Chester Road PDP

Nassau County, Florida

Submitted to **Nassau County Growth Management**

Prepared for **Raydient + Places, Inc.**

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Introduction

VHB/Vanasse Hangen Brustlin, Inc. has been retained by Raydient Places + Properties, Inc. to conduct a transportation impact study for the first Preliminary Development Plan (PDP) within the Chester Road Detailed Specific Area Plan (DSAP). This PDP is to be located north of Pages Dairy Road and west of Chester Road in Nassau County, Florida within the East Nassau Community Planning Area (ENCPA). The project location is shown on Figure 1. This transportation impact study quantifies both the existing traffic conditions along area roadways surrounding the site and the projected future traffic conditions expected for the short term (Year 2021) build out of the development plan. The purpose of this study is to determine the point in time at which improvements already identified in the Mobility Network will be needed. This document provides a detailed description of the study methodology, analysis, and key findings.

Project Description

The proposed Chester Road PDP is approximately 317.5 acres in total area, located north of Pages Dairy Road and west of Chester Road. The PDP proposed development consists of 400 single family residential units, 300 multi-family residential units, and 31,000 square feet of retail.

The proposed project will be developed on currently vacant land. The development is anticipated to be completed in year 2021. There will be one new connection on Pages Dairy Road approximately one-quarter mile west of the intersection of Pages Dairy Road and Chester Road. There will also be two new connections along Chester Road approximately one-quarter mile and one-half mile north of the intersection of Pages Dairy Road and Chester Road. These connections will operate as unsignalized intersections.

\\vhb\proj\Orlando\61636.03 Chester Road DSAP\graphics\FIGURES\AI\PDP Report Figures\Fig 1 - Project Location Map - 61636.03.ai

Project Boundary

Railroads

Figure 1

Project Location Map
Nassau County, Florida

Source Bing Maps

Study Methodology

The purpose of this study is to determine the point in time at which improvements already identified in the Mobility Network will be needed. In addition, the results of this study are used to identify the recommended allocation of Mobility Fee funds towards the completion of the ENCPA Mobility Network improvements. The focus of this study is to evaluate near-term operating conditions on the roadways and intersections likely to be used for access to and from the site and the potential transportation impacts on these roadways and intersections. Additionally, the study identifies transportation impacts on these roadways and intersections and recommends actions and improvements aimed at addressing the project-related impacts on these roadways.

This transportation impact study analyzes traffic operating conditions during the morning and afternoon peak period for intersections within the study area, and analyzes daily traffic operating conditions for roadway segments within the study area per the Transportation Impact Analysis (TIA) Methodology document, which is contained in Appendix A.

To evaluate the potential traffic impacts of the proposed development, an analysis of traffic conditions for the 2016 Existing condition and the 2021 Build condition of the development plan was conducted and is presented in this report.

Analysis Area

Consistent with the project methodology, the primary analysis area for this traffic assessment includes all corridors and intersections within a one mile radius of the project site. (The one mile radius is based on the daily trip generation for the project, which is discussed under Section 3). The Analysis Area for this project is shown in Figure 2. The corridors adjacent to the site are Pages Dairy Road, Chester Road, and SR 200/A1A/The Buccaneer Trail. Intersections were selected for analysis based on a review of the project site in relation to the street network and consistent with the approved TIA methodology. Based on this review, the following intersections were analyzed:

- Pages Dairy Road and Chester Road
- SR 200/ A1A/ The Buccaneer Trail and Miner Road/Felmor Road
- SR 200/ A1A/ The Buccaneer Trail and Christian Way/Gene Lassere Blvd
- SR 200/ A1A/ The Buccaneer Trail and Chester Road
- SR 200/ A1A/ The Buccaneer Trail and Arrigo Blvd
- Hallman Parkway at Chester Road
- Pages Dairy Road and Project Driveway
- Chester Road and South Project Driveway
- Chester Road and North Project Driveway

\\vhb\proj\Orlando\61636.03 Chester Road DSAP\graphics\FIGURES\AI\PDP Report Figures\Fig 2 - Analysis Area - 61636.03.ai

Project Boundary

Analysis Area

Railroads

Figure 2

Analysis Area
Nassau County, Florida

Source Bing Maps

2

Existing Conditions

This section summarizes existing transportation conditions observed in the study area, including roadway and intersection geometry, existing traffic control, and daily and evening peak hour traffic volumes.

Existing Roadway Network

SR 200/A1A/The Buccaneer Trail is the primary east-west arterial roadway in Nassau County, connecting Interstate 95 to the population centers of Fernandina Beach and Amelia Island to the east. To the west of Interstate 95, SR A1A extends to the rural community of Callahan. SR 200/A1A /The Buccaneer Trail is currently a four-lane divided roadway and is under the jurisdiction of FDOT.

Pages Dairy Road is an alternative east-west facility to SR 200/A1A/The Buccaneer Trail. It is a two lane undivided roadway that connects US 17 to Chester Road.

Chester Road is currently four lanes between SR 200/A1A/The Buccaneer Trail and Courtney Isles Way. It transitions to a two-lane facility north of Courtney Isles as Chester Road extends northward into residential areas.

Programmed Improvements

Improvements to SR 200/A1A/The Buccaneer Trail the adopted FDOT Five Year Work Program. The widening of SR 200/A1A/The Buccaneer Trail from four to six lanes between west of Rubin Road to east of CR 107/Scott Road is funded for construction in FY 2016.

At the April 20, 2016 Board of County Commissioners meeting, Nassau County Board of County Commissioners approved $5.15 million to provide for improvements at Chester Road and Pages Dairy Road and the resurfacing of portions of Chester Road north of Heron Isles, and combining the design of this project with the design of the widening and resurfacing of Pages Dairy Road.

Information regarding these improvements was obtained from the Florida Department of Transportation District 2 Five Year Work Program and is included in Appendix B.

Table 1 Programmed Improvements - FDOT D2 Five Year Work program

FDOT Item No.	Roadway and Limits	Description	Phase	Year	Funding
210712-4	SR 200 (A1A) from west of Rubin Rd. to east of CR 107/Scott Rd.	Add lanes (widen from 4 to 6)	Construction	2016	$68,364,450
N/A	Chester Road from Nassau Center Ct to north of Pages Dairy Rd.	Add lanes (widen from 2 to 4) & Improves Intersection	Construction	2018	$5,150,000

Existing Roadway Segment Analysis

To identify current traffic conditions along the major roadways serving the project analysis area, the latest available roadway volumes were collected from the FDOT Florida Traffic Online (2014) and from Nassau County Local Roads Traffic Counts (2006-2009). The latest available roadway data for Pages Dairy Road from the Nassau County Local Roads Traffic Counts is from 2009. All volumes were grown using growth rates identified in the TIA Methodology Document's future growth section to the year 2016. The 2016 weekday average annual daily traffic (AADT) roadway volume network is presented in Figure 3. The existing roadway segment analysis is shown in Table 2. All roadway segments in the analysis area currently operate at a level of service D or better.

Table 2 Existing Roadway Segment Capacity Analysis

Roadway Segment	No. of Lanes	LOS Std	Service Capacity	Existing AADT	Annual Growth Rate	Background Volume	2016 AADT	LOS
SR 200/A1A								
Miner Rd to Christian Way	4D	D	41,800	33,500	2.00%	1,340	34,840	C
Christian Way to Chester Rd	4D	D	41,800	33,500	2.00%	1,340	34,840	C
Chester Rd to Arrigo Blvd	4D	D	41,800	38,500	2.00%	1,540	40,040	D
Pages Dairy Rd								
Felmor Rd to Chester Rd	2U	D	15,900	3,004	4.78%	1,005	4,009	C
Chester Rd								
N Hampton Club Way to SR 200/A1A	4D	D	37,600	10,400	2.00%	416	10,816	C
SR 200/A1A to Pages Dairy Rd	4D	D	37,600	12,500	2.00%	500	13,000	C
Pages Dairy Rd to Green Pine Rd	2U	D	15,900	4,900	2.00%	196	5,096	C
Green Pine Rd to Blackrock Rd	2U	D	15,900	4,900	2.00%	196	5,096	C

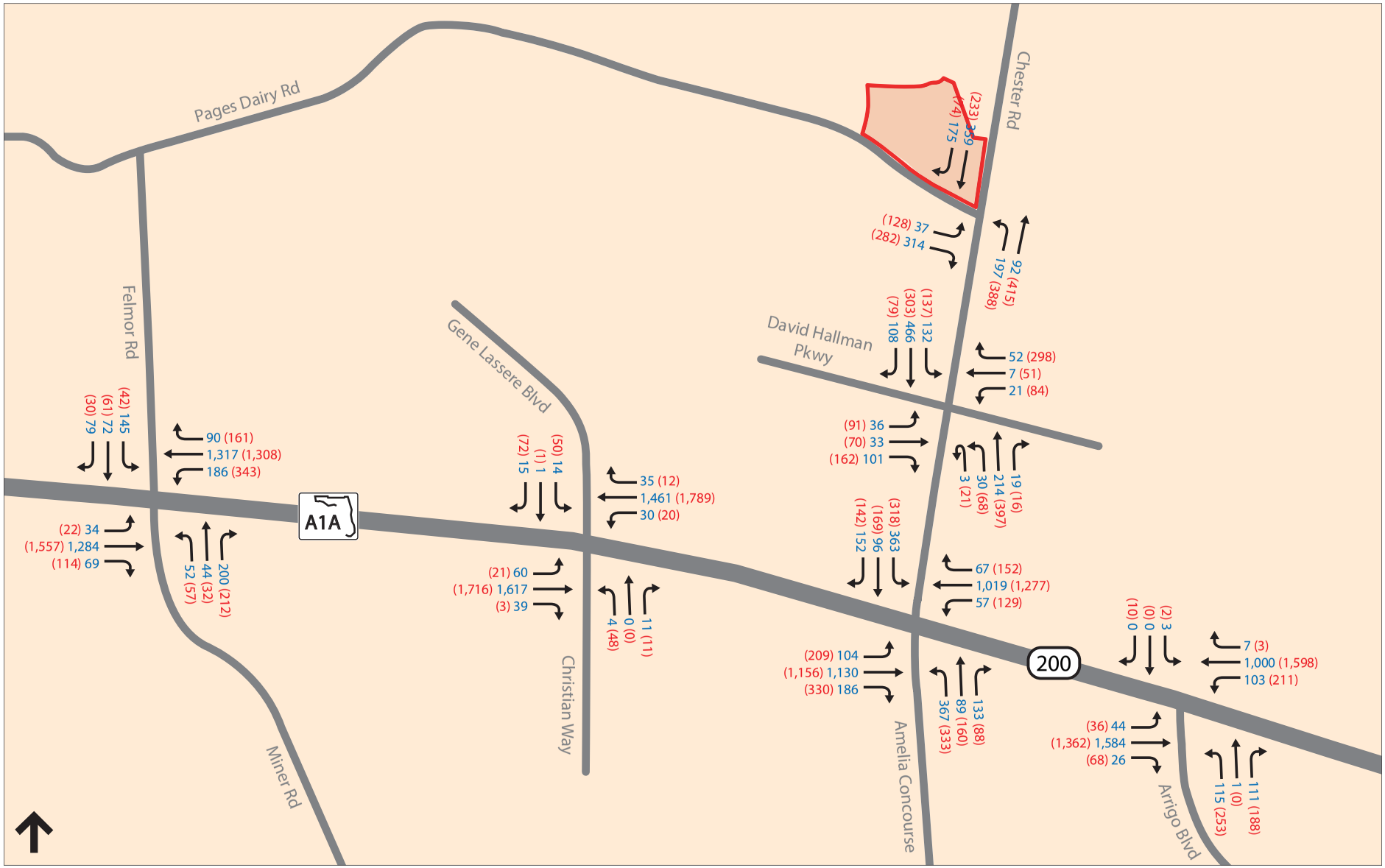
\\vhb\proj\Orlando\61636.03 Chester Road DSAP\graphics\FIGURES\AI\PDP Report Figures\Fig 3 - Existing Roadway Volumes - 61636.03.ai

Project Boundary

Existing Roadway Volumes

Figure 3

Traffic Impact Analysis
Existing Roadway Volumes
Nassau County, Florida



Project Boundary

Traffic Movement

AM Peak Hour Turning Movement Volume (Year 2016 Volumes)

PM Peak Hour Turning Movement Volume (Year 2016 Volumes)

Figure 4

Traffic Impact Analysis
Existing Intersection Volumes
Nassau County, Florida

Existing Unsignalized Intersection Capacity Analysis

To determine the existing traffic at the study intersections, VHB collected turning movement counts (TMCs) on November 19, 2015 for the study area intersections. AM and PM 2-hour turning movement counts were performed at the following intersections:

- Pages Dairy Road at Chester Road
- SR 200/A1A at Miner Rd/Felmor Rd
- SR 200/A1A at Christian Way/Gene Lassere Blvd
- SR 200/A1A at Amelia Concourse/Chester Rd
- SR 200/A1A at Arrigo Blvd
- Hallman Parkway at Chester Road

The AM and PM peak hour intersection TMCs that have been adjusted to 2016 average conditions are presented in Figure 4. A copy of the data collected is included in Appendix C.

The intersection of Pages Dairy Road and Chester Road is the only unsignalized intersection in the analysis area. Table 3 presents the intersection capacity analysis for this intersection. The analysis shows that all movements with the exception of the eastbound left movement, currently operate at a level of service D or better. The eastbound left turn currently experiences long delays (449.1 sec/veh) operating at level of service F with a volume to capacity ratio of 1.70 in the PM peak.

As noted in the Programmed Improvements section, the widening of Chester Road is included in the adopted FDOT Five Year Work Program. This widening project includes improvements to the Pages Dairy Road at Chester Road intersection. These intersection improvements will address the existing deficiencies shown in Table 3.

Table 3 Existing Unsignalized Intersection Capacity Analysis

Intersection	Movement	2016 AM Conditions			2016 PM Conditions		
		v/c	Delay [a]	LOS [b]	v/c	Delay [a]	LOS [b]
Pages Dairy Road at Chester Road	EBL	0.24	32.3	D	1.70	449.1	F
	EBT	N/A	N/A	N/A	N/A	N/A	N/A
	EBR	0.64	22.3	C	0.41	13.0	B
	WBL	N/A	N/A	N/A	N/A	N/A	N/A
	WBT	N/A	N/A	N/A	N/A	N/A	N/A
	WBR	N/A	N/A	N/A	N/A	N/A	N/A
	NBL	0.24	9.9	A	0.34	9.4	A
	NBT	Note 1	Note 1	Note 1	Note 1	Note 1	Note1
	NBR	N/A	N/A	N/A	N/A	N/A	N/A
	SBL	N/A	N/A	N/A	N/A	N/A	N/A
	SBT	Note 1	Note 1	Note 1	Note 1	Note 1	Note1
	SBR	Note 1	Note 1	Note 1	Note 1	Note 1	Note1

Note 1: Unopposed Movement
Source: VHB, Inc. using HCM 2010 Methodology.
a Average delay in seconds per vehicle
b Level of Service

Existing Signalized Intersection Capacity Analysis

Table 4 shows the intersection capacity analysis for the signalized intersections. This analysis results in several movements experiencing long delays and with volume to capacity ratios greater than 1.0. These movements have been highlighted in the table below. With the exception of the intersection of SR 200/A1A/The Buccaneer Trail at Miner Road/Felmor Road, all of the intersections currently operate at an overall level of service of D or better. The Miner Road intersection operates at an overall level of service E in the PM peak hour.

As noted in the Programmed Improvements section, the adopted FDOT Five Year Work Program includes the widening of SR 200/A1A/The Buccaneer Trail from four to six lanes. This widening project will address existing intersection deficiencies along SR 200/A1A/The Buccaneer Trail for those movements that experience volume to capacity ratios over 1.0.

The intersection of Hallman Parkway at Chester Road shows that, during the PM peak hour, the westbound through-right movement operates at a volume to capacity over 1.0 and experiences long delays (> 120 seconds per vehicle).

Table 4 Existing Signalized Intersection Capacity Analysis

Intersection	Movement	2016 AM Conditions			2016 PM Conditions		
		v/c	Delay [a]	LOS [b]	v/c	Delay [a]	LOS [b]
SR 200/ A1A at Miner Rd/Felmor Rd	EBL	0.78	95.6	F	0.81	117.7	F
	EBT	0.93	49.5	D	0.92	46.3	D
	EBR	0.10	23.1	C	0.15	21.5	C
	WBL	0.89	75.9	E	**1.21**	176.6	F
	WBT	0.77	27.3	C	0.61	16.3	B
	WBR	0.11	15.3	B	0.16	10.7	B
	NBL	0.25	53.6	D	0.30	60.3	E
	NBT/R	**1.22**	196.7	F	**1.25**	215.1	F
	SBL	0.78	63.7	E	0.45	64.3	E
	SBT/R	0.54	57.0	E	0.47	68.0	E
	TOTAL	**N/A**	**52.8**	**D**	**N/A**	**57.2**	**E**
SR 200/ A1A at Christian Way/Gene Lassere Blvd	EBL	0.80	65.6	E	0.97	96.0	F
	EBT	0.74	12.5	B	0.75	15.3	B
	EBR	0.75	12.6	B	0.75	15.3	B
	WBL	0.79	75.0	E	0.72	77.2	E
	WBT	0.69	13.1	B	0.83	17.8	B
	WBR	0.04	6.7	A	0.02	7.3	A
	NBL/T/R	0.18	57.6	E	0.47	62.3	E
	SBL	0.12	53.7	D	0.23	52.9	D
	SBT/R	0.15	50.0	D	0.34	50.4	D
	TOTAL	**N/A**	**14.8**	**B**	**N/A**	**19.2**	**B**
SR 200/A1A at Amelia Concourse/Chester Rd	EBL	0.69	61.0	E	0.80	66.0	E
	EBT	0.77	27.9	C	0.71	27.7	C
	EBR	0.27	18.8	B	0.44	23.0	C
	WBL	0.61	62.4	E	0.72	63.4	E
	WBT	0.72	28.1	C	0.82	33.1	C
	WBR	0.10	18.0	B	0.21	21.3	C
	NBL	0.85	59.7	E	0.87	72.9	E
	NBT	0.48	52.2	D	0.70	63.7	E
	NBR	0.85	80.1	F	0.46	54.3	D
	SBL	0.86	62.3	E	0.84	66.3	E
	SBT	0.55	62.0	E	0.75	75.0	E
	SBR	0.99	120.3	F	0.74	77.0	E
	TOTAL	**N/A**	**42.2**	**D**	**N/A**	**42.8**	**D**
SR 200/A1A at Arrigo Blvd	EBL	0.78	67.3	E	0.78	77.1	E
	EBT	0.79	18.0	B	0.74	22.5	C
	EBR	0.03	8.5	A	0.08	12.9	B
	WBL	0.67	61.3	E	0.80	67.1	E
	WBT	0.49	12.2	B	0.81	22.0	C
	WBR	0.01	7.8	A	0.00	9.4	A
	NBL/T	0.38	52.2	D	0.64	57.7	E
	NBR	0.82	77.2	E	**1.06**	140.2	F
	SBT/L	0.36	83.0	F	0.07	63.7	E
	SBR	0.00	0.0	N/A	0.40	72.4	E
	TOTAL	**N/A**	**21.8**	**C**	**N/A**	**33.6**	**C**

Source: VHB, Inc. using HCM 2010 Methodology.
a Average delay in seconds per vehicle
b Level of Service

Intersection	Movement	2016 AM Conditions			2016 PM Conditions		
		v/c	Delay [a]	LOS [b]	v/c	Delay [a]	LOS [b]
Hallman Pkwy at Chester Rd	EBL	0.22	47.8	D	0.59	40.5	D
	EBT/R	0.84	77.2	E	0.69	49.4	D
	WBL	0.21	49.0	D	0.36	36.8	D
	WBT/R	0.41	52.6	D	**1.08**	120.3	F
	NBL	0.06	7.0	A	0.16	14.0	B
	NBT/R	0.11	0.2	A	0.24	18.2	B
	SBL	0.16	6.6	A	0.25	13.9	B
	SBT	0.21	8.2	A	0.17	16.3	B
	SBR	0.11	7.7	A	0.10	15.7	B
	TOTAL	**N/A**	**18.1**	**B**	**N/A**	**43.3**	**D**

3

Future Conditions Year 2021

To determine the impacts of the site-generated traffic volumes on the surrounding roadway network, future traffic conditions were analyzed for the completion of the PDP. The future condition for this analysis includes: 1) existing traffic volumes; 2) background traffic growth; 3) trips from approved ENCPA development (prorated for year 2021) within the analysis area; and 4) project trips assigned to the study area roadways and intersections. Anticipated site-generated traffic volumes were overlaid upon the No-Build traffic volumes to reflect the Build conditions in the study area.

Background Traffic Growth

Traffic growth on area roadways is a function of the expected land development, economic activity, changes to the transportation network, and changes in demographics. For this project, the background growth rates were assigned according to the TIA Methodology document, which can be found in Appendix A of this report. In addition, the prorated portion (corresponding to the year 2021) from the approved Market Street PDP were added as part of the background traffic. The project trip generation for the prorated portion of the Market Street PDP corresponding to the year 2021 is documented in Appendix D.

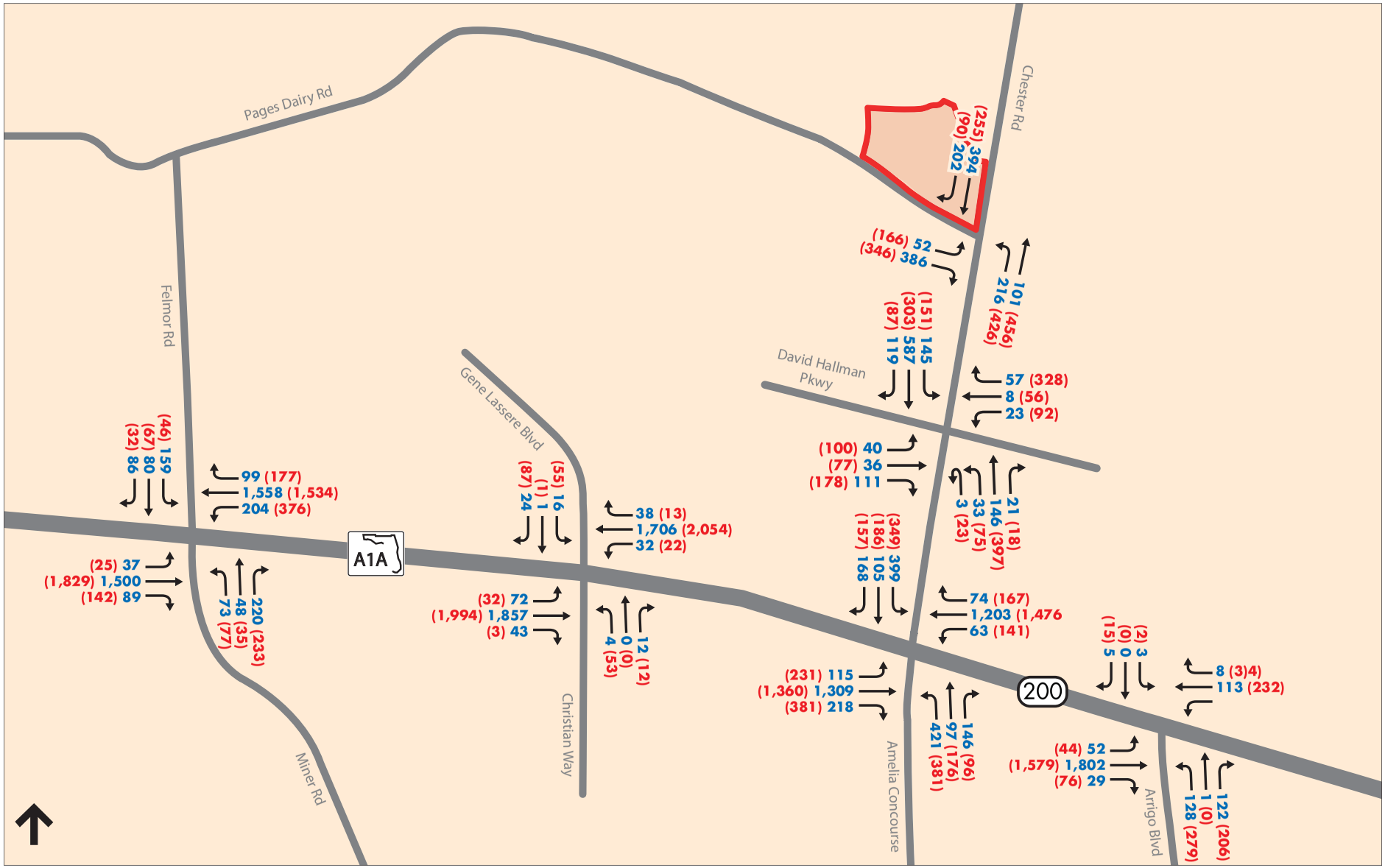
For the study area roadway network, the proposed project trip generation was overlaid upon the existing roadway network volumes. The 2021 No-Build condition daily roadway volumes are presented in Figure 5, and the 2021 No-Build condition AM and PM peak hour intersection turning movement volumes (TMV) are presented in Figure 6. The No-Build volumes are the total of existing traffic volumes and background traffic growth, and do not include any project traffic.

Project Boundary

2021 No Build Roadway Volumes

Figure 5

Traffic Impact Analysis
2021 No-Build Roadway Volumes
Nassau County, Florida



Project Boundary

Traffic Movement

AM Peak Hour Turning Movement Volume (Year 2021 Background Volume)

(#) PM Peak Hour Turning Movement Volume (Year 2021 Background Volume)

Figure 6

Traffic Impact Analysis
2021 No-Build Intersection Volumes
Nassau County, Florida

Site-Generated Traffic

Future year (2021 Build) traffic volumes for the study area roadways were determined by estimating site-generated traffic volumes and assigning these volumes to the study area roadways. The proposed site-generated traffic volumes were added to the 2021 No-Build network volumes to create the 2021 Build traffic volume networks. The following sections describe the procedures used to develop the Build network traffic volumes.

■

Trip Generation

Trip generation was estimated for the proposed development using the Institute of Transportation Engineer's (ITE) "Trip Generation" Manual, 9th Edition. The following ITE Land Use Codes (LUC) were deemed the most appropriate:

- LUC 210 – Single Family Residential
- LUC 220 – Multi-Family Residential
- LUC 820 – Shopping Center

■

Trip Generation Summary

Table 5 presents the total new vehicle trips anticipated from the proposed development. The proposed development is expected to add approximately 7,681 daily weekday, 485 weekday morning peak hour trips, and 714 weekday evening peak hour trips to the area roadway network. Because the proposed development project will generate more than 1,000 daily weekday trips, an analysis radius of one mile was used, as discussed in Section 1. The trip generation estimate can be observed in Appendix E.

Table 5 Trip Generation

Land Use	ITE Land Use Code (LUC)	Intensity	Weekday Daily	Weekday AM			Weekday PM		
				Enter	Exit	Total	Enter	Exit	Total
Single Family	210	400 d.u.	3,760	73	217	290	231	135	366
Multi-Family	220	300 d.u.	1,942	30	121	151	119	64	183
Shopping Center	820	31,000 s.f.	3,172	47	29	76	131	142	273
Total			8,874	150	367	517	481	341	822
Internal Capture Trips			*634*	*4*	*4*	*8*	*29*	*29*	*58*
Pass-by Trips			*559*	*12*	*12*	*24*	*25*	*25*	*50*
New Trips			**7,681**	**134**	**351**	**485**	**427**	**287**	**714**

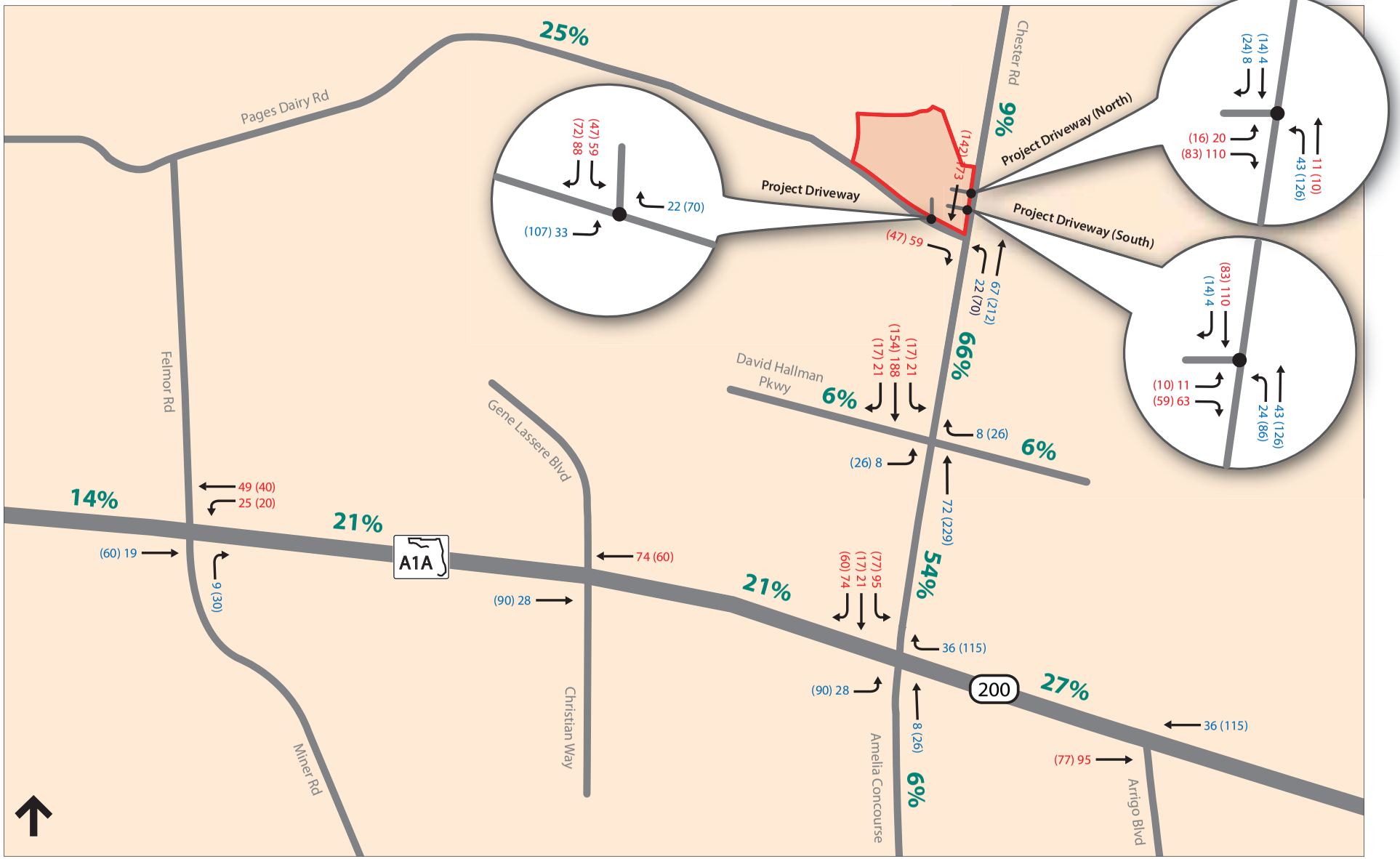
Source: ITE Trip Generation, 9th Edition.

In addition, a Conversion Matrix has been developed to addressed potential residential land uses exchanges. The development of this Conversion Matrix and a land use exchange example are documented in Appendix F.

Trip Distribution and Assignment

The directional distribution of site generated traffic is a function of population in surrounding areas, existing travel patterns, ease of access to the site, and traffic conditions on area roadways. For this analysis, the trip distribution was produced using the Northeast Florida Regional Planning Model (NERPM-AB v1.0). The model output project traffic distribution estimate and the manually adjusted project traffic distribution is documented in Appendix G.

The model originally assigned all of the westbound project trips to Pages Dairy Road. Pages Dairy Road is a narrow, two-lane collector roadway; whereas, SR 200/A1A/The Buccaneer Trail is a major arterial that will be widened to six lanes in the near future. It is reasonable to assume that SR 200/A1A/The Buccaneer Trail will be more attractive to drivers than Pages Dairy Road; therefore, it does not seem likely that all of the westbound trips would choose Pages Dairy Road over SR 200/A1A/The Buccaneer Trail. Based on this, a post processing was performed that reassigned a portion of the westbound project trips away from Pages Dairy Road and onto SR 200/A1A/The Buccaneer Trail. As shown in Appendix G, 21.1 percent of the project trips were transferred from Pages Dairy Road to SR 200/A1A/The Buccaneer Trail. The original model also assigned a high percentage of project trips to the traffic analysis zone (TAZ) across Chester Road from the project site. This TAZ contains primarily residential development; therefore, it seems unlikely that 11.6 percent of project traffic would travel to this TAZ. As shown in Appendix G, 10 percent of the trips that were originally assigned to the TAZ across Chester Road from the project site were reassigned to the TAZs south of Pages Dairy Road, which is primarily retail development. The adjusted distribution of trips to and from the site is summarized in Table 6 and shown graphically on Figure 7.



Project Boundary

Traffic Movement

Project Driveway

xx% Project Trip Distribution

AM Peak Hour Inbound (PM Peak Inbound)

(#) AM Peak Hour Outbound (PM Peak Outbound)

vhb

Figure 7

Traffic Impact Analysis
Project Trip Distribution & Assignment
Nassau County, Florida

Table 6 Trip Distribution Summary

Travel Route	Direction	Modeled Percent of Site Traffic	Modeled Number of Project Trips	Adjusted Percent of Site Traffic	Adjusted Number of Project Trips
Chester Road	North	19%	1,337	9%	634
	South	35%	2,464	66%	4,645
Pages Dairy Road	West	46%	3,238	25%	1,760
All Routes	**Total**	**100%**	**7,039**	**100%**	**7,039**

Source: NERPM-AB v1.0 with manual adjustments

The new traffic generated by the proposed development was assigned to the area roadways based on the above trip distribution pattern.

The site-generated traffic was added to the 2021 No-Build weekday peak hour traffic volume network to establish the 2021 Build peak hour traffic volumes. The 2021 Build daily roadway traffic volumes are illustrated on Figure 8. The 2021 Build AM and PM peak hour intersection traffic volumes are illustrated in Figure 9. Appendix H provides the intersection volume calculations.

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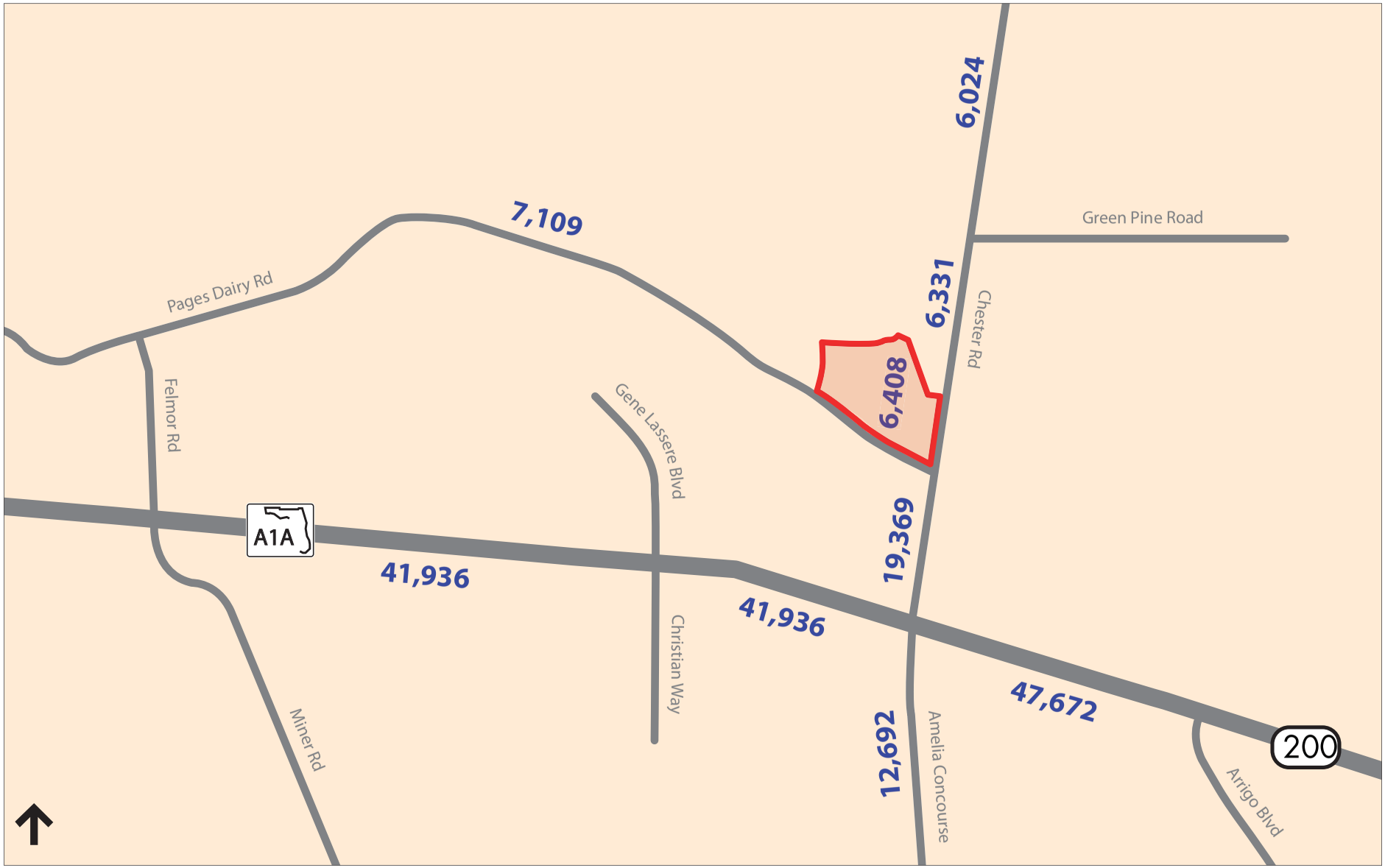
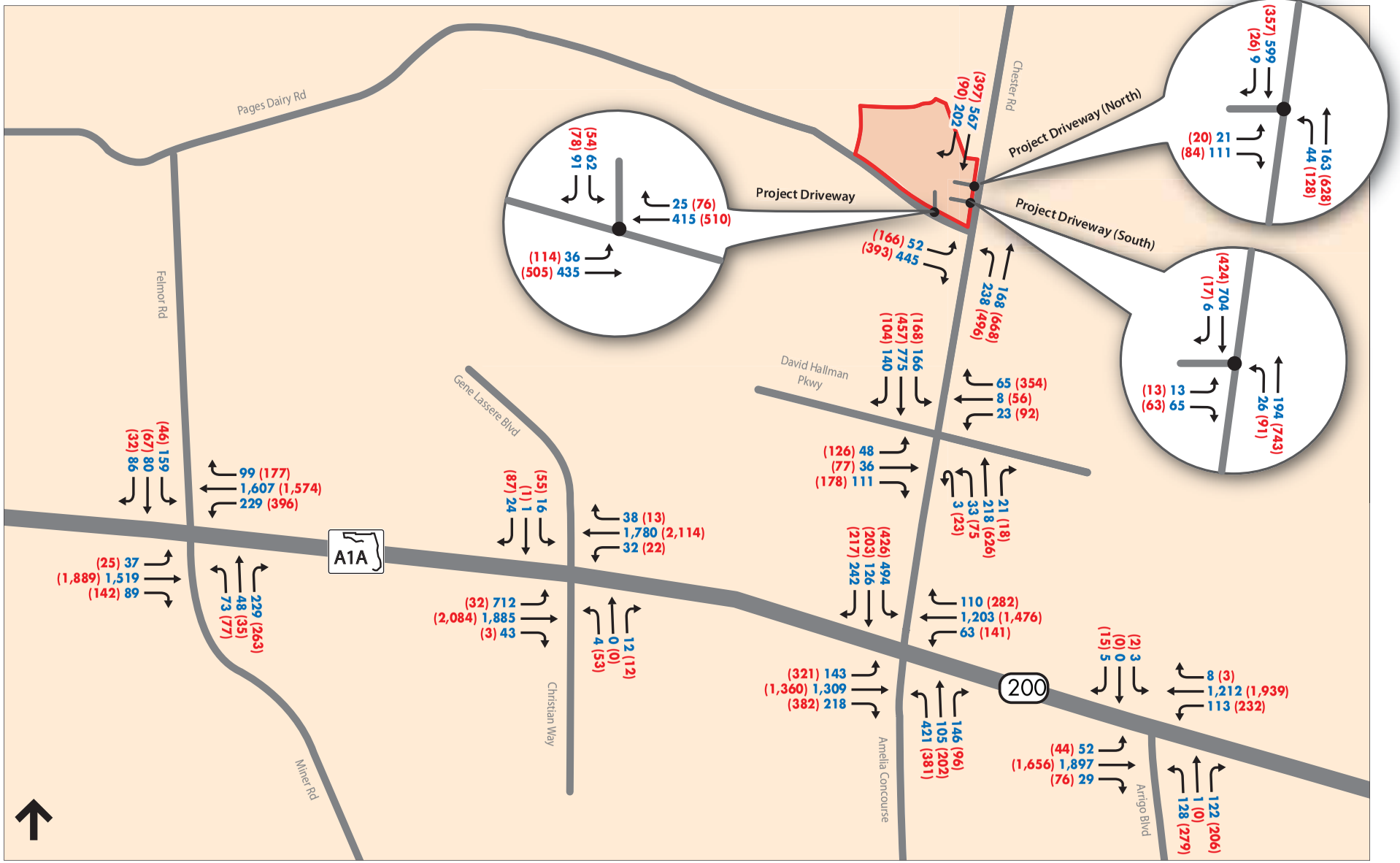


Project Boundary

2021 Build Conditions Roadway Volumes

Figure 8

Traffic Impact Analysis
2021 Build Conditions Roadway Volumes
Nassau County, Florida



Project Boundary

Traffic Movement

AM Peak Hour Turning Movement Volume (Year 2021 Volume Background + Project Trips)

(#) PM Peak Hour Turning Movement Volume (Year 2021 Volume Background + Project Trips)

Project Driveway

Figure 9

Traffic Impact Analysis
2021 Build Intersection Volumes
Nassau County, Florida

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Traffic Operations

To assess the quality of traffic flow, roadway capacity analyses were conducted for existing and projected Build traffic volume conditions for the development program. Capacity analyses provide an indication of how well the roadway facilities serve the traffic demands placed upon them. The evaluation criteria contained in the 2010 Highway Capacity Manual[1] (HCM2010) were used to analyze study area intersections.

Level of Service Criteria

Level of service (LOS) is the term used to describe the different operating conditions which occur on a given roadway segment or intersection under various traffic volume loads. It is a qualitative measure of the effect of a number of factors including roadway geometrics, speed, travel delay, freedom to maneuver, and safety. Six levels of service are defined for each type of facility. Levels of service are given letter designations from A to F, with LOS A representing the best operating conditions and LOS F representing the worst.

The LOS designation is reported differently for signalized and unsignalized intersections. For signalized intersections, the analysis considers the operation of all traffic entering the intersection and the level of service designation is for overall conditions at the intersection. For unsignalized intersections, the analysis assumes that through traffic on the mainline does not stop and is not affected by traffic on the side streets. Instead, the LOS for unsignalized intersections is calculated only for the mainline left-turn or critical side street movements that are required to stop.

Roadway Segment Analysis

For each phase of the development, project traffic was assigned to the No-Build roadway network, and the results of the roadway segment analysis are presented in the tables below. The capacity of SR 200/A1A/The Buccaneer Trail reflects the programmed widening from 4 to 6 lanes within the study area. The capacity of Chester Road reflects the programmed widening from 2 to 4 lanes from the end of the four-lane section to North of Pages Dairy Road.

♦

[1] Highway Capacity Manual 2010; Transportation Research Board, National Research Council, Washington, DC (2010).

Table 7 Year 2021 Roadway Segment Capacity Analysis (Adjusted Project Traffic Distribution)

Roadway Segment	No. of Lanes	LOS Std	Service Capacity	2016 AADT	Annual Growth Rate (1)	2021 Background Volume: from Growth Rate	2021 Background Volume: from Market Street PDP	2021 Background Volume: Total	Project Distrib.	Project Traffic (2)	2021 Build	LOS
SR 200/A1A												
Miner Rd to Christian Way	6D	D	62,900	34,840	2.00%	38,324	1,999	40,323	21%	1,613	41,936	C
Christian Way to Chester Rd	6D	D	62,900	34,840	2.00%	38,324	1,999	40,323	21%	1,613	41,936	C
Chester Rd to Arrigo Blvd	6D	D	62,900	40,040	2.00%	44,044	1,554	45,598	27%	2,074	47,672	C
Pages Dairy Rd												
Felmor Rd to Chester Rd	2U	D	15,900	4,009	4.78%	4,967	222	5,189	25%	1,920	7,109	C
Chester Rd												
N Hampton Club Way to SR 200/A1A	4D	D	37,600	10,816	2.00%	11,898	333	12,231	6%	461	12,692	C
SR 200/A1A to Pages Dairy Rd	4D	D	37,600	13,000	2.00%	14,300	0	14,300	66%	5,069	19,369	C
Pages Dairy Rd to Proj. Driveway	4D	D	37,600	5,096	2.00%	5,606	111	5,717	9%	691	6,408	C
Proj. Driveway to Green Pine Rd	2U	D	15,900	5,096	2.00%	5,606	111	5,717	8%	614	6,331	C
Green Pine Rd to Blackrock Rd	2U	D	15,900	5,096	2.00%	5,606	111	5,717	4%	307	5,913	C

1. Source: TIA Methodology
2. PDP Trip Generation

Based on this analysis, all roadway segments within the analysis area will have available capacity after completion of the project.

The roadway analysis was performed using the adjusted project traffic distribution. In addition, and to provide for a conservative analysis of Pages Dairy Road, an analysis was performed using the modeled project traffic distribution (all of the westbound project trips to Pages Dairy Road). The results of this analysis are provided in Table 8 and it shows that Pages Dairy Road would have excess capacity even if all of the westbound project trips were assigned to it.

Table 8 Year 2021 Roadway Segment Capacity Analysis (Modeled Project Traffic Distribution)

Roadway Segment	No. of Lanes	LOS Std	Service Capacity	2016 AADT	Annual Growth Rate (1)	2021 Background Volume: from Growth Rate	2021 Background Volume: from Market Street PDP	2021 Background Volume: Total	Project Distrib.	Project Traffic (2)	2021 Build	LOS
Pages Dairy Rd												
Felmor Rd to Chester Rd	2U	D	15,900	4,009	4.78%	4,967	222	5,189	46%	3,533	8,722	C

1. Source: TIA Methodology
2. PDP Trip Generation

Unsignalized Intersection Capacity Analysis

Three new project driveways (unsignalized intersections) will be constructed to provide connections from Pages Dairy Road and Chester Road. There will be one new connection on Pages Dairy Road approximately one-quarter mile west of the intersection of Pages Dairy Road and

Chester Road. There will also be two new connections along Chester Road approximately one-quarter mile and one-half mile north of the intersection of Pages Dairy Road and Chester Road. The results of the unsignalized intersection capacity analysis for the study area intersections for the development are summarized in Table 9. The Synchro printouts are provided in Appendix I.

As can be observed in the Table above, all of the movements of the unsignalized intersections have a volume to capacity ratio of less than 1.0. With the exception of the southbound left turn movement at the Pages Dairy Road and Project Driveway during the PM peak hour, all of the movements will operate at level of service D or better. This movement operates at a level of service E with an average delay of 37.6 seconds per vehicle and a volume to capacity ratio of 0.394 (significantly lower than 1.0).

Signalized Intersection Capacity Analysis

Project traffic was assigned to the existing signalized intersections along SR 200/A1A/The Buccaneer Trail. Project traffic was also assigned to the intersection at Chester Road and Pages Dairy Road. This intersection is currently unsignalized; however, based on the existing volumes and the programmed widening of Chester Road from the end of the four lane section to Green Pine Road, it was assumed that a signal will be installed as part of the widening project to better serve current traffic demand. A signalized intersection was assumed for this intersection.

It should be noted that, since the critical point of Chester Road is the Pages Dairy Road intersection, the phasing of the Chester Road widening needs to be further explored. A potential alternative is to split the widening into two phases, the first one from the end of the four lane section to north of the Pages Dairy Road intersection and the second one from north of the Pages Dairy Road intersection to Green Pine Road. The phasing of these improvements would allow the County and the FDOT to stagger the investments while still curing the existing deficiency and providing an adequate level of service.

The SR 200/A1A/The Buccaneer Trail widening to six lanes was incorporated into the signalized intersection analyses. In addition, because the existing Hallman Parkway at Chester Road intersection analysis showed the westbound through-right movement operating at a volume-to-capacity ratio greater than 1.0 during the PM peak hour conditions, the signal timings at this intersection were optimized to cure the existing deficiency and accommodate future travel demand.

The results of the signalized intersection capacity analysis for the study area intersections for the development area are summarized in Table 10. The Synchro printouts are provided in Appendix I.

Table 9 2021 Unsignalized Intersection Capacity Analysis

Intersection	Movement	2021 AM Build Conditions			2021 PM Build Conditions		
		v/c	Delay [a]	LOS [b]	v/c	Delay [a]	LOS [b]
Pages Dairy Road at Project Driveway	EBL	0.035	8.4	A	0.12	9.0	A
	EBT	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1
	EBR	N/A	N/A	N/A	N/A	N/A	N/A
	WBL	N/A	N/A	N/A	N/A	N/A	N/A
	WBT	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1
	WBR	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1
	NBL	N/A	N/A	N/A	N/A	N/A	N/A
	NBT	N/A	N/A	N/A	N/A	N/A	N/A
	NBR	N/A	N/A	N/A	N/A	N/A	N/A
	SBL	0.259	23.6	C	0.402	45.3	E
	SBT	N/A	N/A	N/A	N/A	N/A	N/A
	SBR	0.163	12.1	B	0.159	13.0	B
Chester Road at Project Driveway South	EBL	0.055	19.8	C	0.072	24.9	C
	EBT	N/A	N/A	N/A	N/A	N/A	N/A
	EBR	0.115	11.6	B	0.090	10.2	B
	WBL	N/A	N/A	N/A	N/A	N/A	N/A
	WBT	N/A	N/A	N/A	N/A	N/A	N/A
	WBR	N/A	N/A	N/A	N/A	N/A	N/A
	NBL	0.034	9.4	A	0.092	8.7	A
	NBT	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1
	NBR	N/A	N/A	N/A	N/A	N/A	N/A
	SBL	N/A	N/A	N/A	N/A	N/A	N/A
	SBT	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1
	SBR	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1
Chester Road at Project Driveway North	EBL	0.079	18.6	C	0.107	24.7	C
	EBT	N/A	N/A	N/A	N/A	N/A	N/A
	EBR	0.181	11.6	B	0.114	10.1	B
	WBL	N/A	N/A	N/A	N/A	N/A	N/A
	WBT	N/A	N/A	N/A	N/A	N/A	N/A
	WBR	N/A	N/A	N/A	N/A	N/A	N/A
	NBL	0.052	9.1	A	0.122	8.6	A
	NBT	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1
	NBR	N/A	N/A	N/A	N/A	N/A	N/A
	SBL	N/A	N/A	N/A	N/A	N/A	N/A
	SBT	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1
	SBR	Note 1	Note 1	Note 1	Note 1	Note 1	Note 1

Note 1: Unopposed Movement
Source: VHB, Inc. using HCM 2010 Methodology.
a Average delay in seconds per vehicle
b Level of Service

Table 10 2021 Signalized Intersection Capacity Analysis

Intersection	Movement	2021 AM Conditions			2021 PM Conditions		
		v/c	Delay [a]	LOS [b]	v/c	Delay [a]	LOS [b]
SR 200/ A1A at Miner Rd/Felmor Rd	EBL	0.78	93.3	F	0.80	112.5	F
	EBT	0.92	53.7	D	1.00	68.6	E
	EBR	0.16	19.6	B	0.24	33.6	C
	WBL	0.78	68.4	E	1.00	98.9	F
	WBT	0.69	27.3	C	0.55	19.2	B
	WBR	0.13	17.9	B	0.19	14.5	B
	NBL	0.29	46.1	D	0.28	51.6	D
	NBT/R	0.97	102.1	F	1.00	115.5	F
	SBL	0.94	96.6	F	0.48	58.3	E
	SBT/R	0.51	52.3	D	0.34	58.9	E
	TOTAL	**N/A**	**47.9**	**D**	**N/A**	**54.2**	**D**
SR 200/ A1A at Christian Way/Gene Lassere Blvd	EBL	0.16	38.5	D	0.88	92.1	F
	EBT	0.56	8.1	A	0.61	11.3	B
	EBR	0.04	4.7	A	0.61	6.3	A
	WBL	0.78	86.3	F	0.80	105.1	F
	WBT	0.82	35.0	C	0.64	13.4	B
	WBR	0.06	20.8	C	0.02	7.1	A
	NBL/T/R	0.26	72.9	E	0.55	77.6	E
	SBL	0.19	72.1	E	0.26	65.2	E
	SBT/R	0.30	66.4	E	0.44	64.8	E
	TOTAL	**N/A**	**22.5**	**C**	**N/A**	**16.0**	**B**
SR 200/A1A at Amelia Concourse/Chester Rd	EBL	0.44	63.5	E	0.87	80.7	F
	EBT	0.78	42.6	D	0.55	27.8	C
	EBR	0.40	34.5	C	0.49	27.7	C
	WBL	0.65	77.6	E	0.77	81.8	F
	WBT	0.87	54.2	D	0.68	36.0	D
	WBR	0.24	15.3	B	0.41	30.9	C
	NBL	0.96	94.0	F	0.88	80.3	F
	NBT	0.15	47.0	D	0.45	65.1	E
	NBR	0.45	51.4	D	0.48	66.4	E
	SBL	0.90	72.2	E	0.89	78.4	E
	SBT	0.16	43.5	D	0.41	62.8	E
	SBR	0.65	34.2	C	0.98	122.3	F
	TOTAL	**N/A**	**53.6**	**D**	**N/A**	**49.3**	**D**
SR 200/A1A at Arrigo Blvd	EBL	0.08	28.3	C	0.78	91.7	F
	EBT	0.61	14.0	B	0.61	22.6	C
	EBR	0.03	8.1	A	0.09	15.0	B
	WBL	0.72	76.3	E	0.84	80.7	F
	WBT	0.80	50.3	D	0.67	19.9	B
	WBR	0.02	33.9	C	0.00	10.8	B
	NBL/T	0.41	64.8	E	0.55	63.3	E
	NBR	0.86	99.3	F	0.91	95.9	F
	SBL	0.15	76.8	E	0.05	77.4	E
	SBT/R	0.28	81.7	F	0.49	88.4	F
	TOTAL	**N/A**	**33.2**	**C**	**N/A**	**31.2**	**C**

Intersection	Movement	2016 AM Conditions			2016 PM Conditions		
		v/c	Delay [a]	LOS [b]	v/c	Delay [a]	LOS [b]
Hallman Pkwy at Chester Rd	EBL	0.29	52.8	D	0.62	34.8	C
	EBTR	0.83	60.9	E	0.53	36.0	D
	WBL	0.27	59.4	E	0.28	29.4	C
	WBT/R	0.73	64.0	E	0.93	65.1	E
	NBL	0.10	8.4	A	0.22	29.5	C
	NBT/R	0.12	9.7	A	0.57	37.2	D
	SBL	0.22	7.4	A	0.40	37.7	D
	SBT	0.36	10.2	B	0.40	31.9	C
	SBR	0.15	2.6	A	0.21	17.3	B
	TOTAL	**N/A**	**18.0**	**B**	**N/A**	**39.3**	**D**
Pages Dairy Road at Chester Road	EBL	0.11	12.2	B	0.33	16.9	B
	EBR	0.88	23.8	C	0.87	29.6	C
	NBL	0.61	13.3	B	0.77	13.0	B
	NBT	0.11	7.9	A	0.36	7.5	A
	SBT	0.65	19.0	B	0.50	20.9	C
	SBR	0.51	18.4	B	0.25	19.5	B
	TOTAL	**N/A**	**18.1**	**B**	**N/A**	**16.3**	**B**

Source: VHB, Inc. using HCM Methodology.
a Average delay in seconds per vehicle
b Level of Service

This table shows that many of the movements will experience high delays, this is due to the long cycle lengths (150 seconds and 160 seconds during the AM and PM peak hours, respectively); however, none of the movements will operate with a volume to capacity ratio greater than 1.0. This indicates that no movement will operate over capacity; therefore, all movements are anticipated to be served during one cycle (i.e., no cycle failures). In addition, all of the intersections will operate at an overall level of service of D or better.

In addition to the analysis documented in Table 10 above and due to the proximity among the SR 200/A1A/The Buccaneer Trail, Hallman Parkway, and Pages Dairy Road intersections along Chester Road, a queuing analysis was performed to ensure that the queues at these intersections do not adversely impact the operation of the nearby intersections. This analysis is documented in Table 11 and the analysis outputs are included in Appendix J.

Table 11 2021 Queuing Analysis

Intersection	Movement	Available Distance [feet]	2021 AM Conditions		2021 PM Conditions	
			95th Percentile Queue [feet]	Storage Provided?	95th Percentile Queue [feet]	Storage Provided?
SR 200/ A1A at Chester Rd	SBR	400	154	Yes	142	Yes
	SBT	750	85	Yes	152	Yes
	SBL	425	322	Yes	285	Yes
Hallman Pkwy at Chester Rd	NBT/R	750	72	Yes	277	Yes
	NBL	365	21	Yes	75	Yes
	SBR	225	29	Yes	3	Yes
	SBT	1,450	230	Yes	189	Yes
	SBL	275	71	Yes	120	Yes
Pages Dairy Rd at Chester Rd	NBT/R	1,450	26	Yes	93	Yes
	NBL	535	78	Yes	187	Yes

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Recommended Mobility Network Improvements

Based on the analysis results, the Chester Road Preliminary Development Plan will not trigger any of the improvements identified in the recommended Mobility Network. The only improvements that will need to be made to the existing roadways are turn lanes at the project entrances described as follows:

- Pages Dairy Road at Project Driveway, to be located approximately one-quarter mile west of the intersection of Pages Dairy Road and Chester Road
    - Eastbound Left Turn Lane – 235' (including 50-foot taper)
    - Westbound Right Turn Lane – 185' (including 50-foot taper)
- Chester Road at Project Driveway South, to be located approximately one-quarter mile north of the intersection of Pages Dairy Road and Chester Road
    - Northbound Left Turn Lane – 235' (including 50-foot taper)
- Chester Road at Project Driveway North, to be located approximately one-half mile north of the intersection of Pages Dairy Road and Chester Road (directly across of Heron Isle Parkway)
    - Northbound Left Turn Lane – 235' (including 50-foot taper)

Technical Appendices

A. Transportation Impact Analysis (TIA) Methodology

Exhibit "C"

Transportation Impact Analysis (TIA) Methodology

The following Exhibit summarizes the recommended methodology for completing Transportation Impact Analyses (TIAs) associated with Preliminary Development Plans (PDPs). The purpose of the TIA is to identify the short-term impacts associated with the incremental development of the East Nassau Community Planning Area (ENCPA) and the associated DSAPs. The results of the TIA are intended to identify needed transportation improvements and prioritize the use of mobility fee funds toward those improvements, consistent with the provisions of the applicable DSAP Development Order.

Analysis Area

The analysis area is defined as follows:

- For PDPs generating fewer than 500 daily trips - adjacent access points and nearest intersection included in the Mobility Network
- For PDPs generating between 500 and 1,000 daily trips - 1/2 mile radius from the project site
- For PDPs generating more than 1,000 daily trips - one mile radius from the project site

Within the ENCPA, the analysis includes all roadway segments included as part of the Mobility Network as well as major intersections. Site access points are also included in the analysis. Outside the ENCPA, the analysis should include all arterial and collector roadways within the required radius. Roadway segments and intersections outside the ENCPA are included in the analysis to identify potential mitigating improvements included in the ENCPA Mobility Network — for example, parallel roadway corridors or internal roadway connections. The list of ENCPA Mobility Network improvements is included at the end of this document.

Analysis Timeframe

An existing conditions analysis should be performed using the most recent available roadway counts. If no roadway counts are available from the past twelve (12) months, then the latest available roadway counts should be used and adjusted to the existing year using the model growth rates in this methodology document.

The analysis year shall be defined as the buildout year for the proposed PDP. The buildout year consistent with that used in the Future Conditions Analysis and should be reasonably achievable.

For roadway segments, the analysis should address daily conditions. For intersections, the analysis should address AM peak and PM peak conditions. Intersections should be analyzed using either the latest version of Highway Capacity Software (HCS) or Synchro.

Trip Generation

Trip generation calculations should use rates and equations from the current edition of the Institute of Transportation Engineers' Trip Generation. For land uses where ITE data may not represent local conditions, a trip generation study may replace published rates. The methodology for trip generation studies should follow the ITE Trip Generation Handbook, and a minimum of three sites should be surveyed. Reductions for internal capture, pass-by capture, or transit ~~should not~~ shall be applied to the trip generation for individual PDPs and have no impact on the Mobility Fee to be assessed to land uses included in the Individual PDPs (per unit in the case of residential land uses and per square foot in the case of non-residential developments), as these reductions have already been factored into the overall calculation of transportation impacts and fees for the ENCPA. ~~However, reductions for pass-by trips for retail uses may be applied.~~

Trip Distribution

The distribution of trips associated with the PDP should be estimated using the most current adopted version of the Northeast Florida Regional Planning Model (NERPM). For smaller PDPs generating fewer than 1,000 daily trips, the traffic distribution may be estimated based on existing traffic patterns. The model should be updated to reflect the transportation network and land use assumptions as follows:

- Transportation Network Assumptions - The transportation network should include existing arterial and collector roadways. Future facilities to be included in the analysis should be limited to roadway segments with committed construction funding within the next five (5) years. For analysis purposes, roadway segments with existing backlogs (based on actual traffic levels) shall be assumed to include necessary improvements to address the backlog.

- Land Use Assumptions - The land use data for the NERPM model should be developed through interpolation between the base and forecast years. Within the ENCPA, background development should be limited to the existing development at the time of the application, plus any other parcels with approved TIAs.

Trips from Other Approved ENCPA Development

Project trips from nearby approved PDPs within the analysis area should be added to the future background traffic volumes in determining the total build condition traffic volumes. The trips associated with these PDPs should be obtained from the associated TIA.

Future Conditions Analysis

The future conditions analysis should address operating conditions for roadway segments and

intersections within the analysis area for the PDP. The future conditions analysis year shall be the proposed buildout year for the PDP. The analysis should identify whether roadway segments and intersections will operate at the County's adopted Level of Service standard with the addition of traffic from the PDP. For intersections, the Level of Service standard shall be assumed to be the same as that of the adjacent roadway segments. Annual growth rates to be used for area roadway segment volumes and intersection volumes are found in the table below ~~on the following page~~. The values are based on the ENCPA Mobility Analysis included with the Employment Center DSAP application. For any roadways not in the table, the growth rate for the nearest similar facility should be applied.

Summary of Annual Background Growth Rates

Roadway	From/To	Growth Rate
I-95	Duval County Line to SR 200/A1A	2.94%
	SR 200/A1A to E-W Interchange Rd.	3.12%
	E-W Interchange Rd. to US 17	3.12%
	US 17 to GA State Line	2.39%
SR 200/A1A	Griffen Rd. to I-95	6.39%
	I-95 to Old Yulee Rd.	4.25%
	Old Yulee Rd. to US 17	4.09%
	US 17 to Chester Rd.	2.00%
	Chester Rd. to Blackrock Rd.	2.00%
	Old Nassauville Rd. to Amelia Island Parkway	2.00%
CR 200A/Pages Dairy Rd.	US 17 to Chester Rd.	4.78%
CR 107N/Blackrock Rd.	Chester Rd. to SR 200/A1A	2.00%
CR 107S/Old Nassauville Rd.	SR 200/A1A to Amelia Concourse	2.00%
	Amelia Concourse to Santa Juana Rd.	2.00%
Chester Rd.	SR 200/A1A to Pages Dairy Rd.	2.00%
	Pages Dairy Rd. to CR 108 Extension	2.00%
	CR 108 Extension to Blackrock Rd.	2.00%
US 17	Duval County Line to Harts Rd.	3.67%
	Sowell Rd. to SR 200/A1A	2.00%
	SR 200/A1A to Pages Dairy Rd.	2.00%
	Pages Dairy Rd. to Interchange Rd.	2.00%
	Interchange Rd. to CR 108	2.00%
	CR 108 to I-95	2.00%
	1-95 to GA State Line	3.36%
I-95/SR A1A Interchange	NB I-95 to SR A1A Off-ramp	5.44%
	SR A1A to NB I-95 On-ramp	6.62%
	SB I-95 to SR A1A Off-ramp	7.79%
	SR A1A to SB I-95 On-ramp	5.42%
I-95/US 17 Interchange	NB I-95 to US 17 Off-ramp	7.74%
	US 17 to NB I-95 On-ramp	2.00%
	SB I-95 to US 17 Off-ramp	2.00%
	US 17 to SB 1-95 On-ramp	7.91%

Access Points

An intersection analysis shall be completed for all site access points (roadways or driveways) to adjacent roadways. An intersection analysis should also be completed for the nearest intersection where the site access connects to the ENCPA Mobility Network,

Recommended Improvements

The results of the TIA will be used to identify transportation improvements necessary to serve development in the associated PDP, consistent with the provisions of the applicable DSAP Development Order. Transportation improvements required in this process will be limited to roadway segments and intersections included in the ENCPA Mobility Network and applicable DSAP but may include improvements outside the analysis area. A PDP applicant may propose in its TIA to address transportation impacts by means of transportation or mobility improvements other than those in the ENCPA Mobility Network. Improvements identified or proposed in the TIA may be completed in phases—for example, the first two lanes of a four-lane roadway, or a portion of a roadway segment needed to provide site access. Also, such phasing may be tied to monitoring and/or development levels. Practical transportation improvements are encouraged, so as to maximize the efficiency of available infrastructure and minimize upfront infrastructure costs ahead of actual demand.

Attachment ___

Transportation Improvements Included in ENCPA Mobility Network

Roadway/Segment	Improvement
CR 108 Extension	
US 17 to Interchange Rd	New 2-lane road
Interchange Rd to Resort Area	New 2-lane road
Resort Area to Chester Rd	New 2-lane road
Interchange Road	
Interstate 95 to ~~N-S Regional Center Arterial~~ DSAP Western Loop Collector	New 4-lane road
DSAP Western Loop Collector to N-S Regional Center Arterial	New 4-lane road
~~East Frontage Rd~~N-S Regional Center Arterial to US 17	New 4-lane road
US 17 to CR 108	New 4-lane road
Interchange Road at I-95	New Interchange
~~**Employment Center Collector Roads**~~ **DSAP Western Loop Collector**	New 2-lane road
N-S Regional Center Arterial	
US 17 to CR 108	New 4-lane road
CR 108 to Interchange Road	New 4-lane road
Interchange Road to SR 200/A1A	New 4-lane road
US 17	
N-S Regional Center Arterial to I-95	Widen to 4 lanes
Traffic Signals (at 8 new major intersections)	Install new signal
SR A1A / I-95 Interchange Improvements	
~~Dual westbound left turn lanes onto southbound ramp~~	Interchange improvements
~~Dual southbound left turn lanes off southbound ramp~~	~~New turn lane~~
~~Dual northbound right turn lanes off northbound ramp~~	~~New turn lane~~
	~~New turn lane~~
SR A1A Intersection Improvements	
(cost included with Traffic Signals at major intersections)	Dual left turn lanes at Blackrock Rd
~~Dual left turn lanes at SR A1A/Chester Rd~~	~~New turn lane~~
~~Dual left turn lanes at SR A1A/Blackrock Rd~~	~~New turn lane~~
Internal multi-use trail system (off-street)	
SR A1A/William Burgess Blvd Intersection Improvements	Intersection improvements

B. Committed Projects Information

Florida Department of

TRANSPORTATION

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Office of Work Program and Budget

Lisa Saliba - Director

Five Year Work Program

Selection Criteria	
District 02 **(Updated: 1/31/2016-19.15.01)** **Category:**Highways	**2016-2020 AD** **Nassau County** **Item Number:**210712-4

Display current records in a Report Style
Display current records in an Excel Document

Project Summary

Transportation System: INTRASTATE STATE HIGHWAY — District 02 - Nassau County

Description: SR 200 (A1A) FROM WEST OF RUBIN RD TO EAST OF CR 107/SCOTT RD

Type of Work: ADD LANES & RECONSTRUCT — View Scheduled Activities

Item Number: 210712-4 — **SIS Connector**

Length: 4.878 — View Map of Item

Construction Contract Information

Notice to Proceed Date	Work Begun Date	Present Contract Days	Contract Days Used	Percent Days Used
12/30/2015	01/24/2016	1200	0	0.00%

Vendor Name: SUPERIOR CONSTRUCTION COMPANY O

Project Detail

Fiscal Year:	**2016**	**2017**	**2018**	**2019**	**2020**
Highways/Preliminary Engineering					***(On-Going)***
Amount:					
Highways/Right of Way					***(On-Going)***
Amount:	$1,703,173				
Highways/Railroad & Utilities					
Amount:	$3,949,192				
Highways/Construction					***(On-Going)***
Amount:	$62,467,559	$68,675	$175,851		
Highways/Environmental					***(On-Going)***
Amount:					
Item Total:	**$68,119,924**	**$68,675**	**$175,851**		

This site is maintained by the Office of Work Program and Budget, located at 605 Suwannee Street, MS 21, Tallahassee, Florida 32399. For additional information please e-mail questions or comments to:
(Lisa Saliba: Lisa.Saliba@dot.state.fl.us or call 850-414-4622)

View Contact Information for Office of Work Program and Budget

Application Home: Work Program
Office Home: Office of Work Program and Budget

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Florida Department of Transportation
Consistent, Predictable, Repeatable

C. Data Collection

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Nassau	**City**	0
Intersection	Chester Rd	&	Pages Dairy Rd
Date	November 19, 2015		**All Vehicles**
Time Period	7:00 to 9:00		

VHB Project #: 61636.03

Time Period	Northbound Left	Northbound Through	Northbound Right	Southbound Left	Southbound Through	Southbound Right
7:00 - 7:15	44	16	0	0	76	44
7:15 - 7:30	53	13	0	0	83	50
7:30 - 7:45	58	28	0	0	101	44
7:45 - 8:00	31	30	0	0	78	27
8:00 - 8:15	20	36	0	0	86	16
8:15 - 8:30	18	32	0	0	70	38
8:30 - 8:45	17	36	0	0	51	23
8:45 - 9:00	18	41	0	0	79	13
	259	232	0	0	624	255

Time Period	Eastbound Left	Eastbound Through	Eastbound Right	Westbound Left	Westbound Through	Westbound Right
7:00 - 7:15	1	0	41	0	0	0
7:15 - 7:30	1	0	47	0	0	0
7:30 - 7:45	7	0	78	0	0	0
7:45 - 8:00	25	0	122	0	0	0
8:00 - 8:15	9	0	42	0	0	0
8:15 - 8:30	5	0	56	0	0	0
8:30 - 8:45	10	0	83	0	0	0
8:45 - 9:00	10	0	48	0	0	0
	68	0	517	0	0	0

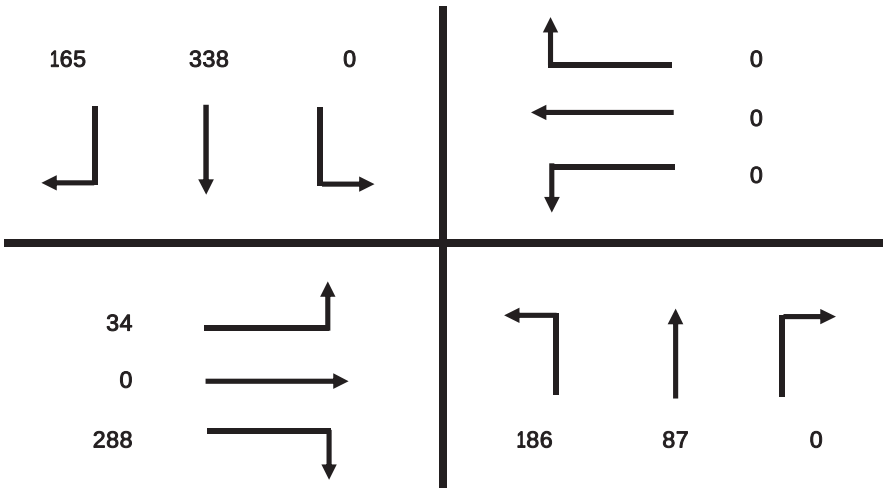
North / South
Chester Rd

East / West
Pages Dairy Rd

Peak Hour
7:00 - 8:00

Peak Hour Factor
0.87

Total Pk Hr Voume
1,098



Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Nassau	**City**	0
Intersection	Chester Rd	&	Pages Dairy Rd
Date	November 19, 2015		**All Vehicles**
Time Period	16:00 to 18:00		

VHB Project #: 61636.03

Time Period	Northbound Left	Northbound Through	Northbound Right	Southbound Left	Southbound Through	Southbound Right
16:00 - 16:15	50	89	0	0	54	19
16:15 - 16:30	64	95	0	0	52	14
16:30 - 16:45	65	86	0	0	52	18
16:45 - 17:00	68	85	0	0	54	19
17:00 - 17:15	104	106	0	0	52	27
17:15 - 17:30	116	93	0	0	55	15
17:30 - 17:45	82	86	0	0	55	13
17:45 - 18:00	63	106	0	0	57	15
	612	746	0	0	431	140

Time Period	Eastbound Left	Eastbound Through	Eastbound Right	Westbound Left	Westbound Through	Westbound Right
16:00 - 16:15	24	0	65	0	0	0
16:15 - 16:30	22	0	75	0	0	0
16:30 - 16:45	20	0	70	0	0	0
16:45 - 17:00	18	0	51	0	0	0
17:00 - 17:15	28	0	60	0	0	0
17:15 - 17:30	27	0	76	0	0	0
17:30 - 17:45	25	0	61	0	0	0
17:45 - 18:00	37	0	62	0	0	0
	201	0	520	0	0	0

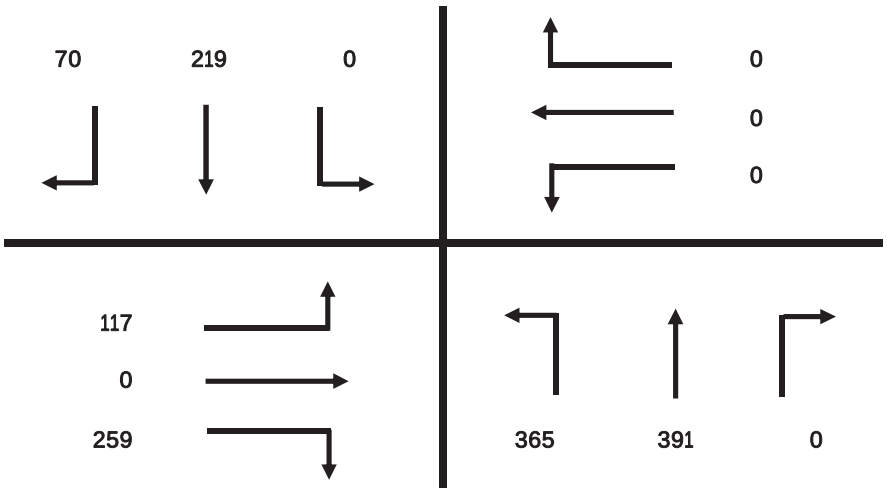
North / South
Chester Rd

East / West
Pages Dairy Rd

Peak Hour
17:00 - 18:00

Peak Hour Factor
0.93

Total Pk Hr Voume
1,421



Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Nassau	**City**	0
Intersection	Felmor Rd	&	SR200-A1A
Date	November 19, 2015		**All Vehicles**
Time Period	7:00 to 9:00		

VHB Project #: 61636.03

Time Period	Northbound Left	Northbound Through	Northbound Right	Southbound Left	Southbound Through	Southbound Right
7:00 - 7:15	12	8	35	4	2	8
7:15 - 7:30	13	11	40	5	2	3
7:30 - 7:45	9	20	48	47	10	21
7:45 - 8:00	13	8	49	66	30	40
8:00 - 8:15	14	2	51	19	26	10
8:15 - 8:30	9	1	53	7	19	1
8:30 - 8:45	7	12	65	10	37	6
8:45 - 9:00	34	14	80	9	21	6
	111	76	421	167	147	95

Time Period	Eastbound Left	Eastbound Through	Eastbound Right	Westbound Left	Westbound Through	Westbound Right
7:00 - 7:15	9	253	6	16	373	27
7:15 - 7:30	10	300	8	25	331	35
7:30 - 7:45	12	327	15	34	313	22
7:45 - 8:00	3	319	17	46	320	11
8:00 - 8:15	7	265	25	70	277	17
8:15 - 8:30	14	253	28	90	250	6
8:30 - 8:45	3	225	43	120	236	7
8:45 - 9:00	6	288	22	59	222	9
	64	2,230	164	460	2,322	134

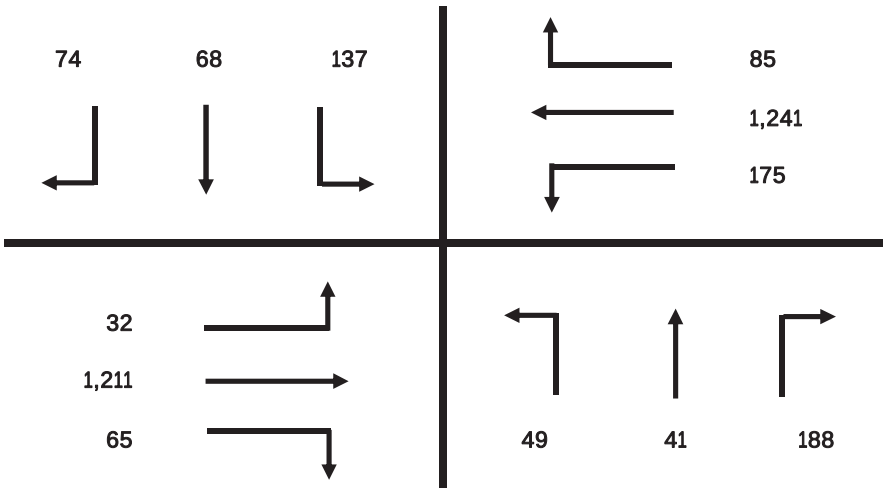
North / South
Felmor Rd

East / West
SR200-A1A

Peak Hour
7:15 - 8:15

Peak Hour Factor
0.91

Total Pk Hr Voume
3,366



Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Nassau	**City**	0
Intersection	Felmor Rd	&	SR200-A1A
Date	November 19, 2015		**All Vehicles**
Time Period	16:00 to 18:00		

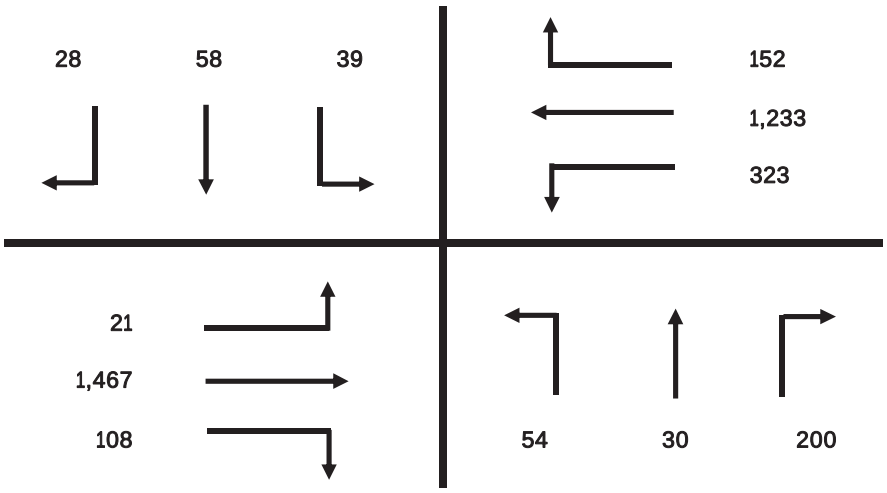
VHB Project #: 61636.03

Time Period	Northbound Left	Northbound Through	Northbound Right	Southbound Left	Southbound Through	Southbound Right
16:00 - 16:15	21	14	108	23	3	5
16:15 - 16:30	7	2	53	6	7	4
16:30 - 16:45	12	3	48	8	9	2
16:45 - 17:00	8	8	55	9	8	1
17:00 - 17:15	14	3	46	11	19	8
17:15 - 17:30	12	4	43	9	13	3
17:30 - 17:45	21	18	60	9	20	12
17:45 - 18:00	7	5	51	10	6	5
	102	57	464	85	85	40

Time Period	Eastbound Left	Eastbound Through	Eastbound Right	Westbound Left	Westbound Through	Westbound Right
16:00 - 16:15	9	329	8	39	318	16
16:15 - 16:30	3	352	15	74	331	21
16:30 - 16:45	14	348	19	85	325	20
16:45 - 17:00	14	240	31	83	232	34
17:00 - 17:15	6	375	19	76	320	65
17:15 - 17:30	4	375	33	83	359	41
17:30 - 17:45	8	326	33	88	320	30
17:45 - 18:00	3	391	23	76	234	16
	61	2,736	181	604	2,439	243

North / South
Felmor Rd

East / West
SR200-A1A



Peak Hour
17:00 - 18:00

Peak Hour Factor
0.95

Total Pk Hr Voume
3,713

Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Nassau	**City**	0
Intersection	Gene Lassere Blvd/Christian Way	&	SR200-A1A
Date	November 19, 2015		**All Vehicles**
Time Period	7:00 to 9:00		

VHB Project #: 61636.03

Time Period	Northbound Left	Northbound Through	Northbound Right	Southbound Left	Southbound Through	Southbound Right
7:00 - 7:15	2	0	1	1	0	3
7:15 - 7:30	1	0	2	5	0	1
7:30 - 7:45	1	0	3	3	0	2
7:45 - 8:00	2	0	3	5	0	7
8:00 - 8:15	0	0	3	0	0	4
8:15 - 8:30	2	0	5	1	0	3
8:30 - 8:45	6	0	11	4	0	2
8:45 - 9:00	2	0	7	7	0	5
	16	0	35	26	0	27

Time Period	Eastbound Left	Eastbound Through	Eastbound Right	Westbound Left	Westbound Through	Westbound Right
7:00 - 7:15	5	274	14	1	404	8
7:15 - 7:30	12	332	10	7	350	8
7:30 - 7:45	17	404	5	6	350	11
7:45 - 8:00	20	419	8	14	333	13
8:00 - 8:15	8	369	14	1	344	1
8:15 - 8:30	7	319	4	5	343	3
8:30 - 8:45	3	317	4	4	356	4
8:45 - 9:00	2	360	5	5	267	5
	74	2,794	64	43	2,747	53

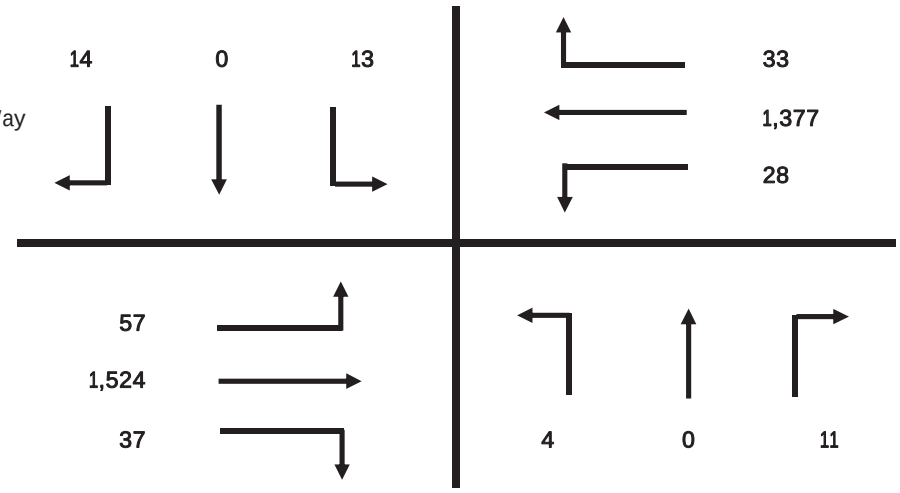
North / South
Gene Lassere Blvd/Christian Way

East / West
SR200-A1A

Peak Hour
7:15 - 8:15

Peak Hour Factor
0.94

Total Pk Hr Voume
3,098



Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Nassau	**City**	0
Intersection	Gene Lassere Blvd/Christian Way	&	SR200-A1A
Date	November 19, 2015		**All Vehicles**
Time Period	16:00 to 18:00		

VHB Project #: 61636.03

Time Period	Northbound Left	Northbound Through	Northbound Right	Southbound Left	Southbound Through	Southbound Right
16:00 - 16:15	12	0	3	5	0	13
16:15 - 16:30	5	0	3	5	0	7
16:30 - 16:45	16	0	1	29	0	32
16:45 - 17:00	12	0	4	8	1	16
17:00 - 17:15	24	0	4	21	0	30
17:15 - 17:30	17	0	4	1	0	4
17:30 - 17:45	8	0	3	7	0	3
17:45 - 18:00	4	0	4	0	0	3
	98	0	26	76	1	108

Time Period	Eastbound Left	Eastbound Through	Eastbound Right	Westbound Left	Westbound Through	Westbound Right
16:00 - 16:15	5	460	0	4	381	7
16:15 - 16:30	6	433	2	4	434	3
16:30 - 16:45	8	410	0	5	431	1
16:45 - 17:00	1	314	1	6	441	1
17:00 - 17:15	3	373	3	4	401	4
17:15 - 17:30	3	388	2	4	436	0
17:30 - 17:45	1	380	1	2	402	0
17:45 - 18:00	3	388	3	10	344	1
	30	3,146	12	39	3,270	17

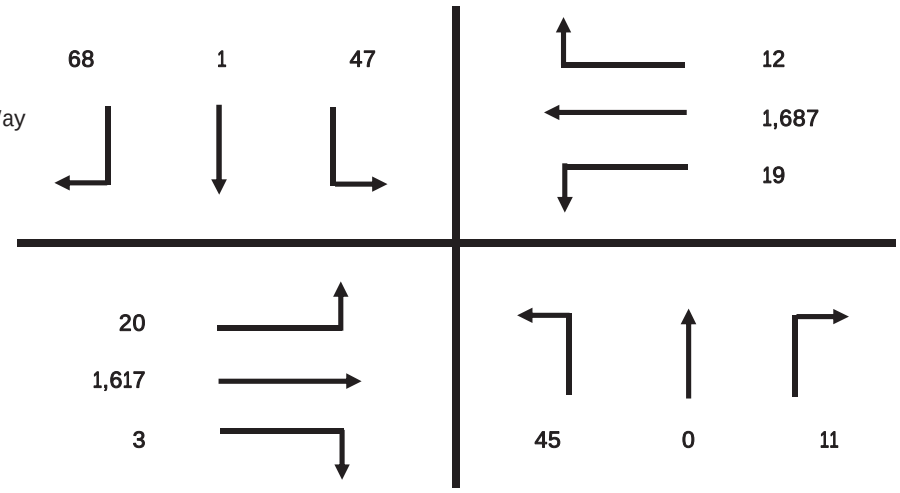
North / South
Gene Lassere Blvd/Christian Way

East / West
SR200-A1A

Peak Hour
16:00 - 17:00

Peak Hour Factor
0.95

Total Pk Hr Voume
3,530



Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Nassau	**City**	0
Intersection	Chester Rd/Amelia Concourse	&	SR200-A1A
Date	November 19, 2015		**All Vehicles**
Time Period	7:00 to 9:00		

VHB Project #: 61636.03

Time Period	Northbound Left	Northbound Through	Northbound Right	Southbound Left	Southbound Through	Southbound Right
7:00 - 7:15	109	18	30	59	11	31
7:15 - 7:30	76	37	31	65	13	37
7:30 - 7:45	86	31	37	89	19	42
7:45 - 8:00	89	11	26	94	29	39
8:00 - 8:15	87	16	30	71	17	39
8:15 - 8:30	84	26	32	88	25	23
8:30 - 8:45	101	8	37	96	13	18
8:45 - 9:00	58	15	30	65	39	23
	690	162	253	627	166	252

Time Period	Eastbound Left	Eastbound Through	Eastbound Right	Westbound Left	Westbound Through	Westbound Right
7:00 - 7:15	12	228	18	7	237	22
7:15 - 7:30	9	237	25	11	240	24
7:30 - 7:45	28	323	38	7	249	16
7:45 - 8:00	34	263	61	20	248	18
8:00 - 8:15	19	260	40	10	227	17
8:15 - 8:30	17	219	36	17	237	12
8:30 - 8:45	26	214	35	18	215	15
8:45 - 9:00	24	245	44	21	222	17
	169	1,989	297	111	1,875	141

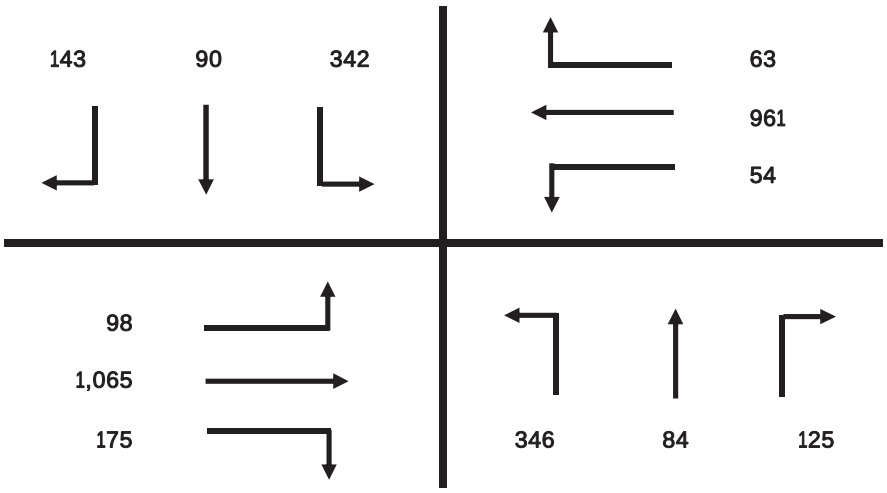
North / South
Chester Rd/Amelia Concourse

East / West
SR200-A1A

Peak Hour
7:30 - 8:30

Peak Hour Factor
0.92

Total Pk Hr Voume
3,546



Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Nassau	**City**	0
Intersection	Chester Rd/Amelia Concourse	&	SR200-A1A
Date	November 19, 2015		**All Vehicles**
Time Period	16:00 to 18:00		

VHB Project #: 61636.03

Time Period	Northbound Left	Northbound Through	Northbound Right	Southbound Left	Southbound Through	Southbound Right
16:00 - 16:15	69	32	25	80	40	35
16:15 - 16:30	60	33	25	75	40	31
16:30 - 16:45	81	27	18	97	37	31
16:45 - 17:00	86	27	33	66	44	37
17:00 - 17:15	75	51	20	71	46	37
17:15 - 17:30	90	33	20	97	46	35
17:30 - 17:45	76	35	27	72	33	30
17:45 - 18:00	72	32	16	60	35	32
	609	270	184	618	321	268

Time Period	Eastbound Left	Eastbound Through	Eastbound Right	Westbound Left	Westbound Through	Westbound Right
16:00 - 16:15	54	259	64	32	290	37
16:15 - 16:30	49	303	47	21	310	36
16:30 - 16:45	58	243	76	40	323	29
16:45 - 17:00	43	192	64	23	279	26
17:00 - 17:15	49	267	72	28	328	37
17:15 - 17:30	50	269	70	31	294	41
17:30 - 17:45	55	265	77	21	298	37
17:45 - 18:00	43	288	93	41	284	28
	401	2,086	563	237	2,406	271

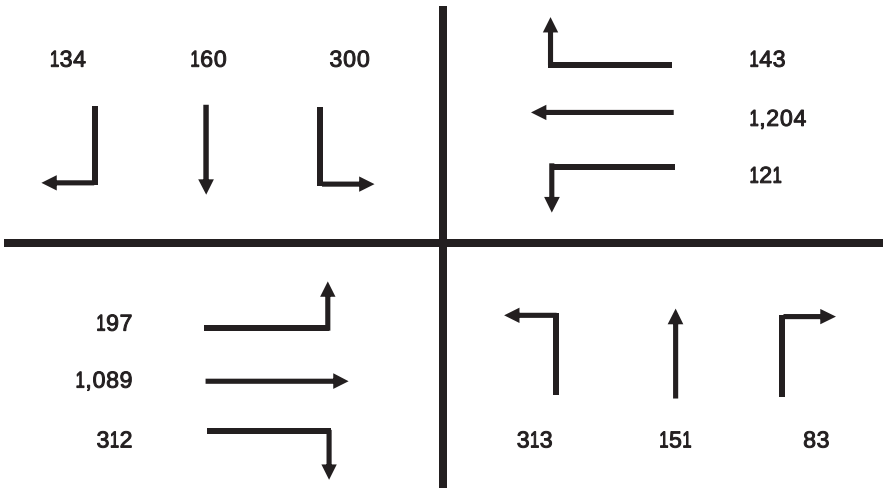
North / South
Chester Rd/Amelia Concourse

East / West
SR200-A1A

Peak Hour
17:00 - 18:00

Peak Hour Factor
0.97

Total Pk Hr Voume
4,207



Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Nassau	**City**	0
Intersection	Arrigo Blvd	&	SR200-A1A
Date	November 19, 2015		**All Vehicles**
Time Period	7:00 to 9:00		

VHB Project #: 61636.03

Time Period	Northbound Left	Northbound Through	Northbound Right	Southbound Left	Southbound Through	Southbound Right
7:00 - 7:15	31	0	19	0	0	0
7:15 - 7:30	39	0	31	1	0	1
7:30 - 7:45	26	0	28	1	0	0
7:45 - 8:00	26	0	32	0	0	0
8:00 - 8:15	25	1	25	1	0	0
8:15 - 8:30	32	0	20	1	0	0
8:30 - 8:45	32	1	30	3	0	0
8:45 - 9:00	27	1	28	0	1	2
	238	3	213	7	1	3

Time Period	Eastbound Left	Eastbound Through	Eastbound Right	Westbound Left	Westbound Through	Westbound Right
7:00 - 7:15	2	296	6	18	242	2
7:15 - 7:30	10	313	7	19	200	1
7:30 - 7:45	4	426	3	21	230	0
7:45 - 8:00	13	370	11	23	251	2
8:00 - 8:15	8	360	4	26	230	3
8:15 - 8:30	16	337	6	27	231	2
8:30 - 8:45	14	307	4	30	231	4
8:45 - 9:00	20	314	7	27	229	2
	87	2,723	48	191	1,844	16

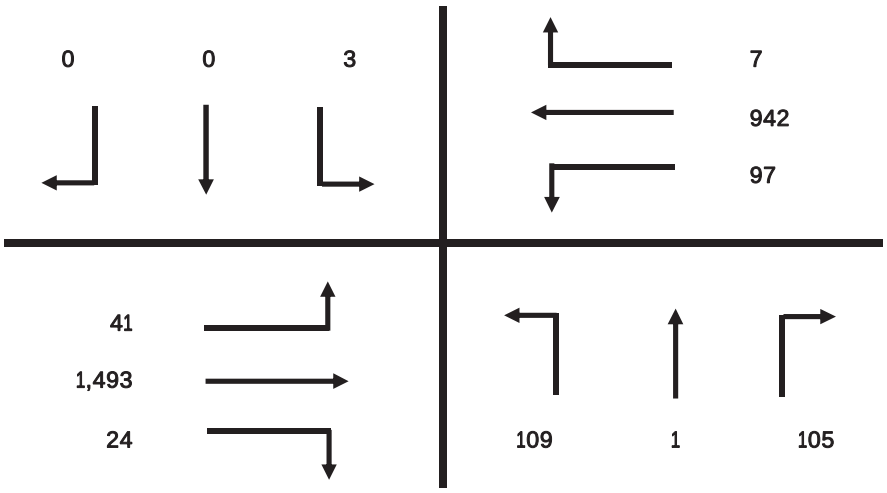
North / South
Arrigo Blvd

East / West
SR200-A1A

Peak Hour
7:30 - 8:30

Peak Hour Factor
0.96

Total Pk Hr Voume
2,822



Roadway Count Summary

Vanasse Hangen Brustlin, Inc.

County	Nassau	**City**	0
Intersection	Arrigo Blvd	&	SR200-A1A
Date	November 19, 2015		**All Vehicles**
Time Period	16:00 to 18:00		

VHB Project #: 61636.03

Time Period	Northbound Left	Northbound Through	Northbound Right	Southbound Left	Southbound Through	Southbound Right
16:00 - 16:15	63	1	40	0	1	1
16:15 - 16:30	62	0	47	0	0	2
16:30 - 16:45	67	0	52	0	0	2
16:45 - 17:00	55	0	42	0	0	1
17:00 - 17:15	54	0	36	2	0	5
17:15 - 17:30	38	0	48	2	0	7
17:30 - 17:45	56	0	34	2	1	4
17:45 - 18:00	45	0	33	1	0	4
	440	1	332	7	2	26

Time Period	Eastbound Left	Eastbound Through	Eastbound Right	Westbound Left	Westbound Through	Westbound Right
16:00 - 16:15	8	325	14	50	361	1
16:15 - 16:30	12	362	18	48	392	0
16:30 - 16:45	7	323	16	45	357	1
16:45 - 17:00	7	270	23	52	369	1
17:00 - 17:15	8	329	7	54	389	1
17:15 - 17:30	11	358	16	57	397	0
17:30 - 17:45	2	325	20	50	371	1
17:45 - 18:00	8	311	19	53	351	4
	63	2,603	133	409	2,987	9

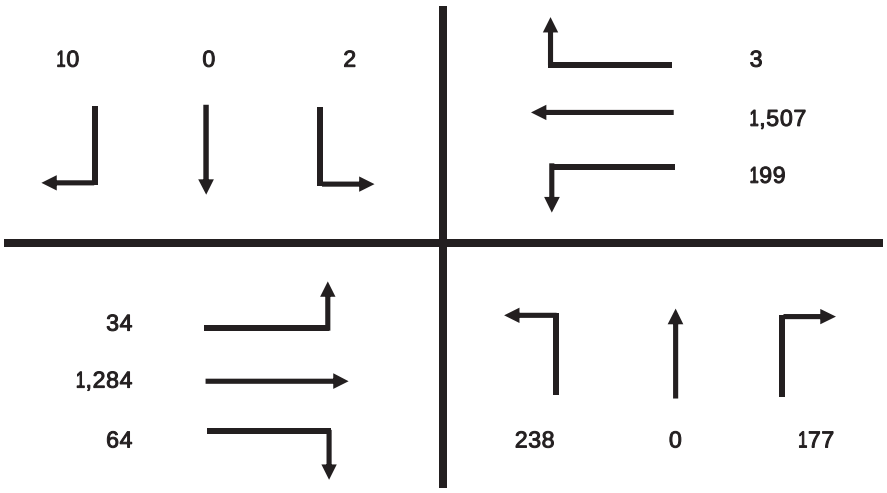
North / South
Arrigo Blvd

East / West
SR200-A1A

Peak Hour
16:15 - 17:15

Peak Hour Factor
0.93

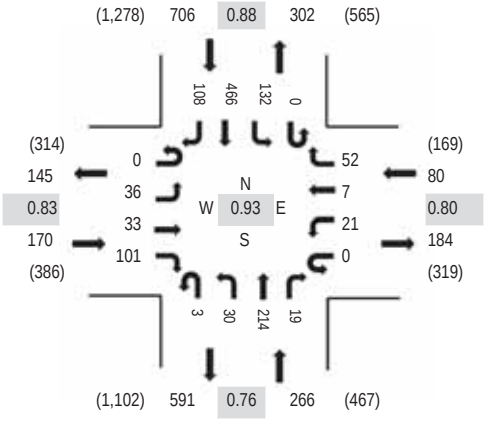
Total Pk Hr Voume
3,518



(303) 216-2439
www.alltrafficdata.net

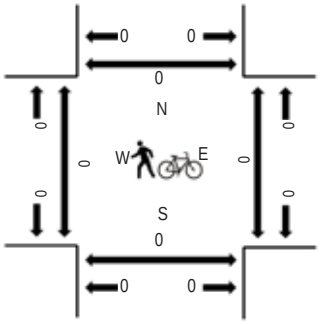
Location: 1 CHESTER ROAD & DAVID HALLMAN PKWY AM
Date and Start Time: Tuesday, March 29, 2016
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	THE HOME DEPOT Eastbound				DAVID HALLMAN PKWY Westbound				CHESTER ROAD Northbound				CHESTER ROAD Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00:00 AM	0	4	1	18	0	1	2	7	0	2	46	5	0	13	77	29	205	1,134	0	0	0	1
7:15:00 AM	0	7	5	17	0	4	0	12	1	3	61	2	0	25	119	28	284	1,222	0	0	0	0
7:30:00 AM	0	7	10	30	0	5	1	10	0	16	64	8	0	23	118	24	316	1,205	0	0	0	0
7:45:00 AM	0	13	9	29	0	7	3	13	1	3	42	8	0	56	119	26	329	1,178	0	0	0	0
8:00:00 AM	0	9	9	25	0	5	3	17	1	8	47	1	0	28	110	30	293	1,166	0	0	0	0
8:15:00 AM	0	16	8	32	0	7	7	14	4	5	35	0	0	22	81	36	267		0	0	0	0
8:30:00 AM	0	15	9	38	0	5	2	17	3	5	43	2	0	25	93	32	289		0	0	0	0
8:45:00 AM	0	17	12	46	0	9	5	13	1	9	36	5	0	33	96	35	317		0	0	0	0

Peak Rolling Hour Flow Rates

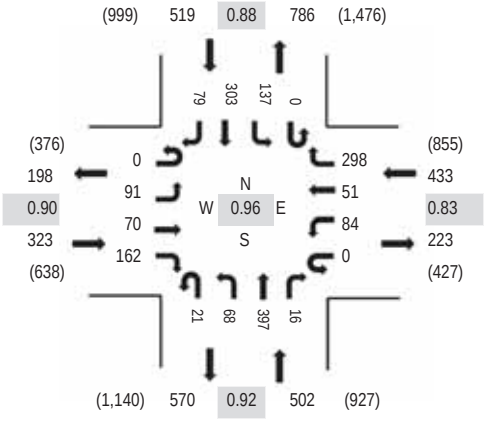
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	3
Lights	0	33	33	95	0	19	7	51	3	27	207	16	0	132	457	105	1,185
Mediums	0	3	0	6	0	2	0	0	0	3	6	2	0	0	9	3	34
Total	0	36	33	101	0	21	7	52	3	30	214	19	0	132	466	108	1,222

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

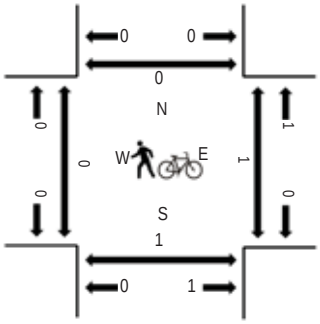
Location: 1 CHESTER ROAD & DAVID HALLMAN PKWY PM
Date and Start Time: Tuesday, March 29, 2016
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	THE HOME DEPOT Eastbound				DAVID HALLMAN PKWY Westbound				CHESTER ROAD Northbound				CHESTER ROAD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00:00 PM	0	21	13	45	0	25	10	45	5	14	96	6	0	39	81	21	421	1,690	0	0	0	0
4:15:00 PM	0	22	17	50	0	29	12	71	1	18	74	2	0	29	65	14	404	1,730	0	0	5	0
4:30:00 PM	0	22	20	41	0	16	12	60	10	16	99	5	0	38	90	20	449	1,777	0	0	0	0
4:45:00 PM	0	31	14	45	0	21	12	61	2	18	89	3	0	30	71	19	416	1,730	0	0	0	0
5:00:00 PM	0	17	21	37	0	21	17	83	5	17	96	5	0	41	86	15	461	1,729	0	1	1	0
5:15:00 PM	0	21	15	39	0	26	10	94	4	17	113	3	0	28	56	25	451		0	0	0	0
5:30:00 PM	0	24	18	29	0	26	9	61	0	19	88	2	0	31	75	20	402		0	0	0	0
5:45:00 PM	0	17	15	44	0	36	10	88	3	11	83	3	0	29	56	20	415		0	0	2	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0	4
Lights	0	91	70	162	0	83	51	295	21	67	393	15	0	135	296	79	1,758
Mediums	0	0	0	0	0	0	0	3	0	1	3	1	0	2	5	0	15
Total	0	91	70	162	0	84	51	298	21	68	397	16	0	137	303	79	1,777

D. Market Street PDP – Trip Generation Estimate

Market Street PDP Trip Generation - Tear 2021 (Prorated)

Land Use	ITE Land Use Code (LUC)	Intensity		Weekday Daily	Weekday AM			Weekday PM		
					Enter	Exit	Total	Enter	Exit	Total
Elementary School	520	800	students	1,032	198	162	360	59	61	120
Single Family Residential	210	274	units	2,655	51	151	202	164	96	260
Multi Family Residential	220	302	units	1,954	30	122	152	120	64	184
General Office Buidling - North	710	88,000	sf	1,191	152	21	173	30	147	177
General Office Buidling - South	710	60,000	sf	890	112	15	127	25	121	146
Retail - North	820	74,000	sf	5,584	81	49	130	235	255	490
Retail - South	820	30,000	sf	3,105	47	28	75	128	139	267
Total				16,411	671	548	1,219	761	883	1,644
Internal Captured Trips				2,388	18	18	36	104	104	208
Driveway Trips				14,023	653	530	1,183	657	779	1,436
Pass-By Captured Trips - Retail North				1,877	20	20	40	73	73	146
Pass-By Captured Trips - Retail South				1,043	12	11	23	39	39	78
Net New Trips				**11,103**	**621**	**499**	**1,120**	**545**	**667**	**1,212**

2021 - Internal Capture

Daily

			Residential		General Office Buidling		Retail		Total
			In	Out	In	Out	In	Out	
			2,305	2,304	1,041	1,040	4,345	4,345	
Residential	In	2,305				21		478	499
	Out	2,304			0		391		391
General Office Buidling	In	1,041		0				130	130
	Out	1,040	21				174		195
Retail	In	4,345		391		174			565
	Out	4,345	478		130				608
Total		15,379							2,388

AM Peak Hour

			Residential		General Office Buidling		Retail		Total
			In	Out	In	Out	In	Out	
			81	273	264	36	128	77	
Residential	In	81				0		5	5
	Out	273			0		6		6
General Office Buidling	In	264		0				2	2
	Out	36	0				5		5
Retail	In	128		6		5			11
	Out	77	5		2				7
Total		859							36

PM Peak Hour

			Residential		General Office Buidling		Retail		Total
			In	Out	In	Out	In	Out	
			284	160	55	268	363	394	
Residential	In	284				5		47	52
	Out	160			0		33		33
General Office Buidling	In	55		0				12	12
	Out	268	5				7		12
Retail	In	363		33		7			40
	Out	394	47		12				59
Total		1,524							208

2021 - Pass-By Capture

Daily

Retail - North		Retail - South	
Inbound:	2,792	Inbound:	1,553
Outbound:	2,792	Outbound:	1,552
Total:	5,584	Total:	3,105
Internal Capture		**Internal Capture**	
Inbound:	25	Inbound:	15
Outbound:	37	Outbound:	22
Total:	62	Total:	37
Net Trips		**Net Trips**	
Inbound:	2,767	Inbound:	1,538
Outbound:	2,755	Outbound:	1,530
Total:	5,522	Total:	3,068
Pass-By Capture (34%)		**Pass-By Capture (34%)**	
Inbound:	939	Inbound:	522
Outbound:	938	Outbound:	521
Total:	1,877	Total:	1,043

AM Peak Hour

Retail - North		Retail - South	
Inbound:	81	Inbound:	47
Outbound:	49	Outbound:	28
Total:	130	Total:	75
Internal Capture		**Internal Capture**	
Inbound:	7	Inbound:	4
Outbound:	4	Outbound:	3
Total:	11	Total:	7
Net Trips		**Net Trips**	
Inbound:	74	Inbound:	43
Outbound:	45	Outbound:	25
Total:	119	Total:	68
Pass-By Capture (34%)		**Pass-By Capture (34%)**	
Inbound:	20	Inbound:	12
Outbound:	20	Outbound:	11
Total:	40	Total:	23

PM Peak Hour

Retail - North		Retail - South	
Inbound:	235	Inbound:	128
Outbound:	255	Outbound:	139
Total:	490	Total:	267
Internal Capture		**Internal Capture**	
Inbound:	25	Inbound:	15
Outbound:	37	Outbound:	22
Total:	62	Total:	37
Net Trips		**Net Trips**	
Inbound:	210	Inbound:	113
Outbound:	218	Outbound:	117
Total:	428	Total:	230
Pass-By Capture (34%)		**Pass-By Capture (34%)**	
Inbound:	73	Inbound:	39
Outbound:	73	Outbound:	39
Total:	146	Total:	78

E. Trip Generation Estimate

Chester Road PDP Trip Generation

Land Use	ITE Land Use Code (LUC)	Intensity	Weekday Daily	Weekday AM			Weekday PM		
				Enter	Exit	Total	Enter	Exit	Total
Single Family	210	400 du	3,760	73	217	290	231	135	366
Multi Family	220	300 du	1,942	30	121	151	119	64	183
Retail	820	31,000 sf	3,172	47	29	76	131	142	273
Total			8,874	150	367	517	481	341	822
		Internal Capture Trips	*634*	*4*	*4*	*8*	*29*	*29*	*58*
Driveway Trips			8,240	146	363	509	452	312	764
		Pass-by Trips	*559*	*12*	*12*	*24*	*25*	*25*	*50*
New Trips			**7,681**	**134**	**351**	**485**	**427**	**287**	**714**

Internal Capture

Daily

			Residential		Retail		Total
			In	Out	In	Out	
			2,851	2,851	1,586	1,586	
Residential	In	2,851				174	174
	Out	2,851			143		143
Retail	In	1,586		143			143
	Out	1,586	174				174
Total		8,874					634

AM Peak Hour

			Residential		Retail		Total
			In	Out	In	Out	
			103	338	47	29	
Residential	In	103				2	2
	Out	338			2		2
Retail	In	47		2			2
	Out	29	2				2
Total		517					8

PM Peak Hour

			Residential		Retail		Total
			In	Out	In	Out	
			350	199	131	142	
Residential	In	350				17	17
	Out	199			12		12
Retail	In	131		12			12
	Out	142	17				17
Total		822					58

Retail Pass-By Capture

Daily		AM Peak Hour		PM Peak Hour	
Inbound:	1,586	Inbound:	47	Inbound:	131
Outbound:	1,586	Outbound:	29	Outbound:	142
Internal Capture		**Internal Capture**		**Internal Capture**	
Inbound:	143	Inbound:	2	Inbound:	12
Outbound:	174	Outbound:	2	Outbound:	17
Driveway Trips		**Driveway Trips**		**Driveway Trips**	
Inbound:	1,443	Inbound:	45	Inbound:	119
Outbound:	1,412	Outbound:	27	Outbound:	125
Pass-By Capture (34 percent)		**Pass-By Capture (34 percent)**		**Pass-By Capture (34 percent)**	
Inbound:	485	Inbound:	12	Inbound:	41
Outbound:	485	Outbound:	12	Outbound:	41
Total:	**970**	**Total:**	**24**	**Total:**	**82**
10 Percent Limit		**10 Percent Limit**		**10 Percent Limit**	
Chester Road north of Pages Dairy Road					
AADT (2014):	4,900				
Annual Growth Rate:	2.00%				
AADT (2021):	5,586				
		K Factor:	0.09	K Factor:	0.09
		Peak Hour Volume:	503	Peak Hour Volume	503
10 Percent:	**559**	10 Percent:	**50**	10 Percent:	**50**
Pass By-Capture		**Pass By-Capture**		**Pass By-Capture**	
Inbound:	280	Inbound:	12	Inbound:	25
Outbound:	279	Outbound:	12	Outbound:	25
Total:	**559**	**Total:**	**24**	**Total:**	**50**

F. Conversion Matrix and Land Use Exchange Example

Chester Road
Conversion Matrix Development
and
Land Use Exchange Example

Introduction

A conversion matrix was developed in support of potential residential land use exchanges that can be performed in the future for residential development within the Chester Road Detailed Specific Area Plan (DSAP). It should be noted that these exchanges are only from residential to residential land uses and no residential to non-residential exchange (or vice-versa) is allowed under the Chester Road DSAP Development Order (the "D.O.").

The first portion of this Appendix documents how the land use conversion would work and the second part shows how these rates could be applied through the use of an example.

Conversion Rates Computation

The Chester Road Phase I Preliminary Development Plan (PDP) is anticipated to generate 714 new trips during the pm peak hour (427 inbound and 287 outbound). Table 1 documents the PDP trip generation estimate.

Table 1. Chester Road First PDP Trip Generation Estimate

Land Use	ITE Land Use Code (LUC)	Intensity	Weekday PM		
			Enter	Exit	Total
Single Family	210	400 du	231	135	366
Multi Family	220	300 du	119	64	183
Retail	820	31,000 sf	131	142	273
Total			481	341	822
		Internally Captured Trips	*29*	*29*	*58*
Driveway Trips			452	312	764
		Pass-by Trips	*25*	*25*	*50*
New Trips			**427**	**287**	**714**

The Conversion Matrix was developed based on the pm peak hour trip generation estimate. The first step was to develop Average Rates (trip generation) for the residential component of the PDP and a potential land use to convert to that are not included in the original PDP as an example. The average

rates were calculated by dividing the total weekday pm peak hour trips estimated from the ITE equation by the number of dwelling units. Table 2 documents these average rates computations.

Table 2. Average Trip Generation Rates

Land Use	ITE Land Use Code (LUC)	Intensity	Weekday PM Peak Hour	
			# of Trips	Average Rate
Residential Land Use Program Included in the PDP				
Single Family	210	400 du	366	0.92
Multi Family	220	300 du	183	0.61
Potential Residential Age Restricted Land Uses				
Senior Adult Housing - Detached	251	1,248 du	298	0.24
Senior Adult Housing - Attached	252	102 du	26	0.25

Once the Average Rates were developed, the equivalency between land uses (Conversion Matrix) was obtained. These equivalencies were computed based on the Average Rate ratios between land uses. Table 3 documents these ratios.

Table 3. Conversion Matrix

From	ITE Land Use Code (LUC)	Unit	To			
			Single Family	Multi Family	Senior Adult Housing Detached	Senior Adult Housing Attached
Single Family	210	du	N/A	1.51 (= 0.92 / 0.61)	3.83 (= 0.92 / 0.24)	3.68 (= 0.92 / 0.25)
Multi Family	220	du	0.66 (= 0.61 / 0.92)	N/A	2.54 (= 0.61 / 0.24)	2.44 (= 0.61 / 0.25)
Senior Adult Housing - Detache	251	du	0.26 (= 0.24 / 0.92)	0.39 (= 0.24 / 0.61)	N/A	0.96 (= 0.24 / 0.25)
Senior Adult Housing - Attache	252	du	0.27 (= 0.25 / 0.92)	0.41 (= 0.25 / 0.61)	1.04 (= 0.25 / 0.24)	N/A

Land Use Conversion Example

This section documents an example of how to use the conversion matrix. In addition, it also includes a trip generation estimate for a potential alternative development program in order to show that when the Conversion Matrix is applied, the number of trips stays below the number of trips included in the PDP analysis. Please note the examples set forth in Tables 4 and 5 are examples and the ultimate development within the Chester Road DSAP and companion PDP(s) shall be pursuant to the D.O. and companion PDP(s). This potential alternative development program is listed in Table 4. Please note that the non-residential land uses included in the potential alternative development program are the same as the ones included in the PDP analysis since non-residential land uses cannot be exchanged.

Table 4. Potential Alternative Development Program

Land Use	ITE Land Use Code (LUC)	Intensity
Single Family	210	150 du
Senior Adult Housing - Detached	251	1,248 du
Senior Adult Housing - Attached	252	102 du
Retail	820	31,000 sf

It should also be noted that, as established by the D.O., the total number of residential dwelling units shall not exceed 1,500 units (150 + 1,248 + 102) within the Residential Neighborhood (RN) portion of the Chester Road DSAP. The proposed 375 residential units in the Village Center portion of the Chester Road DSAP remains unchanged for purposes of this conversion example. The development program conversion is documented in Table 5.

Table 5. Development Program Conversion

From			To			
Land Use	ITE Land Use Code (LUC)	Intensity	Land Use	ITE Land Use Code (LUC)	Conversion Rate	Intensity
Single Family(1)	210	250 du	Senior Adult Housing - Detached	251	3.83	958 du
Multi Family(2)	251	114 du	Senior Adult Housing - Detached	251	2.54	290 du
Multi Family(3)	251	42 du	Senior Adult Housing - Attached	252	2.44	102 du

Notes:

(1). 150 single family residential units are included in the potential alternative development program; therefore, the remaining 250 (400 – 150 = 250) single family residential units are converted to 958 Senior Adult Housing - Detached units.

(2). 114 Multi family residential units are converted to 290 Senior Adult Housing - Detached units. For a total of 1,248 Senior Adult Housing - Detached units (958 + 290).

(3). 42 Multi family residential units are converted to 102 Senior Adult Housing - Attached units. After the conversion, there are 144 multi family units still available; however, since the 1,500 dwelling units limit (150 + 958 + 290 + 102 = 1,500) within the Residential Neighborhood portion of the Chester Road DSAP was reached, the multi family units cannot be used.

As noted above, the trip generation estimate for the potential development program was developed to demonstrate how the number of trips analyzed in the PDP will not be exceeded. Tables 6 through 8 show the trip generation estimate, internal capture, and pass-by capture estimates using the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition.

Table 6. Potential Development Program Trip Generation Estimate

Land Use	ITE Land Use Code (LUC)	Intensity	Weekday PM		
			Enter	Exit	Total
Single Family	210	150 du	95	56	151
Senior Adult Housing - Detached	251	1,248 du	182	116	298
Senior Adult Housing - Attached	252	102 du	14	12	26
Retail	820	31,000 sf	131	142	273
Total			422	326	748
		Internally Captured Trips	*29*	*29*	*58*
Driveway Trips			393	297	690
		Pass-by Trips	*25*	*25*	*50*
New Trips			**368**	**272**	**640**

As shown in Table 6 above, the potential development program will generate 74 fewer trip during the pm peak hour than the original development program proposed in the Chester Road Phase I PDP.

Table 7. Potential Development Program Internal Capture Estimate

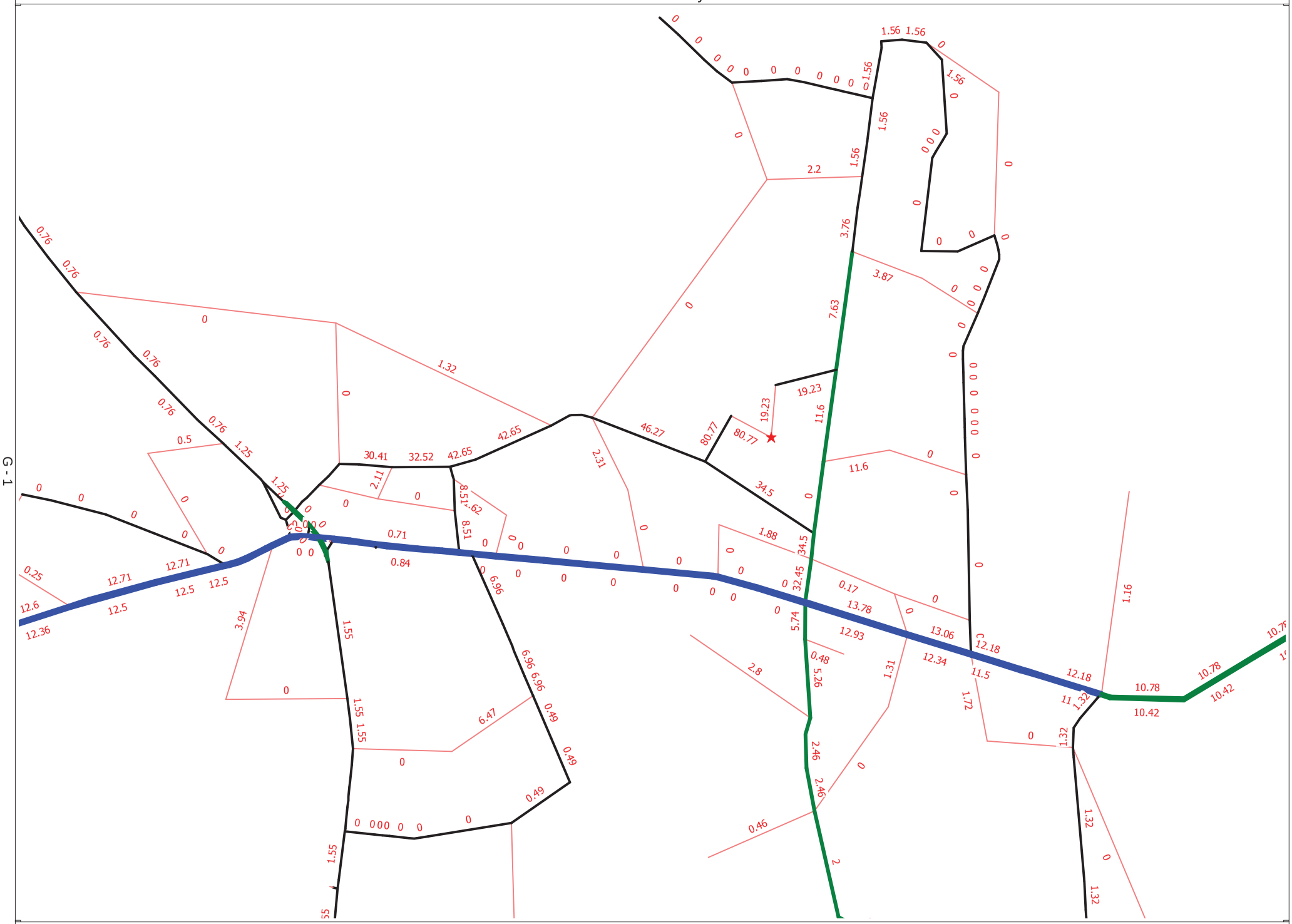
			Residential		Retail		Total
			In	Out	In	Out	
			291	**184**	**131**	**142**	
Residential	**In**	**291**				17	17
	Out	**184**			12		12
Retail	**In**	**131**		12			12
	Out	**142**	17				17
Total		**748**					**58**

Table 8. Potential Development Program Pass-By Capture Estimate

Inbound:	131
Outbound:	142
Internal Capture	
Inbound:	12
Outbound:	17
Driveway Trips	
Inbound:	119
Outbound:	125
Pass-By Capture (34 percent)	
Inbound:	41
Outbound:	41
Total:	**82**
10 Percent Limit	
Chester Road north of Pages Dairy Road	
AADT (2014):	4,900
Annual Growth Rate:	2.00%
AADT (2021):	5,586
K Factor:	0.09
Peak Hour Volume:	503
10 Percent:	**50**
Pass By-Capture	
Inbound:	25
Outbound:	25
Total:	**50**

G. Project Distribution

Year 2021 NEERPMAB1V1 - Project Distribution



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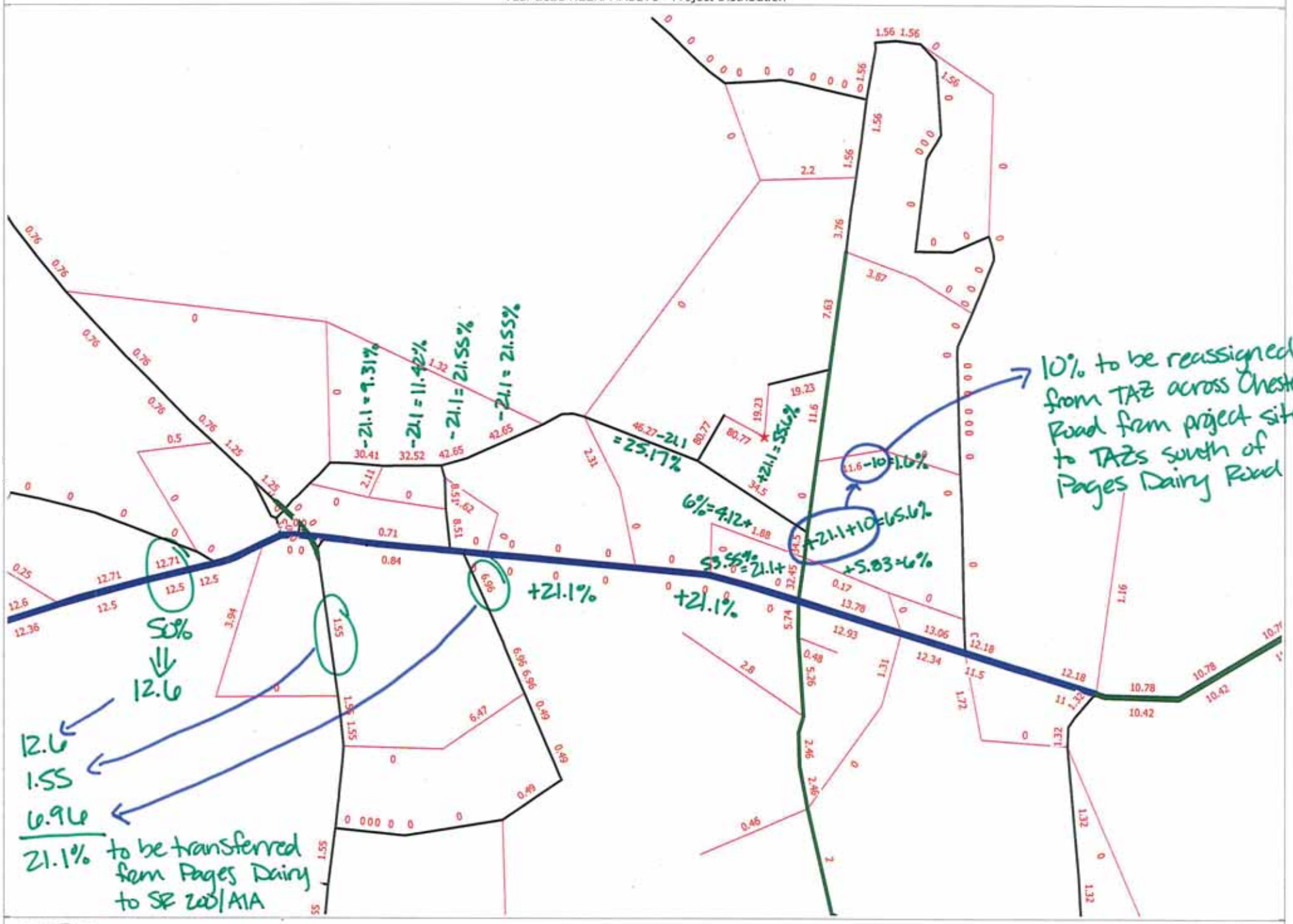
Year 2021 NEERPMAB1V1 - Project Distribution



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H. Intersection Volumes

Intersection: Pages Dairy Road at Chester Road
Time Period: AM Peak Hour

Year 2015 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	186	87	0	0	338	165	34	0	288	0	0	0	1,098
SF													1.04
Pk Season	193	90	0	0	352	172	35	0	300	0	0	0	1,142

Average Annual Growth Rate

	NB	SB	EB	WB
	2.00%	2.00%	4.78%	N/A

Year 2016 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	197	**92**	**0**	**0**	**359**	**175**	**37**	**0**	**314**	**0**	**0**	**0**	**1,174**

Year 2021 Volume - Background

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	216	**101**	**0**	**0**	**394**	**193**	**45**	**0**	**386**	**0**	**0**	**0**	**1,335**

Market Street PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													621
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
Volume	0	0	0	0	0	9	0	0	0	0	0	0	9
Outbound													499
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
Volume	0	0	0	0	0	0	7	0	0	0	0	0	7
Total	**0**	**0**	**0**	**0**	**0**	**9**	**7**	**0**	**0**	**0**	**0**	**0**	**16**

PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													134
Distrib.	16.4%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	66.4%
Volume	22	67	0	0	0	0	0	0	0	0	0	0	89
Outbound													351
Distrib.	0.0%	0.0%	0.0%	0.0%	49.3%	0.0%	0.0%	0.0%	16.8%	0.0%	0.0%	0.0%	66.1%
Volume	0	0	0	0	173	0	0	0	59	0	0	0	232
Total	**22**	**67**	**0**	**0**	**173**	**0**	**0**	**0**	**59**	**0**	**0**	**0**	**321**

2021 Total Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	238	**168**	**0**	**0**	**567**	**202**	**52**	**0**	**445**	**0**	**0**	**0**	**1,672**

Intersection: Pages Dairy Road at Chester Road
Time Period: PM Peak Hour

Year 2015 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	365	391	0	0	219	70	117	0	259	0	0	0	1,421
SF													1.04
Pk Season	380	407	0	0	228	73	122	0	269	0	0	0	1,479

Average Annual Growth Rate

	NB	SB	EB	WB
	2.00%	2.00%	4.78%	N/A

Year 2016 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	388	**415**	**0**	**0**	**233**	**74**	**128**	**0**	**282**	**0**	**0**	**0**	**1,520**

Year 2021 Volume - Background

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	426	**456**	**0**	**0**	**255**	**82**	**157**	**0**	**346**	**0**	**0**	**0**	**1,722**

Market Street PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													545
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
Volume	0	0	0	0	0	8	0	0	0	0	0	0	8
Outbound													667
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
Volume	0	0	0	0	0	0	9	0	0	0	0	0	9
Total	**0**	**0**	**0**	**0**	**0**	**8**	**9**	**0**	**0**	**0**	**0**	**0**	**17**

PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													427
Distrib.	16.4%	49.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	66.0%
Volume	70	212	0	0	0	0	0	0	0	0	0	0	282
Outbound													287
Distrib.	0.0%	0.0%	0.0%	0.0%	49.5%	0.0%	0.0%	0.0%	16.4%	0.0%	0.0%	0.0%	65.9%
Volume	0	0	0	0	142	0	0	0	47	0	0	0	189
Total	**70**	**212**	**0**	**0**	**142**	**0**	**0**	**0**	**47**	**0**	**0**	**0**	**471**

2021 Total Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	496	**668**	**0**	**0**	**397**	**90**	**166**	**0**	**393**	**0**	**0**	**0**	**2,210**

Intersection: SRA1A at Miner Rd/Felmor Rd
Time Period: AM Peak Hour

Year 2015 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	49	41	188	137	68	74	32	1,211	65	175	1,241	85	3,366
SF													1.04
Pk Season	51	43	196	142	71	77	33	1,259	68	182	1,291	88	3,501

Average Annual Growth Rate

	NB	SB	EB	WB
	2.00%	2.00%	2.00%	2.00%

Year 2016 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	52	**44**	**200**	**145**	**72**	**79**	**34**	**1,284**	**69**	**186**	**1,317**	**90**	**3,572**

Year 2021 Volume - Background

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	57	**48**	**220**	**159**	**80**	**86**	**37**	**1,410**	**76**	**204**	**1,446**	**99**	**3,922**

Market Street PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													621
Distrib.	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	18.0%	0.0%	20.6%
Volume	16	0	0	0	0	0	0	0	0	0	112	0	128
Outbound													499
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	18.0%	2.6%	0.0%	0.0%	0.0%	20.6%
Volume	0	0	0	0	0	0	0	90	13	0	0	0	103
Total	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**90**	**13**	**0**	**112**	**0**	**231**

PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													134
Distrib.	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	14.0%	0.0%	0.0%	0.0%	0.0%	21.0%
Volume	0	0	9	0	0	0	0	19	0	0	0	0	28
Outbound													351
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	14.0%	0.0%	21.0%
Volume	0	0	0	0	0	0	0	0	0	25	49	0	74
Total	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**19**	**0**	**25**	**49**	**0**	**102**

2021 Total Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	73	**48**	**229**	**159**	**80**	**86**	**37**	**1,519**	**89**	**229**	**1,607**	**99**	**4,255**

Intersection: SRA1A at Miner Rd/Felmor Rd
Time Period: PM Peak Hour

Year 2015 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	54	30	200	39	58	28	21	1,467	108	323	1,233	152	3,713
SF													1.04
Pk Season	56	31	208	41	60	29	22	1,526	112	336	1,282	158	3,861

Average Annual Growth Rate

	NB	SB	EB	WB
	2.00%	2.00%	2.00%	2.00%

Year 2016 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	57	**32**	**212**	**42**	**61**	**30**	**22**	**1,557**	**114**	**343**	**1,308**	**161**	**3,939**

Year 2021 Volume - Background

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	63	**35**	**233**	**46**	**67**	**32**	**25**	**1,709**	**125**	**376**	**1,436**	**177**	**4,324**

Market Street PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													545
Distrib.	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	18.0%	0.0%	20.6%
Volume	14	0	0	0	0	0	0	0	0	0	98	0	112
Outbound													667
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	18.0%	2.6%	0.0%	0.0%	0.0%	20.6%
Volume	0	0	0	0	0	0	0	120	17	0	0	0	137
Total	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**120**	**17**	**0**	**98**	**0**	**249**

PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													427
Distrib.	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	0.0%	14.0%	0.0%	0.0%	0.0%	0.0%	21.0%
Volume	0	0	30	0	0	0	0	60	0	0	0	0	90
Outbound													287
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	14.0%	0.0%	21.0%
Volume	0	0	0	0	0	0	0	0	0	20	40	0	60
Total	**0**	**0**	**30**	**0**	**0**	**0**	**0**	**60**	**0**	**20**	**40**	**0**	**150**

2021 Total Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	77	**35**	**263**	**46**	**67**	**32**	**25**	**1,889**	**142**	**396**	**1,574**	**177**	**4,723**

Intersection: SRA1A at Christian Way/Gene Lassere Blvd
Time Period: AM Peak Hour

Year 2015 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	4	0	11	13	1	14	57	1,524	37	28	1,377	33	3,099
SF													1.04
Pk Season	4	0	11	14	1	15	59	1,585	38	29	1,432	34	3,222

Average Annual Growth Rate

	NB	SB	EB	WB
	2.00%	2.00%	2.00%	2.00%

Year 2016 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	4	**0**	**11**	**14**	**1**	**15**	**60**	**1,617**	**39**	**30**	**1,461**	**35**	**3,287**

Year 2021 Volume - Background

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	4	**0**	**12**	**16**	**1**	**17**	**66**	**1,775**	**43**	**32**	**1,604**	**38**	**3,608**

Market Street PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													621
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	0.0%	0.0%	0.0%	0.0%	16.5%	0.0%	17.7%
Volume	0	0	0	0	0	7	0	0	0	0	102	0	109
Outbound													499
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	16.5%	0.0%	0.0%	0.0%	0.0%	17.7%
Volume	0	0	0	0	0	0	6	82	0	0	0	0	88
Total	**0**	**0**	**0**	**0**	**0**	**7**	**6**	**82**	**0**	**0**	**102**	**0**	**197**

PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													134
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	21.0%	0.0%	0.0%	0.0%	0.0%	21.0%
Volume	0	0	0	0	0	0	0	28	0	0	0	0	28
Outbound													351
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	21.0%	0.0%	21.0%
Volume	0	0	0	0	0	0	0	0	0	0	74	0	74
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**28**	**0**	**0**	**74**	**0**	**102**

2021 Total Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	4	**0**	**12**	**16**	**1**	**24**	**72**	**1,885**	**43**	**32**	**1,780**	**38**	**3,907**

Intersection: SRA1A at Christian Way/Gene Lassere Blvd
Time Period: PM Peak Hour

Year 2015 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	45	0	11	47	1	68	20	1,617	3	19	1,687	12	3,530
SF													1.04
Pk Season	47	0	11	49	1	71	21	1,682	3	20	1,754	12	3,671

Average Annual Growth Rate

	NB	SB	EB	WB
	2.00%	2.00%	2.00%	2.00%

Year 2016 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	48	**0**	**11**	**50**	**1**	**72**	**21**	**1,716**	**3**	**20**	**1,789**	**12**	**3,743**

Year 2021 Volume - Background

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	53	**0**	**12**	**55**	**1**	**80**	**24**	**1,884**	**3**	**22**	**1,964**	**13**	**4,111**

Market Street PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													545
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	0.0%	0.0%	0.0%	0.0%	16.5%	0.0%	17.7%
Volume	0	0	0	0	0	7	0	0	0	0	90	0	97
Outbound													667
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	16.5%	0.0%	0.0%	0.0%	0.0%	17.7%
Volume	0	0	0	0	0	0	8	110	0	0	0	0	118
Total	**0**	**0**	**0**	**0**	**0**	**7**	**8**	**110**	**0**	**0**	**90**	**0**	**215**

PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													427
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	21.0%	0.0%	0.0%	0.0%	0.0%	21.0%
Volume	0	0	0	0	0	0	0	90	0	0	0	0	90
Outbound													287
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	21.0%	0.0%	21.0%
Volume	0	0	0	0	0	0	0	0	0	0	60	0	60
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**90**	**0**	**0**	**60**	**0**	**150**

2021 Total Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	53	**0**	**12**	**55**	**1**	**87**	**32**	**2,084**	**3**	**22**	**2,114**	**13**	**4,476**

Intersection: SRA1A at Amelia Concourse/Chester Rd
Time Period: AM Peak Hour

Year 2015 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	346	84	125	342	90	143	98	1,065	175	54	961	63	3,546
SF													1.04
Pk Season	360	87	130	356	94	149	102	1,108	182	56	999	66	3,689

Average Annual Growth Rate

	NB	SB	EB	WB
	2.00%	2.00%	2.00%	2.00%

Year 2016 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	367	**89**	**133**	**363**	**96**	**152**	**104**	**1,130**	**186**	**57**	**1,019**	**67**	**3,763**

Year 2021 Volume - Background

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	403	**97**	**146**	**399**	**105**	**167**	**114**	**1,241**	**204**	**63**	**1,119**	**74**	**4,132**

Market Street PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													621
Distrib.	2.9%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	13.6%	0.0%	16.7%
Volume	18	0	0	0	0	1	0	0	0	0	84	0	103
Outbound													499
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	13.6%	2.9%	0.0%	0.0%	0.0%	16.7%
Volume	0	0	0	0	0	0	1	68	14	0	0	0	83
Total	**18**	**0**	**0**	**0**	**0**	**1**	**1**	**68**	**14**	**0**	**84**	**0**	**186**

PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													134
Distrib.	0.0%	6.0%	0.0%	0.0%	0.0%	0.0%	21.0%	0.0%	0.0%	0.0%	0.0%	27.0%	54.0%
Volume	0	8	0	0	0	0	28	0	0	0	0	36	72
Outbound													351
Distrib.	0.0%	0.0%	0.0%	27.0%	6.0%	21.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	54.0%
Volume	0	0	0	95	21	74	0	0	0	0	0	0	190
Total	**0**	**8**	**0**	**95**	**21**	**74**	**28**	**0**	**0**	**0**	**0**	**36**	**262**

2021 Total Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	421	**105**	**146**	**494**	**126**	**242**	**143**	**1,309**	**218**	**63**	**1,203**	**110**	**4,580**

Intersection: SRA1A at Amelia Concourse/Chester Rd
Time Period: PM Peak Hour

Year 2015 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	313	151	83	300	160	134	197	1,089	312	121	1,204	143	4,207
SF													1.04
Pk Season	326	157	86	312	166	139	205	1,133	324	126	1,252	149	4,375

Average Annual Growth Rate

	NB	SB	EB	WB
	2.00%	2.00%	2.00%	2.00%

Year 2016 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	333	**160**	**88**	**318**	**169**	**142**	**209**	**1,156**	**330**	**129**	**1,277**	**152**	**4,463**

Year 2021 Volume - Background

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	365	**176**	**96**	**349**	**186**	**156**	**230**	**1,269**	**363**	**141**	**1,402**	**167**	**4,900**

Market Street PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													545
Distrib.	2.9%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	13.6%	0.0%	16.7%
Volume	16	0	0	0	0	1	0	0	0	0	74	0	91
Outbound													667
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	13.6%	2.9%	0.0%	0.0%	0.0%	16.7%
Volume	0	0	0	0	0	0	1	91	19	0	0	0	111
Total	**16**	**0**	**0**	**0**	**0**	**1**	**1**	**91**	**19**	**0**	**74**	**0**	**202**

PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													427
Distrib.	0.0%	6.0%	0.0%	0.0%	0.0%	0.0%	21.0%	0.0%	0.0%	0.0%	0.0%	27.0%	54.0%
Volume	0	26	0	0	0	0	90	0	0	0	0	115	231
Outbound													287
Distrib.	0.0%	0.0%	0.0%	27.0%	6.0%	21.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	54.0%
Volume	0	0	0	77	17	60	0	0	0	0	0	0	154
Total	**0**	**26**	**0**	**77**	**17**	**60**	**90**	**0**	**0**	**0**	**0**	**115**	**385**

2021 Total Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	381	**202**	**96**	**426**	**203**	**217**	**321**	**1,360**	**382**	**141**	**1,476**	**282**	**5,487**

Intersection: SRA1A at Arrigo Blvd
Time Period: AM Peak Hour

Year 2015 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	109	1	105	3	0	0	41	1,493	24	97	942	7	2,822
SF													1.04
Pk Season	113	1	109	3	0	0	43	1,553	25	101	980	7	2,935

Average Annual Growth Rate

	NB	SB	EB	WB
	2.00%	2.00%	2.00%	2.00%

Year 2016 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	115	**1**	**111**	**3**	**0**	**0**	**44**	**1,584**	**26**	**103**	**1,000**	**7**	**2,994**

Year 2021 Volume - Background

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	127	**1**	**122**	**3**	**0**	**0**	**48**	**1,739**	**28**	**113**	**1,098**	**8**	**3,287**

Market Street PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													621
Distrib.	0.2%	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	12.6%	0.0%	13.6%
Volume	1	0	0	0	0	5	0	0	0	0	78	0	84
Outbound													499
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	12.6%	0.2%	0.0%	0.0%	0.0%	13.6%
Volume	0	0	0	0	0	0	4	63	1	0	0	0	68
Total	**1**	**0**	**0**	**0**	**0**	**5**	**4**	**63**	**1**	**0**	**78**	**0**	**152**

PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													134
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	27.0%	0.0%	27.0%
Volume	0	0	0	0	0	0	0	0	0	0	36	0	36
Outbound													351
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	27.0%	0.0%	0.0%	0.0%	0.0%	27.0%
Volume	0	0	0	0	0	0	0	95	0	0	0	0	95
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**95**	**0**	**0**	**36**	**0**	**131**

2021 Total Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	128	**1**	**122**	**3**	**0**	**5**	**52**	**1,897**	**29**	**113**	**1,212**	**8**	**3,570**

Intersection: SRA1A at Arrigo Blvd
Time Period: PM Peak Hour

Year 2015 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	238	0	177	2	0	10	34	1,284	64	199	1,507	3	3,518
SF													1.04
Pk Season	248	0	184	2	0	10	35	1,335	67	207	1,567	3	3,658

Average Annual Growth Rate

	NB	SB	EB	WB
	2.00%	2.00%	2.00%	2.00%

Year 2016 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	253	**0**	**188**	**2**	**0**	**10**	**36**	**1,362**	**68**	**211**	**1,598**	**3**	**3,731**

Year 2021 Volume - Background

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	278	**0**	**206**	**2**	**0**	**11**	**39**	**1,495**	**75**	**232**	**1,755**	**3**	**4,096**

Market Street PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													545
Distrib.	0.2%	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	12.6%	0.0%	13.6%
Volume	1	0	0	0	0	4	0	0	0	0	69	0	74
Outbound													667
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	12.6%	0.2%	0.0%	0.0%	0.0%	13.6%
Volume	0	0	0	0	0	0	5	84	1	0	0	0	90
Total	**1**	**0**	**0**	**0**	**0**	**4**	**5**	**84**	**1**	**0**	**69**	**0**	**164**

PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													427
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	27.0%	0.0%	27.0%
Volume	0	0	0	0	0	0	0	0	0	0	115	0	115
Outbound													287
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	27.0%	0.0%	0.0%	0.0%	0.0%	27.0%
Volume	0	0	0	0	0	0	0	77	0	0	0	0	77
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**77**	**0**	**0**	**115**	**0**	**192**

2021 Total Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	279	**0**	**206**	**2**	**0**	**15**	**44**	**1,656**	**76**	**232**	**1,939**	**3**	**4,452**

Intersection: Chester Road at David Hallman Pkwy
Time Period: AM Peak Hour

Year 2016 Volumes

	NB				SB			EB			WB			Total
	U	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	3	30	214	19	132	466	108	36	33	101	21	7	52	1,219
SF														1.00
Pk Season	3	30	214	19	132	466	108	36	33	101	21	7	52	1,219

Average Annual Growth Rate

	NB	SB	EB	WB
	2.00%	2.00%	2.00%	2.00%

Year 2021 Volume - Background

	NB				SB			EB			WB			Total
	U	L	T	R	L	T	R	L	T	R	L	T	R	
	3	**33**	**146**	**21**	**145**	**587**	**119**	**40**	**36**	**111**	**23**	**8**	**57**	**1,326**

Market Street PDP Volume

	NB				SB			EB			WB			Total
	U	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound														621
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.2%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outbound														499
Distrib.	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PDP Volume

	NB				SB			EB			WB			Total
	U	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound														134
Distrib.	0.0%	0.0%	53.6%	0.0%	0.0%	0.0%	0.0%	6.0%	0.0%	0.0%	0.0%	0.0%	6.0%	65.6%
Volume	0	0	72	0	0	0	0	8	0	0	0	0	8	88
Outbound														351
Distrib.	0.0%	0.0%	0.0%	0.0%	6.0%	53.6%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	65.6%
Volume	0	0	0	0	21	188	21	0	0	0	0	0	0	230
Total	**0**	**0**	**72**	**0**	**21**	**188**	**21**	**8**	**0**	**0**	**0**	**0**	**8**	**318**

2021 Total Volume

	NB				SB			EB			WB			Total
	U	L	T	R	L	T	R	L	T	R	L	T	R	
	3	**33**	**218**	**21**	**166**	**775**	**140**	**48**	**36**	**111**	**23**	**8**	**65**	**1,644**

Intersection: Chester Road at David Hallman Pkwy
Time Period: PM Peak Hour

Year 2016 Volumes

	NB				SB			EB			WB			Total
	U	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	21	68	397	16	137	303	79	91	70	162	84	51	298	1,756
SF														1.00
Pk Season	21	68	397	16	137	303	79	91	70	162	84	51	298	1,756

Average Annual Growth Rate

	NB	SB	EB	WB
	2.00%	2.00%	2.00%	2.00%

Year 2021 Volume - Background

	NB				SB			EB			WB			Total
	U	L	T	R	L	T	R	L	T	R	L	T	R	
	23	**75**	**397**	**18**	**151**	**303**	**87**	**100**	**77**	**178**	**92**	**56**	**328**	**1,862**

Market Street PDP Volume

	NB				SB			EB			WB			Total
	U	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound														545
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.2%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Outbound														667
Distrib.	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%
Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

PDP Volume

	NB				SB			EB			WB			Total
	U	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound														427
Distrib.	0.0%	0.0%	53.6%	0.0%	0.0%	0.0%	0.0%	6.0%	0.0%	0.0%	0.0%	0.0%	6.0%	65.6%
Volume	0	0	229	0	0	0	0	26	0	0	0	0	26	281
Outbound														287
Distrib.	0.0%	0.0%	0.0%	0.0%	6.0%	53.6%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	65.6%
Volume	0	0	0	0	17	154	17	0	0	0	0	0	0	188
Total	**0**	**0**	**229**	**0**	**17**	**154**	**17**	**26**	**0**	**0**	**0**	**0**	**26**	**469**

2021 Total Volume

	NB				SB			EB			WB			Total
	U	L	T	R	L	T	R	L	T	R	L	T	R	
	23	**75**	**626**	**18**	**168**	**457**	**104**	**126**	**77**	**178**	**92**	**56**	**354**	**2,331**

Intersection: Pages Dairy Road at Project Driveway
Time Period: AM Peak Hour

Year 2015 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	0	0	0	0	0	0	0	322	0	0	351	0	673
SF													1.04
Pk Season	0	0	0	0	0	0	0	335	0	0	365	0	700

Average Annual Growth Rate

	NB	SB	EB	WB
	N/A	N/A	4.78%	4.78%

Year 2016 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	0	**0**	**0**	**0**	**0**	**0**	**0**	**351**	**0**	**0**	**372**	**0**	**723**

Year 2021 Volume - Background

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	0	**0**	**0**	**0**	**0**	**0**	**0**	**431**	**0**	**0**	**409**	**0**	**840**

Market Street PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													621
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	1.4%
Volume	0	0	0	0	0	0	0	0	0	0	9	0	9
Outbound													499
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	1.4%
Volume	0	0	0	0	0	0	0	7	0	0	0	0	7
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**9**	**0**	**16**

PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													134
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	24.6%	0.0%	0.0%	0.0%	0.0%	16.4%	41.0%
Volume	0	0	0	0	0	0	33	0	0	0	0	22	55
Ountbound													351
Distrib.	0.0%	0.0%	0.0%	16.8%	0.0%	25.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	41.9%
Volume	0	0	0	59	0	88	0	0	0	0	0	0	147
Total	**0**	**0**	**0**	**59**	**0**	**88**	**33**	**0**	**0**	**0**	**0**	**22**	**202**

Pass-By Capture

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	0	0	0	3	0	3	3	-3	0	0	-3	3	**6**

2021 Total Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	0	**0**	**0**	**62**	**0**	**91**	**36**	**435**	**0**	**0**	**415**	**25**	**1,064**

Intersection: Pages Dairy Road at Project Driveway
Time Period: PM Peak Hour

Year 2015 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	0	0	0	0	0	0	0	376	0	0	435	0	811
SF													1.04
Pk Season	0	0	0	0	0	0	0	391	0	0	452	0	843

Average Annual Growth Rate

	NB	SB	EB	WB
	N/A	N/A	4.78%	4.78%

Year 2016 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	0	**0**	**0**	**0**	**0**	**0**	**0**	**410**	**0**	**0**	**462**	**0**	**872**

Year 2021 Volume - Background

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	0	**0**	**0**	**0**	**0**	**0**	**0**	**503**	**0**	**0**	**508**	**0**	**1,011**

Market Street PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													545
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	1.4%
Volume	0	0	0	0	0	0	0	0	0	0	8	0	8
Outbound													667
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	1.4%
Volume	0	0	0	0	0	0	0	9	0	0	0	0	9
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**8**	**0**	**17**

PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													427
Distrib.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.1%	0.0%	0.0%	0.0%	0.0%	16.4%	41.5%
Volume	0	0	0	0	0	0	107	0	0	0	0	70	177
Ountbound													287
Distrib.	0.0%	0.0%	0.0%	16.4%	0.0%	25.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	41.5%
Volume	0	0	0	47	0	72	0	0	0	0	0	0	119
Total	**0**	**0**	**0**	**47**	**0**	**72**	**107**	**0**	**0**	**0**	**0**	**70**	**296**

Pass-By Capture

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	0	0	0	7	0	6	7	-7	0	0	-6	6	**13**

2021 Total Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	0	**0**	**0**	**54**	**0**	**78**	**114**	**505**	**0**	**0**	**510**	**76**	**1,337**

Intersection: Chester Road at South Project Driveway
Time Period: AM Peak Hour

Year 2015 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	0	121	0	0	503	0	0	0	0	0	0	0	624
SF													1.04
Pk Season	0	126	0	0	523	0	0	0	0	0	0	0	649

Average Annual Growth Rate

	NB	SB	EB	WB
	2.00%	2.00%	N/A	N/A

Year 2016 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	0	**129**	**0**	**0**	**534**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**663**

Year 2021 Volume - Background

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	0	**146**	**0**	**0**	**587**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**733**

Market Street PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													621
Distrib.	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
Volume	0	0	0	0	9	0	0	0	0	0	0	0	9
Outbound													499
Distrib.	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
Volume	0	7	0	0	0	0	0	0	0	0	0	0	7
Total	**0**	**7**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**

PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													134
Distrib.	17.9%	32.1%	0.0%	0.0%	0.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	53.0%
Volume	24	43	0	0	0	4	0	0	0	0	0	0	71
Ountbound													351
Distrib.	0.0%	0.0%	0.0%	0.0%	31.3%	0.0%	3.1%	0.0%	17.9%	0.0%	0.0%	0.0%	52.4%
Volume	0	0	0	0	110	0	11	0	63	0	0	0	184
Total	**24**	**43**	**0**	**0**	**110**	**4**	**11**	**0**	**63**	**0**	**0**	**0**	**255**

Pass-By Capture

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	2	-2	0	0	-2	2	2	0	2	0	0	0	**4**

2021 Total Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	26	**194**	**0**	**0**	**704**	**6**	**13**	**0**	**65**	**0**	**0**	**0**	**1,008**

Intersection: Chester Road at South Project Driveway
Time Period: PM Peak Hour

Year 2015 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	0	508	0	0	289	0	0	0	0	0	0	0	797
SF													1.04
Pk Season	0	528	0	0	301	0	0	0	0	0	0	0	829

Average Annual Growth Rate

	NB	SB	EB	WB
	2.00%	2.00%	N/A	N/A

Year 2016 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	0	**543**	**0**	**0**	**307**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**850**

Year 2021 Volume - Background

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	0	**613**	**0**	**0**	**337**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**950**

Market Street PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													545
Distrib.	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
Volume	0	0	0	0	8	0	0	0	0	0	0	0	8
Outbound													667
Distrib.	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
Volume	0	9	0	0	0	0	0	0	0	0	0	0	9
Total	**0**	**9**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**

PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													427
Distrib.	20%	30%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	53%
Volume	86	126	0	0	0	14	0	0	0	0	0	0	226
Ountbound													287
Distrib.	0%	0%	0%	0%	29%	0%	3%	0%	21%	0%	0%	0%	53%
Volume	0	0	0	0	83	0	10	0	59	0	0	0	152
Total	**86**	**126**	**0**	**0**	**83**	**14**	**10**	**0**	**59**	**0**	**0**	**0**	**378**

Pass-By Capture

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	5	-5	0	0	-4	3	3	0	4	0	0	0	**6**

2021 Total Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	91	**743**	**0**	**0**	**424**	**17**	**13**	**0**	**63**	**0**	**0**	**0**	**1,351**

Intersection: Chester Road at North Project Driveway
Time Period: AM Peak Hour

Year 2015 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	0	121	0	0	503	0	0	0	0	0	0	0	624
SF													1.04
Pk Season	0	126	0	0	523	0	0	0	0	0	0	0	649

Average Annual Growth Rate

	NB	SB	EB	WB
	2.00%	2.00%	N/A	N/A

Year 2016 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	0	**129**	**0**	**0**	**534**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**663**

Year 2021 Volume - Background

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	0	**146**	**0**	**0**	**587**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**733**

Market Street PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													621
Distrib.	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
Volume	0	0	0	0	9	0	0	0	0	0	0	0	9
Outbound													499
Distrib.	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
Volume	0	7	0	0	0	0	0	0	0	0	0	0	7
Total	**0**	**7**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**

PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													134
Distrib.	32.1%	0.0%	0.0%	0.0%	3.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	41.0%
Volume	43	0	0	0	4	8	0	0	0	0	0	0	55
Ountbound													351
Distrib.	0.0%	3.1%	0.0%	0.0%	0.0%	0.0%	5.7%	0.0%	31.3%	0.0%	0.0%	0.0%	40.2%
Volume	0	11	0	0	0	0	20	0	110	0	0	0	141
Total	**43**	**11**	**0**	**0**	**4**	**8**	**20**	**0**	**110**	**0**	**0**	**0**	**196**

Pass-By Capture

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	1	-1	0	0	-1	1	1	0	1	0	0	0	**2**

2021 Total Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	44	**163**	**0**	**0**	**599**	**9**	**21**	**0**	**111**	**0**	**0**	**0**	**947**

Intersection: Chester Road at North Project Driveway
Time Period: PM Peak Hour

Year 2015 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
TMC	0	508	0	0	289	0	0	0	0	0	0	0	797
SF													1.04
Pk Season	0	528	0	0	301	0	0	0	0	0	0	0	829

Average Annual Growth Rate

	NB	SB	EB	WB
	2.00%	2.00%	N/A	N/A

Year 2016 Volumes

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	0	**543**	**0**	**0**	**307**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**850**

Year 2021 Volume - Background

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	0	**613**	**0**	**0**	**337**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**950**

Market Street PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													545
Distrib.	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
Volume	0	0	0	0	8	0	0	0	0	0	0	0	8
Outbound													667
Distrib.	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
Volume	0	9	0	0	0	0	0	0	0	0	0	0	9
Total	**0**	**9**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**

PDP Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Inbound													427
Distrib.	29.5%	0.0%	0.0%	0.0%	3.3%	5.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	38.4%
Volume	126	0	0	0	14	24	0	0	0	0	0	0	164
Ountbound													287
Distrib.	0.0%	3.5%	0.0%	0.0%	0.0%	0.0%	5.6%	0.0%	28.9%	0.0%	0.0%	0.0%	38.0%
Volume	0	10	0	0	0	0	16	0	83	0	0	0	109
Total	**126**	**10**	**0**	**0**	**14**	**24**	**16**	**0**	**83**	**0**	**0**	**0**	**273**

Pass-By Capture

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	2	-4	0	0	-2	2	4	0	1	0	0	0	**3**

2021 Total Volume

	NB			SB			EB			WB			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
	128	**628**	**0**	**0**	**357**	**26**	**20**	**0**	**84**	**0**	**0**	**0**	**1,243**

I. Level of Service Analysis Printouts

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	34	1284	69	186	1317	90	52	44	200	145	72	79
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1759	1863	1863	1853	1900	1776	1773	1900
Adj Flow Rate, veh/h	37	1411	76	204	1447	99	57	48	220	159	79	87
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	10	2	2	8	2	2	5	5	7	4	4
Cap, veh/h	48	1518	732	229	1888	894	231	39	181	204	146	160
Arrive On Green	0.03	0.46	0.46	0.13	0.56	0.56	0.04	0.14	0.14	0.09	0.19	0.19
Sat Flow, veh/h	1774	3282	1583	1774	3343	1583	1774	290	1329	1691	772	851
Grp Volume(v), veh/h	37	1411	76	204	1447	99	57	0	268	159	0	166
Grp Sat Flow(s),veh/h/ln	1774	1641	1583	1774	1671	1583	1774	0	1619	1691	0	1623
Q Serve(g_s), s	3.1	60.8	4.1	17.0	49.8	4.4	4.1	0.0	20.4	11.8	0.0	13.9
Cycle Q Clear(g_c), s	3.1	60.8	4.1	17.0	49.8	4.4	4.1	0.0	20.4	11.8	0.0	13.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.82	1.00		0.52
Lane Grp Cap(c), veh/h	48	1518	732	229	1888	894	231	0	220	204	0	306
V/C Ratio(X)	0.78	0.93	0.10	0.89	0.77	0.11	0.25	0.00	1.22	0.78	0.00	0.54
Avail Cap(c_a), veh/h	117	1518	732	365	1888	894	347	0	220	226	0	306
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.73	0.73	0.73	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.5	38.0	22.8	64.3	25.1	15.2	53.1	0.0	64.8	49.3	0.0	55.0
Incr Delay (d2), s/veh	23.1	11.5	0.3	11.6	2.2	0.2	0.6	0.0	131.9	14.4	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	29.9	1.8	9.1	23.5	2.0	2.0	0.0	17.2	6.3	0.0	6.4
LnGrp Delay(d),s/veh	95.6	49.5	23.1	75.9	27.3	15.3	53.6	0.0	196.7	63.7	0.0	57.0
LnGrp LOS	F	D	C	E	C	B	D		F	E		E
Approach Vol, veh/h		1524			1750			325			325	
Approach Delay, s/veh		49.3			32.3			171.6			60.3	
Approach LOS		D			C			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	91.8	20.1	27.0	26.5	76.5	12.2	34.9
Change Period (Y+Rc), s	7.1	7.1	* 6.2	6.6	7.1	7.1	6.6	6.6
Max Green Setting (Gmax), s	9.9	76.9	* 16	20.4	30.9	55.9	15.4	20.4
Max Q Clear Time (g_c+I1), s	5.1	51.8	13.8	22.4	19.0	62.8	6.1	15.9
Green Ext Time (p_c), s	0.0	21.4	0.1	0.0	0.4	0.0	0.1	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	52.8
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	1617	39	30	1461	35	4	0	11	14	1	15
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1712	1746	1900	1863	1759	1610	1900	1863	1900	1234	1291	1900
Adj Flow Rate, veh/h	64	1720	41	32	1554	37	4	0	12	15	1	16
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	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
Percent Heavy Veh, %	11	9	9	2	8	18	2	2	2	54	2	2
Cap, veh/h	80	2310	55	40	2244	919	47	4	39	128	6	104
Arrive On Green	0.05	0.70	0.70	0.02	0.67	0.67	0.03	0.00	0.03	0.01	0.10	0.10
Sat Flow, veh/h	1630	3312	79	1774	3343	1369	273	117	1172	1175	65	1042
Grp Volume(v), veh/h	64	859	902	32	1554	37	16	0	0	15	0	17
Grp Sat Flow(s),veh/h/ln	1630	1658	1732	1774	1671	1369	1563	0	0	1175	0	1107
Q Serve(g_s), s	4.7	39.0	39.5	2.2	34.3	1.1	0.0	0.0	0.0	1.5	0.0	1.7
Cycle Q Clear(g_c), s	4.7	39.0	39.5	2.2	34.3	1.1	1.1	0.0	0.0	1.5	0.0	1.7
Prop In Lane	1.00		0.05	1.00		1.00	0.25		0.75	1.00		0.94
Lane Grp Cap(c), veh/h	80	1157	1208	40	2244	919	90	0	0	128	0	110
V/C Ratio(X)	0.80	0.74	0.75	0.79	0.69	0.04	0.18	0.00	0.00	0.12	0.00	0.15
Avail Cap(c_a), veh/h	101	1157	1208	109	2244	919	212	0	0	246	0	310
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.26	0.26	0.26	0.53	0.53	0.53	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.5	11.4	11.5	58.4	12.1	6.7	56.6	0.0	0.0	53.3	0.0	49.4
Incr Delay (d2), s/veh	9.1	1.1	1.1	16.7	1.0	0.0	0.9	0.0	0.0	0.4	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	18.0	18.9	1.2	15.8	0.4	0.5	0.0	0.0	0.5	0.0	0.5
LnGrp Delay(d),s/veh	65.6	12.5	12.6	75.0	13.1	6.7	57.6	0.0	0.0	53.7	0.0	50.0
LnGrp LOS	E	B	B	E	B	A	E			D		D
Approach Vol, veh/h		1825			1623			16			32	
Approach Delay, s/veh		14.4			14.2			57.6			51.8	
Approach LOS		B			B			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	13.5	88.1	8.0	10.4	10.3	91.3		18.4
Change Period (Y+Rc), s	7.6	7.6	6.4	6.4	7.6	7.6		6.4
Max Green Setting (Gmax), s	7.4	57.4	13.6	13.6	7.4	57.4		33.6
Max Q Clear Time (g_c+I1), s	6.7	36.3	3.5	3.1	4.2	41.5		3.7
Green Ext Time (p_c), s	0.0	19.4	0.0	0.1	0.0	14.9		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	104	1130	186	57	1019	67	367	89	133	363	96	152
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1712	1792	1792	1727	1845	1863	1863	1863	1863	1792	1863
Adj Flow Rate, veh/h	113	1228	202	62	1108	73	399	97	145	395	104	165
Adj No. of Lanes	2	2	1	2	2	1	2	1	1	2	1	1
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
Percent Heavy Veh, %	7	11	6	6	10	3	2	2	2	2	6	2
Cap, veh/h	163	1586	743	102	1539	735	468	201	171	459	189	167
Arrive On Green	0.05	0.49	0.49	0.03	0.47	0.47	0.14	0.11	0.11	0.13	0.11	0.11
Sat Flow, veh/h	3281	3252	1524	3312	3282	1568	3442	1863	1583	3442	1792	1583
Grp Volume(v), veh/h	113	1228	202	62	1108	73	399	97	145	395	104	165
Grp Sat Flow(s),veh/h/ln	1640	1626	1524	1656	1641	1568	1721	1863	1583	1721	1792	1583
Q Serve(g_s), s	4.1	37.3	9.4	2.2	32.5	3.1	13.6	5.9	10.8	13.5	6.6	12.5
Cycle Q Clear(g_c), s	4.1	37.3	9.4	2.2	32.5	3.1	13.6	5.9	10.8	13.5	6.6	12.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	163	1586	743	102	1539	735	468	201	171	459	189	167
V/C Ratio(X)	0.69	0.77	0.27	0.61	0.72	0.10	0.85	0.48	0.85	0.86	0.55	0.99
Avail Cap(c_a), veh/h	205	1586	743	207	1539	735	605	219	186	548	189	167
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.69	0.88	0.88	0.88	1.00	1.00	1.00	0.99	0.99	0.99
Uniform Delay (d), s/veh	56.1	25.3	18.2	57.4	25.5	17.7	50.7	50.4	52.6	50.9	51.0	53.6
Incr Delay (d2), s/veh	4.9	2.6	0.6	5.0	2.6	0.2	9.1	1.8	27.5	11.4	11.0	66.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	17.3	4.1	1.1	15.2	1.4	7.1	3.1	6.0	7.1	3.8	8.6
LnGrp Delay(d),s/veh	61.0	27.9	18.8	62.4	28.1	18.0	59.7	52.2	80.1	62.3	62.0	120.3
LnGrp LOS	E	C	B	E	C	B	E	D	F	E	E	F
Approach Vol, veh/h		1543			1243			641			664	
Approach Delay, s/veh		29.1			29.3			63.2			76.6	
Approach LOS		C			C			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	63.8	22.9	19.9	11.2	66.0	23.2	19.5
Change Period (Y+Rc), s	7.5	7.5	6.9	6.9	7.5	7.5	6.9	6.9
Max Green Setting (Gmax), s	7.5	50.5	19.1	14.1	7.5	50.5	21.1	12.1
Max Q Clear Time (g_c+I1), s	6.1	34.5	15.5	12.8	4.2	39.3	15.6	14.5
Green Ext Time (p_c), s	0.0	13.1	0.5	0.2	0.0	9.6	0.7	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	44	1584	26	103	1000	7	115	1	111	3	0	0
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1759	1863	1845	1743	1863	1827	1827	1845	1900	1863	1863
Adj Flow Rate, veh/h	46	1650	27	107	1042	7	121	0	116	3	0	0
Adj No. of Lanes	1	2	1	2	2	1	2	0	1	0	1	1
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
Percent Heavy Veh, %	2	8	2	3	9	2	4	2	3	2	2	2
Cap, veh/h	59	2094	992	159	2119	1013	315	0	142	8	0	8
Arrive On Green	0.03	0.63	0.63	0.05	0.64	0.64	0.09	0.00	0.09	0.00	0.00	0.00
Sat Flow, veh/h	1774	3343	1583	3408	3312	1583	3480	0	1568	1774	0	1583
Grp Volume(v), veh/h	46	1650	27	107	1042	7	121	0	116	3	0	0
Grp Sat Flow(s),veh/h/ln	1774	1671	1583	1704	1656	1583	1740	0	1568	1774	0	1583
Q Serve(g_s), s	3.1	43.7	0.8	3.7	19.8	0.2	3.9	0.0	8.7	0.2	0.0	0.0
Cycle Q Clear(g_c), s	3.1	43.7	0.8	3.7	19.8	0.2	3.9	0.0	8.7	0.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	59	2094	992	159	2119	1013	315	0	142	8	0	8
V/C Ratio(X)	0.78	0.79	0.03	0.67	0.49	0.01	0.38	0.00	0.82	0.36	0.00	0.00
Avail Cap(c_a), veh/h	126	2094	992	213	2119	1013	365	0	165	157	0	140
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.47	0.47	0.47	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	57.6	16.5	8.5	56.3	11.4	7.8	51.4	0.0	53.6	59.5	0.0	0.0
Incr Delay (d2), s/veh	9.7	1.5	0.0	5.0	0.8	0.0	0.8	0.0	23.7	23.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	20.4	0.3	1.9	9.2	0.1	1.9	0.0	4.7	0.2	0.0	0.0
LnGrp Delay(d),s/veh	67.3	18.0	8.5	61.3	12.2	7.8	52.2	0.0	77.2	83.0	0.0	0.0
LnGrp LOS	E	B	A	E	B	A	D		E	F		
Approach Vol, veh/h		1723			1156			237			3	
Approach Delay, s/veh		19.2			16.7			64.5			83.0	
Approach LOS		B			B			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	84.3		17.3	13.1	82.7		7.0
Change Period (Y+Rc), s	7.5	7.5		6.4	7.5	7.5		6.4
Max Green Setting (Gmax), s	8.5	60.5		12.6	7.5	61.5		10.6
Max Q Clear Time (g_c+I1), s	5.1	21.8		10.7	5.7	45.7		2.2
Green Ext Time (p_c), s	0.0	28.7		0.1	0.0	13.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.8
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	33	101	21	7	52	33	214	19	132	466	108
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1817	1900	1727	1867	1900	1727	1826	1900	1900	1863	1845
Adj Flow Rate, veh/h	39	35	109	23	8	56	35	230	20	142	501	116
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	8	0	0	10	0	0	10	3	3	0	2	3
Cap, veh/h	181	42	129	111	20	137	548	2066	178	874	2339	1036
Arrive On Green	0.03	0.11	0.11	0.02	0.10	0.10	0.05	1.00	1.00	0.04	0.66	0.66
Sat Flow, veh/h	1675	390	1214	1645	202	1415	1645	3233	279	1810	3539	1568
Grp Volume(v), veh/h	39	0	144	23	0	64	35	123	127	142	501	116
Grp Sat Flow(s),veh/h/ln	1675	0	1603	1645	0	1618	1645	1735	1777	1810	1770	1568
Q Serve(g_s), s	2.5	0.0	10.6	1.5	0.0	4.5	0.9	0.0	0.0	3.2	6.7	3.3
Cycle Q Clear(g_c), s	2.5	0.0	10.6	1.5	0.0	4.5	0.9	0.0	0.0	3.2	6.7	3.3
Prop In Lane	1.00		0.76	1.00		0.88	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	181	0	171	111	0	157	548	1109	1135	874	2339	1036
V/C Ratio(X)	0.22	0.00	0.84	0.21	0.00	0.41	0.06	0.11	0.11	0.16	0.21	0.11
Avail Cap(c_a), veh/h	325	0	195	268	0	332	715	1109	1135	988	2339	1036
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.2	0.0	52.6	48.1	0.0	50.9	6.9	0.0	0.0	6.5	8.0	7.5
Incr Delay (d2), s/veh	0.6	0.0	24.6	0.9	0.0	1.7	0.0	0.2	0.2	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	5.8	0.7	0.0	2.1	0.4	0.1	0.1	1.6	3.3	1.5
LnGrp Delay(d),s/veh	47.8	0.0	77.2	49.0	0.0	52.6	7.0	0.2	0.2	6.6	8.2	7.7
LnGrp LOS	D		E	D		D	A	A	A	A	A	A
Approach Vol, veh/h		183			87			285			759	
Approach Delay, s/veh		70.9			51.7			1.0			7.9	
Approach LOS		E			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	82.8	7.5	18.2	8.9	85.4	8.7	17.0
Change Period (Y+Rc), s	6.1	6.1	5.4	5.4	6.1	6.1	5.4	5.4
Max Green Setting (Gmax), s	12.9	45.9	13.6	14.6	14.9	43.9	13.6	24.6
Max Q Clear Time (g_c+I1), s	5.2	2.0	3.5	12.6	2.9	8.7	4.5	6.5
Green Ext Time (p_c), s	0.2	6.2	0.0	0.2	0.0	6.0	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	18.1
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	37	314	197	92	359	175
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	560	530	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	18	2	3	6	2	2
Mvmt Flow	43	361	226	106	413	201

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1072	513	614	0	-	0
Stage 1	513	-	-	-	-	-
Stage 2	559	-	-	-	-	-
Critical Hdwy	6.58	6.22	4.13	-	-	-
Critical Hdwy Stg 1	5.58	-	-	-	-	-
Critical Hdwy Stg 2	5.58	-	-	-	-	-
Follow-up Hdwy	3.662	3.318	2.227	-	-	-
Pot Cap-1 Maneuver	228	561	961	-	-	-
Stage 1	570	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	174	561	961	-	-	-
Mov Cap-2 Maneuver	174	-	-	-	-	-
Stage 1	570	-	-	-	-	-
Stage 2	415	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.4	6.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	961	-	174	561	-	-
HCM Lane V/C Ratio	0.236	-	0.244	0.643	-	-
HCM Control Delay (s)	9.9	-	32.3	22.3	-	-
HCM Lane LOS	A	-	D	C	-	-
HCM 95th %tile Q(veh)	0.9	-	0.9	4.6	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	1557	114	343	1308	161	57	32	212	42	61	30
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1845	1863	1863	1810	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	23	1639	120	361	1377	169	60	34	223	44	64	32
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	3	2	2	5	2	2	2	2	2	2	2
Cap, veh/h	29	1774	801	298	2261	1041	198	27	179	97	135	68
Arrive On Green	0.02	0.51	0.51	0.17	0.66	0.66	0.04	0.13	0.13	0.03	0.12	0.12
Sat Flow, veh/h	1723	3505	1583	1774	3438	1583	1774	214	1402	1774	1173	586
Grp Volume(v), veh/h	23	1639	120	361	1377	169	60	0	257	44	0	96
Grp Sat Flow(s),veh/h/ln	1723	1752	1583	1774	1719	1583	1774	0	1615	1774	0	1759
Q Serve(g_s), s	2.1	69.4	6.5	26.9	36.6	6.5	4.7	0.0	20.4	3.5	0.0	8.2
Cycle Q Clear(g_c), s	2.1	69.4	6.5	26.9	36.6	6.5	4.7	0.0	20.4	3.5	0.0	8.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.87	1.00		0.33
Lane Grp Cap(c), veh/h	29	1774	801	298	2261	1041	198	0	206	97	0	203
V/C Ratio(X)	0.81	0.92	0.15	1.21	0.61	0.16	0.30	0.00	1.25	0.45	0.00	0.47
Avail Cap(c_a), veh/h	85	1774	801	298	2261	1041	221	0	206	143	0	224
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.52	0.52	0.52	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	78.4	36.7	21.1	66.6	15.6	10.5	59.4	0.0	69.8	61.1	0.0	66.2
Incr Delay (d2), s/veh	39.3	9.6	0.4	110.1	0.6	0.2	0.9	0.0	145.3	3.3	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	35.8	2.9	22.3	17.4	2.9	2.4	0.0	17.4	1.8	0.0	4.1
LnGrp Delay(d),s/veh	117.7	46.3	21.5	176.6	16.3	10.7	60.3	0.0	215.1	64.3	0.0	68.0
LnGrp LOS	F	D	C	F	B	B	E		F	E		E
Approach Vol, veh/h		1782			1907			317			140	
Approach Delay, s/veh		45.5			46.1			185.8			66.8	
Approach LOS		D			D			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	112.3	10.9	27.0	34.0	88.1	12.9	25.0
Change Period (Y+Rc), s	7.1	7.1	* 6.2	6.6	7.1	7.1	6.6	6.6
Max Green Setting (Gmax), s	7.9	95.9	* 8.8	20.4	26.9	76.9	8.4	20.4
Max Q Clear Time (g_c+I1), s	4.1	38.6	5.5	22.4	28.9	71.4	6.7	10.2
Green Ext Time (p_c), s	0.0	44.9	0.0	0.0	0.0	5.3	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	57.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	1716	3	20	1789	12	48	0	11	50	1	72
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1310	1844	1900	1863	1792	1429	1900	1834	1900	1792	1777	1900
Adj Flow Rate, veh/h	22	1806	3	21	1883	13	51	0	12	53	1	76
Adj No. of Lanes	1	2	0	1	2	1	0	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	45	3	3	2	6	33	2	2	2	6	2	2
Cap, veh/h	23	2397	4	29	2269	809	116	3	16	233	3	223
Arrive On Green	0.02	0.67	0.67	0.02	0.67	0.67	0.06	0.00	0.06	0.04	0.15	0.15
Sat Flow, veh/h	1248	3588	6	1774	3406	1214	1043	54	258	1707	20	1494
Grp Volume(v), veh/h	22	881	928	21	1883	13	63	0	0	53	0	77
Grp Sat Flow(s),veh/h/ln	1248	1752	1843	1774	1703	1214	1356	0	0	1707	0	1513
Q Serve(g_s), s	2.3	43.7	43.8	1.5	53.7	0.5	5.6	0.0	0.0	3.7	0.0	5.9
Cycle Q Clear(g_c), s	2.3	43.7	43.8	1.5	53.7	0.5	5.9	0.0	0.0	3.7	0.0	5.9
Prop In Lane	1.00		0.00	1.00		1.00	0.81		0.19	1.00		0.99
Lane Grp Cap(c), veh/h	23	1170	1231	29	2269	809	135	0	0	233	0	226
V/C Ratio(X)	0.97	0.75	0.75	0.72	0.83	0.02	0.47	0.00	0.00	0.23	0.00	0.34
Avail Cap(c_a), veh/h	119	1170	1231	101	2269	809	191	0	0	348	0	391
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.19	0.19	0.19	0.43	0.43	0.43	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.8	14.4	14.4	63.6	16.2	7.3	59.8	0.0	0.0	52.5	0.0	49.5
Incr Delay (d2), s/veh	32.2	0.9	0.9	13.6	1.6	0.0	2.5	0.0	0.0	0.5	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	21.1	22.2	0.9	25.6	0.2	2.3	0.0	0.0	1.8	0.0	2.5
LnGrp Delay(d),s/veh	96.0	15.3	15.3	77.2	17.8	7.3	62.3	0.0	0.0	52.9	0.0	50.4
LnGrp LOS	F	B	B	E	B	A	E			D		D
Approach Vol, veh/h		1831			1917			63			130	
Approach Delay, s/veh		16.3			18.4			62.3			51.4	
Approach LOS		B			B			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	94.2	11.3	14.6	9.7	94.4		25.8
Change Period (Y+Rc), s	7.6	7.6	6.4	6.4	7.6	7.6		6.4
Max Green Setting (Gmax), s	12.4	62.4	13.6	13.6	7.4	67.4		33.6
Max Q Clear Time (g_c+I1), s	4.3	55.7	5.7	7.9	3.5	45.8		7.9
Green Ext Time (p_c), s	0.0	6.6	0.0	0.3	0.0	20.6		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	19.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	209	1156	330	129	1277	152	333	160	88	318	169	142
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1827	1863	1863	1827	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	215	1192	340	133	1316	157	343	165	91	328	174	146
Adj No. of Lanes	2	2	1	2	2	1	2	1	1	2	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	4	2	2	4	2	2	2	2	2	2	2
Cap, veh/h	269	1687	769	185	1603	731	395	234	199	389	231	196
Arrive On Green	0.08	0.49	0.49	0.05	0.46	0.46	0.11	0.13	0.13	0.11	0.12	0.12
Sat Flow, veh/h	3442	3471	1583	3442	3471	1583	3442	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	215	1192	340	133	1316	157	343	165	91	328	174	146
Grp Sat Flow(s),veh/h/ln	1721	1736	1583	1721	1736	1583	1721	1863	1583	1721	1863	1583
Q Serve(g_s), s	8.0	34.9	18.3	4.9	42.7	7.7	12.7	11.0	6.9	12.1	11.7	11.6
Cycle Q Clear(g_c), s	8.0	34.9	18.3	4.9	42.7	7.7	12.7	11.0	6.9	12.1	11.7	11.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	269	1687	769	185	1603	731	395	234	199	389	231	196
V/C Ratio(X)	0.80	0.71	0.44	0.72	0.82	0.21	0.87	0.70	0.46	0.84	0.75	0.74
Avail Cap(c_a), veh/h	331	1687	769	278	1603	731	426	234	199	506	231	196
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.63	0.63	0.63	0.55	0.55	0.55	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	58.9	26.2	21.9	60.5	30.3	20.9	56.6	54.5	52.7	56.5	55.0	55.0
Incr Delay (d2), s/veh	7.0	1.6	1.2	2.9	2.7	0.4	16.3	9.2	1.6	9.7	19.9	22.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	17.1	8.2	2.4	21.1	3.4	6.9	6.3	3.1	6.3	7.3	6.3
LnGrp Delay(d),s/veh	66.0	27.7	23.0	63.4	33.1	21.3	72.9	63.7	54.3	66.3	75.0	77.0
LnGrp LOS	E	C	C	E	C	C	E	E	D	E	E	E
Approach Vol, veh/h		1747			1606			599			648	
Approach Delay, s/veh		31.5			34.4			67.5			71.0	
Approach LOS		C			C			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.6	67.5	21.6	23.2	14.5	70.7	21.8	23.0
Change Period (Y+Rc), s	7.5	7.5	6.9	6.9	7.5	7.5	6.9	6.9
Max Green Setting (Gmax), s	12.5	56.5	19.1	13.1	10.5	58.5	16.1	16.1
Max Q Clear Time (g_c+I1), s	10.0	44.7	14.1	13.0	6.9	36.9	14.7	13.7
Green Ext Time (p_c), s	0.2	10.5	0.5	0.0	0.1	18.0	0.2	0.7

Intersection Summary	
HCM 2010 Ctrl Delay	42.8
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	1362	68	211	1598	3	253	0	188	2	0	10
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1845	1863	1863	1810	1429	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	39	1465	73	227	1718	3	272	0	202	2	0	11
Adj No. of Lanes	1	2	1	2	2	1	2	0	1	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	3	2	2	5	33	2	2	2	2	2	2
Cap, veh/h	50	1986	897	283	2134	754	426	0	190	31	0	27
Arrive On Green	0.03	0.57	0.57	0.08	0.62	0.62	0.12	0.00	0.12	0.02	0.00	0.02
Sat Flow, veh/h	1774	3505	1583	3442	3438	1214	3548	0	1583	1774	0	1583
Grp Volume(v), veh/h	39	1465	73	227	1718	3	272	0	202	2	0	11
Grp Sat Flow(s),veh/h/ln	1774	1752	1583	1721	1719	1214	1774	0	1583	1774	0	1583
Q Serve(g_s), s	2.8	40.5	2.7	8.4	49.3	0.1	9.5	0.0	15.6	0.1	0.0	0.9
Cycle Q Clear(g_c), s	2.8	40.5	2.7	8.4	49.3	0.1	9.5	0.0	15.6	0.1	0.0	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	50	1986	897	283	2134	754	426	0	190	31	0	27
V/C Ratio(X)	0.78	0.74	0.08	0.80	0.81	0.00	0.64	0.00	1.06	0.07	0.00	0.40
Avail Cap(c_a), veh/h	102	1986	897	384	2134	754	426	0	190	145	0	129
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	0.59	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	62.8	21.0	12.8	58.6	18.7	9.4	54.5	0.0	57.2	62.8	0.0	63.2
Incr Delay (d2), s/veh	14.3	1.5	0.1	8.5	3.4	0.0	3.2	0.0	83.0	0.9	0.0	9.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	19.9	1.2	4.3	24.1	0.0	4.8	0.0	11.2	0.1	0.0	0.5
LnGrp Delay(d),s/veh	77.1	22.5	12.9	67.1	22.0	9.4	57.7	0.0	140.2	63.7	0.0	72.4
LnGrp LOS	E	C	B	E	C	A	E		F	E		E
Approach Vol, veh/h		1577			1948			474			13	
Approach Delay, s/veh		23.4			27.3			92.9			71.1	
Approach LOS		C			C			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.2	88.2		22.0	18.2	81.2		8.6
Change Period (Y+Rc), s	7.5	7.5		6.4	7.5	7.5		6.4
Max Green Setting (Gmax), s	7.5	68.5		15.6	14.5	61.5		10.6
Max Q Clear Time (g_c+I1), s	4.8	51.3		17.6	10.4	42.5		2.9
Green Ext Time (p_c), s	0.0	16.0		0.0	0.3	17.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	33.6
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	91	70	162	84	51	298	89	397	16	137	303	79
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1884	1900	1881	1878	1900	1900	1881	1863
Adj Flow Rate, veh/h	95	73	169	88	53	310	93	414	17	143	316	82
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
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
Percent Heavy Veh, %	0	0	0	1	0	0	1	1	1	0	1	2
Cap, veh/h	161	106	246	242	49	287	589	1715	70	573	1808	801
Arrive On Green	0.06	0.21	0.21	0.05	0.21	0.21	0.04	0.49	0.49	0.06	0.51	0.51
Sat Flow, veh/h	1810	510	1181	1792	239	1398	1792	3493	143	1810	3574	1583
Grp Volume(v), veh/h	95	0	242	88	0	363	93	211	220	143	316	82
Grp Sat Flow(s),veh/h/ln	1810	0	1692	1792	0	1637	1792	1784	1852	1810	1787	1583
Q Serve(g_s), s	4.9	0.0	15.9	4.6	0.0	24.6	3.1	8.2	8.2	4.7	5.7	3.2
Cycle Q Clear(g_c), s	4.9	0.0	15.9	4.6	0.0	24.6	3.1	8.2	8.2	4.7	5.7	3.2
Prop In Lane	1.00		0.70	1.00		0.85	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	161	0	352	242	0	336	589	876	909	573	1808	801
V/C Ratio(X)	0.59	0.00	0.69	0.36	0.00	1.08	0.16	0.24	0.24	0.25	0.17	0.10
Avail Cap(c_a), veh/h	265	0	352	350	0	336	737	876	909	665	1808	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	0.0	43.9	35.8	0.0	47.7	13.9	17.6	17.6	13.7	16.1	15.4
Incr Delay (d2), s/veh	3.4	0.0	5.5	0.9	0.0	72.6	0.1	0.5	0.5	0.2	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	7.9	2.3	0.0	17.9	1.5	4.2	4.3	2.3	2.9	1.5
LnGrp Delay(d),s/veh	40.5	0.0	49.4	36.8	0.0	120.3	14.0	18.2	18.2	13.9	16.3	15.7
LnGrp LOS	D		D	D		F	B	B	B	B	B	B
Approach Vol, veh/h		337			451			524			541	
Approach Delay, s/veh		46.9			104.0			17.4			15.6	
Approach LOS		D			F			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.9	65.0	11.7	30.4	11.1	66.8	12.1	30.0
Change Period (Y+Rc), s	6.1	6.1	5.4	5.4	6.1	6.1	5.4	5.4
Max Green Setting (Gmax), s	12.9	45.9	13.6	14.6	14.9	43.9	13.6	24.6
Max Q Clear Time (g_c+I1), s	6.7	10.2	6.6	17.9	5.1	7.7	6.9	26.6
Green Ext Time (p_c), s	0.2	5.6	0.1	0.0	0.1	5.6	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	43.3
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	42.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	128	282	388	415	233	74
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	560	530	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	138	303	417	446	251	80

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1571	290	330	0	-	0
Stage 1	290	-	-	-	-	-
Stage 2	1281	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 122	749	1229	-	-	-
Stage 1	759	-	-	-	-	-
Stage 2	261	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 81	749	1229	-	-	-
Mov Cap-2 Maneuver	~ 81	-	-	-	-	-
Stage 1	759	-	-	-	-	-
Stage 2	172	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	149.1	4.6	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1229	-	81	749	-	-
HCM Lane V/C Ratio	0.339	-	1.699	0.405	-	-
HCM Control Delay (s)	9.4	-	$ 449.1	13	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	1.5	-	11.5	2	-	-

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	37	1519	89	229	1607	99	73	48	229	159	80	86
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1727	1863	1863	1759	1863	1863	1853	1900	1776	1774	1900
Adj Flow Rate, veh/h	41	1669	98	252	1766	109	80	53	252	175	88	95
Adj No. of Lanes	1	3	1	1	3	1	1	1	0	1	1	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	10	2	2	8	2	2	5	5	7	4	4
Cap, veh/h	53	1805	606	322	2553	842	279	55	260	186	173	187
Arrive On Green	0.03	0.38	0.38	0.18	0.53	0.53	0.05	0.19	0.19	0.08	0.22	0.22
Sat Flow, veh/h	1774	4715	1583	1774	4803	1583	1774	281	1336	1691	781	844
Grp Volume(v), veh/h	41	1669	98	252	1766	109	80	0	305	175	0	183
Grp Sat Flow(s),veh/h/ln	1774	1572	1583	1774	1601	1583	1774	0	1617	1691	0	1625
Q Serve(g_s), s	3.4	50.7	4.8	20.3	40.9	5.2	5.4	0.0	28.1	11.6	0.0	14.8
Cycle Q Clear(g_c), s	3.4	50.7	4.8	20.3	40.9	5.2	5.4	0.0	28.1	11.6	0.0	14.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.83	1.00		0.52
Lane Grp Cap(c), veh/h	53	1805	606	322	2553	842	279	0	315	186	0	361
V/C Ratio(X)	0.78	0.92	0.16	0.78	0.69	0.13	0.29	0.00	0.97	0.94	0.00	0.51
Avail Cap(c_a), veh/h	108	1848	621	322	2553	842	285	0	315	186	0	361
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.83	0.83	0.83	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.3	44.2	19.1	58.5	26.0	17.7	45.5	0.0	59.9	48.2	0.0	51.2
Incr Delay (d2), s/veh	21.1	9.5	0.6	9.9	1.3	0.3	0.6	0.0	42.1	48.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	23.5	2.2	10.8	18.3	2.3	2.7	0.0	16.2	4.3	0.0	6.8
LnGrp Delay(d),s/veh	93.3	53.7	19.6	68.4	27.3	17.9	46.1	0.0	102.1	96.6	0.0	52.3
LnGrp LOS	F	D	B	E	C	B	D		F	F		D
Approach Vol, veh/h		1808			2127			385			358	
Approach Delay, s/veh		52.8			31.7			90.4			74.0	
Approach LOS		D			C			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	86.8	16.8	34.8	34.4	64.0	12.7	38.9
Change Period (Y+Rc), s	7.1	* 7.1	* 5.2	5.6	7.1	6.6	5.6	5.6
Max Green Setting (Gmax), s	9.1	* 76	* 12	29.2	25.9	58.8	7.6	32.8
Max Q Clear Time (g_c+I1), s	5.4	42.9	13.6	30.1	22.3	52.7	7.4	16.8
Green Ext Time (p_c), s	0.0	18.1	0.0	0.0	1.1	4.7	0.0	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	47.9
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	72	1885	43	32	1780	38	4	0	12	16	1	24
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1712	1743	1863	1863	1759	1610	1900	1863	1900	1234	1282	1900
Adj Flow Rate, veh/h	77	2005	46	34	1894	40	4	0	13	17	1	26
Adj No. of Lanes	1	3	1	1	3	1	0	1	0	1	1	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
Percent Heavy Veh, %	11	9	2	2	8	18	2	2	2	54	2	2
Cap, veh/h	491	3592	1195	44	2314	659	33	5	27	88	3	88
Arrive On Green	0.30	0.75	0.75	0.02	0.48	0.48	0.03	0.00	0.03	0.01	0.08	0.08
Sat Flow, veh/h	1630	4759	1583	1774	4803	1369	112	139	815	1175	41	1055
Grp Volume(v), veh/h	77	2005	46	34	1894	40	17	0	0	17	0	27
Grp Sat Flow(s),veh/h/ln	1630	1586	1583	1774	1601	1369	1066	0	0	1175	0	1096
Q Serve(g_s), s	5.2	26.8	1.1	2.9	50.6	2.3	0.0	0.0	0.0	0.0	0.0	3.5
Cycle Q Clear(g_c), s	5.2	26.8	1.1	2.9	50.6	2.3	3.5	0.0	0.0	0.0	0.0	3.5
Prop In Lane	1.00		1.00	1.00		1.00	0.24		0.76	1.00		0.96
Lane Grp Cap(c), veh/h	491	3592	1195	44	2314	659	65	0	0	88	0	91
V/C Ratio(X)	0.16	0.56	0.04	0.78	0.82	0.06	0.26	0.00	0.00	0.19	0.00	0.30
Avail Cap(c_a), veh/h	491	3592	1195	123	2910	829	102	0	0	124	0	150
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.50	0.50	0.50	0.49	0.49	0.49	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.4	7.8	4.6	72.7	33.3	20.8	70.8	0.0	0.0	71.0	0.0	64.6
Incr Delay (d2), s/veh	0.1	0.3	0.0	13.6	1.7	0.1	2.1	0.0	0.0	1.1	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	11.6	0.5	1.6	22.6	0.9	0.7	0.0	0.0	0.7	0.0	1.1
LnGrp Delay(d),s/veh	38.5	8.1	4.7	86.3	35.0	20.8	72.9	0.0	0.0	72.1	0.0	66.4
LnGrp LOS	D	A	A	F	C	C	E			E		E
Approach Vol, veh/h		2128			1968			17			44	
Approach Delay, s/veh		9.1			35.6			72.9			68.6	
Approach LOS		A			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	52.8	79.4	7.4	10.4	11.3	120.8		17.9
Change Period (Y+Rc), s	7.6	7.1	5.4	5.4	7.6	* 7.6		5.4
Max Green Setting (Gmax), s	18.4	90.9	6.6	8.6	10.4	* 99		20.6
Max Q Clear Time (g_c+I1), s	7.2	52.6	2.0	5.5	4.9	28.8		5.5
Green Ext Time (p_c), s	8.9	19.6	0.0	0.0	0.0	28.5		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	22.5
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	143	1309	218	63	1203	110	421	105	146	494	126	242
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1712	1792	1792	1727	1845	1863	1863	1863	1863	1792	1863
Adj Flow Rate, veh/h	155	1423	237	68	1308	120	458	114	159	537	137	263
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
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
Percent Heavy Veh, %	7	11	6	6	10	3	2	2	2	2	6	2
Cap, veh/h	351	1833	598	105	1511	502	480	786	352	599	874	406
Arrive On Green	0.11	0.39	0.39	0.03	0.32	0.32	0.14	0.22	0.22	0.17	0.26	0.26
Sat Flow, veh/h	3281	4673	1524	3312	4715	1568	3442	3539	1583	3442	3406	1583
Grp Volume(v), veh/h	155	1423	237	68	1308	120	458	114	159	537	137	263
Grp Sat Flow(s),veh/h/ln	1640	1558	1524	1656	1572	1568	1721	1770	1583	1721	1703	1583
Q Serve(g_s), s	6.6	39.9	16.8	3.0	39.1	5.2	19.8	3.9	13.0	22.9	4.7	16.3
Cycle Q Clear(g_c), s	6.6	39.9	16.8	3.0	39.1	5.2	19.8	3.9	13.0	22.9	4.7	16.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	351	1833	598	105	1511	502	480	786	352	599	874	406
V/C Ratio(X)	0.44	0.78	0.40	0.65	0.87	0.24	0.96	0.15	0.45	0.90	0.16	0.65
Avail Cap(c_a), veh/h	351	1833	598	157	1682	559	480	786	352	732	874	406
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	0.90	0.90	0.90	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	62.8	39.8	32.8	71.8	47.9	14.3	64.1	46.9	50.5	60.6	43.2	26.9
Incr Delay (d2), s/veh	0.7	2.8	1.6	5.8	6.3	1.0	29.9	0.1	0.9	11.6	0.4	7.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	17.6	7.3	1.5	17.8	2.4	11.4	1.9	5.8	11.9	2.3	8.0
LnGrp Delay(d),s/veh	63.5	42.6	34.5	77.6	54.2	15.3	94.0	47.0	51.4	72.2	43.5	34.2
LnGrp LOS	E	D	C	E	D	B	F	D	D	E	D	C
Approach Vol, veh/h		1815			1496			731			937	
Approach Delay, s/veh		43.3			52.1			77.4			57.4	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.5	55.1	32.1	39.3	12.3	66.3	26.9	44.5
Change Period (Y+Rc), s	7.5	7.0	6.0	6.0	7.5	* 7.5	6.0	6.0
Max Green Setting (Gmax), s	10.6	53.5	31.9	27.5	7.1	* 57	20.9	38.5
Max Q Clear Time (g_c+I1), s	8.6	41.1	24.9	15.0	5.0	41.9	21.8	18.3
Green Ext Time (p_c), s	1.6	6.9	1.2	2.3	0.0	9.3	0.0	2.7

Intersection Summary	
HCM 2010 Ctrl Delay	53.6
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	52	1897	29	113	1212	8	128	1	122	3	0	5
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1759	1863	1845	1743	1863	1827	1827	1845	1900	1863	1863
Adj Flow Rate, veh/h	54	1976	30	118	1262	8	134	0	127	3	0	5
Adj No. of Lanes	1	3	1	2	3	1	2	0	1	0	1	1
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
Percent Heavy Veh, %	2	8	2	3	9	2	4	2	3	2	2	2
Cap, veh/h	702	3240	1068	164	1570	522	328	0	148	20	0	18
Arrive On Green	0.40	0.67	0.67	0.05	0.33	0.33	0.09	0.00	0.09	0.01	0.00	0.01
Sat Flow, veh/h	1774	4803	1583	3408	4759	1583	3480	0	1568	1774	0	1583
Grp Volume(v), veh/h	54	1976	30	118	1262	8	134	0	127	3	0	5
Grp Sat Flow(s),veh/h/ln	1774	1601	1583	1704	1586	1583	1740	0	1568	1774	0	1583
Q Serve(g_s), s	2.8	34.1	0.9	5.1	36.3	0.5	5.4	0.0	12.0	0.3	0.0	0.5
Cycle Q Clear(g_c), s	2.8	34.1	0.9	5.1	36.3	0.5	5.4	0.0	12.0	0.3	0.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	702	3240	1068	164	1570	522	328	0	148	20	0	18
V/C Ratio(X)	0.08	0.61	0.03	0.72	0.80	0.02	0.41	0.00	0.86	0.15	0.00	0.28
Avail Cap(c_a), veh/h	702	3240	1068	284	2824	939	362	0	163	90	0	80
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.54	0.54	0.54	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.2	13.5	8.1	70.4	45.8	33.8	64.0	0.0	67.0	73.4	0.0	73.5
Incr Delay (d2), s/veh	0.0	0.5	0.0	5.9	4.5	0.1	0.8	0.0	32.4	3.4	0.0	8.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	15.1	0.4	2.5	16.5	0.2	2.7	0.0	6.5	0.1	0.0	0.2
LnGrp Delay(d),s/veh	28.3	14.0	8.1	76.3	50.3	33.9	64.8	0.0	99.3	76.8	0.0	81.7
LnGrp LOS	C	B	A	E	D	C	E		F	E		F
Approach Vol, veh/h		2060			1388			261			8	
Approach Delay, s/veh		14.3			52.4			81.6			79.9	
Approach LOS		B			D			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	66.9	56.5		19.5	14.7	108.7		7.1
Change Period (Y+Rc), s	7.5	7.0		5.4	7.5	* 7.5		5.4
Max Green Setting (Gmax), s	12.5	89.0		15.6	12.5	* 89		7.6
Max Q Clear Time (g_c+I1), s	4.8	38.3		14.0	7.1	36.1		2.5
Green Ext Time (p_c), s	6.3	11.2		0.1	0.1	24.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	33.4
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	48	36	111	23	8	65	36	218	21	166	775	140
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1759	1818	1900	1727	1867	1900	1727	1824	1900	1900	1863	1845
Adj Flow Rate, veh/h	52	39	119	25	9	70	39	234	23	178	833	151
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	8	0	0	10	0	0	10	3	3	0	2	3
Cap, veh/h	180	47	143	91	12	96	384	1968	192	827	2290	1015
Arrive On Green	0.07	0.12	0.12	0.02	0.07	0.07	0.02	0.62	0.62	0.05	0.65	0.65
Sat Flow, veh/h	1675	396	1209	1645	184	1431	1645	3191	311	1810	3539	1568
Grp Volume(v), veh/h	52	0	158	25	0	79	39	126	131	178	833	151
Grp Sat Flow(s),veh/h/ln	1675	0	1605	1645	0	1614	1645	1733	1769	1810	1770	1568
Q Serve(g_s), s	0.0	0.0	11.6	0.0	0.0	5.8	1.0	3.6	3.7	4.3	13.0	2.4
Cycle Q Clear(g_c), s	0.0	0.0	11.6	0.0	0.0	5.8	1.0	3.6	3.7	4.3	13.0	2.4
Prop In Lane	1.00		0.75	1.00		0.89	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	180	0	190	91	0	108	384	1068	1091	827	2290	1015
V/C Ratio(X)	0.29	0.00	0.83	0.27	0.00	0.73	0.10	0.12	0.12	0.22	0.36	0.15
Avail Cap(c_a), veh/h	197	0	329	150	0	291	439	1068	1091	953	2290	1015
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	0.0	51.7	57.8	0.0	54.9	8.3	9.5	9.5	7.3	9.8	2.3
Incr Delay (d2), s/veh	0.9	0.0	9.1	1.6	0.0	9.0	0.1	0.2	0.2	0.1	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	5.6	0.9	0.0	2.8	0.5	1.8	1.8	2.1	6.5	1.1
LnGrp Delay(d),s/veh	52.8	0.0	60.9	59.4	0.0	64.0	8.4	9.7	9.7	7.4	10.2	2.6
LnGrp LOS	D		E	E		E	A	A	A	A	B	A
Approach Vol, veh/h		210			104			296			1162	
Approach Delay, s/veh		58.9			62.9			9.6			8.8	
Approach LOS		E			E			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	80.1	7.7	19.6	9.0	83.7	13.8	13.4
Change Period (Y+Rc), s	6.1	6.1	5.4	5.4	6.1	6.1	5.4	5.4
Max Green Setting (Gmax), s	14.9	50.9	6.6	24.6	6.9	58.9	9.6	21.6
Max Q Clear Time (g_c+I1), s	6.3	5.7	2.0	13.6	3.0	15.0	2.0	7.8
Green Ext Time (p_c), s	0.3	8.9	0.1	0.6	0.0	8.9	0.1	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	52	445	238	168	567	202
Number	5	12	3	8	4	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1610	1863	1845	1792	1863	1863
Adj Flow Rate, veh/h	60	511	274	193	652	232
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	18	2	3	6	2	2
Cap, veh/h	563	581	449	1688	1009	451
Arrive On Green	0.37	0.37	0.14	0.50	0.29	0.29
Sat Flow, veh/h	1533	1583	1757	3495	3632	1583
Grp Volume(v), veh/h	60	511	274	193	652	232
Grp Sat Flow(s),veh/h/ln	1533	1583	1757	1703	1770	1583
Q Serve(g_s), s	1.5	17.6	5.8	1.8	9.4	7.2
Cycle Q Clear(g_c), s	1.5	17.6	5.8	1.8	9.4	7.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	563	581	449	1688	1009	451
V/C Ratio(X)	0.11	0.88	0.61	0.11	0.65	0.51
Avail Cap(c_a), veh/h	867	895	772	2860	1577	705
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.2	17.2	12.0	7.9	18.3	17.5
Incr Delay (d2), s/veh	0.1	6.5	1.3	0.0	0.7	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	8.7	2.9	0.8	4.7	3.2
LnGrp Delay(d),s/veh	12.2	23.8	13.3	7.9	19.0	18.4
LnGrp LOS	B	C	B	A	B	B
Approach Vol, veh/h	571			467	884	
Approach Delay, s/veh	22.6			11.1	18.8	
Approach LOS	C			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		25.4	12.3	20.6				32.9
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		33.0	19.0	26.0				49.0
Max Q Clear Time (g_c+I1), s		19.6	7.8	11.4				3.8
Green Ext Time (p_c), s		1.8	0.6	5.2				7.1

Intersection Summary	
HCM 2010 Ctrl Delay	18.1
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	36	435	415	25	62	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	235	-	-	185	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	473	451	27	67	99

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	451	0	-	0	1002	451
Stage 1	-	-	-	-	451	-
Stage 2	-	-	-	-	551	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1109	-	-	-	269	608
Stage 1	-	-	-	-	642	-
Stage 2	-	-	-	-	577	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1109	-	-	-	260	608
Mov Cap-2 Maneuver	-	-	-	-	260	-
Stage 1	-	-	-	-	642	-
Stage 2	-	-	-	-	557	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	16.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1109	-	-	-	260	608
HCM Lane V/C Ratio	0.035	-	-	-	0.259	0.163
HCM Control Delay (s)	8.4	-	-	-	23.6	12.1
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1	0.6

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	13	65	26	194	704	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	235	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	71	28	211	765	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	930	386	772	0	-	0
Stage 1	768	-	-	-	-	-
Stage 2	162	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	266	612	839	-	-	-
Stage 1	418	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	257	612	839	-	-	-
Mov Cap-2 Maneuver	257	-	-	-	-	-
Stage 1	418	-	-	-	-	-
Stage 2	822	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	839	-	257	612	-	-
HCM Lane V/C Ratio	0.034	-	0.055	0.115	-	-
HCM Control Delay (s)	9.4	-	19.8	11.6	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	0.4	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	21	111	44	163	599	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	235	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	121	48	177	651	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	840	330	661	0	-	0
Stage 1	656	-	-	-	-	-
Stage 2	184	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	304	666	923	-	-	-
Stage 1	478	-	-	-	-	-
Stage 2	829	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	288	666	923	-	-	-
Mov Cap-2 Maneuver	288	-	-	-	-	-
Stage 1	478	-	-	-	-	-
Stage 2	786	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	1.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	923	-	288	666	-	-
HCM Lane V/C Ratio	0.052	-	0.079	0.181	-	-
HCM Control Delay (s)	9.1	-	18.6	11.6	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.3	0.7	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	1889	142	396	1574	177	77	35	263	46	67	32
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1845	1863	1863	1810	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	26	1968	148	412	1640	184	80	36	274	48	70	33
Adj No. of Lanes	1	3	1	1	3	1	1	1	0	1	1	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
Percent Heavy Veh, %	5	3	2	2	5	2	2	2	2	2	2	2
Cap, veh/h	33	1971	620	412	2988	958	286	36	274	99	206	97
Arrive On Green	0.02	0.39	0.39	0.23	0.60	0.60	0.05	0.19	0.19	0.03	0.17	0.17
Sat Flow, veh/h	1723	5036	1583	1774	4940	1583	1774	187	1424	1774	1198	565
Grp Volume(v), veh/h	26	1968	148	412	1640	184	80	0	310	48	0	103
Grp Sat Flow(s),veh/h/ln	1723	1679	1583	1774	1647	1583	1774	0	1611	1774	0	1763
Q Serve(g_s), s	2.4	62.5	10.0	37.1	31.4	8.3	5.9	0.0	30.8	3.5	0.0	8.2
Cycle Q Clear(g_c), s	2.4	62.5	10.0	37.1	31.4	8.3	5.9	0.0	30.8	3.5	0.0	8.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.88	1.00		0.32
Lane Grp Cap(c), veh/h	33	1971	620	412	2988	958	286	0	310	99	0	303
V/C Ratio(X)	0.80	1.00	0.24	1.00	0.55	0.19	0.28	0.00	1.00	0.48	0.00	0.34
Avail Cap(c_a), veh/h	88	1971	620	412	2988	958	404	0	310	101	0	303
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.73	0.73	0.73	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	78.2	48.7	32.7	61.4	18.7	14.1	51.1	0.0	64.6	54.7	0.0	58.2
Incr Delay (d2), s/veh	34.4	20.0	0.9	37.5	0.5	0.3	0.5	0.0	50.9	3.6	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	32.6	4.5	22.5	14.4	3.7	2.9	0.0	18.1	1.8	0.0	4.1
LnGrp Delay(d),s/veh	112.5	68.6	33.6	98.9	19.2	14.5	51.6	0.0	115.5	58.3	0.0	58.9
LnGrp LOS	F	E	C	F	B	B	D		F	E		E
Approach Vol, veh/h		2142			2236			390			151	
Approach Delay, s/veh		66.7			33.5			102.4			58.7	
Approach LOS		E			C			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	103.4	10.1	36.4	44.3	69.2	13.4	33.1
Change Period (Y+Rc), s	7.1	6.6	* 5.2	5.6	7.1	6.6	5.6	5.6
Max Green Setting (Gmax), s	8.2	91.5	* 5	30.8	37.2	62.5	18.4	17.0
Max Q Clear Time (g_c+I1), s	4.4	33.4	5.5	32.8	39.1	64.5	7.9	10.2
Green Ext Time (p_c), s	0.0	51.1	0.0	0.0	0.0	0.0	0.1	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	54.2
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	32	2084	3	22	2114	13	53	0	12	55	1	87
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1310	1845	1429	1863	1792	1429	1900	1834	1900	1792	1777	1900
Adj Flow Rate, veh/h	34	2194	3	23	2225	14	56	0	13	58	1	92
Adj No. of Lanes	1	3	1	1	3	1	0	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	45	3	33	2	6	33	2	2	2	6	2	2
Cap, veh/h	39	3625	874	29	3451	856	108	2	16	225	2	207
Arrive On Green	0.03	0.72	0.72	0.02	0.71	0.71	0.06	0.00	0.06	0.04	0.14	0.14
Sat Flow, veh/h	1248	5036	1214	1774	4893	1214	1049	32	251	1707	16	1496
Grp Volume(v), veh/h	34	2194	3	23	2225	14	69	0	0	58	0	93
Grp Sat Flow(s),veh/h/ln	1248	1679	1214	1774	1631	1214	1333	0	0	1707	0	1513
Q Serve(g_s), s	4.3	34.6	0.1	2.1	39.3	0.6	7.9	0.0	0.0	5.0	0.0	9.0
Cycle Q Clear(g_c), s	4.3	34.6	0.1	2.1	39.3	0.6	8.2	0.0	0.0	5.0	0.0	9.0
Prop In Lane	1.00		1.00	1.00		1.00	0.81		0.19	1.00		0.99
Lane Grp Cap(c), veh/h	39	3625	874	29	3451	856	126	0	0	225	0	209
V/C Ratio(X)	0.88	0.61	0.00	0.80	0.64	0.02	0.55	0.00	0.00	0.26	0.00	0.44
Avail Cap(c_a), veh/h	89	3625	874	93	3451	856	137	0	0	248	0	242
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.26	0.26	0.26	0.66	0.66	0.66	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	77.2	11.1	6.3	78.4	12.8	7.0	73.8	0.0	0.0	64.6	0.0	63.3
Incr Delay (d2), s/veh	14.8	0.2	0.0	26.7	0.6	0.0	3.7	0.0	0.0	0.6	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	15.9	0.0	1.2	17.7	0.2	3.1	0.0	0.0	2.4	0.0	3.9
LnGrp Delay(d),s/veh	92.1	11.3	6.3	105.1	13.4	7.1	77.6	0.0	0.0	65.2	0.0	64.8
LnGrp LOS	F	B	A	F	B	A	E			E		E
Approach Vol, veh/h		2231			2262			69			151	
Approach Delay, s/veh		12.5			14.3			77.6			64.9	
Approach LOS		B			B			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	12.6	119.9	11.9	15.7	10.2	122.3		27.5
Change Period (Y+Rc), s	7.6	7.1	5.4	5.4	7.6	7.1		5.4
Max Green Setting (Gmax), s	11.4	102.9	8.6	11.6	8.4	105.9		25.6
Max Q Clear Time (g_c+I1), s	6.3	41.3	7.0	10.2	4.1	36.6		11.0
Green Ext Time (p_c), s	0.0	58.4	0.0	0.1	0.0	65.4		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	16.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	321	1360	382	141	1476	282	381	202	96	426	203	217
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1827	1863	1863	1827	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	331	1402	394	145	1522	291	393	208	99	439	209	224
Adj No. of Lanes	2	3	1	2	3	1	2	2	1	2	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	4	2	2	4	2	2	2	2	2	2	2
Cap, veh/h	380	2525	801	188	2246	713	447	459	205	495	509	228
Arrive On Green	0.11	0.51	0.51	0.05	0.45	0.45	0.13	0.13	0.13	0.14	0.14	0.14
Sat Flow, veh/h	3442	4988	1583	3442	4988	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	331	1402	394	145	1522	291	393	208	99	439	209	224
Grp Sat Flow(s),veh/h/ln	1721	1663	1583	1721	1663	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	15.1	30.9	26.2	6.7	38.6	19.8	17.9	8.7	9.3	20.0	8.6	22.6
Cycle Q Clear(g_c), s	15.1	30.9	26.2	6.7	38.6	19.8	17.9	8.7	9.3	20.0	8.6	22.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	380	2525	801	188	2246	713	447	459	205	495	509	228
V/C Ratio(X)	0.87	0.56	0.49	0.77	0.68	0.41	0.88	0.45	0.48	0.89	0.41	0.98
Avail Cap(c_a), veh/h	484	2525	801	254	2246	713	581	459	205	645	509	228
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.79	0.73	0.73	0.73	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	70.0	27.1	26.0	74.6	34.8	29.6	68.4	64.4	64.7	67.2	62.3	68.3
Incr Delay (d2), s/veh	10.7	0.7	1.7	7.2	1.2	1.3	11.9	0.7	1.8	11.2	0.5	54.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	14.3	11.8	3.3	18.0	8.9	9.3	4.3	4.2	10.3	4.2	13.3
LnGrp Delay(d),s/veh	80.7	27.8	27.7	81.8	36.0	30.9	80.3	65.1	66.4	78.4	62.8	122.3
LnGrp LOS	F	C	C	F	D	C	F	E	E	E	E	F
Approach Vol, veh/h		2127			1958			700			872	
Approach Delay, s/veh		36.0			38.6			73.8			86.0	
Approach LOS		D			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.2	79.1	29.0	26.7	16.2	88.0	26.8	29.0
Change Period (Y+Rc), s	7.5	7.0	6.0	6.0	7.5	7.0	6.0	6.0
Max Green Setting (Gmax), s	22.5	61.0	30.0	20.0	11.8	71.7	27.0	23.0
Max Q Clear Time (g_c+I1), s	17.1	40.6	22.0	11.3	8.7	32.9	19.9	24.6
Green Ext Time (p_c), s	0.5	18.5	1.0	2.4	0.1	32.9	0.8	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	49.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	44	1656	76	232	1939	3	279	0	206	2	0	15
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1845	1863	1863	1810	1429	1863	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	47	1781	82	249	2085	3	300	0	222	2	0	16
Adj No. of Lanes	1	3	1	2	3	1	2	0	1	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	3	2	2	5	33	2	2	2	2	2	2
Cap, veh/h	60	2920	918	298	3124	768	549	0	245	37	0	33
Arrive On Green	0.03	0.58	0.58	0.09	0.63	0.63	0.15	0.00	0.15	0.02	0.00	0.02
Sat Flow, veh/h	1774	5036	1583	3442	4940	1214	3548	0	1583	1774	0	1583
Grp Volume(v), veh/h	47	1781	82	249	2085	3	300	0	222	2	0	16
Grp Sat Flow(s),veh/h/ln	1774	1679	1583	1721	1647	1214	1774	0	1583	1774	0	1583
Q Serve(g_s), s	4.2	36.8	3.7	11.4	43.0	0.1	12.5	0.0	22.1	0.2	0.0	1.6
Cycle Q Clear(g_c), s	4.2	36.8	3.7	11.4	43.0	0.1	12.5	0.0	22.1	0.2	0.0	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	60	2920	918	298	3124	768	549	0	245	37	0	33
V/C Ratio(X)	0.78	0.61	0.09	0.84	0.67	0.00	0.55	0.00	0.91	0.05	0.00	0.49
Avail Cap(c_a), veh/h	116	2920	918	441	3124	768	612	0	273	84	0	75
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.77	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	76.7	21.8	14.9	72.0	18.7	10.8	62.4	0.0	66.5	76.8	0.0	77.5
Incr Delay (d2), s/veh	15.0	0.7	0.1	8.7	1.1	0.0	0.8	0.0	29.5	0.6	0.0	10.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	17.2	1.6	5.8	19.8	0.1	6.2	0.0	11.6	0.1	0.0	0.8
LnGrp Delay(d),s/veh	91.7	22.6	15.0	80.7	19.9	10.8	63.3	0.0	95.9	77.4	0.0	88.4
LnGrp LOS	F	C	B	F	B	B	E		F	E		F
Approach Vol, veh/h		1910			2337			522			18	
Approach Delay, s/veh		24.0			26.3			77.2			87.2	
Approach LOS		C			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.0	108.2		30.2	21.4	99.8		8.7
Change Period (Y+Rc), s	7.5	7.0		5.4	7.5	7.0		5.4
Max Green Setting (Gmax), s	10.5	89.0		27.6	20.5	79.0		7.6
Max Q Clear Time (g_c+I1), s	6.2	45.0		24.1	13.4	38.8		3.6
Green Ext Time (p_c), s	0.0	40.6		0.7	0.5	37.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	126	77	178	92	56	354	98	626	18	168	457	104
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1881	1884	1900	1881	1879	1900	1900	1881	1863
Adj Flow Rate, veh/h	131	80	185	96	58	369	102	652	19	175	476	108
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	1
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
Percent Heavy Veh, %	0	0	0	1	0	0	1	1	1	0	1	2
Cap, veh/h	210	152	351	341	63	399	470	1136	33	440	1185	525
Arrive On Green	0.07	0.30	0.30	0.05	0.28	0.28	0.13	0.32	0.32	0.14	0.33	0.33
Sat Flow, veh/h	1810	511	1181	1792	222	1412	1792	3542	103	1810	3574	1583
Grp Volume(v), veh/h	131	0	265	96	0	427	102	328	343	175	476	108
Grp Sat Flow(s),veh/h/ln	1810	0	1692	1792	0	1634	1792	1785	1860	1810	1787	1583
Q Serve(g_s), s	6.1	0.0	15.7	4.5	0.0	30.5	0.0	18.4	18.4	0.0	12.3	4.4
Cycle Q Clear(g_c), s	6.1	0.0	15.7	4.5	0.0	30.5	0.0	18.4	18.4	0.0	12.3	4.4
Prop In Lane	1.00		0.70	1.00		0.86	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	210	0	503	341	0	461	470	573	597	440	1185	525
V/C Ratio(X)	0.62	0.00	0.53	0.28	0.00	0.93	0.22	0.57	0.57	0.40	0.40	0.21
Avail Cap(c_a), veh/h	278	0	586	346	0	485	470	573	597	440	1185	525
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.78	0.78	0.78	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.8	0.0	35.1	29.0	0.0	41.8	29.3	33.9	33.9	37.1	30.9	16.4
Incr Delay (d2), s/veh	3.0	0.0	0.9	0.4	0.0	23.3	0.2	3.3	3.1	0.6	1.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	7.4	2.3	0.0	16.7	2.5	9.5	9.9	5.1	6.2	2.1
LnGrp Delay(d),s/veh	34.8	0.0	36.0	29.4	0.0	65.1	29.5	37.2	37.1	37.7	31.9	17.3
LnGrp LOS	C		D	C		E	C	D	D	D	C	B
Approach Vol, veh/h		396			523			773			759	
Approach Delay, s/veh		35.6			58.6			36.1			31.2	
Approach LOS		D			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.6	44.6	11.7	41.1	21.3	45.9	13.5	39.3
Change Period (Y+Rc), s	6.1	6.1	5.4	5.4	6.1	6.1	5.4	5.4
Max Green Setting (Gmax), s	10.3	38.5	6.6	41.6	9.0	39.8	12.6	35.6
Max Q Clear Time (g_c+I1), s	2.0	20.4	6.5	17.7	2.0	14.3	8.1	32.5
Green Ext Time (p_c), s	0.5	3.5	0.0	5.2	0.4	3.3	0.1	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	39.3
HCM 2010 LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	166	393	496	668	397	90
Number	5	12	3	8	4	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	178	423	533	718	427	97
Adj No. of Lanes	1	1	1	2	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	546	487	694	1996	851	381
Arrive On Green	0.31	0.31	0.26	0.56	0.24	0.24
Sat Flow, veh/h	1774	1583	1774	3632	3632	1583
Grp Volume(v), veh/h	178	423	533	718	427	97
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1770	1770	1583
Q Serve(g_s), s	4.8	15.7	12.5	6.9	6.5	3.1
Cycle Q Clear(g_c), s	4.8	15.7	12.5	6.9	6.5	3.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	546	487	694	1996	851	381
V/C Ratio(X)	0.33	0.87	0.77	0.36	0.50	0.25
Avail Cap(c_a), veh/h	740	660	1231	3179	965	432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.6	20.4	11.1	7.4	20.4	19.2
Incr Delay (d2), s/veh	0.3	9.2	1.8	0.1	0.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	8.1	6.3	3.3	3.2	1.4
LnGrp Delay(d),s/veh	16.9	29.6	13.0	7.5	20.9	19.5
LnGrp LOS	B	C	B	A	C	B
Approach Vol, veh/h	601			1251	524	
Approach Delay, s/veh	25.8			9.9	20.6	
Approach LOS	C			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		23.2	20.2	19.0				39.2
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		26.0	35.0	17.0				56.0
Max Q Clear Time (g_c+I1), s		17.7	14.5	8.5				8.9
Green Ext Time (p_c), s		1.5	1.6	4.5				9.4

Intersection Summary	
HCM 2010 Ctrl Delay	16.3
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	13	63	91	743	424	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	235	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	68	99	808	461	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1072	240	479	0	-	0
Stage 1	470	-	-	-	-	-
Stage 2	602	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	215	761	1080	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	510	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	195	761	1080	-	-	-
Mov Cap-2 Maneuver	195	-	-	-	-	-
Stage 1	595	-	-	-	-	-
Stage 2	463	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1080	-	195	761	-	-
HCM Lane V/C Ratio	0.092	-	0.072	0.09	-	-
HCM Control Delay (s)	8.7	-	24.9	10.2	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.2	0.3	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	20	84	128	628	357	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	235	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	91	139	683	388	28

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1022	208	416	0	-	0
Stage 1	402	-	-	-	-	-
Stage 2	620	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	232	798	1139	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	204	798	1139	-	-	-
Mov Cap-2 Maneuver	204	-	-	-	-	-
Stage 1	644	-	-	-	-	-
Stage 2	438	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	1.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1139	-	204	798	-	-
HCM Lane V/C Ratio	0.122	-	0.107	0.114	-	-
HCM Control Delay (s)	8.6	-	24.7	10.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.4	0.4	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	114	505	510	76	54	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	235	-	-	185	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	124	549	554	83	59	85

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	554	0	-	0	1351	554
Stage 1	-	-	-	-	554	-
Stage 2	-	-	-	-	797	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1016	-	-	-	166	532
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	444	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1016	-	-	-	146	532
Mov Cap-2 Maneuver	-	-	-	-	146	-
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	390	-

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	26.2
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1016	-	-	-	146	532
HCM Lane V/C Ratio	0.122	-	-	-	0.402	0.159
HCM Control Delay (s)	9	-	-	-	45.3	13
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0.4	-	-	-	1.7	0.6

J. 95th Percentile Queue Analysis Printouts

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	155	1423	237	68	1308	120	458	114	159	537	137	263
v/c Ratio	0.65	0.80	0.33	0.45	0.83	0.19	0.92	0.14	0.30	0.84	0.15	0.47
Control Delay	55.0	23.1	2.4	88.7	36.1	3.2	86.8	49.1	2.2	71.0	43.0	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	23.1	2.4	88.7	36.1	3.2	86.8	49.1	2.2	71.0	43.0	17.6
Queue Length 50th (ft)	81	492	5	34	434	27	232	48	0	262	55	63
Queue Length 95th (ft)	111	264	31	64	147	3	#342	80	8	322	85	154
Internal Link Dist (ft)		3964			4691			1169			898	
Turn Bay Length (ft)	380		505	505		265	450		420	370		350
Base Capacity (vph)	246	1791	730	156	1681	664	499	813	537	730	923	561
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.79	0.32	0.44	0.78	0.18	0.92	0.14	0.30	0.74	0.15	0.47

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	52	158	25	79	39	257	178	833	151
v/c Ratio	0.25	0.60	0.19	0.48	0.09	0.12	0.21	0.34	0.13
Control Delay	44.4	26.5	44.0	24.9	6.2	10.5	5.8	10.2	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	26.5	44.0	24.9	6.2	10.5	5.8	10.2	2.1
Queue Length 50th (ft)	35	32	17	7	7	38	35	150	0
Queue Length 95th (ft)	68	98	40	55	21	72	71	230	29
Internal Link Dist (ft)		788		1162		898		412	
Turn Bay Length (ft)	190		175		365		270		225
Base Capacity (vph)	235	421	147	348	447	2136	883	2424	1121
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	0.22	0.38	0.17	0.23	0.09	0.12	0.20	0.34	0.13

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	60	511	274	193	652	232
v/c Ratio	0.20	0.72	0.50	0.09	0.51	0.32
Control Delay	19.6	9.6	7.7	4.1	14.9	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	9.6	7.7	4.1	14.9	3.9
Queue Length 50th (ft)	13	4	21	6	63	0
Queue Length 95th (ft)	46	67	78	26	156	37
Internal Link Dist (ft)	1240			940	1226	
Turn Bay Length (ft)		560	530			250
Base Capacity (vph)	1069	1254	820	3180	1949	976
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	0.06	0.41	0.33	0.06	0.33	0.24

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	331	1402	394	145	1522	291	393	208	99	439	209	224
v/c Ratio	0.77	0.55	0.39	0.59	0.67	0.35	0.79	0.64	0.33	0.81	0.56	0.69
Control Delay	73.6	24.2	9.3	89.9	31.4	8.6	78.2	78.7	2.9	76.9	73.2	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.6	24.2	9.3	89.9	31.4	8.6	78.2	78.7	2.9	76.9	73.2	28.8
Queue Length 50th (ft)	152	536	237	69	492	127	207	112	0	231	111	49
Queue Length 95th (ft)	205	416	158	109	596	113	261	155	0	285	152	142
Internal Link Dist (ft)		3964			4691			1169			880	
Turn Bay Length (ft)	380		505	505		265	450		420	370		350
Base Capacity (vph)	486	2550	1002	265	2282	843	579	442	346	643	508	376
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.55	0.39	0.55	0.67	0.35	0.68	0.47	0.29	0.68	0.41	0.60

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	131	265	96	427	102	671	175	476	108
v/c Ratio	0.56	0.65	0.42	0.86	0.20	0.39	0.41	0.27	0.12
Control Delay	37.8	32.1	33.7	34.3	15.5	22.7	20.7	20.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.8	32.1	33.7	34.3	15.5	22.7	20.7	20.5	0.6
Queue Length 50th (ft)	76	115	54	124	32	167	57	108	0
Queue Length 95th (ft)	106	173	81	223	75	277	120	189	3
Internal Link Dist (ft)		651		961		880		430	
Turn Bay Length (ft)	190		175		365		270		225
Base Capacity (vph)	256	658	231	676	543	1722	470	1768	871
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	0.51	0.40	0.42	0.63	0.19	0.39	0.37	0.27	0.12

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	178	423	533	718	427	97
v/c Ratio	0.50	0.65	0.68	0.31	0.45	0.19
Control Delay	27.0	8.0	10.8	5.0	21.4	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.0	8.0	10.8	5.0	21.4	6.9
Queue Length 50th (ft)	50	0	67	41	56	0
Queue Length 95th (ft)	129	68	187	93	140	36
Internal Link Dist (ft)	1106			847	1188	
Turn Bay Length (ft)		560	530			250
Base Capacity (vph)	811	954	1127	3286	1061	542
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	0.22	0.44	0.47	0.22	0.40	0.18

Intersection Summary