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases			Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap			Exit Red	0.0		
TClr 1 Olap Ped			Min Dwell	12	Min Duration	0
TClr 2 Veh Phases			Dwell Extend	2		
TClr 2 Ped Phases			Max Dwell	80	Max Call	0
TClr 2 Olap			Reserve Inh Same	0		
TClr 2 Olap Ped			Reserve Inh All	0		
Init Dwell Phases			Delay	0		
Dwell Veh Phases	1	6	Phases/Overlaps	1-8	9-16	
Dwell Ped Phases			TClr 1 FR Olap			
Dwell Olap			TClr 2 FR Olap			
Dwell Olap Ped			Dwell FR Olap			
Exit Veh Phases			TClr 1 FYA			
Exit Ped Phases			TClr 2 FYA			
Exit Olap			Dwell FYA			
Exit Olap Ped						
Zero Phase Walk						
Zero Phase Ped Clr						
Zero Phase Green						
Zero Olap Walk						
Zero Olap Ped Clr						
Zero Olap Green						
Dwell-Phase Red						
Dwell-Phase Red Flash						
Dwell-Phase Yel Flash						
Dwell-Olap Red Flash						
Dwell-Olap Yel Flash						
Dwell-Ped Dark						
Dwell-Olap Ped Dark						

Rte. 271 (Pouncey Tract) & Ashland Rd

Soft Preempt 1 - Misc

6/10/2025 11:37:59 AM

Dwell Step

0

Override SPE Flash

No

Override Steps

--	--	--	--	--	--	--	--

Phases/Overlaps

1-8

9-16

Dwl Phase Red

--	--	--	--	--	--	--	--

Dwl Phase Red Flash

--	--	--	--	--	--	--	--

Dwl Phase Yel Flash

--	--	--	--	--	--	--	--

Dwl Olap Red Flash

--	--	--	--	--	--	--	--

Dwl Ped Dark

--	--	--	--	--	--	--	--

Dwl Olap Ped Dark

--	--	--	--	--	--	--	--

Dwl Zero Phase Ped Clr

Dwl Zero Phase Green

Dwl Zero Olap Ped Clr

Dwl Zero Olap Green

Dwl Zero Olap Green

--	--	--	--	--	--	--	--

Rte. 271 (Pouncey Tract) & Ashland Rd

Soft Preempt 2 - Misc

6/10/2025 11:37:59 AM

Dwell Step

0

Override SPE Flash

No

Override Steps

--	--	--	--	--	--	--	--

Phases/Overlaps

1-8

9-16

Dwl Phase Red

--	--	--	--	--	--	--	--

Dwl Phase Red Flash

Dwl Phase Yel Flash

--	--	--	--	--	--	--	--

Dwl Olap Red Flash

--	--	--	--	--	--	--	--

Dwl Ped Dark

--	--	--	--	--	--	--	--

Dwl Olap Ped Dark

--	--	--	--	--	--	--	--

Dwl Zero Phase Ped Clr

--	--	--	--	--	--	--	--

Dwl Zero Phase Green

Dwl Zero Olap Ped Clr

Dwl Zero Olap Green

--	--	--	--	--	--	--	--

[illegible]

Rte. 271 (Pouncey Tract) & Ashland Rd

Soft Preempt 3 - Misc

6/10/2025 11:37:59 AM

Dwell Step

0

Override SPE Flash

No

Override Steps

--	--	--	--	--	--	--	--

Phases/Overlaps

1-8

9-16

Dwl Phase Red

--	--	--	--	--	--	--	--

Dwl Phase Red Flash

--	--	--	--	--	--	--	--

Dwl Phase Yel Flash

--	--	--	--	--	--	--	--

Dwl Olap Red Flash

--	--	--	--	--	--	--	--

Dwl Ped Dark

--	--	--	--	--	--	--	--

Dwl Olap Ped Dark

--	--	--	--	--	--	--	--

Dwl Zero Phase Ped Clr

--	--	--	--	--	--	--	--

Dwl Zero Phase Green

--	--	--	--	--	--	--	--

Dwl Zero Olap Ped Clr

--	--	--	--	--	--	--	--

Dwl Zero Olap Green

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Rte. 271 (Pouncey Tract) & Ashland Rd

Soft Preempt 4 - Misc

6/10/2025 11:37:59 AM

Dwell Step

0

Override SPE Flash

No

Override Steps

--	--	--	--	--	--	--	--

Phases/Overlaps

1-8

9-16

Dwl Phase Red

--	--	--	--	--	--	--	--

Dwl Phase Red Flash

--	--	--	--	--	--	--	--

Dwl Phase Yel Flash

--	--	--	--	--	--	--	--

Dwl Olap Red Flash

--	--	--	--	--	--	--	--

Dwl Ped Dark

--	--	--	--	--	--	--	--

Dwl Olap Ped Dark

--	--	--	--	--	--	--	--

Dwl Zero Phase Ped Clr

--	--	--	--	--	--	--	--

Dwl Zero Phase Green

Dwl Zero Olap Ped Clr

Dwl Zero Olap Green

--	--	--	--	--	--	--	--

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Rte. 271 (Pouncey Tract) & Ashland Rd

TOD Pattern Events

6/10/2025 11:37:59 AM

[illegible]

Rte. 271 (Pouncey Tract) & Ashland Rd

Holidays

6/10/2025 11:37:59 AM

	Active Holidays							Month	Day	DOW							WOM
Date 1								0	0								0
Date 2								0	0								0
Date 3								0	0								0
Date 4								0	0								0
Date 5								0	0								0
Date 6								0	0								0
Date 7								0	0								0
Date 8								0	0								0
Date 9								0	0								0
Date 10								0	0								0
Date 11								0	0								0
Date 12								0	0								0
Date 13								0	0								0
Date 14								0	0								0
Date 15								0	0								0
Date 16								0	0								0
Date 17								0	0								0
Date 18								0	0								0
Date 19								0	0								0
Date 20								0	0								0
Date 21								0	0								0
Date 22								0	0								0
Date 23								0	0								0
Date 24								0	0								0
Date 25								0	0								0
Date 26								0	0								0
Date 27								0	0								0
Date 28								0	0								0
Date 29								0	0								0
Date 30								0	0								0
Date 31								0	0								0
Date 32								0	0								0

Rte. 271 (Pouncey Tract) & Ashland Rd

Load Switch Outputs (BIU 1)

6/10/2025 11:37:59 AM

	LS 1	LS 2	LS 3	LS 4	LS 5	LS 6	LS 7	LS 8
Red Function	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Red Index	1	2	3	4	5	6	7	8
Yellow Function	VehYel	VehYel	VehYel	VehYel	VehYel	VehYel	VehYel	VehYel
Yellow Index	1	2	3	4	5	6	7	8
Green Function	VehGrn	VehGrn	VehGrn	VehGrn	VehGrn	VehGrn	VehGrn	VehGrn
Green Index	1	2	3	4	5	6	7	8

Load Switch Outputs (BIU 2)

	LS 9	LS 10	LS 11	LS 12	LS 13	LS 14	LS 15	LS 16
Red Function	DntWlk	DntWlk	DntWlk	DntWlk	OlpRed	OlpRed	OlpRed	OlpRed
Red Index	2	4	6	8	13	14	15	16
Yellow Function	PedClr	PedClr	PedClr	PedClr	OlpYel	OlpYel	OlpYel	OlpYel
Yellow Index	2	4	6	8	13	14	15	16
Green Function	Walk	Walk	Walk	Walk	OlpGrn	OlpGrn	OlpGrn	OlpGrn
Green Index	2	4	6	8	13	14	15	16

Rte. 271 (Pouncey Tract) & Ashland Rd

T/F Outputs (BIU 1)

6/10/2025 11:37:59 AM

	I/O 10	I/O 11	I/O 12	I/O 13
Output	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0

T/F Outputs (BIU 2)

	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0

T/F Outputs (BIU 3)

	OUT 1	OUT 2	OUT 3	OUT 4	OUT 5	OUT 6	OUT 7	OUT 8
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	OUT 9	OUT 10	OUT 11	OUT 12	OUT 13	OUT 14	OUT 15	I/O 1
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6			
Output	VehRed	VehRed	VehRed	VehRed	VehRed			
Index	0	0	0	0	0			

T/F Outputs (BIU 4)

	OUT 1	OUT 2	OUT 3	OUT 4	OUT 5	OUT 6	OUT 7	OUT 8
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	OUT 9	OUT 10	OUT 11	OUT 12	OUT 13	OUT 14	OUT 15	I/O 1
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7	I/O 8	I/O 9
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0

Rte. 271 (Pouncey Tract) & Ashland Rd

Detector Inputs (BIU 9)

6/10/2025 11:37:59 AM

	Det 1	Det 2	Det 3	Det 4	Det 5	Det 6	Det 7	Det 8
Function	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	0	0	0	0	0	0	0	0
	Det 9	Det 10	Det 11	Det 12	Det 13	Det 14	Det 15	Det 16
Function	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	0	0	0	0	0	0	0	0

Detector Inputs (BIU 10)

	Det 17	Det 18	Det 19	Det 20	Det 21	Det 22	Det 23	Det 24
Function	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	0	0	0	0	0	0	0	0
	Det 25	Det 26	Det 27	Det 28	Det 29	Det 30	Det 31	Det 32
Function	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	0	0	0	0	0	0	0	0

Rte. 271 (Pouncey Tract) & Ashland Rd

Detector Inputs (BIU 11)

6/10/2025 11:37:59 AM

	Det 33	Det 34	Det 35	Det 36	Det 37	Det 38	Det 39	Det 40
Function	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Det 41	Det 42	Det 43	Det 44	Det 45	Det 46	Det 47	Det 48
Function	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0

Detector Inputs (BIU 12)

	Det 49	Det 50	Det 51	Det 52	Det 53	Det 54	Det 55	Det 56
Function	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Det 57	Det 58	Det 59	Det 60	Det 61	Det 62	Det 63	Det 64
Function	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0

Rte. 271 (Pouncey Tract) & Ashland Rd

T/F Inputs (BIU 1)

6/10/2025 11:37:59 AM

	I/O 14	I/O 15	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21
Input	Preempt	Preempt	None	None	AutoFlash	None	ManCtrl	IntAdv
Index	1	2	0	0	5	0	5	5
	I/O 22	I/O 23	I/O 24	IN 1	IN 2	IN 3	IN 4	IN 5
Input	MinRec	ExtStr	None	StopTm	StopTm	MaxII	MaxII	Force
Index	5	5	0	5	5	1	2	1
	IN 6	IN 7	IN 8	OPTO 1	OPTO 2	OPTO 3	OPTO 4	
Input	Force	None	None	PedDet	PedDet	PedDet	PedDet	
Index	2	0	0	1	2	3	4	

T/F Inputs (BIU 2)

	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Input	Preempt	Preempt	Preempt	Preempt	None	None	None	None
Index	3	4	5	6	0	0	0	0
	I/O 24	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7
Input	None	MaxInh	MaxInh	LocFlash	MMUFlash	Alarm	Alarm	None
Index	0	1	2	5	5	1	2	0
	IN 8	OPTO 1	OPTO 2	OPTO 3	OPTO 4			
Input	None	PedDet	PedDet	PedDet	PedDet			
Index	0	5	6	7	8			

Rte. 271 (Pouncey Tract) & Ashland Rd

T/F Inputs (BIU 3)

6/10/2025 11:37:59 AM

	I/O 7	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 15	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 23	I/O 24	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	IN 7	IN 8	OPTO 1	OPTO 2	OPTO 3	OPTO 4		
Input	None	None	None	None	None	None		
Index	0	0	0	0	0	0		

T/F Inputs (BIU 4)

	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15	I/O 16	I/O 17
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23	I/O 24	IN 1
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	IN 8	OPTO 1
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	OPTO 2	OPTO 3	OPTO 4					
Input	None	None	None					
Index	0	0	0					

Rte. 271 (Pouncey Tract) & Ashland Rd

TS1 Outputs (Connector A)

6/10/2025 11:37:59 AM

	Pin D	Pin E	Pin F	Pin G	Pin H	Pin J	Pin X	Pin Y
Output	VehRed	VehRed	VehRed	DntWlk	PedClr	Walk	VehRed	VehRed
Index	1	0	2	2	2	2	0	0
	Pin Z	Pin a	Pin b	Pin c	Pin d	Pin e	Pin r	Pin s
Output	VehYel	VehRed	VehYel	VehGrn	PhsChk	PhsOn	VehRed	VehGrn
Index	1	0	2	2	2	2	0	1
	Pin t	Pin u	Pin CC	Pin DD				
Output	VehRed	PhsChk	VehRed	PhsOn				
Index	0	1	0	1				

TS1 Outputs (Connector B)

	Pin A	Pin C	Pin D	Pin E	Pin F	Pin G	Pin H	Pin J
Output	PhsNxt	PhsNxt	VehGrn	VehYel	VehRed	VehRed	PedClr	DntWlk
Index	1	2	3	3	3	4	4	4
	Pin K	Pin Y	Pin Z	Pin a	Pin b	Pin c	Pin d	Pin e
Output	PhsChk	VehRed	VehRed	VehRed	VehGrn	VehYel	Walk	PhsOn
Index	4	0	0	0	4	4	4	4
	Pin f	Pin p	Pin q	Pin r	Pin s	Pin t	Pin u	Pin w
Output	PhsNxt	OlpYel	OlpRed	PhsChk	PhsOn	PhsNxt	OlpRed	OlpGrn
Index	4	9	9	3	3	3	12	12
	Pin AA	Pin BB	Pin CC	Pin DD	Pin EE	Pin FF	Pin GG	Pin HH
Output	OlpGrn	OlpYel	OlpRed	OlpRed	OlpYel	OlpGrn	OlpGrn	OlpYel
Index	9	10	10	11	12	11	10	11

Rte. 271 (Pouncey Tract) & Ashland Rd

TS1 Outputs (Connector C)

6/10/2025 11:37:59 AM

	Pin A	Pin B	Pin C	Pin D	Pin E	Pin F	Pin G	Pin H
Output	VehRed	VehRed	DntWlk	VehRed	VehYel	VehRed	VehRed	VehRed
Index	0	0	8	8	7	7	6	5
	Pin J	Pin K	Pin L	Pin M	Pin N	Pin c	Pin d	Pin e
Output	VehYel	VehRed	VehRed	PhsNxt	PhsOn	VehRed	Walk	VehYel
Index	5	0	0	5	5	0	8	8
	Pin f	Pin g	Pin h	Pin i	Pin j	Pin k	Pin w	Pin x
Output	VehGrn	VehGrn	VehYel	VehGrn	VehRed	PhsChk	PedClr	VehGrn
Index	7	6	6	5	0	5	8	8
	Pin y	Pin z	Pin AA	Pin BB	Pin CC	Pin DD	Pin FF	Pin GG
Output	VehRed	DntWlk	PedClr	PhsChk	PhsOn	PhsNxt	PhsChk	PhsOn
Index	0	6	6	6	6	6	8	8
	Pin HH	Pin JJ	Pin KK	Pin LL	Pin MM	Pin NN	Pin PP	
Output	PhsNxt	VehRed	VehRed	Walk	PhsChk	PhsOn	PhsNxt	
Index	8	0	0	6	7	7	7	

TS1 Outputs (Connector D)

	Pin z	Pin AA	Pin BB	Pin CC	Pin DD	Pin EE	Pin FF	Pin GG
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	Pin HH	Pin JJ	Pin LL					
Output	VehRed	VehRed	VehRed					
Index	0	0	0					

Rte. 271 (Pouncey Tract) & Ashland Rd

TS1 Inputs (Connector A)

6/10/2025 11:37:59 AM

	Pin K	Pin L	Pin M	Pin N	Pin P	Pin R	Pin S	Pin T
Input	VehDet	PedDet	VehDet	StopTm	MaxInh	ExtStr	IntAdv	None
Index	2	2	10	5	1	1	1	0
	Pin f	Pin g	Pin h	Pin i	Pin j	Pin k	Pin m	Pin n
Input	VehDet	PedDet	VehDet	Force	MinRec	ManCtrl	CNA	None
Index	1	1	9	1	1	1	1	0
	Pin q	Pin v	Pin w	Pin x	Pin y	Pin z	Pin AA	Pin BB
Input	None	VehDet	OmtRed	RedRst	None	CNA	None	None
Index	0	26	1	1	0	2	0	0
	Pin EE	Pin FF	Pin GG	Pin HH				
Input	VehDet	PedRcy	MaxII	None				
Index	25	1	1	0				

TS1 Inputs (Connector B)

	Pin B	Pin L	Pin M	Pin N	Pin P	Pin R	Pin S	Pin T
Input	None	VehDet	PedDet	VehDet	PedDet	VehDet	VehDet	VehDet
Index	0	4	4	3	3	19	18	29
	Pin U	Pin V	Pin W	Pin X	Pin g	Pin h	Pin i	Pin j
Input	VehDet	PedRcy	None	None	VehDet	VehDet	VehDet	VehDet
Index	17	2	0	0	20	12	11	27
	Pin k	Pin m	Pin n	Pin v	Pin x	Pin z		
Input	VehDet	VehDet	VehDet	None	VehDet	MaxII		
Index	30	31	32	0	28	2		

Rte. 271 (Pouncey Tract) & Ashland Rd

TS1 Inputs (Connector C)

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	Pin P	Pin R	Pin S	Pin T	Pin U	Pin V	Pin W	Pin X
Input	VehDet	PedDet	VehDet	PedDet	PedDet	VehDet	PedDet	VehDet
Index	5	5	6	6	7	7	8	16
	Pin Y	Pin Z	Pin a	Pin b	Pin m	Pin n	Pin p	Pin q
Input	Force	StopTm	MaxInh	None	VehDet	VehDet	VehDet	VehDet
Index	2	5	2	0	13	21	14	22
	Pin r	Pin s	Pin t	Pin u	Pin v	Pin EE		
Input	VehDet	VehDet	VehDet	RedRst	OmtRed	VehDet		
Index	23	24	8	2	2	15		

TS1 Inputs (Connector D)

	Pin A	Pin B	Pin C	Pin D	Pin E	Pin F	Pin G	Pin H
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Pin J	Pin K	Pin L	Pin M	Pin N	Pin P	Pin R	Pin S
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Pin T	Pin U	Pin V	Pin W	Pin X	Pin Y	Pin Z	Pin a
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Pin b	Pin c	Pin d	Pin e	Pin f	Pin g	Pin h	Pin i
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Pin j	Pin k	Pin m	Pin n	Pin p	Pin q	Pin r	Pin s
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Pin t	Pin u	Pin v	Pin w	Pin x	Pin y		
Input	None	None	None	None	None	None		
Index	0	0	0	0	0	0		

Rte. 271 (Pouncey Tract) & Ashland Rd

332/336 Outputs (Connector C1S)

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	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
Output	DntWlk	Walk	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn
Index	4	4	4	4	4	3	3	3
	Pin 10	Pin 11	Pin 12	Pin 13	Pin 15	Pin 16	Pin 17	Pin 18
Output	DntWlk	Walk	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn
Index	2	2	2	2	2	1	1	1
	Pin 19	Pin 20	Pin 21	Pin 22	Pin 23	Pin 24	Pin 25	Pin 26
Output	DntWlk	Walk	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn
Index	8	8	8	8	8	7	7	7
	Pin 27	Pin 28	Pin 29	Pin 30	Pin 31	Pin 32	Pin 33	Pin 34
Output	DntWlk	Walk	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn
Index	6	6	6	6	6	5	5	5
	Pin 35	Pin 36	Pin 37	Pin 38	Pin 83	Pin 84	Pin 85	Pin 86
Output	PedClr	PedClr	PedClr	PedClr	VehRed	VehRed	OlpRed	OlpYel
Index	2	6	4	8	0	0	12	12
	Pin 87	Pin 88	Pin 89	Pin 90	Pin 91	Pin 93	Pin 94	Pin 95
Output	OlpGrn	OlpRed	OlpYel	OlpGrn	VehRed	VehRed	OlpRed	OlpYel
Index	12	11	11	11	0	0	10	10
	Pin 96	Pin 97	Pin 98	Pin 99	Pin 100	Pin 101	Pin 102	Pin 103
Output	OlpGrn	OlpRed	OlpYel	OlpGrn	VehRed	VehRed	VehRed	VehRed
Index	10	9	9	9	0	0	0	0

332/336 Outputs (Connector C11S)

	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0

Rte. 271 (Pouncey Tract) & Ashland Rd

332/336 Inputs (Connector C1S)

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	Pin 39	Pin 40	Pin 41	Pin 42	Pin 43	Pin 44	Pin 45	Pin 46
Input	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	2	16	8	22	3	17	9	23
	Pin 47	Pin 48	Pin 49	Pin 50	Pin 51	Pin 52	Pin 53	Pin 54
Input	VehDet	VehDet	VehDet	VehDet	Preempt	Preempt	ManCtrl	None
Index	6	20	12	26	1	2	5	0
	Pin 55	Pin 56	Pin 57	Pin 58	Pin 59	Pin 60	Pin 61	Pin 62
Input	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	15	1	21	7	27	13	28	14
	Pin 63	Pin 64	Pin 65	Pin 66	Pin 67	Pin 68	Pin 69	Pin 70
Input	VehDet	VehDet	VehDet	VehDet	PedDet	PedDet	PedDet	PedDet
Index	4	18	10	24	2	6	4	8
	Pin 71	Pin 72	Pin 73	Pin 74	Pin 75	Pin 76	Pin 77	Pin 78
Input	Preempt	Preempt	Preempt	Preempt	None	VehDet	VehDet	VehDet
Index	3	4	5	6	0	5	19	11
	Pin 79	Pin 80	Pin 81	Pin 82				
Input	VehDet	IntAdv	LocFlash	StopTm				
Index	25	5	5	5				

332/336 Inputs (Connector C11S)

	Pin 10	Pin 11	Pin 12	Pin 13	Pin 15	Pin 16	Pin 17	Pin 18
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Pin 19	Pin 20	Pin 21	Pin 22	Pin 23	Pin 24	Pin 25	Pin 26
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Pin 27	Pin 28	Pin 29	Pin 30				
Input	None	None	None	None				
Index	0	0	0	0				

Rte. 271 (Pouncey Tract) & Ashland Rd

ITS Outputs (14 Pack-1)

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	OPTO 1	OPTO 2	OPTO 3	OPTO 4
Output	ManCtrl	IntAdv	StopTm	None
Index	5	5	5	0

	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Output	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn	VehRed	VehYel
Index	0	0	1	2	2	2	3	3
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Output	VehGrn	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn	VehRed
Index	3	4	4	4	0	0	5	6
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Output	VehYel	VehGrn	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn
Index	6	6	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Output	VehRed	VehYel	VehYel	OlpRed	OlpYel	OlpGrn	VehRed	VehYel
Index	1	1	101	0	0	0	5	5
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Output	VehYel	OlpRed	OlpYel	OlpGrn	VehRed	VehGrn	VehGrn	VehRed
Index	105	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Output	VehYel	VehGrn	VehRed	VehGrn	VehGrn	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Output	VehYel	VehGrn	VehRed	VehRed	VehRed	VehRed		
Index	0	0	0	0	0	255		

Rte. 271 (Pouncey Tract) & Ashland Rd

ITS Outputs (14 Pack-3)

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	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Output	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn	VehRed	VehYel
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Output	VehGrn	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Output	VehYel	VehGrn	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Output	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn	VehRed	VehYel
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Output	VehGrn	VehRed	VehYel	VehGrn	VehRed	VehGrn	VehGrn	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Output	VehYel	VehGrn	VehRed	VehGrn	VehGrn	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Output	VehYel	VehGrn	VehRed	VehRed	VehRed	VehRed		
Index	0	0	0	0	0	0		

Rte. 271 (Pouncey Tract) & Ashland Rd

ITS Outputs (6 Pack-1)

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	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed		
Index	0	0	0	0	0	0		

Rte. 271 (Pouncey Tract) & Ashland Rd

ITS Outputs (6 Pack-2)

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	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed		
Index	0	0	0	0	0	0		

Rte. 271 (Pouncey Tract) & Ashland Rd

ITS Outputs (6 Pack-3)

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	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed		
Index	0	0	0	0	0	0		

Rte. 271 (Pouncey Tract) & Ashland Rd

ITS Outputs (6 Pack-4)

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	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed		
Index	0	0	0	0	0	0		

Rte. 271 (Pouncey Tract) & Ashland Rd

ITS Inputs (Input Asm 1)

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	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Input	None	None	None	None	None	None	VehDet	VehDet
Index	0	0	0	0	0	0	2	2
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Input	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	6	6	1	0	5	0	3	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Input	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	4	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Input	VehDet	VehDet	Preempt	Preempt	Preempt	Preempt	None	None
Index	0	0	6	3	2	4	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Input	None	None	None	None	None	None		
Index	0	0	0	0	0	0		

Rte. 271 (Pouncey Tract) & Ashland Rd

ITS Inputs (Input Asm 2)

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	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Input	None	None	None	None	None	None	VehDet	VehDet
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Input	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Input	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Input	VehDet	VehDet	Preempt	Preempt	Preempt	Preempt	None	None
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Input	None	None	None	None	None	None		
Index	0	0	0	0	0	0		

Rte. 271 (Pouncey Tract) & Ashland Rd

ITS Inputs (Input Asm 3)

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	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Input	None	None	None	None	None	None		
Index	0	0	0	0	0	0		

Rte. 271 (Pouncey Tract) & Ashland Rd

ITS Inputs (Input Asm 4)

6/10/2025 11:37:59 AM

	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Input	None	None	None	None	None	None		
Index	0	0	0	0	0	0		

Rte. 271 (Pouncey Tract) & Ashland Rd

ITS Inputs (Input Asm 5)

6/10/2025 11:37:59 AM

	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Input	None	None	None	None	None	None		
Index	0	0	0	0	0	0		

Rte. 271 (Pouncey Tract) & Ashland Rd

Cabinet / MMU Configuration

6/10/2025 11:37:59 AM

Cabinet Type	ITS	MMU Channel Ignore	1-8	9-16
MMU Disable	No	Det BIU 1-No Fail Call		
		Det BIU 2-No Fail Call		
		Alt LS Flash		
		Alt Phase Flash		
		Alt Overlap Flash		
		Alt LRV Flash		

CMU Channel Ignore	1-8	9-16
	17-24	25-32
		9 1
Det IASM1-Det Diag	1-8	9-16
	17-24	
Det IASM2-Det Diag	1-8	9-16
	17-24	

Phase / Overlap Outputs

	Phase	Overlap
1	Normal	Normal
2	Normal	Normal
3	Normal	Normal
4	Normal	Normal
5	Normal	Normal
6	Normal	Normal
7	Normal	Normal
8	Normal	Normal
9	Normal	Normal
10	Normal	Normal
11	Normal	Normal
12	Normal	Normal
13	Normal	Normal
14	Normal	Normal
15	Normal	Normal
16	Normal	Normal

LRV Outputs

	LRV
1	2 Head
2	2 Head
3	2 Head
4	2 Head
5	2 Head
6	2 Head
7	2 Head
8	2 Head

Rte. 271 (Pouncey Tract) & Ashland Rd

Vehicle Detector 5

6/10/2025 11:37:59 AM

Delay Extend Carryover Queue Limit

Mode	No Disc	Added	Disabled	System	Enabled
------	---------	-------	----------	--------	---------

Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0
-----------	------	----------	---	--------	---	---------	---	-----------	---

Delay 2 0.0

Phases

1-8

9-16

Call Phases

				5			
--	--	--	--	---	--	--	--

Yellow Lock Phases

--	--	--	--	--	--	--	--

Red Lock Phases

--	--	--	--	--	--	--	--

Extend Phases

				5			
--	--	--	--	---	--	--	--

XSwitch Phases

--	--	--	--	--	--	--	--

Bike Call Phases

--	--	--	--	--	--	--	--

Vehicle Detector 6

Delay Extend Carryover Queue Limit

Mode	No Disc	Added	Disabled	System	Enabled
------	---------	-------	----------	--------	---------

Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0
-----------	------	----------	---	--------	---	---------	---	-----------	---

Delay 2	0.0
---------	-----

Phases

1-8

9-16

Call Phases

					6		
--	--	--	--	--	---	--	--

Yellow Lock Phases

--	--	--	--	--	--	--	--

Red Lock Phases

--	--	--	--	--	--	--	--

Extend Phases

					6		
--	--	--	--	--	---	--	--

XSwitch Phases

--	--	--	--	--	--	--	--

Bike Call Phases

--	--	--	--	--	--	--	--

Rte. 271 (Pouncey Tract) & Ashland Rd

Vehicle Detector 7

6/10/2025 11:37:59 AM

Delay Extend Carryover Queue Limit

Mode	No Disc	Added	Disabled	System	Enabled
------	---------	-------	----------	--------	---------

Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0
-----------	------	----------	---	--------	---	---------	---	-----------	---

Delay 2

0.0

Phases

1-8

9-16

Call Phases

						7	
--	--	--	--	--	--	---	--

Yellow Lock Phases

--	--	--	--	--	--	--	--

Red Lock Phases

--	--	--	--	--	--	--	--

Extend Phases

						7	
--	--	--	--	--	--	---	--

XSwitch Phases

--	--	--	--	--	--	--	--

Bike Call Phases

--	--	--	--	--	--	--	--

Vehicle Detector 8

Delay Extend Carryover Queue Limit

Mode	No Disc	Added	Disabled	System	Enabled
------	---------	-------	----------	--------	---------

Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0
-----------	------	----------	---	--------	---	---------	---	-----------	---

Delay 2	0.0
---------	-----

Phases

1-8

9-16

Call Phases

							8
--	--	--	--	--	--	--	---

Yellow Lock Phases

--	--	--	--	--	--	--	--

Red Lock Phases

--	--	--	--	--	--	--	--

Extend Phases

							8
--	--	--	--	--	--	--	---

XSwitch Phases

--	--	--	--	--	--	--	--

Bike Call Phases

--	--	--	--	--	--	--	--

Rte. 271 (Pouncey Tract) & Ashland Rd

Transit Detector 2

6/10/2025 11:37:59 AM

Delay	0.0	Extend	0.0	Travel Time	0
Delay2	0.0	Warning Ext	0.0	Travel Slack	0
Checkout Limit	0	Checkout Mode	Normal		
Checkin Fail	0	Checkout Fail	0	CO Fail Cnt	0
Diag Enable	No				
	1-8				
Call LRVs	2				
Checkout Dets					
	1-8				
Low Priority PE					
Call Phases					

Transit Detector 6

Delay	0.0	Extend	0.0	Travel Time	0
Delay2	0.0	Warning Ext	0.0	Travel Slack	0
Checkout Limit	0	Checkout Mode	Normal		
Checkin Fail	0	Checkout Fail	0	CO Fail Cnt	0
Diag Enable	No				
	1-8				
Call LRVs			6		
Checkout Dets					
	1-8				
Low Priority PE					
Call Phases					

Rte. 271 (Pouncey Tract) & Ashland Rd

Adaptive Priority - General/Local Detectors

6/10/2025 11:37:59 AM

Local Detector Slack	0
Remote Detector Slack	0
Local Adjust Threshold	0
Remote Adjust Threshold	0

Detector	1	2	3	4	5	6	7	8
Step (Base)	0	0	0	0	0	0	0	0
Max (Base)	0	0	0	0	0	0	0	0
Step (Alt 1)	0	0	0	0	0	0	0	0
Max (Alt 1)	0	0	0	0	0	0	0	0
Step (Alt 2)	0	0	0	0	0	0	0	0
Max (Alt 2)	0	0	0	0	0	0	0	0
Step (Alt 3)	0	0	0	0	0	0	0	0
Max (Alt 3)	0	0	0	0	0	0	0	0

Rte. 271 (Pouncey Tract) & Ashland Rd

Estimated Delay

6/10/2025 11:37:59 AM

Transit	1	2	3	4	5	6	7	8
Disable	No	No	No	No	No	No	No	No
Rem Phs	0	0	0	0	0	0	0	0
Loc Int	0	0	0	0	0	0	0	0
Loc TT	0	0	0	0	0	0	0	0
RM1 Int	0	0	0	0	0	0	0	0

Rte. 271 (Pouncey Tract) & Ashland Rd

Transit/LRV Startup/Options

6/10/2025 11:37:59 AM

No Startup Call

LRV 1-8

--	--	--	--	--	--	--	--

Warn Flash Rate

1 Hz

Rsrv Inh Mode

Seconds

Rte. 271 (Pouncey Tract) & Ashland Rd

Control / Config

6/10/2025 11:37:59 AM

Pattern Mode

Free

Manual Pattern

0

Manual Offset

0

Stop Time Input

Enabled

Aux Switch

None

5

DLS Mode

D4

Time Zone

Est (UTC-5)

GPS Thresh

0

Password Timeout

5

Maint Phs Recalls

1-8

9-16

Maint Ped Recalls

Serial 1 Port Configuration

Broadcast Plan/Sync

Disabled

Broadcast Time

00:00

Serial Rebroadcast

Disabled

Response

None

Serial 2 Port Configuration

Broadcast Plan/Sync

Disabled

Broadcast Time

00:00

Ethernet Port Configuration

Broadcast Plan/Sync

Disabled

Broadcast Time

00:00

Serial Rebroadcast

Disabled

Peer Configuration

Peer 1

0

Peer 2

0

Peer 3

0

Peer 4

0

Peer 5

0

Peer 6

0

Peer 7

0

Peer 8

0

Rte. 33 & Rte. 623 Ashland Rd

Phase Timing

6/10/2025 11:40:06 AM

[illegible]

Rte. 33 & Rte. 623 Ashland Rd

Phase Options

6/10/2025 11:40:06 AM

[illegible]

Rte. 33 & Rte. 623 Ashland Rd

Phase Startup Options

6/10/2025 11:40:06 AM

Startup Flash

0

Startup All Red

0

Mode

Yel->Red

Yellow

0.0

Phases

1-8

9-16

Startup Phases

	2			6												
--	---	--	--	---	--	--	--	--	--	--	--	--	--	--	--	--

Startup Yellow

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Startup Red

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Startup No Walk

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Startup Next

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Startup Yel Fls

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Startup FYA

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

No Veh Call

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

No Ped Call

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Phase Startup Timing

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Start Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Max Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Unit

Red Revert

4.0

Ped Protect

No

AdvFls in Flash

No

Rte. 33 & Rte. 623 Ashland Rd

Ring Sequence / Conflicting Phases

6/10/2025 11:40:06 AM

Ringgroup 1

[illegible]

Ringgroup 2

Custom Sequences

[illegible]

Conflicting Phases

1-8

9-16

[illegible]

Rte. 33 & Rte. 623 Ashland Rd

MCE Options

6/10/2025 11:40:06 AM

Phases	1-8								9-16							
MCE Ped Protect	1	2	3	4	5	6	7	8								
MCE Veh Call	1	2	3	4	5	6	7	8								
MCE Ped Call	1	2	3	4	5	6	7	8								
MCE Veh Omit																
MCE Ped Omit																
MCE Veh Sync	1	2	3	4	5	6	7	8								
MCE Ped Sync		2		4		6		8								
MCE Halt Don't Walk																

LRV Phases	1-8							
MCE LRV Term Early								

Rte. 33 & Rte. 623 Ashland Rd

FYA/FRA

6/10/2025 11:40:06 AM

FYA	1	2	3	4	5	6	7	8
Prot Phs	1	0	3	0	5	0	7	0
Opp Thru	2	0	4	0	6	0	8	0
Start Phs	0	0	0	0	0	0	0	0
Opp Ped	0	0	0	0	0	0	0	0
Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Skip Prot Red	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Head Mode	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1

Ped Hawk 1

Veh Phase	0		
Ped Phase	0		
Flash Yel	0.0	Dark Signal	Yes
Flash Delay	0.0	Flash Carryover	0.0
Green Mode	Normal		

Ped Hawk 2

Veh Phase	0		
Ped Phase	0		
Flash Yel	0.0	Dark Signal	Yes
Flash Delay	0.0	Flash Carryover	0.0
Green Mode	Normal		

Ped Hawk 3

Veh Phase	0		
Ped Phase	0		
Flash Yel	0.0	Dark Signal	Yes
Flash Delay	0.0	Flash Carryover	0.0
Green Mode	Normal		

Ped Hawk 4

Veh Phase	0		
Ped Phase	0		
Flash Yel	0.0	Dark Signal	Yes
Flash Delay	0.0	Flash Carryover	0.0
Green Mode	Normal		

Rte. 33 & Rte. 623 Ashland Rd

Coordination Options

6/10/2025 11:40:06 AM

Sync Time 00:00

RTC Set Time 00:00

Transition Mode	Best 2
-----------------	--------

Ped Adjust	None
------------	------

Trans Short % Trans Long % 35

Offset Reference	Lag FO
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
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91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99

Short Cycles

0

Dual Entry

Normal

Overlap F/O ☐ Disabled

Master Sync Mode	RTC
------------------	-----

Master Sync Length	0
--------------------	---

Adapt Thresh	0
--------------	---

Adapt Step	0
------------	---

External Plan Max	0
-------------------	---

Hardwire No Match	Sched

Hardwire Sync Fail	0
--------------------	---

Override Omit/Recall	No
----------------------	----

Phases 1-8

9-16

No Trans Recall							
-----------------	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Trans Ped Recall							
------------------	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Trans Phases							
--------------	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Rte. 33 & Rte. 623 Ashland Rd

Hardwire Plans

6/10/2025 11:40:06 AM

Hardwire	Plan Select							Pattern	Offset	Mode
Plan 1								0	0	Hardwire
Plan 2								0	0	Hardwire
Plan 3								0	0	Hardwire
Plan 4								0	0	Hardwire
Plan 5								0	0	Hardwire
Plan 6								0	0	Hardwire
Plan 7								0	0	Hardwire
Plan 8								0	0	Hardwire
Plan 9								0	0	Hardwire
Plan 10								0	0	Hardwire
Plan 11								0	0	Hardwire
Plan 12								0	0	Hardwire
Plan 13								0	0	Hardwire
Plan 14								0	0	Hardwire
Plan 15								0	0	Hardwire
Plan 16								0	0	Hardwire
Plan 17								0	0	Hardwire
Plan 18								0	0	Hardwire
Plan 19								0	0	Hardwire
Plan 20								0	0	Hardwire
Plan 21								0	0	Hardwire
Plan 22								0	0	Hardwire
Plan 23								0	0	Hardwire
Plan 24								0	0	Hardwire
Plan 25								0	0	Hardwire
Plan 26								0	0	Hardwire
Plan 27								0	0	Hardwire
Plan 28								0	0	Hardwire
Plan 29								0	0	Hardwire
Plan 30								0	0	Hardwire
Plan 31								0	0	Hardwire
Plan 32								0	0	Hardwire

Rte. 33 & Rte. 623 Ashland Rd

Soft Interconnect

6/10/2025 11:40:06 AM

Mode	Slave
------	-------

Remote Int Number

Yield Delay	0
-------------	---

Yield Duration	0
----------------	---

Permissive	0
------------	---

Local Hold Limit	0
------------------	---

Phases

1-8

9-16

Local Control Phases

Local Hold Phases

Local Perm Phases

Local Call Phases

Remote Perm Phases

Remote Hold Phases

Rte. 33 & Rte. 623 Ashland Rd

Preempt Inputs

6/10/2025 11:40:06 AM

Preempt Input	1	2	3	4	5	6	7	8	9	10
Delay	0	0	0	0	0	0	0	0	0	0
Checkout Limit	0	0	0	0	0	0	0	0	0	0
Locked	No	No	No	No	No	No	No	No	No	No
Interlock	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Input Number	0	0	0	0	0	0	0	0	0	0
Input Priority	All	Low	Low	Low	Low	Low	Low	Low	All	All
Delay Mode	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp

Preempt Priority

Preempt	1	2	3	4	5	6	7	8	9	10
Priority	0	0	0	0	0	0	0	0	0	0

Remote Preemption

Remote Preempt	RM 1	RM 2	RM 3	RM 4	RM 5	RM 6	RM 7	RM 8
Int Number	0	0	0	0	0	0	0	0
PE Number	0	0	0	0	0	0	0	0
Mode	Dis	Dis	Dis	Dis	Dis	Dis	Dis	Dis
Slack	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0
Alt TT 1	0	0	0	0	0	0	0	0
Alt TT 2	0	0	0	0	0	0	0	0
Alt TT 3	0	0	0	0	0	0	0	0
Alt TT 4	0	0	0	0	0	0	0	0
Alt TT 5	0	0	0	0	0	0	0	0
Alt TT 6	0	0	0	0	0	0	0	0
Alt TT 7	0	0	0	0	0	0	0	0

Rte. 33 & Rte. 623 Ashland Rd

Preempt 2 (Configuration)

6/10/2025 11:40:06 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8	
Enable Phases			LRV Disable		Max 0
Preempt Inputs	2		LRV Dwell Flash		
			LRV Omit		Delay 0
			LRV No Yel		

Preempt 2 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0
Omit Olap Grn Clr					Start Ped Clr	0
Phs EWlk to Grn			Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases			TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases			Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap			Exit Red	0.0		
TClr 1 Olap Ped			Min Dwell	12	Min Duration	0
TClr 2 Veh Phases			Dwell Extend	2		
TClr 2 Ped Phases			Max Dwell	80	Max Call	0
TClr 2 Olap			Reserve Inh Same	0		
TClr 2 Olap Ped			Reserve Inh All	0		
Init Dwell Phases			Delay	0		
Dwell Veh Phases	2	5	Phases/Overlaps	1-8	9-16	
Dwell Ped Phases			TClr 1 FR Olap			
Dwell Olap			TClr 2 FR Olap			
Dwell Olap Ped			Dwell FR Olap			
Exit Veh Phases			TClr 1 FYA			
Exit Ped Phases			TClr 2 FYA			
Exit Olap			Dwell FYA			
Exit Olap Ped						
Zero Phase Walk						
Zero Phase Ped Clr						
Zero Phase Green						
Zero Olap Walk						
Zero Olap Ped Clr						
Zero Olap Green						
Dwell-Phase Red						
Dwell-Phase Red Flash						
Dwell-Phase Yel Flash						
Dwell-Olap Red Flash						
Dwell-Olap Yel Flash						
Dwell-Ped Dark						
Dwell-Olap Ped Dark						

Rte. 33 & Rte. 623 Ashland Rd

Preempt 3 (Configuration)

6/10/2025 11:40:06 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8																																																		
Enable Phases	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																	LRV Disable	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																	Max	0
Preempt Inputs	<table><tr><td></td><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>		3															<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																	LRV Dwell Flash	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																		
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Preempt 3 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0																																																																																																																																																																																																																																														
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Rte. 33 & Rte. 623 Ashland Rd

Preempt 4 (Configuration)

6/10/2025 11:40:06 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8	
Enable Phases			LRV Disable		Max 0
Preempt Inputs	4		LRV Dwell Flash		
			LRV Omit		Delay 0
			LRV No Yel		

Preempt 4 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0
Omit Olap Grn Clr					Start Ped Clr	0
Phs EWlk to Grn			Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases			TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases			Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap			Exit Red	0.0		
TClr 1 Olap Ped			Min Dwell	12	Min Duration	0
TClr 2 Veh Phases			Dwell Extend	2		
TClr 2 Ped Phases			Max Dwell	80	Max Call	0
TClr 2 Olap			Reserve Inh Same	0		
TClr 2 Olap Ped			Reserve Inh All	0		
Init Dwell Phases			Delay	0		
Dwell Veh Phases	4	7	Phases/Overlaps	1-8	9-16	
Dwell Ped Phases			TClr 1 FR Olap			
Dwell Olap			TClr 2 FR Olap			
Dwell Olap Ped			Dwell FR Olap			
Exit Veh Phases			TClr 1 FYA			
Exit Ped Phases			TClr 2 FYA			
Exit Olap			Dwell FYA			
Exit Olap Ped						
Zero Phase Walk						
Zero Phase Ped Clr						
Zero Phase Green						
Zero Olap Walk						
Zero Olap Ped Clr						
Zero Olap Green						
Dwell-Phase Red						
Dwell-Phase Red Flash						
Dwell-Phase Yel Flash						
Dwell-Olap Red Flash						
Dwell-Olap Yel Flash						
Dwell-Ped Dark						
Dwell-Olap Ped Dark						

Rte. 33 & Rte. 623 Ashland Rd

Preempt 6 (Configuration)

6/10/2025 11:40:06 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8	
Enable Phases			LRV Disable		Max 0
Preempt Inputs	6		LRV Dwell Flash		
			LRV Omit		Delay 0
			LRV No Yel		

Preempt 6 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0
Omit Olap Grn Clr					Start Ped Clr	0
Phs EWlk to Grn			Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases			TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases			Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap			Exit Red	0.0		
TClr 1 Olap Ped			Min Dwell	12	Min Duration	0
TClr 2 Veh Phases			Dwell Extend	2		
TClr 2 Ped Phases			Max Dwell	80	Max Call	0
TClr 2 Olap			Reserve Inh Same	0		
TClr 2 Olap Ped			Reserve Inh All	0		
Init Dwell Phases			Delay	0		
Dwell Veh Phases	1	6	Phases/Overlaps	1-8	9-16	
Dwell Ped Phases			TClr 1 FR Olap			
Dwell Olap			TClr 2 FR Olap			
Dwell Olap Ped			Dwell FR Olap			
Exit Veh Phases			TClr 1 FYA			
Exit Ped Phases			TClr 2 FYA			
Exit Olap			Dwell FYA			
Exit Olap Ped						
Zero Phase Walk						
Zero Phase Ped Clr						
Zero Phase Green						
Zero Olap Walk						
Zero Olap Ped Clr						
Zero Olap Green						
Dwell-Phase Red						
Dwell-Phase Red Flash						
Dwell-Phase Yel Flash						
Dwell-Olap Red Flash						
Dwell-Olap Yel Flash						
Dwell-Ped Dark						
Dwell-Olap Ped Dark						

Rte. 33 & Rte. 623 Ashland Rd

Soft Preempt 1 - Misc

6/10/2025 11:40:06 AM

Dwell Step

0

Override SPE Flash

No

Override Steps

--	--	--	--	--	--	--	--

Phases/Overlaps

1-8

9-16

Dwl Phase Red

--	--	--	--	--	--	--	--

Dwl Phase Red Flash

--	--	--	--	--	--	--	--

Dwl Phase Yel Flash

--	--	--	--	--	--	--	--

Dwl Olap Red Flash

--	--	--	--	--	--	--	--

Dwl Ped Dark

--	--	--	--	--	--	--	--

Dwl Olap Ped Dark

--	--	--	--	--	--	--	--

Dwl Zero Phase Ped Clr

--	--	--	--	--	--	--	--

Dwl Zero Phase Green

Dwl Zero Olap Ped Clr

Dwl Zero Olap Green

[illegible]

Rte. 33 & Rte. 623 Ashland Rd

Soft Preempt 2 - Misc

6/10/2025 11:40:06 AM

Dwell Step

0

Override SPE Flash

No

Override Steps

--	--	--	--	--	--	--	--

Phases/Overlaps

1-8

9-16

Dwl Phase Red

--	--	--	--	--	--	--	--

Dwl Phase Red Flash

--	--	--	--	--	--	--	--

Dwl Phase Yel Flash

--	--	--	--	--	--	--	--

Dwl Olap Red Flash

--	--	--	--	--	--	--	--

Dwl Ped Dark

--	--	--	--	--	--	--	--

Dwl Olap Ped Dark

--	--	--	--	--	--	--	--

Dwl Zero Phase Ped Clr

--	--	--	--	--	--	--	--

Dwl Zero Phase Green

Dwl Zero Olap Ped Clr

Dwl Zero Olap Green

--	--	--	--	--	--	--	--

[illegible]

Rte. 33 & Rte. 623 Ashland Rd

Soft Preempt 3 - Misc

6/10/2025 11:40:06 AM

Dwell Step

0

Override SPE Flash

No

Override Steps

--	--	--	--	--	--	--	--

Phases/Overlaps

1-8

9-16

Dwl Phase Red

--	--	--	--	--	--	--	--

Dwl Phase Red Flash

--	--	--	--	--	--	--	--

Dwl Phase Yel Flash

--	--	--	--	--	--	--	--

Dwl Olap Red Flash

--	--	--	--	--	--	--	--

Dwl Ped Dark

--	--	--	--	--	--	--	--

Dwl Olap Ped Dark

--	--	--	--	--	--	--	--

Dwl Zero Phase Ped Clr

--	--	--	--	--	--	--	--

Dwl Zero Phase Green

Dwl Zero Olap Ped Clr

Dwl Zero Olap Green

--	--	--	--	--	--	--	--

[illegible]

Rte. 33 & Rte. 623 Ashland Rd

Soft Preempt 4 - Misc

6/10/2025 11:40:06 AM

Dwell Step	0	Override SPE Flash	No
------------	---	--------------------	----

Override Steps

--	--	--	--	--	--	--	--

Phases/Overlaps

1-8

9-16

Dwl Phase Red

Dwl Phase Red Flash

Dwl Phase Yel Flash

Dwl Olap Red Flash

Dwl Ped Dark

Dwl Olap Ped Dark

Dwl Zero Phase Ped Clr

Dwl Zero Phase Green

Dwl Zero Olap Ped Clr

Dwl Zero Olap Green

Rte. 33 & Rte. 623 Ashland Rd

TOD Pattern Events

6/10/2025 11:40:06 AM

	Time	DOW							Holidays							Mode	Pattern	Offset
Event 1	00:00															Free	0	0
Event 2	00:00															Sched	0	0
Event 3	00:00															Sched	0	0
Event 4	00:00															Sched	0	0
Event 5	00:00															Sched	0	0
Event 6	00:00															Sched	0	0
Event 7	00:00															Sched	0	0
Event 8	00:00															Sched	0	0
Event 9	00:00															Sched	0	0
Event 10	00:00															Sched	0	0
Event 11	00:00															Sched	0	0
Event 12	00:00															Sched	0	0
Event 13	00:00															Sched	0	0
Event 14	00:00															Sched	0	0
Event 15	00:00															Sched	0	0
Event 16	00:00															Sched	0	0
Event 17	00:00															Sched	0	0
Event 18	00:00															Sched	0	0
Event 19	00:00															Sched	0	0
Event 20	00:00															Sched	0	0
Event 21	00:00															Sched	0	0
Event 22	00:00															Sched	0	0
Event 23	00:00															Sched	0	0
Event 24	00:00															Sched	0	0
Event 25	00:00															Sched	0	0
Event 26	00:00															Sched	0	0
Event 27	00:00															Sched	0	0
Event 28	00:00															Sched	0	0
Event 29	00:00															Sched	0	0
Event 30	00:00															Sched	0	0
Event 31	00:00															Sched	0	0
Event 32	00:00															Sched	0	0

Rte. 33 & Rte. 623 Ashland Rd

Holidays

6/10/2025 11:40:06 AM

	Active Holidays							Month	Day	DOW							WOM
Date 1								0	0								0
Date 2								0	0								0
Date 3								0	0								0
Date 4								0	0								0
Date 5								0	0								0
Date 6								0	0								0
Date 7								0	0								0
Date 8								0	0								0
Date 9								0	0								0
Date 10								0	0								0
Date 11								0	0								0
Date 12								0	0								0
Date 13								0	0								0
Date 14								0	0								0
Date 15								0	0								0
Date 16								0	0								0
Date 17								0	0								0
Date 18								0	0								0
Date 19								0	0								0
Date 20								0	0								0
Date 21								0	0								0
Date 22								0	0								0
Date 23								0	0								0
Date 24								0	0								0
Date 25								0	0								0
Date 26								0	0								0
Date 27								0	0								0
Date 28								0	0								0
Date 29								0	0								0
Date 30								0	0								0
Date 31								0	0								0
Date 32								0	0								0

Rte. 33 & Rte. 623 Ashland Rd

Load Switch Outputs (BIU 1)

6/10/2025 11:40:06 AM

	LS 1	LS 2	LS 3	LS 4	LS 5	LS 6	LS 7	LS 8
Red Function	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Red Index	1	2	3	4	5	6	7	8
Yellow Function	VehYel	VehYel	VehYel	VehYel	VehYel	VehYel	VehYel	VehYel
Yellow Index	1	2	3	4	5	6	7	8
Green Function	VehGrn	VehGrn	VehGrn	VehGrn	VehGrn	VehGrn	VehGrn	VehGrn
Green Index	1	2	3	4	5	6	7	8

Load Switch Outputs (BIU 2)

	LS 9	LS 10	LS 11	LS 12	LS 13	LS 14	LS 15	LS 16
Red Function	OlpRed	OlpRed	OlpRed	OlpRed	DntWlk	DntWlk	DntWlk	DntWlk
Red Index	9	10	11	12	2	4	6	8
Yellow Function	OlpYel	OlpYel	OlpYel	OlpYel	PedClr	PedClr	PedClr	PedClr
Yellow Index	9	10	11	12	2	4	6	8
Green Function	OlpGrn	OlpGrn	OlpGrn	OlpGrn	Walk	Walk	Walk	Walk
Green Index	9	10	11	12	2	4	6	8

Rte. 33 & Rte. 623 Ashland Rd

T/F Outputs (BIU 1)

6/10/2025 11:40:06 AM

	I/O 10	I/O 11	I/O 12	I/O 13
Output	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0

T/F Outputs (BIU 2)

	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0

T/F Outputs (BIU 3)

	OUT 1	OUT 2	OUT 3	OUT 4	OUT 5	OUT 6	OUT 7	OUT 8
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	OUT 9	OUT 10	OUT 11	OUT 12	OUT 13	OUT 14	OUT 15	I/O 1
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6			
Output	VehRed	VehRed	VehRed	VehRed	VehRed			
Index	0	0	0	0	0			

T/F Outputs (BIU 4)

	OUT 1	OUT 2	OUT 3	OUT 4	OUT 5	OUT 6	OUT 7	OUT 8
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	OUT 9	OUT 10	OUT 11	OUT 12	OUT 13	OUT 14	OUT 15	I/O 1
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7	I/O 8	I/O 9
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0

Rte. 33 & Rte. 623 Ashland Rd

Detector Inputs (BIU 9)

6/10/2025 11:40:06 AM

	Det 1	Det 2	Det 3	Det 4	Det 5	Det 6	Det 7	Det 8
Function	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	0	0	0	0	0	0	0	0
	Det 9	Det 10	Det 11	Det 12	Det 13	Det 14	Det 15	Det 16
Function	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	0	0	0	0	0	0	0	0

Detector Inputs (BIU 10)

	Det 17	Det 18	Det 19	Det 20	Det 21	Det 22	Det 23	Det 24
Function	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	0	0	0	0	0	0	0	0
	Det 25	Det 26	Det 27	Det 28	Det 29	Det 30	Det 31	Det 32
Function	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	0	0	0	0	0	0	0	0

Rte. 33 & Rte. 623 Ashland Rd

Detector Inputs (BIU 11)

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	Det 33	Det 34	Det 35	Det 36	Det 37	Det 38	Det 39	Det 40
Function	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Det 41	Det 42	Det 43	Det 44	Det 45	Det 46	Det 47	Det 48
Function	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0

Detector Inputs (BIU 12)

	Det 49	Det 50	Det 51	Det 52	Det 53	Det 54	Det 55	Det 56
Function	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Det 57	Det 58	Det 59	Det 60	Det 61	Det 62	Det 63	Det 64
Function	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0

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T/F Inputs (BIU 1)

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	I/O 14	I/O 15	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21
Input	Preempt	Preempt	None	None	AutoFlash	None	ManCtrl	IntAdv
Index	1	2	0	0	5	0	5	5
	I/O 22	I/O 23	I/O 24	IN 1	IN 2	IN 3	IN 4	IN 5
Input	MinRec	ExtStr	None	StopTm	StopTm	MaxII	MaxII	Force
Index	5	5	0	5	5	1	2	1
	IN 6	IN 7	IN 8	OPTO 1	OPTO 2	OPTO 3	OPTO 4	
Input	Force	None	None	PedDet	PedDet	PedDet	PedDet	
Index	2	0	0	1	2	3	4	

T/F Inputs (BIU 2)

	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Input	Preempt	Preempt	Preempt	Preempt	None	None	None	None
Index	3	4	5	6	0	0	0	0
	I/O 24	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7
Input	None	MaxInh	MaxInh	LocFlash	MMUFlash	Alarm	Alarm	None
Index	0	1	2	5	5	1	2	0
	IN 8	OPTO 1	OPTO 2	OPTO 3	OPTO 4			
Input	None	PedDet	PedDet	PedDet	PedDet			
Index	0	5	6	7	8			

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T/F Inputs (BIU 3)

6/10/2025 11:40:06 AM

	I/O 7	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 15	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 23	I/O 24	IN 1	IN 2	IN 3	IN 4	IN 5	IN 6
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	IN 7	IN 8	OPTO 1	OPTO 2	OPTO 3	OPTO 4		
Input	None	None	None	None	None	None		
Index	0	0	0	0	0	0		

T/F Inputs (BIU 4)

	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15	I/O 16	I/O 17
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23	I/O 24	IN 1
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	IN 2	IN 3	IN 4	IN 5	IN 6	IN 7	IN 8	OPTO 1
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	OPTO 2	OPTO 3	OPTO 4					
Input	None	None	None					
Index	0	0	0					

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TS1 Outputs (Connector A)

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	Pin D	Pin E	Pin F	Pin G	Pin H	Pin J	Pin X	Pin Y
Output	VehRed	VehRed	VehRed	DntWlk	PedClr	Walk	VehRed	VehRed
Index	1	0	2	2	2	2	0	0
	Pin Z	Pin a	Pin b	Pin c	Pin d	Pin e	Pin r	Pin s
Output	VehYel	VehRed	VehYel	VehGrn	PhsChk	PhsOn	VehRed	VehGrn
Index	1	0	2	2	2	2	0	1
	Pin t	Pin u	Pin CC	Pin DD				
Output	VehRed	PhsChk	VehRed	PhsOn				
Index	0	1	0	1				

TS1 Outputs (Connector B)

	Pin A	Pin C	Pin D	Pin E	Pin F	Pin G	Pin H	Pin J
Output	PhsNxt	PhsNxt	VehGrn	VehYel	VehRed	VehRed	PedClr	DntWlk
Index	1	2	3	3	3	4	4	4
	Pin K	Pin Y	Pin Z	Pin a	Pin b	Pin c	Pin d	Pin e
Output	PhsChk	VehRed	VehRed	VehRed	VehGrn	VehYel	Walk	PhsOn
Index	4	0	0	0	4	4	4	4
	Pin f	Pin p	Pin q	Pin r	Pin s	Pin t	Pin u	Pin w
Output	PhsNxt	OlpYel	OlpRed	PhsChk	PhsOn	PhsNxt	OlpRed	OlpGrn
Index	4	9	9	3	3	3	12	12
	Pin AA	Pin BB	Pin CC	Pin DD	Pin EE	Pin FF	Pin GG	Pin HH
Output	OlpGrn	OlpYel	OlpRed	OlpRed	OlpYel	OlpGrn	OlpGrn	OlpYel
Index	9	10	10	11	12	11	10	11

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TS1 Outputs (Connector C)

6/10/2025 11:40:06 AM

	Pin A	Pin B	Pin C	Pin D	Pin E	Pin F	Pin G	Pin H
Output	VehRed	VehRed	DntWlk	VehRed	VehYel	VehRed	VehRed	VehRed
Index	0	0	8	8	7	7	6	5
	Pin J	Pin K	Pin L	Pin M	Pin N	Pin c	Pin d	Pin e
Output	VehYel	VehRed	VehRed	PhsNxt	PhsOn	VehRed	Walk	VehYel
Index	5	0	0	5	5	0	8	8
	Pin f	Pin g	Pin h	Pin i	Pin j	Pin k	Pin w	Pin x
Output	VehGrn	VehGrn	VehYel	VehGrn	VehRed	PhsChk	PedClr	VehGrn
Index	7	6	6	5	0	5	8	8
	Pin y	Pin z	Pin AA	Pin BB	Pin CC	Pin DD	Pin FF	Pin GG
Output	VehRed	DntWlk	PedClr	PhsChk	PhsOn	PhsNxt	PhsChk	PhsOn
Index	0	6	6	6	6	6	8	8
	Pin HH	Pin JJ	Pin KK	Pin LL	Pin MM	Pin NN	Pin PP	
Output	PhsNxt	VehRed	VehRed	Walk	PhsChk	PhsOn	PhsNxt	
Index	8	0	0	6	7	7	7	

TS1 Outputs (Connector D)

	Pin z	Pin AA	Pin BB	Pin CC	Pin DD	Pin EE	Pin FF	Pin GG
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	Pin HH	Pin JJ	Pin LL					
Output	VehRed	VehRed	VehRed					
Index	0	0	0					

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TS1 Inputs (Connector A)

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	Pin K	Pin L	Pin M	Pin N	Pin P	Pin R	Pin S	Pin T
Input	VehDet	PedDet	VehDet	StopTm	MaxInh	ExtStr	IntAdv	None
Index	2	2	10	5	1	1	1	0
	Pin f	Pin g	Pin h	Pin i	Pin j	Pin k	Pin m	Pin n
Input	VehDet	PedDet	VehDet	Force	MinRec	ManCtrl	CNA	None
Index	1	1	9	1	1	1	1	0
	Pin q	Pin v	Pin w	Pin x	Pin y	Pin z	Pin AA	Pin BB
Input	None	VehDet	OmtRed	RedRst	None	CNA	None	None
Index	0	26	1	1	0	2	0	0
	Pin EE	Pin FF	Pin GG	Pin HH				
Input	VehDet	PedRcy	MaxII	None				
Index	25	1	1	0				

TS1 Inputs (Connector B)

	Pin B	Pin L	Pin M	Pin N	Pin P	Pin R	Pin S	Pin T
Input	None	VehDet	PedDet	VehDet	PedDet	VehDet	VehDet	VehDet
Index	0	4	4	3	3	19	18	29
	Pin U	Pin V	Pin W	Pin X	Pin g	Pin h	Pin i	Pin j
Input	VehDet	PedRcy	None	None	VehDet	VehDet	VehDet	VehDet
Index	17	2	0	0	20	12	11	27
	Pin k	Pin m	Pin n	Pin v	Pin x	Pin z		
Input	VehDet	VehDet	VehDet	None	VehDet	MaxII		
Index	30	31	32	0	28	2		

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TS1 Inputs (Connector C)

6/10/2025 11:40:06 AM

	Pin P	Pin R	Pin S	Pin T	Pin U	Pin V	Pin W	Pin X
Input	VehDet	PedDet	VehDet	PedDet	PedDet	VehDet	PedDet	VehDet
Index	5	5	6	6	7	7	8	16
	Pin Y	Pin Z	Pin a	Pin b	Pin m	Pin n	Pin p	Pin q
Input	Force	StopTm	MaxInh	None	VehDet	VehDet	VehDet	VehDet
Index	2	5	2	0	13	21	14	22
	Pin r	Pin s	Pin t	Pin u	Pin v	Pin EE		
Input	VehDet	VehDet	VehDet	RedRst	OmtRed	VehDet		
Index	23	24	8	2	2	15		

TS1 Inputs (Connector D)

	Pin A	Pin B	Pin C	Pin D	Pin E	Pin F	Pin G	Pin H
Input	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	56	62	63	60	61	57	58	59
	Pin J	Pin K	Pin L	Pin M	Pin N	Pin P	Pin R	Pin S
Input	None	Preempt	Preempt	Preempt	Preempt	MMUFlash	LocFlash	Alarm
Index	0	1	2	3	4	1	1	1
	Pin T	Pin U	Pin V	Pin W	Pin X	Pin Y	Pin Z	Pin a
Input	Alarm	Alarm	Alarm	Preempt	Preempt	None	None	None
Index	2	3	4	5	6	0	0	0
	Pin b	Pin c	Pin d	Pin e	Pin f	Pin g	Pin h	Pin i
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Pin j	Pin k	Pin m	Pin n	Pin p	Pin q	Pin r	Pin s
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Pin t	Pin u	Pin v	Pin w	Pin x	Pin y		
Input	None	None	None	None	None	None		
Index	0	0	0	0	0	0		

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332/336 Outputs (Connector C1S)

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	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
Output	DntWlk	Walk	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn
Index	0	0	0	0	0	0	0	0
	Pin 10	Pin 11	Pin 12	Pin 13	Pin 15	Pin 16	Pin 17	Pin 18
Output	DntWlk	Walk	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn
Index	0	0	0	0	0	0	0	0
	Pin 19	Pin 20	Pin 21	Pin 22	Pin 23	Pin 24	Pin 25	Pin 26
Output	DntWlk	Walk	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn
Index	0	0	0	0	0	0	0	0
	Pin 27	Pin 28	Pin 29	Pin 30	Pin 31	Pin 32	Pin 33	Pin 34
Output	DntWlk	Walk	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn
Index	0	0	0	0	0	0	0	0
	Pin 35	Pin 36	Pin 37	Pin 38	Pin 83	Pin 84	Pin 85	Pin 86
Output	PedClr	PedClr	PedClr	PedClr	VehRed	VehRed	OlpRed	OlpYel
Index	0	0	0	0	0	0	0	0
	Pin 87	Pin 88	Pin 89	Pin 90	Pin 91	Pin 93	Pin 94	Pin 95
Output	OlpGrn	OlpRed	OlpYel	OlpGrn	VehRed	VehRed	OlpRed	OlpYel
Index	0	0	0	0	0	0	0	0
	Pin 96	Pin 97	Pin 98	Pin 99	Pin 100	Pin 101	Pin 102	Pin 103
Output	OlpGrn	OlpRed	OlpYel	OlpGrn	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0

332/336 Outputs (Connector C11S)

	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0

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332/336 Inputs (Connector C1S)

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	Pin 39	Pin 40	Pin 41	Pin 42	Pin 43	Pin 44	Pin 45	Pin 46
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Pin 47	Pin 48	Pin 49	Pin 50	Pin 51	Pin 52	Pin 53	Pin 54
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Pin 55	Pin 56	Pin 57	Pin 58	Pin 59	Pin 60	Pin 61	Pin 62
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Pin 63	Pin 64	Pin 65	Pin 66	Pin 67	Pin 68	Pin 69	Pin 70
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Pin 71	Pin 72	Pin 73	Pin 74	Pin 75	Pin 76	Pin 77	Pin 78
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Pin 79	Pin 80	Pin 81	Pin 82				
Input	None	None	None	None				
Index	0	0	0	0				

332/336 Inputs (Connector C11S)

	Pin 10	Pin 11	Pin 12	Pin 13	Pin 15	Pin 16	Pin 17	Pin 18
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Pin 19	Pin 20	Pin 21	Pin 22	Pin 23	Pin 24	Pin 25	Pin 26
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	Pin 27	Pin 28	Pin 29	Pin 30				
Input	None	None	None	None				
Index	0	0	0	0				

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ITS Outputs (14 Pack-1)

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	OPTO 1	OPTO 2	OPTO 3	OPTO 4
Output	ManCtrl	IntAdv	StopTm	None
Index	5	5	5	0

	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Output	VehRed	VehYel	VehYel	VehRed	VehYel	VehGrn	VehRed	VehYel
Index	1	1	101	2	2	2	3	3
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Output	VehYel	VehRed	VehYel	VehGrn	VehRed	VehYel	VehYel	VehRed
Index	103	4	4	4	5	5	105	6
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Output	VehYel	VehGrn	VehRed	VehYel	VehYel	VehRed	VehYel	VehGrn
Index	6	6	7	7	107	8	8	8
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Output	OlpRed	OlpYel	OlpGrn	OlpRed	OlpYel	OlpGrn	OlpRed	OlpYel
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Output	OlpGrn	OlpRed	OlpYel	OlpGrn	DntWlk	VehGrn	Walk	DntWlk
Index	0	0	0	0	0	1	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Output	VehGrn	Walk	DntWlk	VehGrn	Walk	DntWlk	VehGrn	Walk
Index	3	0	0	5	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Output	VehGrn	VehGrn	VehRed	VehRed	VehRed	VehRed		
Index	7	0	0	0	0	255		

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ITS Outputs (14 Pack-3)

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	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Output	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn	VehRed	VehYel
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Output	VehGrn	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Output	VehYel	VehGrn	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Output	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn	VehRed	VehYel
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Output	VehGrn	VehRed	VehYel	VehGrn	VehRed	VehYel	VehGrn	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Output	VehYel	VehGrn	VehRed	VehYel	VehGrn	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Output	VehYel	VehGrn	VehRed	VehRed	VehRed	VehRed		
Index	0	0	0	0	0	0		

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ITS Outputs (6 Pack-1)

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	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed		
Index	0	0	0	0	0	0		

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ITS Outputs (6 Pack-2)

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	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed		
Index	0	0	0	0	0	0		

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ITS Outputs (6 Pack-3)

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	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed		
Index	0	0	0	0	0	0		

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ITS Outputs (6 Pack-4)

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	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Output	VehRed	VehRed	VehRed	VehRed	VehRed	VehRed		
Index	0	0	0	0	0	0		

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ITS Inputs (Input Asm 1)

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	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Input	ManCtrl	IntAdv	StopTm	None	None	None	VehDet	VehDet
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Input	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Input	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	0	0	4	7	3	8	2	5
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Input	VehDet	VehDet	Preempt	Preempt	Preempt	Preempt	None	None
Index	1	6	6	3	2	4	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Input	None	None	None	None	None	None		
Index	0	0	0	0	0	0		

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ITS Inputs (Input Asm 2)

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	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Input	None	None	None	None	None	None	None	VehDet
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Input	None	None	None	None	None	None		
Index	0	0	0	0	0	0		

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ITS Inputs (Input Asm 3)

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	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Input	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet	VehDet
Index	1	2	3	4	5	6	7	8
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Input	PedDet	PedDet	PedDet	PedDet	Preempt	Preempt	Preempt	Preempt
Index	2	4	6	3	2	3	4	6
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Input	None	None	None	None	None	None		
Index	0	0	0	0	0	0		

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ITS Inputs (Input Asm 4)

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	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Input	None	None	None	None	None	None		
Index	0	0	0	0	0	0		

Rte. 33 & Rte. 623 Ashland Rd

ITS Inputs (Input Asm 5)

6/10/2025 11:40:06 AM

	I/O 0	I/O 1	I/O 2	I/O 3	I/O 4	I/O 5	I/O 6	I/O 7
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 8	I/O 9	I/O 10	I/O 11	I/O 12	I/O 13	I/O 14	I/O 15
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 16	I/O 17	I/O 18	I/O 19	I/O 20	I/O 21	I/O 22	I/O 23
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 24	I/O 25	I/O 26	I/O 27	I/O 28	I/O 29	I/O 30	I/O 31
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 32	I/O 33	I/O 34	I/O 35	I/O 36	I/O 37	I/O 38	I/O 39
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 40	I/O 41	I/O 42	I/O 43	I/O 44	I/O 45	I/O 46	I/O 47
Input	None	None	None	None	None	None	None	None
Index	0	0	0	0	0	0	0	0
	I/O 48	I/O 49	I/O 50	I/O 51	I/O 52	I/O 53		
Input	None	None	None	None	None	None		
Index	0	0	0	0	0	0		

Rte. 33 & Rte. 623 Ashland Rd

Cabinet / MMU Configuration

6/10/2025 11:40:06 AM

Cabinet Type	ITS	MMU Channel Ignore	1-8	9-16
MMU Disable	No	Det BIU 1-No Fail Call		
		Det BIU 2-No Fail Call		
		Alt LS Flash		
		Alt Phase Flash		
		Alt Overlap Flash		
		Alt LRV Flash		

CMU Channel Ignore	1-8	9-16
	17-24	25-32 9 0 1 2
Det IASM1-Det Diag	1-8	9-16
	17-24	
Det IASM2-Det Diag	1-8	9-16
	17-24	

Phase / Overlap Outputs

	Phase	Overlap
1	Normal	Normal
2	Normal	Normal
3	Normal	Normal
4	Normal	Normal
5	Normal	Normal
6	Normal	Normal
7	Normal	Normal
8	Normal	Normal
9	Normal	Normal
10	Normal	Normal
11	Normal	Normal
12	Normal	Normal
13	Normal	Normal
14	Normal	Normal
15	Normal	Normal
16	Normal	Normal

LRV Outputs

	LRV
1	2 Head
2	2 Head
3	2 Head
4	2 Head
5	2 Head
6	2 Head
7	2 Head
8	2 Head

Rte. 33 & Rte. 623 Ashland Rd

Vehicle Detector 1

6/10/2025 11:40:06 AM

Delay Extend Carryover Queue Limit

Mode	No Disc	Added	Disabled	System	Enabled
------	---------	-------	----------	--------	---------

Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0
-----------	------	----------	---	--------	---	---------	---	-----------	---

Delay 2	0.0
---------	-----

Phases

1-8

9-16

Call Phases

1							
---	--	--	--	--	--	--	--

Yellow Lock Phases

--	--	--	--	--	--	--	--

Red Lock Phases

--	--	--	--	--	--	--	--

Extend Phases

1							
---	--	--	--	--	--	--	--

XSwitch Phases

--	--	--	--	--	--	--	--

Bike Call Phases

--	--	--	--	--	--	--	--

Vehicle Detector 2

Delay Extend Carryover Queue Limit

Mode	No Disc	Added	Disabled	System	Enabled
------	---------	-------	----------	--------	---------

Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0
-----------	------	----------	---	--------	---	---------	---	-----------	---

Delay 2	0.0
---------	-----

Phases

1-8

9-16

Call Phases

	2						
--	---	--	--	--	--	--	--

Yellow Lock Phases

--	--	--	--	--	--	--	--

Red Lock Phases

--	--	--	--	--	--	--	--

Extend Phases

	2						
--	---	--	--	--	--	--	--

XSwitch Phases

--	--	--	--	--	--	--	--

Bike Call Phases

--	--	--	--	--	--	--	--

Rte. 33 & Rte. 623 Ashland Rd

Vehicle Detector 5

6/10/2025 11:40:06 AM

Delay Extend Carryover Queue Limit

Mode	No Disc	Added	Disabled	System	Enabled
------	---------	-------	----------	--------	---------

Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0
-----------	------	----------	---	--------	---	---------	---	-----------	---

Delay 2

0.0

Phases	1-8	9-16
--------	-----	------

Call Phases				5								
Yellow Lock Phases												
Red Lock Phases												
Extend Phases				5								
XSwitch Phases												
Bike Call Phases												

Vehicle Detector 6

Delay Extend Carryover Queue Limit

Mode	No Disc	Added	Disabled	System	Enabled
------	---------	-------	----------	--------	---------

Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0
-----------	------	----------	---	--------	---	---------	---	-----------	---

Delay 2	0.0
---------	-----

Phases	1-8	9-16
--------	-----	------

Call Phases					6							
Yellow Lock Phases												
Red Lock Phases												
Extend Phases					6							
XSwitch Phases												
Bike Call Phases												

Rte. 33 & Rte. 623 Ashland Rd

Vehicle Detector 7

6/10/2025 11:40:06 AM

Delay Extend Carryover Queue Limit

Mode	No Disc	Added	Disabled	System	Enabled
------	---------	-------	----------	--------	---------

Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0
-----------	------	----------	---	--------	---	---------	---	-----------	---

Delay 2

0.0

Phases

1-8

9-16

Call Phases

						7	
--	--	--	--	--	--	---	--

Yellow Lock Phases

--	--	--	--	--	--	--	--

Red Lock Phases

--	--	--	--	--	--	--	--

Extend Phases

						7	
--	--	--	--	--	--	---	--

XSwitch Phases

--	--	--	--	--	--	--	--

Bike Call Phases

--	--	--	--	--	--	--	--

Vehicle Detector 8

Delay Extend Carryover Queue Limit

Mode	No Disc	Added	Disabled	System	Enabled
------	---------	-------	----------	--------	---------

Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0
-----------	------	----------	---	--------	---	---------	---	-----------	---

Delay 2	0.0
---------	-----

Phases

1-8

9-16

Call Phases

							8
--	--	--	--	--	--	--	---

Yellow Lock Phases

--	--	--	--	--	--	--	--

Red Lock Phases

--	--	--	--	--	--	--	--

Extend Phases

							8
--	--	--	--	--	--	--	---

XSwitch Phases

--	--	--	--	--	--	--	--

Bike Call Phases

--	--	--	--	--	--	--	--

Rte. 33 & Rte. 623 Ashland Rd

Transit Detector 2

6/10/2025 11:40:06 AM

Delay	0.0	Extend	0.0	Travel Time	0
Delay2	0.0	Warning Ext	0.0	Travel Slack	0
Checkout Limit	0	Checkout Mode	Normal		
Checkin Fail	0	Checkout Fail	0	CO Fail Cnt	0
Diag Enable	No				
	1-8				
Call LRVs	2				
Checkout Dets					
	1-8				
Low Priority PE					
Call Phases					

Transit Detector 6

Delay	0.0	Extend	0.0	Travel Time	0
Delay2	0.0	Warning Ext	0.0	Travel Slack	0
Checkout Limit	0	Checkout Mode	Normal		
Checkin Fail	0	Checkout Fail	0	CO Fail Cnt	0
Diag Enable	No				
	1-8				
Call LRVs			6		
Checkout Dets					
	1-8				
Low Priority PE					
Call Phases					

Rte. 33 & Rte. 623 Ashland Rd

Adaptive Priority - General/Local Detectors

6/10/2025 11:40:06 AM

Local Detector Slack	0
Remote Detector Slack	0
Local Adjust Threshold	0
Remote Adjust Threshold	0

Detector	1	2	3	4	5	6	7	8
Step (Base)	0	0	0	0	0	0	0	0
Max (Base)	0	0	0	0	0	0	0	0
Step (Alt 1)	0	0	0	0	0	0	0	0
Max (Alt 1)	0	0	0	0	0	0	0	0
Step (Alt 2)	0	0	0	0	0	0	0	0
Max (Alt 2)	0	0	0	0	0	0	0	0
Step (Alt 3)	0	0	0	0	0	0	0	0
Max (Alt 3)	0	0	0	0	0	0	0	0

Rte. 33 & Rte. 623 Ashland Rd

Estimated Delay

6/10/2025 11:40:06 AM

Transit	1	2	3	4	5	6	7	8
Disable	No	No	No	No	No	No	No	No
Rem Phs	0	0	0	0	0	0	0	0
Loc Int	0	0	0	0	0	0	0	0
Loc TT	0	0	0	0	0	0	0	0
RM1 Int	0	0	0	0	0	0	0	0

Rte. 33 & Rte. 623 Ashland Rd

Transit/LRV Startup/Options

6/10/2025 11:40:06 AM

No Startup Call

LRV 1-8

--	--	--	--	--	--	--	--

Warn Flash Rate

1 Hz

Rsrv Inh Mode

Seconds

Rte. 33 & Rte. 623 Ashland Rd

Control / Config

6/10/2025 11:40:06 AM

Pattern Mode

Free

Manual Pattern

0

Manual Offset

0

Stop Time Input

Enabled

Aux Switch

StopTm

5

DLS Mode

D4

Time Zone

Est (UTC-5)

GPS Thresh

0

Password Timeout

5

Maint Phs Recalls

1-8

9-16

Maint Ped Recalls

Serial 1 Port Configuration

Broadcast Plan/Sync

Disabled

Broadcast Time

00:00

Serial Rebroadcast

Disabled

Response

None

Serial 2 Port Configuration

Broadcast Plan/Sync

Disabled

Broadcast Time

00:00

Ethernet Port Configuration

Broadcast Plan/Sync

Disabled

Broadcast Time

00:00

Serial Rebroadcast

Disabled

Peer Configuration

Peer 1

0

Peer 2

0

Peer 3

0

Peer 4

0

Peer 5

0

Peer 6

0

Peer 7

0

Peer 8

0

Appendix D
SYNCHRO & SimTraffic Analysis
Of 2025 Existing Conditions

Existing AM Peak
1: Pouncey Tract Road & Ashland Road

AM Peak
Queues



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	247	240	65	128	59	290
v/c Ratio	0.81	0.91	0.26	0.33	0.18	0.75
Control Delay	64.3	82.5	29.8	37.8	28.4	55.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.3	82.5	29.8	37.8	28.4	55.5
Queue Length 50th (ft)	178	189	35	76	32	209
Queue Length 95th (ft)	#345	#421	68	139	64	324
Internal Link Dist (ft)	2680	6753		1193		1824
Turn Bay Length (ft)			200		340	
Base Capacity (vph)	374	265	349	575	470	668
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.91	0.19	0.22	0.13	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Existing AM Peak
1: Pouncey Tract Road & Ashland Road

AM Peak
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↗	↖		↗	↖	
Traffic Volume (vph)	67	115	47	52	146	25	60	80	39	55	185	85
Future Volume (vph)	67	115	47	52	146	25	60	80	39	55	185	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.98		1.00	0.95		1.00	0.95	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1564			1669		1641	1726		1570	1777	
Flt Permitted		0.82			0.65		0.33	1.00		0.67	1.00	
Satd. Flow (perm)		1296			1090		575	1726		1115	1777	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	72	124	51	56	157	27	65	86	42	59	199	91
RTOR Reduction (vph)	0	6	0	0	3	0	0	13	0	0	12	0
Lane Group Flow (vph)	0	241	0	0	237	0	65	115	0	59	278	0
Heavy Vehicles (%)	10%	19%	19%	6%	13%	8%	10%	3%	8%	15%	0%	6%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3			2			6		
Actuated Green, G (s)		27.1			28.3		33.1	25.5		31.7	24.8	
Effective Green, g (s)		27.1			28.3		33.1	25.5		31.7	24.8	
Actuated g/C Ratio		0.23			0.24		0.28	0.21		0.27	0.21	
Clearance Time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Vehicle Extension (s)		3.0			3.0		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)		295			259		228	370		324	371	
v/s Ratio Prot							c0.02	0.07		0.01	c0.16	
v/s Ratio Perm		c0.19			c0.22		0.06			0.04		
v/c Ratio		0.82			0.91		0.29	0.31		0.18	0.75	
Uniform Delay, d1		43.4			44.0		32.7	39.2		33.1	44.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		15.8			33.9		0.7	0.7		0.3	8.6	
Delay (s)		59.3			77.9		33.4	39.9		33.4	52.6	
Level of Service		E			E		C	D		C	D	
Approach Delay (s)		59.3			77.9			37.7			49.4	
Approach LOS		E			E			D			D	
Intersection Summary												
HCM 2000 Control Delay			56.2			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			118.7			Sum of lost time (s)			30.9			
Intersection Capacity Utilization			57.7%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

Existing AM Peak
2: Driveway/Abner Church Road & Ashland Road

AM Peak
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	158	0	0	177	14	0	0	0	17	0	2
Future Volume (Veh/h)	2	158	0	0	177	14	0	0	0	17	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	3	200	0	0	224	18	0	0	0	22	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	242			200			442	448	200	439	439	233
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	242			200			442	448	200	439	439	233
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	96	100	100
cM capacity (veh/h)	1336			1384			526	508	846	531	514	811
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	203	242	0	25								
Volume Left	3	0	0	22								
Volume Right	0	18	0	3								
cSH	1336	1384	1700	554								
Volume to Capacity	0.00	0.00	0.00	0.05								
Queue Length 95th (ft)	0	0	0	4								
Control Delay (s)	0.1	0.0	0.0	11.8								
Lane LOS	A		A	B								
Approach Delay (s)	0.1	0.0	0.0	11.8								
Approach LOS			A	B								
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			20.2%		ICU Level of Service				A			
Analysis Period (min)			15									

Existing AM Peak
3: Cauthorne Road/Private Access & Ashland Road

AM Peak
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	198	6	131	224	6	2	1	70	0	3	2
Future Volume (Veh/h)	5	198	6	131	224	6	2	1	70	0	3	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	5	206	6	136	233	6	2	1	73	0	3	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	239			212			730	730	209	800	730	236
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	239			212			730	730	209	800	730	236
tC, single (s)	4.7			4.1			7.1	6.5	6.2	7.1	7.2	6.2
tC, 2 stage (s)												
tF (s)	2.7			2.2			3.5	4.0	3.3	3.5	4.6	3.3
p0 queue free %	100			90			99	100	91	100	99	100
cM capacity (veh/h)	1052			1364			310	315	834	256	252	808
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	217	375	76	5								
Volume Left	5	136	2	0								
Volume Right	6	6	73	2								
cSH	1052	1364	782	348								
Volume to Capacity	0.00	0.10	0.10	0.01								
Queue Length 95th (ft)	0	8	8	1								
Control Delay (s)	0.2	3.5	10.1	15.5								
Lane LOS	A	A	B	C								
Approach Delay (s)	0.2	3.5	10.1	15.5								
Approach LOS			B	C								
Intersection Summary												
Average Delay			3.3									
Intersection Capacity Utilization			46.7%		ICU Level of Service				A			
Analysis Period (min)			15									

Existing AM Peak
4: Route 33 & Ashland Road

AM Peak
Queues

									
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	55	206	121	235	38	180	94	22	556
v/c Ratio	0.17	0.70	0.34	0.58	0.17	0.26	0.12	0.04	0.83
Control Delay	24.1	51.6	26.0	42.7	17.3	24.1	0.3	15.8	43.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	51.6	26.0	42.7	17.3	24.1	0.3	15.8	43.3
Queue Length 50th (ft)	25	129	56	146	13	65	0	7	345
Queue Length 95th (ft)	54	216	101	240	34	160	0	23	#620
Internal Link Dist (ft)		6037		2003		3047			1955
Turn Bay Length (ft)	440		250		295		350	280	
Base Capacity (vph)	389	422	413	448	279	736	801	593	720
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.49	0.29	0.52	0.14	0.24	0.12	0.04	0.77

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Existing AM Peak
4: Route 33 & Ashland Road

AM Peak
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	183	12	115	211	12	36	171	89	21	512	16
Future Volume (vph)	52	183	12	115	211	12	36	171	89	21	512	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6	9.6	9.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1641	1698		1787	1737		1517	1743	1615	1805	1831	
Flt Permitted	0.49	1.00		0.52	1.00		0.20	1.00	1.00	0.64	1.00	
Satd. Flow (perm)	839	1698		971	1737		326	1743	1615	1223	1831	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	55	193	13	121	222	13	38	180	94	22	539	17
RTOR Reduction (vph)	0	2	0	0	2	0	0	0	60	0	1	0
Lane Group Flow (vph)	55	204	0	121	233	0	38	180	34	22	555	0
Heavy Vehicles (%)	10%	11%	8%	1%	8%	17%	19%	9%	0%	0%	3%	13%
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA	Perm	D.P+P	NA	
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	4			8			6		2	2		
Actuated Green, G (s)	28.3	18.5		28.3	22.0		40.5	37.3	37.3	39.7	36.5	
Effective Green, g (s)	28.3	18.5		28.3	22.0		40.5	37.3	37.3	39.7	36.5	
Actuated g/C Ratio	0.28	0.18		0.28	0.22		0.40	0.36	0.36	0.39	0.36	
Clearance Time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6	9.6	9.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)	281	307		347	373		175	636	589	488	653	
v/s Ratio Prot	0.01	0.12		c0.03	c0.13		c0.01	0.10		0.00	c0.30	
v/s Ratio Perm	0.04			0.06			0.08		0.02	0.02		
v/c Ratio	0.20	0.66		0.35	0.63		0.22	0.28	0.06	0.05	0.85	
Uniform Delay, d1	27.8	38.9		28.7	36.4		21.2	23.0	21.1	19.3	30.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	5.3		0.6	3.3		0.6	0.3	0.1	0.0	10.7	
Delay (s)	28.1	44.3		29.3	39.6		21.8	23.3	21.1	19.4	41.0	
Level of Service	C	D		C	D		C	C	C	B	D	
Approach Delay (s)		40.8			36.1			22.5			40.2	
Approach LOS		D			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			35.7			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			102.2			Sum of lost time (s)			34.2			
Intersection Capacity Utilization			67.2%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection: 1: Pouncey Tract Road & Ashland Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	288	305	96	136	99	259
Average Queue (ft)	149	140	29	41	34	120
95th Queue (ft)	254	237	70	99	76	219
Link Distance (ft)	2713	6767		1230		1873
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		340	
Storage Blk Time (%)			0	0		0
Queuing Penalty (veh)			0	0		0

Intersection: 2: Driveway/Abner Church Road & Ashland Road

Movement	EB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	5	34
Average Queue (ft)	0	14
95th Queue (ft)	4	37
Link Distance (ft)	6767	870
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Cauthorne Road/Private Access & Ashland Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	32	88	58	46
Average Queue (ft)	1	15	31	5
95th Queue (ft)	10	52	52	25
Link Distance (ft)	4377	6036	2239	1325
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Route 33 & Ashland Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	UL	TR
Maximum Queue (ft)	87	256	174	248	102	164	57	167	423
Average Queue (ft)	28	113	62	115	32	66	24	19	214
95th Queue (ft)	70	208	122	205	76	132	49	87	360
Link Distance (ft)		6036		2040		3097			1993
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	440		250		295		350	280	
Storage Blk Time (%)			0	0				0	4
Queuing Penalty (veh)			0	0				0	1

Network Summary

Network wide Queuing Penalty: 1

Existing PM Peak
1: Pouncey Tract Road & Ashland Road

PM Peak
Queues



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	490	191	51	267	29	174
v/c Ratio	1.14	0.75	0.16	0.64	0.11	0.49
Control Delay	125.2	60.9	28.7	47.1	28.3	44.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	125.2	60.9	28.7	47.1	28.3	44.6
Queue Length 50th (ft)	~440	128	26	180	15	109
Queue Length 95th (ft)	#767	230	58	289	38	191
Internal Link Dist (ft)	2680	6753		1193		1824
Turn Bay Length (ft)			200		340	
Base Capacity (vph)	430	348	428	639	469	724
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.55	0.12	0.42	0.06	0.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Existing PM Peak
1: Pouncey Tract Road & Ashland Road

PM Peak
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↗	↘		↗	↘	
Traffic Volume (vph)	186	175	80	45	90	37	46	193	48	26	121	36
Future Volume (vph)	186	175	80	45	90	37	46	193	48	26	121	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.97		1.00	0.97		1.00	0.97	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1791			1802		1770	1836		1805	1834	
Flt Permitted		0.78			0.74		0.53	1.00		0.46	1.00	
Satd. Flow (perm)		1419			1347		996	1836		868	1834	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	207	194	89	50	100	41	51	214	53	29	134	40
RTOR Reduction (vph)	0	5	0	0	7	0	0	6	0	0	8	0
Lane Group Flow (vph)	0	485	0	0	184	0	51	261	0	29	166	0
Heavy Vehicles (%)	1%	1%	3%	0%	2%	0%	2%	0%	2%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3			2			6		
Actuated Green, G (s)		33.2			20.5		31.5	25.0		26.7	22.6	
Effective Green, g (s)		33.2			20.5		31.5	25.0		26.7	22.6	
Actuated g/C Ratio		0.29			0.18		0.28	0.22		0.23	0.20	
Clearance Time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Vehicle Extension (s)		3.0			3.0		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)		414			242		320	403		237	364	
v/s Ratio Prot							c0.01	c0.14		0.00	0.09	
v/s Ratio Perm		c0.34			c0.14		0.04			0.02		
v/c Ratio		1.17			0.76		0.16	0.65		0.12	0.46	
Uniform Delay, d1		40.2			44.3		30.7	40.3		34.0	40.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		100.1			13.2		0.2	4.0		0.2	1.2	
Delay (s)		140.4			57.5		30.9	44.3		34.2	41.4	
Level of Service		F			E		C	D		C	D	
Approach Delay (s)		140.4			57.5			42.2			40.3	
Approach LOS		F			E			D			D	
Intersection Summary												
HCM 2000 Control Delay			84.3			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			113.7			Sum of lost time (s)			30.9			
Intersection Capacity Utilization			77.7%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Existing PM Peak
2: Driveway/Abner Church Road & Ashland Road

PM Peak
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	276	0	0	204	34	0	0	0	20	0	3
Future Volume (Veh/h)	5	276	0	0	204	34	0	0	0	20	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	5	294	0	0	217	36	0	0	0	21	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	253			294			542	557	294	539	539	235
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	253			294			542	557	294	539	539	235
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	95	100	100
cM capacity (veh/h)	1324			1279			451	440	750	455	450	809
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	299	253	0	24								
Volume Left	5	0	0	21								
Volume Right	0	36	0	3								
cSH	1324	1279	1700	481								
Volume to Capacity	0.00	0.00	0.00	0.05								
Queue Length 95th (ft)	0	0	0	4								
Control Delay (s)	0.2	0.0	0.0	12.9								
Lane LOS	A		A	B								
Approach Delay (s)	0.2	0.0	0.0	12.9								
Approach LOS			A	B								
Intersection Summary												
Average Delay												
Intersection Capacity Utilization												
Analysis Period (min)												

Existing PM Peak
3: Cauthorne Road/Private Access & Ashland Road

PM Peak
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	256	5	81	185	2	8	0	202	1	0	3
Future Volume (Veh/h)	3	256	5	81	185	2	8	0	202	1	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	278	5	88	201	2	9	0	220	1	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	203			283			668	666	280	884	667	202
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	203			283			668	666	280	884	667	202
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			93			97	100	71	99	100	100
cM capacity (veh/h)	1381			1285			353	356	761	180	355	844
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	286	291	229	4								
Volume Left	3	88	9	1								
Volume Right	5	2	220	3								
cSH	1381	1285	728	439								
Volume to Capacity	0.00	0.07	0.31	0.01								
Queue Length 95th (ft)	0	6	34	1								
Control Delay (s)	0.1	2.9	12.2	13.3								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.1	2.9	12.2	13.3								
Approach LOS			B	B								
Intersection Summary												
Average Delay			4.6									
Intersection Capacity Utilization			51.6%		ICU Level of Service				A			
Analysis Period (min)			15									

Existing PM Peak
4: Route 33 & Ashland Road

PM Peak
Queues

									
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	139	293	94	238	30	582	115	24	280
v/c Ratio	0.40	0.66	0.29	0.67	0.07	0.82	0.16	0.11	0.44
Control Delay	25.2	43.9	23.6	46.8	16.8	40.9	0.5	17.6	29.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.2	43.9	23.6	46.8	16.8	40.9	0.5	17.6	29.5
Queue Length 50th (ft)	49	149	32	119	10	290	0	8	147
Queue Length 95th (ft)	110	#305	78	232	27	#614	0	24	232
Internal Link Dist (ft)		6037		2003		3047			1955
Turn Bay Length (ft)	440		250		295		350	280	
Base Capacity (vph)	396	473	381	454	492	709	729	288	706
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.62	0.25	0.52	0.06	0.82	0.16	0.08	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Existing PM Peak
4: Route 33 & Ashland Road

PM Peak
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	121	242	13	82	187	20	26	506	100	5	16	235
Future Volume (vph)	121	242	13	82	187	20	26	506	100	5	16	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6		9.6	9.2
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85		1.00	0.99
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1885		1787	1863		1736	1863	1583		1727	1830
Flt Permitted	0.45	1.00		0.37	1.00		0.54	1.00	1.00		0.17	1.00
Satd. Flow (perm)	843	1885		697	1863		978	1863	1583		314	1830
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	139	278	15	94	215	23	30	582	115	6	18	270
RTOR Reduction (vph)	0	2	0	0	3	0	0	0	74	0	0	1
Lane Group Flow (vph)	139	291	0	94	235	0	30	582	41	0	24	279
Heavy Vehicles (%)	2%	0%	0%	1%	0%	5%	4%	2%	2%	0%	6%	3%
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA	Perm	D.P+P	D.P+P	NA
Protected Phases	3	8		7	4		5	2		1	1	6
Permitted Phases	4			8			6		2	2	2	
Actuated Green, G (s)	29.8	22.4		29.8	19.8		39.5	36.2	36.2		38.7	35.6
Effective Green, g (s)	29.8	22.4		29.8	19.8		39.5	36.2	36.2		38.7	35.6
Actuated g/C Ratio	0.29	0.22		0.29	0.19		0.38	0.35	0.35		0.38	0.35
Clearance Time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6		9.6	9.2
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	4.0	4.0		3.0	4.0
Lane Grp Cap (vph)	334	411		280	359		404	656	557		152	634
v/s Ratio Prot	c0.04	c0.15		0.02	0.13		0.00	c0.31			c0.00	0.15
v/s Ratio Perm	0.08			0.07			0.03		0.03		0.06	
v/c Ratio	0.42	0.71		0.34	0.65		0.07	0.89	0.07		0.16	0.44
Uniform Delay, d1	28.2	37.1		27.7	38.3		19.8	31.3	22.1		22.7	25.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.8	5.5		0.7	4.2		0.1	14.1	0.1		0.5	0.7
Delay (s)	29.1	42.7		28.4	42.5		19.9	45.4	22.2		23.2	26.5
Level of Service	C	D		C	D		B	D	C		C	C
Approach Delay (s)		38.3			38.5			40.7				26.3
Approach LOS		D			D			D				C
Intersection Summary												
HCM 2000 Control Delay			37.3			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			102.7			Sum of lost time (s)			34.2			
Intersection Capacity Utilization			65.7%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Existing PM Peak
4: Route 33 & Ashland Road

PM Peak
HCM Signalized Intersection Capacity Analysis

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	9
Future Volume (vph)	9
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.87
Adj. Flow (vph)	10
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	11%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Intersection: 1: Pouncey Tract Road & Ashland Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	430	213	93	232	49	160
Average Queue (ft)	236	106	25	97	17	70
95th Queue (ft)	376	185	66	186	43	134
Link Distance (ft)	2713	6767		1230		1873
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		340	
Storage Blk Time (%)			0	1		
Queuing Penalty (veh)			0	0		

Intersection: 2: Driveway/Abner Church Road & Ashland Road

Movement	EB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	24	42
Average Queue (ft)	1	15
95th Queue (ft)	12	39
Link Distance (ft)	6767	870
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Cauthorne Road/Private Access & Ashland Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	7	76	116	26
Average Queue (ft)	0	15	54	3
95th Queue (ft)	4	52	87	16
Link Distance (ft)	4377	6036	2239	1325
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Route 33 & Ashland Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	UL	TR
Maximum Queue (ft)	133	248	111	206	197	413	181	56	186
Average Queue (ft)	57	115	46	101	23	195	38	15	88
95th Queue (ft)	110	199	85	172	96	339	125	42	164
Link Distance (ft)		6036		2040		3097			1993
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	440		250		295		350	280	
Storage Blk Time (%)				0	0	3	0		
Queuing Penalty (veh)				0	0	3	0		

Network Summary

Network wide Queuing Penalty: 4

Appendix E
SYNCHRO & SimTraffic Analysis
Of 2035 Background Conditions

Background 2035 AM Peak
1: Pouncey Tract Road & Ashland Road

35 BG AM
Queues



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	300	291	78	157	72	355
v/c Ratio	0.96	0.99	0.52	0.42	0.26	0.92
Control Delay	85.8	95.4	44.3	41.7	33.4	76.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.8	95.4	44.3	41.7	33.4	76.3
Queue Length 50th (ft)	236	~247	45	98	41	271
Queue Length 95th (ft)	#426	#430	84	167	79	#455
Internal Link Dist (ft)	2680	6753		1193		1824
Turn Bay Length (ft)			200		340	
Base Capacity (vph)	314	294	151	382	283	398
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.99	0.52	0.41	0.25	0.89

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Background 2035 AM Peak
1: Pouncey Tract Road & Ashland Road

35 BG AM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	140	57	63	178	30	73	98	48	67	226	104
Future Volume (vph)	82	140	57	63	178	30	73	98	48	67	226	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.99		1.00	0.95		1.00	0.95	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1565			1670		1641	1725		1570	1776	
Flt Permitted		0.80			0.64		0.20	1.00		0.61	1.00	
Satd. Flow (perm)		1267			1083		346	1725		1007	1776	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	88	151	61	68	191	32	78	105	52	72	243	112
RTOR Reduction (vph)	0	8	0	0	4	0	0	14	0	0	14	0
Lane Group Flow (vph)	0	292	0	0	287	0	78	143	0	72	341	0
Heavy Vehicles (%)	10%	19%	19%	6%	13%	8%	10%	3%	8%	15%	0%	6%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3			2			6		
Actuated Green, G (s)		29.4			32.5		29.8	25.0		30.4	25.3	
Effective Green, g (s)		29.4			32.5		29.8	25.0		30.4	25.3	
Actuated g/C Ratio		0.24			0.26		0.24	0.20		0.25	0.21	
Clearance Time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Vehicle Extension (s)		3.0			3.0		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)		303			286		134	350		272	365	
v/s Ratio Prot							c0.02	0.08		0.01	c0.19	
v/s Ratio Perm		c0.23			c0.27		0.12			0.05		
v/c Ratio		0.96			1.00		0.58	0.41		0.26	0.94	
Uniform Delay, d1		46.2			45.2		38.1	42.5		36.5	48.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		41.9			54.4		6.3	1.1		0.5	31.1	
Delay (s)		88.1			99.6		44.4	43.6		37.0	79.1	
Level of Service		F			F		D	D		D	E	
Approach Delay (s)		88.1			99.6			43.9			72.0	
Approach LOS		F			F			D			E	
Intersection Summary												
HCM 2000 Control Delay		77.0			HCM 2000 Level of Service			E				
HCM 2000 Volume to Capacity ratio		0.95										
Actuated Cycle Length (s)		122.9			Sum of lost time (s)			30.9				
Intersection Capacity Utilization		65.1%			ICU Level of Service			C				
Analysis Period (min)		15										
c Critical Lane Group												

Background 2035 AM Peak
2: Driveway/Abner Church Road & Ashland Road

35 BG AM
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	193	0	0	216	17	0	0	0	21	0	2
Future Volume (Veh/h)	2	193	0	0	216	17	0	0	0	21	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	2	219	0	0	245	19	0	0	0	24	0	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	264			219			480	487	219	478	478	254
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	264			219			480	487	219	478	478	254
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	95	100	100
cM capacity (veh/h)	1312			1362			498	483	826	501	489	789
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	221	264	0	26								
Volume Left	2	0	0	24								
Volume Right	0	19	0	2								
cSH	1312	1362	1700	515								
Volume to Capacity	0.00	0.00	0.00	0.05								
Queue Length 95th (ft)	0	0	0	4								
Control Delay (s)	0.1	0.0	0.0	12.4								
Lane LOS	A		A	B								
Approach Delay (s)	0.1	0.0	0.0	12.4								
Approach LOS			A	B								
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			22.4%	ICU Level of Service		A						
Analysis Period (min)			15									

Background 2035 AM Peak
3: Cauthorne Road/Private Access & Ashland Road

35 BG AM
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	241	7	160	273	7	2	1	85	0	4	2
Future Volume (Veh/h)	6	241	7	160	273	7	2	1	85	0	4	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	6	251	7	167	284	7	2	1	89	0	4	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	291			258			892	892	254	978	892	288
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	291			258			892	892	254	978	892	288
tC, single (s)	4.7			4.1			7.1	6.5	6.2	7.1	7.2	6.2
tC, 2 stage (s)												
tF (s)	2.7			2.2			3.5	4.0	3.3	3.5	4.6	3.3
p0 queue free %	99			87			99	100	89	100	98	100
cM capacity (veh/h)	1002			1313			234	246	787	184	193	756
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	264	458	92	6								
Volume Left	6	167	2	0								
Volume Right	7	7	89	2								
cSH	1002	1313	731	256								
Volume to Capacity	0.01	0.13	0.13	0.02								
Queue Length 95th (ft)	0	11	11	2								
Control Delay (s)	0.3	3.8	10.6	19.4								
Lane LOS	A	A	B	C								
Approach Delay (s)	0.3	3.8	10.6	19.4								
Approach LOS			B	C								
Intersection Summary												
Average Delay			3.5									
Intersection Capacity Utilization			54.3%		ICU Level of Service				A			
Analysis Period (min)			15									



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	66	251	147	287	46	219	114	27	678
v/c Ratio	0.30	0.86	0.57	0.80	0.28	0.31	0.15	0.05	0.91
Control Delay	28.7	66.2	37.1	56.1	16.7	22.5	0.4	12.2	45.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	66.2	37.1	56.1	16.7	22.5	0.4	12.2	45.8
Queue Length 50th (ft)	30	157	71	183	14	99	0	8	419
Queue Length 95th (ft)	63	#300	#130	#352	31	161	0	21	#664
Internal Link Dist (ft)		6037		2003		3047			1955
Turn Bay Length (ft)	440		250		295		350	280	
Base Capacity (vph)	221	304	256	361	165	699	786	555	747
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.83	0.57	0.80	0.28	0.31	0.15	0.05	0.91

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Background 2035 AM Peak
4: Route 33 & Ashland Road

35 BG AM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	223	15	140	257	15	44	208	108	26	624	20
Future Volume (vph)	63	223	15	140	257	15	44	208	108	26	624	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6	9.6	9.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1641	1698		1787	1736		1517	1743	1615	1805	1831	
Flt Permitted	0.38	1.00		0.38	1.00		0.11	1.00	1.00	0.61	1.00	
Satd. Flow (perm)	664	1698		705	1736		179	1743	1615	1168	1831	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	66	235	16	147	271	16	46	219	114	27	657	21
RTOR Reduction (vph)	0	2	0	0	2	0	0	0	71	0	1	0
Lane Group Flow (vph)	66	249	0	147	285	0	46	219	43	27	677	0
Heavy Vehicles (%)	10%	11%	8%	1%	8%	17%	19%	9%	0%	0%	3%	13%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	22.5	17.7		25.7	19.3		40.9	37.5	37.5	41.7	38.3	
Effective Green, g (s)	22.5	17.7		25.7	19.3		40.9	37.5	37.5	41.7	38.3	
Actuated g/C Ratio	0.23	0.18		0.26	0.19		0.41	0.38	0.38	0.42	0.39	
Clearance Time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6	9.6	9.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)	197	302		252	337		119	658	610	512	706	
v/s Ratio Prot	0.02	0.15		c0.04	c0.16		c0.01	0.13		0.00	c0.37	
v/s Ratio Perm	0.06			0.11			0.15		0.03	0.02		
v/c Ratio	0.34	0.82		0.58	0.84		0.39	0.33	0.07	0.05	0.96	
Uniform Delay, d1	31.1	39.2		30.2	38.5		21.7	21.9	19.7	16.9	29.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	16.4		3.4	17.3		2.1	1.4	0.2	0.0	25.1	
Delay (s)	32.1	55.6		33.6	55.8		23.8	23.3	19.9	17.0	54.8	
Level of Service	C	E		C	E		C	C	B	B	D	
Approach Delay (s)		50.7			48.3			22.3			53.4	
Approach LOS		D			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			45.3			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			99.2			Sum of lost time (s)			34.2			
Intersection Capacity Utilization			77.5%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection: 1: Pouncey Tract Road & Ashland Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	380	325	118	151	253	392
Average Queue (ft)	189	170	41	58	49	191
95th Queue (ft)	330	281	90	120	134	327
Link Distance (ft)	2713	6767		1230		1873
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		340	
Storage Blk Time (%)			0	0	0	1
Queuing Penalty (veh)			0	0	0	1

Intersection: 2: Driveway/Abner Church Road & Ashland Road

Movement	EB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	12	35
Average Queue (ft)	0	17
95th Queue (ft)	10	39
Link Distance (ft)	6767	870
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Cauthorne Road/Private Access & Ashland Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	56	111	69	61
Average Queue (ft)	3	27	37	7
95th Queue (ft)	30	78	59	32
Link Distance (ft)	4377	6036	2239	1325
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Route 33 & Ashland Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	UL	TR
Maximum Queue (ft)	146	332	249	392	99	190	70	213	557
Average Queue (ft)	42	164	96	174	37	76	26	31	278
95th Queue (ft)	101	301	190	315	79	149	56	135	489
Link Distance (ft)		6036		2040		3097			1993
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	440		250		295		350	280	
Storage Blk Time (%)	0	0	0	4				0	11
Queuing Penalty (veh)	0	0	0	6				0	3

Network Summary

Network wide Queuing Penalty: 10

2035 Background PM Peak
1: Pouncey Tract Road & Ashland Road

35 BG PM
Queues



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	598	233	62	327	36	212
v/c Ratio	1.04	1.02	0.28	0.95	0.27	0.62
Control Delay	89.4	121.4	43.6	92.7	44.1	60.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.4	121.4	43.6	92.7	44.1	60.4
Queue Length 50th (ft)	~616	~231	44	303	25	179
Queue Length 95th (ft)	#855	#408	84	#502	55	270
Internal Link Dist (ft)	2680	6753		1193		1824
Turn Bay Length (ft)			200		340	
Base Capacity (vph)	574	228	219	346	135	345
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.04	1.02	0.28	0.95	0.27	0.61

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2035 Background PM Peak
1: Pouncey Tract Road & Ashland Road

35 BG PM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	227	213	98	55	110	45	56	235	59	32	147	44
Future Volume (vph)	227	213	98	55	110	45	56	235	59	32	147	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.97		1.00	0.97		1.00	0.97	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1791			1802		1770	1835		1805	1834	
Flt Permitted		0.76			0.74		0.44	1.00		0.17	1.00	
Satd. Flow (perm)		1386			1344		810	1835		327	1834	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	252	237	109	61	122	50	62	261	66	36	163	49
RTOR Reduction (vph)	0	5	0	0	7	0	0	7	0	0	7	0
Lane Group Flow (vph)	0	593	0	0	226	0	62	320	0	36	205	0
Heavy Vehicles (%)	1%	1%	3%	0%	2%	0%	2%	0%	2%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3			2			6		
Actuated Green, G (s)		58.4			23.4		31.2	26.3		31.0	26.2	
Effective Green, g (s)		58.4			23.4		31.2	26.3		31.0	26.2	
Actuated g/C Ratio		0.41			0.16		0.22	0.18		0.22	0.18	
Clearance Time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Vehicle Extension (s)		3.0			3.0		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)		562			218		208	335		119	334	
v/s Ratio Prot							c0.01	c0.17		0.01	0.11	
v/s Ratio Perm		c0.43			c0.17		0.05			0.05		
v/c Ratio		1.05			1.04		0.30	0.96		0.30	0.61	
Uniform Delay, d1		42.7			60.2		45.9	58.2		46.3	54.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		53.1			71.3		0.8	37.6		1.4	3.8	
Delay (s)		95.8			131.5		46.7	95.8		47.8	57.9	
Level of Service		F			F		D	F		D	E	
Approach Delay (s)		95.8			131.5			88.0			56.4	
Approach LOS		F			F			F			E	
Intersection Summary												
HCM 2000 Control Delay			92.8			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			143.8			Sum of lost time (s)			30.9			
Intersection Capacity Utilization			88.0%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

2035 Background PM Peak
2: Driveway/Abner Church Road & Ashland Road

35 BG PM
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	336	0	0	249	41	0	0	0	24	0	4
Future Volume (Veh/h)	6	336	0	0	249	41	0	0	0	24	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	6	357	0	0	265	44	0	0	0	26	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	309			357			660	678	357	656	656	287
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	309			357			660	678	357	656	656	287
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	93	100	99
cM capacity (veh/h)	1263			1213			376	375	692	380	386	757
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	363	309	0	30								
Volume Left	6	0	0	26								
Volume Right	0	44	0	4								
cSH	1263	1213	1700	407								
Volume to Capacity	0.00	0.00	0.00	0.07								
Queue Length 95th (ft)	0	0	0	6								
Control Delay (s)	0.2	0.0	0.0	14.5								
Lane LOS	A		A	B								
Approach Delay (s)	0.2	0.0	0.0	14.5								
Approach LOS			A	B								
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			32.5%		ICU Level of Service		A					
Analysis Period (min)			15									

2035 Background PM Peak
3: Cauthorne Road/Private Access & Ashland Road

35 BG PM
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	312	6	99	226	2	10	0	246	1	0	4
Future Volume (Veh/h)	4	312	6	99	226	2	10	0	246	1	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	339	7	108	246	2	11	0	267	1	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	248			346			818	814	342	1080	817	247
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	248			346			818	814	342	1080	817	247
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			91			96	100	62	99	100	99
cM capacity (veh/h)	1330			1219			275	286	702	114	285	797
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	350	356	278	5								
Volume Left	4	108	11	1								
Volume Right	7	2	267	4								
cSH	1330	1219	662	362								
Volume to Capacity	0.00	0.09	0.42	0.01								
Queue Length 95th (ft)	0	7	52	1								
Control Delay (s)	0.1	3.1	14.3	15.1								
Lane LOS	A	A	B	C								
Approach Delay (s)	0.1	3.1	14.3	15.1								
Approach LOS			B	C								
Intersection Summary												
Average Delay			5.3									
Intersection Capacity Utilization			61.0%		ICU Level of Service				B			
Analysis Period (min)			15									

									
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	167	353	114	286	36	701	139	30	338
v/c Ratio	0.69	0.92	0.62	0.79	0.08	0.92	0.18	0.18	0.45
Control Delay	46.0	71.7	44.6	58.0	13.1	49.5	1.0	15.3	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.0	71.7	44.6	58.0	13.1	49.5	1.0	15.3	24.8
Queue Length 50th (ft)	90	250	59	195	12	475	0	10	172
Queue Length 95th (ft)	#170	#427	#117	#332	26	#694	4	24	248
Internal Link Dist (ft)		6037		2003		3047			1955
Turn Bay Length (ft)	440		250		295		350	280	
Base Capacity (vph)	241	385	183	360	446	793	794	169	794
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.92	0.62	0.79	0.08	0.88	0.18	0.18	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2035 Background PM Peak
4: Route 33 & Ashland Road

35 BG PM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	147	295	16	100	228	24	32	617	122	6	20	286
Future Volume (vph)	147	295	16	100	228	24	32	617	122	6	20	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6		9.6	9.2
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85		1.00	0.99
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1885		1787	1864		1736	1863	1583		1726	1829
Flt Permitted	0.32	1.00		0.20	1.00		0.48	1.00	1.00		0.10	1.00
Satd. Flow (perm)	597	1885		371	1864		886	1863	1583		176	1829
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	167	335	18	114	259	27	36	701	139	7	23	325
RTOR Reduction (vph)	0	2	0	0	3	0	0	0	84	0	0	1
Lane Group Flow (vph)	167	351	0	114	283	0	36	701	55	0	30	337
Heavy Vehicles (%)	2%	0%	0%	1%	0%	5%	4%	2%	2%	0%	6%	3%
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA	Perm	D.P+P	D.P+P	NA
Protected Phases	3	8		7	4		5	2		1	1	6
Permitted Phases	4			8			6		2	2	2	
Actuated Green, G (s)	27.0	20.8		27.0	19.6		45.8	41.7	41.7		45.0	42.5
Effective Green, g (s)	27.0	20.8		27.0	19.6		45.8	41.7	41.7		45.0	42.5
Actuated g/C Ratio	0.25	0.20		0.25	0.18		0.43	0.39	0.39		0.42	0.40
Clearance Time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6		9.6	9.2
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	4.0	4.0		3.0	4.0
Lane Grp Cap (vph)	233	369		176	344		408	731	621		122	731
v/s Ratio Prot	c0.05	c0.19		0.04	0.15		0.00	c0.38			c0.01	0.18
v/s Ratio Perm	0.13			0.13			0.04		0.03		0.10	
v/c Ratio	0.72	0.95		0.65	0.82		0.09	0.96	0.09		0.25	0.46
Uniform Delay, d1	33.9	42.2		32.5	41.6		17.7	31.4	20.3		22.8	23.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	10.0	34.4		8.0	14.6		0.1	23.5	0.1		1.1	0.6
Delay (s)	43.9	76.6		40.4	56.2		17.8	54.9	20.4		23.9	24.1
Level of Service	D	E		D	E		B	D	C		C	C
Approach Delay (s)		66.1			51.7			47.9				24.0
Approach LOS		E			D			D				C
Intersection Summary												
HCM 2000 Control Delay			48.9			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			106.2			Sum of lost time (s)			34.2			
Intersection Capacity Utilization			75.0%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	11
Future Volume (vph)	11
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.88
Adj. Flow (vph)	12
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	11%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Intersection: 1: Pouncey Tract Road & Ashland Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	474	286	200	374	69	233
Average Queue (ft)	282	143	55	184	22	106
95th Queue (ft)	430	251	150	336	55	192
Link Distance (ft)	2713	6767		1230		1873
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		340	
Storage Blk Time (%)			0	10		0
Queuing Penalty (veh)			0	6		0

Intersection: 2: Driveway/Abner Church Road & Ashland Road

Movement	EB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	24	41
Average Queue (ft)	1	16
95th Queue (ft)	11	40
Link Distance (ft)	6767	870
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Cauthorne Road/Private Access & Ashland Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	22	106	145	26
Average Queue (ft)	1	25	65	5
95th Queue (ft)	11	76	109	21
Link Distance (ft)	4377	6036	2239	1325
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Route 33 & Ashland Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	UL	TR
Maximum Queue (ft)	178	331	171	256	203	437	322	59	199
Average Queue (ft)	77	181	63	136	28	234	56	19	102
95th Queue (ft)	143	300	130	228	113	371	187	48	178
Link Distance (ft)		6036		2040		3097			1993
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	440		250		295		350	280	
Storage Blk Time (%)			0	1	0	4	0		
Queuing Penalty (veh)			0	1	0	6	1		

Network Summary

Network wide Queuing Penalty: 14

Appendix F
SYNCHRO & SimTraffic Analysis
Of 2041 Background Conditions

Background 2041 AM Peak
1: Pouncey Tract Road & Ashland Road

41BG AM
Queues



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	339	328	88	176	82	399
v/c Ratio	1.07	1.10	0.75	0.47	0.30	1.00
Control Delay	118.5	128.2	73.8	50.2	39.7	97.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	118.5	128.2	73.8	50.2	39.7	97.5
Queue Length 50th (ft)	~346	~347	60	134	56	368
Queue Length 95th (ft)	#548	#546	#127	213	99	#591
Internal Link Dist (ft)	2680	6753		1193		1824
Turn Bay Length (ft)			200		340	
Base Capacity (vph)	318	299	118	378	273	401
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.07	1.10	0.75	0.47	0.30	1.00

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Background 2041 AM Peak
1: Pouncey Tract Road & Ashland Road

41BG AM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Traffic Volume (vph)	92	158	65	71	200	34	82	110	54	76	254	117
Future Volume (vph)	92	158	65	71	200	34	82	110	54	76	254	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.97			0.98		1.00	0.95		1.00	0.95	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1564			1669		1641	1726		1570	1776	
Flt Permitted		0.79			0.64		0.13	1.00		0.53	1.00	
Satd. Flow (perm)		1247			1082		224	1726		880	1776	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	99	170	70	76	215	37	88	118	58	82	273	126
RTOR Reduction (vph)	0	7	0	0	3	0	0	12	0	0	12	0
Lane Group Flow (vph)	0	332	0	0	325	0	88	164	0	82	387	0
Heavy Vehicles (%)	10%	19%	19%	6%	13%	8%	10%	3%	8%	15%	0%	6%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3			2			6		
Actuated Green, G (s)		36.3			39.7		37.1	30.8		39.1	31.8	
Effective Green, g (s)		36.3			39.7		37.1	30.8		39.1	31.8	
Actuated g/C Ratio		0.25			0.27		0.26	0.21		0.27	0.22	
Clearance Time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Vehicle Extension (s)		3.0			3.0		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)		312			296		118	366		272	389	
v/s Ratio Prot							c0.03	0.10		0.02	c0.22	
v/s Ratio Perm		c0.27			c0.30		0.16			0.07		
v/c Ratio		1.06			1.10		0.75	0.45		0.30	1.00	
Uniform Delay, d1		54.4			52.6		44.5	49.7		40.9	56.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		69.2			81.2		22.3	1.2		0.6	44.2	
Delay (s)		123.5			133.9		66.8	50.9		41.5	100.8	
Level of Service		F			F		E	D		D	F	
Approach Delay (s)		123.5			133.9			56.2			90.7	
Approach LOS		F			F			E			F	
Intersection Summary												
HCM 2000 Control Delay		102.2			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.04										
Actuated Cycle Length (s)		145.0			Sum of lost time (s)			30.9				
Intersection Capacity Utilization		70.2%			ICU Level of Service			C				
Analysis Period (min)		15										
c Critical Lane Group												

Background 2041 AM Peak
2: Driveway/Abner Church Road & Ashland Road

41BG AM
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	217	0	0	243	19	0	0	0	23	0	3
Future Volume (Veh/h)	3	217	0	0	243	19	0	0	0	23	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	3	247	0	0	276	22	0	0	0	26	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	298			247			543	551	247	540	540	287
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	298			247			543	551	247	540	540	287
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	94	100	100
cM capacity (veh/h)	1275			1331			451	444	797	455	450	757
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	250	298	0	29								
Volume Left	3	0	0	26								
Volume Right	0	22	0	3								
cSH	1275	1331	1700	475								
Volume to Capacity	0.00	0.00	0.00	0.06								
Queue Length 95th (ft)	0	0	0	5								
Control Delay (s)	0.1	0.0	0.0	13.1								
Lane LOS	A		A	B								
Approach Delay (s)	0.1	0.0	0.0	13.1								
Approach LOS			A	B								
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			23.9%		ICU Level of Service		A					
Analysis Period (min)			15									

Background 2041 AM Peak
3: Cauthorne Road/Private Access & Ashland Road

41BG AM
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	272	8	180	308	8	3	1	96	0	4	3
Future Volume (Veh/h)	7	272	8	180	308	8	3	1	96	0	4	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	7	283	8	188	321	8	3	1	100	0	4	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	329			291			1007	1006	287	1102	1006	325
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	329			291			1007	1006	287	1102	1006	325
tC, single (s)	4.7			4.1			7.1	6.5	6.2	7.1	7.2	6.2
tC, 2 stage (s)												
tF (s)	2.7			2.2			3.5	4.0	3.3	3.5	4.6	3.3
p0 queue free %	99			85			98	100	87	100	97	100
cM capacity (veh/h)	967			1276			191	206	754	145	159	721
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	298	517	104	7								
Volume Left	7	188	3	0								
Volume Right	8	8	100	3								
cSH	967	1276	679	238								
Volume to Capacity	0.01	0.15	0.15	0.03								
Queue Length 95th (ft)	1	13	13	2								
Control Delay (s)	0.3	4.0	11.3	20.6								
Lane LOS	A	A	B	C								
Approach Delay (s)	0.3	4.0	11.3	20.6								
Approach LOS			B	C								
Intersection Summary												
Average Delay			3.7									
Intersection Capacity Utilization			60.6%		ICU Level of Service				B			
Analysis Period (min)			15									



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	75	281	166	322	52	247	128	31	763
v/c Ratio	0.40	0.95	0.74	0.87	0.37	0.32	0.15	0.05	0.99
Control Delay	35.6	85.3	53.0	66.8	20.4	22.4	0.4	12.4	63.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	85.3	53.0	66.8	20.4	22.4	0.4	12.4	63.0
Queue Length 50th (ft)	39	198	90	~243	17	120	0	10	~574
Queue Length 95th (ft)	75	#371	#147	#423	36	187	0	24	#811
Internal Link Dist (ft)		6037		2003		3047			1955
Turn Bay Length (ft)	440		250		295		350	280	
Base Capacity (vph)	186	297	223	372	141	770	831	575	770
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.95	0.74	0.87	0.37	0.32	0.15	0.05	0.99

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Background 2041 AM Peak
4: Route 33 & Ashland Road

41BG AM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	251	16	158	290	16	49	235	122	29	703	22
Future Volume (vph)	71	251	16	158	290	16	49	235	122	29	703	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6	9.6	9.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1641	1699		1787	1738		1517	1743	1615	1805	1831	
Flt Permitted	0.27	1.00		0.31	1.00		0.09	1.00	1.00	0.60	1.00	
Satd. Flow (perm)	461	1699		581	1738		136	1743	1615	1132	1831	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	75	264	17	166	305	17	52	247	128	31	740	23
RTOR Reduction (vph)	0	2	0	0	2	0	0	0	74	0	1	0
Lane Group Flow (vph)	75	279	0	166	320	0	52	247	54	31	762	0
Heavy Vehicles (%)	10%	11%	8%	1%	8%	17%	19%	9%	0%	0%	3%	13%
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA	Perm	D.P+P	NA	
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	4			8			6		2	2		
Actuated Green, G (s)	27.5	20.2		27.5	22.8		51.6	47.3	47.3	50.8	46.9	
Effective Green, g (s)	27.5	20.2		27.5	22.8		51.6	47.3	47.3	50.8	46.9	
Actuated g/C Ratio	0.24	0.18		0.24	0.20		0.46	0.42	0.42	0.45	0.42	
Clearance Time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6	9.6	9.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)	161	305		220	352		120	732	679	532	763	
v/s Ratio Prot	0.02	0.16		c0.05	c0.18		c0.02	0.14		0.00	c0.42	
v/s Ratio Perm	0.09			0.14			0.18		0.03	0.02		
v/c Ratio	0.47	0.91		0.75	0.91		0.43	0.34	0.08	0.06	1.00	
Uniform Delay, d1	34.3	45.3		37.3	43.8		24.3	22.0	19.5	17.2	32.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.1	30.0		13.7	26.7		2.5	0.4	0.1	0.0	32.0	
Delay (s)	36.5	75.3		51.0	70.6		26.8	22.4	19.6	17.3	64.8	
Level of Service	D	E		D	E		C	C	B	B	E	
Approach Delay (s)		67.2			63.9			22.1			62.9	
Approach LOS		E			E			C			E	
Intersection Summary												
HCM 2000 Control Delay			55.4			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			0.96									
Actuated Cycle Length (s)			112.5			Sum of lost time (s)			34.2			
Intersection Capacity Utilization			84.2%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection: 1: Pouncey Tract Road & Ashland Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	459	389	137	188	340	595
Average Queue (ft)	237	216	53	81	108	321
95th Queue (ft)	393	349	109	161	296	586
Link Distance (ft)	2713	6767		1230		1873
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		340	
Storage Blk Time (%)			0	0	0	13
Queuing Penalty (veh)			0	0	0	10

Intersection: 2: Driveway/Abner Church Road & Ashland Road

Movement	EB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	23	39
Average Queue (ft)	1	17
95th Queue (ft)	12	40
Link Distance (ft)	6767	870
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Cauthorne Road/Private Access & Ashland Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	56	149	73	66
Average Queue (ft)	3	40	37	8
95th Queue (ft)	29	107	60	38
Link Distance (ft)	4377	6036	2239	1325
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Route 33 & Ashland Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	UL	TR
Maximum Queue (ft)	260	433	250	467	140	248	108	257	963
Average Queue (ft)	56	218	123	218	42	91	32	48	537
95th Queue (ft)	164	399	236	391	102	187	78	190	1156
Link Distance (ft)		6036		2040		3097			1993
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	440		250		295		350	280	
Storage Blk Time (%)	0	2	0	9	0	0	0	0	30
Queuing Penalty (veh)	0	1	0	15	0	0	0	0	9

Network Summary

Network wide Queuing Penalty: 37

2041 Background PM Peak
1: Pouncey Tract Road & Ashland Road

41BG PM
Queues



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	672	264	70	367	40	238
v/c Ratio	1.21	1.11	0.35	1.06	0.31	0.69
Control Delay	148.5	143.9	45.7	117.7	45.8	63.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	148.5	143.9	45.7	117.7	45.8	63.9
Queue Length 50th (ft)	~782	~283	50	~379	28	206
Queue Length 95th (ft)	#1028	#468	92	#588	60	304
Internal Link Dist (ft)	2680	6753		1193		1824
Turn Bay Length (ft)			200		340	
Base Capacity (vph)	554	237	199	347	127	347
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.21	1.11	0.35	1.06	0.31	0.69

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

2041 Background PM Peak
1: Pouncey Tract Road & Ashland Road

41BG PM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	255	240	110	62	124	51	63	265	66	36	166	49
Future Volume (vph)	255	240	110	62	124	51	63	265	66	36	166	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.97		1.00	0.97		1.00	0.97	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1791			1802		1770	1836		1805	1835	
Flt Permitted		0.74			0.74		0.38	1.00		0.15	1.00	
Satd. Flow (perm)		1362			1344		700	1836		288	1835	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	283	267	122	69	138	57	70	294	73	40	184	54
RTOR Reduction (vph)	0	5	0	0	7	0	0	7	0	0	7	0
Lane Group Flow (vph)	0	667	0	0	257	0	70	360	0	40	231	0
Heavy Vehicles (%)	1%	1%	3%	0%	2%	0%	2%	0%	2%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3			2			6		
Actuated Green, G (s)		57.4			24.4		31.3	26.5		31.1	26.4	
Effective Green, g (s)		57.4			24.4		31.3	26.5		31.1	26.4	
Actuated g/C Ratio		0.40			0.17		0.22	0.18		0.22	0.18	
Clearance Time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Vehicle Extension (s)		3.0			3.0		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)		543			227		187	338		111	336	
v/s Ratio Prot							c0.01	c0.20		0.01	0.13	
v/s Ratio Perm		c0.49			c0.19		0.07			0.07		
v/c Ratio		1.23			1.13		0.37	1.07		0.36	0.69	
Uniform Delay, d1		43.2			59.8		46.3	58.7		47.0	54.9	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		117.9			100.5		1.3	67.7		2.0	6.2	
Delay (s)		161.2			160.2		47.5	126.4		49.0	61.1	
Level of Service		F			F		D	F		D	E	
Approach Delay (s)		161.2			160.2			113.7			59.3	
Approach LOS		F			F			F			E	
Intersection Summary												
HCM 2000 Control Delay			131.3			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.13									
Actuated Cycle Length (s)			143.9			Sum of lost time (s)				30.9		
Intersection Capacity Utilization			95.2%			ICU Level of Service				F		
Analysis Period (min)			15									
c Critical Lane Group												

2041 Background PM Peak
2: Driveway/Abner Church Road & Ashland Road

41BG PM
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	379	0	0	280	47	0	0	0	27	0	4
Future Volume (Veh/h)	7	379	0	0	280	47	0	0	0	27	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	7	403	0	0	298	50	0	0	0	29	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	348			403			744	765	403	740	740	323
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	348			403			744	765	403	740	740	323
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	91	100	99
cM capacity (veh/h)	1222			1167			330	334	652	334	345	723
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	410	348	0	33								
Volume Left	7	0	0	29								
Volume Right	0	50	0	4								
cSH	1222	1167	1700	357								
Volume to Capacity	0.01	0.00	0.00	0.09								
Queue Length 95th (ft)	0	0	0	8								
Control Delay (s)	0.2	0.0	0.0	16.1								
Lane LOS	A		A	C								
Approach Delay (s)	0.2	0.0	0.0	16.1								
Approach LOS			A	C								
Intersection Summary												
Average Delay			0.8									
Intersection Capacity Utilization			35.6%	ICU Level of Service				A				
Analysis Period (min)			15									

2041 Background PM Peak
3: Cauthorne Road/Private Access & Ashland Road

41BG PM
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	351	7	111	254	3	11	0	277	1	0	4
Future Volume (Veh/h)	4	351	7	111	254	3	11	0	277	1	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	382	8	121	276	3	12	0	301	1	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	279			390			918	915	386	1214	918	278
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	279			390			918	915	386	1214	918	278
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			90			95	100	55	99	100	99
cM capacity (veh/h)	1295			1174			233	246	664	80	245	766
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	394	400	313	5								
Volume Left	4	121	12	1								
Volume Right	8	3	301	4								
cSH	1295	1174	620	283								
Volume to Capacity	0.00	0.10	0.50	0.02								
Queue Length 95th (ft)	0	9	71	1								
Control Delay (s)	0.1	3.3	16.6	18.0								
Lane LOS	A	A	C	C								
Approach Delay (s)	0.1	3.3	16.6	18.0								
Approach LOS			C	C								
Intersection Summary												
Average Delay			6.0									
Intersection Capacity Utilization			67.4%		ICU Level of Service				C			
Analysis Period (min)			15									



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	189	397	128	323	41	790	156	33	381
v/c Ratio	0.93	1.05	0.72	0.91	0.10	1.02	0.20	0.20	0.49
Control Delay	81.4	102.6	53.0	73.3	13.2	68.6	1.6	15.8	25.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.4	102.6	53.0	73.3	13.2	68.6	1.6	15.8	25.6
Queue Length 50th (ft)	103	~324	67	227	13	~626	0	11	200
Queue Length 95th (ft)	#216	#501	#129	#393	29	#829	13	25	284
Internal Link Dist (ft)		6037		2003		3047			1955
Turn Bay Length (ft)	440		250		295		350	280	
Base Capacity (vph)	203	377	178	354	421	777	783	165	778
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	1.05	0.72	0.91	0.10	1.02	0.20	0.20	0.49

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2041 Background PM Peak
4: Route 33 & Ashland Road

41BG PM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	166	332	18	113	257	27	36	695	137	7	22	323
Future Volume (vph)	166	332	18	113	257	27	36	695	137	7	22	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6		9.6	9.2
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85		1.00	0.99
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1886		1787	1864		1736	1863	1583		1727	1829
Flt Permitted	0.22	1.00		0.19	1.00		0.44	1.00	1.00		0.09	1.00
Satd. Flow (perm)	416	1886		364	1864		804	1863	1583		168	1829
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	189	377	20	128	292	31	41	790	156	8	25	367
RTOR Reduction (vph)	0	2	0	0	3	0	0	0	93	0	0	1
Lane Group Flow (vph)	189	395	0	128	320	0	41	790	63	0	33	380
Heavy Vehicles (%)	2%	0%	0%	1%	0%	5%	4%	2%	2%	0%	6%	3%
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA	Perm	D.P+P	D.P+P	NA
Protected Phases	3	8		7	4		5	2		1	1	6
Permitted Phases	4			8			6		2	2	2	
Actuated Green, G (s)	26.8	20.7		26.8	19.5		47.5	43.3	43.3		46.7	44.1
Effective Green, g (s)	26.8	20.7		26.8	19.5		47.5	43.3	43.3		46.7	44.1
Actuated g/C Ratio	0.25	0.19		0.25	0.18		0.44	0.40	0.40		0.43	0.41
Clearance Time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6		9.6	9.2
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	4.0	4.0		3.0	4.0
Lane Grp Cap (vph)	195	362		171	337		384	749	636		122	748
v/s Ratio Prot	c0.07	c0.21		0.04	0.17		0.00	c0.42			c0.01	0.21
v/s Ratio Perm	0.18			0.14			0.04		0.04		0.11	
v/c Ratio	0.97	1.09		0.75	0.95		0.11	1.05	0.10		0.27	0.51
Uniform Delay, d1	37.6	43.5		34.4	43.6		17.5	32.2	20.0		24.9	23.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	54.9	74.4		16.3	35.3		0.1	48.3	0.1		1.2	0.7
Delay (s)	92.5	117.9		50.7	78.9		17.7	80.5	20.1		26.1	24.5
Level of Service	F	F		D	E		B	F	C		C	C
Approach Delay (s)		109.7			70.9			68.3				24.6
Approach LOS		F			E			E				C
Intersection Summary												
HCM 2000 Control Delay			71.3			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			107.7			Sum of lost time (s)			34.2			
Intersection Capacity Utilization			81.9%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	12
Future Volume (vph)	12
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.88
Adj. Flow (vph)	14
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	11%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Intersection: 1: Pouncey Tract Road & Ashland Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	737	326	200	652	119	289
Average Queue (ft)	440	176	86	328	29	149
95th Queue (ft)	897	290	213	621	68	266
Link Distance (ft)	2713	6767		1230		1873
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		340	
Storage Blk Time (%)			0	33	0	0
Queuing Penalty (veh)			1	21	0	0

Intersection: 2: Driveway/Abner Church Road & Ashland Road

Movement	EB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	31	47
Average Queue (ft)	2	18
95th Queue (ft)	17	43
Link Distance (ft)	6767	870
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Cauthorne Road/Private Access & Ashland Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	26	128	143	26
Average Queue (ft)	1	30	72	4
95th Queue (ft)	13	83	119	19
Link Distance (ft)	4377	6036	2239	1325
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Route 33 & Ashland Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	UL	TR
Maximum Queue (ft)	336	499	238	341	294	877	350	65	260
Average Queue (ft)	117	249	78	169	60	425	141	23	124
95th Queue (ft)	271	440	168	292	218	833	381	54	217
Link Distance (ft)		6036		2040		3097			1993
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	440		250		295		350	280	
Storage Blk Time (%)	0	2	0	3	0	20	0		0
Queuing Penalty (veh)	0	3	0	4	1	36	3		0

Network Summary

Network wide Queuing Penalty: 69

Appendix G
SYNCHRO & SimTraffic Analysis
Of 2027 Future Conditions

2027 Future AM Peak
1: Pouncey Tract Road & Ashland Road

27TF AM
Queues



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	560	266	67	208	86	301
v/c Ratio	1.23	1.26	0.60	0.73	0.52	1.05
Control Delay	164.4	192.4	68.8	64.8	59.5	122.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	164.4	192.4	68.8	64.8	59.5	122.2
Queue Length 50th (ft)	~674	~323	52	162	68	~307
Queue Length 95th (ft)	#912	#510	#105	#269	119	#505
Internal Link Dist (ft)	2680	2715		1193		1824
Turn Bay Length (ft)			200		340	
Base Capacity (vph)	455	211	111	285	164	288
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.23	1.26	0.60	0.73	0.52	1.05

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2027 Future AM Peak
1: Pouncey Tract Road & Ashland Road

27TF AM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	402	49	57	164	27	62	83	111	80	192	88
Future Volume (vph)	70	402	49	57	164	27	62	83	111	80	192	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.99			0.99		1.00	0.91		1.00	0.95	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1582			1670		1641	1641		1570	1776	
Flt Permitted		0.90			0.44		0.17	1.00		0.39	1.00	
Satd. Flow (perm)		1437			739		298	1641		640	1776	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	75	432	53	61	176	29	67	89	119	86	206	95
RTOR Reduction (vph)	0	3	0	0	3	0	0	32	0	0	11	0
Lane Group Flow (vph)	0	557	0	0	263	0	67	176	0	86	290	0
Heavy Vehicles (%)	10%	19%	19%	6%	13%	8%	10%	3%	8%	15%	0%	6%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3			2			6		
Actuated Green, G (s)		47.3			42.4		29.2	23.2		29.6	23.4	
Effective Green, g (s)		47.3			42.4		29.2	23.2		29.6	23.4	
Actuated g/C Ratio		0.32			0.28		0.19	0.15		0.20	0.16	
Clearance Time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Vehicle Extension (s)		3.0			3.0		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)		453			208		111	253		164	277	
v/s Ratio Prot							c0.02	0.11		0.02	c0.16	
v/s Ratio Perm		c0.39			c0.36		0.09			0.08		
v/c Ratio		1.23			1.27		0.60	0.70		0.52	1.05	
Uniform Delay, d1		51.4			53.8		51.8	60.1		52.3	63.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		121.7			151.7		8.9	8.6		3.0	66.9	
Delay (s)		173.0			205.5		60.7	68.7		55.3	130.2	
Level of Service		F			F		E	E		E	F	
Approach Delay (s)		173.0			205.5			66.7			113.6	
Approach LOS		F			F			E			F	
Intersection Summary												
HCM 2000 Control Delay		143.7										
HCM 2000 Volume to Capacity ratio		1.17										
Actuated Cycle Length (s)		150.0								30.9		
Intersection Capacity Utilization		72.6%										
Analysis Period (min)		15										
c Critical Lane Group												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	261	0	0	258	15	0	0	0	18	0	2
Future Volume (Veh/h)	2	261	0	0	258	15	0	0	0	18	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	2	297	0	0	293	17	0	0	0	20	0	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	310			297			604	611	297	602	602	302
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	310			297			604	611	297	602	602	302
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	95	100	100
cM capacity (veh/h)	1262			1276			411	411	747	414	415	743
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	299	310	0	22								
Volume Left	2	0	0	20								
Volume Right	0	17	0	2								
cSH	1262	1276	1700	431								
Volume to Capacity	0.00	0.00	0.00	0.05								
Queue Length 95th (ft)	0	0	0	4								
Control Delay (s)	0.1	0.0	0.0	13.8								
Lane LOS	A		A	B								
Approach Delay (s)	0.1	0.0	0.0	13.8								
Approach LOS			A	B								
Intersection Summary												
Average Delay	0.5											
Intersection Capacity Utilization	25.3%			ICU Level of Service					A			
Analysis Period (min)	15											

2027 Future AM Peak
3: Cauthorne Road/Private Access & Ashland Road

27TF AM
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	209	7	136	303	6	25	1	73	0	3	2
Future Volume (Veh/h)	5	209	7	136	303	6	25	1	73	0	3	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	5	218	7	142	316	6	26	1	76	0	3	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	322			225			838	838	222	911	838	319
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	322			225			838	838	222	911	838	319
tC, single (s)	4.7			4.1			7.1	6.5	6.2	7.1	7.2	6.2
tC, 2 stage (s)												
tF (s)	2.7			2.2			3.5	4.0	3.3	3.5	4.6	3.3
p0 queue free %	99			89			90	100	91	100	99	100
cM capacity (veh/h)	973			1350			260	271	821	213	214	726
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	230	464	103	5								
Volume Left	5	142	26	0								
Volume Right	7	6	76	2								
cSH	973	1350	525	298								
Volume to Capacity	0.01	0.11	0.20	0.02								
Queue Length 95th (ft)	0	9	18	1								
Control Delay (s)	0.2	3.2	13.5	17.3								
Lane LOS	A	A	B	C								
Approach Delay (s)	0.2	3.2	13.5	17.3								
Approach LOS			B	C								
Intersection Summary												
Average Delay			3.7									
Intersection Capacity Utilization			58.1%		ICU Level of Service				B			
Analysis Period (min)			15									



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	58	215	126	245	88	187	98	23	603
v/c Ratio	0.27	0.77	0.48	0.86	0.38	0.24	0.12	0.04	0.88
Control Delay	26.5	56.1	31.5	66.1	17.1	19.3	0.3	11.8	43.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	56.1	31.5	66.1	17.1	19.3	0.3	11.8	43.7
Queue Length 50th (ft)	24	118	54	138	25	56	0	6	331
Queue Length 95th (ft)	52	#240	99	#281	49	134	0	18	#552
Internal Link Dist (ft)		5961		2003		3047			1955
Turn Bay Length (ft)	440		250		295		350	280	
Base Capacity (vph)	219	285	262	291	230	764	852	560	686
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.75	0.48	0.84	0.38	0.24	0.12	0.04	0.88

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2027 Future AM Peak
4: Route 33 & Ashland Road

27TF AM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	190	14	120	220	12	84	178	93	22	533	40
Future Volume (vph)	55	190	14	120	220	12	84	178	93	22	533	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6	9.6	9.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1641	1697		1787	1738		1517	1743	1615	1805	1813	
Flt Permitted	0.39	1.00		0.48	1.00		0.19	1.00	1.00	0.64	1.00	
Satd. Flow (perm)	681	1697		910	1738		297	1743	1615	1215	1813	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	200	15	126	232	13	88	187	98	23	561	42
RTOR Reduction (vph)	0	3	0	0	3	0	0	0	59	0	3	0
Lane Group Flow (vph)	58	212	0	126	242	0	88	187	39	23	600	0
Heavy Vehicles (%)	10%	11%	8%	1%	8%	17%	19%	9%	0%	0%	3%	13%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	8			4			2		2	6		
Actuated Green, G (s)	18.2	13.6		18.2	13.6		41.4	36.8	36.8	37.4	35.2	
Effective Green, g (s)	18.2	13.6		18.2	13.6		41.4	36.8	36.8	37.4	35.2	
Actuated g/C Ratio	0.20	0.15		0.20	0.15		0.45	0.40	0.40	0.41	0.39	
Clearance Time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6	9.6	9.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)	183	252		225	258		195	701	650	511	698	
v/s Ratio Prot	0.02	0.12		c0.03	c0.14		c0.02	0.11		0.00	c0.33	
v/s Ratio Perm	0.05			0.08			0.18		0.02	0.02		
v/c Ratio	0.32	0.84		0.56	0.94		0.45	0.27	0.06	0.05	0.86	
Uniform Delay, d1	30.5	37.8		32.1	38.5		17.3	18.3	16.7	16.2	25.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	21.1		3.2	39.4		1.7	0.9	0.2	0.0	13.1	
Delay (s)	31.5	58.9		35.3	77.9		19.0	19.2	16.9	16.2	38.9	
Level of Service	C	E		D	E		B	B	B	B	D	
Approach Delay (s)		53.1			63.4			18.5			38.1	
Approach LOS		D			E			B			D	
Intersection Summary												
HCM 2000 Control Delay			41.9			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			91.4			Sum of lost time (s)			34.2			
Intersection Capacity Utilization			80.8%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

2027 Future AM Peak
5: Site Entrance 1 & Ashland Road

27TF AM
HCM Unsignalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	448	94	23	198	4	1
Future Volume (Veh/h)	448	94	23	198	4	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	509	107	26	225	5	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			616	840		562
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			616	840		562
tC, single (s)			4.1	6.4		6.2
tC, 2 stage (s)						
tF (s)			2.2	3.5		3.3
p0 queue free %			97	98		100
cM capacity (veh/h)			964	327		526
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	616	251	6			
Volume Left	0	26	5			
Volume Right	107	0	1			
cSH	1700	964	349			
Volume to Capacity	0.36	0.03	0.02			
Queue Length 95th (ft)	0	2	1			
Control Delay (s)	0.0	1.2	15.5			
Lane LOS			A C			
Approach Delay (s)	0.0	1.2	15.5			
Approach LOS			C			
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			39.7%	ICU Level of Service		A
Analysis Period (min)			15			

2027 Future AM Peak
6: Site Entrance 2 & Ashland Road

27TF AM
HCM Unsignalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	261	188	47	213	8	2
Future Volume (Veh/h)	261	188	47	213	8	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	297	214	53	242	9	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			511		645	297
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			511		645	297
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		98	100
cM capacity (veh/h)			1054		415	742
Direction, Lane #	EB 1	EB 2	WB 1	NB 1		
Volume Total	297	214	295	11		
Volume Left	0	0	53	9		
Volume Right	0	214	0	2		
cSH	1700	1700	1054	451		
Volume to Capacity	0.17	0.13	0.05	0.02		
Queue Length 95th (ft)	0	0	4	2		
Control Delay (s)	0.0	0.0	2.0	13.2		
Lane LOS			A	B		
Approach Delay (s)	0.0		2.0	13.2		
Approach LOS				B		
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			40.9%	ICU Level of Service		A
Analysis Period (min)			15			

2027 Future AM Peak
7: Site Entrance 3 & Ashland Road

27TF AM
HCM Unsignalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	185	94	23	269	4	1
Future Volume (Veh/h)	185	94	23	269	4	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	210	107	26	306	5	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			317		622	264
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			317		622	264
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		99	100
cM capacity (veh/h)			1243		441	775
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	317	332	6			
Volume Left	0	26	5			
Volume Right	107	0	1			
cSH	1700	1243	475			
Volume to Capacity	0.19	0.02	0.01			
Queue Length 95th (ft)	0	2	1			
Control Delay (s)	0.0	0.8	12.7			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.8	12.7			
Approach LOS			B			
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			43.2%	ICU Level of Service		A
Analysis Period (min)			15			

Intersection: 1: Pouncey Tract Road & Ashland Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	922	360	176	277	298	466
Average Queue (ft)	494	182	48	109	89	237
95th Queue (ft)	966	299	116	215	225	445
Link Distance (ft)	2713	2724		1230		1876
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		340	
Storage Blk Time (%)			0	2	0	7
Queuing Penalty (veh)			0	1	0	5

Intersection: 2: Driveway/Abner Church Road & Ashland Road

Movement	SB
Directions Served	LTR
Maximum Queue (ft)	42
Average Queue (ft)	15
95th Queue (ft)	41
Link Distance (ft)	874
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Cauthorne Road/Private Access & Ashland Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	28	95	78	59
Average Queue (ft)	1	23	37	6
95th Queue (ft)	13	65	64	31
Link Distance (ft)	2808	5950	2243	1317
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Route 33 & Ashland Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	UL	TR
Maximum Queue (ft)	96	254	192	280	142	159	62	232	536
Average Queue (ft)	27	115	74	138	55	63	24	24	269
95th Queue (ft)	69	216	156	256	109	127	52	123	467
Link Distance (ft)		5950		2040		3099			1980
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	440		250		295		350	280	
Storage Blk Time (%)			0	2				0	11
Queuing Penalty (veh)			0	2				0	2

Intersection: 5: Site Entrance 1 & Ashland Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	9	95	37
Average Queue (ft)	1	13	5
95th Queue (ft)	6	52	25
Link Distance (ft)	2724	1822	2820
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Site Entrance 2 & Ashland Road

Movement	EB	WB	NB
Directions Served	R	LT	LR
Maximum Queue (ft)	20	107	12
Average Queue (ft)	1	20	3
95th Queue (ft)	10	69	11
Link Distance (ft)		2664	1119
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	270		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Site Entrance 3 & Ashland Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	4	63	28
Average Queue (ft)	0	7	5
95th Queue (ft)	3	34	22
Link Distance (ft)	1620	2808	3335
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 11

2027 Future PM Peak
1: Pouncey Tract Road & Ashland Road

27 TF PM
Queues



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	520	421	53	281	30	181
v/c Ratio	1.15	1.13	0.27	0.91	0.23	0.66
Control Delay	133.0	134.1	49.2	91.3	48.7	69.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	133.0	134.1	49.2	91.3	48.7	69.5
Queue Length 50th (ft)	~606	~483	41	~275	23	162
Queue Length 95th (ft)	#840	#701	80	#471	52	248
Internal Link Dist (ft)	2680	2715		1193		1824
Turn Bay Length (ft)			200		340	
Base Capacity (vph)	451	373	194	308	132	288
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.15	1.13	0.27	0.91	0.23	0.63

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2027 Future PM Peak
1: Pouncey Tract Road & Ashland Road

27 TF PM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	191	83	84	245	50	48	201	52	27	126	37
Future Volume (vph)	194	191	83	84	245	50	48	201	52	27	126	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.98		1.00	0.97		1.00	0.97	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1793			1822		1770	1834		1805	1835	
Flt Permitted		0.68			0.76		0.44	1.00		0.22	1.00	
Satd. Flow (perm)		1247			1405		823	1834		425	1835	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	216	212	92	93	272	56	53	223	58	30	140	41
RTOR Reduction (vph)	0	5	0	0	4	0	0	6	0	0	7	0
Lane Group Flow (vph)	0	515	0	0	417	0	53	275	0	30	174	0
Heavy Vehicles (%)	1%	1%	3%	0%	2%	0%	2%	0%	2%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3			2			6		
Actuated Green, G (s)		52.4			38.5		28.8	24.1		26.4	22.9	
Effective Green, g (s)		52.4			38.5		28.8	24.1		26.4	22.9	
Actuated g/C Ratio		0.35			0.26		0.19	0.16		0.18	0.15	
Clearance Time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Vehicle Extension (s)		3.0			3.0		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)		437			362		188	295		107	281	
v/s Ratio Prot							c0.01	c0.15		0.01	0.09	
v/s Ratio Perm		c0.41			c0.30		0.05			0.04		
v/c Ratio		1.18			1.15		0.28	0.93		0.28	0.62	
Uniform Delay, d1		48.5			55.5		50.4	61.8		52.2	59.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		101.6			95.7		0.8	35.2		1.4	4.8	
Delay (s)		150.1			151.1		51.2	97.1		53.6	63.9	
Level of Service		F			F		D	F		D	E	
Approach Delay (s)		150.1			151.1			89.8			62.5	
Approach LOS		F			F			F			E	
Intersection Summary												
HCM 2000 Control Delay		124.4			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.10										
Actuated Cycle Length (s)		149.4			Sum of lost time (s)			30.9				
Intersection Capacity Utilization		84.4%			ICU Level of Service			E				
Analysis Period (min)		15										
c Critical Lane Group												

2027 Future PM Peak
2: Driveway/Abner Church Road & Ashland Road

27 TF PM
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	328	0	0	264	35	0	0	0	21	0	3
Future Volume (Veh/h)	5	328	0	0	264	35	0	0	0	21	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	5	349	0	0	281	37	0	0	0	22	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	318			349			662	677	349	658	658	300
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	318			349			662	677	349	658	658	300
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	94	100	100
cM capacity (veh/h)	1253			1221			376	376	699	379	385	745
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	354	318	0	25								
Volume Left	5	0	0	22								
Volume Right	0	37	0	3								
cSH	1253	1221	1700	403								
Volume to Capacity	0.00	0.00	0.00	0.06								
Queue Length 95th (ft)	0	0	0	5								
Control Delay (s)	0.2	0.0	0.0	14.5								
Lane LOS	A		A	B								
Approach Delay (s)	0.2	0.0	0.0	14.5								
Approach LOS			A	B								
Intersection Summary												
Average Delay			0.6									
Intersection Capacity Utilization			31.3%	ICU Level of Service				A				
Analysis Period (min)			15									

2027 Future PM Peak
3: Cauthorne Road/Private Access & Ashland Road

27 TF PM
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	303	17	84	194	2	8	0	210	1	0	3
Future Volume (Veh/h)	3	303	17	84	194	2	8	0	210	1	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	329	18	91	211	2	9	0	228	1	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	213			347			741	739	338	966	747	212
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	213			347			741	739	338	966	747	212
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			93			97	100	68	99	100	100
cM capacity (veh/h)	1369			1218			314	321	706	150	317	833
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	350	304	237	4								
Volume Left	3	91	9	1								
Volume Right	18	2	228	3								
cSH	1369	1218	674	390								
Volume to Capacity	0.00	0.07	0.35	0.01								
Queue Length 95th (ft)	0	6	39	1								
Control Delay (s)	0.1	2.9	13.2	14.3								
Lane LOS	A	A	B	B								
Approach Delay (s)	0.1	2.9	13.2	14.3								
Approach LOS			B	B								
Intersection Summary												
Average Delay			4.6									
Intersection Capacity Utilization			56.0%		ICU Level of Service				B			
Analysis Period (min)			15									

									
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	157	330	97	246	32	598	118	25	287
v/c Ratio	0.55	0.82	0.40	0.75	0.07	0.87	0.16	0.11	0.42
Control Delay	30.6	51.4	26.0	48.0	12.9	41.8	0.5	13.9	22.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	51.4	26.0	48.0	12.9	41.8	0.5	13.9	22.6
Queue Length 50th (ft)	48	146	29	103	9	241	0	7	92
Queue Length 95th (ft)	114	#360	75	#245	23	#538	0	19	196
Internal Link Dist (ft)		5961		2003		3047			1955
Turn Bay Length (ft)	440		250		295		350	280	
Base Capacity (vph)	284	404	243	350	459	684	744	218	692
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.82	0.40	0.70	0.07	0.87	0.16	0.11	0.41

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2027 Future PM Peak
4: Route 33 & Ashland Road

27 TF PM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	138	252	39	85	195	21	28	526	104	5	17	244
Future Volume (vph)	138	252	39	85	195	21	28	526	104	5	17	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6		9.6	9.2
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85		1.00	0.99
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1862		1787	1863		1736	1863	1583		1726	1830
Flt Permitted	0.46	1.00		0.29	1.00		0.55	1.00	1.00		0.15	1.00
Satd. Flow (perm)	849	1862		545	1863		1008	1863	1583		272	1830
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	157	286	44	97	222	24	32	598	118	6	19	277
RTOR Reduction (vph)	0	6	0	0	4	0	0	0	78	0	0	1
Lane Group Flow (vph)	157	324	0	97	242	0	32	598	40	0	25	286
Heavy Vehicles (%)	2%	0%	0%	1%	0%	5%	4%	2%	2%	0%	6%	3%
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA	Perm	D.P+P	D.P+P	NA
Protected Phases	3	8		7	4		5	2		1	1	6
Permitted Phases	4			8			6		2	2	2	
Actuated Green, G (s)	21.8	17.1		21.8	15.6		32.2	29.3	29.3		31.4	30.1
Effective Green, g (s)	21.8	17.1		21.8	15.6		32.2	29.3	29.3		31.4	30.1
Actuated g/C Ratio	0.25	0.20		0.25	0.18		0.37	0.34	0.34		0.36	0.34
Clearance Time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6		9.6	9.2
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	4.0	4.0		3.0	4.0
Lane Grp Cap (vph)	277	364		202	332		388	624	530		132	630
v/s Ratio Prot	c0.04	c0.17		0.03	0.13		0.00	c0.32			c0.00	0.16
v/s Ratio Perm	0.10			0.09			0.03		0.02		0.06	
v/c Ratio	0.57	0.89		0.48	0.73		0.08	0.96	0.07		0.19	0.45
Uniform Delay, d1	27.2	34.2		26.5	33.9		17.8	28.5	19.8		20.4	22.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.7	22.8		1.8	7.8		0.1	25.9	0.1		0.7	0.7
Delay (s)	29.9	57.0		28.3	41.7		17.9	54.4	19.9		21.1	23.0
Level of Service	C	E		C	D		B	D	B		C	C
Approach Delay (s)		48.3			37.9			47.4				22.8
Approach LOS		D			D			D				C
Intersection Summary												
HCM 2000 Control Delay			41.8			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			87.4			Sum of lost time (s)			34.2			
Intersection Capacity Utilization			68.8%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	9
Future Volume (vph)	9
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.88
Adj. Flow (vph)	10
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	11%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

2027 Future PM Peak
5: Site Entrance 1 & Ashland Road

27 TF PM
HCM Unsignalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	301	3	0	366	50	12
Future Volume (Veh/h)	301	3	0	366	50	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	342	3	0	416	57	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			345		760	344
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			345		760	344
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		85	98
cM capacity (veh/h)			1214		374	699
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	345	416	71			
Volume Left	0	0	57			
Volume Right	3	0	14			
cSH	1700	1214	412			
Volume to Capacity	0.20	0.00	0.17			
Queue Length 95th (ft)	0	0	15			
Control Delay (s)	0.0	0.0	15.6			
Lane LOS			C			
Approach Delay (s)	0.0	0.0	15.6			
Approach LOS			C			
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			29.4%	ICU Level of Service		A
Analysis Period (min)			15			

2027 Future PM Peak
6: Site Entrance 2 & Ashland Road

27 TF PM
HCM Unsignalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	307	6	1	266	100	25
Future Volume (Veh/h)	307	6	1	266	100	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	349	7	1	302	114	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			356		653	349
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			356		653	349
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		74	96
cM capacity (veh/h)			1203		432	694
Direction, Lane #	EB 1	EB 2	WB 1	NB 1		
Volume Total	349	7	303	142		
Volume Left	0	0	1	114		
Volume Right	0	7	0	28		
cSH	1700	1700	1203	466		
Volume to Capacity	0.21	0.00	0.00	0.30		
Queue Length 95th (ft)	0	0	0	32		
Control Delay (s)	0.0	0.0	0.0	16.1		
Lane LOS			A	C		
Approach Delay (s)	0.0		0.0	16.1		
Approach LOS				C		
Intersection Summary						
Average Delay			2.9			
Intersection Capacity Utilization			29.9%	ICU Level of Service		A
Analysis Period (min)			15			

2027 Future PM Peak
7: Site Entrance 3 & Ashland Road

27 TF PM
HCM Unsignalized Intersection Capacity Analysis

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (veh/h)	345	3	0	250	50	12
Future Volume (Veh/h)	345	3	0	250	50	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	392	3	0	284	57	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			395		678	394
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			395		678	394
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		86	98
cM capacity (veh/h)			1164		418	655
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	395	284	71			
Volume Left	0	0	57			
Volume Right	3	0	14			
cSH	1700	1164	450			
Volume to Capacity	0.23	0.00	0.16			
Queue Length 95th (ft)	0	0	14			
Control Delay (s)	0.0	0.0	14.5			
Lane LOS			B			
Approach Delay (s)	0.0	0.0	14.5			
Approach LOS			B			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			28.5%	ICU Level of Service		A
Analysis Period (min)			15			

Intersection: 1: Pouncey Tract Road & Ashland Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	470	483	199	364	69	207
Average Queue (ft)	282	265	47	175	22	103
95th Queue (ft)	430	429	140	325	56	180
Link Distance (ft)	2713	2724		1230		1876
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		340	
Storage Blk Time (%)			0	10		
Queuing Penalty (veh)			0	5		

Intersection: 2: Driveway/Abner Church Road & Ashland Road

Movement	EB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	41	47
Average Queue (ft)	2	16
95th Queue (ft)	22	43
Link Distance (ft)	2664	874
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Cauthorne Road/Private Access & Ashland Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	6	94	122	24
Average Queue (ft)	0	19	60	3
95th Queue (ft)	4	61	98	16
Link Distance (ft)	2808	5950	2243	1317
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Route 33 & Ashland Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	UL	TR
Maximum Queue (ft)	144	258	128	236	110	414	241	57	177
Average Queue (ft)	60	124	45	112	21	198	40	13	83
95th Queue (ft)	117	226	94	198	77	349	127	38	151
Link Distance (ft)		5950		2040		3099			1980
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	440		250		295		350	280	
Storage Blk Time (%)			0	1	0	3	0		
Queuing Penalty (veh)			0	0	0	5	0		

Intersection: 5: Site Entrance 1 & Ashland Road

Movement	NB
Directions Served	LR
Maximum Queue (ft)	66
Average Queue (ft)	32
95th Queue (ft)	59
Link Distance (ft)	2820
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Site Entrance 2 & Ashland Road

Movement	NB
Directions Served	LR
Maximum Queue (ft)	70
Average Queue (ft)	26
95th Queue (ft)	56
Link Distance (ft)	1119
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 7: Site Entrance 3 & Ashland Road

Movement	NB
Directions Served	LR
Maximum Queue (ft)	64
Average Queue (ft)	31
95th Queue (ft)	55
Link Distance (ft)	3335
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

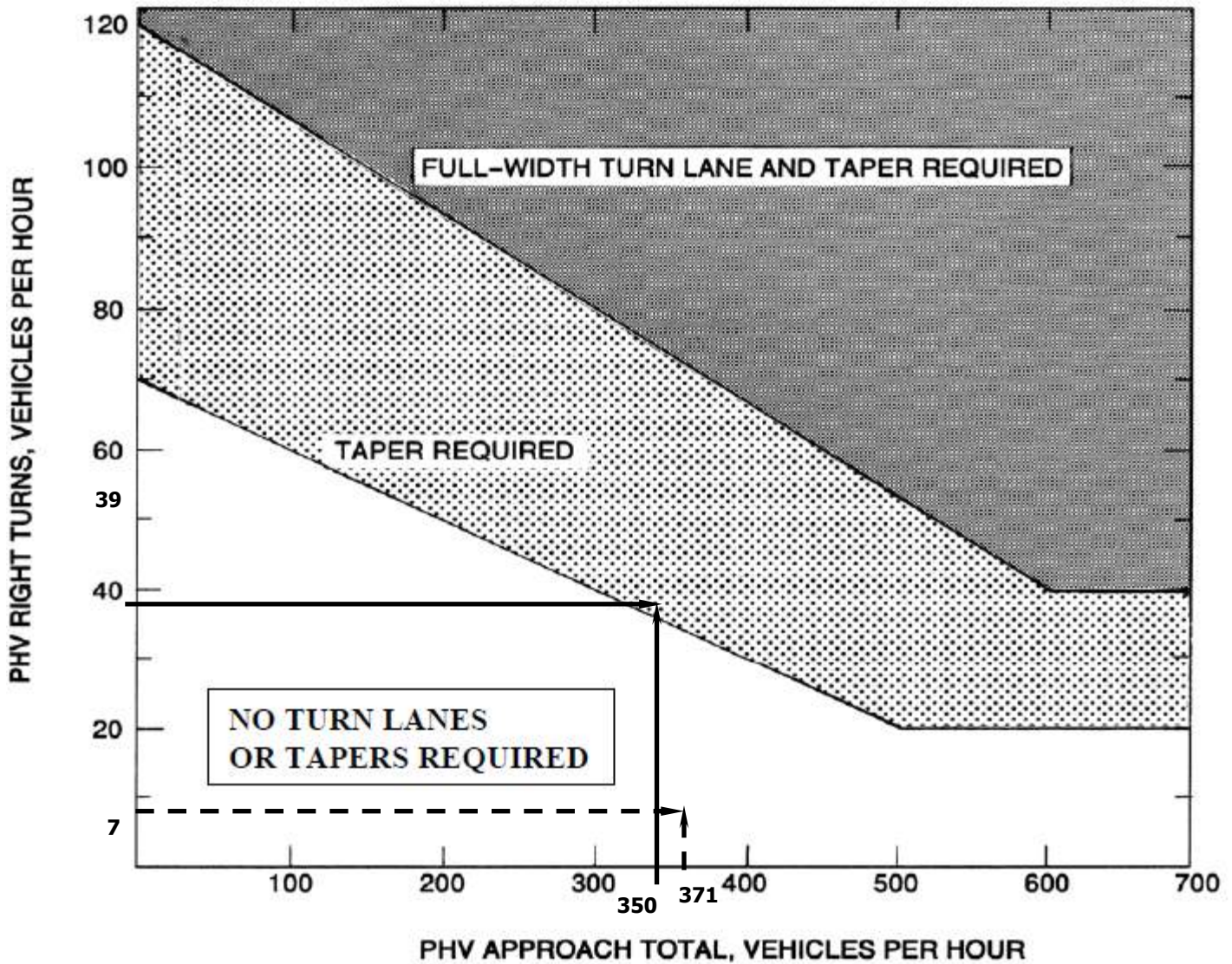
Network Summary

Network wide Queuing Penalty: 10

Appendix H

Turn Lane Nomographs

GUIDELINES FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)
FIGURE 3-26 VDOT ROAD DESIGN MANUAL APPENDIX F



RIGHT TURN TAPER REQUIRED

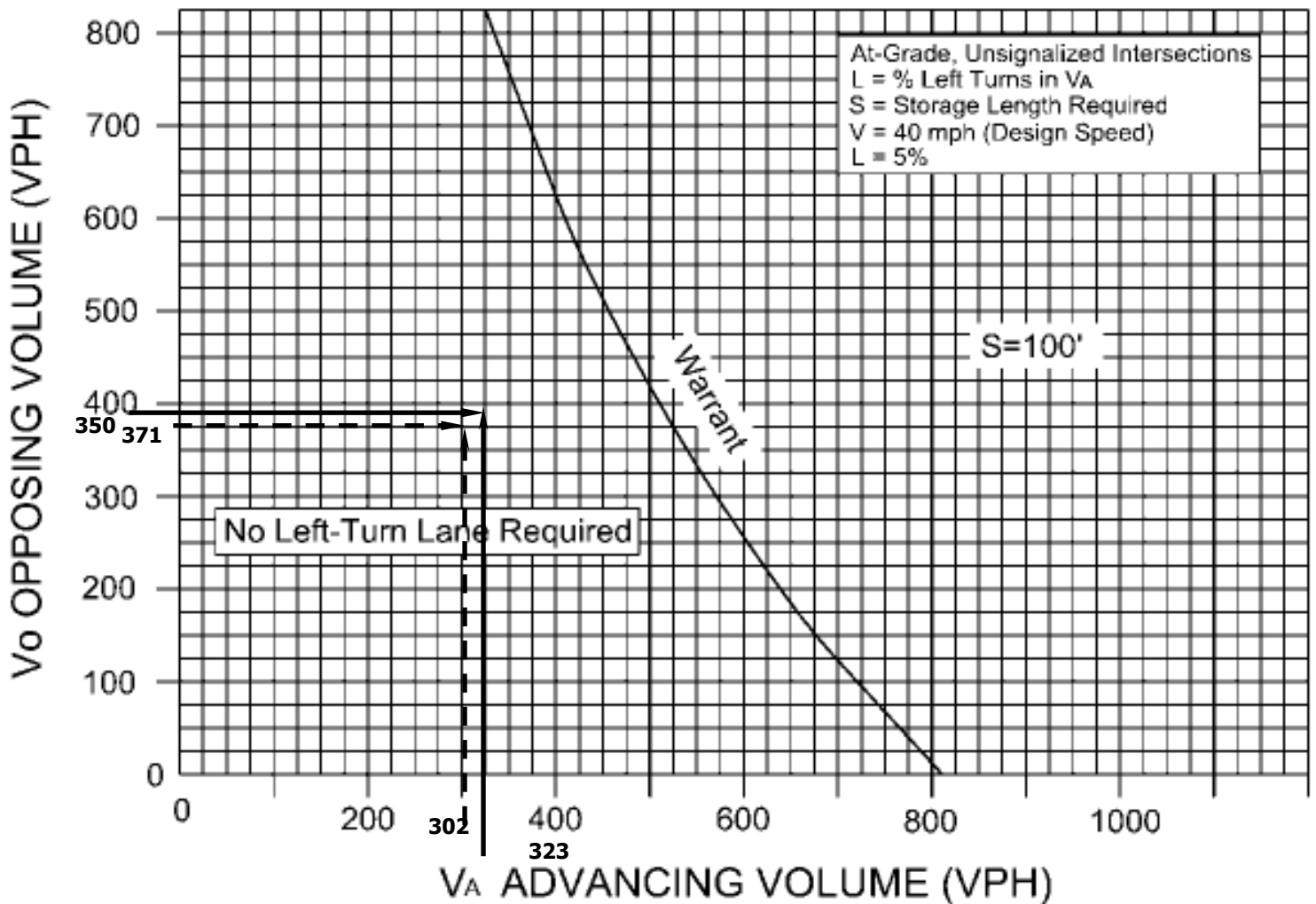
LEGEND

- AM Peak Hour
- - - PM Peak Hour

Right-Turn Lane Guideline
2035 Total Future Volumes
Eastbound Right at Site Entrance 1

Figure
H-1

WARRANT FOR LEFT-TURN STORAGE LANES
ON TWO-LANE HIGHWAYS (40 MPH)
FIGURE 3-4 VDOT ROAD DESIGN MANUAL APPENDIX F

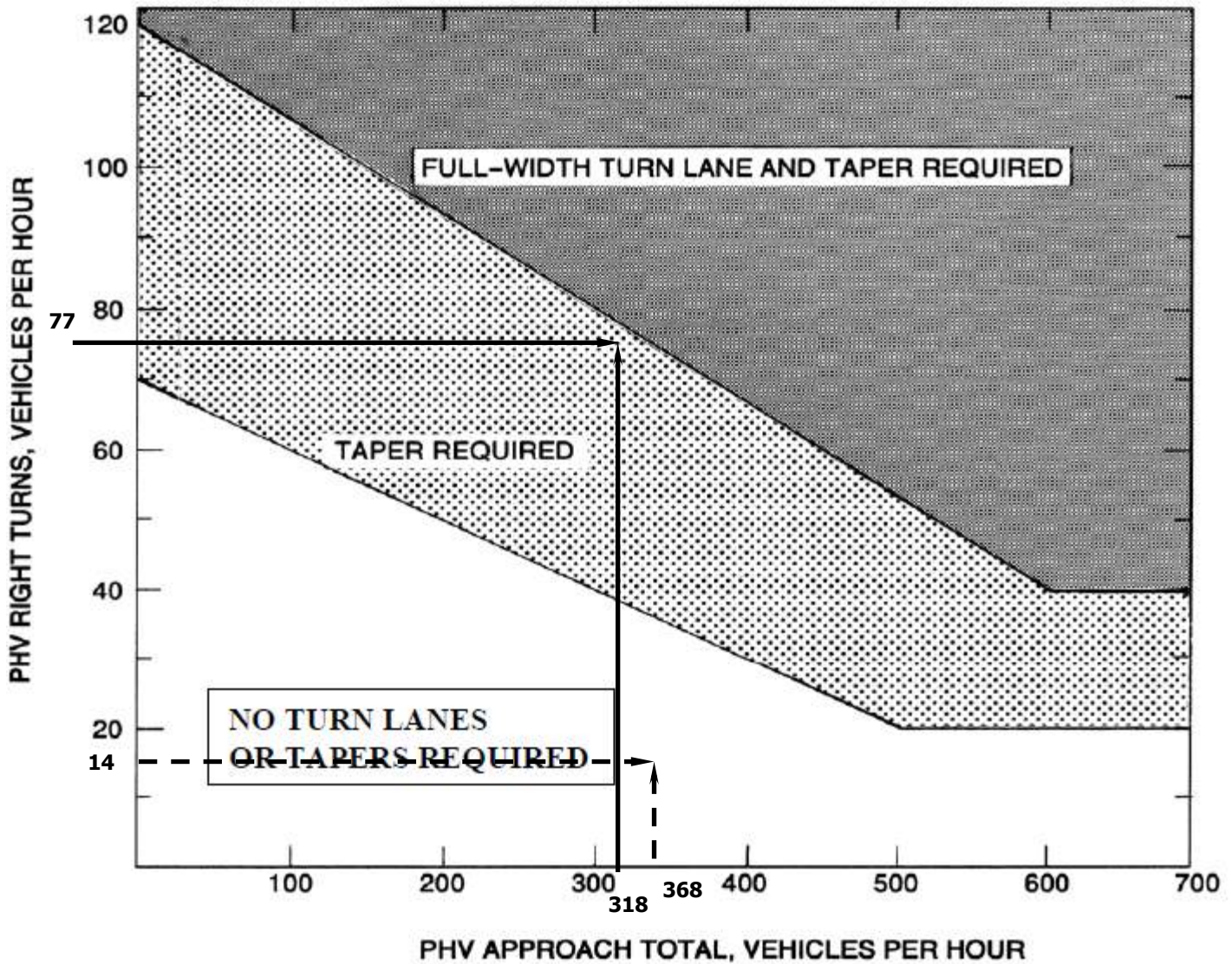


LEGEND

- AM Peak Hour
- - - PM Peak Hour

NO LEFT TURN LANE REQUIRED

GUIDELINES FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)
FIGURE 3-26 VDOT ROAD DESIGN MANUAL APPENDIX F



RIGHT TURN TAPER REQUIRED

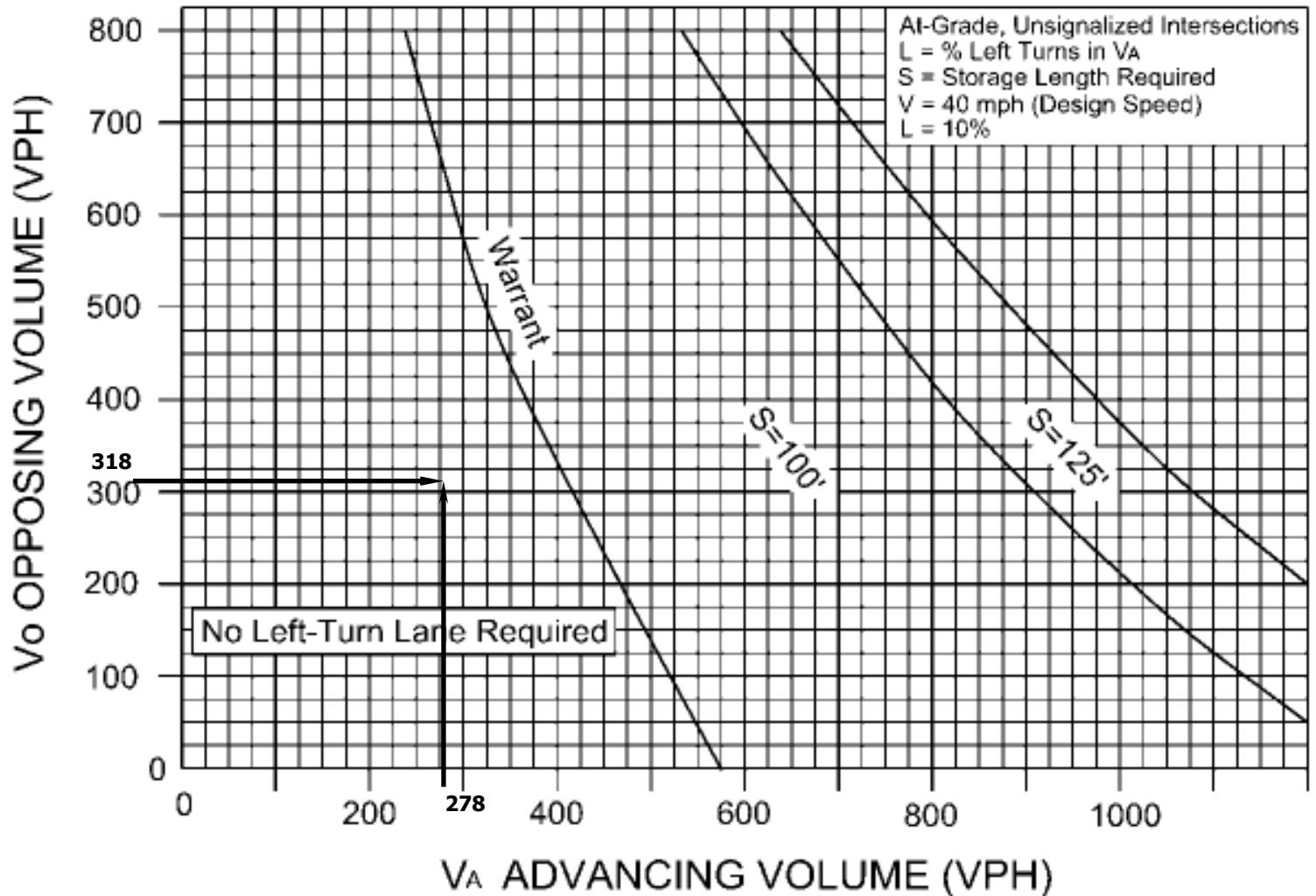
LEGEND

- AM Peak Hour
- - - PM Peak Hour

Right-Turn Lane Guideline
2035 Total Future Volumes
Eastbound Right at Site Entrance 2

Figure
H-3

WARRANT FOR LEFT-TURN STORAGE LANES
ON TWO-LANE HIGHWAYS (40 MPH)
FIGURE 3-5 VDOT ROAD DESIGN MANUAL APPENDIX F

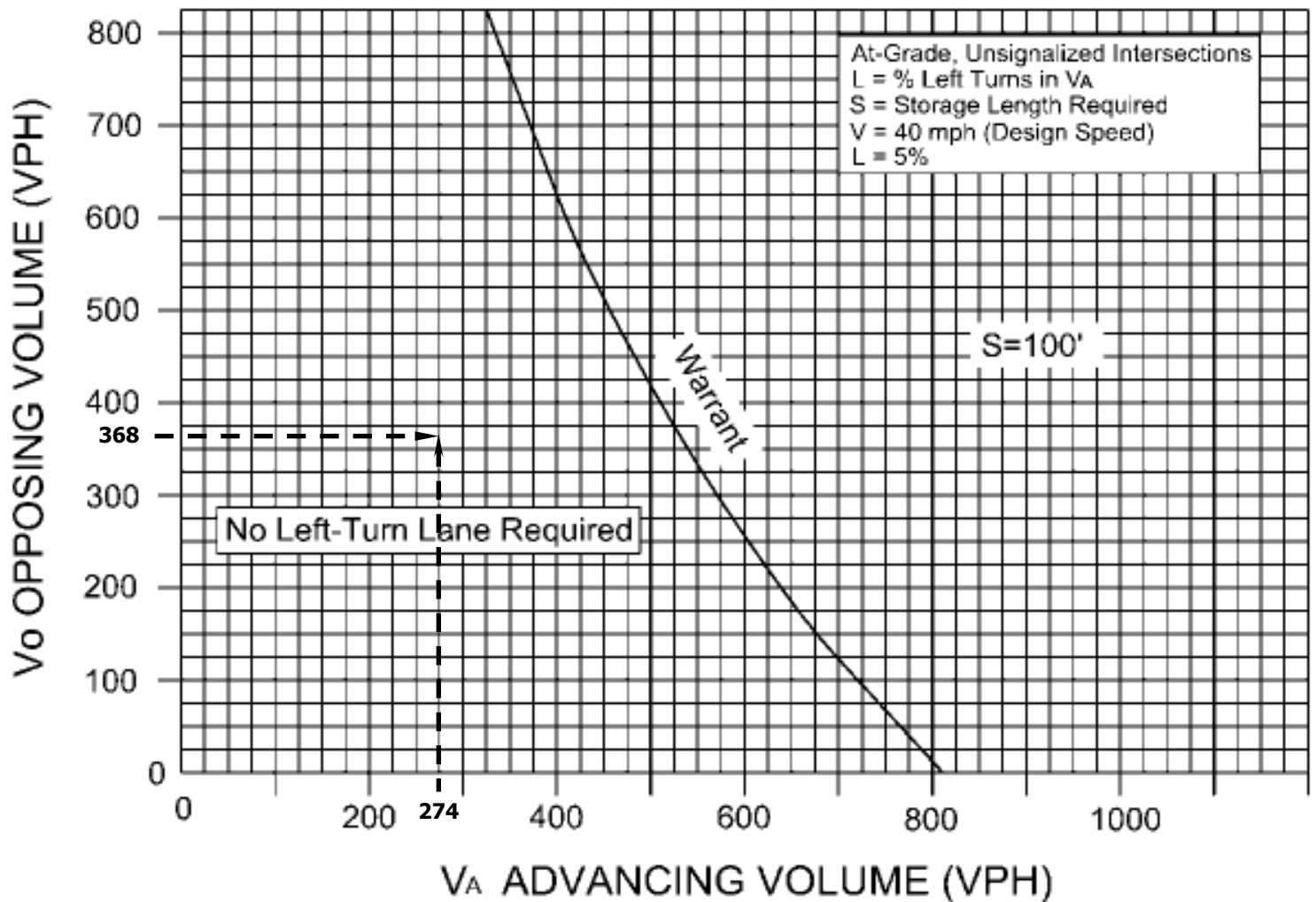


LEGEND

— AM Peak Hour

NO LEFT TURN LANE REQUIRED

WARRANT FOR LEFT-TURN STORAGE LANES
ON TWO-LANE HIGHWAYS (40 MPH)
FIGURE 3-4 VDOT ROAD DESIGN MANUAL APPENDIX F

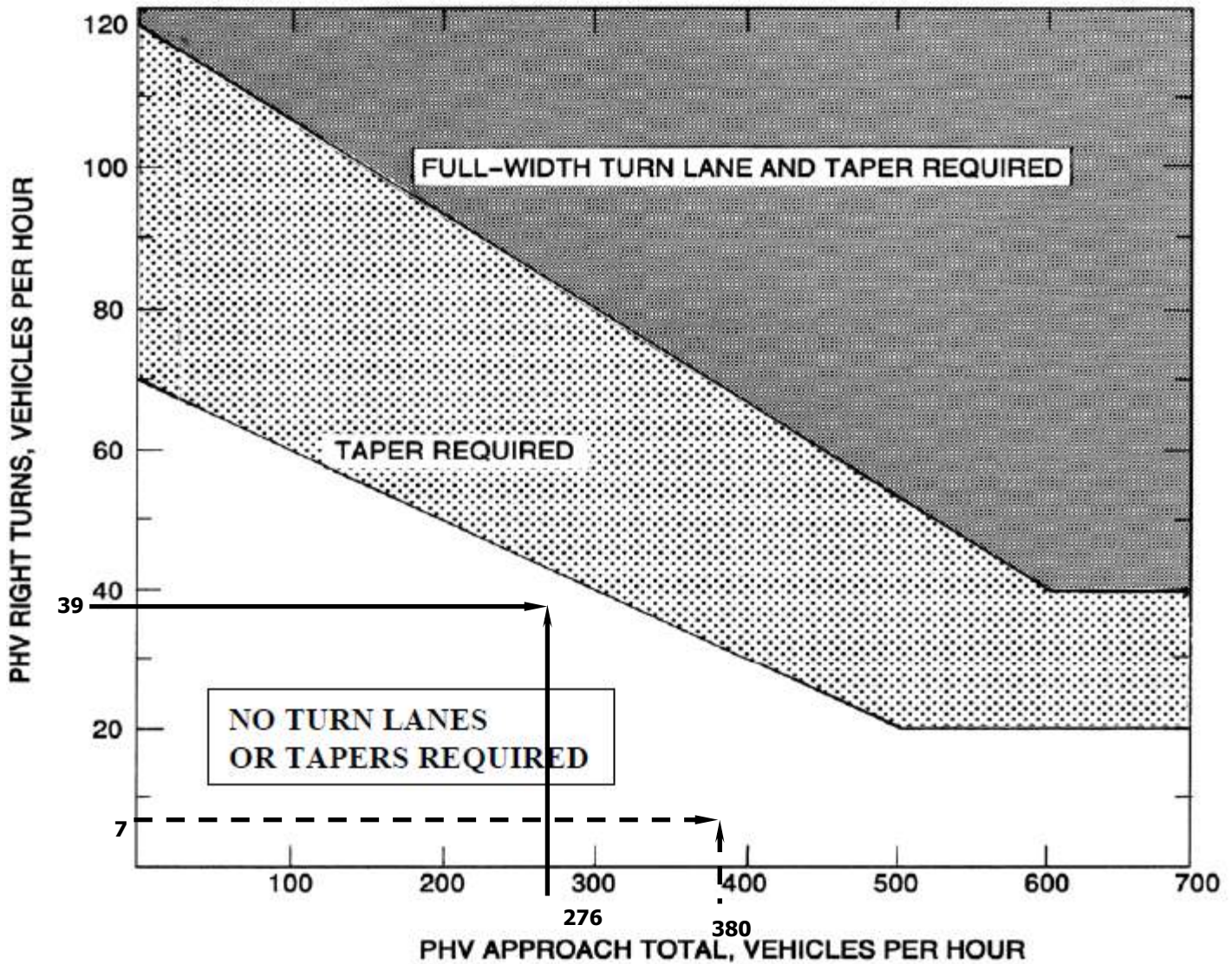


LEGEND

----- PM Peak Hour

NO LEFT TURN LANE REQUIRED

GUIDELINES FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)
FIGURE 3-26 VDOT ROAD DESIGN MANUAL APPENDIX F



NO RIGHT TURN LANE OR TAPER REQUIRED

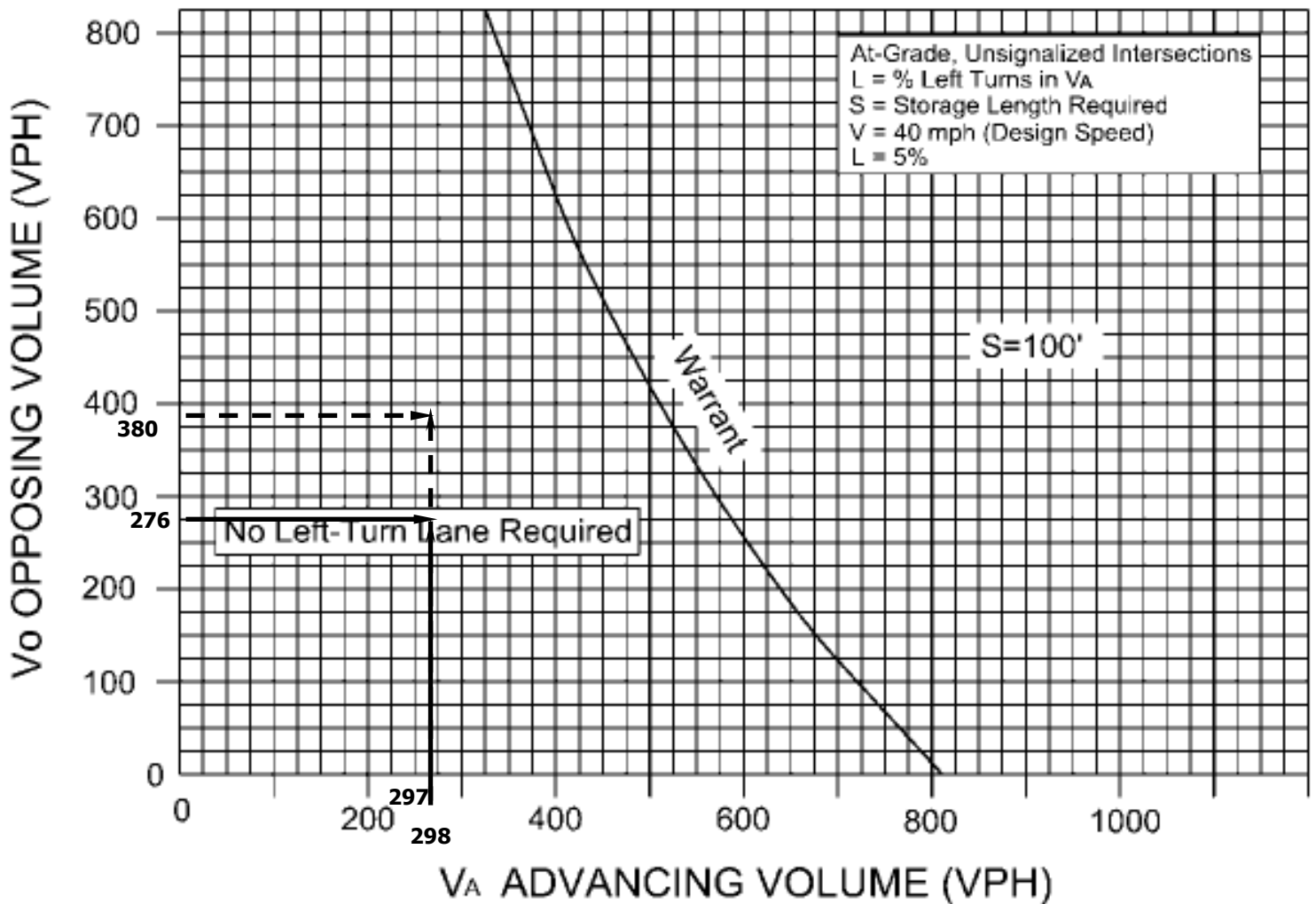
LEGEND

- AM Peak Hour
- - - PM Peak Hour

Right-Turn Lane Guideline
2035 Total Future Volumes
Eastbound Right at Site Entrance 3

Figure
H-6

WARRANT FOR LEFT-TURN STORAGE LANES
ON TWO-LANE HIGHWAYS (40 MPH)
FIGURE 3-4 VDOT ROAD DESIGN MANUAL APPENDIX F

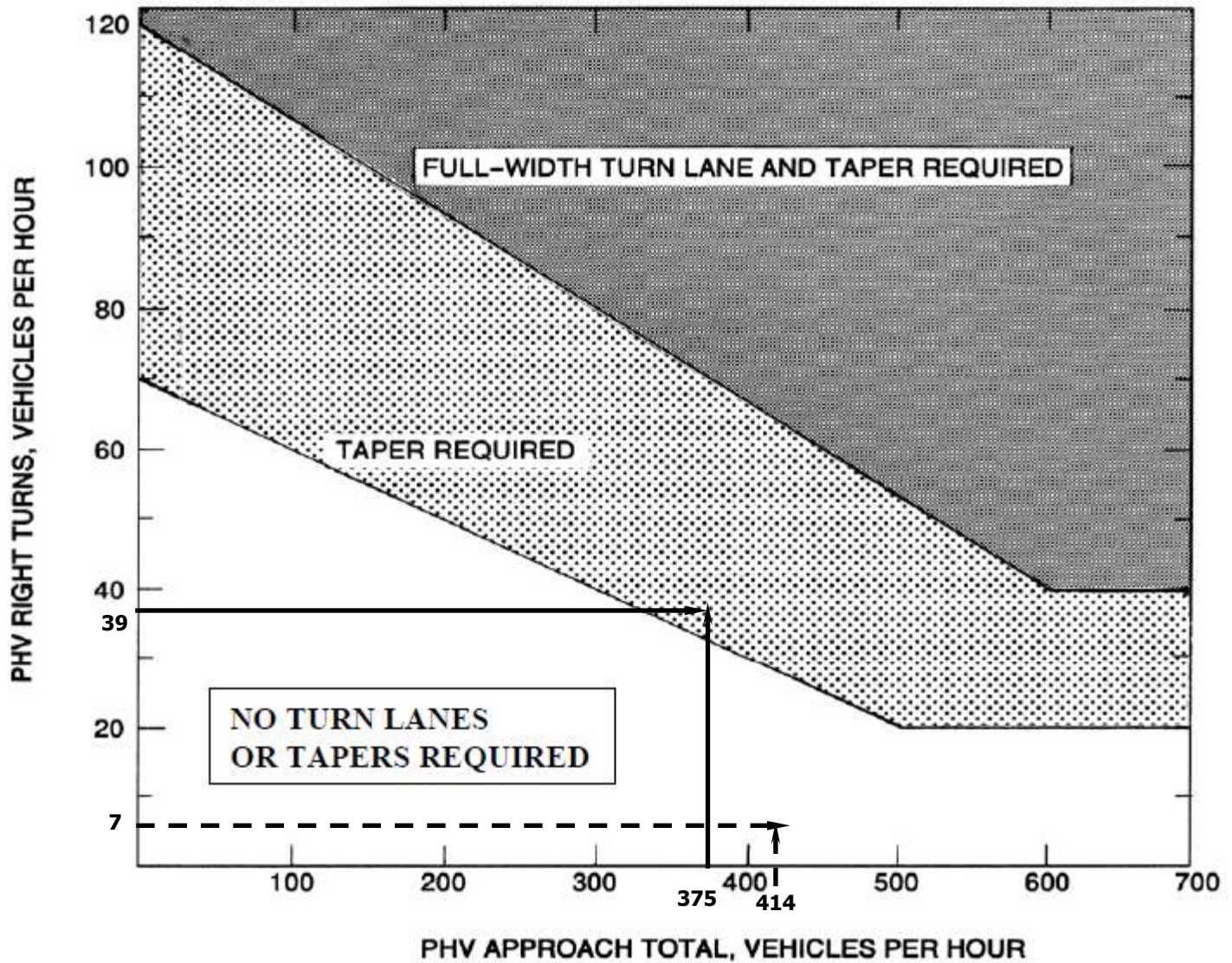


LEGEND

- AM Peak Hour
- - - PM Peak Hour

NO LEFT TURN LANE REQUIRED

GUIDELINES FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)
FIGURE 3-26 VDOT ROAD DESIGN MANUAL APPENDIX F



RIGHT TURN TAPER REQUIRED

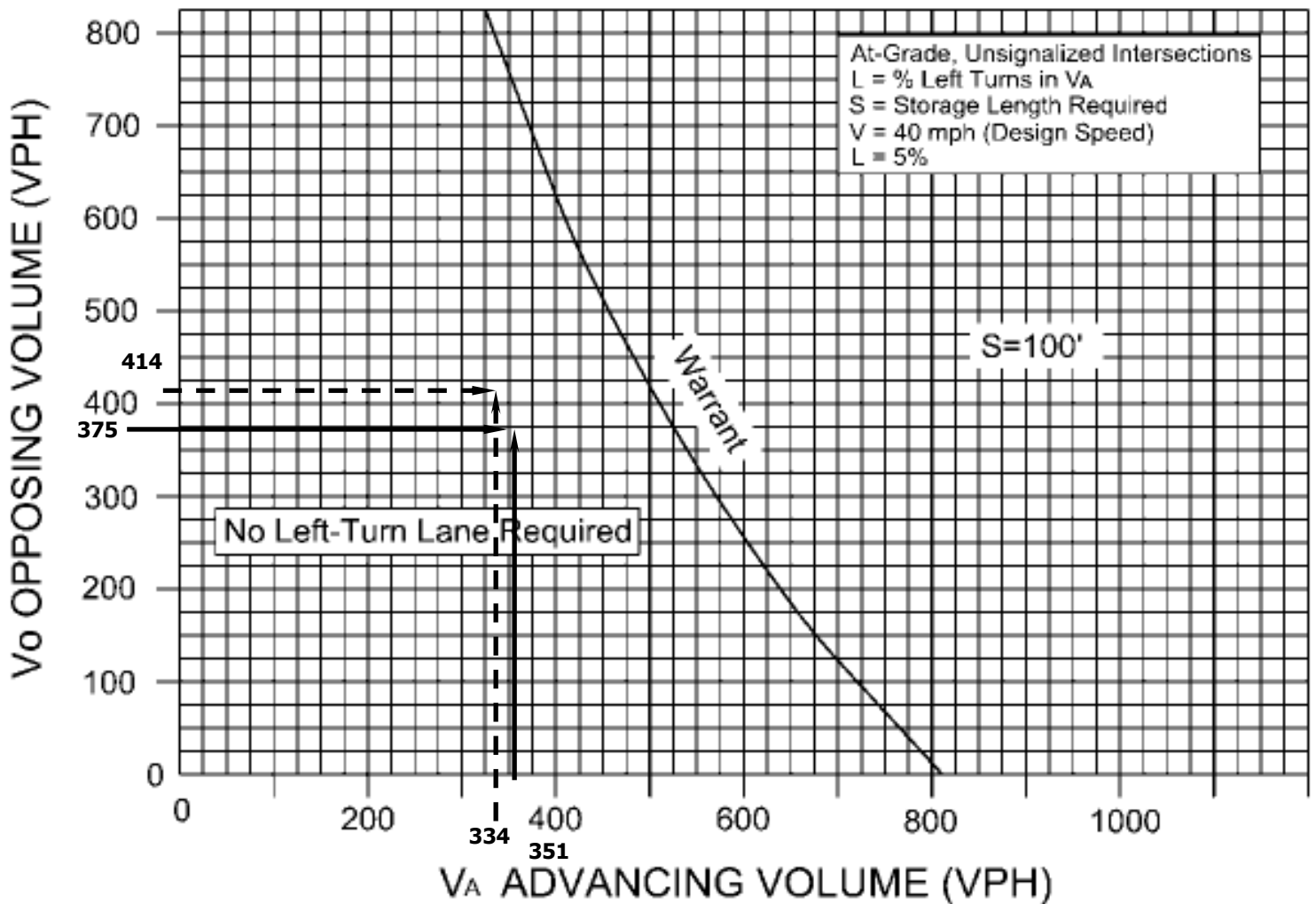
LEGEND

- AM Peak Hour
- - - PM Peak Hour

Right-Turn Lane Guideline
2041 Total Future Volumes
Eastbound Right at Site Entrance 1

Figure
H-8

WARRANT FOR LEFT-TURN STORAGE LANES
ON TWO-LANE HIGHWAYS (40 MPH)
FIGURE 3-4 VDOT ROAD DESIGN MANUAL APPENDIX F



LEGEND

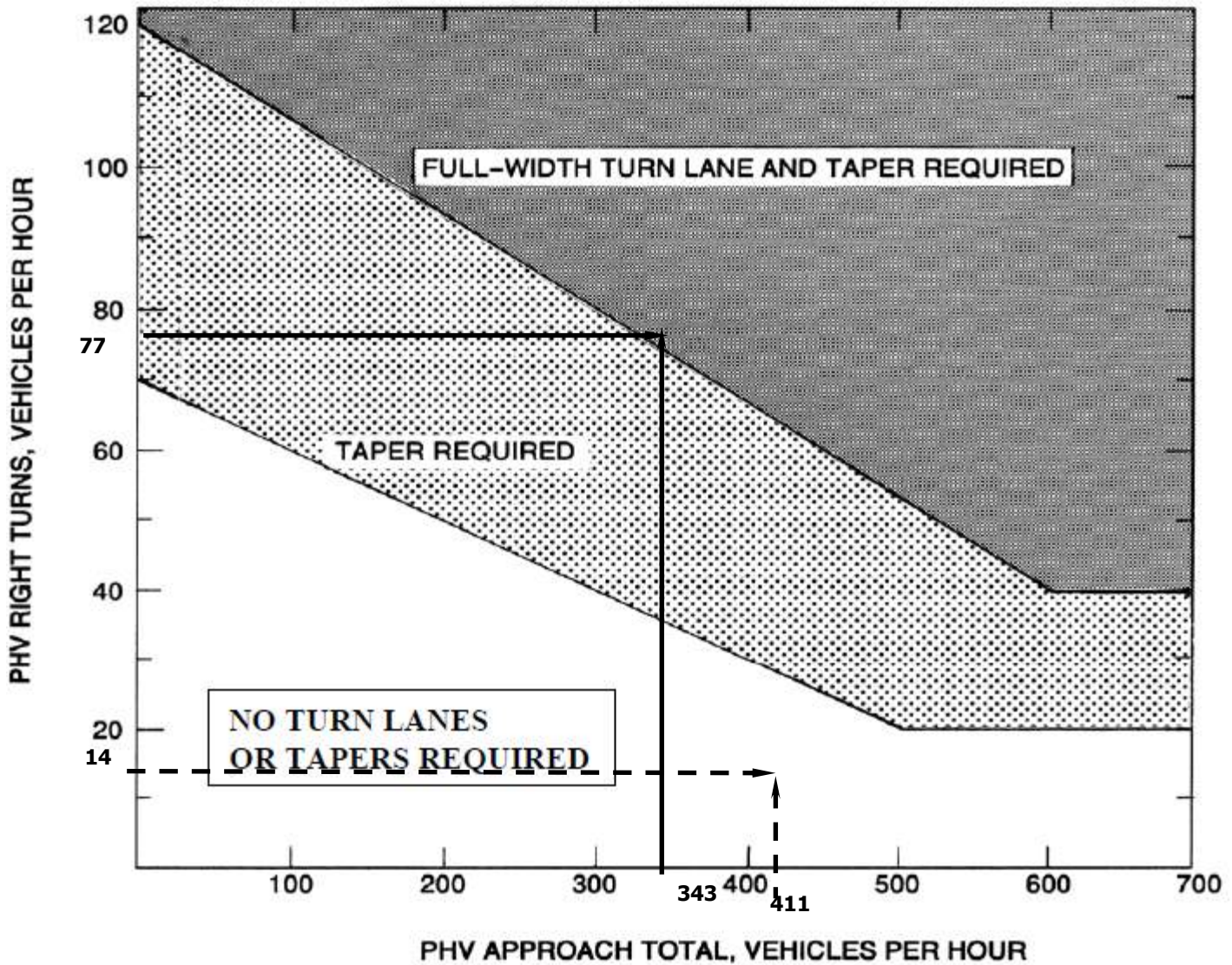
- AM Peak Hour
- - - PM Peak Hour

NO LEFT TURN LANE REQUIRED

Left-Turn Lane Warrant
2041 Total Future Volumes
Westbound Left at Site Entrance 1

Figure
H-9

GUIDELINES FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)
FIGURE 3-26 VDOT ROAD DESIGN MANUAL APPENDIX F



RIGHT TURN LANE AND TAPER REQUIRED

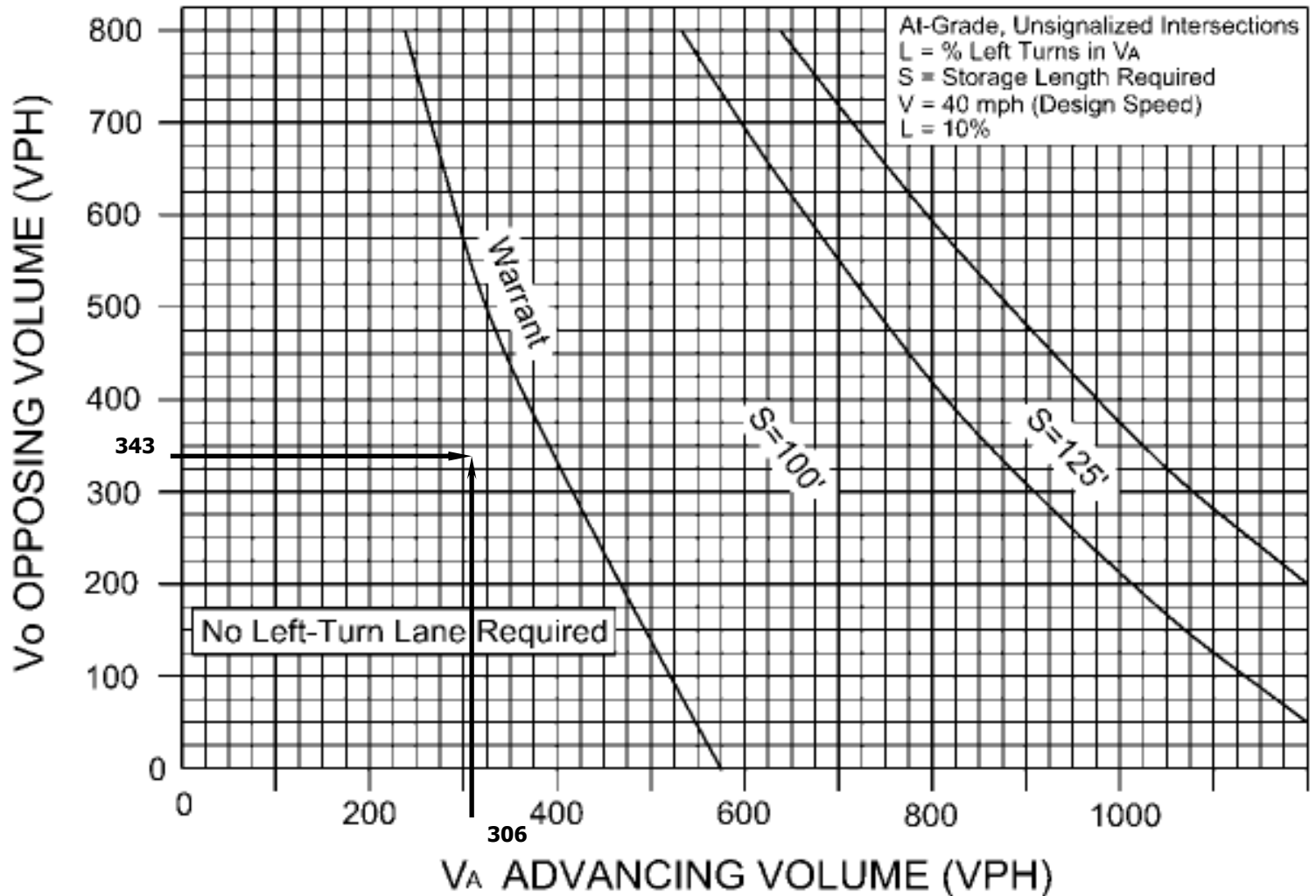
LEGEND

- AM Peak Hour
- - - PM Peak Hour

Right-Turn Lane Guideline
2041 Total Future Volumes
Eastbound Right at Site Entrance 2

Figure
H-10

WARRANT FOR LEFT-TURN STORAGE LANES
ON TWO-LANE HIGHWAYS (40 MPH)
FIGURE 3-5 VDOT ROAD DESIGN MANUAL APPENDIX F

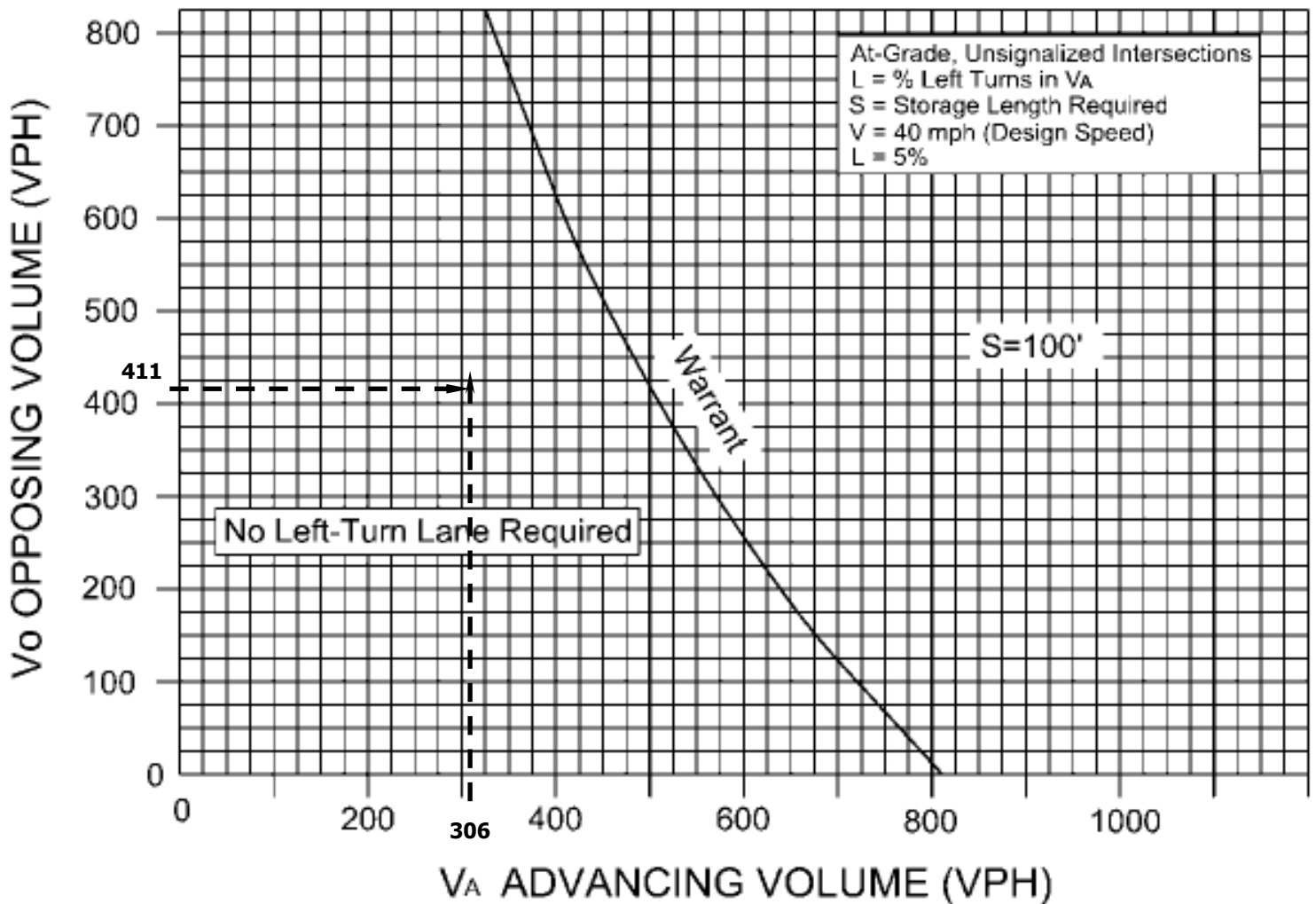


LEGEND

— AM Peak Hour

NO LEFT TURN LANE REQUIRED

WARRANT FOR LEFT-TURN STORAGE LANES
ON TWO-LANE HIGHWAYS (40 MPH)
FIGURE 3-4 VDOT ROAD DESIGN MANUAL APPENDIX F



LEGEND

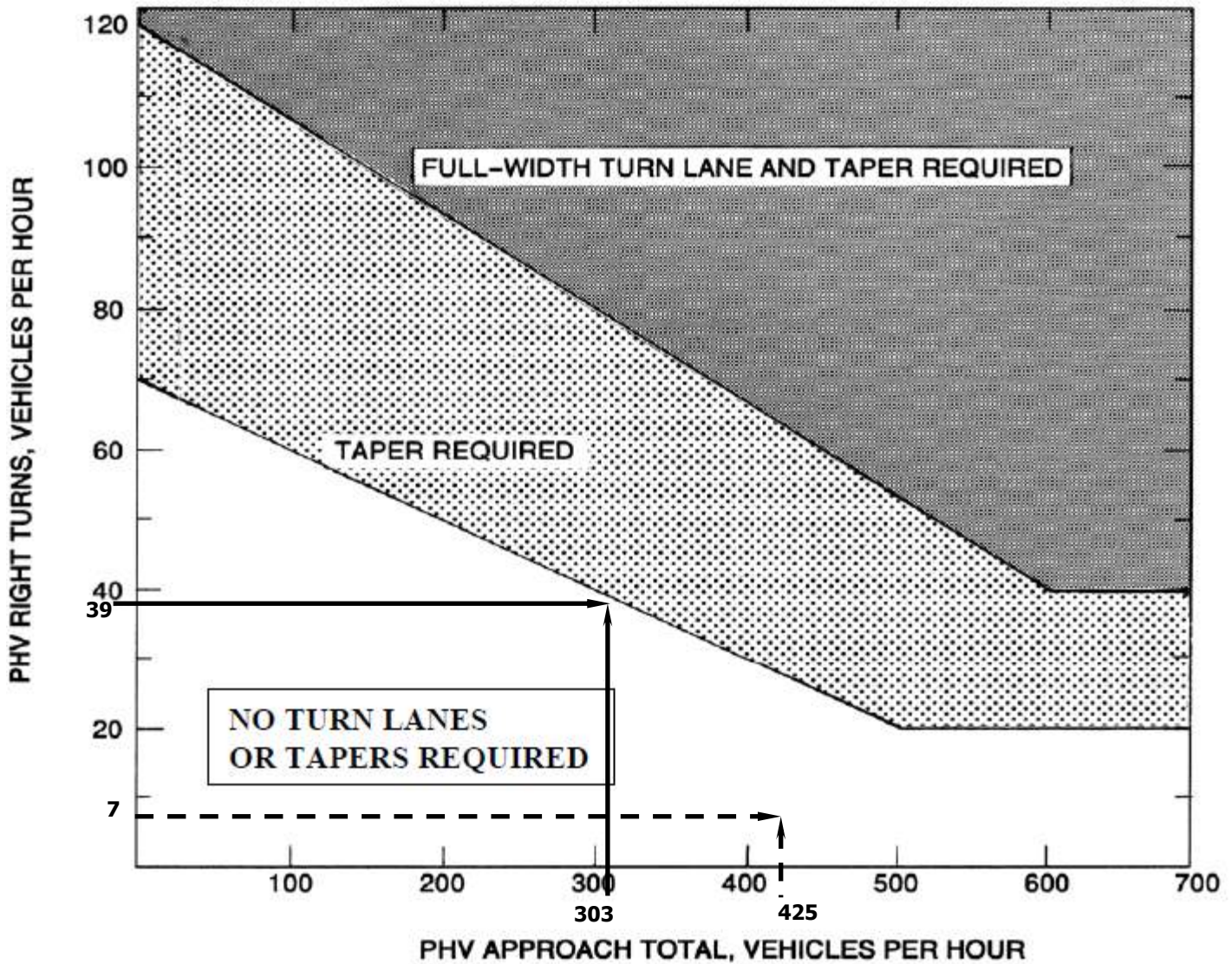
- AM Peak Hour
- - - PM Peak Hour

NO LEFT TURN LANE REQUIRED

Left-Turn Lane Warrant
2041 Total Future Volumes (PM Peak)
Westbound Left at Site Entrance 2

Figure
H-12

GUIDELINES FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)
FIGURE 3-26 VDOT ROAD DESIGN MANUAL APPENDIX F



NO RIGHT TURN LANE OR TAPER REQUIRED

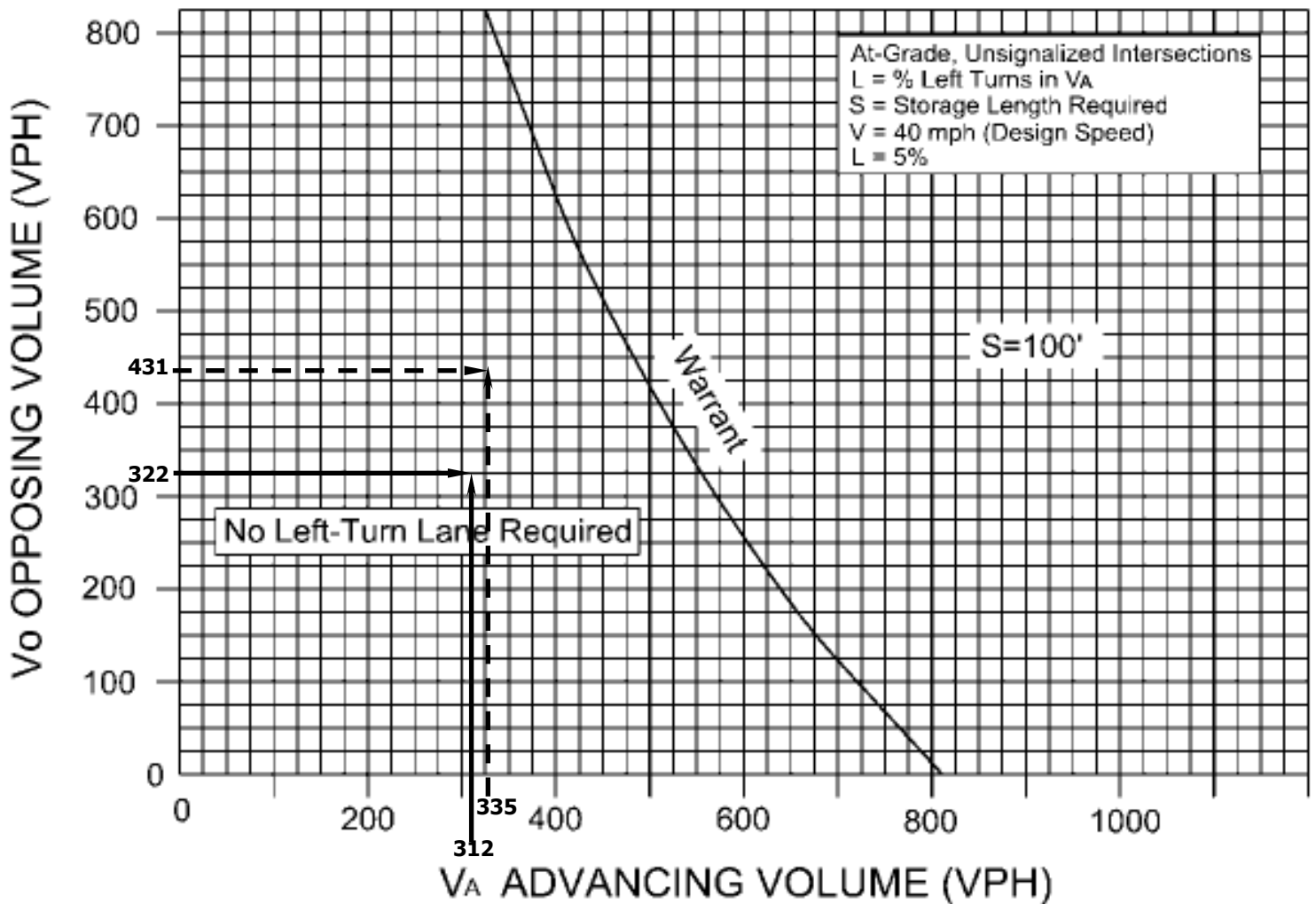
LEGEND

- AM Peak Hour
- - - PM Peak Hour

Right-Turn Lane Guideline
2041 Total Future Volumes
Eastbound Right at Site Entrance 3

Figure
H-13

WARRANT FOR LEFT-TURN STORAGE LANES
ON TWO-LANE HIGHWAYS (40 MPH)
FIGURE 3-4 VDOT ROAD DESIGN MANUAL APPENDIX F



LEGEND

- AM Peak Hour
- - - PM Peak Hour

NO LEFT TURN LANE REQUIRED

Left-Turn Lane Warrant
2041 Total Future Volumes
Westbound Left at Site Entrance 3

Figure
H-14

Appendix I
SYNCHRO & SimTraffic Analysis
Of 2035 Future Conditions

2035 Future AM Peak
1: Pouncey Tract Road & Ashland Road

35 TF AM
Queues



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	424	429	78	188	83	355
v/c Ratio	1.35	1.41	0.70	0.58	0.40	1.06
Control Delay	217.7	238.8	75.8	57.3	49.4	119.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	217.7	238.8	75.8	57.3	49.4	119.7
Queue Length 50th (ft)	~540	~560	59	150	63	~368
Queue Length 95th (ft)	#760	#780	#111	235	110	#576
Internal Link Dist (ft)	2680	2715		1193		1824
Turn Bay Length (ft)			200		340	
Base Capacity (vph)	315	305	111	323	210	336
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.35	1.41	0.70	0.58	0.40	1.06

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2035 Future AM Peak
1: Pouncey Tract Road & Ashland Road

35 TF AM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	256	57	87	273	38	73	98	77	77	226	104
Future Volume (vph)	82	256	57	87	273	38	73	98	77	77	226	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.93		1.00	0.95	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1574			1671		1641	1686		1570	1776	
Flt Permitted		0.81			0.55		0.15	1.00		0.48	1.00	
Satd. Flow (perm)		1286			922		255	1686		793	1776	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	88	275	61	94	294	41	78	105	83	83	243	112
RTOR Reduction (vph)	0	4	0	0	3	0	0	19	0	0	11	0
Lane Group Flow (vph)	0	420	0	0	426	0	78	169	0	83	344	0
Heavy Vehicles (%)	10%	19%	19%	6%	13%	8%	10%	3%	8%	15%	0%	6%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3			2			6		
Actuated Green, G (s)		36.3			49.4		33.1	27.1		33.7	27.4	
Effective Green, g (s)		36.3			49.4		33.1	27.1		33.7	27.4	
Actuated g/C Ratio		0.24			0.33		0.22	0.18		0.22	0.18	
Clearance Time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Vehicle Extension (s)		3.0			3.0		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)		311			303		111	304		210	324	
v/s Ratio Prot							c0.03	0.10		0.02	c0.19	
v/s Ratio Perm		c0.33			c0.46		0.13			0.07		
v/c Ratio		1.35			1.41		0.70	0.56		0.40	1.06	
Uniform Delay, d1		56.9			50.3		49.5	56.0		47.9	61.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		177.8			201.8		18.2	2.7		1.2	66.8	
Delay (s)		234.7			252.1		67.8	58.7		49.2	128.1	
Level of Service		F			F		E	E		D	F	
Approach Delay (s)		234.7			252.1			61.3			113.2	
Approach LOS		F			F			E			F	
Intersection Summary												
HCM 2000 Control Delay		175.7			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.27										
Actuated Cycle Length (s)		150.0			Sum of lost time (s)			30.9				
Intersection Capacity Utilization		71.9%			ICU Level of Service			C				
Analysis Period (min)		15										
c Critical Lane Group												

2035 Future AM Peak
2: Driveway/Abner Church Road & Ashland Road

35 TF AM
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	255	0	0	276	17	0	0	0	21	0	2
Future Volume (Veh/h)	2	255	0	0	276	17	0	0	0	21	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	2	290	0	0	314	19	0	0	0	24	0	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	333			290			620	627	290	618	618	324
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	333			290			620	627	290	618	618	324
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	94	100	100
cM capacity (veh/h)	1238			1283			402	402	754	404	407	722
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	292	333	0	26								
Volume Left	2	0	0	24								
Volume Right	0	19	0	2								
cSH	1238	1283	1700	418								
Volume to Capacity	0.00	0.00	0.00	0.06								
Queue Length 95th (ft)	0	0	0	5								
Control Delay (s)	0.1	0.0	0.0	14.2								
Lane LOS	A		A	B								
Approach Delay (s)	0.1	0.0	0.0	14.2								
Approach LOS			A	B								
Intersection Summary												
Average Delay			0.6									
Intersection Capacity Utilization			25.6%	ICU Level of Service					A			
Analysis Period (min)			15									

2035 Future AM Peak
3: Cauthorne Road/Private Access & Ashland Road

35 TF AM
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	265	15	160	302	7	12	1	85	0	4	2
Future Volume (Veh/h)	6	265	15	160	302	7	12	1	85	0	4	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	6	276	16	167	315	7	12	1	89	0	4	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	322			292			952	952	284	1038	956	318
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	322			292			952	952	284	1038	956	318
tC, single (s)	4.7			4.1			7.1	6.5	6.2	7.1	7.2	6.2
tC, 2 stage (s)												
tF (s)	2.7			2.2			3.5	4.0	3.3	3.5	4.6	3.3
p0 queue free %	99			87			94	100	88	100	98	100
cM capacity (veh/h)	973			1275			212	226	757	166	174	727
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	298	489	102	6								
Volume Left	6	167	12	0								
Volume Right	16	7	89	2								
cSH	973	1275	571	233								
Volume to Capacity	0.01	0.13	0.18	0.03								
Queue Length 95th (ft)	0	11	16	2								
Control Delay (s)	0.2	3.7	12.7	20.8								
Lane LOS	A	A	B	C								
Approach Delay (s)	0.2	3.7	12.7	20.8								
Approach LOS			B	C								
Intersection Summary												
Average Delay			3.7									
Intersection Capacity Utilization			63.0%	ICU Level of Service					B			
Analysis Period (min)			15									



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	75	268	147	287	66	219	114	27	689
v/c Ratio	0.35	0.92	0.64	0.80	0.42	0.30	0.14	0.05	0.96
Control Delay	30.9	76.9	42.0	58.3	21.0	22.1	0.4	12.2	56.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.9	76.9	42.0	58.3	21.0	22.1	0.4	12.2	56.4
Queue Length 50th (ft)	35	168	71	183	20	99	0	8	430
Queue Length 95th (ft)	70	#327	#135	#352	41	161	0	21	#680
Internal Link Dist (ft)		5961		2003		3047			1955
Turn Bay Length (ft)	440		250		295		350	280	
Base Capacity (vph)	215	293	231	357	157	724	806	571	717
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.91	0.64	0.80	0.42	0.30	0.14	0.05	0.96

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2035 Future AM Peak
4: Route 33 & Ashland Road

35 TF AM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	223	31	140	257	15	63	208	108	26	624	30
Future Volume (vph)	71	223	31	140	257	15	63	208	108	26	624	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6	9.6	9.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1641	1686		1787	1736		1517	1743	1615	1805	1824	
Flt Permitted	0.34	1.00		0.36	1.00		0.11	1.00	1.00	0.62	1.00	
Satd. Flow (perm)	592	1686		673	1736		168	1743	1615	1181	1824	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	75	235	33	147	271	16	66	219	114	27	657	32
RTOR Reduction (vph)	0	5	0	0	2	0	0	0	69	0	2	0
Lane Group Flow (vph)	75	263	0	147	285	0	66	219	45	27	687	0
Heavy Vehicles (%)	10%	11%	8%	1%	8%	17%	19%	9%	0%	0%	3%	13%
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA	Perm	D.P+P	NA	
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	4			8			6		2	2		
Actuated Green, G (s)	24.5	18.2		24.5	19.8		44.6	40.3	40.3	43.8	40.0	
Effective Green, g (s)	24.5	18.2		24.5	19.8		44.6	40.3	40.3	43.8	40.0	
Actuated g/C Ratio	0.24	0.18		0.24	0.19		0.44	0.39	0.39	0.43	0.39	
Clearance Time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6	9.6	9.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)	189	299		229	335		133	685	634	525	711	
v/s Ratio Prot	0.02	0.16		c0.04	c0.16		c0.02	0.13		0.00	c0.38	
v/s Ratio Perm	0.08			0.11			0.19		0.03	0.02		
v/c Ratio	0.40	0.88		0.64	0.85		0.50	0.32	0.07	0.05	0.97	
Uniform Delay, d1	31.5	41.1		33.3	39.9		21.8	21.6	19.4	17.1	30.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	24.1		6.0	17.9		2.9	1.2	0.2	0.0	26.5	
Delay (s)	32.8	65.2		39.3	57.8		24.7	22.8	19.6	17.1	57.1	
Level of Service	C	E		D	E		C	C	B	B	E	
Approach Delay (s)		58.1			51.5			22.2			55.6	
Approach LOS		E			D			C			E	
Intersection Summary												
HCM 2000 Control Delay			48.1			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			102.5			Sum of lost time (s)			34.2			
Intersection Capacity Utilization			88.9%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

2035 Future AM Peak
5: Site Entrance 1 & Ashland Road

35 TF AM
HCM Unsignalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	311	39	10	313	32	8
Future Volume (Veh/h)	311	39	10	313	32	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	353	44	11	356	36	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			397		753	375
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			397		753	375
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		90	99
cM capacity (veh/h)			1162		374	671
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	397	367	45			
Volume Left	0	11	36			
Volume Right	44	0	9			
cSH	1700	1162	410			
Volume to Capacity	0.23	0.01	0.11			
Queue Length 95th (ft)	0	1	9			
Control Delay (s)	0.0	0.3	14.9			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.3	14.9			
Approach LOS			B			
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			34.5%	ICU Level of Service		A
Analysis Period (min)			15			

2035 Future AM Peak
6: Site Entrance 2 & Ashland Road

35 TF AM
HCM Unsignalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	241	77	19	259	63	16
Future Volume (Veh/h)	241	77	19	259	63	16
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	274	88	22	294	72	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			362		612	274
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			362		612	274
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		84	98
cM capacity (veh/h)			1197		448	765
Direction, Lane #	EB 1	EB 2	WB 1	NB 1		
Volume Total	274	88	316	90		
Volume Left	0	0	22	72		
Volume Right	0	88	0	18		
cSH	1700	1700	1197	489		
Volume to Capacity	0.16	0.05	0.02	0.18		
Queue Length 95th (ft)	0	0	1	17		
Control Delay (s)	0.0	0.0	0.7	14.0		
Lane LOS						
			A	B		
Approach Delay (s)	0.0		0.7	14.0		
Approach LOS						
				B		
Intersection Summary						
Average Delay						
			1.9			
Intersection Capacity Utilization						
			40.4%	ICU Level of Service		A
Analysis Period (min)						
			15			

2035 Future AM Peak
7: Site Entrance 3 & Ashland Road

35 TF AM
HCM Unsignalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	237	39	10	262	32	8
Future Volume (Veh/h)	237	39	10	262	32	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	269	44	11	298	36	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			313		611	291
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			313		611	291
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		92	99
cM capacity (veh/h)			1247		453	748
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	313	309	45			
Volume Left	0	11	36			
Volume Right	44	0	9			
cSH	1700	1247	492			
Volume to Capacity	0.18	0.01	0.09			
Queue Length 95th (ft)	0	1	8			
Control Delay (s)	0.0	0.4	13.1			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.4	13.1			
Approach LOS			B			
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			31.9%	ICU Level of Service		A
Analysis Period (min)			15			

Intersection: 1: Pouncey Tract Road & Ashland Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	888	496	179	234	340	673
Average Queue (ft)	509	299	59	103	120	359
95th Queue (ft)	911	464	129	195	308	666
Link Distance (ft)	2713	2724		1230		1876
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		340	
Storage Blk Time (%)			0	1	0	20
Queuing Penalty (veh)			0	1	0	16

Intersection: 2: Driveway/Abner Church Road & Ashland Road

Movement	EB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	7	36
Average Queue (ft)	0	15
95th Queue (ft)	4	39
Link Distance (ft)	2664	874
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Cauthorne Road/Private Access & Ashland Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	41	146	75	55
Average Queue (ft)	2	40	37	6
95th Queue (ft)	20	101	63	32
Link Distance (ft)	2808	5950	2243	1317
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Route 33 & Ashland Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	UL	TR
Maximum Queue (ft)	155	344	245	442	122	169	70	279	683
Average Queue (ft)	46	173	106	191	43	76	28	36	340
95th Queue (ft)	139	323	209	355	89	141	58	163	624
Link Distance (ft)		5950		2040		3099			1980
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	440		250		295		350	280	
Storage Blk Time (%)	0	1	0	7				0	20
Queuing Penalty (veh)	0	1	0	9				0	5

Intersection: 5: Site Entrance 1 & Ashland Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	38	64
Average Queue (ft)	3	25
95th Queue (ft)	22	55
Link Distance (ft)	1822	2820
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Site Entrance 2 & Ashland Road

Movement	EB	WB	NB
Directions Served	R	LT	LR
Maximum Queue (ft)	7	69	58
Average Queue (ft)	0	6	19
95th Queue (ft)	6	31	41
Link Distance (ft)		2664	1119
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	270		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Site Entrance 3 & Ashland Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	23	57
Average Queue (ft)	2	23
95th Queue (ft)	14	51
Link Distance (ft)	2808	3335
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 33

2035 Future PM Peak
1: Pouncey Tract Road & Ashland Road

35 TF PM
Queues



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	621	305	62	332	38	212
v/c Ratio	1.25	0.92	0.34	1.13	0.30	0.72
Control Delay	167.1	85.3	51.0	144.7	50.8	71.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	167.1	85.3	51.0	144.7	50.8	71.7
Queue Length 50th (ft)	~778	282	48	~384	29	194
Queue Length 95th (ft)	#1023	#453	90	#587	62	#309
Internal Link Dist (ft)	2680	2715		1193		1824
Turn Bay Length (ft)			200		340	
Base Capacity (vph)	496	368	180	294	125	294
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.25	0.83	0.34	1.13	0.30	0.72

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

2035 Future PM Peak
1: Pouncey Tract Road & Ashland Road

35 TF PM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	227	234	98	67	159	49	56	235	64	34	147	44
Future Volume (vph)	227	234	98	67	159	49	56	235	64	34	147	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.98		1.00	0.97		1.00	0.97	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1794			1811		1770	1831		1805	1834	
Flt Permitted		0.73			0.74		0.39	1.00		0.18	1.00	
Satd. Flow (perm)		1344			1353		720	1831		338	1834	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	252	260	109	74	177	54	62	261	71	38	163	49
RTOR Reduction (vph)	0	5	0	0	5	0	0	7	0	0	7	0
Lane Group Flow (vph)	0	616	0	0	300	0	62	325	0	38	205	0
Heavy Vehicles (%)	1%	1%	3%	0%	2%	0%	2%	0%	2%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3			2			6		
Actuated Green, G (s)		52.6			34.7		27.1	22.5		27.1	22.5	
Effective Green, g (s)		52.6			34.7		27.1	22.5		27.1	22.5	
Actuated g/C Ratio		0.36			0.24		0.19	0.15		0.19	0.15	
Clearance Time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Vehicle Extension (s)		3.0			3.0		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)		486			323		167	283		109	283	
v/s Ratio Prot							c0.01	c0.18		0.01	0.11	
v/s Ratio Perm		c0.46			c0.22		0.06			0.05		
v/c Ratio		1.27			0.93		0.37	1.15		0.35	0.73	
Uniform Delay, d1		46.4			54.1		50.1	61.4		50.3	58.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		135.8			31.6		1.4	100.0		1.9	9.5	
Delay (s)		182.2			85.7		51.5	161.4		52.2	67.9	
Level of Service		F			F		D	F		D	E	
Approach Delay (s)		182.2			85.7			144.1			65.6	
Approach LOS		F			F			F			E	
Intersection Summary												
HCM 2000 Control Delay		135.3			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.10										
Actuated Cycle Length (s)		145.3			Sum of lost time (s)			30.9				
Intersection Capacity Utilization		92.4%			ICU Level of Service			F				
Analysis Period (min)		15										
c Critical Lane Group												

2035 Future PM Peak
2: Driveway/Abner Church Road & Ashland Road

35 TF PM
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	355	0	0	271	41	0	0	0	24	0	4
Future Volume (Veh/h)	6	355	0	0	271	41	0	0	0	24	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	6	378	0	0	288	44	0	0	0	26	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	332			378			704	722	378	700	700	310
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	332			378			704	722	378	700	700	310
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	93	100	99
cM capacity (veh/h)	1239			1192			351	354	673	355	364	735
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	384	332	0	30								
Volume Left	6	0	0	26								
Volume Right	0	44	0	4								
cSH	1239	1192	1700	381								
Volume to Capacity	0.00	0.00	0.00	0.08								
Queue Length 95th (ft)	0	0	0	6								
Control Delay (s)	0.2	0.0	0.0	15.2								
Lane LOS	A		A	C								
Approach Delay (s)	0.2	0.0	0.0	15.2								
Approach LOS			A	C								
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			33.5%	ICU Level of Service						A		
Analysis Period (min)			15									

2035 Future PM Peak
3: Cauthorne Road/Private Access & Ashland Road

35 TF PM
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	324	10	99	231	2	12	0	246	1	0	4
Future Volume (Veh/h)	4	324	10	99	231	2	12	0	246	1	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	352	11	108	251	2	13	0	267	1	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	253			363			838	834	358	1100	839	252
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	253			363			838	834	358	1100	839	252
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			91			95	100	61	99	100	99
cM capacity (veh/h)	1324			1201			266	278	689	109	276	792
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	367	361	280	5								
Volume Left	4	108	13	1								
Volume Right	11	2	267	4								
cSH	1324	1201	642	351								
Volume to Capacity	0.00	0.09	0.44	0.01								
Queue Length 95th (ft)	0	7	55	1								
Control Delay (s)	0.1	3.1	14.9	15.4								
Lane LOS	A	A	B	C								
Approach Delay (s)	0.1	3.1	14.9	15.4								
Approach LOS			B	C								
Intersection Summary												
Average Delay			5.3									
Intersection Capacity Utilization			62.5%		ICU Level of Service				B			
Analysis Period (min)			15									



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	172	362	114	286	41	701	139	30	340
v/c Ratio	0.70	0.90	0.54	0.86	0.10	1.08	0.19	0.15	0.52
Control Delay	41.4	63.1	33.2	61.2	12.9	87.3	0.6	14.1	26.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	63.1	33.2	61.2	12.9	87.3	0.6	14.1	26.0
Queue Length 50th (ft)	74	~245	47	160	11	~479	0	8	156
Queue Length 95th (ft)	#152	#405	#92	#302	27	#668	0	22	235
Internal Link Dist (ft)		5961		2003		3047			1955
Turn Bay Length (ft)	440		250		295		350	280	
Base Capacity (vph)	247	404	212	334	406	652	721	204	658
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.90	0.54	0.86	0.10	1.08	0.19	0.15	0.52

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2035 Future PM Peak
4: Route 33 & Ashland Road

35 TF PM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	151	295	24	100	228	24	36	617	122	6	20	286
Future Volume (vph)	151	295	24	100	228	24	36	617	122	6	20	286
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6		9.6	9.2
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85		1.00	0.99
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1879		1787	1864		1736	1863	1583		1726	1826
Flt Permitted	0.36	1.00		0.22	1.00		0.47	1.00	1.00		0.14	1.00
Satd. Flow (perm)	669	1879		423	1864		861	1863	1583		248	1826
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	172	335	27	114	259	27	41	701	139	7	23	325
RTOR Reduction (vph)	0	3	0	0	4	0	0	0	93	0	0	2
Lane Group Flow (vph)	172	359	0	114	282	0	41	701	46	0	30	338
Heavy Vehicles (%)	2%	0%	0%	1%	0%	5%	4%	2%	2%	0%	6%	3%
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA	Perm	D.P+P	D.P+P	NA
Protected Phases	3	8		7	4		5	2		1	1	6
Permitted Phases	4			8			6		2	2	2	
Actuated Green, G (s)	22.5	17.8		22.5	16.3		33.4	29.3	29.3		32.6	30.1
Effective Green, g (s)	22.5	17.8		22.5	16.3		33.4	29.3	29.3		32.6	30.1
Actuated g/C Ratio	0.25	0.20		0.25	0.18		0.37	0.33	0.33		0.37	0.34
Clearance Time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6		9.6	9.2
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	4.0	4.0		3.0	4.0
Lane Grp Cap (vph)	245	374		178	340		354	611	519		145	615
v/s Ratio Prot	c0.05	c0.19		0.03	0.15		0.00	c0.38			c0.01	0.19
v/s Ratio Perm	0.13			0.13			0.04		0.03		0.07	
v/c Ratio	0.70	0.96		0.64	0.83		0.12	1.15	0.09		0.21	0.55
Uniform Delay, d1	28.7	35.4		27.4	35.2		18.0	30.0	20.8		22.0	24.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	8.8	35.5		7.6	15.3		0.1	84.3	0.1		0.7	1.3
Delay (s)	37.5	70.9		35.0	50.4		18.2	114.3	20.9		22.7	25.3
Level of Service	D	E		D	D		B	F	C		C	C
Approach Delay (s)		60.2			46.0			95.1				25.1
Approach LOS		E			D			F				C
Intersection Summary												
HCM 2000 Control Delay			65.7			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			89.3			Sum of lost time (s)			34.2			
Intersection Capacity Utilization			75.5%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	13
Future Volume (vph)	13
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.88
Adj. Flow (vph)	15
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	11%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

2035 Future PM Peak
5: Site Entrance 1 & Ashland Road

35 TF PM
HCM Unsignalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	364	7	1	301	16	4
Future Volume (Veh/h)	364	7	1	301	16	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	414	8	1	342	18	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			422		762	418
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			422		762	418
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		95	99
cM capacity (veh/h)			1137		373	635
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	422	343	23			
Volume Left	0	1	18			
Volume Right	8	0	5			
cSH	1700	1137	409			
Volume to Capacity	0.25	0.00	0.06			
Queue Length 95th (ft)	0	0	4			
Control Delay (s)	0.0	0.0	14.3			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.0	14.3			
Approach LOS			B			
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			29.6%	ICU Level of Service		A
Analysis Period (min)			15			

2035 Future PM Peak
6: Site Entrance 2 & Ashland Road

35 TF PM
HCM Unsignalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	354	14	4	270	33	8
Future Volume (Veh/h)	354	14	4	270	33	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	402	16	5	307	38	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			418		719	402
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			418		719	402
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		90	99
cM capacity (veh/h)			1141		393	648
Direction, Lane #	EB 1	EB 2	WB 1	NB 1		
Volume Total	402	16	312	47		
Volume Left	0	0	5	38		
Volume Right	0	16	0	9		
cSH	1700	1700	1141	425		
Volume to Capacity	0.24	0.01	0.00	0.11		
Queue Length 95th (ft)	0	0	0	9		
Control Delay (s)	0.0	0.0	0.2	14.5		
Lane LOS			A	B		
Approach Delay (s)	0.0		0.2	14.5		
Approach LOS				B		
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			28.6%		ICU Level of Service	
					A	
Analysis Period (min)			15			

2035 Future PM Peak
7: Site Entrance 3 & Ashland Road

35 TF PM
HCM Unsignalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	373	7	2	295	16	4
Future Volume (Veh/h)	373	7	2	295	16	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	424	8	2	335	18	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			432	767		428
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			432	767		428
tC, single (s)			4.1	6.4		6.2
tC, 2 stage (s)						
tF (s)			2.2	3.5		3.3
p0 queue free %			100	95		99
cM capacity (veh/h)			1128	370		627
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	432	337	23			
Volume Left	0	2	18			
Volume Right	8	0	5			
cSH	1700	1128	406			
Volume to Capacity	0.25	0.00	0.06			
Queue Length 95th (ft)	0	0	4			
Control Delay (s)	0.0	0.1	14.4			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.1	14.4			
Approach LOS			B			
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			30.1%	ICU Level of Service		A
Analysis Period (min)			15			

Intersection: 1: Pouncey Tract Road & Ashland Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	601	366	200	467	75	263
Average Queue (ft)	328	188	68	249	26	126
95th Queue (ft)	525	314	184	472	61	219
Link Distance (ft)	2713	2724		1230		1876
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		340	
Storage Blk Time (%)			0	22		0
Queuing Penalty (veh)			0	13		0

Intersection: 2: Driveway/Abner Church Road & Ashland Road

Movement	EB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	32	48
Average Queue (ft)	2	17
95th Queue (ft)	17	43
Link Distance (ft)	2664	874
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Cauthorne Road/Private Access & Ashland Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	19	113	133	24
Average Queue (ft)	1	26	67	3
95th Queue (ft)	10	79	108	17
Link Distance (ft)	2808	5950	2243	1317
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Route 33 & Ashland Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	UL	TR
Maximum Queue (ft)	193	336	147	253	277	772	322	48	218
Average Queue (ft)	73	160	58	138	53	341	99	15	101
95th Queue (ft)	171	309	122	232	195	696	309	41	182
Link Distance (ft)		5950		2040		3099			1980
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	440		250		295		350	280	
Storage Blk Time (%)	0	1	0	1	0	16	0		0
Queuing Penalty (veh)	0	1	0	1	0	25	2		0

Intersection: 5: Site Entrance 1 & Ashland Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	19	35
Average Queue (ft)	1	15
95th Queue (ft)	14	41
Link Distance (ft)	1822	2820
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Site Entrance 2 & Ashland Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	67	38
Average Queue (ft)	2	11
95th Queue (ft)	26	26
Link Distance (ft)	2664	1119
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Site Entrance 3 & Ashland Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	9	36
Average Queue (ft)	0	15
95th Queue (ft)	4	39
Link Distance (ft)	2808	3335
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 43

Appendix J
SYNCHRO & SimTraffic Analysis
Of 2041 Future Conditions

2041 Future AM Peak
1: Pouncey Tract Road & Ashland Road

41 TF AM
Queues



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	464	464	88	207	92	399
v/c Ratio	1.50	1.50	0.79	0.64	0.47	1.19
Control Delay	278.0	275.3	88.4	60.8	52.7	159.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	278.0	275.3	88.4	60.8	52.7	159.6
Queue Length 50th (ft)	~626	~628	66	170	70	~458
Queue Length 95th (ft)	#852	#854	#139	263	120	#674
Internal Link Dist (ft)	2680	2715		1193		1824
Turn Bay Length (ft)			200		340	
Base Capacity (vph)	310	310	111	323	196	336
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.50	1.50	0.79	0.64	0.47	1.19

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

2041 Future AM Peak
1: Pouncey Tract Road & Ashland Road

41 TF AM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	274	65	95	295	42	82	110	83	86	254	117
Future Volume (vph)	92	274	65	95	295	42	82	110	83	86	254	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.99		1.00	0.94		1.00	0.95	
Flt Protected		0.99			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1573			1671		1641	1690		1570	1776	
Flt Permitted		0.79			0.55		0.15	1.00		0.43	1.00	
Satd. Flow (perm)		1262			935		255	1690		717	1776	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	99	295	70	102	317	45	88	118	89	92	273	126
RTOR Reduction (vph)	0	5	0	0	3	0	0	18	0	0	11	0
Lane Group Flow (vph)	0	459	0	0	461	0	88	189	0	92	388	0
Heavy Vehicles (%)	10%	19%	19%	6%	13%	8%	10%	3%	8%	15%	0%	6%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3			2			6		
Actuated Green, G (s)		36.3			49.4		33.1	27.1		33.7	27.4	
Effective Green, g (s)		36.3			49.4		33.1	27.1		33.7	27.4	
Actuated g/C Ratio		0.24			0.33		0.22	0.18		0.22	0.18	
Clearance Time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Vehicle Extension (s)		3.0			3.0		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)		305			307		111	305		196	324	
v/s Ratio Prot							c0.03	0.11		0.02	c0.22	
v/s Ratio Perm		c0.36			c0.49		0.14			0.09		
v/c Ratio		1.51			1.50		0.79	0.62		0.47	1.20	
Uniform Delay, d1		56.9			50.3		51.8	56.7		49.1	61.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		244.3			242.5		31.0	4.3		1.8	114.4	
Delay (s)		301.1			292.8		82.8	61.0		50.9	175.7	
Level of Service		F			F		F	E		D	F	
Approach Delay (s)		301.1			292.8			67.5			152.3	
Approach LOS		F			F			E			F	
Intersection Summary												
HCM 2000 Control Delay		216.0			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.39										
Actuated Cycle Length (s)		150.0			Sum of lost time (s)			30.9				
Intersection Capacity Utilization		76.4%			ICU Level of Service			D				
Analysis Period (min)		15										
c Critical Lane Group												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	279	0	0	303	19	0	0	0	23	0	3
Future Volume (Veh/h)	3	279	0	0	303	19	0	0	0	23	0	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	3	317	0	0	344	22	0	0	0	26	0	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	366			317			681	689	317	678	678	355
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	366			317			681	689	317	678	678	355
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	93	100	100
cM capacity (veh/h)	1204			1255			365	370	728	368	376	693
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	320	366	0	29								
Volume Left	3	0	0	26								
Volume Right	0	22	0	3								
cSH	1204	1255	1700	387								
Volume to Capacity	0.00	0.00	0.00	0.07								
Queue Length 95th (ft)	0	0	0	6								
Control Delay (s)	0.1	0.0	0.0	15.1								
Lane LOS	A		A	C								
Approach Delay (s)	0.1	0.0	0.0	15.1								
Approach LOS			A	C								
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			27.1%		ICU Level of Service				A			
Analysis Period (min)			15									

2041 Future AM Peak
3: Cauthorne Road/Private Access & Ashland Road

41 TF AM
HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	296	16	180	337	8	13	1	96	0	4	3
Future Volume (Veh/h)	7	296	16	180	337	8	13	1	96	0	4	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	7	308	17	188	351	8	14	1	100	0	4	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	359			325			1066	1066	316	1162	1070	355
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	359			325			1066	1066	316	1162	1070	355
tC, single (s)	4.7			4.1			7.1	6.5	6.2	7.1	7.2	6.2
tC, 2 stage (s)												
tF (s)	2.7			2.2			3.5	4.0	3.3	3.5	4.6	3.3
p0 queue free %	99			85			92	99	86	100	97	100
cM capacity (veh/h)	940			1240			173	189	726	131	143	693
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	332	547	115	7								
Volume Left	7	188	14	0								
Volume Right	17	8	100	3								
cSH	940	1240	513	217								
Volume to Capacity	0.01	0.15	0.22	0.03								
Queue Length 95th (ft)	1	13	21	2								
Control Delay (s)	0.3	4.0	14.0	22.1								
Lane LOS	A	A	B	C								
Approach Delay (s)	0.3	4.0	14.0	22.1								
Approach LOS			B	C								
Intersection Summary												
Average Delay			4.0									
Intersection Capacity Utilization			68.5%	ICU Level of Service				C				
Analysis Period (min)			15									



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	83	298	166	322	72	247	128	31	774
v/c Ratio	0.45	0.97	0.78	0.83	0.55	0.31	0.15	0.05	0.96
Control Delay	39.9	93.0	59.2	64.5	33.4	22.5	0.8	12.8	56.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.9	93.0	59.2	64.5	33.4	22.5	0.8	12.8	56.9
Queue Length 50th (ft)	47	230	99	249	25	126	0	10	583
Queue Length 95th (ft)	88	#419	#170	#436	#67	192	6	25	#860
Internal Link Dist (ft)		5961		2003		3047			1955
Turn Bay Length (ft)	440		250		295		350	280	
Base Capacity (vph)	184	307	213	388	131	805	849	587	805
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.97	0.78	0.83	0.55	0.31	0.15	0.05	0.96

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2041 Future AM Peak
4: Route 33 & Ashland Road

41 TF AM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	251	32	158	290	16	68	235	122	29	703	32
Future Volume (vph)	79	251	32	158	290	16	68	235	122	29	703	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6	9.6	9.2	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	0.99		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1641	1688		1787	1738		1517	1743	1615	1805	1825	
Flt Permitted	0.27	1.00		0.26	1.00		0.07	1.00	1.00	0.59	1.00	
Satd. Flow (perm)	469	1688		498	1738		119	1743	1615	1123	1825	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	83	264	34	166	305	17	72	247	128	31	740	34
RTOR Reduction (vph)	0	4	0	0	2	0	0	0	72	0	1	0
Lane Group Flow (vph)	83	294	0	166	320	0	72	247	56	31	773	0
Heavy Vehicles (%)	10%	11%	8%	1%	8%	17%	19%	9%	0%	0%	3%	13%
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA	Perm	D.P+P	NA	
Protected Phases	3	8		7	4		5	2		1	6	
Permitted Phases	4			8			6		2	2		
Actuated Green, G (s)	30.8	22.7		30.8	26.0		58.3	54.0	54.0	57.5	53.5	
Effective Green, g (s)	30.8	22.7		30.8	26.0		58.3	54.0	54.0	57.5	53.5	
Actuated g/C Ratio	0.25	0.19		0.25	0.21		0.48	0.44	0.44	0.47	0.44	
Clearance Time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6	9.6	9.2	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)	163	312		210	368		111	768	711	546	797	
v/s Ratio Prot	0.02	0.17		c0.05	c0.18		c0.03	0.14		0.00	c0.42	
v/s Ratio Perm	0.11			0.15			0.28		0.03	0.02		
v/c Ratio	0.51	0.94		0.79	0.87		0.65	0.32	0.08	0.06	0.97	
Uniform Delay, d1	37.2	49.3		40.1	46.6		26.2	22.3	19.8	17.6	33.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.5	35.8		18.1	19.5		12.3	1.1	0.2	0.0	25.3	
Delay (s)	39.7	85.0		58.2	66.2		38.5	23.4	20.1	17.6	59.0	
Level of Service	D	F		E	E		D	C	C	B	E	
Approach Delay (s)		75.1			63.4			24.9			57.4	
Approach LOS		E			E			C			E	
Intersection Summary												
HCM 2000 Control Delay			55.1			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			122.5			Sum of lost time (s)			34.2			
Intersection Capacity Utilization			95.7%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

2041 Future AM Peak
5: Site Entrance 1 & Ashland Road

41 TF AM
HCM Unsignalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	336	39	10	341	32	8
Future Volume (Veh/h)	336	39	10	341	32	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	382	44	11	388	36	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			426		814	404
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			426		814	404
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		90	99
cM capacity (veh/h)			1133		344	647
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	426	399	45			
Volume Left	0	11	36			
Volume Right	44	0	9			
cSH	1700	1133	380			
Volume to Capacity	0.25	0.01	0.12			
Queue Length 95th (ft)	0	1	10			
Control Delay (s)	0.0	0.3	15.8			
Lane LOS		A	C			
Approach Delay (s)	0.0	0.3	15.8			
Approach LOS			C			
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			36.0%	ICU Level of Service		A
Analysis Period (min)			15			

2041 Future AM Peak
6: Site Entrance 2 & Ashland Road

41 TF AM
HCM Unsignalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	266	77	19	287	63	16
Future Volume (Veh/h)	266	77	19	287	63	16
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	302	88	22	326	72	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume				390	672	302
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				390	672	302
tC, single (s)				4.1	6.4	6.2
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				98	83	98
cM capacity (veh/h)				1169	413	738
Direction, Lane #	EB 1	EB 2	WB 1	NB 1		
Volume Total	302	88	348	90		
Volume Left	0	0	22	72		
Volume Right	0	88	0	18		
cSH	1700	1700	1169	453		
Volume to Capacity	0.18	0.05	0.02	0.20		
Queue Length 95th (ft)	0	0	1	18		
Control Delay (s)	0.0	0.0	0.7	14.9		
Lane LOS						
			A	B		
Approach Delay (s)	0.0		0.7	14.9		
Approach LOS						
				B		
Intersection Summary						
Average Delay						
			1.9			
Intersection Capacity Utilization						
			41.8%	ICU Level of Service		A
Analysis Period (min)						
			15			

2041 Future AM Peak
7: Site Entrance 3 & Ashland Road

41 TF AM
HCM Unsignalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	264	39	10	291	32	8
Future Volume (Veh/h)	264	39	10	291	32	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	300	44	11	331	36	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			344		675	322
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			344		675	322
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		91	99
cM capacity (veh/h)			1215		416	719
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	344	342	45			
Volume Left	0	11	36			
Volume Right	44	0	9			
cSH	1700	1215	454			
Volume to Capacity	0.20	0.01	0.10			
Queue Length 95th (ft)	0	1	8			
Control Delay (s)	0.0	0.3	13.8			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.3	13.8			
Approach LOS			B			
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			33.4%	ICU Level of Service		A
Analysis Period (min)			15			

Intersection: 1: Pouncey Tract Road & Ashland Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	1972	614	196	278	340	1618
Average Queue (ft)	1233	355	76	125	228	1104
95th Queue (ft)	2234	545	158	248	450	1870
Link Distance (ft)	2713	2724		1230		1876
Upstream Blk Time (%)	3					7
Queuing Penalty (veh)	0					0
Storage Bay Dist (ft)			200		340	
Storage Blk Time (%)			0	3	0	73
Queuing Penalty (veh)			1	2	1	63

Intersection: 2: Driveway/Abner Church Road & Ashland Road

Movement	EB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	26	42
Average Queue (ft)	1	17
95th Queue (ft)	18	42
Link Distance (ft)	2664	874
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Cauthorne Road/Private Access & Ashland Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	52	188	90	59
Average Queue (ft)	3	50	42	9
95th Queue (ft)	24	132	70	37
Link Distance (ft)	2808	5950	2243	1317
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Route 33 & Ashland Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	UL	TR
Maximum Queue (ft)	343	540	250	544	161	203	85	256	930
Average Queue (ft)	84	282	155	271	57	92	31	38	518
95th Queue (ft)	282	556	280	517	116	172	66	167	955
Link Distance (ft)		5950		2040		3099			1980
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	440		250		295		350	280	
Storage Blk Time (%)	0	7	2	15	0	0		0	31
Queuing Penalty (veh)	0	6	7	24	0	0		0	9

Intersection: 5: Site Entrance 1 & Ashland Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	53	59
Average Queue (ft)	5	25
95th Queue (ft)	30	53
Link Distance (ft)	1822	2820
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Site Entrance 2 & Ashland Road

Movement	EB	WB	NB
Directions Served	R	LT	LR
Maximum Queue (ft)	2	81	60
Average Queue (ft)	0	8	18
95th Queue (ft)	3	40	44
Link Distance (ft)		2664	1119
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	270		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Site Entrance 3 & Ashland Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	2	54	59
Average Queue (ft)	0	4	23
95th Queue (ft)	2	26	51
Link Distance (ft)	1620	2808	3335
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 113

2041 Future PM Peak
1: Pouncey Tract Road & Ashland Road

41 TF PM
Queues



Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	695	335	70	373	42	238
v/c Ratio	1.32	1.30	0.36	1.07	0.34	0.68
Control Delay	192.0	206.7	47.7	123.3	48.6	65.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	192.0	206.7	47.7	123.3	48.6	65.6
Queue Length 50th (ft)	~885	~420	52	~405	31	213
Queue Length 95th (ft)	#1133	#625	94	#617	64	312
Internal Link Dist (ft)	2680	2715		1193		1824
Turn Bay Length (ft)			200		340	
Base Capacity (vph)	527	257	196	348	122	348
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.32	1.30	0.36	1.07	0.34	0.68

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2041 Future PM Peak
1: Pouncey Tract Road & Ashland Road

41 TF PM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	255	261	110	74	173	55	63	265	71	38	166	49
Future Volume (vph)	255	261	110	74	173	55	63	265	71	38	166	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.98		1.00	0.97		1.00	0.97	
Flt Protected		0.98			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1794			1810		1770	1832		1805	1835	
Flt Permitted		0.72			0.74		0.37	1.00		0.15	1.00	
Satd. Flow (perm)		1320			1351		690	1832		277	1835	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	283	290	122	82	192	61	70	294	79	42	184	54
RTOR Reduction (vph)	0	5	0	0	6	0	0	7	0	0	7	0
Lane Group Flow (vph)	0	690	0	0	329	0	70	366	0	42	231	0
Heavy Vehicles (%)	1%	1%	3%	0%	2%	0%	2%	0%	2%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			3		5	2		1	6	
Permitted Phases	4			3			2			6		
Actuated Green, G (s)		58.4			27.4		32.3	27.5		32.1	27.4	
Effective Green, g (s)		58.4			27.4		32.3	27.5		32.1	27.4	
Actuated g/C Ratio		0.39			0.18		0.22	0.18		0.22	0.18	
Clearance Time (s)		7.7			7.6		7.8	7.8		7.8	7.8	
Vehicle Extension (s)		3.0			3.0		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)		517			248		184	338		107	337	
v/s Ratio Prot							0.01	c0.20		c0.01	0.13	
v/s Ratio Perm		c0.52			c0.24		0.07			0.07		
v/c Ratio		1.33			1.33		0.38	1.08		0.39	0.68	
Uniform Delay, d1		45.2			60.8		48.0	60.7		48.8	56.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		163.5			172.6		1.3	73.3		2.4	6.1	
Delay (s)		208.7			233.4		49.3	134.0		51.2	62.8	
Level of Service		F			F		D	F		D	E	
Approach Delay (s)		208.7			233.4			120.6			61.1	
Approach LOS		F			F			F			E	
Intersection Summary												
HCM 2000 Control Delay		167.6			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.24										
Actuated Cycle Length (s)		148.9			Sum of lost time (s)			30.9				
Intersection Capacity Utilization		100.1%			ICU Level of Service			G				
Analysis Period (min)		15										
c Critical Lane Group												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	398	0	0	302	47	0	0	0	27	0	4
Future Volume (Veh/h)	7	398	0	0	302	47	0	0	0	27	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	7	423	0	0	321	50	0	0	0	29	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	371			423			787	808	423	783	783	346
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	371			423			787	808	423	783	783	346
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	91	100	99
cM capacity (veh/h)	1199			1147			309	315	635	312	326	702
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	430	371	0	33								
Volume Left	7	0	0	29								
Volume Right	0	50	0	4								
cSH	1199	1147	1700	335								
Volume to Capacity	0.01	0.00	0.00	0.10								
Queue Length 95th (ft)	0	0	0	8								
Control Delay (s)	0.2	0.0	0.0	16.9								
Lane LOS	A		A	C								
Approach Delay (s)	0.2	0.0	0.0	16.9								
Approach LOS			A	C								
Intersection Summary												
Average Delay			0.8									
Intersection Capacity Utilization			36.6%	ICU Level of Service		A						
Analysis Period (min)			15									

3: Cauthorne Road/Private Access & Ashland Road

HCM Unsignalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	363	11	111	259	3	13	0	277	1	0	4
Future Volume (Veh/h)	4	363	11	111	259	3	13	0	277	1	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	395	12	121	282	3	14	0	301	1	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	285			407			938	936	401	1236	940	284
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	285			407			938	936	401	1236	940	284
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			90			94	100	54	99	100	99
cM capacity (veh/h)	1289			1157			225	238	651	76	237	760
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	411	406	315	5								
Volume Left	4	121	14	1								
Volume Right	12	3	301	4								
cSH	1289	1157	601	272								
Volume to Capacity	0.00	0.10	0.52	0.02								
Queue Length 95th (ft)	0	9	76	1								
Control Delay (s)	0.1	3.3	17.4	18.5								
Lane LOS	A	A	C	C								
Approach Delay (s)	0.1	3.3	17.4	18.5								
Approach LOS			C	C								
Intersection Summary												
Average Delay			6.1									
Intersection Capacity Utilization			68.8%		ICU Level of Service				C			
Analysis Period (min)			15									



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	193	407	128	323	45	790	156	33	383
v/c Ratio	0.87	0.97	0.82	0.92	0.11	0.94	0.19	0.23	0.49
Control Delay	69.8	85.2	71.7	80.4	14.4	53.4	2.6	18.1	28.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.8	85.2	71.7	80.4	14.4	53.4	2.6	18.1	28.2
Queue Length 50th (ft)	125	~366	79	271	17	647	0	12	224
Queue Length 95th (ft)	#241	#553	#167	#448	35	#886	26	28	307
Internal Link Dist (ft)		5961		2003		3047			1955
Turn Bay Length (ft)	440		250		295		350	280	
Base Capacity (vph)	222	420	157	353	417	858	825	141	855
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.97	0.82	0.92	0.11	0.92	0.19	0.23	0.45

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

2041 Future PM Peak
4: Route 33 & Ashland Road

41 TF PM
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	170	332	26	113	257	27	40	695	137	7	22	323
Future Volume (vph)	170	332	26	113	257	27	40	695	137	7	22	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6		9.6	9.2
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	1.00	0.85		1.00	0.99
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1879		1787	1864		1736	1863	1583		1727	1827
Flt Permitted	0.19	1.00		0.15	1.00		0.43	1.00	1.00		0.07	1.00
Satd. Flow (perm)	358	1879		276	1864		795	1863	1583		131	1827
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	193	377	30	128	292	31	45	790	156	8	25	367
RTOR Reduction (vph)	0	2	0	0	3	0	0	0	88	0	0	1
Lane Group Flow (vph)	193	405	0	128	320	0	45	790	68	0	33	382
Heavy Vehicles (%)	2%	0%	0%	1%	0%	5%	4%	2%	2%	0%	6%	3%
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA	Perm	D.P+P	D.P+P	NA
Protected Phases	3	8		7	4		5	2		1	1	6
Permitted Phases	4			8			6		2	2	2	
Actuated Green, G (s)	33.8	27.3		33.8	23.0		59.5	55.3	55.3		58.7	54.8
Effective Green, g (s)	33.8	27.3		33.8	23.0		59.5	55.3	55.3		58.7	54.8
Actuated g/C Ratio	0.27	0.22		0.27	0.18		0.47	0.44	0.44		0.46	0.43
Clearance Time (s)	7.5	7.5		7.5	7.5		9.2	9.6	9.6		9.6	9.2
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	4.0	4.0		3.0	4.0
Lane Grp Cap (vph)	215	404		151	338		408	813	690		103	790
v/s Ratio Prot	c0.08	c0.22		0.04	0.17		0.00	c0.42			c0.01	0.21
v/s Ratio Perm	0.16			0.18			0.05		0.04		0.14	
v/c Ratio	0.90	1.00		0.85	0.95		0.11	0.97	0.10		0.32	0.48
Uniform Delay, d1	40.0	49.7		40.4	51.2		18.7	34.9	21.0		27.4	25.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	34.6	45.2		33.2	34.7		0.1	24.7	0.1		1.8	0.6
Delay (s)	74.6	94.9		73.6	85.9		18.8	59.7	21.1		29.2	26.4
Level of Service	E	F		E	F		B	E	C		C	C
Approach Delay (s)		88.4			82.4			51.8				26.7
Approach LOS		F			F			D				C
Intersection Summary												
HCM 2000 Control Delay			62.1			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			126.7			Sum of lost time (s)			34.2			
Intersection Capacity Utilization			82.4%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	14
Future Volume (vph)	14
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.88
Adj. Flow (vph)	16
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	11%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

2041 Future PM Peak
5: Site Entrance 1 & Ashland Road

41 TF PM
HCM Unsignalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	407	7	1	333	16	4
Future Volume (Veh/h)	407	7	1	333	16	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	462	8	1	378	18	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			470	846	466	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			470	846	466	
tC, single (s)			4.1	6.4	6.2	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			100	95	99	
cM capacity (veh/h)			1092	332	597	
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	470	379	23			
Volume Left	0	1	18			
Volume Right	8	0	5			
cSH	1700	1092	368			
Volume to Capacity	0.28	0.00	0.06			
Queue Length 95th (ft)	0	0	5			
Control Delay (s)	0.0	0.0	15.4			
Lane LOS		A	C			
Approach Delay (s)	0.0	0.0	15.4			
Approach LOS			C			
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			31.8%	ICU Level of Service		A
Analysis Period (min)			15			

2041 Future PM Peak
6: Site Entrance 2 & Ashland Road

41 TF PM
HCM Unsignalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	397	14	4	302	33	8
Future Volume (Veh/h)	397	14	4	302	33	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	451	16	5	343	38	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	467			804	451	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	467			804	451	
tC, single (s)	4.1			6.4	6.2	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	100			89	99	
cM capacity (veh/h)	1094			351	608	
Direction, Lane #	EB 1	EB 2	WB 1	NB 1		
Volume Total	451	16	348	47		
Volume Left	0	0	5	38		
Volume Right	0	16	0	9		
cSH	1700	1700	1094	382		
Volume to Capacity	0.27	0.01	0.00	0.12		
Queue Length 95th (ft)	0	0	0	10		
Control Delay (s)	0.0	0.0	0.2	15.8		
Lane LOS	A			C		
Approach Delay (s)	0.0	0.2		15.8		
Approach LOS				C		
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			30.9%	ICU Level of Service		A
Analysis Period (min)			15			

2041 Future PM Peak
7: Site Entrance 3 & Ashland Road

41 TF PM
HCM Unsignalized Intersection Capacity Analysis

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	418	7	2	332	16	4
Future Volume (Veh/h)	418	7	2	332	16	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	475	8	2	377	18	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			483			860 479
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			483			860 479
tC, single (s)			4.1			6.4 6.2
tC, 2 stage (s)						
tF (s)			2.2			3.5 3.3
p0 queue free %			100			94 99
cM capacity (veh/h)			1080			326 587
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	483	379	23			
Volume Left	0	2	18			
Volume Right	8	0	5			
cSH	1700	1080	361			
Volume to Capacity	0.28	0.00	0.06			
Queue Length 95th (ft)	0	0	5			
Control Delay (s)	0.0	0.1	15.7			
Lane LOS		A	C			
Approach Delay (s)	0.0	0.1	15.7			
Approach LOS			C			
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			32.4%	ICU Level of Service		A
Analysis Period (min)			15			

Intersection: 1: Pouncey Tract Road & Ashland Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	1058	458	200	790	82	272
Average Queue (ft)	607	270	88	456	33	150
95th Queue (ft)	1077	425	218	847	71	256
Link Distance (ft)	2713	2724		1230		1876
Upstream Blk Time (%)				0		
Queuing Penalty (veh)				0		
Storage Bay Dist (ft)			200		340	
Storage Blk Time (%)			0	51		
Queuing Penalty (veh)			1	32		

Intersection: 2: Driveway/Abner Church Road & Ashland Road

Movement	EB	SB
Directions Served	LTR	LTR
Maximum Queue (ft)	51	44
Average Queue (ft)	3	18
95th Queue (ft)	24	42
Link Distance (ft)	2664	874
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Cauthorne Road/Private Access & Ashland Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	28	162	170	24
Average Queue (ft)	1	38	75	4
95th Queue (ft)	16	103	131	18
Link Distance (ft)	2808	5950	2243	1317
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Route 33 & Ashland Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	UL	TR
Maximum Queue (ft)	255	397	250	406	294	807	350	55	263
Average Queue (ft)	102	217	94	203	50	367	111	17	122
95th Queue (ft)	211	365	207	357	193	688	328	45	217
Link Distance (ft)		5950		2040		3099			1980
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	440		250		295		350	280	
Storage Blk Time (%)	0	0	0	6	0	15	0		0
Queuing Penalty (veh)	0	0	0	7	0	27	2		0

Intersection: 5: Site Entrance 1 & Ashland Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	5	42
Average Queue (ft)	0	16
95th Queue (ft)	6	43
Link Distance (ft)	1822	2820
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Site Entrance 2 & Ashland Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	33	42
Average Queue (ft)	2	11
95th Queue (ft)	17	27
Link Distance (ft)	2664	1119
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Site Entrance 3 & Ashland Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	27	42
Average Queue (ft)	1	14
95th Queue (ft)	15	39
Link Distance (ft)	2808	3335
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 71
