

TRAFFIC IMPACT STUDY

For

Jaynes Property
El Paso County, Colorado
PCD File No. SKP225

January 6, 2023
Revised:
January 19, 2023

Prepared for:

Classic SRJ, LLC
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Prepared by:



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Engineer in Responsible Charge:
Fred Lantz, PE

22-021604

Traffic Engineer's Statement

The attached traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.



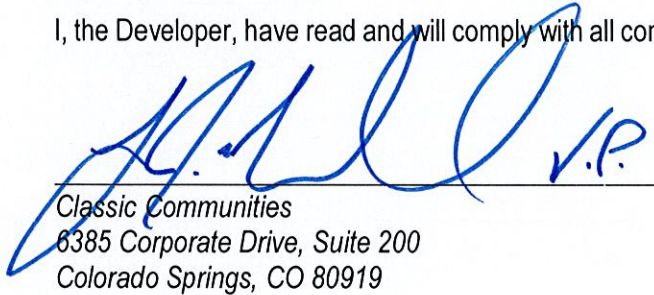
Fred Lantz, P.E. #23410

01/19/2023

Date

Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.



Classic Communities
6385 Corporate Drive, Suite 200
Colorado Springs, CO 80919

1/19/2023

Date

Condition:

Additional analysis shall be provided with the Rezoning and Preliminary Plan TIS, showing that proposed mitigation mentioned in this report will address PM peak issues at the Vollmer Road / Briargate Parkway intersection and that proposed queuing lengths will be adequate.

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APPENDIX C	CAPACITY WORKSHEETS

I. Introduction

Project Overview

This traffic impact study is provided as a planning document and addresses the capacity, geometric, and control requirements associated with the development entitled Jaynes Property.

This proposed mixed-use development consists of a variety of residential, neighborhood commercial and park land uses. The 142-acre development is located along the west side of Vollmer Road between Poco Road and Dines Boulevard in El Paso County, Colorado.

Study Area Boundaries

The study area to be examined in this analysis encompasses the Vollmer Road intersections with Poco Road, Briargate Parkway (future) and Dines Boulevard, and the Briargate Parkway (future) intersection with the key site development roadway (future).

Consistent with Section B.2.3.B of Appendix B – Transportation Impact Study Guidelines from the County's Engineering Criteria Manual (ECM)¹, the study area did not extend south towards Marksheffel Road since the development's trip distribution pattern does not anticipate much, if any, site traffic traveling to/from Marksheffel Road.

Figure 1 illustrates location of the site and study intersections.

Site Description

Land for the development is vacant and surrounded predominately by existing or proposed residential land uses.

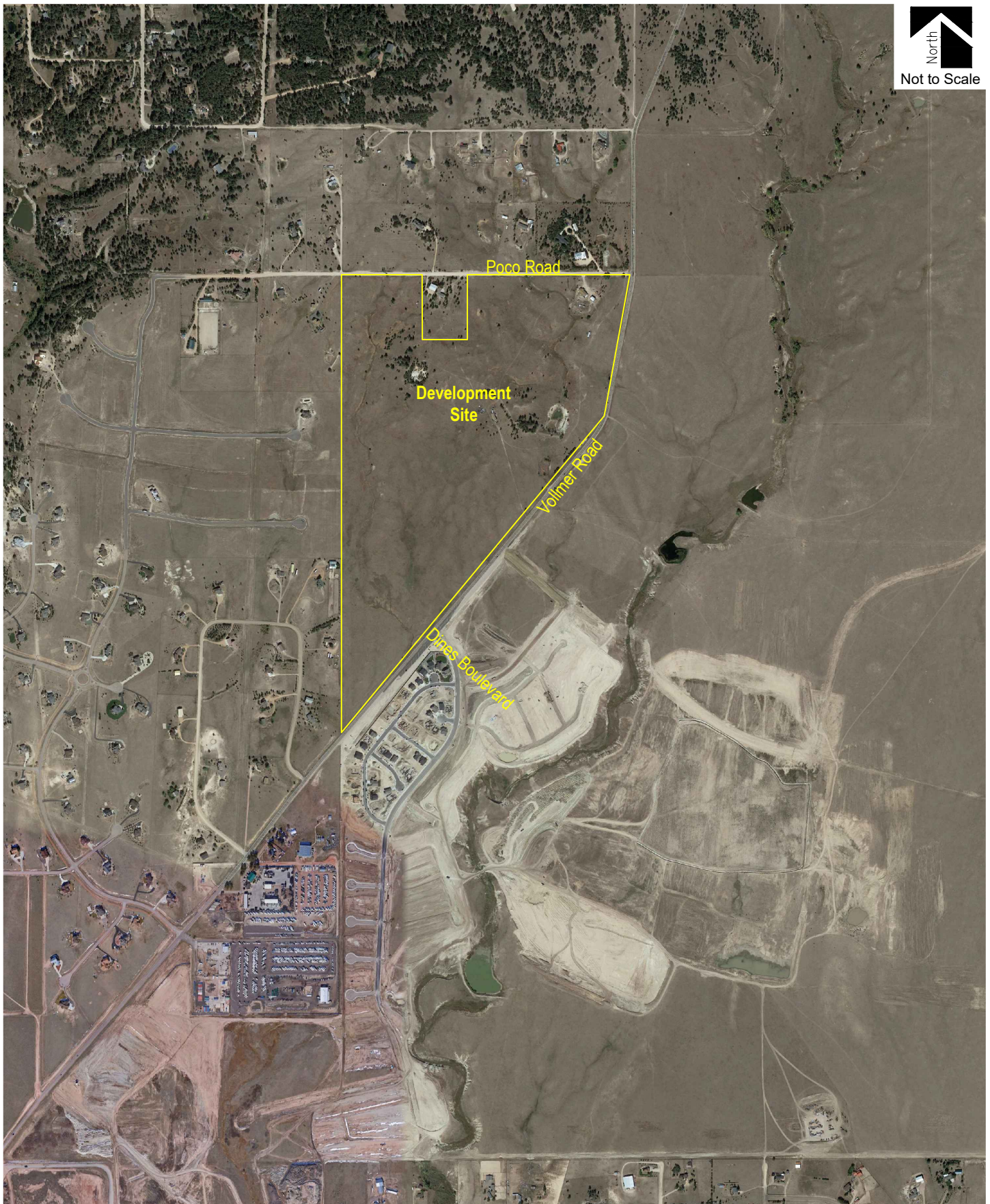
The proposed development's sketch plan is conceptual and not all land uses have been determined. However, there is understood to be a maximum capacity for 450 single-family dwelling units and 4.5 acres of commercial. In order to provide for a conservative analysis, there is assumed to be construction for 630 single-family dwelling units (approximately 298 single-family detached housing dwelling units and 332 single-family attached housing dwelling units), and approximately 39,200 square feet of commercial land use (assuming an FAR of 0.20).

¹ El Paso County Engineering Criteria Manual, El Paso County, October 2020.

Considering the conceptual nature of the proposed development, future access will generally include one access drive along future Briargate Parkway as well as roadways aligning with the existing intersections along Vollmer Road. For purposes of this analysis, primary points of entry to the overall development area are provided at the following locations:

- One full-movement access serving as the west leg of the Vollmer Road and (future) Sam Bass Drive intersection.
- One full-movement access serving as the west leg of the Briargate Parkway and Vollmer Road intersection.
- One full-movement access serving as the west leg of the Vollmer Road and Dines Boulevard intersection. Access movements may be restricted to right-in/right-out or three-quarter due to geometric or design constraints.
- One full-movement accesses on (future) Briargate Parkway serving as the north/south roadway connection to proposed development.

For purposes of this study, it is anticipated that development construction would be phased with completion by end of Year 2040. A sketch plan, as prepared by N.E.S. Inc., is shown on Figure 2. This plan is provided for illustrative purposes only.





Not to Scale



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Figure 2
SKETCH PLAN

January 2023
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Existing and Committed Surface Transportation Network

Within the study area, Vollmer Road and Briargate Parkway are the primary roadways that will accommodate traffic to and from the proposed development. A secondary roadway includes Poco Road. A brief description of each roadway, based on the County's 2016 Major Transportation Corridors Plan (MTCP)² and ECM, as well as the City of Colorado Springs' Major Thoroughfare Plan³, is provided below:

Vollmer Road is a north-south, minor arterial roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersections within the study area. Vollmer Road provides a posted speed limit of 45 MPH.

Pursuant to the County's 2040 MTCP Roadway Plan, Vollmer Road is envisioned to be widened from two to four through lanes from Briargate Parkway to Marksheffel Road and remain as a two through lane roadway north of Briargate Parkway. Recently approved traffic studies^{4,5} for area development on the east side of Vollmer Road have proposed a modification to the MTCP Roadway Plan and recommend the widening of Vollmer Road to four through lanes between Briargate Parkway to Poco Road. The intermediate vision of Vollmer Road would remain as a two-lane roadway north of Poco Road.

Briargate Parkway is a future east-west, four-lane principal arterial roadway. Briargate Parkway design plans, for the portion east of Vollmer Road to Sterling Ranch Road, are under County review as of this study date. The Briargate Parkway extension west of Vollmer Road to Black Forest Road, and ultimately to North Powers Boulevard, will be completed through various future private development or public improvement projects. Briargate Parkway envisioned to provide a posted speed limit of 45 MPH.

Poco Road is an east-west roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersection within the study area. The County's MTCP does not provide a roadway classification for Poco Road. However, per Sections 2.2.4 and 2.3.2 of the County's ECM, the roadway's estimated right-of-way (ROW) width and its connection to Vollmer Road, Poco Road is assumed to be classified as a collector roadway with a posted speed limit of 35 MPH.

The study intersections along Vollmer Road currently operate under a stop-controlled condition. A stop-controlled intersection is defined as a roadway intersection where vehicle rights-of-way are controlled by one or more "STOP" signs.

Beyond that described in this section, no other regional or specific improvements for the above-described roadways are known to be planned or committed at this time.

² El Paso County 2016 Major Transportation Corridors Plan Update, Felsburg Holt & Ullevig, December 2016.

³ Major Thoroughfare Plan, City of Colorado Springs, August 2011.

⁴ The Retreat at Timber Ridge Preliminary Plan Transportation Memorandum, LSC Transportation Consultants Inc., June 29, 2018.

⁵ Homestead North Phase 1 Updated Traffic Impact Study, LSC Transportation Consultants Inc., January 11, 2022.

II. Existing Traffic Conditions

Morning (AM) and afternoon (PM) peak hour traffic counts were collected at the following intersections:

- Vollmer Road / Poco Road
- Vollmer Road / Dines Boulevard

Average daily (24-hour) traffic volumes for study areas were derived from collected intersection peak hour volumes using standard average daily traffic volume conversion relationships or from adjacent traffic studies as earlier referenced.

Counts were collected on Thursday, March 24, 2022, with AM peak hour counts being collected during the period of 7:00 AM to 9:00 AM, and PM peak hour counts being collected during the period of 4:00 PM to 6:00 PM.

Newly collected counts and intersection geometry are shown on Figure 3.

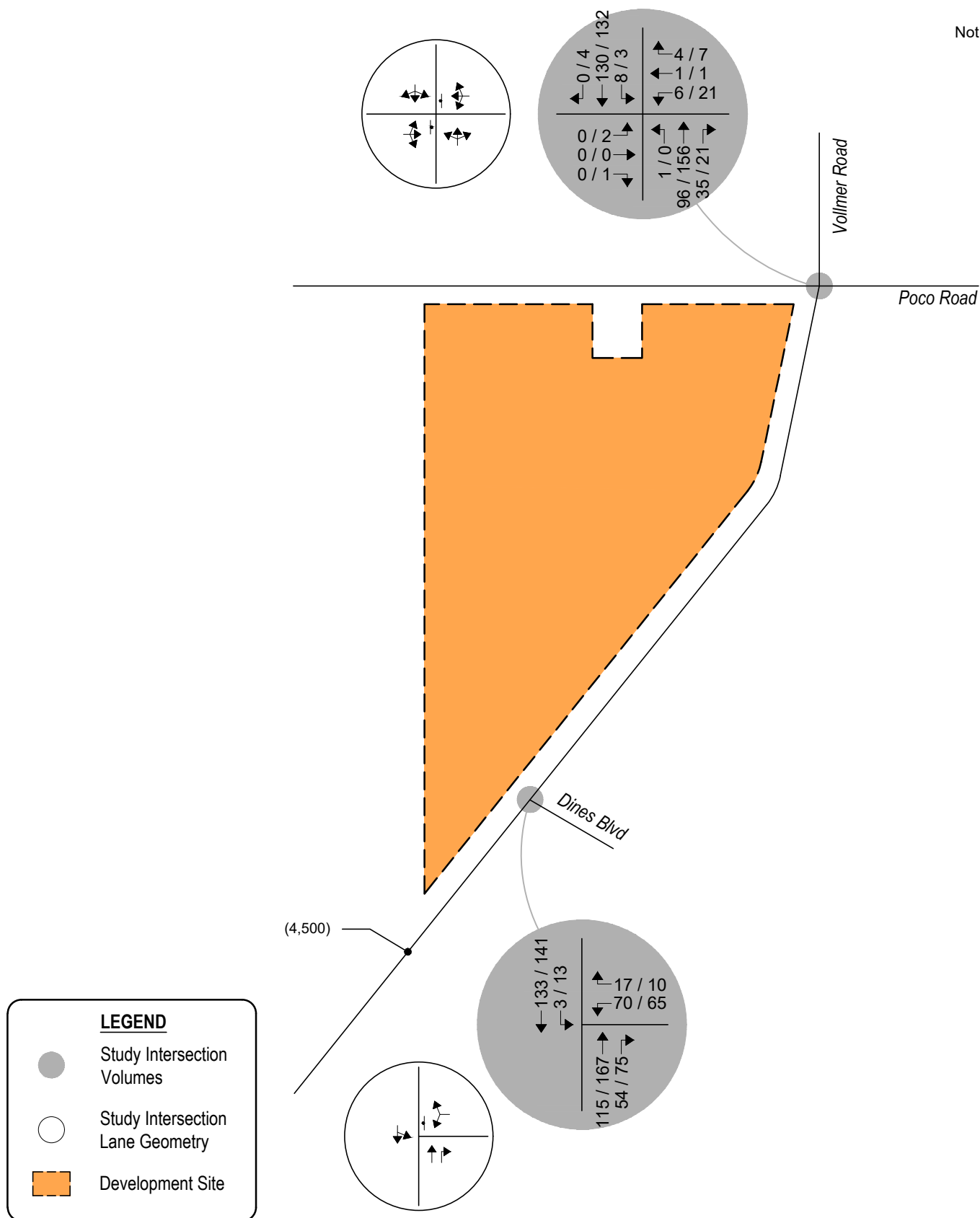


Figure 3
EXISTING TRAFFIC
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic



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Peak Hour Intersection Levels of Service – Existing Traffic

The Signalized, Unsignalized, and Roundabout Intersection Analysis techniques, as published in the Highway Capacity Manual (HCM) by the Transportation Research Board and as incorporated into the SYNCHRO computer program, were used to analyze the study intersections for existing traffic conditions. These nationally accepted techniques allow for the determination of intersection level of service (LOS) based on the congestion and delay of each traffic movement and based on the volume to capacity ratio and control delay for each approach.

Level of service is a method of measurement used by transportation professionals to quantify a driver's perception of travel conditions that include travel time, number of stops, and total amount of stopped delay experienced on a roadway network. The HCM categorizes level of service into a range from "A" which indicates little, if any, vehicle delay, to "F" which indicates a level of operation considered unacceptable to most drivers. These levels of service grades with brief descriptions of the operating condition, for unsignalized and signalized intersections, are included for reference in Appendix B and have been used throughout this study.

The level of service analyses results for existing conditions are summarized in Table 1.

Intersection capacity worksheets developed for this study are provided in Appendix C.

Table 1 – Intersection Capacity Analysis Summary – Existing Traffic

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Poco Road / Vollmer Road (Stop-Controlled)		
Eastbound Left, Through and Right	A	B
Westbound Left, Through and Right	B	B
Northbound Left, Through and Right	A	A
Southbound Left, Through and Right	A	A
Dines Boulevard / Vollmer Road (Stop-Controlled)		
Westbound Left and Right	B	B
Southbound Left and Through	A	A

Key: Stop-Controlled Intersection: Level of Service

Existing Traffic Analysis Results

Under existing conditions, the stop-controlled intersections of Poco Road and Dines Boulevard with Vollmer Road have turn movement operations at or better than LOS B during both the morning and afternoon peak traffic hours.

III. Future Traffic Conditions Without Proposed Development

Background traffic is the traffic projected to be on area roadways without consideration of the proposed development. Background traffic includes traffic generated by development of vacant parcels in the area.

Additionally, this study's background traffic analysis includes through traffic and intersection traffic generated by adjacent development as described within the earlier reference traffic studies for Retreat at Timber Ridge and Homestead North Phase I. To account for projected increases in background traffic for Years 2027 and 2040 not considered in the referenced traffic study, a compounded annual growth rate was determined using population growth estimates provided by the Pikes Peak Area Council of Governments' (PPACG) 2045 Long Range Transportation Plan⁶. PPACG's 2045 Long Range Transportation Plan anticipates a 20-year growth rate between one and three percent. Because this area of the County is experiencing a large degree of regional growth and in order to provide for a conservative analysis, a growth rate of seven percent was applied to existing traffic volumes where short-term or long-term background traffic volumes were not considered in adjacent development traffic studies. This annual growth rate is aggressive but is considered to be consistent with long-term regional growth projections and the level of in-fill development expected within the area.

Pursuant to the committed area roadway improvements discussed in Section I, Year 2027 background traffic conditions assume the completion of various, earlier explained, roadway improvements for Vollmer Road (south of Poco Road) and Briargate Parkway (east of Vollmer Road) to accommodate regional transportation demands. Year 2040 background traffic conditions assume the new construction and westerly extension of Briargate Parkway (west of Vollmer Road). Year 2040 also assumes signal timing parameters for Briargate Parkway and Vollmer Road consistent with that described in the referenced traffic study for Homestead North Phase I. These assumptions provide for a conservative analysis.

Projected background traffic volumes and intersection geometry for Year 2027 are shown on Figure 4.

Figure 5 shows projected background traffic volumes and intersection geometry for Year 2040.

⁶ Moving Forward 2045: Pikes Peak Area Regional Transportation Plan, Pikes Peak Area Council of Governments, January 2020.

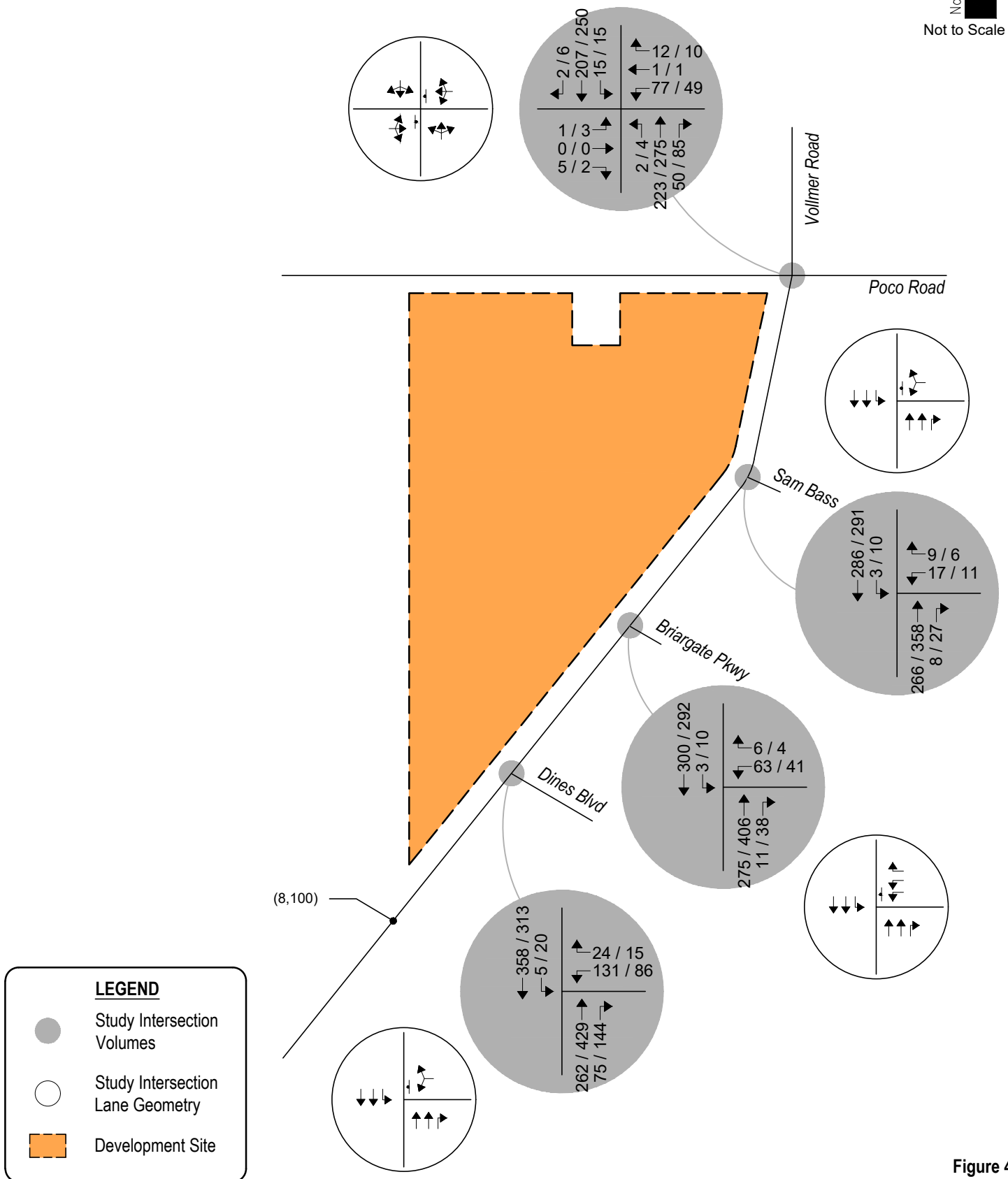


Figure 4
BACKGROUND TRAFFIC - YEAR 2027
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic



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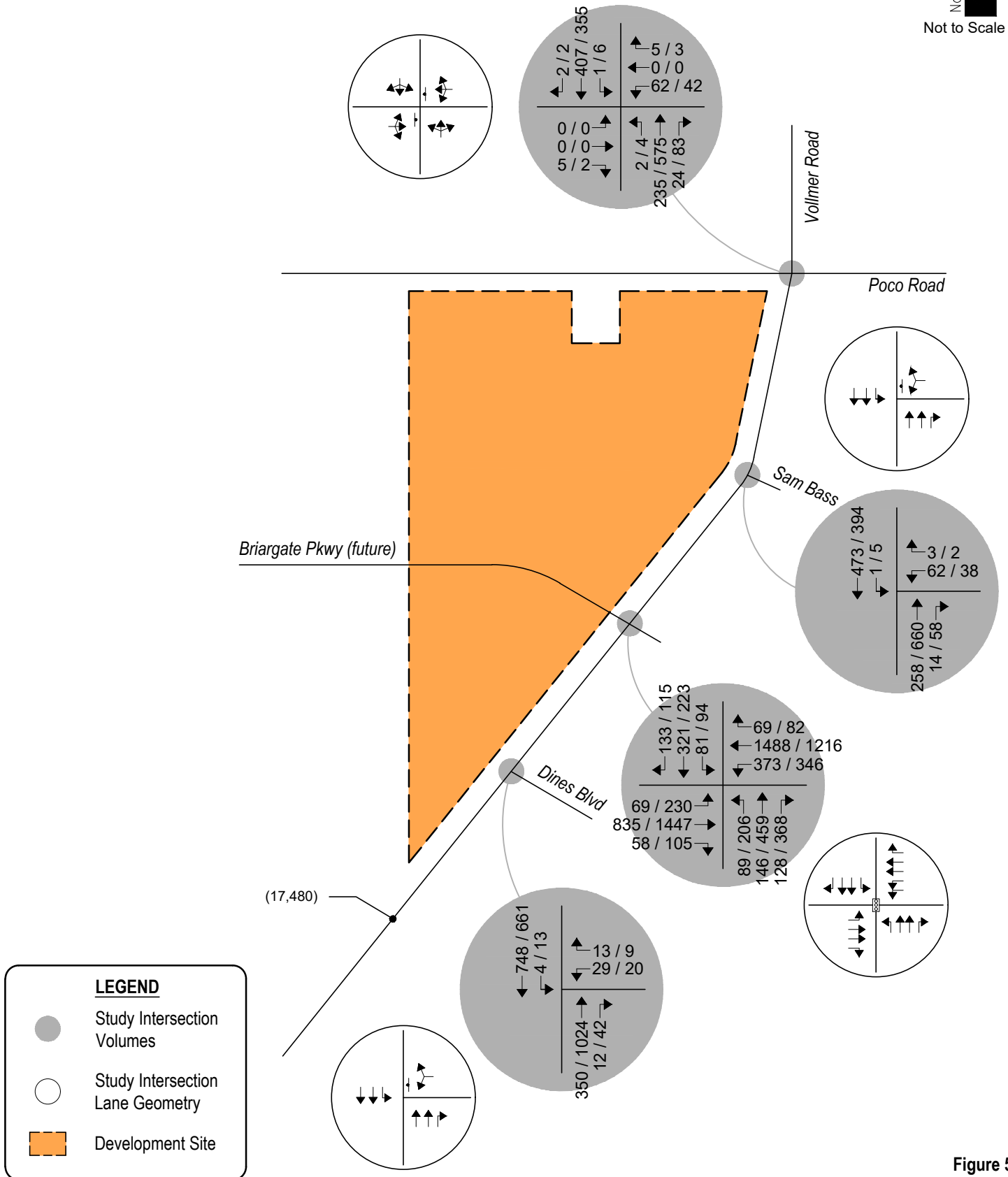


Figure 5
BACKGROUND TRAFFIC - YEAR 2040
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic



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Peak Hour Intersection Levels of Service – Background Traffic

As with existing traffic conditions, the operations of study intersections were analyzed under background conditions, without the proposed development, using the SYNCHRO computer program.

Background traffic level of service analysis results for Year 2027 are listed in Table 2. Year 2040 operational results are summarized in Table 3.

Definitions of levels of service are given in Appendix B. Intersection capacity worksheets are provided in Appendix C.

Table 2 – Intersection Capacity Analysis Summary – Background Traffic – Year 2027

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Poco Road / Vollmer Road (Stop-Controlled) Eastbound Left, Through and Right Westbound Left, Through and Right Northbound Left, Through and Right Southbound Left, Through and Right	B B A A	B C A A
Sam Bass Drive / Vollmer Road (Stop-Controlled) Westbound Left and Right Southbound Left	B A	B A
Briargate Parkway / Vollmer Road (Stop-Controlled) Westbound Left Westbound Right Southbound Left	B A A	B A A
Dines Boulevard / Vollmer Road (Stop-Controlled) Westbound Left and Right Southbound Left	B A	C A

Key: Stop-Controlled Intersection: Level of Service

Background Traffic Analysis Results – Year 2027

Year 2027 background traffic analysis indicates that all stop-controlled intersections within the study area experience turn movement operations at or better than LOS C during both the morning and afternoon peak traffic hours.

Table 3 – Intersection Capacity Analysis Summary – Background Traffic – Year 2040

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Poco Road / Vollmer Road (Stop-Controlled)		
Eastbound Left, Through and Right	B	B
Westbound Left, Through and Right	C	D
Northbound Left, Through and Right	A	A
Southbound Left, Through and Right	A	A
Sam Bass Drive / Vollmer Road (Stop-Controlled)		
Westbound Left and Right	B	C
Southbound Left	A	A
Briargate Parkway / Vollmer Road (Signalized)	C (29.0)	D (50.9)
Dines Boulevard / Vollmer Road (Stop-Controlled)		
Westbound Left and Right	C	E
Southbound Left	A	B

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)
 Stop-Controlled Intersection: Level of Service

Background Traffic Analysis Results – Year 2040

By Year 2040 and without the proposed development, the signalized intersection of Briargate Parkway and Vollmer Road is projected to have an overall operation at LOS C during the morning peak traffic hour and LOS D within the afternoon peak hour. These projected operations remain similar to referenced traffic studies for adjacent development.

All stop-controlled intersections within the study area project turn movement operations at or better than LOS D during both peak traffic hours. An exception is the existing westbound left and right turn movement for Dines Boulevard at Vollmer Road where a LOS E is projected during the afternoon peak hour. The LOS E operation is attributed to the long-term projected through traffic volume along Vollmer Road and the stop-controlled nature of the intersection. It is emphasized that it is not uncommon for unsignalized movements to or from an arterial roadway, in urbanized areas, to operate with noticeable delays during peak traffic hours. It is, however, likely that turn movements will operate better than the results obtained with this HCM Two Way Stop Control (TWSC) level of service analysis would indicate, as HCM analysis limitations may not accurately account for the effect of vehicle platooning and gaps caused by upstream signals. Upstream signal controls along Vollmer Road may create additional gaps in the traffic stream for turning movements at Dines Boulevard which could provide mitigation to the LOS E operations projected during the peak afternoon traffic hour.

IV. Proposed Project Traffic

Trip Generation

Standard traffic generation characteristics compiled by the Institute of Transportation Engineers (ITE) in their report entitled Trip Generation Manual, 11th Edition, were applied to the proposed land use in order to estimate average daily traffic (ADT), AM Peak Hour, and PM Peak Hour vehicle trips. A vehicle trip is defined as a one-way vehicle movement from a point of origin to a point of destination.

The ITE land use codes 210 (Single-Family Detached Housing), 215 (Single-Family Attached Housing), and 822 (Strip Retail Plaza) were used for estimating trip generation because of their best fit to the proposed land use descriptions.

Due to the conceptual nature of the proposed development, no specific commercial land uses have been determined. As such, a floor-area-ratio (FAR) of 0.20 was applied to the assumed commercial area of development.

As actual land uses, densities or site plans within the Jaynes Property sketch plan become defined over time and through additional County land use approval procedures, it is expected that traffic generation characteristics considered within this study will need to be updated by more specific traffic analyses or studies to help assess if transportation improvements are needed to mitigate potential traffic impacts.

Trip generation rates used in this study are presented in Table 4.

Table 4 – Trip Generation Rates

ITE CODE	LAND USE	UNIT	TRIP GENERATION RATES						
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
210	Single-Family Detached	DU	9.43	0.18	0.52	0.70	0.59	0.35	0.94
215	Single-Family Attached	DU	7.20	0.15	0.33	0.48	0.32	0.25	0.57
822	Strip Retail Plaza	KSF	54.45	1.42	0.94	2.36	3.30	3.30	6.59

Key: KSF = Thousand Square Feet Gross Floor Area.
DU = Dwelling Units.

Table 5 illustrates projected ADT, AM Peak Hour, and PM Peak Hour traffic volumes likely generated by the proposed development upon build-out.

Table 5 – Trip Generation Summary

ITE CODE	LAND USE	SIZE	24 HOUR	TOTAL TRIPS GENERATED					
				AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
210	Single-Family Detached	298 DU	2,810	54	154	209	176	104	280
215	Single-Family Attached	332 DU	2,390	49	110	159	108	81	189
822	Strip Retail Plaza	39.2 KSF	2,135	56	37	93	129	129	258
<i>Total:</i>			7,335	159	301	460	414	314	728

Key: KSF = Thousand Square Feet Gross Floor Area. DU = Dwelling Units.

Note: All data and calculations above are subject to being rounded to nearest value.

Upon build-out and without consideration of applicable vehicle trip reductions, Table 5 illustrates that the proposed development has the potential to generate approximately 7,335 daily trips with 460 of those occurring during the morning peak hour and 728 during the afternoon peak hour.

Adjustments to Trip Generation Rates

While a mixed-use development of this type is likely to attract trips from within area land uses as well as pass-by or diverted linked trips from the adjacent roadway system, no trip reduction was taken in this analysis due to its conceptual nature. This assumption provides for a conservative analysis.

Trip Distribution & Assignment

The construction of this development is assumed to be phased with the initial phase being completed by 2027 and entailing the portion of residential (361 dwelling units) located north of future Briargate Parkway.

Traffic assignment is how generated and distributed vehicle trips are expected to be loaded onto the available roadway network.

The initial and overall directional distribution of site-generated traffic was determined based on the location of development site within the County, proposed and existing area land uses, allowed turning movements, available roadway network, and in compliance to the adjacent traffic study prepared for Homestead North Phase I previously referenced.

Trip distribution patterns for the initial phase of development are shown on Figure 6A. Applying trip distribution patterns to initial phase of site-generated traffic provides the initial site-generated trip assignments also shown on Figure 6A.

Overall, long-term, trip distribution patterns and site-generated traffic assignment for development build-out are shown on Figure 6B.

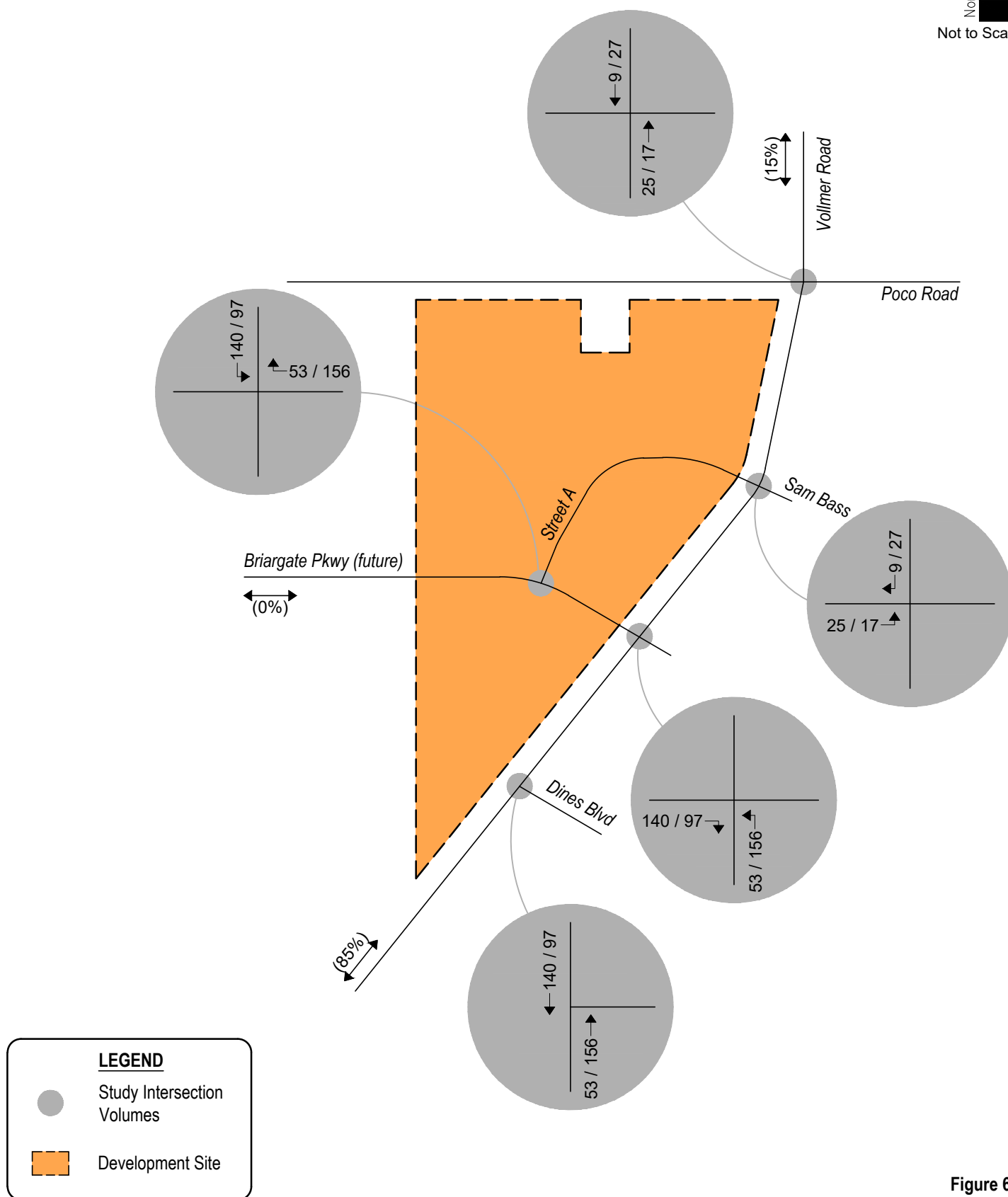


Figure 6-A
SITE DEVELOPMENT SHORT-TERM DISTRIBUTION
(%) : Overall
SITE-GENERATED
AM / PM Peak Hour



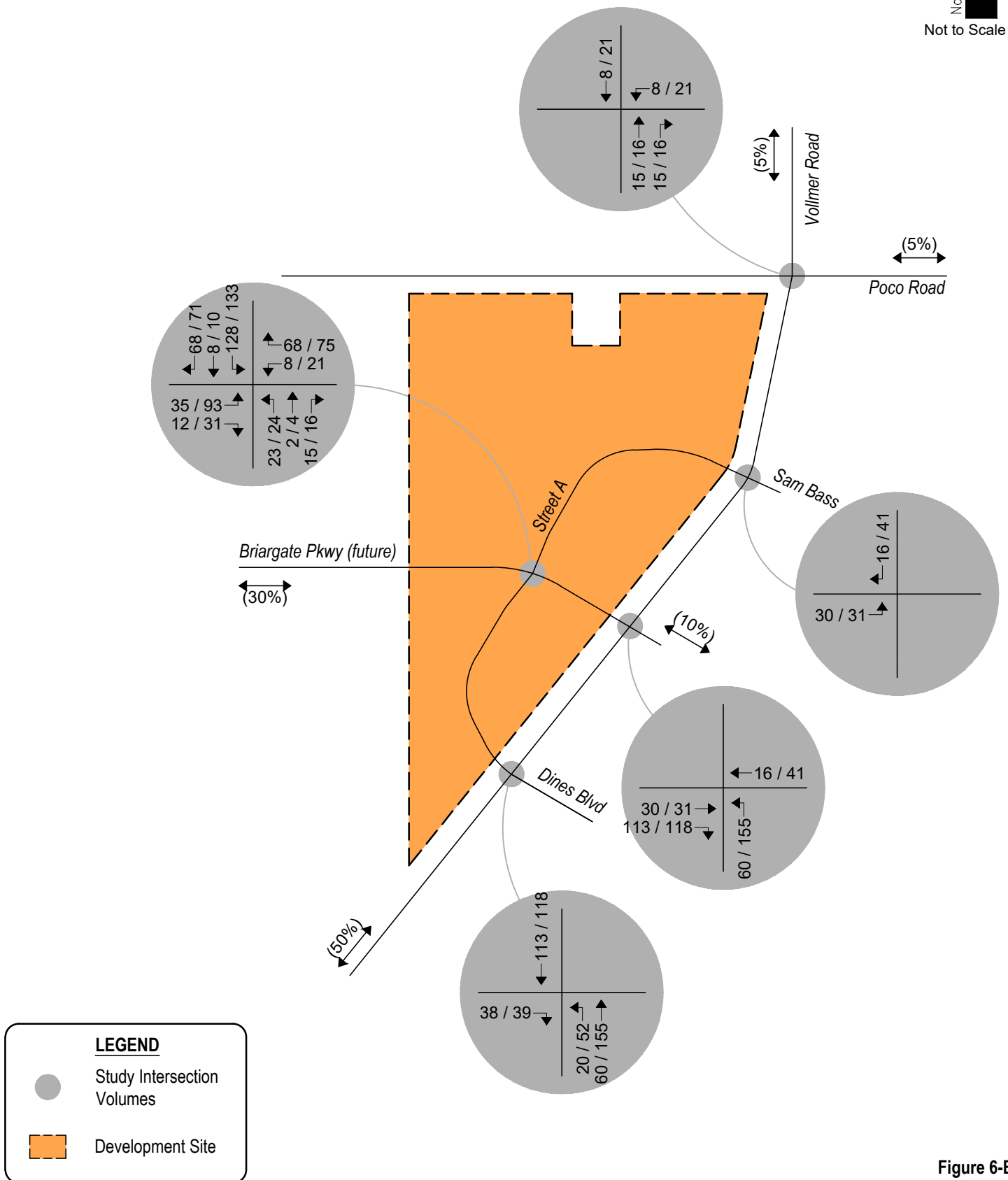


Figure 6-B
SITE DEVELOPMENT LONG-TERM DISTRIBUTION
(%) : Overall
SITE-GENERATED
AM / PM Peak Hour



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V. Future Traffic Conditions With Proposed Developments

Total traffic is the traffic projected to be on area roadways with consideration of the proposed development. Total traffic includes background traffic projections for Years 2027 and 2040 with consideration of site-generated traffic. For analysis purposes, it was assumed that overall development construction would be completed by end of Year 2040.

Pursuant to area roadway improvement discussions provided in Section III, Year 2027 and Year 2040 total traffic conditions assume no additional roadway improvements to accommodate regional transportation demands than that described for each background analysis year. Roadway improvements associated with site development are expected to be limited to site access and frontage as required by the governing agency. An exception is Briargate Parkway where the construction of a partial roadway section (two through lanes with shared center turn lane) is envisioned with the initial phase of site development.

Projected Year 2027 total traffic volumes and intersection geometry are shown in Figure 7.

Figure 8 shows projected total traffic volumes and intersection geometry for Year 2040.

Total Traffic Auxiliary Lane Analysis

Auxiliary lanes for site development accesses were based on the County's ECM.

Considering development build-out, an evaluation of auxiliary lane requirements, pursuant to Section 2.3.7 of the County's ECM, reveals that a southbound right turn deceleration lane along Vollmer Road at Briargate Parkway is required since the southbound right turn ingress volume exceeds the 25 vehicles per hour threshold. While peak hour for southbound right turn ingress volumes along Vollmer Road at Sam Bass Drive and Dines Boulevard are not projected to exceed the 25 vehicles per hour threshold, a right turn lane was assumed for analysis purposes. Dedicated right turn lanes were also assumed along the future, ultimate section of Briargate Parkway at Vollmer Road and Street A.

Section 2.3.7 of the County's ECM also reveals that an exclusive left turn deceleration lane is required along ultimate Briargate Parkway at Street A and Vollmer Road, and along Vollmer Road at Dines Boulevard and Briargate Parkway since the projected left turn ingress volume exceeds the County's threshold of 10 vehicles per hour.

Due to the conservative analysis performed throughout this study and the conceptual nature of site development, it is expected that auxiliary lane requirements evaluated within this study will need to be updated by more specific traffic analyses or studies as actual area development occurs, to help assess if transportation improvements are needed to meet the County's vehicle volume thresholds.

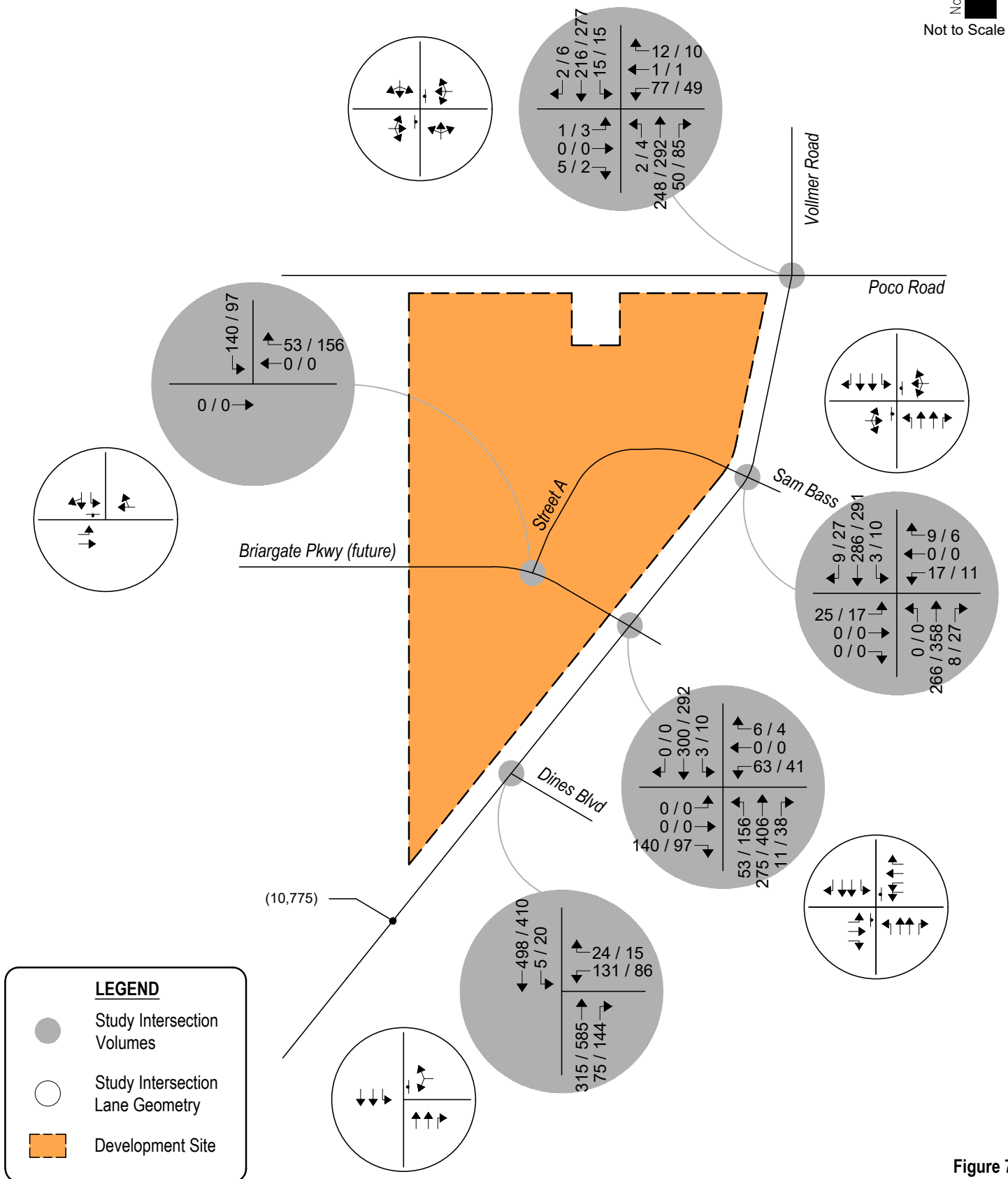


Figure 7
TOTAL TRAFFIC - YEAR 2027
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic



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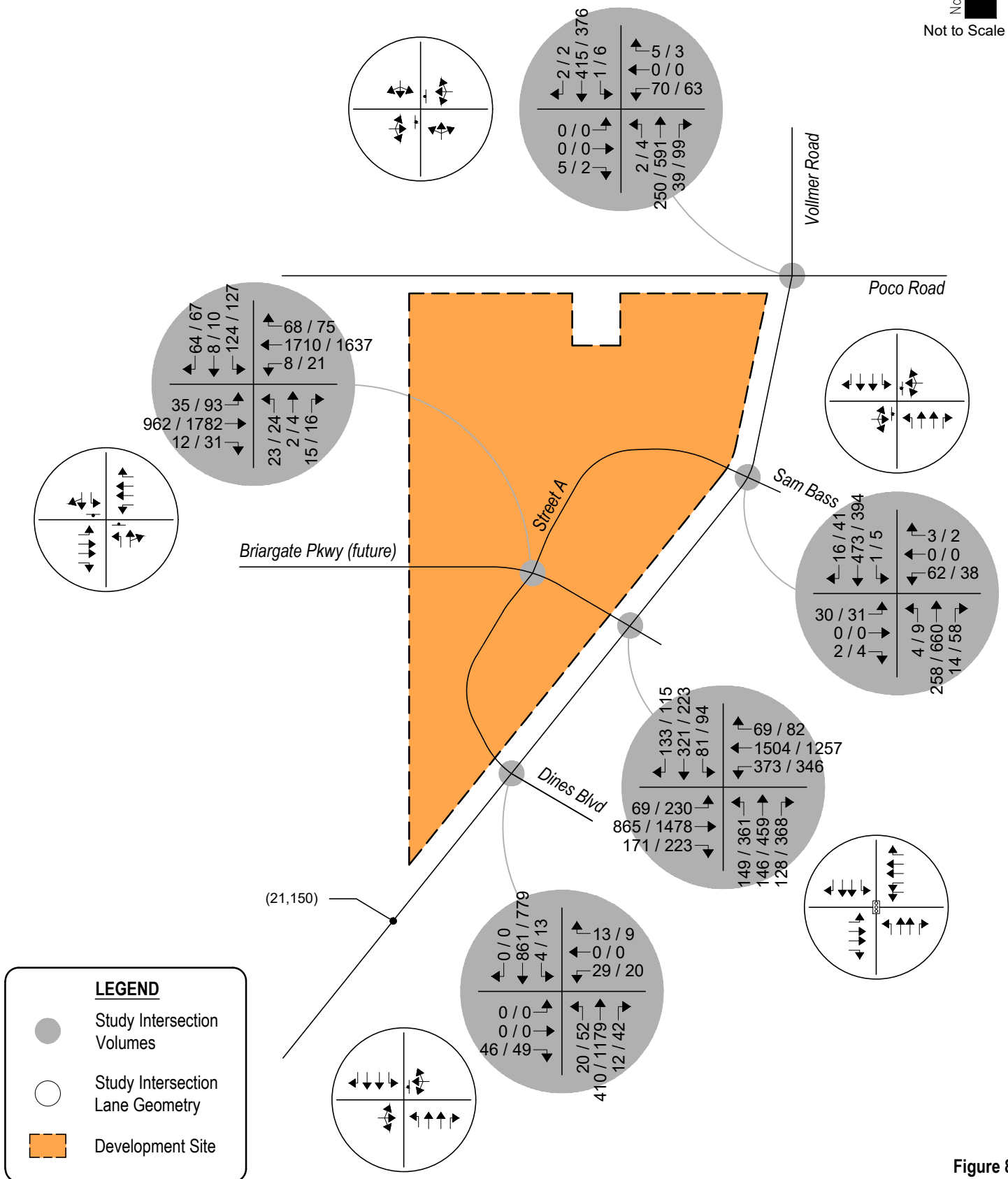


Figure 8
TOTAL TRAFFIC - YEAR 2040
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic



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VI. Project Impacts

The analyses and procedures described in this study were performed in accordance with the Highway Capacity Manual (HCM) and are based upon the worst-case conditions that occur during a typical weekday upon build-out of site development and analyzed land uses. Therefore, study intersections are likely to operate with traffic conditions better than those described within this study, which represent the peak hours of weekday operations only.

Peak Hour Intersection Levels of Service – Total Traffic

As with background traffic, the operations of the study intersections were analyzed under projected total traffic conditions using the SYNCHRO computer program. Total traffic level of service analysis results for Years 2027 and 2040 are summarized in Table 6 and Table 7, respectively.

Definitions of levels of service are given in Appendix B. Intersection capacity worksheets are provided in Appendix C.

Table 6 – Intersection Capacity Analysis Summary – Total Traffic – Year 2027

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Poco Road / Vollmer Road (Stop-Controlled) Eastbound Left, Through and Right Westbound Left, Through and Right Northbound Left, Through and Right Southbound Left, Through and Right	B C A A	B C A A
Sam Bass Drive / Vollmer Road (Stop-Controlled) Eastbound Left, Through and Right Westbound Left, Through and Right Northbound Left Southbound Left	B B A A	B B A A
Briargate Parkway / Vollmer Road (Stop-Controlled) Eastbound Left Eastbound Through Eastbound Right Westbound Left Westbound Through Westbound Right Northbound Left Southbound Left	A A B C A A A A	A A A D A A A A
Dines Boulevard / Vollmer Road (Stop-Controlled) Westbound Left and Right Southbound Left	C A	C A
Street A / Briargate Parkway (Stop-Controlled) Eastbound Left Southbound Left Southbound Through and Right	A A A	A A A

Key: Stop-Controlled Intersection: Level of Service

Table 7 – Intersection Capacity Analysis Summary – Total Traffic – Year 2040

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
Poco Road / Vollmer Road (Stop-Controlled)		
Eastbound Left, Through and Right	B	B
Westbound Left, Through and Right	C	E
Northbound Left, Through and Right	A	A
Southbound Left, Through and Right	A	A
Sam Bass Drive / Vollmer Road (Stop-Controlled)		
Eastbound Left, Through and Right	C	C
Westbound Left, Through and Right	C	D
Northbound Left	A	A
Southbound Left	A	A
Briargate Parkway / Vollmer Road (Signalized)	C (29.9)	D (51.3)
Dines Boulevard / Vollmer Road (Stop-Controlled)		
Eastbound Left, Through and Right	B	B
Westbound Left, Through and Right	C	F
Northbound Left	B	A
Southbound Left	A	B
Street A / Briargate Parkway (Stop-Controlled)		
Eastbound Left	C	C
Westbound Left	B	C
Northbound Left	F	F
Northbound Through and Right	F	F
Southbound Left	F	F
Southbound Through and Right	F	F
Street A / Briargate Parkway (Signalized)	C (32.5)	C (30.2)

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)
 Stop-Controlled Intersection: Level of Service

Total Traffic Analysis Results Upon Development Build-Out

Table 7 illustrates how, by Year 2040 and upon assumed development build-out, the signalized intersection of Briargate Parkway with Vollmer Road experiences overall operations at LOS C during the morning peak traffic hour and LOS D during the afternoon peak traffic hour. Additional mitigation analyses for the overall intersection or individual lane operations, including the need for an additional left turn lane, to be provided with applicable preliminary plan application submittal to County.

The stop-controlled intersections along Briargate Parkway and Vollmer Road are projected to have turn movement operations at or better than LOS C during the morning peak traffic hour and LOS D or better during the afternoon peak traffic hour. Exceptions would include the northbound and southbound movements at Street A, westbound turn movements at Dines Boulevard, and westbound movements at Poco Road where long-term LOS E and LOS F operations are projected during the respective peak hour. The projected LOS E and LOS F operations are attributed to the through traffic volume along Briargate Parkway and Vollmer Road and the stop-controlled nature of the respective intersection. In order to mitigate the anticipated LOS F operations at the Briargate Parkway intersection with Street A, Table 7 shows how signalization of the intersection is expected to improve overall intersection operations to LOS C during both peak traffic hours.

It is again emphasized that it is not uncommon for unsignalized movements to or from an arterial roadway, in urbanized areas, to operate with noticeable delays during peak traffic hours. It is, however, likely that turn movements will operate better than the results obtained with this HCM Two Way Stop Control (TWSC) level of service analysis would indicate, as the HCM analysis limitations may not accurately account for the effect of vehicle platooning and gaps caused by upstream signals. Upstream signal controls along Briargate Parkway and Vollmer Road may create additional gaps in the traffic stream for turning movements onto Briargate Parkway or Vollmer Road which could provide mitigation to the LOS E and LOS F operations projected during peak traffic hours.

Queue Length Analysis

Queue lengths for the study intersections were analyzed using Year 2040 total traffic conditions. The analysis yields estimate of 95th percentile queue lengths, which have only a five percent probability of being exceeded during the analysis time period. An average vehicle length of 25 feet was assumed. Queue lengths were modeled and are included with the Synchro worksheets in Appendix C.

Table 8 summarizes the 95th percentile queue results in comparison to the projected storage requirements for turn movements within study area for Year 2040. Table 8 further provides recommended turn lane lengths based on minimum requirements from Section 2.3.7 of the County's ECM, projected 95th percentile queue lengths, and assuming design speeds for future roadways.

Table 8 – Turn Lane Queues and Storage Requirements – Total Traffic – Year 2040

Intersection	Turn Movement		Existing Turn Lane Length (feet)	AM Peak Hour 95th Percentile Queue Length (feet)	PM Peak Hour 95th Percentile Queue Length (feet)	Recommended Turn Lane Length (feet)
Signalized Intersections						
Briargate Parkway / Vollmer Road	EB	L	-	46'	258'	195'
		T	-	358'	839'	-
		R	-	42'	86'	195'
	WB	L	-	207'	185'	205'
		T	-	615'	721'	-
		R	-	9'	0'	195'
	NB	L	-	165'	404'	405'
		T	-	90'	249'	-
		R	-	45'	252'	255'
	SB	L	-	97'	98'	195'
		T	-	191'	179'	-
		R	-	52'	2'	195'
Street A / Briargate Parkway	EB	L	-	22'	99'	195'
		T	-	305'	809'	-
		R	-	0'	0'	195'
	WB	L	-	28'	53'	195'
		T	-	787'	734'	-
		R	-	12'	17'	195'
	NB	L	-	44'	46'	155'
		T,R	-	26'	30'	-
	SB	L	-	166'	174'	175'
T,R	-	55'	59'	-		
Stop-Controlled Intersections						
Poco Road / Vollmer Road	EB	L,T,R	-	0'	0'	-
	WB	L,T,R	-	23'	43'	-
	NB	L,T,R	-	0'	0'	-
	SB	L,T,R	-	0'	0'	-
Sam Bass Drive / Vollmer Road	EB	L,T,R	-	8'	13'	-
	WB	L,T,R	-	15'	18'	-
	NB	L	-	0'	0'	195'
		T	-	0'	0'	-
		R	-	0'	0'	195'
	SB	L	-	0'	0'	195'
		T	-	0'	0'	-
		R	-	0'	0'	195'
Dines Boulevard / Vollmer Road	EB	L,T,R	-	8'	8'	-
	WB	L,T,R	-	18'	58'	-
	NB	L	-	3'	5'	-
		T	-	0'	0'	-
		R	380'	0'	0'	195'
	SB	L	-	0'	3'	195'
		T	-	0'	0'	-
		R	-	0'	0'	-
Street A / Briargate Parkway	EB	L	-	10'	33'	195'
		T	-	0'	0'	-
		R	-	0'	0'	195'
	WB	L	-	0'	8'	195'
		T	-	0'	0'	-
		R	-	0'	0'	195'
	NB	L	-	110'	*	155'
		T,R	-	23'	93'	-
	SB	L	-	455'	*	455'
T,R	-	140'	285'	-		

Note: Turn Lane Length does not include taper length.
 Key: x2 = Dual Turn Lanes.
 * = Synchro does not report 95th percentile queue.

Areas of concern highlighted:
 - Modeling states that queues may be longer
 - If through-lane queues are long, turn lane queues may need to be longer than shown

Recommended Improvements

Table 9 illustrates the recommended roadway and intersection control improvements associated with the proposed Jaynes Property development and adjacent area.

Table 9 – Recommended Improvements Summary

IMPROVEMENT	TYPE	TIMING	RESPONSIBILITY
Signalization of Vollmer Road / Briargate Parkway	Traffic Signal	When Warranted	Applicant / Developer / Sterling Ranch
Signalization of Briargate Parkway / Proposed Street A	Traffic Signal	When Warranted	Applicant / Developer
Widen Vollmer Road to four-lane cross-section from Marksheffel Road to Poco Road	Roadway Segment	Shown on MTCP by 2040	Sterling Ranch / Retreat at TimberRidge / Others
Construct west leg of Vollmer Road and (future) Sam Bass Drive intersection	Roadway Segment	With Final Plat Application(s) / Site Development	Applicant / Developer
Construct west leg of Vollmer Road and Dines Boulevard	Roadway Segment	With Final Plat Application(s) / Site Development	Applicant / Developer
Construct west leg of Vollmer Road and Briargate Parkway	Roadway Segment	With Final Plat Application(s) / Site Development	Developer, STP Metro, PPRTA
Construct southbound right turn lanes along Vollmer Road at Sam Bass Drive and Dines Boulevard	Auxiliary Lane	With Final Plat Application(s) / Site Development	Applicant / Developer / Sterling Ranch
Construct southbound right turn lane along Vollmer Road at Briargate Parkway	Auxiliary Lane	When Warranted	Developer, STP Metro, PPRTA
Construct northbound left turn lanes along Vollmer Road at Dines Boulevard	Auxiliary Lane	With Final Plat Application(s) / Site Development	Applicant / Developer
Construct northbound left turn lanes along Vollmer Road at Briargate Parkway	Auxiliary Lane	When Warranted	Developer, STP Metro, PPRTA

Key: STP Metro = Regional Surface Transportation Program Metro.

Recommended improvements, as shown in Table 9 above, which may be reimbursable under the County's MTCP include roadway widening improvements and auxiliary lane improvements along Vollmer Road or Briargate Parkway.

Highlighted items are most likely not applicable.
(STP federal money has not been identified for these roads.)

VII. Conclusion

This traffic impact study is provided as a planning document and addressed the capacity, geometric, and control requirements associated with the development entitled Jaynes Property. This proposed mixed-use development consists of a variety of residential, neighborhood commercial, and park land uses. The 142-acre development is located along the west side of Vollmer Road between Poco Road and Dines Boulevard in El Paso County, Colorado.

The study area examined in this analysis encompassed the Vollmer Road intersections with Poco Road, Briargate Parkway (future) and Dines Boulevard, and the Briargate Parkway (future) intersection with the key site development roadway (future).

Analysis was conducted for critical AM Peak Hour and PM Peak Hour traffic operations for existing traffic conditions, Year 2027 and Year 2040 background traffic conditions, and Year 2027 and Year 2040 total traffic conditions.

Analysis of existing traffic conditions indicates that the stop-controlled intersections of Poco Road and Dines Boulevard with Vollmer Road have turn movement operations at or better than LOS B during both the morning and afternoon peak traffic hours.

Without the proposed development, Year 2027 background operational analysis shows all stop-controlled intersections within the study area experience turn movement operations at or better than LOS C during both the morning and afternoon peak traffic hours.

By Year 2040 and without the proposed development, the signalized intersection of Briargate Parkway and Vollmer Road is projected to have an overall operation at LOS C during the morning peak traffic hour and LOS D within the afternoon peak hour and remain similar to referenced traffic studies for adjacent development. All stop-controlled intersections within the study area project turn movement operations at or better than LOS D during both peak traffic hours. The exception is the existing westbound left and right turn movement for Dines Boulevard at Vollmer Road where a LOS E is projected during the afternoon peak hour. The LOS E operation is attributed to the long-term projected through traffic volume along Vollmer Road and the stop-controlled nature of the intersection.

Analysis of future traffic conditions indicates that the addition of site-generated traffic is expected to create no negative impact to traffic operations for the existing and surrounding roadway system upon roadway and intersection control improvements assumed within this analysis. Additional mitigation analyses for overall intersection operations, or potential for additional auxiliary lanes, to be provided with applicable preliminary plan application.

This site is subjected to the El Paso County Road Impact Fee Program (Resolution 19-471), as amended. An option for payment will be selected at the final land use approval stage.

APPENDIX A

Traffic Count Data



(303) 216-2439
www.alltrafficdata.net

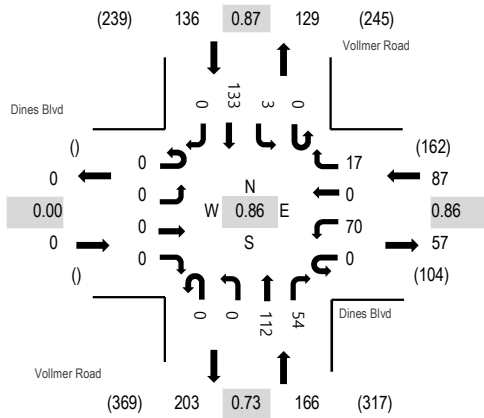
Location: 5 Vollmer Road & Dines Blvd AM

Date: Thursday, March 24, 2022

Peak Hour: 07:15 AM - 08:15 AM

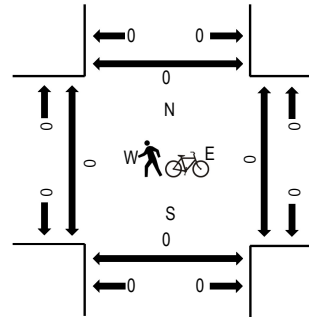
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	Dines Blvd Eastbound				Dines Blvd Westbound				Vollmer Road Northbound				Vollmer Road Southbound				Total	Rolling Hour	Pedestrian 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 AM	0	0	0	0	0	11	0	1	0	0	25	14	0	2	16	0	69	370	0	0	0	0
7:15 AM	0	0	0	0	0	15	0	3	0	0	22	13	0	1	29	0	83	389	0	0	0	0
7:30 AM	0	0	0	0	0	21	0	5	0	0	27	13	0	0	39	0	105	381	0	0	0	0
7:45 AM	0	0	0	0	0	11	0	6	0	0	38	21	0	1	36	0	113	375	0	0	0	0
8:00 AM	0	0	0	0	0	23	0	3	0	0	25	7	0	1	29	0	88	348	0	0	0	0
8:15 AM	0	0	0	0	0	18	0	2	0	0	23	8	0	0	24	0	75		0	0	0	0
8:30 AM	0	0	0	0	0	23	0	1	1	0	28	13	1	2	30	0	99		0	0	0	0
8:45 AM	0	0	0	0	0	15	0	4	0	0	31	8	0	0	28	0	86		0	0	0	0
Count Total	0	0	0	0	0	137	0	25	1	0	219	97	1	7	231	0	718		0	0	0	0
Peak Hour	0	0	0	0	0	70	0	17	0	0	112	54	0	3	133	0	389		0	0	0	0



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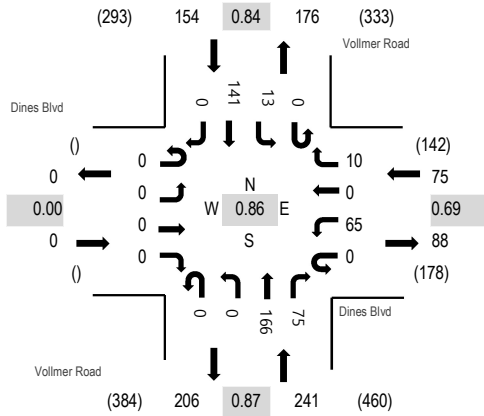
Location: 5 Vollmer Road & Dines Blvd PM

Date: Thursday, March 24, 2022

Peak Hour: 04:00 PM - 05:00 PM

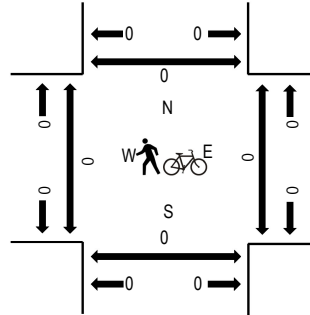
Peak 15-Minutes: 04:00 PM - 04:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	Dines Blvd Eastbound				Dines Blvd Westbound				Vollmer Road Northbound				Vollmer Road Southbound				Total	Rolling Hour	Pedestrian 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
4:00 PM	0	0	0	0	0	24	0	3	0	0	46	18	0	2	44	0	137	470	0	0	0	0
4:15 PM	0	0	0	0	0	13	0	5	0	0	36	25	0	5	37	0	121	441	0	0	0	0
4:30 PM	0	0	0	0	0	12	0	2	0	0	35	11	0	3	30	0	93	436	0	0	0	0
4:45 PM	0	0	0	0	0	16	0	0	0	0	49	21	0	3	30	0	119	452	0	0	0	0
5:00 PM	0	0	0	0	0	14	0	5	0	0	42	18	0	2	27	0	108	425	0	0	0	0
5:15 PM	0	0	0	0	0	17	0	3	0	0	39	17	0	4	36	0	116		0	0	0	0
5:30 PM	0	0	0	0	0	12	0	1	0	0	36	21	0	8	31	0	109		0	0	0	0
5:45 PM	0	0	0	0	0	14	0	1	0	0	30	16	0	4	27	0	92		0	0	0	0
Count Total	0	0	0	0	0	122	0	20	0	0	313	147	0	31	262	0	895		0	0	0	0
Peak Hour	0	0	0	0	0	65	0	10	0	0	166	75	0	13	141	0	470		0	0	0	0



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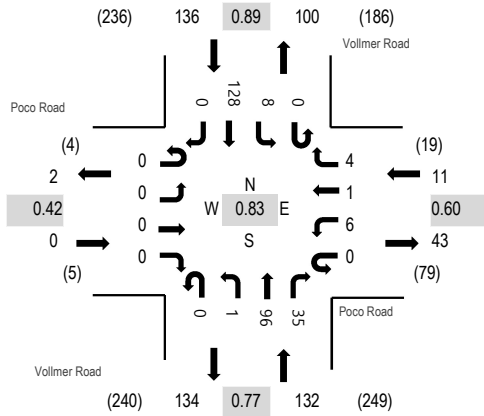
Location: 6 Vollmer Road & Poco Road AM

Date: Thursday, March 24, 2022

Peak Hour: 07:15 AM - 08:15 AM

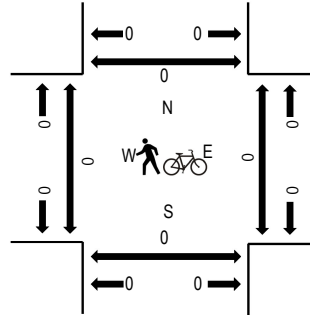
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	Poco Road Eastbound				Poco Road Westbound				Vollmer Road Northbound				Vollmer Road Southbound				Total	Rolling Hour	Pedestrian 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 AM	0	0	0	0	0	0	0	0	0	0	10	15	0	1	20	0	46	264	0	0	0	0
7:15 AM	0	0	0	0	0	1	0	2	0	0	18	8	0	2	27	0	58	279	0	0	0	0
7:30 AM	0	0	0	0	0	1	0	2	0	1	26	8	0	2	36	0	76	273	0	0	0	0
7:45 AM	0	0	0	0	0	4	0	0	0	0	34	9	0	4	33	0	84	265	0	0	0	0
8:00 AM	0	0	0	0	0	0	1	0	0	0	18	10	0	0	32	0	61	245	0	0	0	0
8:15 AM	0	0	0	0	0	1	0	1	0	0	24	3	0	0	23	0	52		0	0	0	0
8:30 AM	0	0	0	2	0	3	0	2	0	1	24	6	0	1	29	0	68		0	0	0	0
8:45 AM	0	2	0	1	0	1	0	0	0	1	23	10	0	0	26	0	64		0	0	0	0
Count Total	0	2	0	3	0	11	1	7	0	3	177	69	0	10	226	0	509		0	0	0	0
Peak Hour	0	0	0	0	0	6	1	4	0	1	96	35	0	8	128	0	279		0	0	0	0



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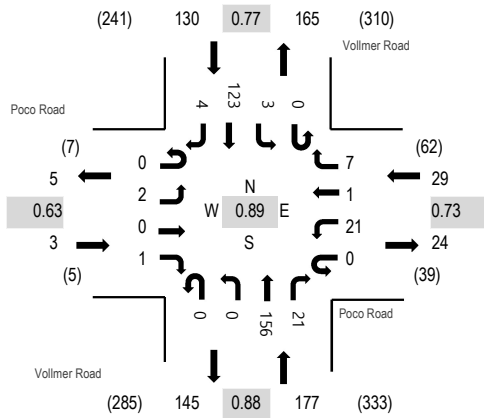
Location: 6 Vollmer Road & Poco Road PM

Date: Thursday, March 24, 2022

Peak Hour: 04:00 PM - 05:00 PM

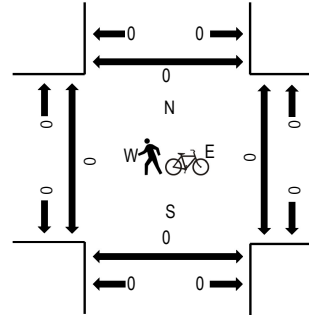
Peak 15-Minutes: 04:15 PM - 04:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	Poco Road Eastbound				Poco Road Westbound				Vollmer Road Northbound				Vollmer Road Southbound				Total	Rolling Hour	Pedestrian 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
4:00 PM	0	0	0	0	0	8	1	4	0	0	41	4	0	1	29	2	90	339	0	0	0	0
4:15 PM	0	1	0	0	0	4	0	2	0	0	40	6	0	1	39	2	95	325	0	0	0	0
4:30 PM	0	0	0	0	0	2	0	0	0	0	32	3	0	1	28	0	66	313	0	0	0	0
4:45 PM	0	1	0	1	0	7	0	1	0	0	43	8	0	0	27	0	88	321	0	0	0	0
5:00 PM	0	0	0	2	0	6	0	1	0	0	44	3	0	0	20	0	76	302	0	0	0	0
5:15 PM	0	0	0	0	0	12	0	0	0	0	37	4	0	0	29	1	83		0	0	0	0
5:30 PM	0	0	0	0	0	6	0	2	0	0	33	3	0	1	29	0	74		0	0	0	0
5:45 PM	0	0	0	0	0	5	0	1	0	1	27	4	0	0	31	0	69		0	0	0	0
Count Total	0	2	0	3	0	50	1	11	0	1	297	35	0	4	232	5	641		0	0	0	0
Peak Hour	0	2	0	1	0	21	1	7	0	0	156	21	0	3	123	4	339		0	0	0	0

APPENDIX B

Level of Service Definitions

The following information can be found in the Highway Capacity Manual, Transportation Research Board, 2016: Chapter 19 – Signalized Intersections and Chapter 20 – Two-Way Stop Controlled Intersections.

Automobile Level of Service (LOS) for Signalized Intersections

Levels of service are defined to represent reasonable ranges in control delay.

LOS A

Describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B

Describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOS C

Describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D

Describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E

Describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F

Describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Level of Service (LOS) for Unsignalized TWSC Intersections

Level of Service ($v/c \leq 1.0$)	Average Control Delay (s/veh)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

APPENDIX C

Capacity Worksheets

HCM 6th TWSC
1: Poco Road & Vollmer Road

Existing Traffic Volumes
AM Peak Hour

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	0	0	0	6	1	4	1	96	35	8	130	0
Future Vol, veh/h	0	0	0	6	1	4	1	96	35	8	130	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	7	1	4	1	104	38	9	141	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	287	303	141	284	284	123	141	0	0	142	0	0
Stage 1	159	159	-	125	125	-	-	-	-	-	-	-
Stage 2	128	144	-	159	159	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	665	610	907	668	625	928	1442	-	-	1441	-	-
Stage 1	843	766	-	879	792	-	-	-	-	-	-	-
Stage 2	876	778	-	843	766	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	657	605	907	664	620	928	1442	-	-	1441	-	-
Mov Cap-2 Maneuver	657	605	-	664	620	-	-	-	-	-	-	-
Stage 1	842	761	-	878	791	-	-	-	-	-	-	-
Stage 2	870	777	-	837	761	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		10		0.1		0.4	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1442	-	-	-	735	1441	-
HCM Lane V/C Ratio	0.001	-	-	-	0.016	0.006	-
HCM Control Delay (s)	7.5	0	-	0	10	7.5	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-

HCM 6th TWSC
2: Vollmer Road & Dines Boulevard

Existing Traffic Volumes
AM Peak Hour

Intersection						
Int Delay, s/veh	2.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑	↑		↑
Traffic Vol, veh/h	70	17	115	54	3	113
Future Vol, veh/h	70	17	115	54	3	113
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	-	-	380	-	-
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	76	18	125	59	3	123

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	254	125	0	0	184
Stage 1	125	-	-	-	-
Stage 2	129	-	-	-	-
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	735	926	-	-	1391
Stage 1	901	-	-	-	-
Stage 2	897	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	734	926	-	-	1391
Mov Cap-2 Maneuver	734	-	-	-	-
Stage 1	901	-	-	-	-
Stage 2	895	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	765	1391
HCM Lane V/C Ratio	-	-	0.124	0.002
HCM Control Delay (s)	-	-	10.4	7.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0

HCM 6th TWSC
1: Poco Road & Vollmer Road

Existing Traffic Volumes
PM Peak Hour

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	2	0	1	21	1	7	0	156	21	3	132	4
Future Vol, veh/h	2	0	1	21	1	7	0	156	21	3	132	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	1	23	1	8	0	170	23	3	143	4





Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	337	344	145	334	335	182	147	0	0	193	0	0
Stage 1	151	151	-	182	182	-	-	-	-	-	-	-
Stage 2	186	193	-	152	153	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	617	579	902	620	585	861	1435	-	-	1380	-	-
Stage 1	851	772	-	820	749	-	-	-	-	-	-	-
Stage 2	816	741	-	850	771	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	610	578	902	618	584	861	1435	-	-	1380	-	-
Mov Cap-2 Maneuver	610	578	-	618	584	-	-	-	-	-	-	-
Stage 1	851	770	-	820	749	-	-	-	-	-	-	-
Stage 2	808	741	-	847	769	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.3		10.7		0		0.2	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1435	-	-	684	662	1380	-
HCM Lane V/C Ratio	-	-	-	0.005	0.048	0.002	-
HCM Control Delay (s)	0	-	-	10.3	10.7	7.6	0
HCM Lane LOS	A	-	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

HCM 6th TWSC
2: Vollmer Road & Dines Boulevard

Existing Traffic Volumes
PM Peak Hour

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	10	167	75	13	141
Future Vol, veh/h	65	10	167	75	13	141
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	-	-	380	-	-
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	71	11	182	82	14	153
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	363	182	0	0	264	0
Stage 1	182	-	-	-	-	-
Stage 2	181	-	-	-	-	-
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	636	861	-	-	1300	-
Stage 1	849	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	628	861	-	-	1300	-
Mov Cap-2 Maneuver	628	-	-	-	-	-
Stage 1	849	-	-	-	-	-
Stage 2	840	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.3	0		0.7		
HCM LOS	B					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	652	1300	-
HCM Lane V/C Ratio		-	-	0.125	0.011	-
HCM Control Delay (s)		-	-	11.3	7.8	0
HCM Lane LOS		-	-	B	A	A
HCM 95th %tile Q(veh)		-	-	0.4	0	-

HCM 6th TWSC
1: Vollmer Road & Poco Road

Background Traffic Volumes
Year 2027 - AM Peak Hour

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	1	0	5	77	1	12	2	223	50	15	207	2
Future Vol, veh/h	1	0	5	77	1	12	2	223	50	15	207	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	5	84	1	13	2	242	54	16	225	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	538	558	226	534	532	269	227	0	0	296	0	0
Stage 1	258	258	-	273	273	-	-	-	-	-	-	-
Stage 2	280	300	-	261	259	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	454	438	813	457	453	770	1341	-	-	1265	-	-
Stage 1	747	694	-	733	684	-	-	-	-	-	-	-
Stage 2	727	666	-	744	694	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	440	431	813	448	446	770	1341	-	-	1265	-	-
Mov Cap-2 Maneuver	440	431	-	448	446	-	-	-	-	-	-	-
Stage 1	746	684	-	732	683	-	-	-	-	-	-	-
Stage 2	712	665	-	729	684	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.1		14.6		0.1		0.5	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1341	-	-	712	474	1265	-
HCM Lane V/C Ratio	0.002	-	-	0.009	0.206	0.013	-
HCM Control Delay (s)	7.7	0	-	10.1	14.6	7.9	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.8	0	-

HCM 6th TWSC

2: Vollmer Road & Dines Boulevard

Background Traffic Volumes
Year 2027 - AM Peak Hour

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑	↑	↑	↑↑
Traffic Vol, veh/h	131	24	262	75	5	358
Future Vol, veh/h	131	24	262	75	5	358
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	-	-	250	250	-
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	142	26	285	82	5	389
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	490	143	0	0	367	0
Stage 1	285	-	-	-	-	-
Stage 2	205	-	-	-	-	-
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	507	879	-	-	1188	-
Stage 1	738	-	-	-	-	-
Stage 2	809	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	505	879	-	-	1188	-
Mov Cap-2 Maneuver	505	-	-	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	806	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	14.6	0	0.1			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	541	1188	-	
HCM Lane V/C Ratio	-	-	0.311	0.005	-	
HCM Control Delay (s)	-	-	14.6	8	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	1.3	0	-	

HCM 6th TWSC

3: Sam Bass Drive & Vollmer Road

Background Traffic Volumes
Year 2027 - AM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	YY		↑↑	↑	↑	↑↑
Traffic Vol, veh/h	17	9	266	8	3	286
Future Vol, veh/h	17	9	266	8	3	286
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	-	-	150	200	-
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	18	10	289	9	3	311

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	451	145	0	0	298	0
Stage 1	289	-	-	-	-	-
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	537	876	-	-	1260	-
Stage 1	735	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	536	876	-	-	1260	-
Mov Cap-2 Maneuver	536	-	-	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	848	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	619	1260
HCM Lane V/C Ratio	-	-	0.046	0.003
HCM Control Delay (s)	-	-	11.1	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 6th TWSC

4: Vollmer Road & Briargate Parkway

Background Traffic Volumes
Year 2027 - AM Peak Hour

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰	↱	↕	↕	↰	↱
Traffic Vol, veh/h	63	6	275	11	3	300
Future Vol, veh/h	63	6	275	11	3	300
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	375	0	-	250	250	-
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	68	7	299	12	3	326
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	468	150	0	0	311	0
Stage 1	299	-	-	-	-	-
Stage 2	169	-	-	-	-	-
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	524	870	-	-	1246	-
Stage 1	726	-	-	-	-	-
Stage 2	843	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	523	870	-	-	1246	-
Mov Cap-2 Maneuver	523	-	-	-	-	-
Stage 1	726	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.6	0	0.1			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 523 870 1246	-	-		
HCM Lane V/C Ratio	-	- 0.131 0.007 0.003	-	-		
HCM Control Delay (s)	-	- 12.9 9.2 7.9	-	-		
HCM Lane LOS	-	- B A A	-	-		
HCM 95th %tile Q(veh)	-	- 0.4 0 0	-	-		

HCM 6th TWSC
1: Vollmer Road & Poco Road

Background Traffic Volumes
Year 2027 - PM Peak Hour

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	3	0	2	49	1	10	4	275	85	15	250	6
Future Vol, veh/h	3	0	2	49	1	10	4	275	85	15	250	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	2	53	1	11	4	299	92	16	272	7
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	667	707	276	662	664	345	279	0	0	391	0	0
Stage 1	308	308	-	353	353	-	-	-	-	-	-	-
Stage 2	359	399	-	309	311	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	372	360	763	375	381	698	1284	-	-	1168	-	-
Stage 1	702	660	-	664	631	-	-	-	-	-	-	-
Stage 2	659	602	-	701	658	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	360	353	763	368	373	698	1284	-	-	1168	-	-
Mov Cap-2 Maneuver	360	353	-	368	373	-	-	-	-	-	-	-
Stage 1	699	649	-	661	628	-	-	-	-	-	-	-
Stage 2	645	600	-	688	647	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	13		15.7			0.1			0.4			
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1284	-	-	456	400	1168	-	-				
HCM Lane V/C Ratio	0.003	-	-	0.012	0.163	0.014	-	-				
HCM Control Delay (s)	7.8	0	-	13	15.7	8.1	0	-				
HCM Lane LOS	A	A	-	B	C	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.6	0	-	-				

HCM 6th TWSC

2: Vollmer Road & Dines Boulevard

Background Traffic Volumes
Year 2027 - PM Peak Hour

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑	↑	↑	↑↑
Traffic Vol, veh/h	86	15	429	144	20	313
Future Vol, veh/h	86	15	429	144	20	313
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	-	-	250	250	-
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	93	16	466	157	22	340
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	680	233	0	0	623	0
Stage 1	466	-	-	-	-	-
Stage 2	214	-	-	-	-	-
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	385	769	-	-	954	-
Stage 1	598	-	-	-	-	-
Stage 2	801	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	376	769	-	-	954	-
Mov Cap-2 Maneuver	376	-	-	-	-	-
Stage 1	598	-	-	-	-	-
Stage 2	783	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	17.1	0	0.5			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	407	954	-	
HCM Lane V/C Ratio	-	-	0.27	0.023	-	
HCM Control Delay (s)	-	-	17.1	8.9	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	1.1	0.1	-	

HCM 6th TWSC
3: Sam Bass Drive & Vollmer Road







Background Traffic Volumes
Year 2027 - PM Peak Hour

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑	↑	↑	↑↑
Traffic Vol, veh/h	11	6	358	27	10	291
Future Vol, veh/h	11	6	358	27	10	291
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	-	-	150	200	-
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	12	7	389	29	11	316
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	569	195	0	0	418	0
Stage 1	389	-	-	-	-	-
Stage 2	180	-	-	-	-	-
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	452	814	-	-	1138	-
Stage 1	654	-	-	-	-	-
Stage 2	833	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	447	814	-	-	1138	-
Mov Cap-2 Maneuver	447	-	-	-	-	-
Stage 1	654	-	-	-	-	-
Stage 2	825	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	12	0		0.3		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	532	1138	-	
HCM Lane V/C Ratio	-	-	0.035	0.01	-	
HCM Control Delay (s)	-	-	12	8.2	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

HCM 6th TWSC

4: Vollmer Road & Briargate Parkway

Background Traffic Volumes
Year 2027 - PM Peak Hour

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	4	406	38	10	292
Future Vol, veh/h	41	4	406	38	10	292
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	375	0	-	250	250	-
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	45	4	441	41	11	317
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	622	221	0	0	482	0
Stage 1	441	-	-	-	-	-
Stage 2	181	-	-	-	-	-
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	419	783	-	-	1077	-
Stage 1	616	-	-	-	-	-
Stage 2	832	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	415	783	-	-	1077	-
Mov Cap-2 Maneuver	415	-	-	-	-	-
Stage 1	616	-	-	-	-	-
Stage 2	824	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	14.2	0	0.3			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1WBLn2	SBL	SBT		
Capacity (veh/h)	-	- 415 783	1077	-		
HCM Lane V/C Ratio	-	- 0.107 0.006	0.01	-		
HCM Control Delay (s)	-	- 14.7 9.6	8.4	-		
HCM Lane LOS	-	- B A	A	-		
HCM 95th %tile Q(veh)	-	- 0.4 0	0	-		

HCM 6th TWSC
1: Vollmer Road & Poco Road

Background Traffic Volumes
Year 2040 - AM Peak Hour

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	0	0	5	62	0	5	2	235	24	1	407	2
Future Vol, veh/h	0	0	5	62	0	5	2	235	24	1	407	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	67	0	5	2	255	26	1	442	2
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	720	730	443	720	718	268	444	0	0	281	0	0
Stage 1	445	445	-	272	272	-	-	-	-	-	-	-
Stage 2	275	285	-	448	446	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	343	349	615	343	355	771	1116	-	-	1282	-	-
Stage 1	592	575	-	734	685	-	-	-	-	-	-	-
Stage 2	731	676	-	590	574	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	340	348	615	339	354	771	1116	-	-	1282	-	-
Mov Cap-2 Maneuver	340	348	-	339	354	-	-	-	-	-	-	-
Stage 1	591	574	-	733	684	-	-	-	-	-	-	-
Stage 2	724	675	-	584	573	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	10.9		17.8			0.1			0			
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1116	-	-	615	354	1282	-	-				
HCM Lane V/C Ratio	0.002	-	-	0.009	0.206	0.001	-	-				
HCM Control Delay (s)	8.2	0	-	10.9	17.8	7.8	0	-				
HCM Lane LOS	A	A	-	B	C	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.8	0	-	-				

HCM 6th TWSC

2: Vollmer Road & Dines Boulevard

Background Traffic Volumes
Year 2040 - AM Peak Hour

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘↘		↑↑	↗	↘	↑↑
Traffic Vol, veh/h	29	13	350	12	4	748
Future Vol, veh/h	29	13	350	12	4	748
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	-	-	250	250	-
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	32	14	380	13	4	813
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	795	190	0	0	393	0
Stage 1	380	-	-	-	-	-
Stage 2	415	-	-	-	-	-
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	325	820	-	-	1162	-
Stage 1	661	-	-	-	-	-
Stage 2	635	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	324	820	-	-	1162	-
Mov Cap-2 Maneuver	324	-	-	-	-	-
Stage 1	661	-	-	-	-	-
Stage 2	633	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	15.2	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-	399	1162	-	
HCM Lane V/C Ratio	-	-	0.114	0.004	-	
HCM Control Delay (s)	-	-	15.2	8.1	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	0.4	0	-	

HCM 6th TWSC

3: Sam Bass Drive & Vollmer Road

Background Traffic Volumes
Year 2040 - AM Peak Hour

























Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	YY		↑↑	↑	↑	↑↑
Traffic Vol, veh/h	62	3	258	14	1	473
Future Vol, veh/h	62	3	258	14	1	473
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	-	-	150	200	-
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	67	3	280	15	1	514
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	539	140	0	0	295	0
Stage 1	280	-	-	-	-	-
Stage 2	259	-	-	-	-	-
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	473	882	-	-	1263	-
Stage 1	742	-	-	-	-	-
Stage 2	761	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	473	882	-	-	1263	-
Mov Cap-2 Maneuver	473	-	-	-	-	-
Stage 1	742	-	-	-	-	-
Stage 2	760	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	13.7	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	483	1263	-	
HCM Lane V/C Ratio	-	-	0.146	0.001	-	
HCM Control Delay (s)	-	-	13.7	7.9	-	
HCM Lane LOS	-	-	B	A	-	
HCM 95th %tile Q(veh)	-	-	0.5	0	-	

Timings

4: Vollmer Road & Briargate Parkway

Background Traffic Volumes

Year 2040 - AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	835	58	373	1488	69	89	146	128	81	321	133
Future Volume (vph)	69	835	58	373	1488	69	89	146	128	81	321	133
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.095			0.950			0.384			0.651		
Satd. Flow (perm)	177	3539	1583	3433	3539	1583	715	3539	1583	1213	3539	1583
Satd. Flow (RTOR)			155			109			155			155
Lane Group Flow (vph)	75	908	63	405	1617	75	97	159	139	88	349	145
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	10.0	53.0	53.0	22.0	65.0	65.0	15.0	30.0	30.0	15.0	30.0	30.0
Total Split (%)	8.3%	44.2%	44.2%	18.3%	54.2%	54.2%	12.5%	25.0%	25.0%	12.5%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	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 Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	45.8	40.4	40.4	16.4	55.0	55.0	23.4	16.5	16.5	23.2	16.4	16.4
Actuated g/C Ratio	0.46	0.40	0.40	0.16	0.55	0.55	0.23	0.17	0.17	0.23	0.16	0.16
v/c Ratio	0.45	0.63	0.09	0.72	0.83	0.08	0.37	0.27	0.36	0.27	0.60	0.37
Control Delay	21.6	26.6	0.2	51.2	25.8	1.3	33.9	41.5	7.9	31.8	46.2	8.8
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	21.6	26.6	0.2	51.2	25.8	1.3	33.9	41.5	7.9	31.8	46.2	8.8
LOS	C	C	A	D	C	A	C	D	A	C	D	A
Approach Delay		24.7			29.8			27.8			34.7	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	19	255	0	144	491	0	53	53	0	48	125	0
Queue Length 95th (ft)	46	349	0	#225	668	11	95	86	43	89	175	49
Internal Link Dist (ft)		3244			884			915			1327	
Turn Bay Length (ft)	375		250	375		250	250		250	250		250
Base Capacity (vph)	166	1825	891	626	2250	1046	283	950	538	347	950	538
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	0.45	0.50	0.07	0.65	0.72	0.07	0.34	0.17	0.26	0.25	0.37	0.27

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 99.9

Natural Cycle: 75

Control Type: Actuated-Uncoordinated









Maximum v/c Ratio: 0.83

Timings 4: Vollmer Road & Briargate Parkway

Background Traffic Volumes
Year 2040 - AM Peak Hour

Intersection Signal Delay: 29.0 Intersection LOS: C
Intersection Capacity Utilization 75.8% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Vollmer Road & Briargate Parkway

 Ø1 22 s		 Ø2 53 s		 Ø3 15 s		 Ø4 30 s	
 Ø5 10 s		 Ø6 65 s		 Ø7 15 s		 Ø8 30 s	

HCM 6th TWSC
1: Vollmer Road & Poco Road

Background Traffic Volumes
Year 2040 - PM Peak Hour

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	0	0	2	42	0	3	4	575	83	6	355	2
Future Vol, veh/h	0	0	2	42	0	3	4	575	83	6	355	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	46	0	3	4	625	90	7	386	2
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1081	1124	387	1080	1080	670	388	0	0	715	0	0
Stage 1	401	401	-	678	678	-	-	-	-	-	-	-
Stage 2	680	723	-	402	402	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	195	205	661	196	218	457	1170	-	-	885	-	-
Stage 1	626	601	-	442	452	-	-	-	-	-	-	-
Stage 2	441	431	-	625	600	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	191	202	661	193	215	457	1170	-	-	885	-	-
Mov Cap-2 Maneuver	191	202	-	193	215	-	-	-	-	-	-	-
Stage 1	622	595	-	439	449	-	-	-	-	-	-	-
Stage 2	435	428	-	617	594	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.5		28.6		0		0.2					
HCM LOS	B		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1170	-	-	661	201	885	-	-				
HCM Lane V/C Ratio	0.004	-	-	0.003	0.243	0.007	-	-				
HCM Control Delay (s)	8.1	0	-	10.5	28.6	9.1	0	-				
HCM Lane LOS	A	A	-	B	D	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.9	0	-	-				

HCM 6th TWSC

2: Vollmer Road & Dines Boulevard

Background Traffic Volumes
Year 2040 - PM Peak Hour

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘↘		↑↑	↗	↘	↑↑
Traffic Vol, veh/h	20	9	1024	42	13	661
Future Vol, veh/h	20	9	1024	42	13	661
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	-	-	250	250	-
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	10	1113	46	14	718
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1500	557	0	0	1159	0
Stage 1	1113	-	-	-	-	-
Stage 2	387	-	-	-	-	-
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	113	474	-	-	599	-
Stage 1	276	-	-	-	-	-
Stage 2	656	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	110	474	-	-	599	-
Mov Cap-2 Maneuver	110	-	-	-	-	-
Stage 1	276	-	-	-	-	-
Stage 2	641	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	36.9	0		0.2		
HCM LOS	E					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	144	599	-
HCM Lane V/C Ratio		-	-	0.219	0.024	-
HCM Control Delay (s)		-	-	36.9	11.2	-
HCM Lane LOS		-	-	E	B	-
HCM 95th %tile Q(veh)		-	-	0.8	0.1	-

HCM 6th TWSC
3: Sam Bass Drive & Vollmer Road

Background Traffic Volumes
Year 2040 - PM Peak Hour

























Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	YY		↑↑	↑	↑	↑↑
Traffic Vol, veh/h	38	2	660	58	5	394
Future Vol, veh/h	38	2	660	58	5	394
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	-	-	150	200	-
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	41	2	717	63	5	428
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	941	359	0	0	780	0
Stage 1	717	-	-	-	-	-
Stage 2	224	-	-	-	-	-
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	262	638	-	-	833	-
Stage 1	445	-	-	-	-	-
Stage 2	792	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	260	638	-	-	833	-
Mov Cap-2 Maneuver	260	-	-	-	-	-
Stage 1	445	-	-	-	-	-
Stage 2	787	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	21	0	0.1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	268	833	-	
HCM Lane V/C Ratio	-	-	0.162	0.007	-	
HCM Control Delay (s)	-	-	21	9.3	-	
HCM Lane LOS	-	-	C	A	-	
HCM 95th %tile Q(veh)	-	-	0.6	0	-	

Timings

4: Vollmer Road & Briargate Parkway

Background Traffic Volumes

Year 2040 - PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	1447	105	346	1216	82	206	459	368	94	223	115
Future Volume (vph)	230	1447	105	346	1216	82	206	459	368	94	223	115
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.088			0.950			0.377			0.324		
Satd. Flow (perm)	164	3539	1583	3433	3539	1583	702	3539	1583	604	3539	1583
Satd. Flow (RTOR)			200			155			400			200
Lane Group Flow (vph)	250	1573	114	376	1322	89	224	499	400	102	242	125
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	20.0	44.0	44.0	35.0	59.0	59.0	20.0	28.0	28.0	13.0	21.0	21.0
Total Split (%)	16.7%	36.7%	36.7%	29.2%	49.2%	49.2%	16.7%	23.3%	23.3%	10.8%	17.5%	17.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	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 Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	59.9	45.8	45.8	17.7	49.3	49.3	33.2	20.8	20.8	22.5	14.7	14.7
Actuated g/C Ratio	0.53	0.41	0.41	0.16	0.44	0.44	0.30	0.19	0.19	0.20	0.13	0.13
v/c Ratio	0.86	1.09	0.15	0.70	0.85	0.11	0.66	0.76	0.65	0.51	0.52	0.33
Control Delay	57.5	85.1	0.4	52.5	34.9	0.3	43.0	52.5	9.5	41.0	51.1	2.6
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	57.5	85.1	0.4	52.5	34.9	0.3	43.0	52.5	9.5	41.0	51.1	2.6
LOS	E	F	A	D	C	A	D	D	A	D	D	A
Approach Delay		76.6			36.9			35.3			36.0	
Approach LOS		E			D			D			D	
Queue Length 50th (ft)	133	~702	0	143	462	0	138	191	0	58	92	0
Queue Length 95th (ft)	#290	#899	0	188	561	1	214	255	90	105	136	2
Internal Link Dist (ft)		3244			884			915			1327	
Turn Bay Length (ft)	375		250	375		250	250		250	250		250
Base Capacity (vph)	305	1443	763	927	1720	849	354	733	645	206	509	399
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	0.82	1.09	0.15	0.41	0.77	0.10	0.63	0.68	0.62	0.50	0.48	0.31

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 112.2

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.09

Timings 4: Vollmer Road & Briargate Parkway

Background Traffic Volumes
Year 2040 - PM Peak Hour

Intersection Signal Delay: 50.9

Intersection LOS: D

Intersection Capacity Utilization 84.4%

ICU Level of Service E

Analysis Period (min) 15









~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Vollmer Road & Briargate Parkway

 Ø1 35 s		 Ø2 44 s		 Ø3 20 s		 Ø4 21 s	
 Ø5 20 s		 Ø6 59 s		 Ø7 13 s		 Ø8 28 s	

HCM 6th TWSC
1: Vollmer Road & Poco Road

Total Traffic Volumes
Year 2027 - AM Peak Hour

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	1	0	5	77	1	12	2	248	50	15	216	2
Future Vol, veh/h	1	0	5	77	1	12	2	248	50	15	216	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	5	84	1	13	2	270	54	16	235	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	576	596	236	572	570	297	237	0	0	324	0	0
Stage 1	268	268	-	301	301	-	-	-	-	-	-	-
Stage 2	308	328	-	271	269	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	428	417	803	431	431	742	1330	-	-	1236	-	-
Stage 1	738	687	-	708	665	-	-	-	-	-	-	-
Stage 2	702	647	-	735	687	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	414	410	803	422	424	742	1330	-	-	1236	-	-
Mov Cap-2 Maneuver	414	410	-	422	424	-	-	-	-	-	-	-
Stage 1	737	677	-	707	664	-	-	-	-	-	-	-
Stage 2	687	646	-	719	677	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.2		15.3		0.1		0.5	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1330	-	-	694	448	1236	-
HCM Lane V/C Ratio	0.002	-	-	0.009	0.218	0.013	-
HCM Control Delay (s)	7.7	0	-	10.2	15.3	8	0
HCM Lane LOS	A	A	-	B	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.8	0	-







HCM 6th TWSC
2: Vollmer Road & Dines Boulevard

Total Traffic Volumes
Year 2027 - AM Peak Hour

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘↘		↑↑	↗	↘	↑↑
Traffic Vol, veh/h	131	24	315	75	5	498
Future Vol, veh/h	131	24	315	75	5	498
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	-	-	250	250	-
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	142	26	342	82	5	541
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	623	171	0	0	424	0
Stage 1	342	-	-	-	-	-
Stage 2	281	-	-	-	-	-
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	418	843	-	-	1132	-
Stage 1	691	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	416	843	-	-	1132	-
Mov Cap-2 Maneuver	416	-	-	-	-	-
Stage 1	691	-	-	-	-	-
Stage 2	738	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	17.7	0		0.1		
HCM LOS	C					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	451	1132	-
HCM Lane V/C Ratio		-	-	0.374	0.005	-
HCM Control Delay (s)		-	-	17.7	8.2	-
HCM Lane LOS		-	-	C	A	-
HCM 95th %tile Q(veh)		-	-	1.7	0	-

HCM 6th TWSC
3: Sam Bass Drive & Vollmer Road

Total Traffic Volumes
Year 2027 - AM Peak Hour

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	0	0	17	0	9	0	266	8	3	286	9
Future Vol, veh/h	25	0	0	17	0	9	0	266	8	3	286	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	150	200	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	0	0	18	0	10	0	289	9	3	311	10
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	462	615	156	451	616	145	321	0	0	298	0	0
Stage 1	317	317	-	289	289	-	-	-	-	-	-	-
Stage 2	145	298	-	162	327	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	483	405	862	492	404	876	1236	-	-	1260	-	-
Stage 1	669	653	-	694	672	-	-	-	-	-	-	-
Stage 2	843	666	-	824	646	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	477	404	862	491	403	876	1236	-	-	1260	-	-
Mov Cap-2 Maneuver	477	404	-	491	403	-	-	-	-	-	-	-
Stage 1	669	652	-	694	672	-	-	-	-	-	-	-
Stage 2	834	666	-	822	645	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	13		11.5			0			0.1			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1236	-	-	477	579	1260	-	-				
HCM Lane V/C Ratio	-	-	-	0.057	0.049	0.003	-	-				
HCM Control Delay (s)	0	-	-	13	11.5	7.9	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-				






HCM 6th TWSC
4: Vollmer Road & Briargate Parkway

Total Traffic Volumes
Year 2027 - AM Peak Hour

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑↑	↱	↰	↑↑	↱
Traffic Vol, veh/h	0	0	140	63	0	6	53	275	11	3	300	0
Future Vol, veh/h	0	0	140	63	0	6	53	275	11	3	300	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	250	375	-	250	250	-	250	250	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	152	68	0	7	58	299	12	3	326	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	598	759	163	584	747	150	326	0	0	311	0	0
Stage 1	332	332	-	415	415	-	-	-	-	-	-	-
Stage 2	266	427	-	169	332	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	386	334	853	395	340	870	1230	-	-	1246	-	-
Stage 1	655	643	-	585	591	-	-	-	-	-	-	-
Stage 2	716	584	-	816	643	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	369	318	853	312	323	870	1230	-	-	1246	-	-
Mov Cap-2 Maneuver	369	318	-	312	323	-	-	-	-	-	-	-
Stage 1	624	642	-	558	563	-	-	-	-	-	-	-
Stage 2	677	557	-	669	642	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.1		18.9		1.3		0.1					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1230	-	-	-	-	853	312	-	870	1246	-	-
HCM Lane V/C Ratio	0.047	-	-	-	-	0.178	0.219	-	0.007	0.003	-	-
HCM Control Delay (s)	8.1	-	-	0	0	10.1	19.8	0	9.2	7.9	-	-
HCM Lane LOS	A	-	-	A	A	B	C	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	-	0.6	0.8	-	0	0	-	-

HCM 6th TWSC
5: Briargate Parkway & Street A

Total Traffic Volumes
Year 2027 - AM Peak Hour

Intersection						
Int Delay, s/veh	6.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	53	140	0
Future Vol, veh/h	0	0	0	53	140	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	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	0	0	0	58	152	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	58	0	-	0	29	29
Stage 1	-	-	-	-	29	-
Stage 2	-	-	-	-	0	-
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	1546	-	-	-	986	1046
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1546	-	-	-	986	1046
Mov Cap-2 Maneuver	-	-	-	-	986	-
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9.3		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1546	-	-	-	986	-
HCM Lane V/C Ratio	-	-	-	-	0.154	-
HCM Control Delay (s)	0	-	-	-	9.3	0
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.5	-

HCM 6th TWSC
1: Vollmer Road & Poco Road

Total Traffic Volumes
Year 2027 - PM Peak Hour

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	3	0	2	49	1	10	4	292	85	15	277	6
Future Vol, veh/h	3	0	2	49	1	10	4	292	85	15	277	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	2	53	1	11	4	317	92	16	301	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	714	754	305	709	711	363	308	0	0	409	0	0
Stage 1	337	337	-	371	371	-	-	-	-	-	-	-
Stage 2	377	417	-	338	340	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	346	338	735	349	358	682	1253	-	-	1150	-	-
Stage 1	677	641	-	649	620	-	-	-	-	-	-	-
Stage 2	644	591	-	676	639	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	334	331	735	342	350	682	1253	-	-	1150	-	-
Mov Cap-2 Maneuver	334	331	-	342	350	-	-	-	-	-	-	-
Stage 1	674	630	-	646	618	-	-	-	-	-	-	-
Stage 2	630	589	-	663	628	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.5		16.7		0.1		0.4	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1253	-	-	427 373	1150	-	-
HCM Lane V/C Ratio	0.003	-	-	0.013 0.175	0.014	-	-
HCM Control Delay (s)	7.9	0	-	13.5 16.7	8.2	0	-
HCM Lane LOS	A	A	-	B C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0 0.6	0	-	-

HCM 6th TWSC

2: Vollmer Road & Dines Boulevard

Total Traffic Volumes
Year 2027 - PM Peak Hour

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑	↑	↑	↑↑
Traffic Vol, veh/h	86	15	585	144	20	410
Future Vol, veh/h	86	15	585	144	20	410
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	-	-	250	250	-
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	93	16	636	157	22	446







Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	903	318	0	0	793
Stage 1	636	-	-	-	-
Stage 2	267	-	-	-	-
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	277	678	-	-	824
Stage 1	489	-	-	-	-
Stage 2	754	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	270	678	-	-	824
Mov Cap-2 Maneuver	270	-	-	-	-
Stage 1	489	-	-	-	-
Stage 2	734	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.2	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	296	824
HCM Lane V/C Ratio	-	-	0.371	0.026
HCM Control Delay (s)	-	-	24.2	9.5
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	1.7	0.1













HCM 6th TWSC
3: Sam Bass Drive & Vollmer Road

Total Traffic Volumes
Year 2027 - PM Peak Hour

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	0	0	11	0	6	0	358	27	10	291	27
Future Vol, veh/h	17	0	0	11	0	6	0	358	27	10	291	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	150	200	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	0	0	12	0	7	0	389	29	11	316	29
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	533	756	158	569	756	195	345	0	0	418	0	0
Stage 1	338	338	-	389	389	-	-	-	-	-	-	-
Stage 2	195	418	-	180	367	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	430	336	859	405	336	814	1211	-	-	1138	-	-
Stage 1	650	639	-	606	607	-	-	-	-	-	-	-
Stage 2	788	589	-	804	621	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	424	333	859	402	333	814	1211	-	-	1138	-	-
Mov Cap-2 Maneuver	424	333	-	402	333	-	-	-	-	-	-	-
Stage 1	650	633	-	606	607	-	-	-	-	-	-	-
Stage 2	782	589	-	796	615	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	13.9		12.7			0			0.2			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1211	-	-	424	489	1138	-	-				
HCM Lane V/C Ratio	-	-	-	0.044	0.038	0.01	-	-				
HCM Control Delay (s)	0	-	-	13.9	12.7	8.2	-	-				
HCM Lane LOS	A	-	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-				

HCM 6th TWSC
4: Vollmer Road & Briargate Parkway

Total Traffic Volumes
Year 2027 - PM Peak Hour

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	97	41	0	4	156	406	38	10	292	0
Future Vol, veh/h	0	0	97	41	0	4	156	406	38	10	292	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	250	375	-	250	250	-	250	250	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	105	45	0	4	170	441	41	11	317	0






Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	900	1161	159	962	1120	221	317	0	0	482	0	0
Stage 1	339	339	-	781	781	-	-	-	-	-	-	-
Stage 2	561	822	-	181	339	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	233	194	858	210	205	783	1240	-	-	1077	-	-
Stage 1	649	638	-	354	403	-	-	-	-	-	-	-
Stage 2	480	386	-	803	638	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	206	166	858	164	175	783	1240	-	-	1077	-	-
Mov Cap-2 Maneuver	206	166	-	164	175	-	-	-	-	-	-	-
Stage 1	560	632	-	306	348	-	-	-	-	-	-	-
Stage 2	412	333	-	697	632	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.8		32.7		2.2		0.3	
HCM LOS	A		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1240	-	-	-	-	858	164	-	783	1077	-	-
HCM Lane V/C Ratio	0.137	-	-	-	-	0.123	0.272	-	0.006	0.01	-	-
HCM Control Delay (s)	8.4	-	-	0	0	9.8	34.9	0	9.6	8.4	-	-
HCM Lane LOS	A	-	-	A	A	A	D	A	A	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	-	-	0.4	1	-	0	0	-	-

HCM 6th TWSC
5: Briargate Parkway & Street A

Total Traffic Volumes
Year 2027 - PM Peak Hour

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	156	97	0
Future Vol, veh/h	0	0	0	156	97	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	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	0	0	0	170	105	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	170	0	-	0	85	85
Stage 1	-	-	-	-	85	-
Stage 2	-	-	-	-	0	-
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	1407	-	-	-	916	974
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1407	-	-	-	916	974
Mov Cap-2 Maneuver	-	-	-	-	916	-
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9.4		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1407	-	-	-	916	-
HCM Lane V/C Ratio	-	-	-	-	0.115	-
HCM Control Delay (s)	0	-	-	-	9.4	0
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.4	-

HCM 6th TWSC
1: Vollmer Road & Poco Road

Total Traffic Volumes
Year 2040 - AM Peak Hour

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	0	0	5	70	0	5	2	250	39	1	415	2
Future Vol, veh/h	0	0	5	70	0	5	2	250	39	1	415	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	76	0	5	2	272	42	1	451	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	754	772	452	754	752	293	453	0	0	314	0	0
Stage 1	454	454	-	297	297	-	-	-	-	-	-	-
Stage 2	300	318	-	457	455	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	326	330	608	326	339	746	1108	-	-	1246	-	-
Stage 1	586	569	-	712	668	-	-	-	-	-	-	-
Stage 2	709	654	-	583	569	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	323	329	608	322	338	746	1108	-	-	1246	-	-
Mov Cap-2 Maneuver	323	329	-	322	338	-	-	-	-	-	-	-
Stage 1	585	568	-	711	667	-	-	-	-	-	-	-
Stage 2	702	653	-	577	568	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11	19.2	0.1	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1108	-	-	608	335	1246	-
HCM Lane V/C Ratio	0.002	-	-	0.009	0.243	0.001	-
HCM Control Delay (s)	8.3	0	-	11	19.2	7.9	0
HCM Lane LOS	A	A	-	B	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.9	0	-







HCM 6th TWSC
2: Vollmer Road & Dines Boulevard

Total Traffic Volumes
Year 2040 - AM Peak Hour

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↙		↗↗	↙	↗↗	↙
Traffic Vol, veh/h	0	0	46	29	0	13	20	410	12	4	861	0
Future Vol, veh/h	0	0	46	29	0	13	20	410	12	4	861	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	250	250	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	50	32	0	14	22	446	13	4	936	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1211	1447	468	966	1434	223	936	0	0	459	0	0
Stage 1	944	944	-	490	490	-	-	-	-	-	-	-
Stage 2	267	503	-	476	944	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	138	130	542	209	133	780	727	-	-	1098	-	-
Stage 1	282	339	-	529	547	-	-	-	-	-	-	-
Stage 2	715	540	-	539	339	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	132	126	542	185	128	780	727	-	-	1098	-	-
Mov Cap-2 Maneuver	132	126	-	185	128	-	-	-	-	-	-	-
Stage 1	274	338	-	513	531	-	-	-	-	-	-	-
Stage 2	681	524	-	487	338	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.3		23.3		0.5		0					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	727	-	-	542	242	1098	-	-				
HCM Lane V/C Ratio	0.03	-	-	0.092	0.189	0.004	-	-				
HCM Control Delay (s)	10.1	-	-	12.3	23.3	8.3	-	-				
HCM Lane LOS	B	-	-	B	C	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.7	0	-	-				

HCM 6th TWSC
3: Sam Bass Drive & Vollmer Road

























Total Traffic Volumes
Year 2040 - AM Peak Hour

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	0	2	62	0	3	4	258	14	1	473	16
Future Vol, veh/h	30	0	2	62	0	3	4	258	14	1	473	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	150	200	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	0	2	67	0	3	4	280	15	1	514	17
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	664	819	257	547	821	140	531	0	0	295	0	0
Stage 1	516	516	-	288	288	-	-	-	-	-	-	-
Stage 2	148	303	-	259	533	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	346	309	742	420	308	882	1033	-	-	1263	-	-
Stage 1	510	533	-	695	672	-	-	-	-	-	-	-
Stage 2	840	662	-	723	523	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	344	307	742	417	306	882	1033	-	-	1263	-	-
Mov Cap-2 Maneuver	344	307	-	417	306	-	-	-	-	-	-	-
Stage 1	508	532	-	692	669	-	-	-	-	-	-	-
Stage 2	834	659	-	720	522	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	16.2		15.1		0.1		0					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1033	-	-	356	427	1263	-	-				
HCM Lane V/C Ratio	0.004	-	-	0.098	0.165	0.001	-	-				
HCM Control Delay (s)	8.5	-	-	16.2	15.1	7.9	-	-				
HCM Lane LOS	A	-	-	C	C	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0.6	0	-	-				

Timings

4: Vollmer Road & Briargate Parkway

Total Traffic Volumes
Year 2040 - AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	865	171	373	1504	69	149	146	128	81	321	133
Future Volume (vph)	69	865	171	373	1504	69	149	146	128	81	321	133
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.090			0.950			0.270			0.651		
Satd. Flow (perm)	168	3539	1583	3433	3539	1583	503	3539	1583	1213	3539	1583
Satd. Flow (RTOR)			186			109			155			155
Lane Group Flow (vph)	75	940	186	405	1635	75	162	159	139	88	349	145
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	10.0	57.0	57.0	26.0	73.0	73.0	16.0	26.0	26.0	11.0	21.0	21.0
Total Split (%)	8.3%	47.5%	47.5%	21.7%	60.8%	60.8%	13.3%	21.7%	21.7%	9.2%	17.5%	17.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	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 Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	48.3	43.1	43.1	17.4	58.3	58.3	30.2	22.0	22.0	20.8	14.5	14.5
Actuated g/C Ratio	0.45	0.41	0.41	0.16	0.55	0.55	0.28	0.21	0.21	0.20	0.14	0.14
v/c Ratio	0.49	0.66	0.25	0.72	0.84	0.08	0.61	0.22	0.31	0.33	0.72	0.41
Control Delay	24.9	27.9	3.9	51.9	25.5	1.0	44.1	40.9	7.2	37.8	55.7	10.3
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	24.9	27.9	3.9	51.9	25.5	1.0	44.1	40.9	7.2	37.8	55.7	10.3
LOS	C	C	A	D	C	A	D	D	A	D	E	B
Approach Delay		24.0			29.7			31.8			41.7	
Approach LOS		C			C			C			D	
Queue Length 50th (ft)	20	279	0	148	511	0	96	53	0	50	132	0
Queue Length 95th (ft)	46	358	42	207	615	9	165	90	45	97	191	52
Internal Link Dist (ft)		672			884			915			1327	
Turn Bay Length (ft)	375		250	375		250	500		250	250		250
Base Capacity (vph)	154	1800	896	705	2354	1089	279	746	455	269	553	378
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	0.49	0.52	0.21	0.57	0.69	0.07	0.58	0.21	0.31	0.33	0.63	0.38

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 106.3

Natural Cycle: 75

Control Type: Actuated-Uncoordinated









Maximum v/c Ratio: 0.84

Timings 4: Vollmer Road & Briargate Parkway

Total Traffic Volumes
Year 2040 - AM Peak Hour

Intersection Signal Delay: 29.9 Intersection LOS: C
Intersection Capacity Utilization 79.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 4: Vollmer Road & Briargate Parkway

 Ø1		 Ø2		 Ø3		 Ø4	
26 s		57 s		16 s		21 s	
 Ø5	 Ø6			 Ø7	 Ø8		
10 s	73 s			11 s	26 s		

HCM 6th TWSC
5: Briargate Parkway & Street A

Total Traffic Volumes
Year 2040 - AM Peak Hour

Intersection												
Int Delay, s/veh	256.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↑	↱	↰	↑		↰	↑	
Traffic Vol, veh/h	35	962	12	8	1710	68	23	2	15	124	8	64
Future Vol, veh/h	35	962	12	8	1710	68	23	2	15	124	8	64
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	150	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	1046	13	9	1859	74	25	2	16	135	9	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1933	0	0	1059	0	0	2074	3073	523	2477	3012	930
Stage 1	-	-	-	-	-	-	1122	1122	-	1877	1877	-
Stage 2	-	-	-	-	-	-	952	1951	-	600	1135	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	301	-	-	653	-	-	31	12	499	~ 15	13	269
Stage 1	-	-	-	-	-	-	219	279	-	~ 74	119	-
Stage 2	-	-	-	-	-	-	279	109	-	455	275	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	301	-	-	653	-	-	~ 7	10	499	~ 11	11	269
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 7	10	-	~ 11	11	-
Stage 1	-	-	-	-	-	-	191	244	-	~ 65	117	-
Stage 2	-	-	-	-	-	-	189	107	-	381	240	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	\$ 1280.3	\$ 3703.7
HCM LOS			F	F























Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	7	74	301	-	-	653	-	-	11	75
HCM Lane V/C Ratio	3.571	0.25	0.126	-	-	0.013	-	-	12.253	1.043
HCM Control Delay (s)	\$ 2175.5	69.1	18.7	-	-	10.6	-	-	\$ 5730.4	213.2
HCM Lane LOS	F	F	C	-	-	B	-	-	F	F
HCM 95th %tile Q(veh)	4.4	0.9	0.4	-	-	0	-	-	18.2	5.6

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

Timings

5: Briargate Parkway & Street A

Total Traffic Volumes
Year 2040 - AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	962	12	8	1710	68	23	2	15	124	8	64
Future Volume (vph)	35	962	12	8	1710	68	23	2	15	124	8	64
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1615	0	1770	1615	0
Flt Permitted	0.046			0.950			0.706			0.584		
Satd. Flow (perm)	86	3539	1583	1770	3539	1583	1315	1615	0	1088	1615	0
Satd. Flow (RTOR)			94			94		16			70	
Lane Group Flow (vph)	38	1046	13	9	1859	74	25	18	0	135	79	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8			4		
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0		10.0	23.0	
Total Split (s)	10.0	92.0	92.0	10.0	92.0	92.0	10.0	23.0		15.0	28.0	
Total Split (%)	7.1%	65.7%	65.7%	7.1%	65.7%	65.7%	7.1%	16.4%		10.7%	20.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Act Effct Green (s)	92.0	87.0	87.0	5.0	87.0	87.0	23.0	18.0		33.0	23.0	
Actuated g/C Ratio	0.66	0.62	0.62	0.04	0.62	0.62	0.16	0.13		0.24	0.16	
v/c Ratio	0.33	0.48	0.01	0.14	0.85	0.07	0.11	0.08		0.44	0.24	
Control Delay	14.7	15.1	0.0	70.5	25.9	1.2	43.2	25.0		49.6	15.8	
Queue Delay	0.0	0.0	0.0	0.0	17.4	0.0	0.0	0.0		0.0	0.0	
Total Delay	14.7	15.1	0.0	70.5	43.3	1.2	43.2	25.0		49.6	15.8	
LOS	B	B	A	E	D	A	D	C		D	B	
Approach Delay		14.9			41.8			35.6			37.1	
Approach LOS		B			D			D			D	
Queue Length 50th (ft)	10	255	0	8	673	0	18	2		103	7	
Queue Length 95th (ft)	22	305	0	28	787	12	44	26		166	55	
Internal Link Dist (ft)		245			672			293			275	
Turn Bay Length (ft)	150		150	150		150	150			150		
Base Capacity (vph)	116	2199	1019	63	2199	1019	232	221		305	323	
Starvation Cap Reductn	0	0	0	0	386	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.33	0.48	0.01	0.14	1.03	0.07	0.11	0.08		0.44	0.24	

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 32.5

Intersection LOS: C

Intersection Capacity Utilization 69.1%









ICU Level of Service C

Analysis Period (min) 15

Timings
 5: Briargate Parkway & Street A

Total Traffic Volumes
 Year 2040 - AM Peak Hour

Splits and Phases: 5: Briargate Parkway & Street A

 Ø1		 Ø2 (R)		 Ø3		 Ø4	
10 s		92 s		10 s		28 s	
 Ø5		 Ø6 (R)		 Ø7		 Ø8	
10 s		92 s		15 s		23 s	

HCM 6th TWSC
1: Vollmer Road & Poco Road

Total Traffic Volumes
Year 2040 - PM Peak Hour

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	0	0	2	63	0	3	4	591	99	6	375	2
Future Vol, veh/h	0	0	2	63	0	3	4	591	99	6	375	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	68	0	3	4	642	108	7	408	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1129	1181	409	1128	1128	696	410	0	0	750	0	0
Stage 1	423	423	-	704	704	-	-	-	-	-	-	-
Stage 2	706	758	-	424	424	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	181	190	642	181	204	442	1149	-	-	859	-	-
Stage 1	609	588	-	428	440	-	-	-	-	-	-	-
Stage 2	427	415	-	608	587	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	177	187	642	178	201	442	1149	-	-	859	-	-
Mov Cap-2 Maneuver	177	187	-	178	201	-	-	-	-	-	-	-
Stage 1	605	582	-	425	437	-	-	-	-	-	-	-
Stage 2	421	413	-	599	581	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.6		36.8		0		0.1	
HCM LOS	B		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1149	-	-	642	183	859	-
HCM Lane V/C Ratio	0.004	-	-	0.003	0.392	0.008	-
HCM Control Delay (s)	8.1	0	-	10.6	36.8	9.2	0
HCM Lane LOS	A	A	-	B	E	A	A
HCM 95th %tile Q(veh)	0	-	-	0	1.7	0	-

HCM 6th TWSC
2: Vollmer Road & Dines Boulevard

Total Traffic Volumes
Year 2040 - PM Peak Hour

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	0	0	49	20	0	9	52	1179	42	13	779	0
Future Vol, veh/h	0	0	49	20	0	9	52	1179	42	13	779	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	250	250	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	53	22	0	10	57	1282	46	14	847	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1630	2317	424	1848	2271	641	847	0	0	1328	0	0
Stage 1	875	875	-	1396	1396	-	-	-	-	-	-	-
Stage 2	755	1442	-	452	875	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	67	37	579	46	40	417	786	-	-	516	-	-
Stage 1	310	365	-	148	206	-	-	-	-	-	-	-
Stage 2	367	196	-	557	365	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	61	33	579	39	36	417	786	-	-	516	-	-
Mov Cap-2 Maneuver	61	33	-	39	36	-	-	-	-	-	-	-
Stage 1	287	355	-	137	191	-	-	-	-	-	-	-
Stage 2	332	182	-	492	355	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.8		140.1		0.4		0.2	
HCM LOS	B		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	786	-	-	579	54	516	-
HCM Lane V/C Ratio	0.072	-	-	0.092	0.584	0.027	-
HCM Control Delay (s)	9.9	-	-	11.8	140.1	12.2	-
HCM Lane LOS	A	-	-	B	F	B	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	2.3	0.1	-

HCM 6th TWSC
3: Sam Bass Drive & Vollmer Road

Total Traffic Volumes
Year 2040 - PM Peak Hour

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕	↕	↕	↕	↕
Traffic Vol, veh/h	31	0	4	38	0	2	9	660	58	5	394	41
Future Vol, veh/h	31	0	4	38	0	2	9	660	58	5	394	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	150	200	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	0	4	41	0	2	10	717	63	5	428	45

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	817	1238	214	961	1220	359	473	0	0	780	0	0
Stage 1	438	438	-	737	737	-	-	-	-	-	-	-
Stage 2	379	800	-	224	483	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	268	174	791	211	179	638	1085	-	-	833	-	-
Stage 1	567	577	-	376	423	-	-	-	-	-	-	-
Stage 2	615	395	-	758	551	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	264	171	791	207	176	638	1085	-	-	833	-	-
Mov Cap-2 Maneuver	264	171	-	207	176	-	-	-	-	-	-	-
Stage 1	562	574	-	373	419	-	-	-	-	-	-	-
Stage 2	607	391	-	749	548	-	-	-	-	-	-	-

























Approach	EB		WB		NB		SB	
HCM Control Delay, s	19.5		26.1		0.1		0.1	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1085	-	-	286	214	833	-
HCM Lane V/C Ratio	0.009	-	-	0.133	0.203	0.007	-
HCM Control Delay (s)	8.3	-	-	19.5	26.1	9.3	-
HCM Lane LOS	A	-	-	C	D	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.7	0	-

Timings

4: Vollmer Road & Briargate Parkway

Total Traffic Volumes
Year 2040 - PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	1478	223	346	1257	82	361	459	368	94	223	115
Future Volume (vph)	230	1478	223	346	1257	82	361	459	368	94	223	115
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.075			0.083			0.286			0.469		
Satd. Flow (perm)	140	3539	1583	300	3539	1583	533	3539	1583	874	3539	1583
Satd. Flow (RTOR)			169			200			238			200
Lane Group Flow (vph)	250	1607	242	376	1366	89	392	499	400	102	242	125
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Split (s)	23.0	58.0	58.0	16.0	51.0	51.0	32.0	30.0	30.0	16.0	14.0	14.0
Total Split (%)	19.2%	48.3%	48.3%	13.3%	42.5%	42.5%	26.7%	25.0%	25.0%	13.3%	11.7%	11.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	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 Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	Max	Max	Max	Max	Min	Min	Max	Min	Min
Act Effct Green (s)	67.8	53.0	53.0	59.0	48.0	48.0	41.0	25.0	25.0	20.0	9.0	9.0
Actuated g/C Ratio	0.56	0.44	0.44	0.49	0.40	0.40	0.34	0.21	0.21	0.17	0.08	0.08
v/c Ratio	0.84	1.03	0.31	0.87	0.97	0.12	0.85	0.68	0.77	0.45	0.91	0.41
Control Delay	54.5	63.7	7.8	49.3	53.1	0.3	52.3	49.1	28.9	36.4	92.2	4.4
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	54.5	63.7	7.8	49.3	53.1	0.3	52.3	49.1	28.9	36.4	92.2	4.4
LOS	D	E	A	D	D	A	D	D	C	D	F	A
Approach Delay		56.2			49.7			43.8			56.7	
Approach LOS		E			D			D			E	
Queue Length 50th (ft)	136	~700	32	100	~559	0	255	188	121	55	100	0
Queue Length 95th (ft)	#258	#839	86	#185	#721	0	#404	249	#252	98	#179	2
Internal Link Dist (ft)		672			884			915			1327	
Turn Bay Length (ft)	375		250	375		250	500		250	250		250
Base Capacity (vph)	325	1563	793	434	1414	752	460	737	518	227	265	303
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	0.77	1.03	0.31	0.87	0.97	0.12	0.85	0.68	0.77	0.45	0.91	0.41

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Natural Cycle: 90
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 1.03

Timings 4: Vollmer Road & Briargate Parkway

Total Traffic Volumes
Year 2040 - PM Peak Hour

Intersection Signal Delay: 51.3 Intersection LOS: D
Intersection Capacity Utilization 93.6% ICU Level of Service F
Analysis Period (min) 15









~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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











Queue shown is maximum after two cycles.

Splits and Phases: 4: Vollmer Road & Briargate Parkway

 Ø1	 Ø2	 Ø3	 Ø4
16 s	58 s	32 s	14 s
 Ø5	 Ø6	 Ø7	 Ø8
23 s	51 s	16 s	30 s

HCM 6th TWSC
5: Briargate Parkway & Street A

























Total Traffic Volumes
Year 2040 - PM Peak Hour

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	93	1782	31	21	1637	75	24	4	16	127	10	67
Future Vol, veh/h	93	1782	31	21	1637	75	24	4	16	127	10	67
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	150	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	101	1937	34	23	1779	82	26	4	17	138	11	73
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1861	0	0	1971	0	0	3080	4046	969	2998	3998	890
Stage 1	-	-	-	-	-	-	2139	2139	-	1825	1825	-
Stage 2	-	-	-	-	-	-	941	1907	-	1173	2173	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	321	-	-	290	-	-	~ 5	~ 3	253	~ 6	~ 3	286
Stage 1	-	-	-	-	-	-	50	88	-	~ 80	127	-
Stage 2	-	-	-	-	-	-	283	115	-	204	84	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	321	-	-	290	-	-	-	~ 2	253	-	~ 2	286
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	~ 2	-	-	~ 2	-
Stage 1	-	-	-	-	-	-	34	60	-	~ 55	117	-
Stage 2	-	-	-	-	-	-	176	106	-	~ 121	58	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0.2								
HCM LOS							-			-		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2		
Capacity (veh/h)	-	10	321	-	-	290	-	-	-	-	15	
HCM Lane V/C Ratio	-	2.174	0.315	-	-	0.079	-	-	-	-	5.58	
HCM Control Delay (s)	\$ 1278.7		21.3	-	-	18.5	-	-	\$ 2565.6			
HCM Lane LOS	-	F	C	-	-	C	-	-	-	-	F	
HCM 95th %tile Q(veh)	-	3.7	1.3	-	-	0.3	-	-	-	-	11.4	
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon				

Timings 5: Briargate Parkway & Street A

Total Traffic Volumes

Year 2040 - PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	1782	31	21	1637	75	24	4	16	127	10	67
Future Volume (vph)	93	1782	31	21	1637	75	24	4	16	127	10	67
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1637	0	1770	1621	0
Flt Permitted	0.047			0.950			0.702			0.669		
Satd. Flow (perm)	88	3539	1583	1770	3539	1583	1308	1637	0	1246	1621	0
Satd. Flow (RTOR)			94			94		17			73	
Lane Group Flow (vph)	101	1937	34	23	1779	82	26	21	0	138	84	0
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2			6	8			4		
Minimum Split (s)	10.0	23.0	23.0	10.0	23.0	23.0	10.0	23.0		10.0	23.0	
Total Split (s)	14.0	95.0	95.0	10.0	91.0	91.0	10.0	23.0		12.0	25.0	
Total Split (%)	10.0%	67.9%	67.9%	7.1%	65.0%	65.0%	7.1%	16.4%		8.6%	17.9%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Act Effct Green (s)	99.0	90.0	90.0	5.0	86.0	86.0	23.0	18.0		27.0	20.0	
Actuated g/C Ratio	0.71	0.64	0.64	0.04	0.61	0.61	0.16	0.13		0.19	0.14	
v/c Ratio	0.59	0.85	0.03	0.37	0.82	0.08	0.11	0.09		0.52	0.29	
Control Delay	36.3	24.5	0.1	82.1	25.0	1.7	45.5	26.4		55.8	17.3	
Queue Delay	0.0	0.0	0.0	0.0	10.6	0.0	0.0	0.0		0.0	0.0	
Total Delay	36.3	24.5	0.1	82.1	35.6	1.7	45.5	26.4		55.8	17.3	
LOS	D	C	A	F	D	A	D	C		E	B	
Approach Delay		24.7			34.7			37.0			41.2	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)	35	688	0	21	627	0	19	3		108	9	
Queue Length 95th (ft)	99	806	0	53	734	17	46	30		174	59	
Internal Link Dist (ft)		245			672			293			275	
Turn Bay Length (ft)	150		150	150		150	150			150		
Base Capacity (vph)	170	2275	1051	63	2173	1008	231	225		266	294	
Starvation Cap Reductn	0	0	0	0	394	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.59	0.85	0.03	0.37	1.00	0.08	0.11	0.09		0.52	0.29	

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 100

Control Type: Pretimed

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 30.2

Intersection LOS: C

Intersection Capacity Utilization 79.6%









ICU Level of Service D

Analysis Period (min) 15

Timings 5: Briargate Parkway & Street A

Total Traffic Volumes
Year 2040 - PM Peak Hour

Splits and Phases: 5: Briargate Parkway & Street A

 Ø1 10 s	 Ø2 (R) 95 s	 Ø3 10 s	 Ø4 25 s
 Ø5 14 s	 Ø6 (R) 91 s	 Ø7 12 s	 Ø8 23 s