



Attachment B – East William Street Traffic Data Collection and Analysis Traffic Report

East William Street Traffic Data Collection and Analysis Traffic Report

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Table of Contents

Introduction and Background..... 1

Study Area..... 1

Purpose and Need..... 2

Evaluated Intersections and Scenarios 2

Existing Conditions..... 3

Existing Roadway Facilities 3

Existing Plans and Studies 3

Corridor Crash History..... 3

Existing Traffic Counts..... 5

Segment Analysis..... 8

2022 Intersection Operations Analysis..... 8

Future Conditions 11

Future Traffic Volumes..... 11

Future Segment Analysis 17

Future Intersection Operations Analysis 18

Other Intersection Opportunities 23

Proposed Corridor Analysis 25

Queue Length Analysis..... 27

Tables

Table 1. Intersection Peak Seasons and Peak Hours

Table 2. Level-of-Service Description

Table 3. Existing Intersection Level-of-Service

Table 4. TDM Validation

Table 5. Future Segment Analysis (Carson St. to Stewart St.)

Table 6. One EB Lane Intersection Operations

Table 7. 2030 LOS Results

Table 8. 2050 LOS Results

Table 9. Mitigated 2050 LOS Results

Table 10. Right Turn Lanes Removed LOS Results



Table 11.	Roop Street Northbound No RTOR results
Table 12.	Saliman Rd. with LPI LOS Results
Table 13.	Proposed Corridor Summary
Table 14.	Proposed Corridor 2030 LOS Results
Table 15.	Proposed Corridor 2050 LOS Results
Table 16.	Proposed Corridor Queue Lengths Summary

Figures

Figure ES-1	Summary of Proposed Improvements
Figure 1.	Study Area
Figure 2.	Equivalent Property Damage Only Density Map
Figure 3.	2022 Existing AM and PM Turning Movement Counts
Figure 4.	2022 Existing Mid-Day Turning Movement Counts
Figure 5.	2022 AADT Two-Lane Segment Analysis
Figure 6.	2030 AM and PM Turning Movement Volumes
Figure 7.	2030 Mid-Day Turning Movement Volumes
Figure 8.	2050 AM and PM Turning Movement Volumes
Figure 9.	2050 Mid-Day Turning Movement Volumes

Appendices

Appendix A	Summary of Existing Plans and Studies
Appendix B	Crash History Maps
Appendix C	Synchro Reports

Executive Summary

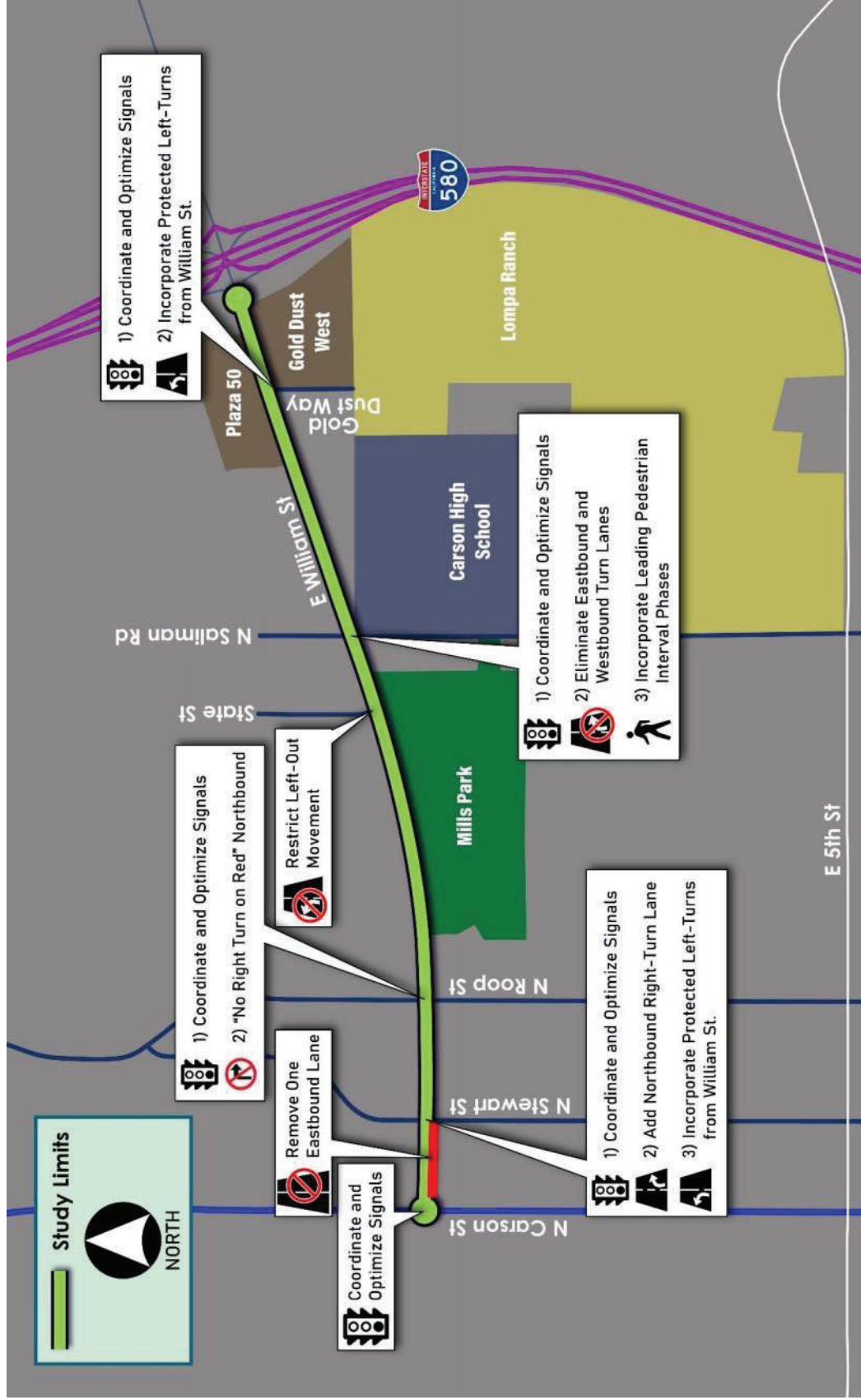


Figure ES-1: Improvement Summary

Introduction and Background

Study Area

William Street is an important east/west facility within Carson City, Nevada, spanning from Minnesota Street to the west to Interstate 580 (I-580) to the east, where it becomes U.S. 50, which ultimately extends to Ocean City, Maryland. The segment of William Street spanning from Carson Street in the west to I-580 in the east is designated as a minor arterial (East (E.) William Street) and represents the Study Area, illustrated in **Figure 1**. E. William Street was once part of the U.S. 50 National Highway System route through Carson City; however, completion of I-580 around Downtown Carson City had the designation moved to the new freeway route. Completion of the I-580 freeway has had a profound impact on traffic patterns throughout Carson City, especially along Carson Street and E. William Street. Therefore, Carson City is evaluating opportunities to reimagine and reinvest in the corridor to better accommodate current use and development patterns across all modes. This document outlines the traffic data collection and operations analysis results to inform decision-makers and the public as to the opportunities and performance of a reimagined E. William Street corridor.



Figure 1: Study Area

Purpose and Need

Carson City is embarking on a design and public outreach effort to reconfigure portions of E. William Street, from Carson Street to I-580, a distance of approximately 1.4 miles. The anticipated reconfiguration includes consideration of lane reductions on E. William Street (if feasible), pedestrian and bicycle facilities, reconfigured intersections, access management, ADA upgrades, and landscape/aesthetics. A traffic data collection and operations analysis are required to inform design development and public outreach activities. This document describes the data, methodology, and results of this traffic analysis in support of Carson City's efforts to modernize this critical corridor.

Evaluated Intersections and Scenarios

Within the study area, six (6) intersections were identified for analysis. The intersections consist of five (5) signalized, four-leg intersections and one (1) unsignalized, three-leg intersection. The following intersections were analyzed:

- ❖ William St./Carson St. (signalized)
- ❖ William St./Stewart St. (signalized)
- ❖ William St./Roop St. (signalized)
- ❖ William St./State St. (unsignalized)
- ❖ William St./Saliman Rd. (signalized)
- ❖ William St./Gold Dust Way (signalized)

The study includes the analysis of AM, PM, and Mid-Day peak traffic periods to ensure the range of traffic fluctuations throughout the day are considered. Analysis years include 2022 (existing), as well as 2030 and 2050 future years, consistent with the Carson Area Metropolitan Planning Organization's (CAMPO) Travel Demand Model (TDM).

Existing Conditions

Existing Roadway Facilities

E. William Street varies from west to east, reflective of adjacent land uses and traffic volumes. From Carson Street east to Humboldt Lane, E. William Street consists of a 4-lane roadway section (two lanes in each direction) with a center two-way-left-turn-lane (TWLTL) and intermittent shoulders. The TWLTL lane transitions to dedicated turn lanes at major intersections and select driveways. A series of sidewalks and shared use paths parallel the roadway with a few existing gaps. There are no bicycle facilities in this section. From Humboldt Lane to the east, E. William Street transitions to a 6-lane section with dedicated center turn lanes and intermittent shoulders. A series of standard and wide sidewalks exist throughout this section along with some marked bicycle facilities.

The following posted speed limits exist along the corridor:

- ❖ Carson Street to Roop Street: 25 miles per hour (MPH)
- ❖ Roop Street to 0.25 miles east: 35 MPH
- ❖ 0.25 miles east of Roop Street to the eastern study limits: 40 MPH

Existing Plans and Studies

Several recent and relevant traffic studies were provided by Carson City (City) to review and consider when developing this analysis. The studies were reviewed and summarized, with a summary matrix provided in **Appendix A**. The key elements of interest from these studies include turning movement, bicycle, and pedestrian counts for reference. Also of reference are the Carson City Development Standards (Ord. 2001-23), specifically Division 12.13, *Traffic and Impact Study Requirements*.

Corridor Crash History

Five years of crash data was obtained from the Nevada Department of Transportation (NDOT) to identify potential hot spots and areas of concern. The data includes the years 2015-2019. The five years of crash data is illustrated in **Figure 2**, depicted as Equivalent Property Damage Only (EPDO), where all crashes are normalized to reflect severity. As can be seen, Saliman Road and Roop Street experience the most crash activity/severity in the corridor. Each intersection and segment, including Saliman Road and Roop Street were analyzed to identify relevant crash trends:

- ❖ **Carson St. Intersection** – Primarily rear-end collisions due to driver error with a slight spike in activity during October. Two pedestrian injuries occurred.
- ❖ **Carson St. to Stewart St. Segment** – Minor crash activity.

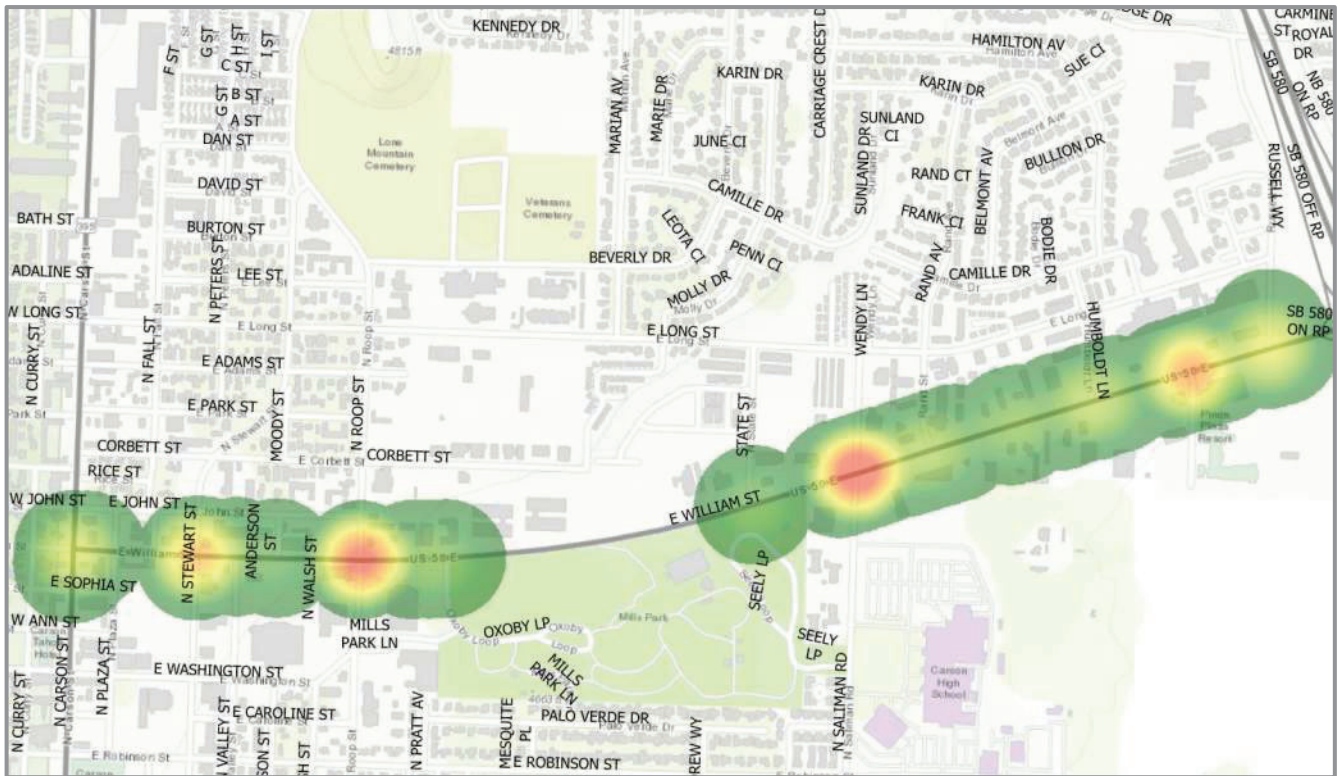


Figure 2: Equivalent Property Damage Only Density Map

- ❖ **Stewart St. Intersection** – High propensity for angle crashes involving failure to yield and/or disregard for signals. Heaviest activity during the Fall. One pedestrian and one motorcycle injury. Protected left-turn phases from William Street will be analyzed to address angle crashes.
- ❖ **Stewart St. to Roop St. Segment** – High propensity of angle crashes due to failure to yield right-of-way. Median channelization and access management should be considered.
- ❖ **Roop St. Intersection** – Half of all crashes were rear end crashes due primarily to following too closely or failure to yield right-of-way. Advanced dilemma-zone detection may improve conditions. One pedestrian and one motorcycle injury crash occurred.
- ❖ **Roop St. to State St. Segment** – Rear-end and angle collisions were prominent due to failure to yield right-of-way and following too closely. Weekdays around 4:00PM stand out as the highest crash timeframe.
- ❖ **State St. Intersection** – Rear-end crashes due to following too closely are the most prominent. Weekdays from 3:00 PM to 5:00PM account for the majority of crash activity.
- ❖ **State St. to Saliman Rd. Segment** – Minor crash activity.
- ❖ **Saliman Rd. Intersection** – High overall number of crashes. Highest crash type is rear-end due to following too closely. Summer months have the least crash activity with mid-day experiencing the highest crash activity. One bicycle and one pedestrian injury crash occurred.
- ❖ **Saliman Rd. to Gold Dust Way Segment** – Angle crashes and rear-end crashes due to failure to yield right-of-way and following too closely during the week are the most prevalent. Additional

median access control should be considered. One bicycle and one motorcycle injury crash occurred.

- ❖ **Gold Dust Way Intersection** - Angle crashes and rear-end crashes due to failure to yield right-of-way, following too closely, and disregard for signals are the most prevalent. May and afternoons see the highest crash activity. Protected left-turn phases from William Street will be analyzed to address angle crashes. One bicycle, one pedestrian, and one motorcycle injury crash occurred.
- ❖ **Gold Dust Way to Russell Way Segment** – Minor crash activity.
- ❖ **Russell Way Intersection** – Rear-ends are the most common due to either unknown or following too closely. A majority of crashes occurred during Fall and Winter months. One pedestrian injury occurred.

Detailed crash history maps for each intersection and roadway segment can be found in **Appendix B**.

Existing Traffic Counts

Existing traffic turning movement counts were collected for each of the six intersections. The Streetlight Data platform was used to extract 2019 counts, prior to the effects of the global COVID 19 pandemic. Streetlight Data is a “big-data” platform that leverages anonymous data from location-based devices such as cell phones and GPS devices. The data is processed to convert these points into actionable traffic data, including turning movement counts. In addition to providing pre-pandemic counts, the Streetlight Data platform also allows the study team to identify peak season average counts and eliminates the potential for atypical traffic conditions during one-time traditional traffic counts. Based on the results of the seasonal analysis, the following peak seasons and corresponding peak hours were identified for each study intersection:

Table 1: Intersection Peak Seasons and Peak Hours

Intersection	Peak Season	AM Peak Hour	Mid-Day Peak Hour	PM Peak Hour
Carson St.	April-June	7:15am-8:15am	12:00pm-1:00pm	4:30pm-5:30pm
Stewart St.	April-June	7:00am-8:00am	12:30pm-1:30pm	4:45pm-5:45pm
Roop St.	April-June	7:00am-8:00am	12:00pm-1:00pm	4:30pm-5:30pm
State St.	April-June	7:00am-8:00am	12:00pm-1:00pm	4:30pm-5:30pm
Saliman Rd.	October-December	7:00am-8:00am	1:00pm-2:00pm	4:45pm-5:45pm
Gold Dust Wy.	April-June	7:00am-8:00am	12:15pm-1:15pm	4:30pm-5:30pm

Traffic turning movements for the peak periods above were extracted for 2019 (pre-pandemic) and extrapolated to create 2022 (existing) turning movement counts by applying an average 0.57-percent annual growth rate. This average annual growth rate was obtained by analyzing the CAMPO TDM for the years 2020 and 2030 in the study area and calculating an average annual growth rate between the analysis years. The resulting 2022 existing peak period turning movement counts are depicted in **Figure 3** and **Figure 4** below.

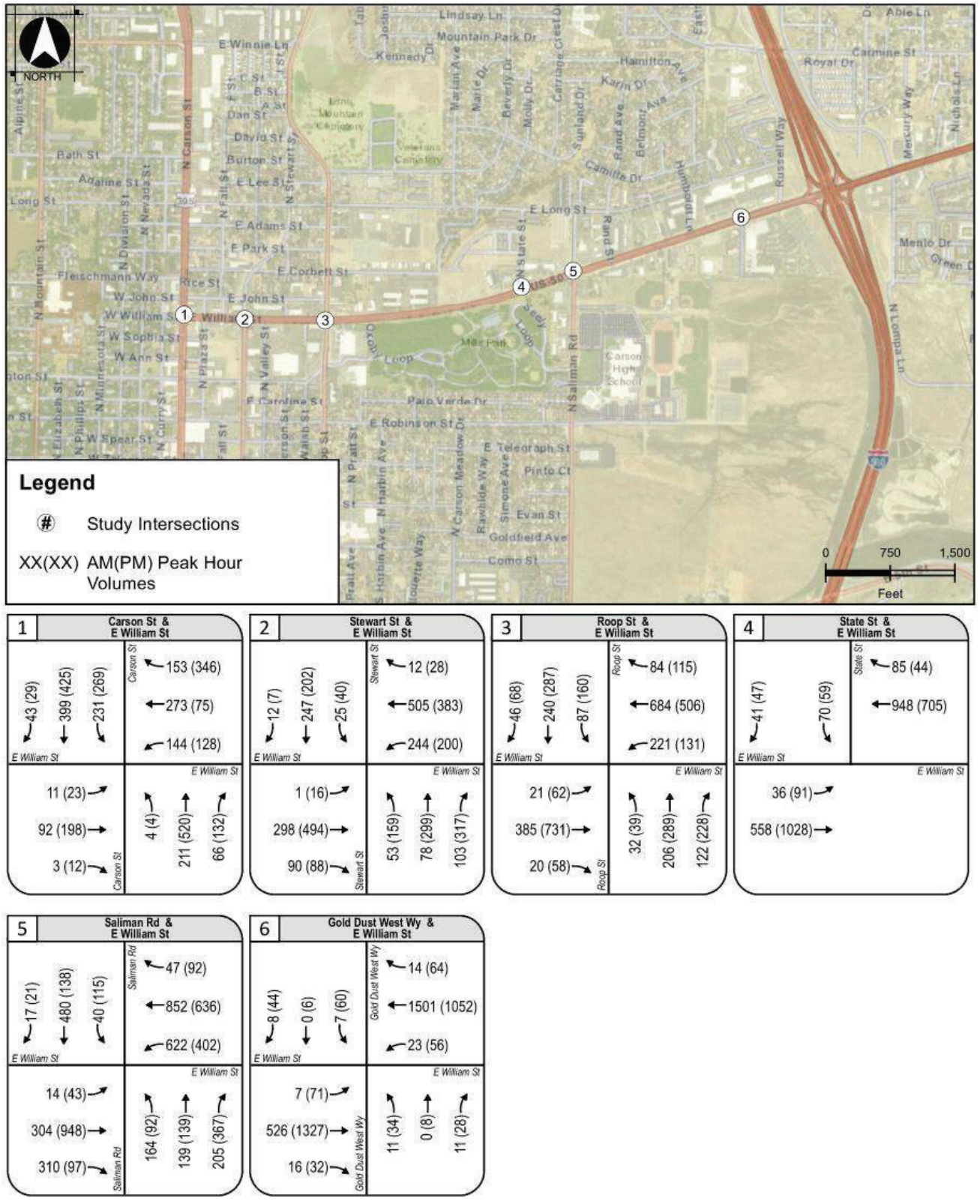


Figure 3: 2022 Existing AM and PM Turning Movements Counts

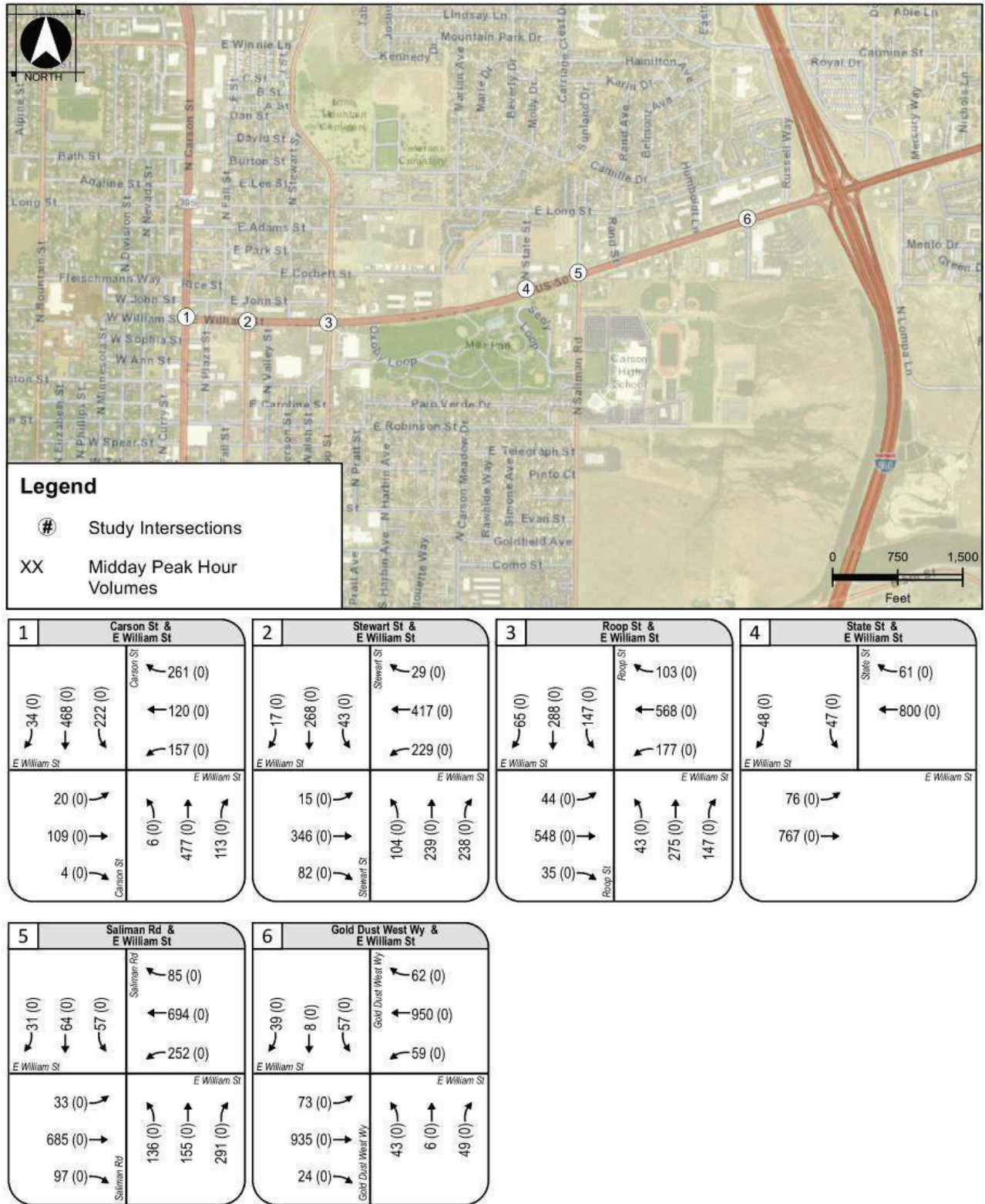


Figure 4: 2022 Existing Mid-Day Turning Movement Counts

Segment Analysis

The existing traffic volumes were compared against planning-level Average Annual Daily Traffic (AADT) level-of-service (LOS) thresholds for a two-lane roadway to identify if there are potentially feasible opportunities for the roadway cross-section to be reconfigured to a two-lane or three-lane cross-section. This would allow the surplus space to be reallocated for other corridor users and/or uses. LOS is further described below. The results of this planning-level analysis are shown in **Figure 5** which illustrates the existing traffic volumes compared against two-lane planning-level thresholds for posted speeds of 25-35 MPH (Carson Street to Roop Street) and 35-45 MPH (Roop Street to Gold Dust Way).

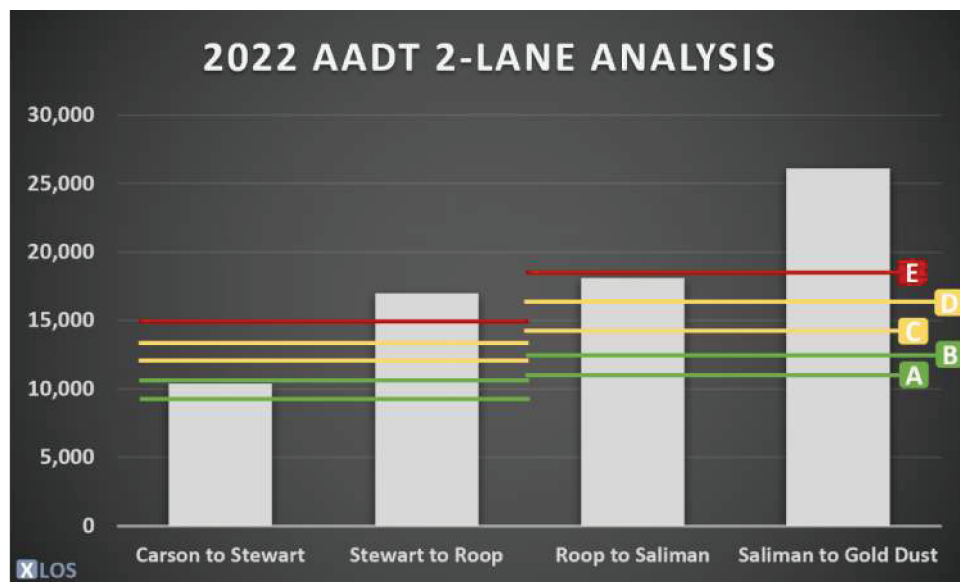


Figure 5: 2022 AADT Two-Lane Segment Analysis

Based on the results, a reasonable LOS is unlikely to be maintained following a roadway reconfiguration for the majority of the corridor. The segment from Carson Street to Stewart Street may be viable and this segment is analyzed in more detail under future traffic conditions.

2022 Intersection Operations Analysis

Based on the existing turning movement counts and City-provided existing signal timings, as well as pedestrian counts obtained from the City and supplemented by Streetlight Data pedestrian indexes, a LOS analysis was conducted using Synchro 11 software. Synchro 11 is a traffic analysis and optimization software application used by traffic engineers to analyze intersection performance and identify improvements by applying *Highway Capacity Manual (6th Edition)* methods. These methods include LOS calculations for intersections which compare the average control delay for individual movements and the overall intersection. The LOS thresholds are shown in **Table 2**.

Table 2: Level of Service Description

LOS	Description	Average Delay (seconds per vehicle)	
		Signalized Intersections	Unsignalized Intersections
A	Free flow	<10	<10
B	Stable flow with some affect from other vehicles	10-20	10-15
C	Stable flow with significant affect from other vehicles	20-35	15-25
D	High density traffic conditions still with stable flow	35-55	25-35
E	At or near capacity flows	55-80	35-50
F	Over capacity conditions	>80	>50

Carson City has established LOS D as the level of service standard (Carson City Code of Ordinances Section 18.12.13). Unique situations and minor movements may exceed this standard upon due care.

By applying this methodology, the LOS analysis for existing 2022 conditions is shown in **Table 3**. Corresponding Synchro 11 reports can be found in **Appendix C**.

Table 3: Existing Intersection Level of Service

#	Intersection	Control Type	LOS Criteria	Peak Hour	2022 Conditions	
					Delay (S/V) ¹	LOS
1	Carson St & William St	Signal	D	AM	20.8	C
				MD	22.7	C
				PM	25.8	C
2	Stewart St & William St	Signal	D	AM	19.4	B
				MD	25.2	C
				PM	36.3	D
3	Roop St & William St	Signal	D	AM	19.2	B
				MD	22.1	C
				PM	24.7	C
4	State St & William St	TWSC	D	AM	25.4	D
				MD	19.2	C
				PM	20.0	C
5	Saliman Rd & William St	Signal	D	AM	39.1	D
				MD	28.4	C
				PM	34.8	C
6	Gold Dust West Way/Commercial Dwy & William St	Signal	D	AM	19.7	B
				MD	29.9	C
				PM	27.2	C
<p>Notes:</p> <p>¹ "Average" control delays (in seconds/vehicle) are indicated for All-way Stop-Control (AWSC) and Signal controlled intersections. "Worst-movement delay" (in seconds/vehicle) is indicated for One-Way Stop-Controlled (OWSC) and Two-Way Stop-Controlled (TWSC) intersections.</p>						

As shown in Table 3, all existing intersections operate at level of service D or better.

Future Conditions

Future Traffic Volumes

Future volumes within the study area can be forecasted using the CAMPO TDM. The TDM is a TransCAD-based model that forecasts future travel demand based on land uses, population, and employment estimates corresponding to the analysis years of 2020, 2030, and 2050. TDM models are calibrated and validated on a regional level to ensure results are reasonable for the overall CAMPO area. Further validation may be required to apply the TDM at the individual project level.

The most recent TDM model was obtained from the City and validated against traffic count data available from NDOT’s Traffic Records Information Access (TRINA) database. Travel forecasting model validation criteria specified in the *National Cooperative Highway Research Program (NCHRP) Report 716 – Travel Demand Forecasting: Parameters and Techniques* (NCHRP, March 2012) and the *Travel Model Validation and Reasonableness Checking Manual* (Federal Highway Administration, September 24, 2010) were used to validate the project corridor, consistent with validation procedures performed for the full TDM. Iterative refinements to the TDM roadway network attributes along the project corridor were made in the base year 2020 scenario to achieve acceptable levels of validation between traffic counts and model estimated base year volumes. Only a small number of refinements were required, which included adjustments to the locations of centroids and centroid connectors so the TDM would more realistically assign trips to the roadway network, and minor adjustments of posted speeds (+/- 5 miles per hour) on parallel roadways to achieve a more realistic distribution of traffic. The results of the validation are shown in **Table 4**.

Table 4: TDM Validation

Roadway	Segment	Dir	TRINA ID	Link ID	ADT Count	TDM ADT	% Diff	Allowable % Diff	Within Limits?
William Street	b/w Carson St & Stewart St	EB+WB	0250017	319	10,400	10,816	4.0%	20%	YES
	b/w Stewart St & Roop St	EB+WB	0250020	376	17,000	13,717	-19.3%	20%	YES
	b/w Roop St & State St	EB+WB	0252210	468	18,100	17,344	-4.2%	20%	YES
	b/w State St & Saliman Rd	EB+WB	0252210	464	18,100	18,972	4.8%	20%	YES
	b/w Saliman & Gold Dust West Wy	EB+WB	0250025	430	26,100	26,243	0.5%	15%	YES
Carson Street	north of William St	NB+SB	0250021	316	17,600	18,263	3.8%	20%	YES
	south of William St	NB+SB	0250016	320	12,300	14,933	21.4%	20%	NO
Stewart Street	north of William St	NB+SB	0250210	1255	3,650	3,788	3.8%	50%	YES
	south of William St	NB+SB	0250019	473	8,950	9,259	3.5%	25%	YES
Roop Street	north of William St	NB+SB	0250046	470	7,400	6,498	-12.2%	25%	YES
	south of William St	NB+SB	0025105	469	7,400	9,193	24.2%	25%	YES
Saliman Road	south of William St	NB+SB	0250149	466	6,600	9,097	37.8%	25%	NO

As shown in **Table 4**, all of the William Street TDM links meet the validation criteria, and all but two (2) of the side street TDM links meet the validation criteria. According to Section 5.5.1 of the *NDOT Traffic*

Forecasting Guidelines (August 2012), there are some cases in which you will find that the TDM is inconsistent with real world conditions, even after calibration. In these instances, the *NDOT Traffic Forecasting Guidelines* recommends applying the *NCHRP Report 255* guidelines for adjusting travel demand model outputs, so that the future year model outputs are relevant and accurate. One of the methodologies the *NCHRP Report 255* recommends is called the Difference Adjustment Method, or Difference Method. The Difference Method helps eliminate the inconsistent TDM results when preparing forecasts.

All base year calibration changes were carried forward to future year 2030 and 2050 TDM scenarios. To develop future turning movement volumes, the Difference Method was applied, consistent with *NDOT Traffic Forecasting Guidelines*. Turning movement volumes were extracted from the TDM for study intersections under 2020, 2030, and 2050 conditions. Growth for each turning movement was calculated and applied to existing counts. This Difference Method approach helped account for any discrepancies between the existing model volumes and the traffic counts, such as at the two roadway segments that do not meet the Allowable % Difference in **Table 4**. After applying the Difference Method, the forecasts were considered accurate. The resulting 2030 and 2050 turning movements counts are shown in **Figures 6-9**.

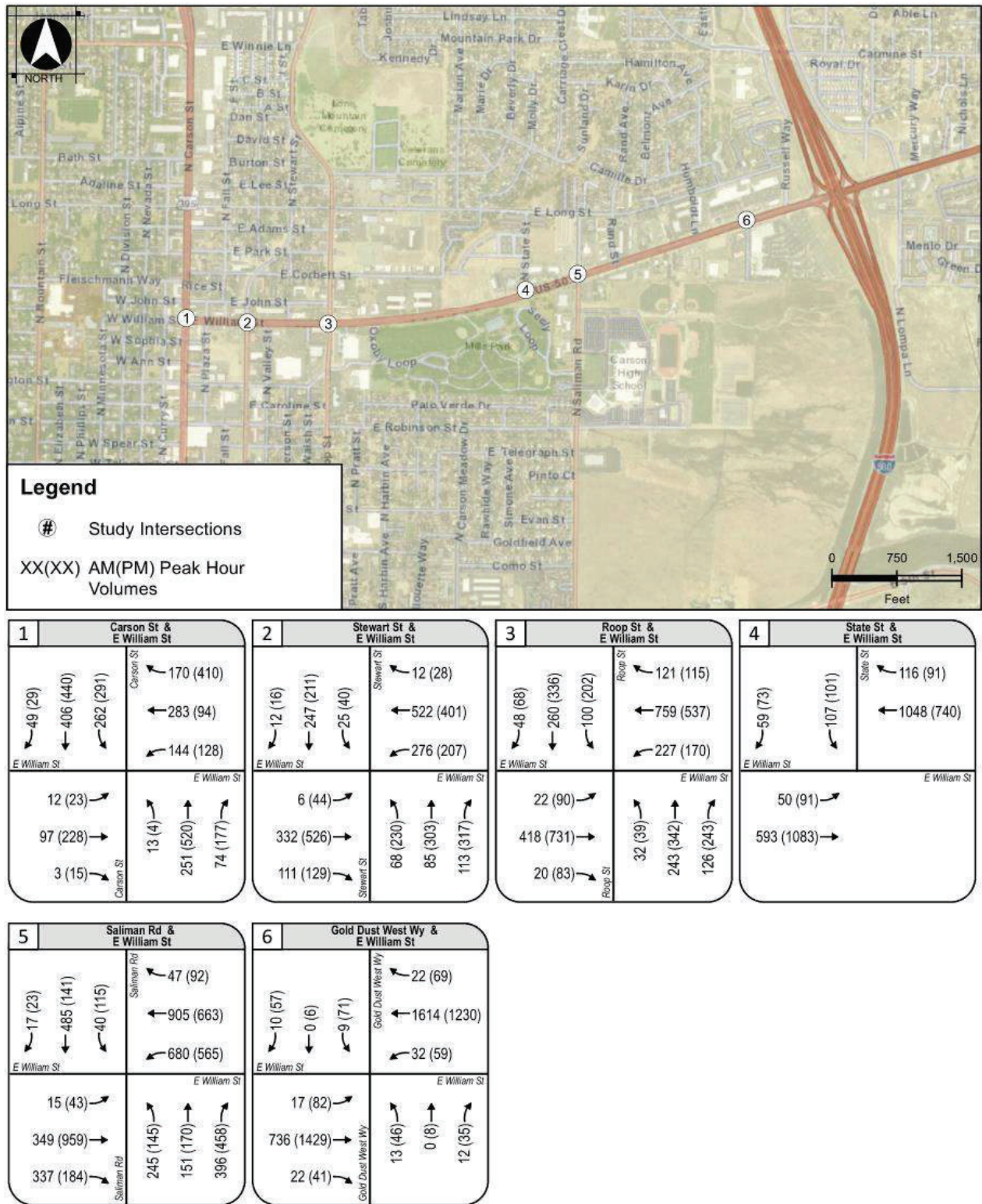


Figure 6: 2030 AM and PM Turning Movements Volumes

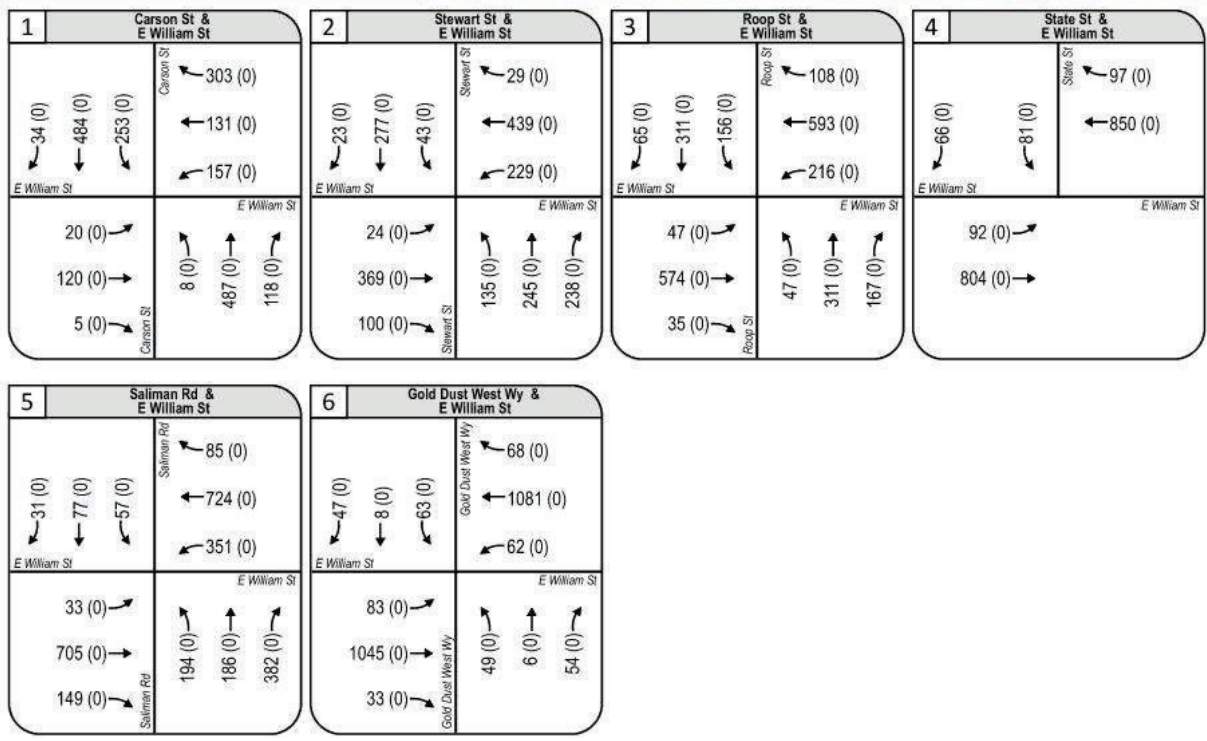
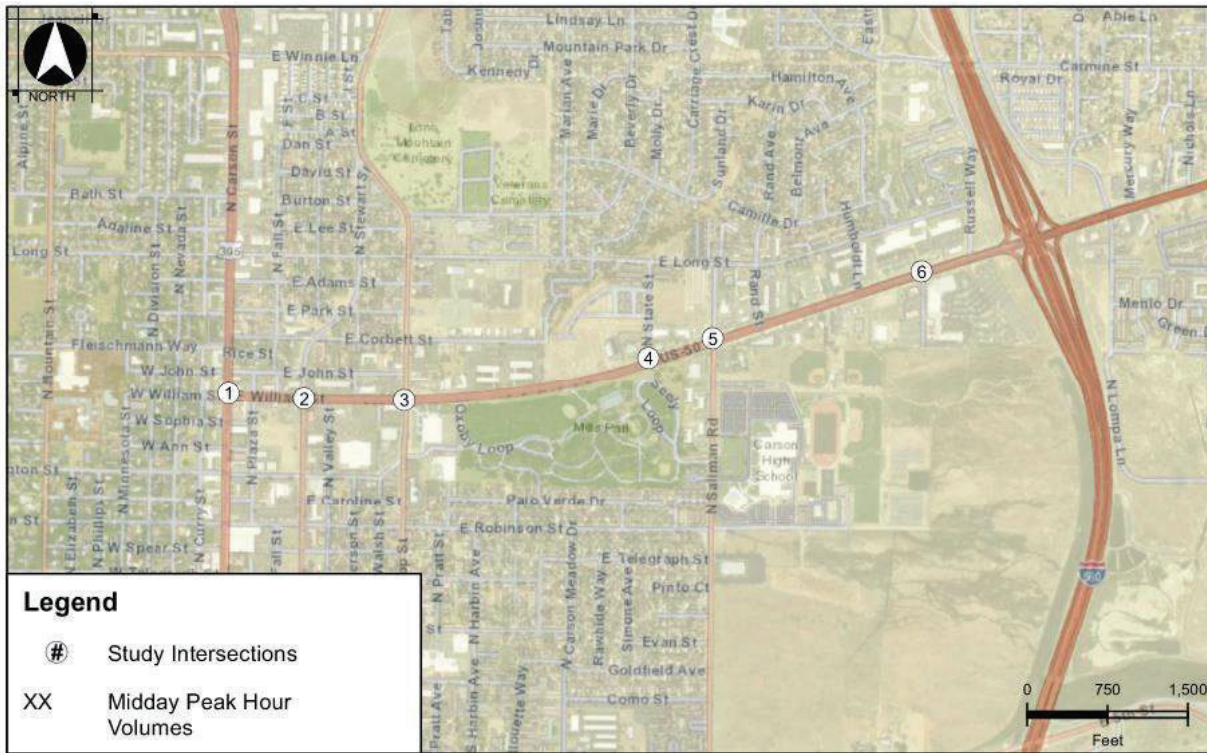


Figure 7: 2030 Mid-Day Turning Movements Volumes

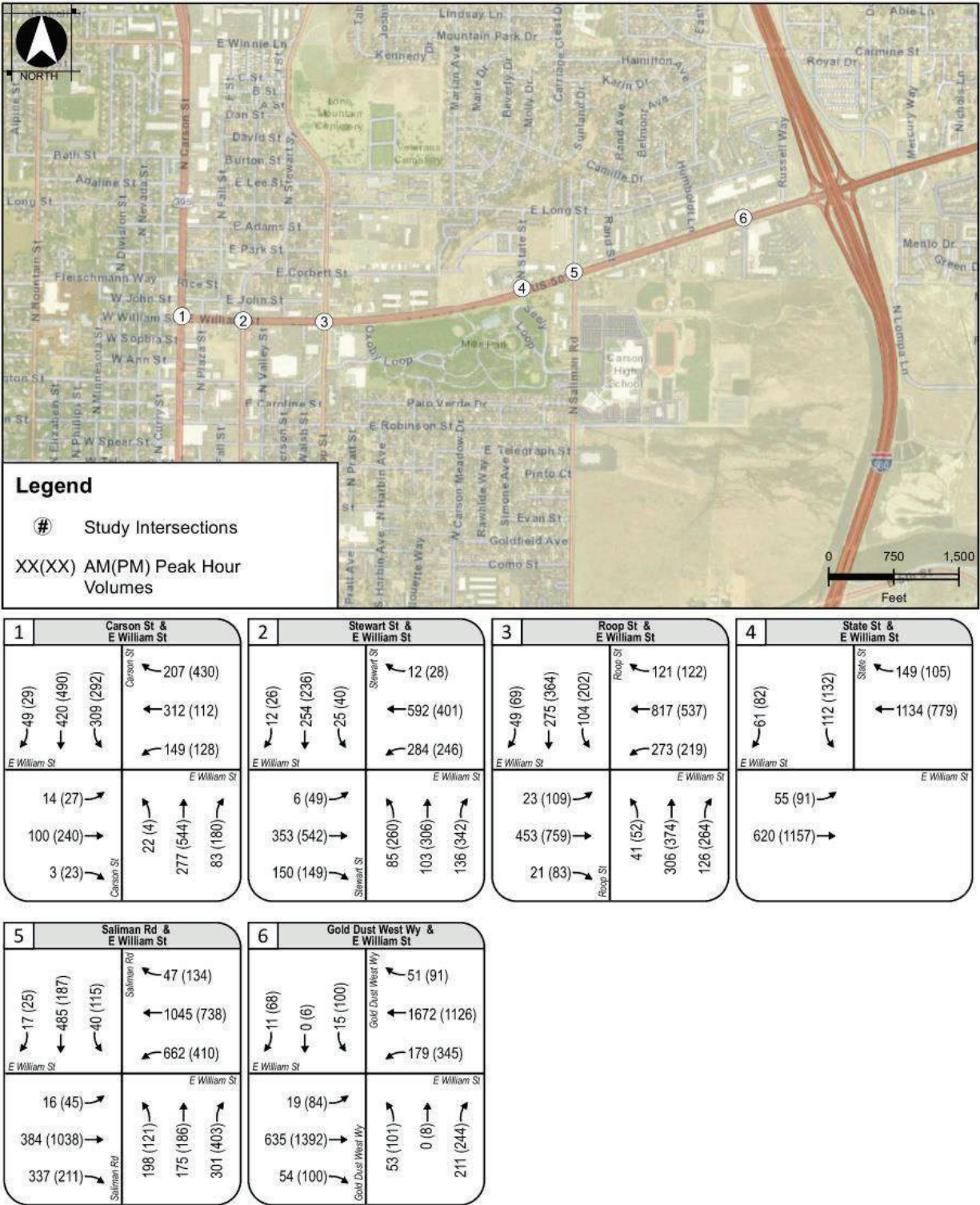


Figure 8: 2050 AM and PM Turning Movements Volumes

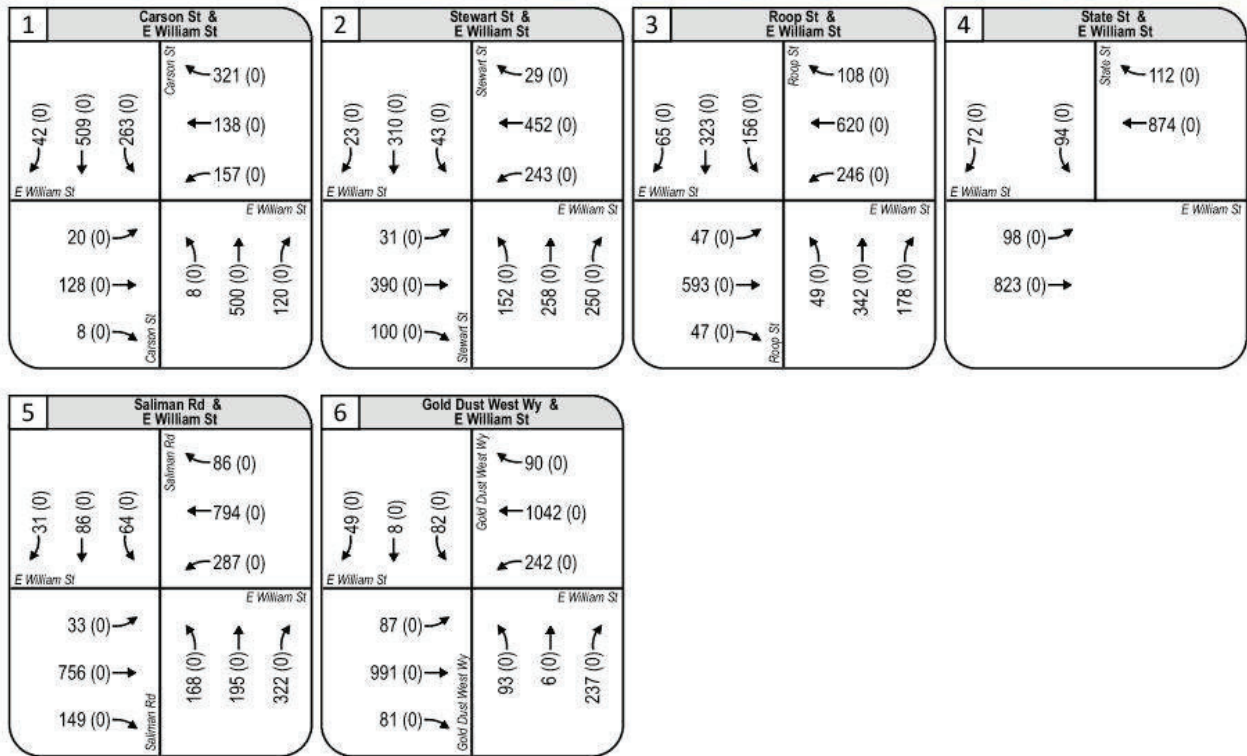
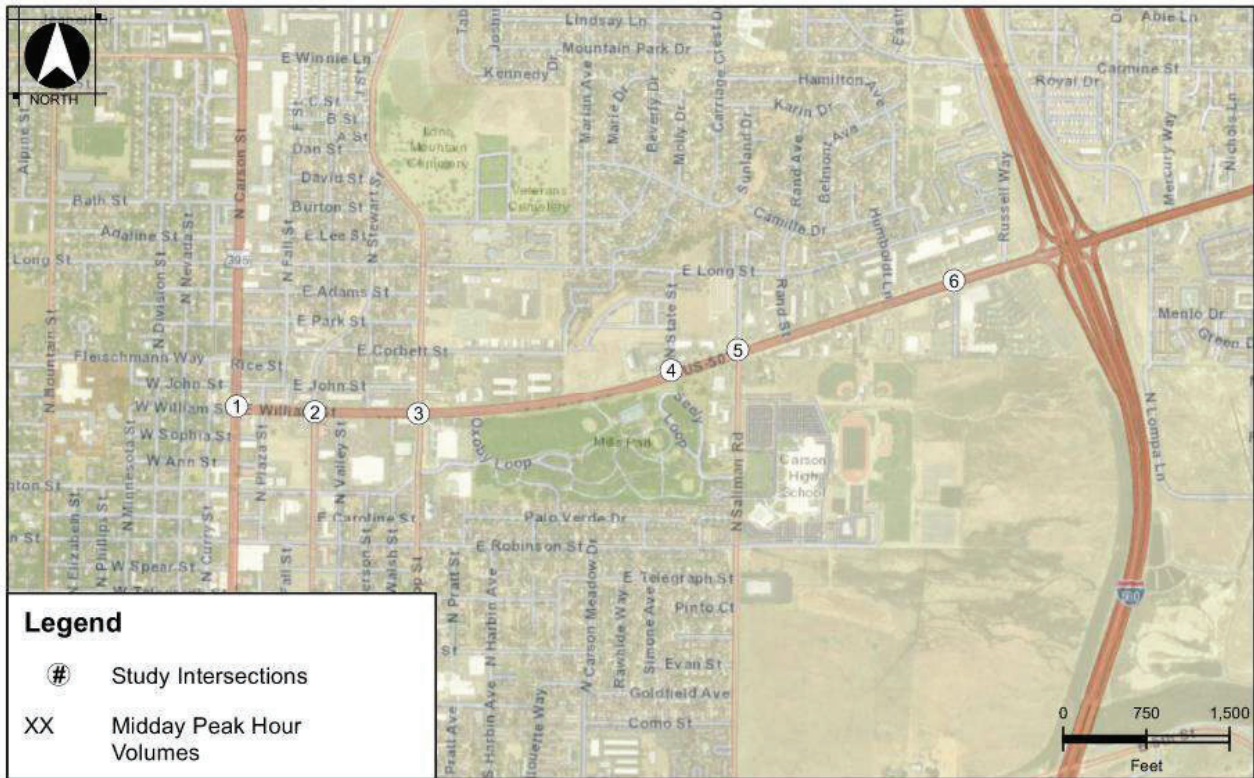


Figure 9: 2050 Mid-Day Turning Movements Volumes

Future Segment Analysis

The future 2030 and 2050 peak hour volumes were compared against threshold peak hour capacities to determine the viability to repurpose lanes for other uses and users. As noted in the existing conditions section, only the segment from Carson Street to Stewart Street could be reasonably considered for a lane reduction from a volumetric standpoint; however, the segment from Stewart Street to Roop Street is also included to inform the development of transitions. The comparison is shown in **Table 5**.

Table 5: Future Segment Analysis

Peak Period	Max. Segment Volume	LOS C Capacity (650)	LOS D Capacity (1,180)	LOS E Capacity (<1,250)
Carson Street to Stewart Street				
2030 AM	597	√	√	√
2030 Mid-Day	591	√	√	√
2030 PM	699	×	√	√
2050 AM	668	×	√	√
2050 Mid-Day	616	×	√	√
2050 PM	740	×	√	√
Stewart Street to Roop Street				
2030 AM	810	×	√	√
2030 Mid-Day	697	×	√	√
2030 PM	904	×	√	√
2050 AM	888	×	√	√
2050 Mid-Day	724	×	√	√
2050 PM	951	×	√	√

As can be seen, the E. William Street roadway segment between Carson Street and Stewart Street could be considered for a lane reduction from a segment capacity standpoint. However, at only 600 feet, this represents a very short roadway segment with bisecting roadways and intermediate driveways. Therefore, some consideration could be given to extending past Stewart Street towards Roop Street for transition and consistency reasons which **Table 5** also suggests is feasible from a segment capacity standpoint.

The next step following consideration of the individual segment is to analyze a lane reduction on intersection operations given through volumes would be loaded into a single lane. Discussions with the City identified the option to remove one eastbound lane while maintaining two westbound lanes to accommodate alternative transportation modes within the roadway prism. Reducing to a single eastbound lane was analyzed under future horizon year 2050 conditions at both the Stewart Street and Roop Street intersections as shown in **Table 6** to determine the impacts of this reconfiguration.

Table 6: One EB Lane Intersection Operations

#	Intersection	Control Type	LOS Criteria	Peak Hour	2050 Conditions	
					Delay (S/V) ¹	LOS
2	Stewart St & William St - One EB Thru Lane	Signal	D	AM	24.8	C
				MD	54.6	D
				PM	116.5	F
3	Roop St & Williams St - One EB Thru Lane	Signal	D	AM	24.1	C
				MD	39.3	D
				PM	79.8	E
<i>Notes:</i> ¹ "Average" control delays (in seconds/vehicle) are indicated for All-way Stop-Control (AWSC) and Signal controlled intersections. "Worst-movement delay" (in seconds/vehicle) is indicated for One-Way Stop-Controlled (OWSC) and Two-Way Stop-Controlled (TWSC) intersections.						

As shown in **Table 6**, neither intersection operates at LOS D or better during the PM peak with one eastbound lane removed. Therefore, it is recommended that, if E. William Street is reduced to a single eastbound lane to accommodate alternative transportation modes, it transitions to add an eastbound through/right turn lane prior to the Stewart Street intersection (minimum 100 feet prior). This configuration is included in the proposed corridor results.

It should be noted that, the eastbound queue lengths in the worst case 2050 peak hour approach 550 feet in length within this 600-foot segment. Conditions should be monitored and timing adjusted and/or the configuration adjusted as needed to avoid excessive queuing.

Future Intersection Operations Analysis

Using the future 2030 and 2050 turning movement and pedestrian forecasts, a LOS analysis was conducted using Synchro 11 software to determine projected intersection operations. It was assumed that all signals will be coordinated by 2030 and all timings have been optimized. The results of the analysis are shown in **Tables 7** and **8** respectively.

Table 7: 2030 LOS Results

#	Intersection	Control Type	LOS Criteria	Peak Hour	2030 Conditions	
					Delay (S/V) ¹	LOS
1	Carson St & William St	Signal	D	AM	24.3	C
				MD	29.7	C
				PM	41.9	D
2	Stewart St & William St	Signal	D	AM	20.6	C
				MD	32.0	C
				PM	49.8	D
3	Roop St & William St	Signal	D	AM	19.5	B
				MD	25.8	C
				PM	33.3	C
4	State St & William St	TWSC	D	AM	51.0	F
				MD	28.8	D
				PM	30.9	D
5	Saliman Rd & William St	Signal	D	AM	50.4	D
				MD	29.1	C
				PM	51.4	D
6	Gold Dust West Way/Commercial Dwy & William St	Signal	D	AM	18.1	B
				MD	24.2	C
				PM	23.4	C
<p>Notes:</p> <p>¹ "Average" control delays (in seconds/vehicle) are indicated for All-way Stop-Control (AWSC) and Signal controlled intersections. "Worst-movement delay" (in seconds/vehicle) is indicated for One-Way Stop-Controlled (OWSC) and Two-Way Stop-Controlled (TWSC) intersections.</p>						

Table 8: 2050 LOS Results

#	Intersection	Control Type	LOS Criteria	Peak Hour	2050 Conditions	
					Delay (S/V) ¹	LOS
1	Carson St & William St	Signal	D	AM	26.4	C
				MD	31.5	C
				PM	42.1	D
2	Stewart St & William St	Signal	D	AM	21.8	C
				MD	34.5	C
				PM	64.0	E
3	Roop St & William St	Signal	D	AM	20.7	C
				MD	27.1	C
				PM	35.0	C
4	State St & William St	TWSC	D	AM	81.6	F
				MD	36.4	E
				PM	50.8	F
5	Saliman Rd & William St	Signal	D	AM	40.6	D
				MD	22.8	C
				PM	35.1	D
6	Gold Dust West Way/Commercial Dwy & William St	Signal	D	AM	25.4	C
				MD	30.0	C
				PM	36.4	D

Notes:
¹ "Average" control delays (in seconds/vehicle) are indicated for All-way Stop-Control (AWSC) and Signal controlled intersections. "Worst-movement delay" (in seconds/vehicle) is indicated for One-Way Stop-Controlled (OWSC) and Two-Way Stop-Controlled (TWSC) intersections.

Based on the LOS results, the following deficiencies have been identified:

- ❖ State Street 2030 (AM), 2050 (AM, MD, PM)
- ❖ Stewart Street 2050 (PM)

Mitigations to the deficiencies identified above have been considered and are described below.

State Street Mitigations: Operations at the existing State Street two-way stop-controlled intersection are projected to fall below policy LOS in both the 2030 and 2050 horizon years. The location of the State Street intersection, shown in **Figure 10**, is 600 feet west of the Saliman Road signalized intersection and is too close to consider for signalization as either a full signalized intersection or signalized High-T intersection.



Figure 10: Existing State Street Intersection (Source: Google)

Therefore, to mitigate the poor operations at this intersection it is recommended that left-turns from State Street to eastbound E. William Street be prohibited and rerouted to the signal at Saliman Road via Long Street. This would require a raised median and channelization to manage movements. An additional benefit of this configuration is the opportunity to incorporate improved pedestrian crossing facilities from State Street across E. William Street. The concept is shown in **Figure 11**.



Figure 11: Proposed State Street Intersection (Source: Google)

Stewart Street Mitigations: The Stewart Street intersection does not meet policy LOS during the 2050 PM Peak. This is due to excessive delay for the northbound Stewart Street to eastbound E. William Street movement. The current configuration for this movement is a shared through/right-turn lane along the south leg of northbound Stewart Street as shown in **Figure 12**.



Figure 12: Existing Stewart Street Intersection (Source: Google)

It is recommended that a dedicated right turn lane be added to northbound Stewart Street to add additional capacity for traffic turning to eastbound E. William Street. This additional turn lane could be added by reducing southbound Stewart Street to one-lane as needed to accommodate the right-turn lane given all movements onto southbound Stewart Street originate from a single lane.

The mitigations described above were analyzed using Synchro 11 software to ensure proper operations. This includes the additional left-turning traffic that would be rerouted to Saliman Road from State Street. The results are shown in **Table 9** and suggest that all intersections operate within policy LOS under the mitigated condition.

Table 9: Mitigated 2050 LOS Results

Scenario	Intersection	Peak Hour	Base Delay	Base LOS	Critical Failing Movements	Improvement	Improved Delay	Improved LOS
2030	4. State St & William St	AM	51.0	F	SBL (F)	Restrict SBL Movements	15.3	C
		MD	28.8	D	-	Restrict SBL Movements	13.6	B
		PM	30.9	D	-	Restrict SBL Movements	12.8	B
	5. Saliman & William St	AM	50.4	D	-	SBL from State St Added	48.4	D
		MD	29.1	C	-	SBL from State St Added	26.0	C
		PM	51.4	D	-	SBL from State St Added	46.0	D
2050	2. Stewart St & William St	PM	64.0	E	NBL (F)	Re-stripe to add NBR turn pocket	37.6	D
	4. State St & William St	AM	81.6	F	SBL (F)	Restrict SBL Movements	16.7	C
		MD	36.4	E	SBL (F)	Restrict SBL Movements	14.0	B
		PM	50.8	F	SBL (F)	Restrict SBL Movements	13.4	B
	5. Saliman & William St	AM	40.6	D	-	SBL from State St Added	40.2	D
		MD	22.8	C	-	SBL from State St Added	24.5	C
		PM	35.1	D	-	SBL from State St Added	39.2	D

Other Intersection Opportunities

Other opportunities for intersection improvements along the corridor have been discussed and were subsequently evaluated. This includes the potential elimination of dedicated right turn lanes along E. William Street. The intent of potentially removing these turn lanes is to provide additional space within the roadway corridor for other uses while also reducing pedestrian crossing distances. There are three existing dedicated right turn lanes along E. William Street located at Carson Street (westbound) and Saliman Road (westbound and eastbound). These locations were analyzed to determine the operations if these turn lanes were removed. The results are shown in **Table 10**.

Table 10: Right Turn Lanes Removed LOS Results

#	Intersection	Control Type	LOS Criteria	Peak Hour	2050 Conditions	
					Delay (S/V) ¹	LOS
1	Carson St & William St - WB Rt Turn Lane Removed	Signal	D	AM	37.6	D
				MD	41.2	D
				PM	65.1	E
5	Saliman Rd & Williams St - EB & WB Rt Turn Lane Removed	Signal	D	AM	44.9	D
				MD	24.5	C
				PM	44.1	D
<p><i>Notes:</i></p> <p>¹ "Average" control delays (in seconds/vehicle) are indicated for All-way Stop-Control (AWSC) and Signal controlled intersections. "Worst-movement delay" (in seconds/vehicle) is indicated for One-Way Stop-Controlled (OWSC) and Two-Way Stop-Controlled (TWSC) intersections.</p>						

As shown, the dedicated right turn lane cannot be removed at Carson Street and meet policy LOS; however, both the eastbound and westbound dedicated right turn lanes can be removed at Saliman Road and meet policy LOS.

In addition to the right turn lane removal, the option to remove right-turn-on-red (RTOR) for the northbound Roop Street to eastbound E. William Street movement was analyzed. The intent of prohibiting RTOR at this location is to alleviate potential safety concerns with sight distance towards the west for vehicles entering E. William Street as shown in **Figure 13**.



Figure 13: Roop Street Sight Distance (Source: Google)

The Roop Street intersection operations were analyzed with the no RTOR prohibition and found to function within policy LOS as shown in **Table 11**.

Table 11: Roop Street Northbound No RTOR LOS Results

#	Intersection	Control Type	LOS Criteria	Peak Hour	2050 Conditions	
					Delay (S/V)	LOS
3	Roop St & Williams St - No NB RTOR	Signal	D	AM	20.7	C
				MD	27.1	C
				PM	35.0	C

Another opportunity that was investigated is the potential for a Leading Pedestrian Interval (LPI) at Saliman Road. Due to the proximity to Carson High School, Saliman Road experiences significant pedestrian activity during certain peak times of the day. LPI is a signalization technique that adds three to five seconds of lead time for pedestrians to enter the crosswalk with all vehicular movements held on a red light. Following the LPI phase, the corresponding vehicular phase is then turned green and runs concurrent with the pedestrian crossing. The intent is to allow a few seconds for pedestrians to enter the crosswalk and become more visible to drivers, reducing potential crashes and improving intersection

safety for pedestrians. LPI is most appropriate for high pedestrian activity intersections. The LPI opportunity was analyzed at Saliman Road with a LPI length of five seconds for all pedestrian movements with the results shown in **Table 12**. It should be noted that Synchro 11 cannot analyze LPI using HCM6 methods and the Synchro Default methods must be utilized.

Table 12: Saliman Rd. with LPI LOS Results

#	Intersection	Control Type	LOS Criteria	Peak Hour	2050 Conditions	
					Delay (S/V)	LOS
5	Saliman Rd & Williams St - with LPI	Signal	D	AM	35.6	D
				MD	20.7	C
				PM	40.7	D

As **Table 12** reveals, five second LPI pedestrian phases can be incorporated at Saliman Road while still maintaining policy LOS. It must be noted that the analysis included converting the southbound left-turn signal to Permissive+Protected to achieve acceptable operations.

Proposed Corridor Analysis

Several concepts and mitigations have been identified for implementation along E. William Street. A summary of the proposed corridor is shown in **Table 13**.

Table 13: Proposed Corridor Summary

#	Intersection	Improvement
1	Carson St. & William St.	Coordinate and Optimize Signals
2	From Carson St. to Stewart St.	Remove One EB Lane
3	Stewart St. & William St.	Coordinate and Optimize Signals
		Add NB Right-Turn Lane
4	Roop St. & William St.	Coordinate and Optimize Signals
		No RTOR NB
5	State St. & William St.	Restrict Left-Out Movement
6	Saliman Rd. & William St.	Coordinate and Optimize Signals and Revise SB Left-Turn to be “Permissive-Protected”
		Eliminate EB and WB Right-Turn Lanes
		Incorporate LPI Phases
7	Gold Dust West Way & William St.	Coordinate and Optimize Signals

Each of these improvements were considered individually to determine if they would function and still meet policy LOS. These improvements were further analyzed together with all improvements incorporated to ensure the proposed corridor would also operate within policy LOS. The results of this analysis are shown in **Tables 14** and **15**.

Table 14: Proposed Corridor 2030 LOS Results

#	Intersection	Control Type	LOS Criteria	Peak Hour	2030 Conditions	
					Delay (S/V) ¹	LOS
1	Carson St & William St	Signal	D	AM	24.3	C
				MD	28.4	C
				PM	42.7	D
2	Stewart St & William St	Signal	D	AM	47.3	D
				MD	37.2	D
				PM	36.4	D
3	Roop St & William St	Signal	D	AM	19.5	B
				MD	25.7	C
				PM	32.7	C
4	State St & William St	TWSC	D	AM	15.3	C
				MD	13.6	B
				PM	12.8	B
5	Saliman Rd & William St	Signal	D	AM	36.3	D
				MD	27.2	C
				PM	50.3	D
6	Gold Dust West Way/Commercial Dwy & William St	Signal	D	AM	8.2	A
				MD	15.4	B
				PM	15.4	B
<p>Notes:</p> <p>¹ "Average" control delays (in seconds/vehicle) are indicated for All-way Stop-Control (AWSC) and Signal controlled intersections. "Worst-movement delay" (in seconds/vehicle) is indicated for One-Way Stop-Controlled (OWSC) and Two-Way Stop-Controlled (TWSC) intersections.</p>						

Table 15: Proposed Corridor 2050 LOS Results

#	Intersection	Control Type	LOS Criteria	Peak Hour	2050 Conditions	
					Delay (S/V) ¹	LOS
1	Carson St & William St	Signal	D	AM	25.6	C
				MD	30.1	C
				PM	43.5	D
2	Stewart St & William St	Signal	D	AM	44.7	D
				MD	40.0	D
				PM	45.5	D
3	Roop St & William St	Signal	D	AM	20.7	C
				MD	27.1	C
				PM	31.2	C
4	State St & William St	TWSC	D	AM	16.7	C
				MD	14.0	B
				PM	13.4	B
5	Saliman Rd & William St	Signal	D	AM	35.5	D
				MD	25.5	C
				PM	51.6	D
6	Gold Dust West Way/Commercial Dwy & William St	Signal	D	AM	21.0	C
				MD	27.3	C
				PM	42.5	D
<i>Notes:</i> ¹ "Average" control delays (in seconds/vehicle) are indicated for All-way Stop-Control (AWSC) and Signal controlled intersections. "Worst-movement delay" (in seconds/vehicle) is indicated for One-Way Stop-Controlled (OWSC) and Two-Way Stop-Controlled (TWSC) intersections.						

Based on the LOS analysis, all intersections operate at policy LOS in both 2030 and 2050.

Queue Length Analysis

Based on the proposed corridor configuration detailed above, a queue length analysis was completed on 2050 volumes to inform the design of turn lane storage and median channelization. It is recognized that actual turn lane and channelization design includes elements beyond simply the storage length (e.g. tapers) and it is the responsibility of the design engineer to detail the actual turn lane design. The results of the queue analysis are shown in **Table 16**. Storage lengths shown represent the 95th percentile or the length necessary to accommodate queues for 95-percent of expected situations.

Table 16: Proposed Corridor Queue Lengths Summary

#	Intersection	Movement	Storage (feet)	Peak Hour	95th Percentile Queue (ft)	
					2030	2050
1	Carson St & William St	NBL	130	AM	14	20
				MD	10	10
				PM	6	7
		SBL	140	AM	153	183
				MD	147	160
				PM	190	294
		SBR	160	AM	0	0
				MD	0	0
				PM	0	0
		EBL	80	AM	16	17
				MD	22	22
				PM	28	27
		WBL	100	AM	12	11
				MD	34	42
				PM	88	55
WBR	615	AM	102	163		
		MD	188	183		
		PM	196	202		
2	Stewart St & William St	NBL	600	AM	49	59
				MD	88	98
				PM	279	196
		SBL	75	AM	23	23
				MD	34	34
				PM	33	32
		EBL	160	AM	11	11
				MD	27	36
				PM	52	37
		WBL	100	AM	356	368
				MD	289	317
				PM	188	318

Table 16: Proposed Corridor Queue Lengths Summary (cont.)

3	Roop St & William St	NBL	260	AM	32	39
				MD	41	42
				PM	37	44
		SBL	105	AM	76	79
				MD	108	117
				PM	158	204
		EBL	100	AM	8	7
				MD	12	16
				PM	23	28
		WBL	280	AM	62	121
				MD	169	190
				PM	152	240
4	State St & William St	EBL	160	AM	8	10
				MD	13	15
				PM	13	13
5	Saliman Rd & William St	NBL	290	AM	247	225
				MD	167	144
				PM	145	111
		SBL	160	AM	116	125
				MD	138	160
				PM	323	325
		EBL	240	AM	8	11
				MD	17	17
				PM	19	18
		WBL	180	AM	323	306
				MD	192	165
				PM	342	258
6	Gold Dust West Way & William St	NBL	115	AM	26	65
				MD	58	98
				PM	63	111
		SBL	200	AM	21	27
				MD	71	123
				PM	89	165
		EBL	250	AM	19	21
				MD	54	63
				PM	49	50
		WBL	225	AM	48	166
				MD	75	216
				PM	80	375
<i>Notes:</i> Bold = Exceeds Existing Storage Length						

Based on the results of the queuing analysis, the following observations and recommendations are provided:

- ❖ Carson Street Southbound Left – The 2030 queues extend to John Street and interfere with turning movements at this location. Consider revising John Street to a right-in/right-out. Similarly, 2050 queues extend to near Rice Street and northbound left turns to Fleischmann Way may need to be restricted as well.
- ❖ Stewart Street Westbound Left – The future queues extend east beyond Valley Street. Consider revising Valley Street and the commercial driveway to the north to right-in/right-out through raised median channelization.
- ❖ Roop Street Southbound Left – Future queues extend beyond the existing turn lane and John Street. Extend the existing turn lane and restrict left turning movements to/from John Street.
- ❖ Saliman Road Southbound Left – Extend the existing left-turn storage to accommodate queues.
- ❖ Saliman Road Westbound Left - Extend the existing left-turn storage to accommodate queues. Eliminate the left-turn lane from eastbound E. William Street to Rand Avenue. Consider right-in/right-out at Rand Avenue and the commercial driveway to the south through raised median channelization.
- ❖ Gold Dust West Way Westbound Left – Extend the existing left-turn storage by reducing the left-turn storage for eastbound E. William Street to northbound I-580, which is thought to have excess capacity.

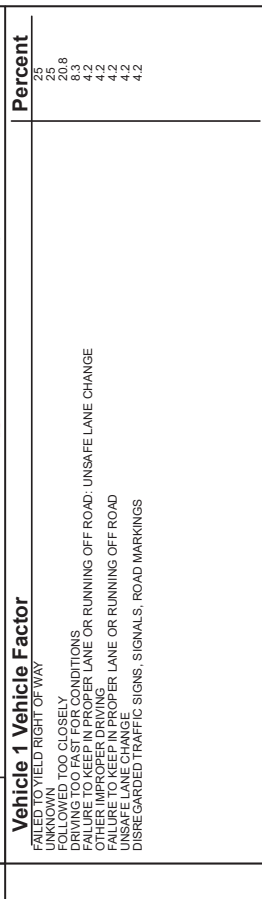
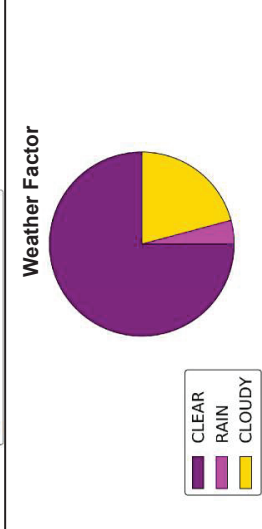
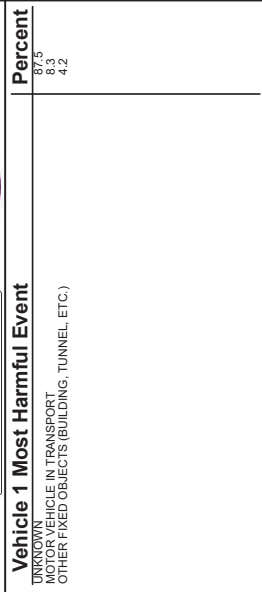
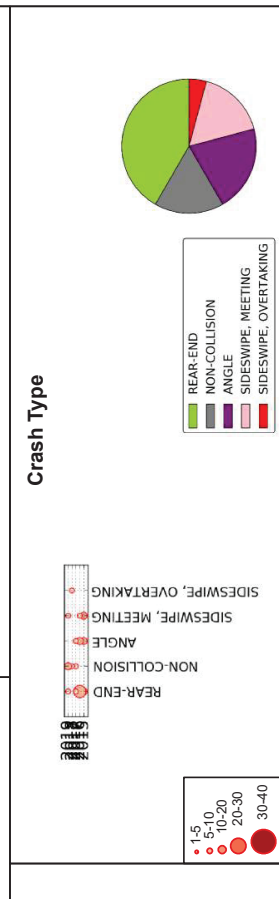
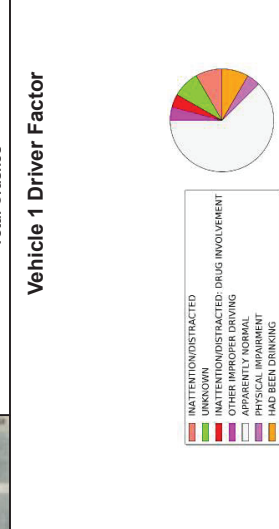
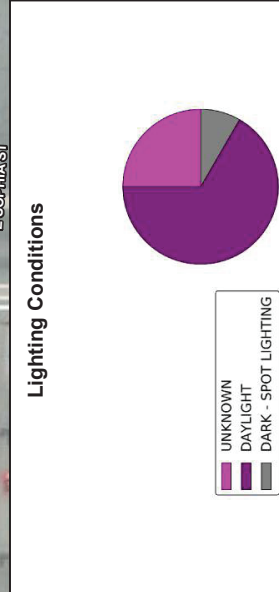
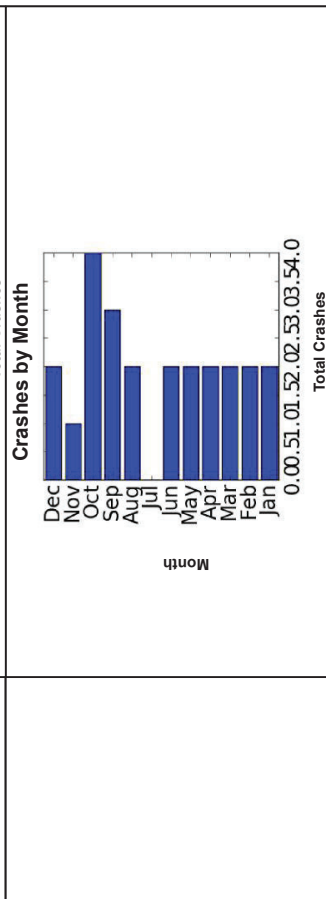
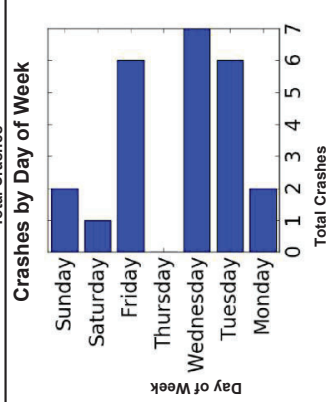
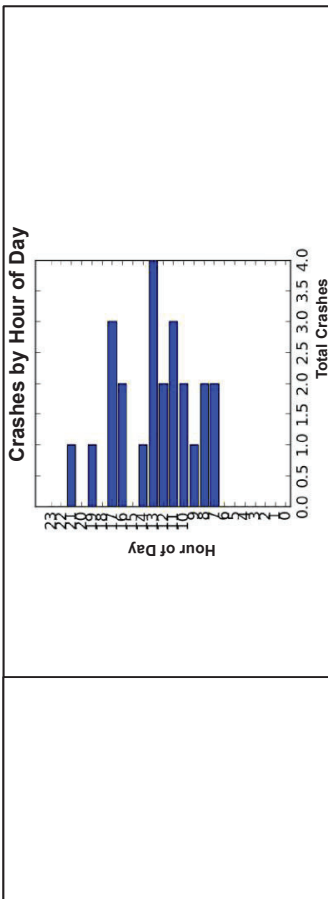
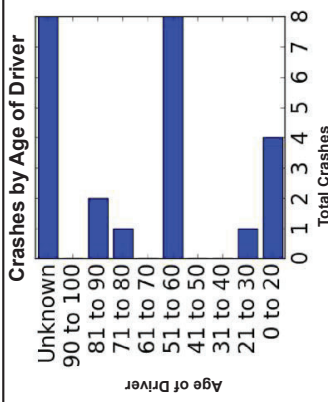
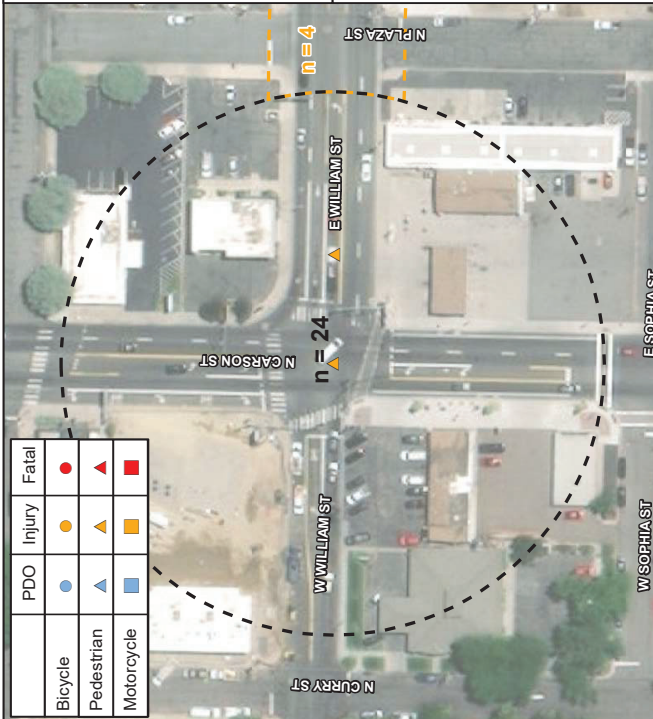
Appendix A:
Summary of Existing Plans and Studies

**E. Williams St. Traffic Analysis
Summary of Existing Plans and Studies**

No.	Traffic Plan/Study	Project Description	Date	Status	Location	Relevant Data	Relevant Findings
1	Altair Apartment Complex Traffic Study	207 unit apartment complex	Dec-21	Not Yet Approved	NW corner of Washington/Stewart	Existing AM/PM peak hour volumes at Williams St and Stewart St., Carson St., and Roop St.	Existing intersection performance issues at Stewart St. and Roop St., particularly in the NB direction.
2	Lompa Ranch North Residential	137 single family homes	Sep-21	Approved	W of I-580, S of Williams St.	Williams St./Saliman Rd. vehicle turning movement, bike/ped volumes from August 2021 (school in session)	2025 and 2040 Williams St./Saliman Rd. intersection operates at LOS D or better.
3	Lompa Ranch North Residential, Traffic Analysis Supplement	137 single family home plus park and middle school added	Nov-21	Approved	W of I-580, S of Williams St.	N/A	2026 and 2040 Williams St./Saliman Rd. intersection operates at LOS D or better.
4	Lompa Ranch West Build-Out	774 apartments, 83 duplexes, 476 single family homes, a new middle school, 80k sf of office, and 108k sf of storage	Mar-17	Approved	W of I-580, S of Williams St.	2017 turning movement counts at Saliman and Gold Dust Way. 2017 existing LOS	2025 plus project EB at Saliman Rd. LOS E for PM peak
5	Independent Review - Lompa Ranch North Residential TIS	Same as #2	Nov-21	Accepted	W of I-580, S of Williams St.	William St./Saliman Rd. AM peak hour ped counts	No major changes to the subject study findings
6	U-Haul Carson City Traffic Evaluation	106k sf U-Haul storage facility	Jun-21	Approved	E of State St., N of Williams St.	N/A	Traffic impact study not triggered

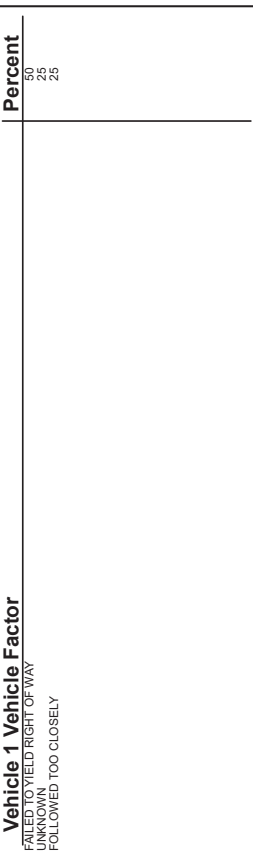
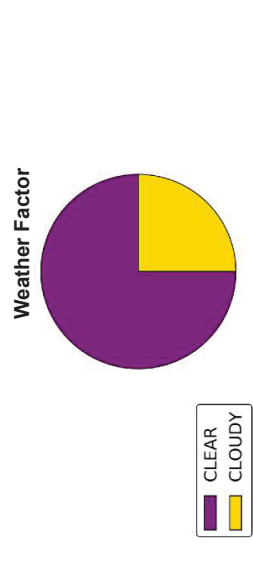
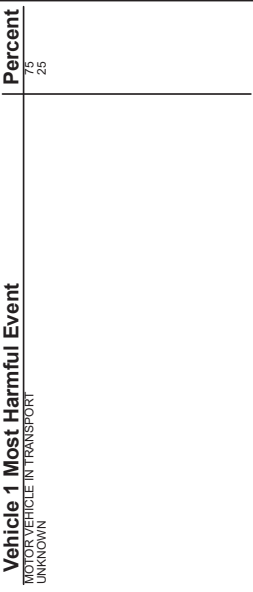
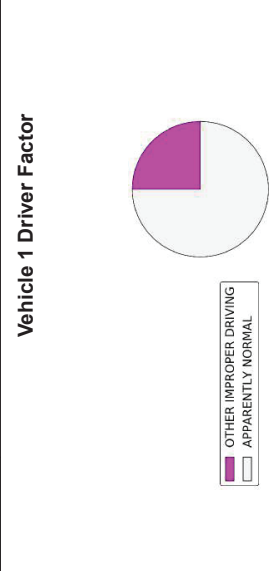
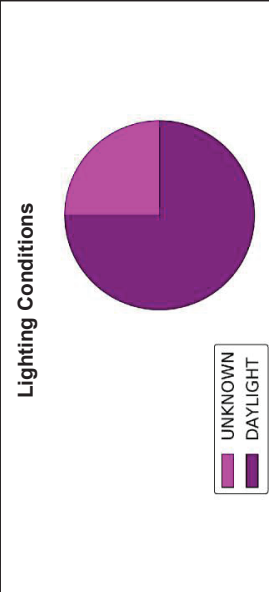
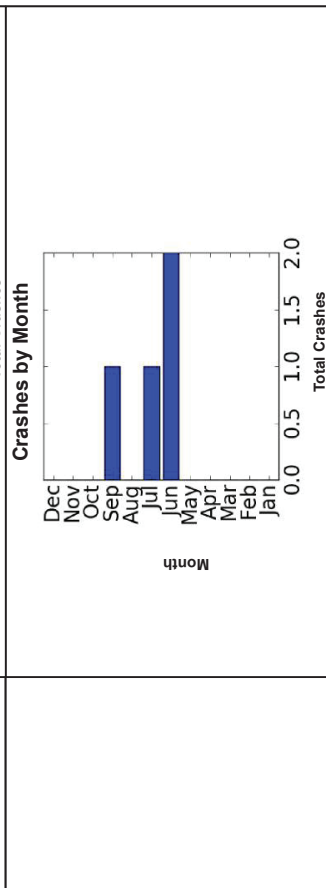
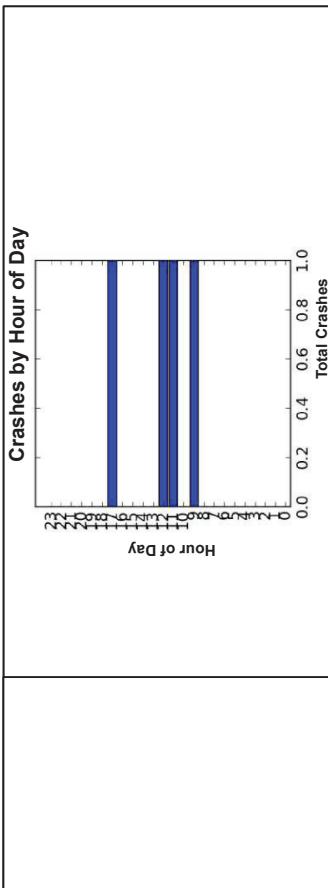
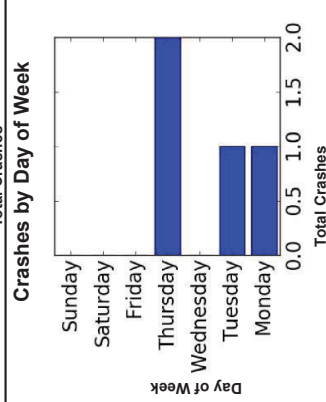
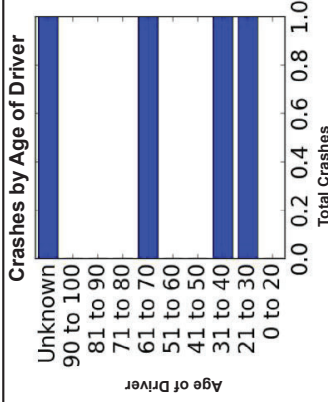
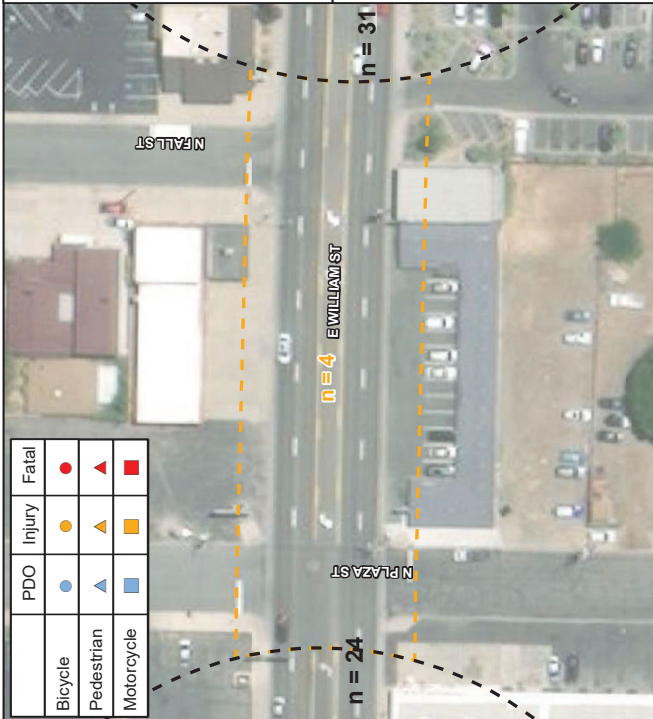
Appendix B:
Crash History Maps

	PDO	Injury	Fatal
Bicycle	●	●	●
Pedestrian	▲	▲	▲
Motorcycle	■	■	■



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	PDO	Injury	Fatal
Bicycle	●	●	●
Pedestrian	▲	▲	▲
Motorcycle	■	■	■

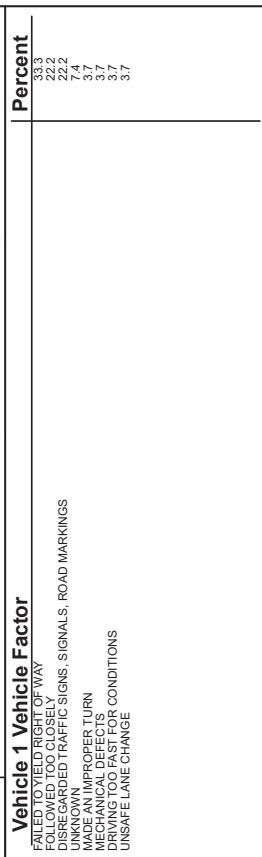
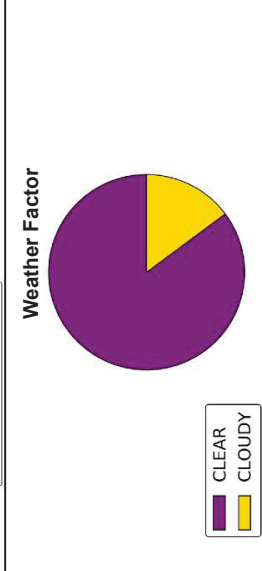
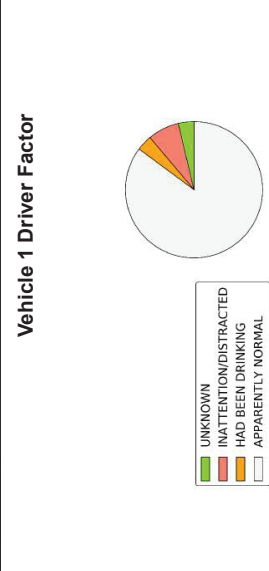
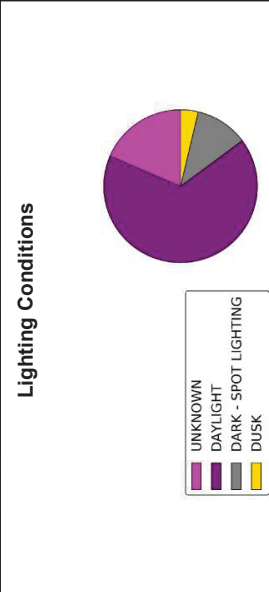
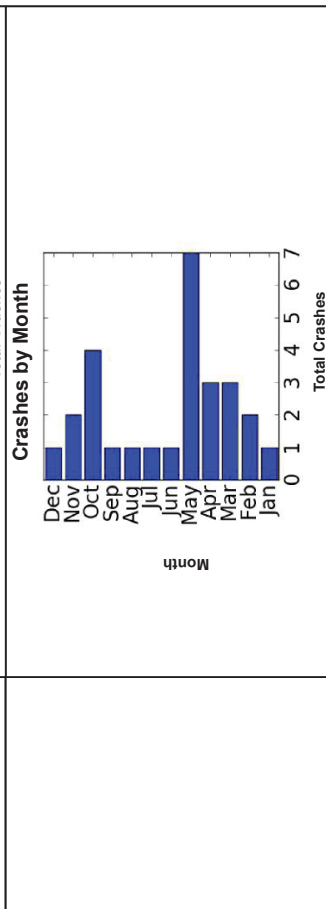
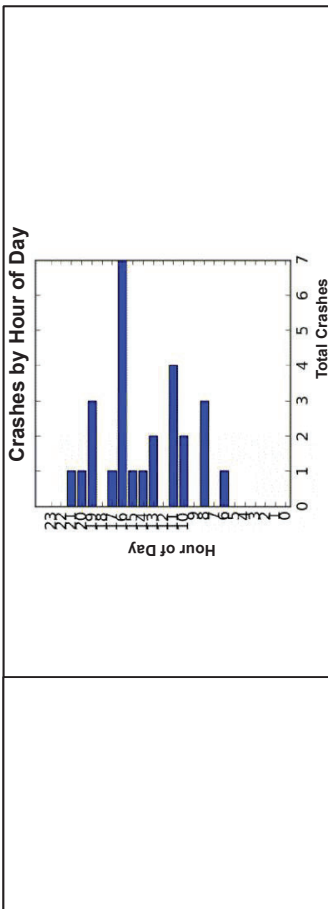
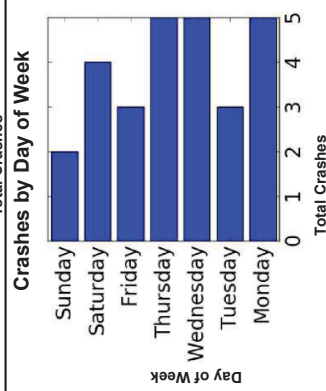
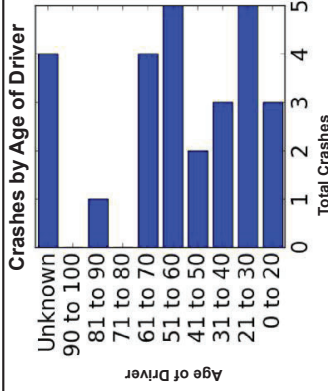
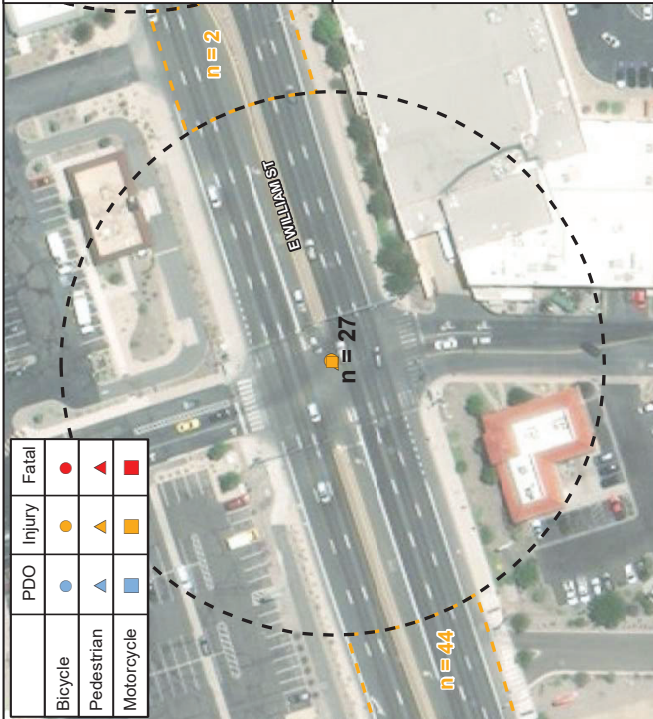


Crash Factors: CARSON ST to N STEWART ST

Williams Street
February 2022

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	PDO	Injury	Fatal
Bicycle	●	●	●
Pedestrian	▲	▲	▲
Motorcycle	■	■	■

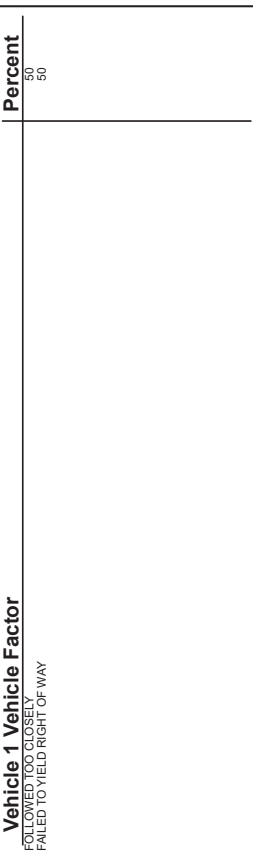
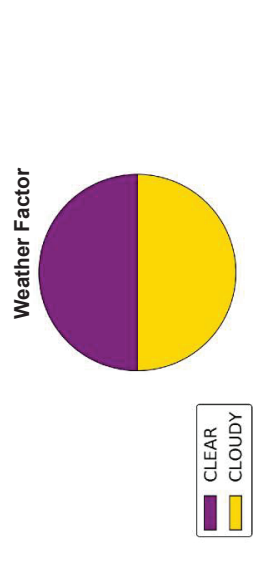
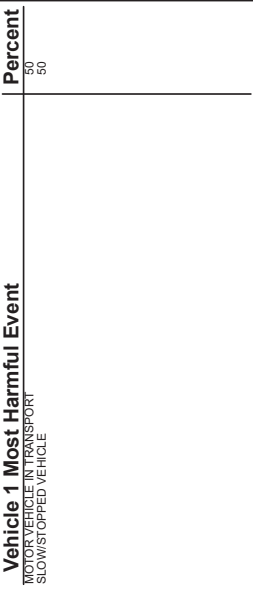
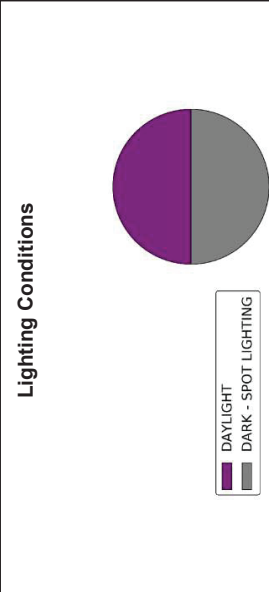
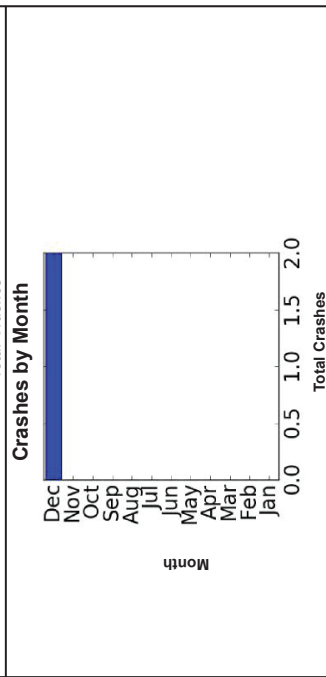
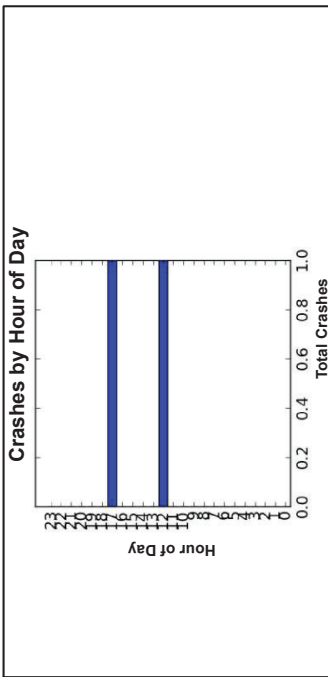
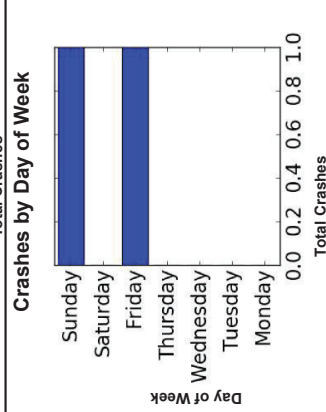
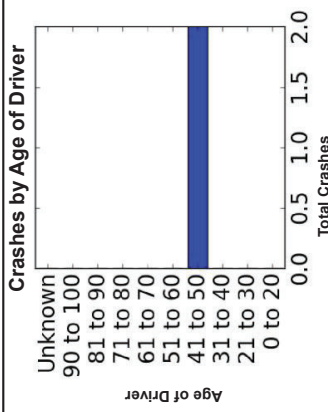
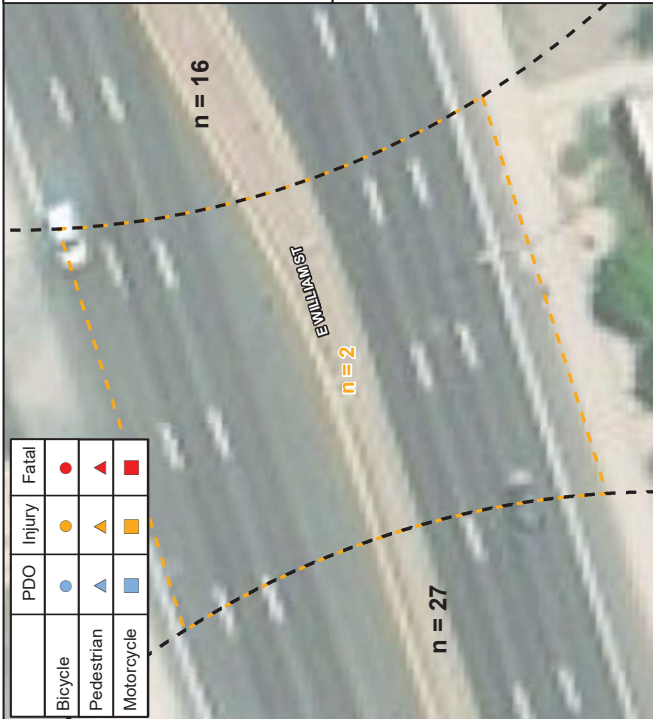


Crash Factors: GOLD DUST WEST ACCESS and E WILLIAM ST
 Williams Street
 February 2022

WOOD RODGERS
 BUILDING RELATIONSHIP ONE PROJECT AT A TIME
 189 Corporate Boulevard
 Reno, NV 89502
 Tel: 775-823-0988
 Fax: 775-823-0265

woodrogers\cloc\production\data\ubcs-Reno\GIS\trans\Cases\only\Crash\crash_FACTORS_chart_11x17_20220128_V1.mxd 1/28/2022

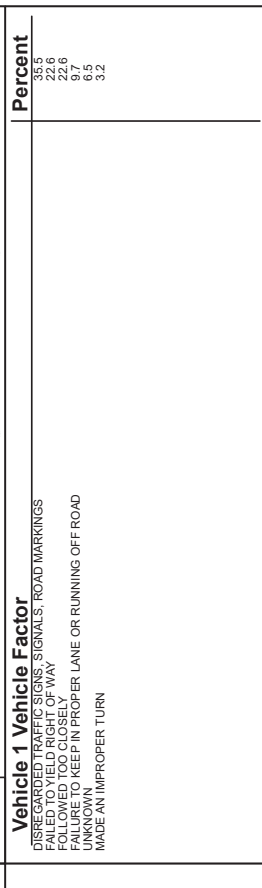
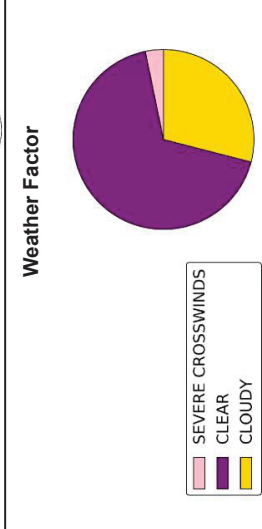
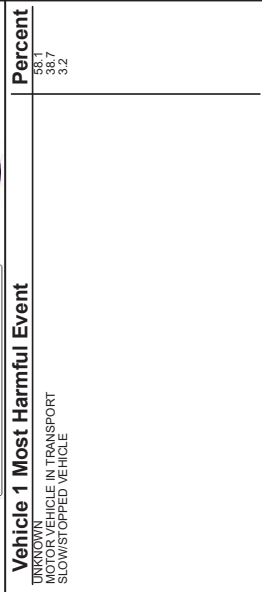
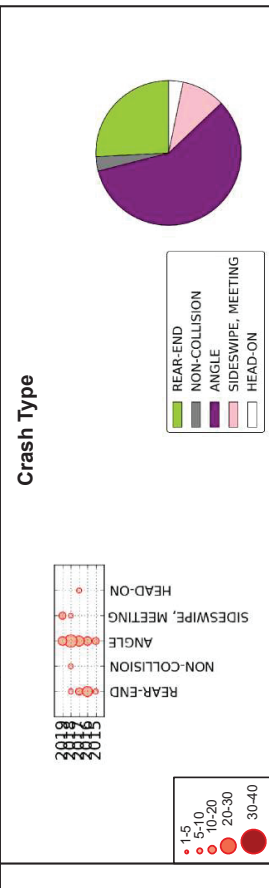
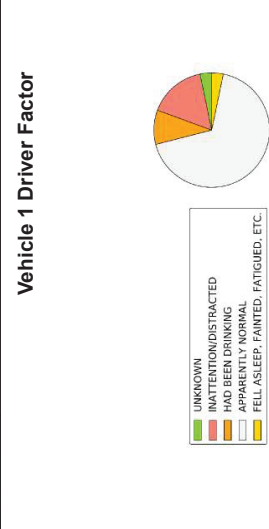
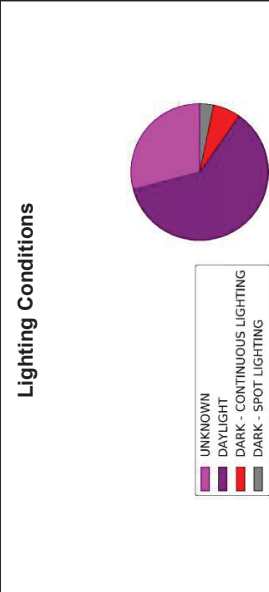
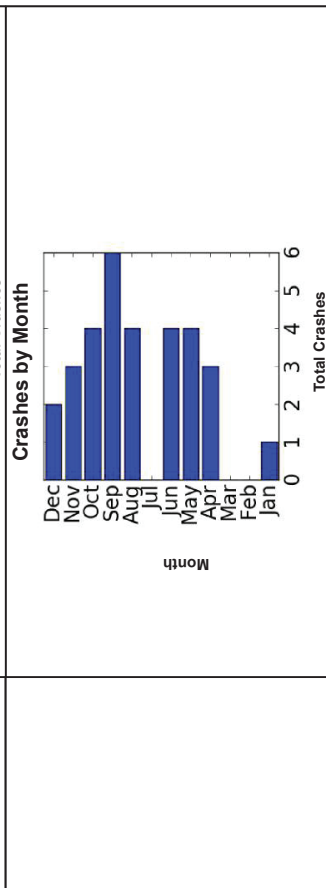
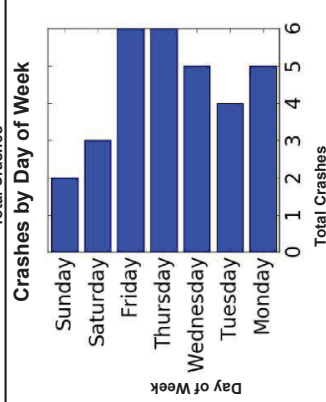
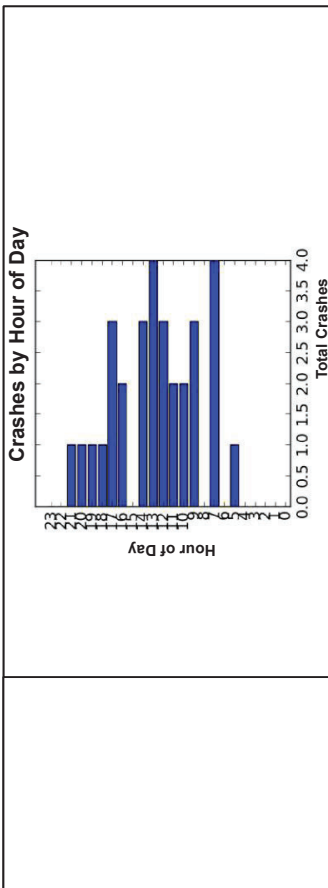
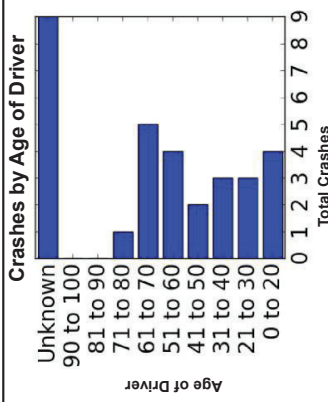
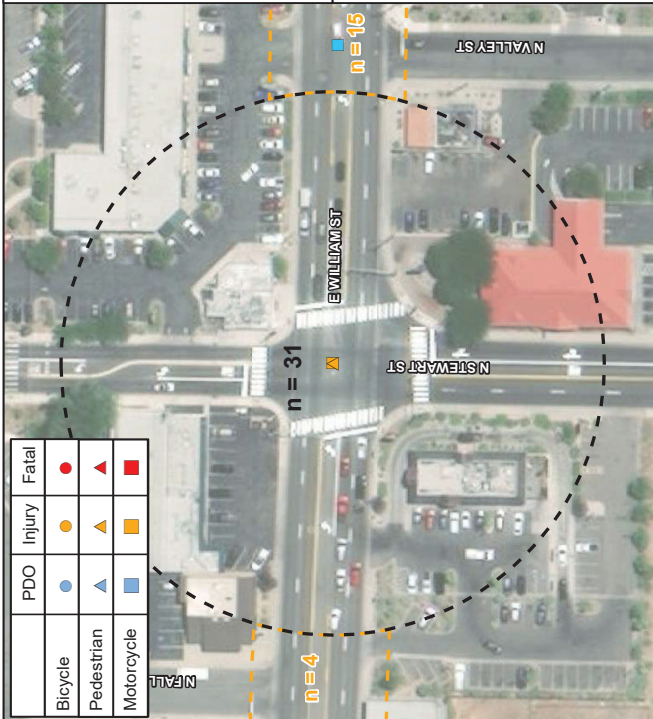
	PDO	Injury	Fatal
Bicycle	●	●	●
Pedestrian	▲	▲	▲
Motorcycle	■	■	■



Crash Factors: GOLD DUST WEST ACCESS to RUSSELL WAY

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	PDO	Injury	Fatal
Bicycle	●	●	●
Pedestrian	▲	▲	▲
Motorcycle	■	■	■

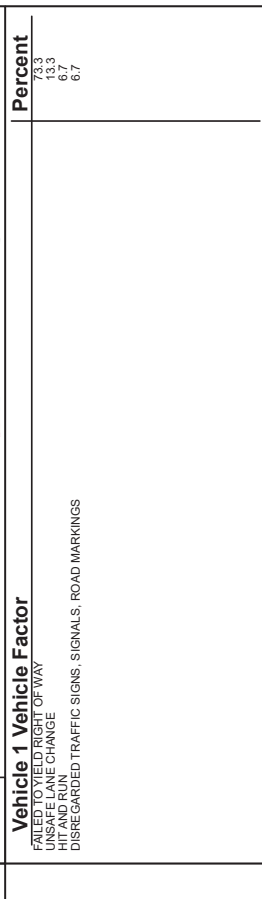
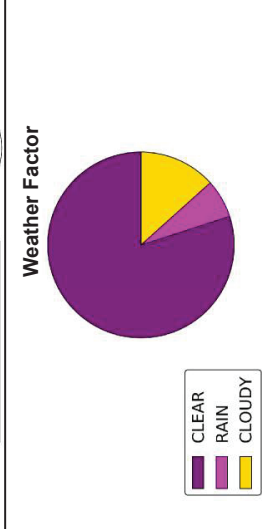
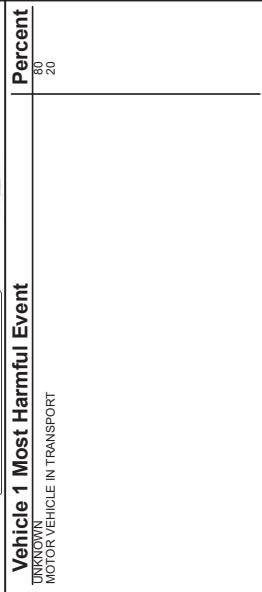
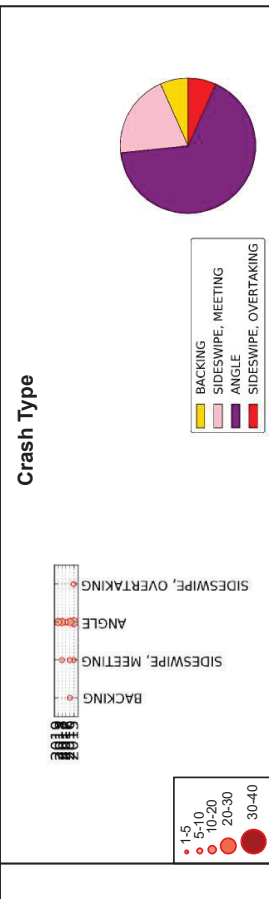
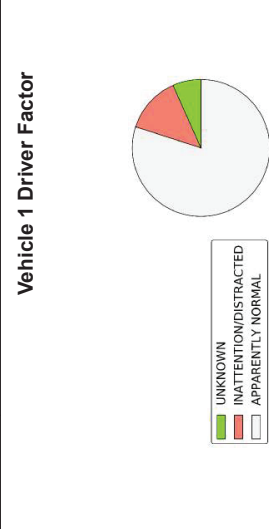
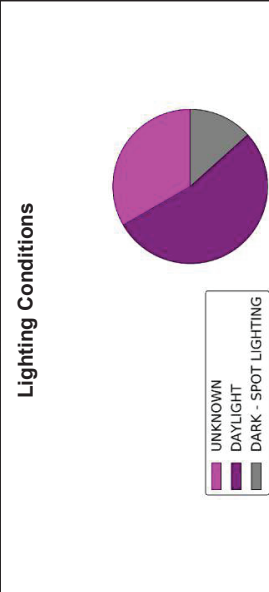
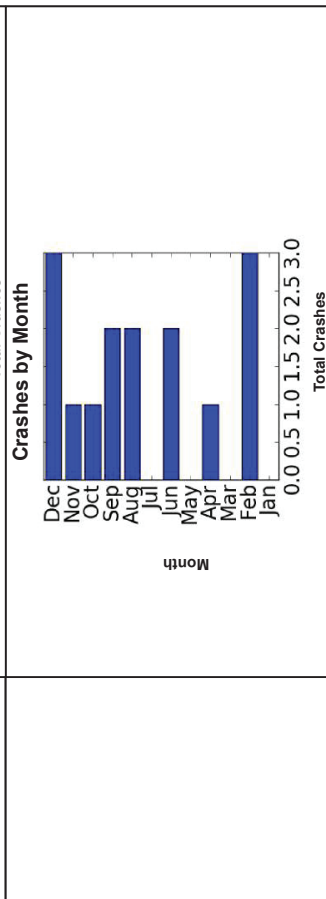
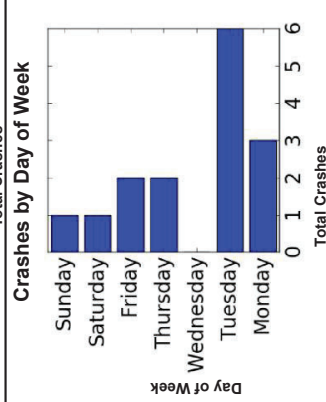
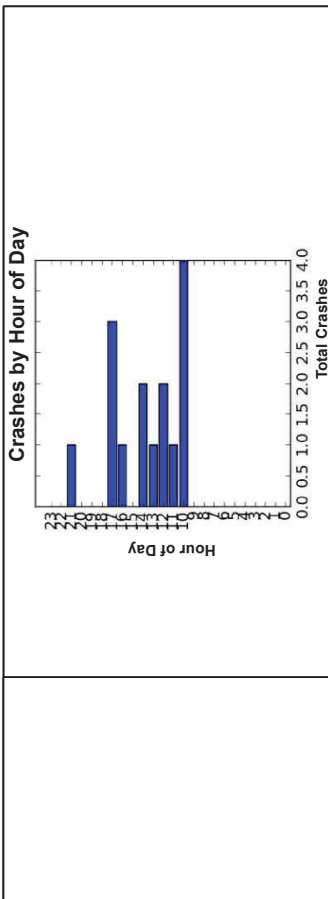
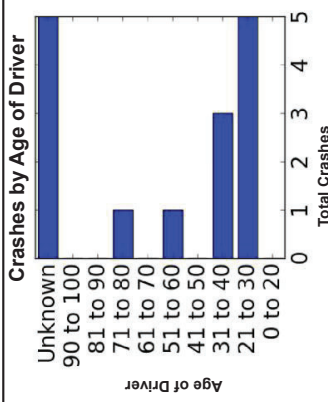
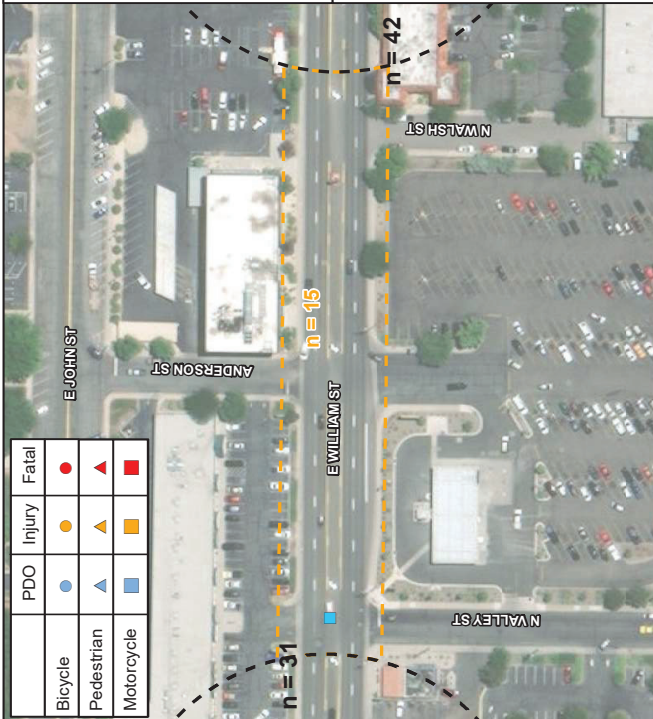


Crash Factors: N STEWART ST and E WILLIAM ST
Williams Street
February 2022

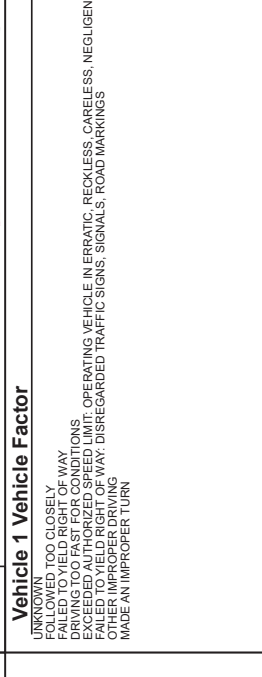
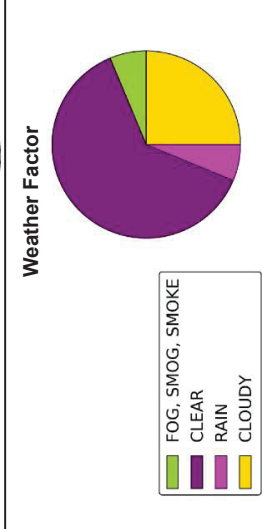
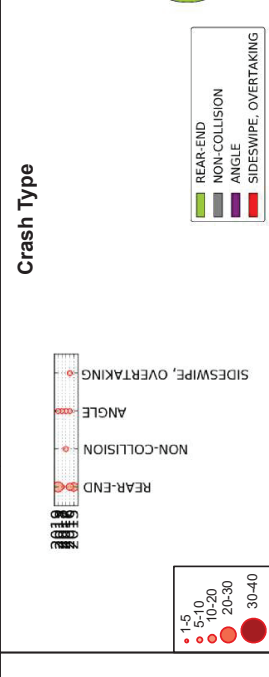
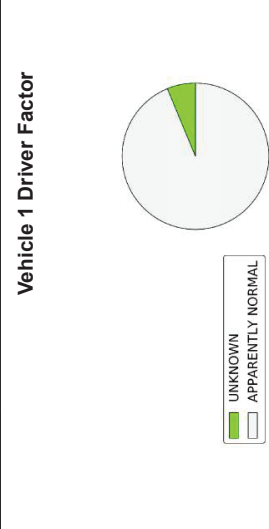
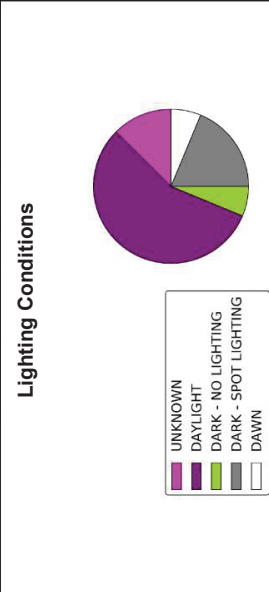
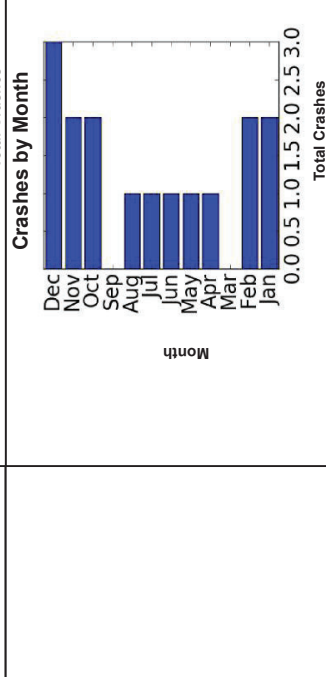
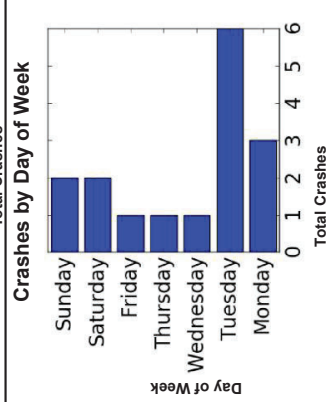
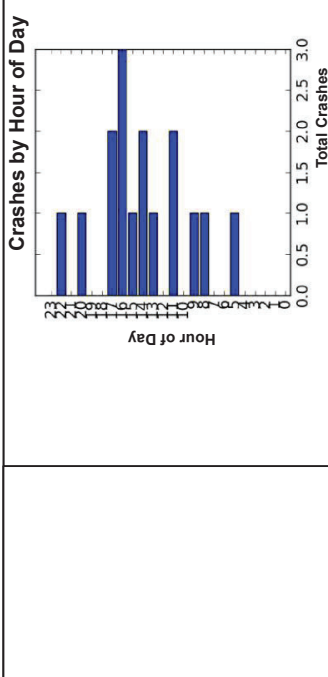
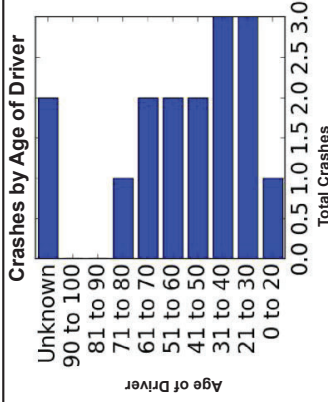
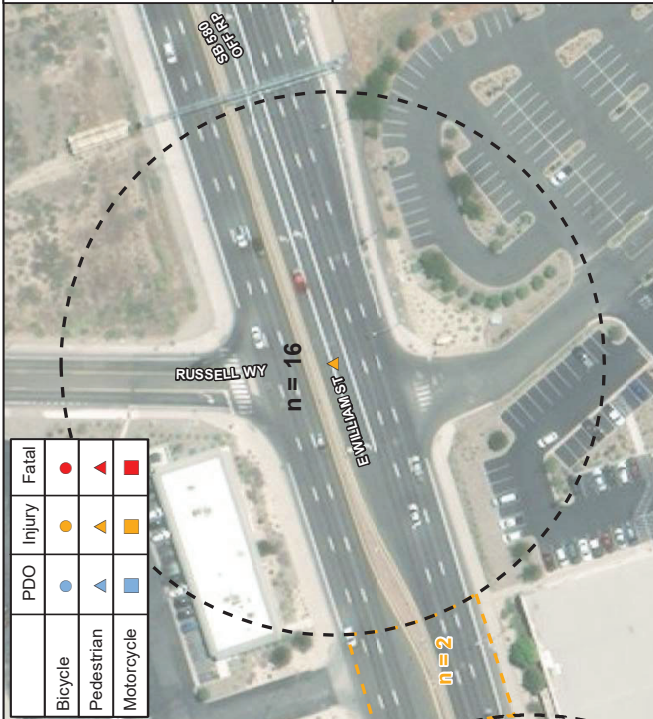
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Fax: 775-823-4268

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	PDO	Injury	Fatal
Bicycle	●	●	●
Pedestrian	▲	▲	▲
Motorcycle	■	■	■



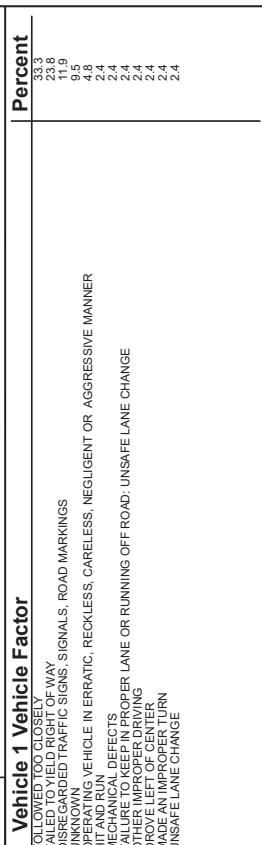
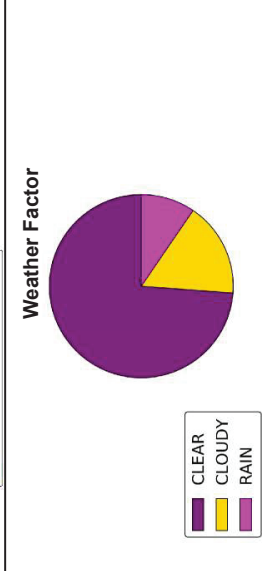
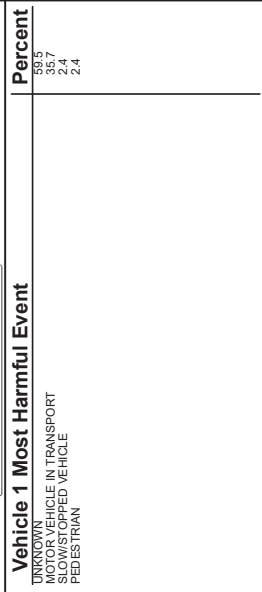
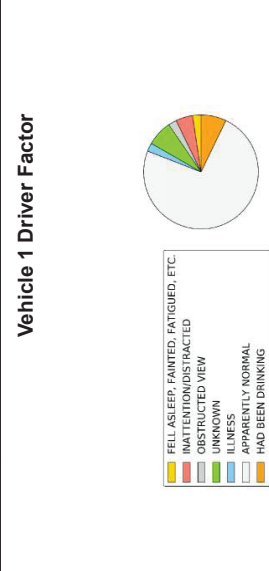
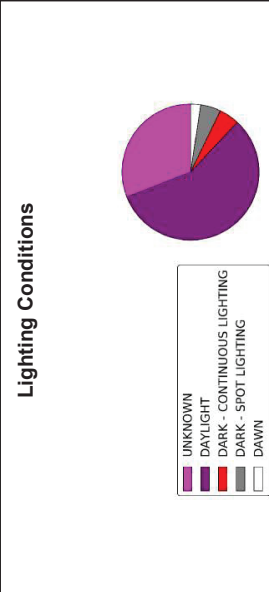
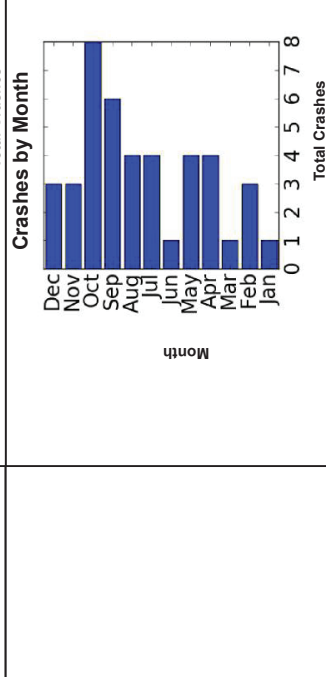
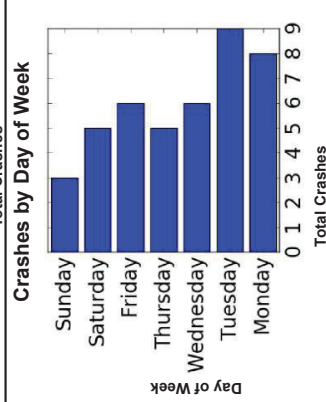
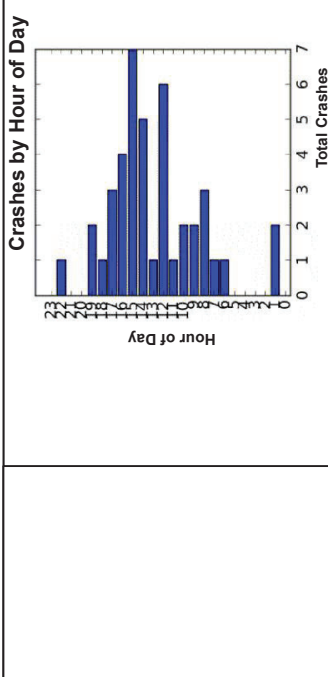
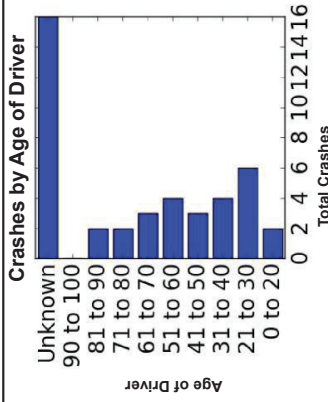
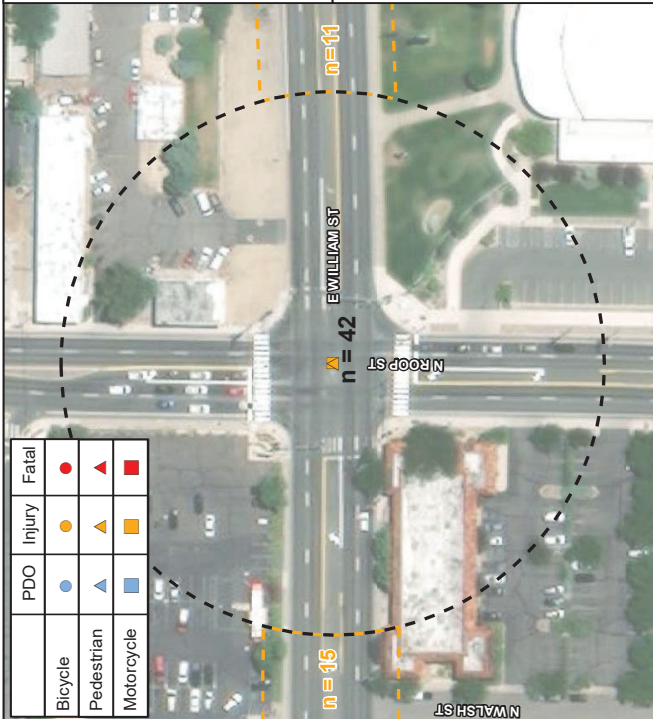
	PDO	Injury	Fatal
Bicycle	●	●	●
Pedestrian	▲	▲	▲
Motorcycle	■	■	■



Crash Factors: RUSSELL WAY and E WILLIAM ST
 Williams Street
 February 2022

woodrogers\slc\Production\data\ubcs-Reno\sls\trans\CasesOnly\Crash\crash_FACTORS_chart_intersection_11x17_20220128_V1.mxd 1/28/2022

	PDO	Injury	Fatal
Bicycle	●	●	●
Pedestrian	▲	▲	▲
Motorcycle	■	■	■



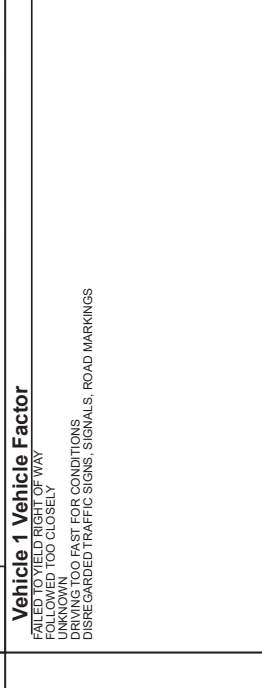
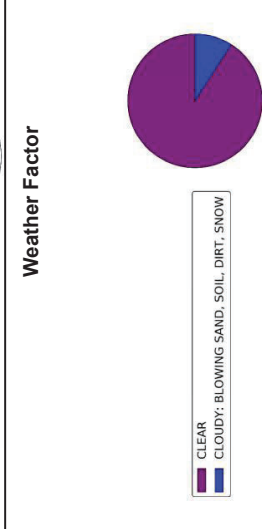
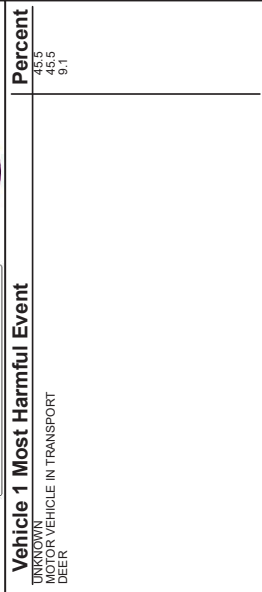
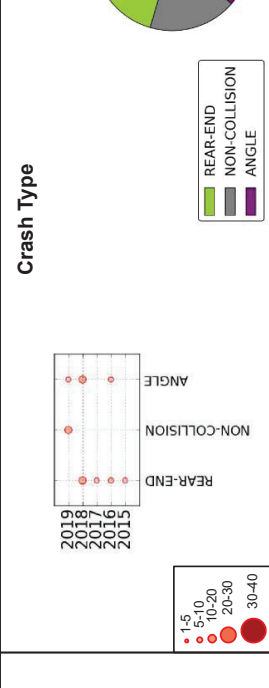
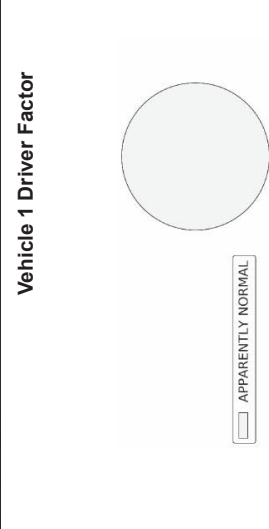
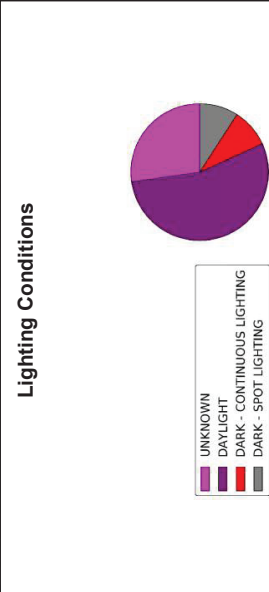
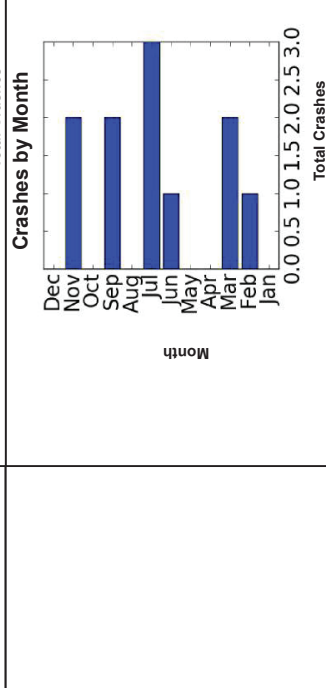
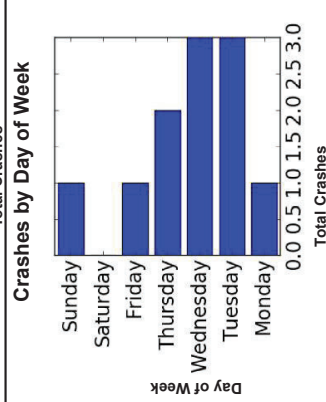
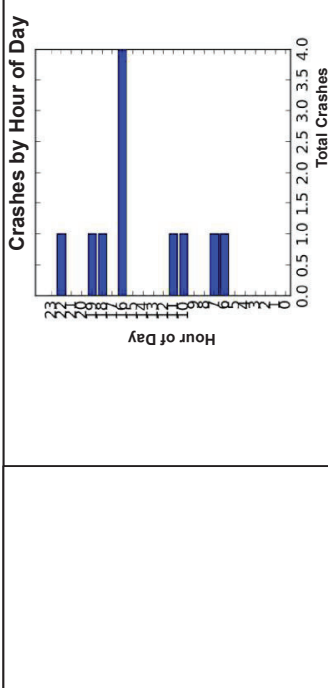
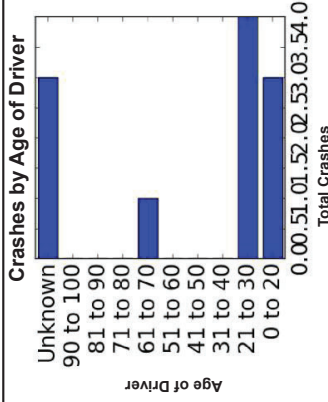
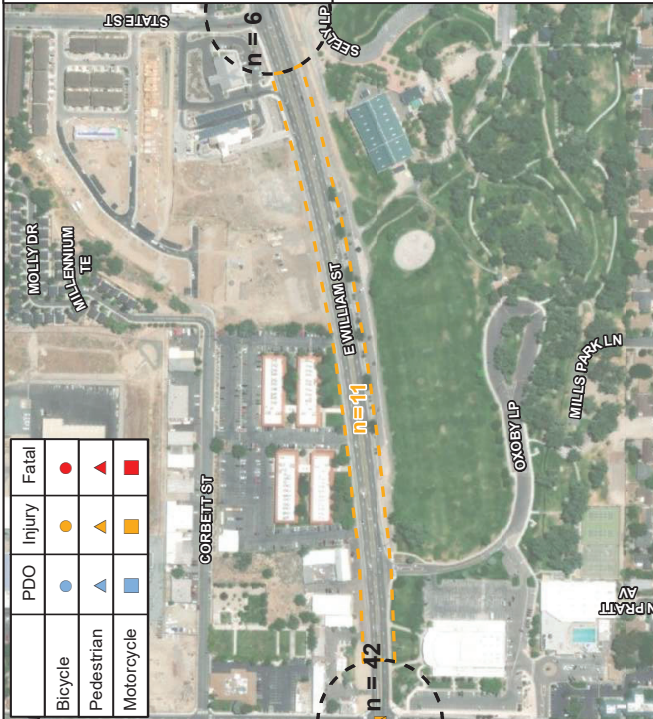
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Crash Factors: S ROOP ST and E WILLIAM ST

Williams Street
February 2022

woodrogers\log\Production\data\ubis-Reno\GIS\trans\Casesonly\Crash\crash_FACTORS_chart_intersection_11x17_20220128_V1.mxd 1/28/2022

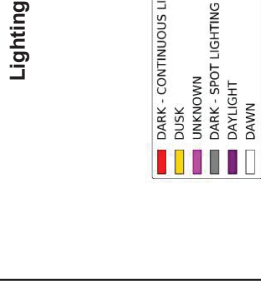
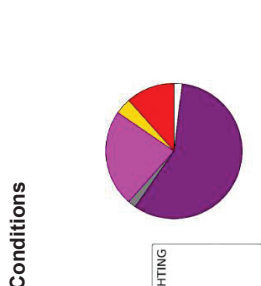
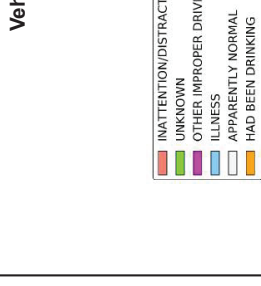
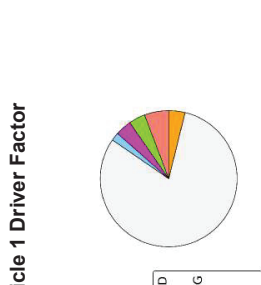
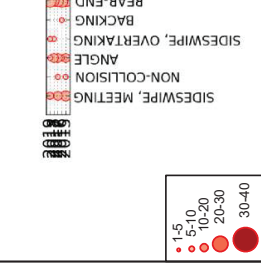
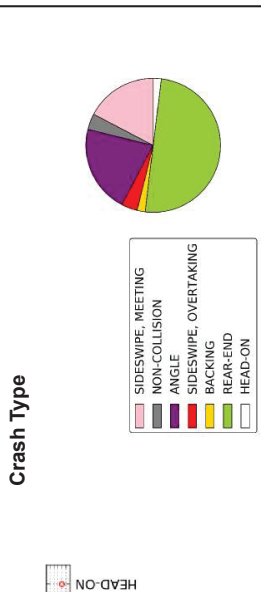
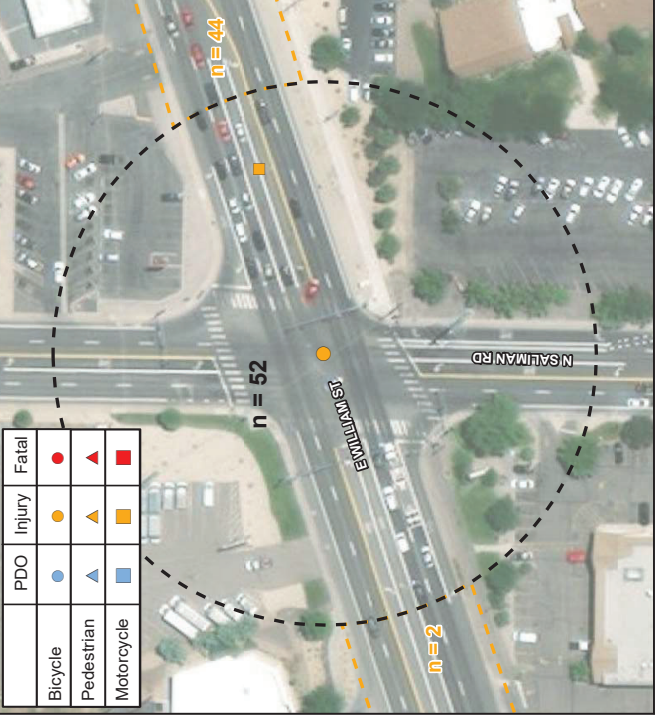
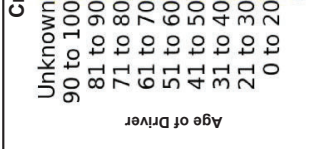
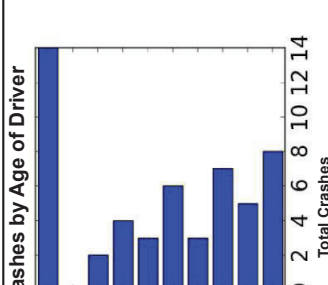
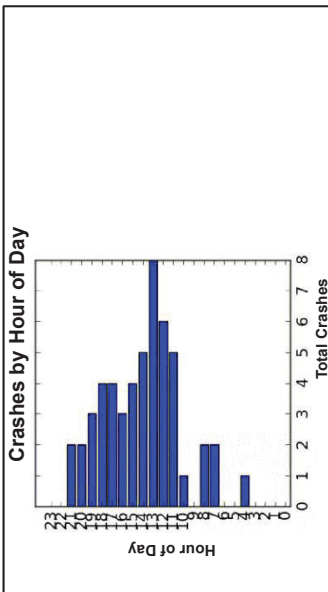
	PDO	Injury	Fatal
Bicycle	●	●	●
Pedestrian	▲	▲	▲
Motorcycle	■	■	■



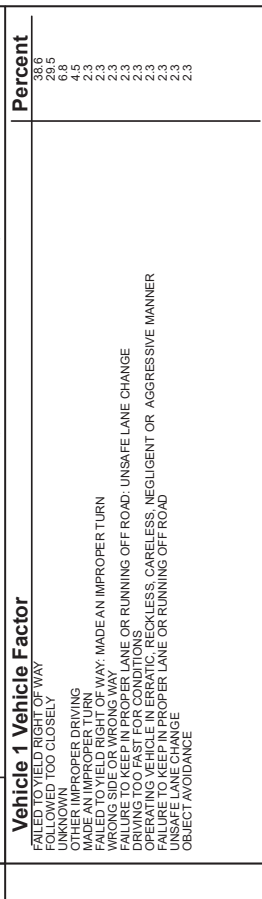
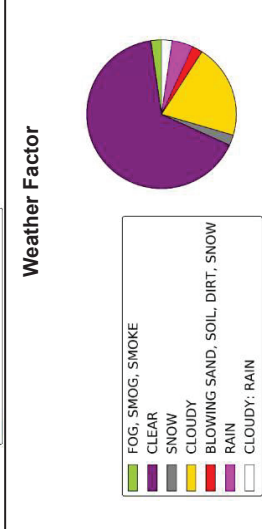
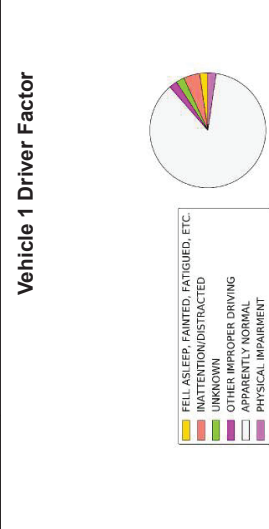
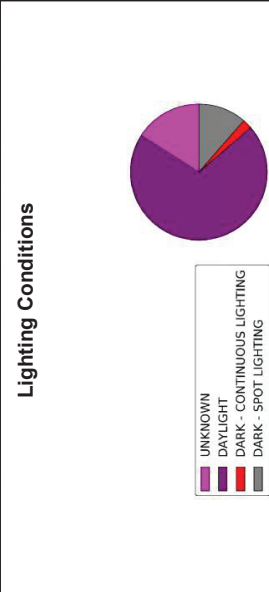
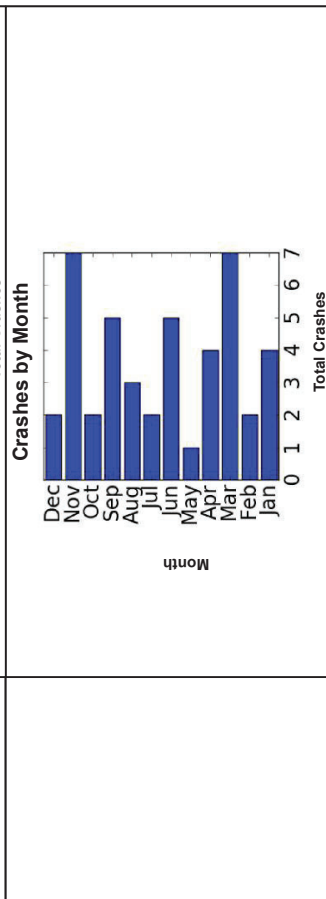
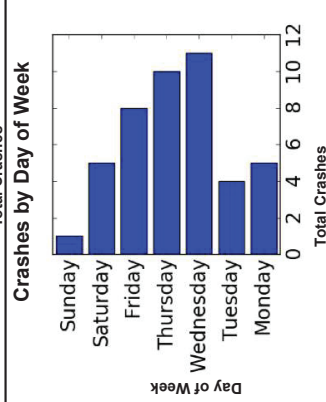
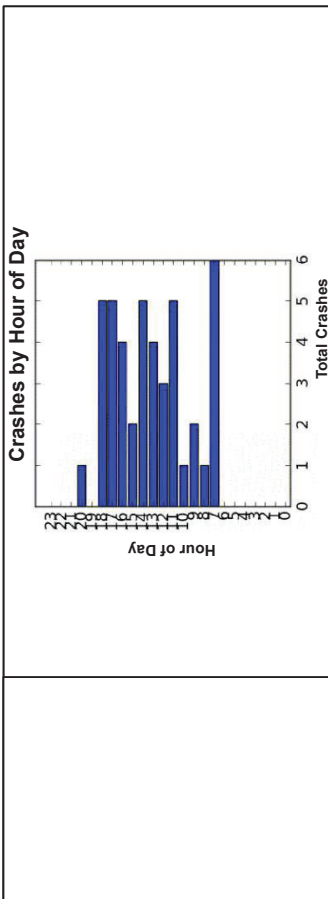
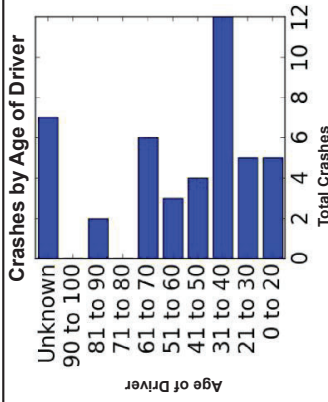
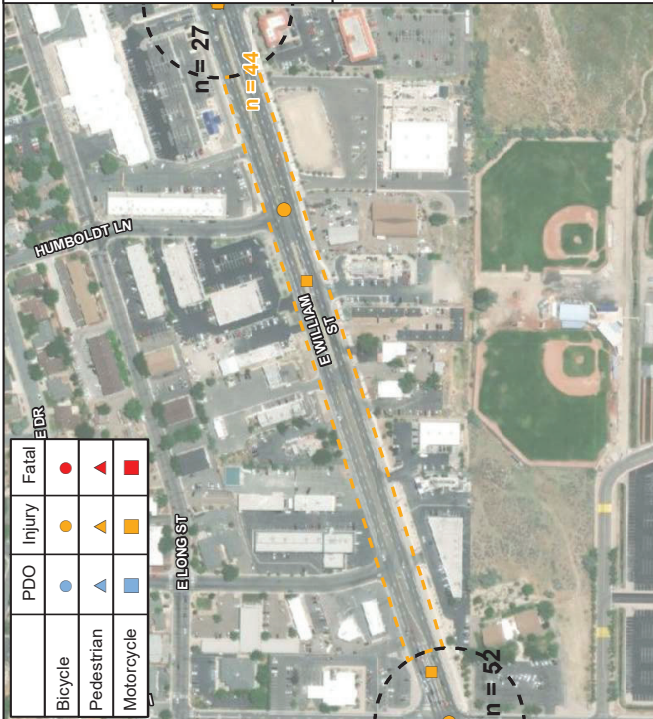
Crash Factors: S ROOPT ST to STATE ST
Williams Street
February 2022

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ENGINEERING
189 Corporate Boulevard
Reno, NV 89502
Tel: 775-823-0988
Fax: 775-823-0265

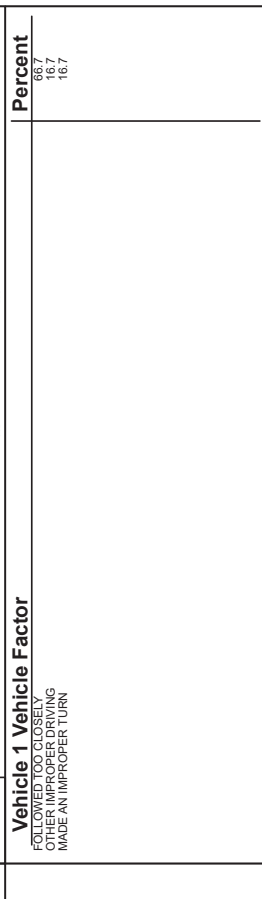
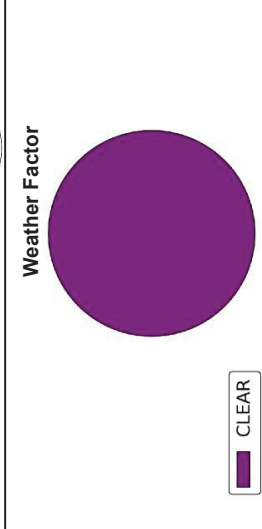
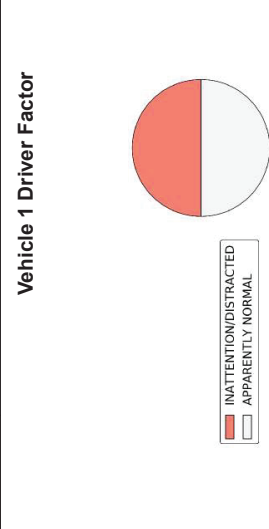
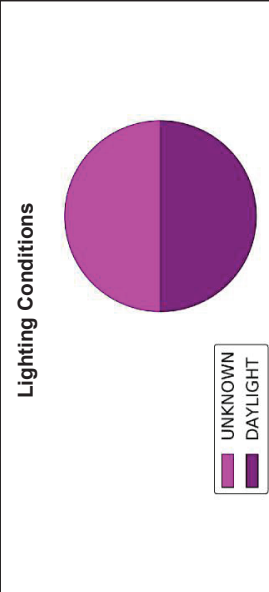
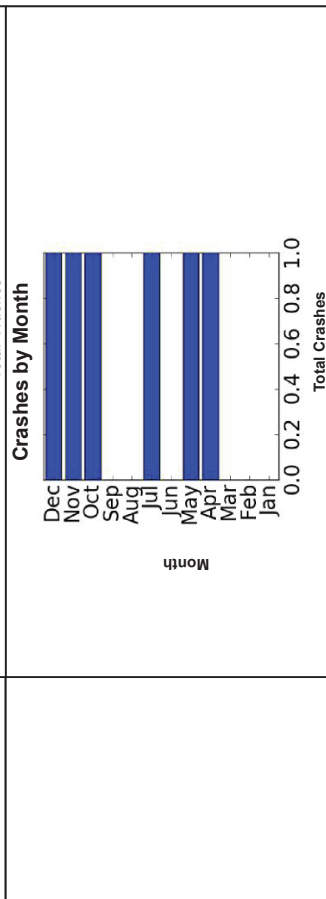
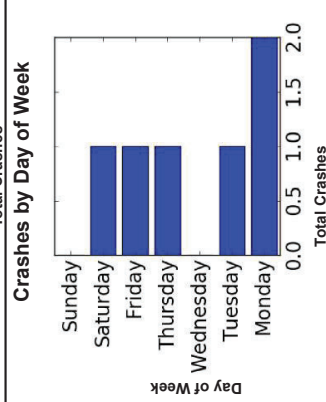
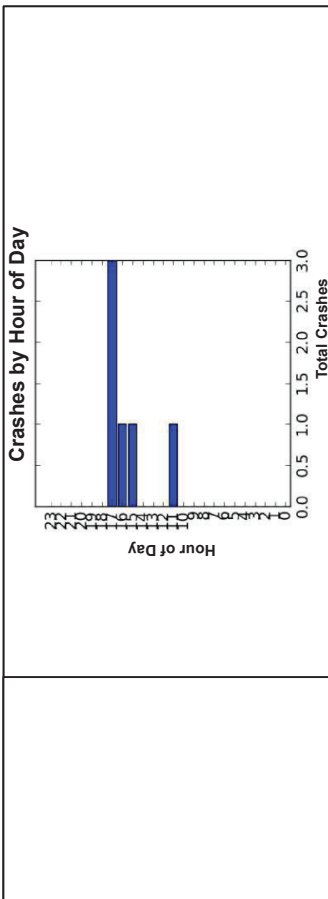
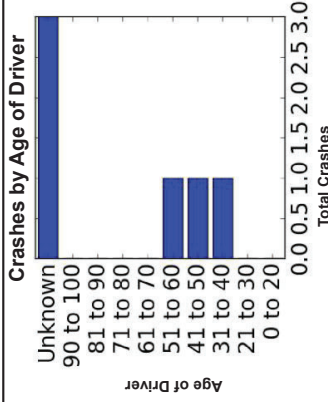
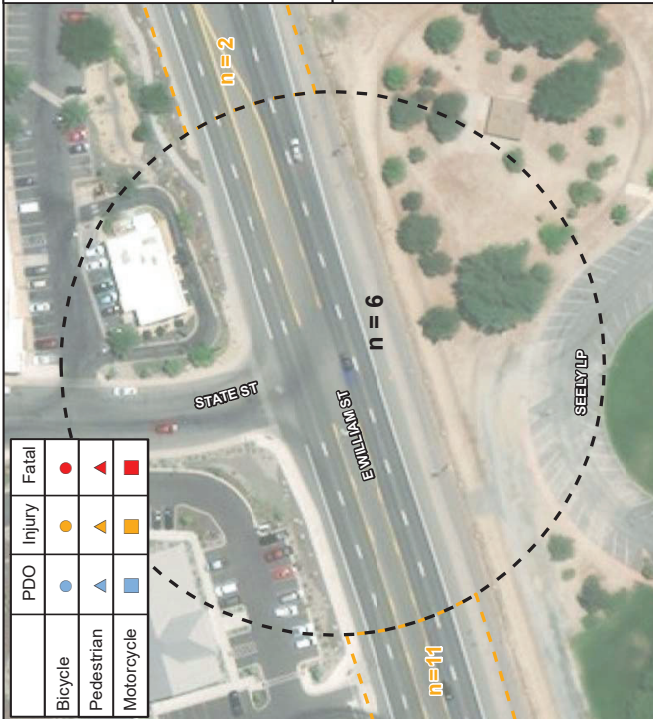
woodrodgers\clock\production\data\ubcs-Reno\GIS\trans\Cases\only\Crash\crash_FACTORS_chart_intersection_11x17_20220128_V1.mxd 1/28/2022



	PDO	Injury	Fatal
Bicycle	●	●	●
Pedestrian	▲	▲	▲
Motorcycle	■	■	■



	PDO	Injury	Fatal
Bicycle	●	●	●
Pedestrian	▲	▲	▲
Motorcycle	■	■	■



Percent
83.3
16.7

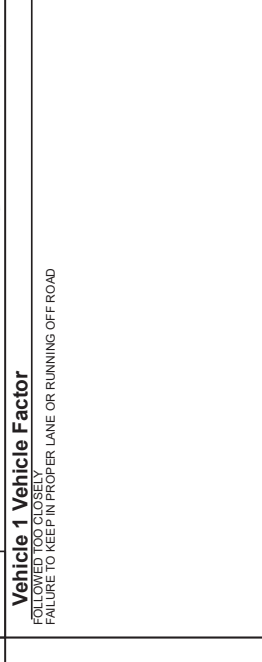
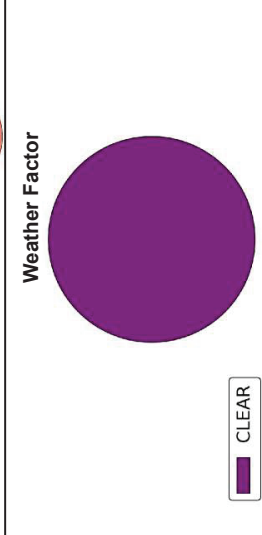
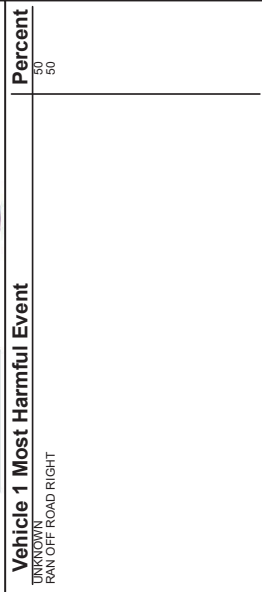
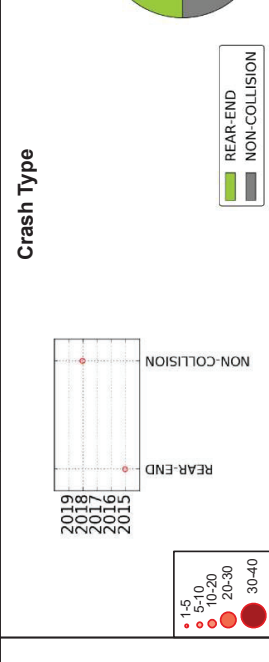
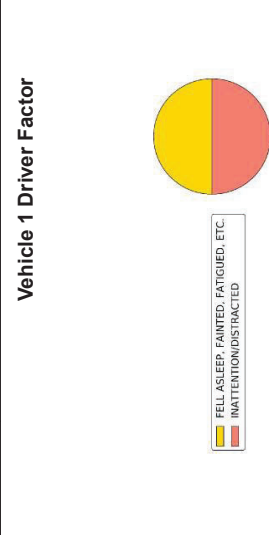
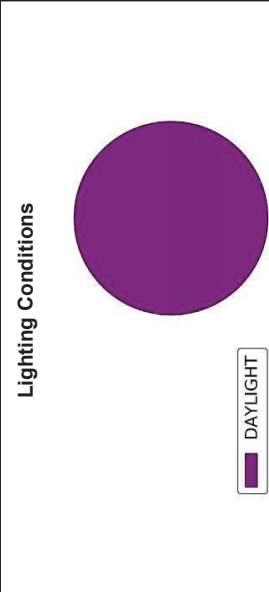
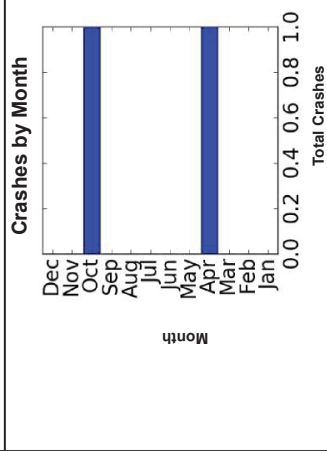
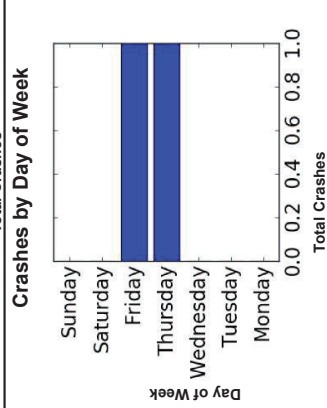
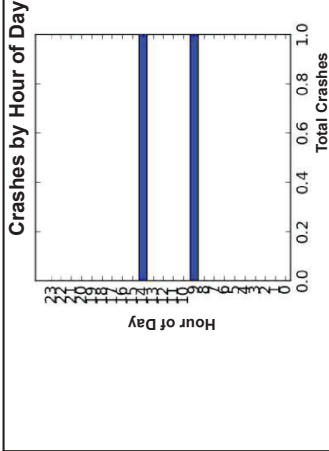
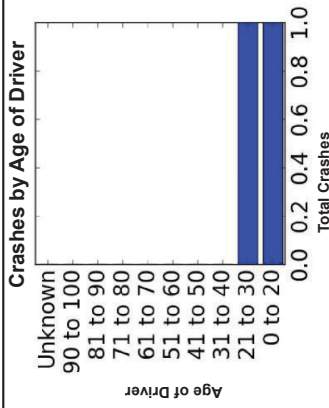
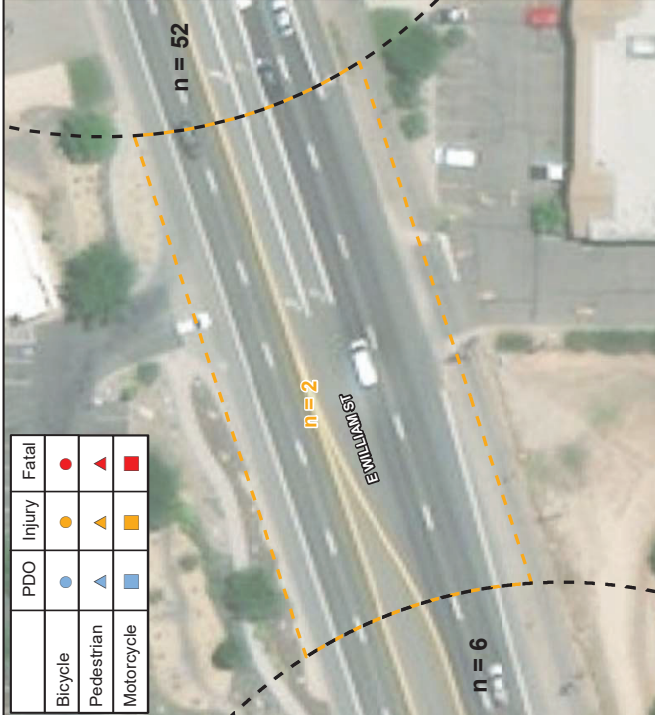
Percent
16.7
83.3

Percent
16.7
83.3

Crash Factors: STATE ST and E WILLIAM ST
Williams Street
February 2022

WOOD RODGERS
BUILDING RELATIONSHIP ONE PROJECT AT A TIME
189 Corporate Boulevard
Reno, NV 89502
Tel: 775-823-0988
Fax: 775-823-4268

	PDO	Injury	Fatal
Bicycle	●	●	●
Pedestrian	▲	▲	▲
Motorcycle	■	■	■



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Appendix C:
Synchro Outputs

William Street Corridor
1: Carson St & William St

2022 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	92	3	144	273	153	4	211	66	231	399	43
Future Volume (veh/h)	11	92	3	144	273	153	4	211	66	231	399	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	12	100	3	157	297	166	4	229	72	251	434	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	317	354	11	480	412	347	316	617	189	524	536	451
Arrive On Green	0.08	0.20	0.20	0.10	0.22	0.22	0.08	0.23	0.23	0.14	0.29	0.29
Sat Flow, veh/h	1781	1806	54	1781	1870	1574	1781	2674	819	1781	1870	1571
Grp Volume(v), veh/h	12	0	103	157	297	166	4	150	151	251	434	47
Grp Sat Flow(s),veh/h/ln	1781	0	1860	1781	1870	1574	1781	1777	1717	1781	1870	1571
Q Serve(g_s), s	0.3	0.0	3.0	4.4	9.5	5.9	0.1	4.6	4.8	6.6	13.8	1.4
Cycle Q Clear(g_c), s	0.3	0.0	3.0	4.4	9.5	5.9	0.1	4.6	4.8	6.6	13.8	1.4
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	317	0	364	480	412	347	316	410	396	524	536	451
V/C Ratio(X)	0.04	0.00	0.28	0.33	0.72	0.48	0.01	0.37	0.38	0.48	0.81	0.10
Avail Cap(c_a), veh/h	457	0	1524	580	1474	1241	732	1359	1313	835	1401	1177
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.6	0.0	22.0	17.5	23.2	21.8	16.2	20.7	20.8	15.0	21.3	16.8
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.1	0.9	0.4	0.0	0.2	0.2	0.3	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	1.3	1.7	4.1	2.1	0.0	1.8	1.9	2.5	5.8	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	0.0	22.1	17.7	24.1	22.2	16.2	21.0	21.1	15.2	22.4	16.9
LnGrp LOS	B	A	C	B	C	C	B	C	C	B	C	B
Approach Vol, veh/h		115			620			305			732	
Approach Delay, s/veh		21.7			22.0			20.9			19.6	
Approach LOS		C			C			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.1	20.7	11.4	18.0	10.5	24.3	9.9	19.5				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 20	49.1	10.0	52.6	20.0	48.1	* 10	50.6				
Max Q Clear Time (g_c+I1), s	8.6	6.8	6.4	5.0	2.1	15.8	2.3	11.5				
Green Ext Time (p_c), s	0.2	1.3	0.0	0.4	0.0	2.0	0.0	1.6				

Intersection Summary

HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
2: Stewart St & William St

2022 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	1	298	90	244	505	12	53	78	103	25	247	12
Future Volume (veh/h)	1	298	90	244	505	12	53	78	103	25	247	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1	324	98	265	549	13	58	85	112	27	268	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	282	511	152	451	1177	28	284	175	230	337	368	18
Arrive On Green	0.00	0.19	0.19	0.15	0.33	0.33	0.05	0.24	0.24	0.03	0.21	0.21
Sat Flow, veh/h	1781	2691	800	1781	3547	84	1781	729	961	1781	1768	86
Grp Volume(v), veh/h	1	212	210	265	275	287	58	0	197	27	0	281
Grp Sat Flow(s),veh/h/ln	1781	1777	1714	1781	1777	1854	1781	0	1690	1781	0	1854
Q Serve(g_s), s	0.0	6.6	6.8	6.7	7.4	7.4	1.5	0.0	6.1	0.7	0.0	8.5
Cycle Q Clear(g_c), s	0.0	6.6	6.8	6.7	7.4	7.4	1.5	0.0	6.1	0.7	0.0	8.5
Prop In Lane	1.00		0.47	1.00		0.05	1.00		0.57	1.00		0.05
Lane Grp Cap(c), veh/h	282	337	325	451	590	615	284	0	405	337	0	386
V/C Ratio(X)	0.00	0.63	0.65	0.59	0.47	0.47	0.20	0.00	0.49	0.08	0.00	0.73
Avail Cap(c_a), veh/h	869	1306	1259	782	1100	1148	637	0	1418	726	0	1372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.8	22.5	22.6	15.1	16.0	16.0	17.8	0.0	19.8	17.9	0.0	22.3
Incr Delay (d2), s/veh	0.0	0.7	0.8	0.5	0.2	0.2	0.1	0.0	0.3	0.0	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.7	2.7	2.5	2.8	2.9	0.6	0.0	2.2	0.3	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.8	23.2	23.4	15.5	16.2	16.2	17.9	0.0	20.1	18.0	0.0	23.3
LnGrp LOS	B	C	C	B	B	B	B	A	C	B	A	C
Approach Vol, veh/h		423			827			255			308	
Approach Delay, s/veh		23.3			16.0			19.6			22.8	
Approach LOS		C			B			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.6	21.8	14.0	17.1	9.5	19.9	5.4	25.7				
Change Period (Y+Rc), s	5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	15	* 51	* 20	44.4	15.1	* 45	* 20	37.4				
Max Q Clear Time (g_c+1/2), s	12.5	8.1	8.7	8.8	3.5	10.5	2.0	9.4				
Green Ext Time (p_c), s	0.0	0.8	0.2	1.9	0.0	1.2	0.0	2.4				

Intersection Summary

HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2022 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	385	20	221	684	84	32	206	122	87	240	46
Future Volume (veh/h)	21	385	20	221	684	84	32	206	122	87	240	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	23	418	22	240	743	91	35	224	133	95	261	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	692	36	451	1010	124	314	376	214	324	572	108
Arrive On Green	0.03	0.20	0.20	0.13	0.32	0.32	0.04	0.17	0.17	0.07	0.19	0.19
Sat Flow, veh/h	1781	3433	180	1781	3185	390	1781	2174	1238	1781	2979	562
Grp Volume(v), veh/h	23	216	224	240	414	420	35	181	176	95	154	157
Grp Sat Flow(s),veh/h/ln	1781	1777	1836	1781	1777	1798	1781	1777	1635	1781	1777	1764
Q Serve(g_s), s	0.6	6.3	6.3	5.6	11.8	11.8	0.9	5.3	5.6	2.4	4.3	4.5
Cycle Q Clear(g_c), s	0.6	6.3	6.3	5.6	11.8	11.8	0.9	5.3	5.6	2.4	4.3	4.5
Prop In Lane	1.00		0.10	1.00		0.22	1.00		0.76	1.00		0.32
Lane Grp Cap(c), veh/h	247	358	370	451	563	570	314	308	283	324	341	338
V/C Ratio(X)	0.09	0.60	0.61	0.53	0.74	0.74	0.11	0.59	0.62	0.29	0.45	0.46
Avail Cap(c_a), veh/h	984	1868	1931	1218	1837	1859	1033	959	882	988	1273	1263
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.3	20.6	20.6	13.8	17.2	17.2	18.1	21.6	21.7	17.5	20.3	20.3
Incr Delay (d2), s/veh	0.1	0.6	0.6	0.4	0.7	0.7	0.1	0.7	0.8	0.2	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.5	2.6	1.9	4.2	4.3	0.4	2.1	2.1	0.9	1.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	21.2	21.2	14.2	17.9	17.9	18.2	22.3	22.5	17.7	20.6	20.7
LnGrp LOS	B	C	C	B	B	B	B	C	C	B	C	C
Approach Vol, veh/h		463			1074			392			406	
Approach Delay, s/veh		21.0			17.1			22.0			20.0	
Approach LOS		C			B			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	16.2	13.6	17.8	8.0	17.3	7.0	24.4				
Change Period (Y+Rc), s	5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	25	30.6	32.0	59.6	25.0	40.6	25.0	58.6				
Max Q Clear Time (g_c+14), s	14.4	7.6	7.6	8.3	2.9	6.5	2.6	13.8				
Green Ext Time (p_c), s	0.1	1.2	0.2	1.9	0.0	1.3	0.0	3.5				

Intersection Summary

HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
4: William St & State St

2022 AM Peak Hour

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	36	558	948	85	70	41
Future Vol, veh/h	36	558	948	85	70	41
Conflicting Peds, #/hr	5	0	0	5	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	607	1030	92	76	45

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1127	0	-	0	1463 571
Stage 1	-	-	-	-	1081 -
Stage 2	-	-	-	-	382 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	616	-	-	-	119 464
Stage 1	-	-	-	-	287 -
Stage 2	-	-	-	-	660 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	613	-	-	-	110 460
Mov Cap-2 Maneuver	-	-	-	-	244 -
Stage 1	-	-	-	-	267 -
Stage 2	-	-	-	-	657 -

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	25.4
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	613	-	-	-	295
HCM Lane V/C Ratio	0.064	-	-	-	0.409
HCM Control Delay (s)	11.3	-	-	-	25.4
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	1.9

William Street Corridor
5: Saliman Rd & William St

2022 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↕	↖	↖↗	↕	↖	↖	↕	↖	↖	↕↖	
Traffic Volume (veh/h)	14	304	310	622	852	47	164	139	205	40	480	17
Future Volume (veh/h)	14	304	310	622	852	47	164	139	205	40	480	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	330	337	676	926	51	178	151	223	43	522	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	57	1110	493	738	1807	804	208	569	480	174	603	21
Arrive On Green	0.02	0.31	0.31	0.21	0.51	0.51	0.08	0.30	0.30	0.17	0.17	0.17
Sat Flow, veh/h	3456	3554	1577	3456	3554	1580	1781	1870	1577	1004	3504	121
Grp Volume(v), veh/h	15	330	337	676	926	51	178	151	223	43	264	276
Grp Sat Flow(s),veh/h/ln	1728	1777	1577	1728	1777	1580	1781	1870	1577	1004	1777	1847
Q Serve(g_s), s	0.5	8.1	15.9	22.0	19.9	1.9	6.7	7.0	13.2	4.6	16.6	16.7
Cycle Q Clear(g_c), s	0.5	8.1	15.9	22.0	19.9	1.9	6.7	7.0	13.2	11.6	16.6	16.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	57	1110	493	738	1807	804	208	569	480	174	306	318
V/C Ratio(X)	0.26	0.30	0.68	0.92	0.51	0.06	0.86	0.27	0.46	0.25	0.87	0.87
Avail Cap(c_a), veh/h	150	1110	493	853	1807	804	342	725	612	190	334	347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.9	30.0	18.8	44.2	18.8	14.3	50.7	30.3	32.4	47.5	46.3	46.3
Incr Delay (d2), s/veh	0.9	0.7	7.5	12.3	1.0	0.2	5.7	0.1	0.3	0.3	18.0	17.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.5	6.5	10.4	8.0	0.7	5.4	3.2	4.9	1.2	8.9	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.7	30.7	26.3	56.5	19.8	14.5	56.4	30.4	32.7	47.8	64.3	64.1
LnGrp LOS	E	C	C	E	B	B	E	C	C	D	E	E
Approach Vol, veh/h		682			1653			552			583	
Approach Delay, s/veh		29.1			34.7			39.7			63.0	
Approach LOS		C			C			D			E	
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		41.4	32.2	41.4	15.2	26.2	9.6	64.0				
Change Period (Y+Rc), s		6.4	7.6	5.5	6.4	* 6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		44.6	28.4	22.5	17.5	* 22	5.0	* 46				
Max Q Clear Time (g_c+I1), s		15.2	24.0	17.9	8.7	18.7	2.5	21.9				
Green Ext Time (p_c), s		1.0	0.6	1.3	0.1	0.8	0.0	6.0				

Intersection Summary

HCM 6th Ctrl Delay	39.1
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
6: Gold Dust West Way & William St

2022 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↑↑↑ ↗			↖ ↑↑↑ ↗			↖ ↗	↖ ↗		↖ ↗	↖ ↗	
Traffic Volume (veh/h)	7	526	16	23	1501	14	11	0	11	7	0	8
Future Volume (veh/h)	7	526	16	23	1501	14	11	0	11	7	0	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		1.00	0.97		0.97	0.97		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	8	572	17	25	1632	15	12	0	12	8	0	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	783	23	1170	3972	37	109	0	61	107	0	61
Arrive On Green	0.01	0.15	0.15	0.61	0.76	0.76	0.04	0.00	0.04	0.04	0.00	0.04
Sat Flow, veh/h	1781	5094	151	1781	5218	48	1358	0	1530	1356	0	1530
Grp Volume(v), veh/h	8	382	207	25	1065	582	12	0	12	8	0	9
Grp Sat Flow(s),veh/h/ln	1781	1702	1840	1781	1702	1862	1358	0	1530	1356	0	1530
Q Serve(g_s), s	0.5	12.3	12.4	0.0	12.5	12.5	1.0	0.0	0.9	0.7	0.0	0.7
Cycle Q Clear(g_c), s	0.5	12.3	12.4	0.0	12.5	12.5	1.6	0.0	0.9	1.5	0.0	0.7
Prop In Lane	1.00		0.08	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	80	523	283	1170	2592	1417	109	0	61	107	0	61
V/C Ratio(X)	0.10	0.73	0.73	0.02	0.41	0.41	0.11	0.00	0.20	0.07	0.00	0.15
Avail Cap(c_a), veh/h	196	2119	1146	1170	2592	1417	174	0	134	171	0	134
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.8	46.4	46.4	7.8	4.8	4.8	54.1	0.0	53.4	54.1	0.0	53.3
Incr Delay (d2), s/veh	0.2	8.6	15.5	0.0	0.5	0.9	0.2	0.0	0.6	0.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.7	6.8	0.2	3.5	4.0	0.3	0.0	0.3	0.2	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.0	55.0	61.9	7.8	5.2	5.6	54.2	0.0	54.0	54.2	0.0	53.7
LnGrp LOS	D	E	E	A	A	A	D	A	D	D	A	D
Approach Vol, veh/h		597			1672			24				17
Approach Delay, s/veh		57.3			5.4			54.1				53.9
Approach LOS		E			A			D				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		12.5	77.4	25.1		12.5	7.5	95.0				
Change Period (Y+Rc), s		7.9	7.4	* 7.4		7.9	* 6.4	7.4				
Max Green Setting (Gmax), s		10.1	11.6	* 72		10.1	* 8.6	74.6				
Max Q Clear Time (g_c+I1), s		3.6	2.0	14.4		3.5	2.5	14.5				
Green Ext Time (p_c), s		0.0	0.0	3.1		0.0	0.0	12.8				

Intersection Summary

HCM 6th Ctrl Delay	19.7
HCM 6th LOS	B

Notes

- User approved pedestrian interval to be less than phase max green.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
1: Carson St & William St

2022 AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	12	103	157	297	166	4	301	251	434	47
v/c Ratio	0.04	0.34	0.36	0.50	0.27	0.01	0.45	0.46	0.53	0.07
Control Delay	16.3	29.3	18.2	22.9	5.5	12.8	24.1	14.4	18.2	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	29.3	18.2	22.9	5.5	12.8	24.1	14.4	18.2	1.0
Queue Length 50th (ft)	2	32	36	74	0	1	44	51	102	0
Queue Length 95th (ft)	16	96	109	241	47	7	110	140	317	5
Internal Link Dist (ft)		326		637			201		484	
Turn Bay Length (ft)	80		100			130		140		
Base Capacity (vph)	461	1577	466	1587	1345	731	2758	721	1506	1251
Starvation Cap Reductn	0	0	0	0	0	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	0.03	0.07	0.34	0.19	0.12	0.01	0.11	0.35	0.29	0.04

Intersection Summary

William Street Corridor
2: Stewart St & William St

2022 AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	1	422	265	562	58	197	27	281
v/c Ratio	0.00	0.60	0.57	0.38	0.16	0.35	0.07	0.66
Control Delay	15.0	30.7	20.2	17.7	16.1	19.0	15.4	35.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	30.7	20.2	17.7	16.1	19.0	15.4	35.6
Queue Length 50th (ft)	0	86	77	87	15	43	7	115
Queue Length 95th (ft)	3	166	162	190	46	136	26	238
Internal Link Dist (ft)		637		869		563		312
Turn Bay Length (ft)	160		100				75	
Base Capacity (vph)	647	2240	627	2321	533	1233	619	1326
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.19	0.42	0.24	0.11	0.16	0.04	0.21

Intersection Summary

William Street Corridor
3: Roop St & William St

2022 AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	23	440	240	834	35	357	95	311
v/c Ratio	0.08	0.55	0.53	0.59	0.10	0.56	0.25	0.33
Control Delay	13.4	28.5	17.5	20.8	18.0	27.1	18.4	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	28.5	17.5	20.8	18.0	27.1	18.4	24.8
Queue Length 50th (ft)	5	87	61	127	9	58	25	57
Queue Length 95th (ft)	21	170	139	293	33	128	71	120
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	707	2941	852	3116	683	2001	675	2023
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.15	0.28	0.27	0.05	0.18	0.14	0.15

Intersection Summary

William Street Corridor
5: Saliman Rd & William St

2022 AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	15	330	337	676	926	51	178	151	223	43	540
v/c Ratio	0.10	0.35	0.52	0.85	0.51	0.06	0.59	0.24	0.33	0.20	0.83
Control Delay	54.1	38.0	8.4	59.7	18.3	0.3	45.0	27.6	4.7	41.2	56.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.1	38.0	8.4	59.7	18.3	0.3	45.0	27.6	4.7	41.2	56.4
Queue Length 50th (ft)	5	107	7	248	214	0	92	78	0	27	199
Queue Length 95th (ft)	17	161	92	338	158	0	149	128	51	61	#281
Internal Link Dist (ft)		571			1368			439			691
Turn Bay Length (ft)	240		175	180		155	290			160	
Base Capacity (vph)	153	943	652	872	1832	885	389	725	742	233	692
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.35	0.52	0.78	0.51	0.06	0.46	0.21	0.30	0.18	0.78

Intersection Summary

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

William Street Corridor
6: Gold Dust West Way & William St

2022 AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	8	589	25	1647	12	12	8	9
v/c Ratio	0.04	0.16	0.03	0.39	0.11	0.02	0.07	0.03
Control Delay	13.9	8.5	6.7	6.1	45.8	0.1	44.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	8.5	6.7	6.1	45.8	0.1	44.4	0.2
Queue Length 50th (ft)	0	8	2	90	9	0	6	0
Queue Length 95th (ft)	m15	201	21	339	24	0	18	0
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	261	4116	827	4350	160	561	160	332
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.14	0.03	0.38	0.07	0.02	0.05	0.03

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
1: Carson St & William St

2022 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	109	4	157	120	261	6	477	113	222	468	34
Future Volume (veh/h)	20	109	4	157	120	261	6	477	113	222	468	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	118	4	171	130	284	7	518	123	241	509	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	394	349	12	460	427	359	286	766	181	409	598	503
Arrive On Green	0.07	0.19	0.19	0.10	0.23	0.23	0.07	0.27	0.27	0.13	0.32	0.32
Sat Flow, veh/h	1781	1798	61	1781	1870	1575	1781	2849	673	1781	1870	1573
Grp Volume(v), veh/h	22	0	122	171	130	284	7	322	319	241	509	37
Grp Sat Flow(s),veh/h/ln	1781	0	1858	1781	1870	1575	1781	1777	1745	1781	1870	1573
Q Serve(g_s), s	0.6	0.0	4.0	5.2	4.0	11.9	0.2	11.4	11.5	6.6	17.8	1.1
Cycle Q Clear(g_c), s	0.6	0.0	4.0	5.2	4.0	11.9	0.2	11.4	11.5	6.6	17.8	1.1
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	394	0	361	460	427	359	286	478	469	409	598	503
V/C Ratio(X)	0.06	0.00	0.34	0.37	0.30	0.79	0.02	0.67	0.68	0.59	0.85	0.07
Avail Cap(c_a), veh/h	522	0	1395	530	1350	1137	667	1245	1222	694	1283	1079
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	24.4	19.2	22.4	25.5	16.8	22.9	22.9	16.1	22.3	16.6
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.2	0.1	1.5	0.0	0.6	0.7	0.5	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	1.7	2.1	1.7	4.4	0.1	4.6	4.6	2.6	7.6	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.2	0.0	24.6	19.4	22.6	27.0	16.8	23.5	23.6	16.6	23.6	16.6
LnGrp LOS	B	A	C	B	C	C	B	C	C	B	C	B
Approach Vol, veh/h		144			585			648			787	
Approach Delay, s/veh		23.7			23.8			23.5			21.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.1	24.7	12.3	19.0	10.5	28.3	9.9	21.4				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 20	49.1	10.0	52.6	20.0	48.1	* 10	50.6				
Max Q Clear Time (g_c+I1), s	8.6	13.5	7.2	6.0	2.2	19.8	2.6	13.9				
Green Ext Time (p_c), s	0.2	3.0	0.0	0.5	0.0	2.4	0.0	1.0				

Intersection Summary

HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
2: Stewart St & William St

2022 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	15	346	82	229	417	29	104	239	238	43	268	17
Future Volume (veh/h)	15	346	82	229	417	29	104	239	238	43	268	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	376	89	249	453	32	113	260	259	47	291	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	526	123	382	1003	71	388	293	292	211	544	34
Arrive On Green	0.02	0.18	0.18	0.13	0.30	0.30	0.06	0.34	0.34	0.04	0.31	0.31
Sat Flow, veh/h	1781	2850	667	1781	3365	237	1781	858	854	1781	1743	108
Grp Volume(v), veh/h	16	233	232	249	238	247	113	0	519	47	0	309
Grp Sat Flow(s),veh/h/ln	1781	1777	1740	1781	1777	1825	1781	0	1712	1781	0	1850
Q Serve(g_s), s	0.6	9.8	10.0	8.5	8.7	8.7	3.4	0.0	22.8	1.4	0.0	11.0
Cycle Q Clear(g_c), s	0.6	9.8	10.0	8.5	8.7	8.7	3.4	0.0	22.8	1.4	0.0	11.0
Prop In Lane	1.00		0.38	1.00		0.13	1.00		0.50	1.00		0.06
Lane Grp Cap(c), veh/h	291	328	321	382	529	544	388	0	585	211	0	577
V/C Ratio(X)	0.06	0.71	0.72	0.65	0.45	0.45	0.29	0.00	0.89	0.22	0.00	0.54
Avail Cap(c_a), veh/h	704	990	970	592	834	857	614	0	1090	474	0	1038
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.5	30.5	30.6	21.2	22.7	22.7	17.5	0.0	24.8	19.9	0.0	22.6
Incr Delay (d2), s/veh	0.0	1.1	1.2	0.7	0.2	0.2	0.2	0.0	1.9	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.2	4.2	3.5	3.6	3.7	1.3	0.0	8.8	0.6	0.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.5	31.6	31.7	21.9	22.9	22.9	17.6	0.0	26.7	20.1	0.0	22.9
LnGrp LOS	C	C	C	C	C	C	B	A	C	C	A	C
Approach Vol, veh/h		481			734			632			356	
Approach Delay, s/veh		31.4			22.6			25.1			22.6	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	34.5	15.8	20.3	11.4	32.2	6.8	29.3				
Change Period (Y+Rc), s	5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	15	* 51	* 20	44.4	15.1	* 45	* 20	37.4				
Max Q Clear Time (g_c+1/3), s	13.4	24.8	10.5	12.0	5.4	13.0	2.6	10.7				
Green Ext Time (p_c), s	0.0	2.3	0.2	2.0	0.1	1.3	0.0	2.1				

Intersection Summary

HCM 6th Ctrl Delay	25.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2022 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	548	35	177	568	103	43	275	147	147	288	65
Future Volume (veh/h)	44	548	35	177	568	103	43	275	147	147	288	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	596	38	192	617	112	47	299	160	160	313	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	287	840	53	365	952	172	325	434	226	340	679	152
Arrive On Green	0.04	0.25	0.25	0.11	0.32	0.32	0.04	0.19	0.19	0.10	0.24	0.24
Sat Flow, veh/h	1781	3391	216	1781	3002	544	1781	2252	1173	1781	2882	644
Grp Volume(v), veh/h	48	312	322	192	365	364	47	234	225	160	191	193
Grp Sat Flow(s),veh/h/ln	1781	1777	1830	1781	1777	1769	1781	1777	1648	1781	1777	1750
Q Serve(g_s), s	1.3	10.8	10.8	5.2	11.9	11.9	1.4	8.2	8.6	4.7	6.2	6.4
Cycle Q Clear(g_c), s	1.3	10.8	10.8	5.2	11.9	11.9	1.4	8.2	8.6	4.7	6.2	6.4
Prop In Lane	1.00		0.12	1.00		0.31	1.00		0.71	1.00		0.37
Lane Grp Cap(c), veh/h	287	440	453	365	563	561	325	342	318	340	418	412
V/C Ratio(X)	0.17	0.71	0.71	0.53	0.65	0.65	0.14	0.68	0.71	0.47	0.46	0.47
Avail Cap(c_a), veh/h	871	1576	1623	1024	1549	1543	910	809	751	831	1073	1057
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.7	23.1	23.1	16.6	19.7	19.7	20.2	25.2	25.4	19.3	22.0	22.1
Incr Delay (d2), s/veh	0.1	0.8	0.8	0.4	0.5	0.5	0.1	0.9	1.1	0.4	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.4	4.5	1.9	4.5	4.5	0.6	3.4	3.3	1.9	2.5	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	23.9	23.9	17.0	20.2	20.2	20.3	26.1	26.4	19.7	22.3	22.4
LnGrp LOS	B	C	C	B	C	C	C	C	C	B	C	C
Approach Vol, veh/h		682		921		506		544				
Approach Delay, s/veh		23.4		19.5		25.7		21.6				
Approach LOS		C		B		C		C				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	1.7	19.4	13.1	23.0	8.8	22.2	8.5	27.7				
Change Period (Y+Rc), s	5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	25	30.6	32.0	59.6	25.0	40.6	25.0	58.6				
Max Q Clear Time (g_c+10), s	10.6	10.6	7.2	12.8	3.4	8.4	3.3	13.9				
Green Ext Time (p_c), s	0.1	1.5	0.1	2.9	0.0	1.6	0.0	3.0				

Intersection Summary

HCM 6th Ctrl Delay	22.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
4: William St & State St

2022 MD Peak Hour

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	76	767	800	61	47	48
Future Vol, veh/h	76	767	800	61	47	48
Conflicting Peds, #/hr	0	0	0	5	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	83	834	870	66	51	52

























Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	941	0	-	0	1491 478
Stage 1	-	-	-	-	908 -
Stage 2	-	-	-	-	583 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	724	-	-	-	114 534
Stage 1	-	-	-	-	354 -
Stage 2	-	-	-	-	521 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	721	-	-	-	100 529
Mov Cap-2 Maneuver	-	-	-	-	267 -
Stage 1	-	-	-	-	312 -
Stage 2	-	-	-	-	518 -

Approach	EB	WB	SB
HCM Control Delay, s	1	0	19.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	721	-	-	-	356
HCM Lane V/C Ratio	0.115	-	-	-	0.29
HCM Control Delay (s)	10.6	-	-	-	19.2
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	1.2

William Street Corridor
5: Saliman Rd & William St

2022 MD Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	685	97	252	694	85	136	155	291	57	64	31
Future Volume (veh/h)	33	685	97	252	694	85	136	155	291	57	64	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	745	105	274	754	92	148	168	316	62	70	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	1673	744	339	1913	851	291	489	412	144	386	175
Arrive On Green	0.03	0.47	0.47	0.10	0.54	0.54	0.04	0.26	0.26	0.16	0.16	0.16
Sat Flow, veh/h	3456	3554	1580	3456	3554	1581	1781	1870	1576	908	2368	1074
Grp Volume(v), veh/h	36	745	105	274	754	92	148	168	316	62	51	53
Grp Sat Flow(s),veh/h/ln	1728	1777	1580	1728	1777	1581	1781	1870	1576	908	1777	1665
Q Serve(g_s), s	1.2	16.1	3.1	8.9	14.3	3.3	0.0	8.4	21.3	7.7	2.9	3.1
Cycle Q Clear(g_c), s	1.2	16.1	3.1	8.9	14.3	3.3	0.0	8.4	21.3	16.0	2.9	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.65
Lane Grp Cap(c), veh/h	103	1673	744	339	1913	851	291	489	412	144	289	271
V/C Ratio(X)	0.35	0.45	0.14	0.81	0.39	0.11	0.51	0.34	0.77	0.43	0.18	0.19
Avail Cap(c_a), veh/h	150	1673	744	853	1913	851	485	725	611	167	334	313
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.7	20.4	9.0	50.8	15.6	13.0	45.7	34.4	39.2	51.1	41.5	41.6
Incr Delay (d2), s/veh	0.8	0.9	0.4	1.8	0.6	0.3	0.5	0.2	1.6	0.8	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	6.6	1.6	3.9	5.6	1.2	4.1	3.9	8.2	1.8	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.5	21.2	9.4	52.6	16.2	13.3	46.3	34.6	40.8	51.9	41.6	41.7
LnGrp LOS	E	C	A	D	B	B	D	C	D	D	D	D
Approach Vol, veh/h		886			1120			632			166	
Approach Delay, s/veh		21.2			24.8			40.4			45.5	
Approach LOS		C			C			D			D	
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		36.5	18.9	59.6	11.4	25.1	11.1	67.4				
Change Period (Y+Rc), s		6.4	7.6	5.5	6.4	* 6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		44.6	28.4	22.5	17.5	* 22	5.0	* 46				
Max Q Clear Time (g_c+I1), s		23.3	10.9	18.1	2.0	18.0	3.2	16.3				
Green Ext Time (p_c), s		1.2	0.3	1.9	0.2	0.2	0.0	5.0				
Intersection Summary												
HCM 6th Ctrl Delay			28.4									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
6: Gold Dust West Way & William St

2022 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↑↑↑↔			↔ ↑↑↑↔			↔ ↑	↔		↔ ↑		
Traffic Volume (veh/h)	73	935	24	59	950	62	43	6	49	57	8	39
Future Volume (veh/h)	73	935	24	59	950	62	43	6	49	57	8	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	79	1016	26	64	1033	67	47	7	53	62	9	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	1310	33	909	3302	214	140	16	123	132	25	116
Arrive On Green	0.05	0.26	0.26	0.46	0.67	0.67	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1781	5118	131	1781	4899	317	1336	185	1404	1326	283	1322
Grp Volume(v), veh/h	79	675	367	64	717	383	47	0	60	62	0	51
Grp Sat Flow(s),veh/h/ln	1781	1702	1845	1781	1702	1812	1336	0	1589	1326	0	1605
Q Serve(g_s), s	4.2	21.2	21.2	0.0	10.0	10.0	4.0	0.0	4.1	5.3	0.0	3.4
Cycle Q Clear(g_c), s	4.2	21.2	21.2	0.0	10.0	10.0	7.4	0.0	4.1	9.5	0.0	3.4
Prop In Lane	1.00		0.07	1.00		0.18	1.00		0.88	1.00		0.82
Lane Grp Cap(c), veh/h	183	871	472	909	2294	1221	140	0	140	132	0	141
V/C Ratio(X)	0.43	0.78	0.78	0.07	0.31	0.31	0.34	0.00	0.43	0.47	0.00	0.36
Avail Cap(c_a), veh/h	228	2119	1149	909	2294	1221	140	0	140	132	0	141
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.6	39.7	39.7	15.4	7.7	7.7	52.9	0.0	49.7	54.2	0.0	49.4
Incr Delay (d2), s/veh	0.6	6.7	11.8	0.0	0.4	0.7	0.5	0.0	0.8	1.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	9.4	10.9	0.9	3.3	3.6	1.4	0.0	1.7	1.8	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.2	46.4	51.6	15.4	8.1	8.4	53.4	0.0	50.5	55.2	0.0	50.0
LnGrp LOS	D	D	D	B	A	A	D	A	D	E	A	D
Approach Vol, veh/h		1121			1164			107				113
Approach Delay, s/veh		47.5			8.6			51.8				52.8
Approach LOS		D			A			D				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.0	60.2	36.8		18.0	12.1	84.9				
Change Period (Y+Rc), s		7.9	7.4	* 7.4		7.9	* 6.4	7.4				
Max Green Setting (Gmax), s		10.1	11.6	* 7.2		10.1	* 8.6	74.6				
Max Q Clear Time (g_c+I1), s		9.4	2.0	23.2		11.5	6.2	12.0				
Green Ext Time (p_c), s		0.0	0.0	6.2		0.0	0.0	6.8				

Intersection Summary

HCM 6th Ctrl Delay	29.9
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
1: Carson St & William St

2022 MD Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	22	122	171	130	284	7	641	241	509	37
v/c Ratio	0.07	0.42	0.40	0.24	0.43	0.02	0.68	0.59	0.58	0.05
Control Delay	18.3	34.0	21.2	24.6	6.0	11.8	27.5	17.4	19.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	34.0	21.2	24.6	6.0	11.8	27.5	17.4	19.2	0.1
Queue Length 50th (ft)	6	48	52	39	0	1	123	55	142	0
Queue Length 95th (ft)	24	114	122	115	62	9	235	130	378	0
Internal Link Dist (ft)		326		637			201		484	
Turn Bay Length (ft)	80		100			130		140		
Base Capacity (vph)	461	1414	448	1425	1253	674	2448	608	1324	1111
Starvation Cap Reductn	0	0	0	0	0	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	0.05	0.09	0.38	0.09	0.23	0.01	0.26	0.40	0.38	0.03

Intersection Summary

William Street Corridor
2: Stewart St & William St

2022 MD Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	16	465	249	485	113	519	47	309
v/c Ratio	0.06	0.68	0.66	0.39	0.27	0.79	0.18	0.55
Control Delay	23.2	42.7	31.3	27.1	17.0	36.5	16.7	32.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.2	42.7	31.3	27.1	17.0	36.5	16.7	32.3
Queue Length 50th (ft)	6	137	108	110	37	271	15	155
Queue Length 95th (ft)	23	240	211	218	84	492	41	286
Internal Link Dist (ft)		637		869		563		312
Turn Bay Length (ft)	160		100				75	
Base Capacity (vph)	535	1684	483	1713	517	972	443	1020
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.28	0.52	0.28	0.22	0.53	0.11	0.30

Intersection Summary

William Street Corridor
3: Roop St & William St

2022 MD Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	48	634	192	729	47	459	160	384
v/c Ratio	0.16	0.67	0.56	0.60	0.14	0.67	0.44	0.41
Control Delay	15.4	31.8	21.0	26.0	19.7	34.3	22.3	28.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	31.8	21.0	26.0	19.7	34.3	22.3	28.2
Queue Length 50th (ft)	13	150	57	164	15	103	53	85
Queue Length 95th (ft)	38	264	124	279	44	194	119	158
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	642	2582	736	2801	631	1722	599	1725
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.25	0.26	0.26	0.07	0.27	0.27	0.22

Intersection Summary

William Street Corridor
5: Saliman Rd & William St

2022 MD Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	36	745	105	274	754	92	148	168	316	62	104
v/c Ratio	0.22	0.41	0.11	0.69	0.34	0.09	0.51	0.45	0.56	0.70	0.28
Control Delay	55.4	20.1	0.3	59.8	7.5	1.2	45.3	42.6	7.6	84.2	32.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.4	20.1	0.3	59.8	7.5	1.2	45.3	42.6	7.6	84.2	32.2
Queue Length 50th (ft)	13	164	0	76	173	8	98	113	0	46	25
Queue Length 95th (ft)	30	297	0	157	56	1	133	150	63	85	47
Internal Link Dist (ft)		571			1368			439			691
Turn Bay Length (ft)	240		175	180		155	290			160	
Base Capacity (vph)	167	1817	914	847	2211	1033	469	722	797	166	656
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.41	0.11	0.32	0.34	0.09	0.32	0.23	0.40	0.37	0.16

Intersection Summary

William Street Corridor
6: Gold Dust West Way & William St

2022 MD Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	79	1042	64	1100	47	60	62	51
v/c Ratio	0.23	0.31	0.15	0.32	0.28	0.24	0.37	0.21
Control Delay	11.0	10.7	15.7	12.1	44.5	13.7	47.8	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	10.7	15.7	12.1	44.5	13.7	47.8	15.4
Queue Length 50th (ft)	14	156	14	110	34	5	45	6
Queue Length 95th (ft)	88	314	60	275	52	33	65	32
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	364	3619	471	3693	188	269	187	262
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.29	0.14	0.30	0.25	0.22	0.33	0.19

Intersection Summary

William Street Corridor
1: Carson St & William St

2022 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	198	12	128	75	346	4	520	132	269	425	29
Future Volume (veh/h)	23	198	12	128	75	346	4	520	132	269	425	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	215	13	139	82	376	4	565	143	292	462	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	421	438	26	402	508	428	305	729	184	392	627	528
Arrive On Green	0.06	0.25	0.25	0.08	0.27	0.27	0.06	0.26	0.26	0.14	0.34	0.34
Sat Flow, veh/h	1781	1745	105	1781	1870	1576	1781	2807	708	1781	1870	1573
Grp Volume(v), veh/h	25	0	228	139	82	376	4	357	351	292	462	32
Grp Sat Flow(s),veh/h/ln	1781	0	1850	1781	1870	1576	1781	1777	1738	1781	1870	1573
Q Serve(g_s), s	0.8	0.0	8.5	4.6	2.7	18.4	0.1	15.0	15.1	9.1	17.6	1.1
Cycle Q Clear(g_c), s	0.8	0.0	8.5	4.6	2.7	18.4	0.1	15.0	15.1	9.1	17.6	1.1
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.41	1.00		1.00
Lane Grp Cap(c), veh/h	421	0	464	402	508	428	305	462	451	392	627	528
V/C Ratio(X)	0.06	0.00	0.49	0.35	0.16	0.88	0.01	0.77	0.78	0.74	0.74	0.06
Avail Cap(c_a), veh/h	532	0	1206	477	1173	988	636	1081	1057	584	1115	938
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.3	0.0	25.8	20.0	22.4	28.1	19.4	27.7	27.7	18.7	23.7	18.2
Incr Delay (d2), s/veh	0.0	0.0	0.3	0.2	0.1	2.3	0.0	1.1	1.1	1.1	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	3.7	1.9	1.2	7.0	0.1	6.4	6.3	3.7	7.6	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.4	0.0	26.1	20.2	22.4	30.4	19.4	28.7	28.8	19.8	24.3	18.2
LnGrp LOS	B	A	C	C	C	C	B	C	C	B	C	B
Approach Vol, veh/h		253			597			712			786	
Approach Delay, s/veh		25.5			26.9			28.7			22.4	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.6	26.9	11.6	25.6	10.5	33.0	9.9	27.3				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 20	49.1	10.0	52.6	20.0	48.1	* 10	50.6				
Max Q Clear Time (g_c+I1), s	11.1	17.1	6.6	10.5	2.1	19.6	2.8	20.4				
Green Ext Time (p_c), s	0.2	3.4	0.0	1.0	0.0	2.2	0.0	1.0				

Intersection Summary

HCM 6th Ctrl Delay	25.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
2: Stewart St & William St

2022 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	494	88	200	383	28	159	299	317	40	202	7
Future Volume (veh/h)	16	494	88	200	383	28	159	299	317	40	202	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	537	96	217	416	30	173	325	345	43	220	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	297	650	116	300	1032	74	525	344	366	157	656	24
Arrive On Green	0.02	0.22	0.22	0.11	0.31	0.31	0.08	0.42	0.42	0.03	0.37	0.37
Sat Flow, veh/h	1781	3008	536	1781	3360	241	1781	829	880	1781	1793	65
Grp Volume(v), veh/h	17	316	317	217	219	227	173	0	670	43	0	228
Grp Sat Flow(s),veh/h/ln	1781	1777	1767	1781	1777	1825	1781	0	1708	1781	0	1858
Q Serve(g_s), s	0.8	18.1	18.3	9.7	10.4	10.5	6.3	0.0	40.3	1.6	0.0	9.5
Cycle Q Clear(g_c), s	0.8	18.1	18.3	9.7	10.4	10.5	6.3	0.0	40.3	1.6	0.0	9.5
Prop In Lane	1.00		0.30	1.00		0.13	1.00		0.51	1.00		0.04
Lane Grp Cap(c), veh/h	297	384	382	300	546	561	525	0	710	157	0	680
V/C Ratio(X)	0.06	0.82	0.83	0.72	0.40	0.40	0.33	0.00	0.94	0.27	0.00	0.34
Avail Cap(c_a), veh/h	597	739	735	437	622	639	638	0	811	347	0	778
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.6	39.9	40.0	28.6	29.2	29.3	18.3	0.0	30.0	25.8	0.0	24.5
Incr Delay (d2), s/veh	0.0	1.7	1.8	1.2	0.2	0.2	0.1	0.0	17.2	0.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	8.1	8.1	4.2	4.5	4.7	2.5	0.0	19.1	0.7	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.6	41.6	41.8	29.8	29.4	29.4	18.5	0.0	47.2	26.1	0.0	24.6
LnGrp LOS	C	D	D	C	C	C	B	A	D	C	A	C
Approach Vol, veh/h		650			663			843			271	
Approach Delay, s/veh		41.4			29.6			41.3			24.8	
Approach LOS		D			C			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.4	51.7	17.0	28.7	14.7	46.4	7.3	38.4				
Change Period (Y+Rc), s	5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	15	* 51	* 20	44.4	15.1	* 45	* 20	37.4				
Max Q Clear Time (g_c+1/3), s	13.6	42.3	11.7	20.3	8.3	11.5	2.8	12.5				
Green Ext Time (p_c), s	0.0	2.1	0.1	2.8	0.1	0.9	0.0	1.8				

Intersection Summary

HCM 6th Ctrl Delay	36.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2022 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	731	58	131	506	115	39	289	228	160	287	68
Future Volume (veh/h)	62	731	58	131	506	115	39	289	228	160	287	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	795	63	142	550	125	42	314	248	174	312	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	316	1007	80	283	967	219	335	411	317	315	762	178
Arrive On Green	0.05	0.30	0.30	0.08	0.34	0.34	0.04	0.22	0.22	0.10	0.27	0.27
Sat Flow, veh/h	1781	3334	264	1781	2875	651	1781	1904	1467	1781	2856	667
Grp Volume(v), veh/h	67	424	434	142	339	336	42	292	270	174	192	194
Grp Sat Flow(s),veh/h/ln	1781	1777	1821	1781	1777	1750	1781	1777	1594	1781	1777	1746
Q Serve(g_s), s	2.0	17.1	17.1	4.2	12.2	12.3	1.4	12.1	12.5	5.7	7.0	7.2
Cycle Q Clear(g_c), s	2.0	17.1	17.1	4.2	12.2	12.3	1.4	12.1	12.5	5.7	7.0	7.2
Prop In Lane	1.00		0.15	1.00		0.37	1.00		0.92	1.00		0.38
Lane Grp Cap(c), veh/h	316	537	550	283	598	589	335	384	344	315	474	466
V/C Ratio(X)	0.21	0.79	0.79	0.50	0.57	0.57	0.13	0.76	0.78	0.55	0.41	0.42
Avail Cap(c_a), veh/h	798	1354	1388	875	1331	1311	836	695	624	709	922	906
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	25.0	25.0	18.8	21.3	21.3	22.3	28.8	28.9	21.2	23.6	23.6
Incr Delay (d2), s/veh	0.1	1.0	1.0	0.5	0.3	0.3	0.1	1.2	1.5	0.6	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	0.8	7.1	7.3	1.6	4.8	4.7	0.6	5.2	4.8	2.4	2.9	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	26.0	26.0	19.3	21.6	21.6	22.4	30.0	30.4	21.8	23.8	23.9
LnGrp LOS	B	C	C	B	C	C	C	C	C	C	C	C
Approach Vol, veh/h		925			817			604			560	
Approach Delay, s/veh		25.4			21.2			29.6			23.2	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	2.9	23.3	12.0	30.0	8.9	27.3	9.3	32.7				
Change Period (Y+Rc), s	5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	25	30.6	32.0	59.6	25.0	40.6	25.0	58.6				
Max Q Clear Time (g_c+11), s	14.5	14.5	6.2	19.1	3.4	9.2	4.0	14.3				
Green Ext Time (p_c), s	0.1	1.8	0.1	4.2	0.0	1.7	0.0	2.8				

Intersection Summary

HCM 6th Ctrl Delay		24.7										
HCM 6th LOS			C									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
4: William St & State St

2022 PM Peak Hour

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	91	1028	705	44	59	47
Future Vol, veh/h	91	1028	705	44	59	47
Conflicting Peds, #/hr	5	0	0	5	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	1117	766	48	64	51

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	819	0	-	0	1552 417
Stage 1	-	-	-	-	795 -
Stage 2	-	-	-	-	757 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	805	-	-	-	104 585
Stage 1	-	-	-	-	405 -
Stage 2	-	-	-	-	424 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	801	-	-	-	90 579
Mov Cap-2 Maneuver	-	-	-	-	270 -
Stage 1	-	-	-	-	353 -
Stage 2	-	-	-	-	422 -

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	20
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	801	-	-	-	354
HCM Lane V/C Ratio	0.123	-	-	-	0.325
HCM Control Delay (s)	10.1	-	-	-	20
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	1.4

William Street Corridor
5: Saliman Rd & William St

2022 PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	948	97	402	636	92	92	139	367	115	138	21
Future Volume (veh/h)	43	948	97	402	636	92	92	139	367	115	138	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	1030	105	437	691	100	100	151	399	125	150	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	1420	631	504	1815	807	291	533	450	170	581	87
Arrive On Green	0.03	0.40	0.40	0.15	0.51	0.51	0.04	0.29	0.29	0.19	0.19	0.19
Sat Flow, veh/h	3456	3554	1579	3456	3554	1580	1781	1870	1577	855	3093	466
Grp Volume(v), veh/h	47	1030	105	437	691	100	100	151	399	125	85	88
Grp Sat Flow(s),veh/h/ln	1728	1777	1579	1728	1777	1580	1781	1870	1577	855	1777	1782
Q Serve(g_s), s	1.5	28.2	3.7	14.2	13.6	3.8	0.0	7.2	27.9	14.4	4.7	4.9
Cycle Q Clear(g_c), s	1.5	28.2	3.7	14.2	13.6	3.8	0.0	7.2	27.9	21.6	4.7	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.26
Lane Grp Cap(c), veh/h	117	1420	631	504	1815	807	291	533	450	170	334	335
V/C Ratio(X)	0.40	0.73	0.17	0.87	0.38	0.12	0.34	0.28	0.89	0.74	0.25	0.26
Avail Cap(c_a), veh/h	150	1420	631	853	1815	807	488	725	611	170	334	335
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.4	29.2	12.8	48.0	17.1	14.7	43.2	32.0	39.3	51.4	39.8	39.9
Incr Delay (d2), s/veh	0.8	3.3	0.6	2.3	0.6	0.3	0.3	0.1	9.6	13.8	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	12.1	1.8	6.2	5.4	1.4	2.6	3.3	11.6	4.3	2.1	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.2	32.5	13.3	50.3	17.7	15.0	43.5	32.1	48.9	65.2	40.0	40.1
LnGrp LOS	E	C	B	D	B	B	D	C	D	E	D	D
Approach Vol, veh/h		1182			1228			650			298	
Approach Delay, s/veh		31.7			29.1			44.2			50.6	
Approach LOS		C			C			D			D	
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		39.2	24.4	51.4	11.2	28.0	11.6	64.2				
Change Period (Y+Rc), s		6.4	7.6	5.5	6.4	* 6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		44.6	28.4	22.5	17.5	* 22	5.0	* 46				
Max Q Clear Time (g_c+I1), s		29.9	16.2	30.2	2.0	23.6	3.5	15.6				
Green Ext Time (p_c), s		1.2	0.5	0.0	0.1	0.0	0.0	4.6				
Intersection Summary												
HCM 6th Ctrl Delay			34.8									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
6: Gold Dust West Way & William St

2022 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶ ↑↑↑ ↷			↶ ↑↑↑ ↷			↶ ↷	↶ ↷		↶ ↷	↶ ↷	
Traffic Volume (veh/h)	71	1327	32	56	1052	64	34	8	28	60	6	44
Future Volume (veh/h)	71	1327	32	56	1052	64	34	8	28	60	6	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	77	1442	35	61	1143	70	37	9	30	65	7	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	215	1833	44	732	3344	205	135	33	109	150	18	121
Arrive On Green	0.04	0.36	0.36	0.36	0.68	0.68	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1781	5127	124	1781	4918	301	1331	374	1246	1349	203	1389
Grp Volume(v), veh/h	77	957	520	61	791	422	37	0	39	65	0	55
Grp Sat Flow(s),veh/h/ln	1781	1702	1847	1781	1702	1815	1331	0	1620	1349	0	1592
Q Serve(g_s), s	3.5	28.9	28.9	0.0	11.1	11.2	3.1	0.0	2.6	5.4	0.0	3.8
Cycle Q Clear(g_c), s	3.5	28.9	28.9	0.0	11.1	11.2	6.9	0.0	2.6	8.0	0.0	3.8
Prop In Lane	1.00		0.07	1.00		0.17	1.00		0.77	1.00		0.87
Lane Grp Cap(c), veh/h	215	1217	660	732	2315	1234	135	0	141	150	0	139
V/C Ratio(X)	0.36	0.79	0.79	0.08	0.34	0.34	0.27	0.00	0.28	0.43	0.00	0.40
Avail Cap(c_a), veh/h	270	2119	1150	732	2315	1234	136	0	142	151	0	140
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.8	33.0	33.0	21.1	7.7	7.7	52.9	0.0	49.1	52.8	0.0	49.6
Incr Delay (d2), s/veh	0.4	5.2	9.2	0.0	0.4	0.8	0.4	0.0	0.4	0.7	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	12.3	14.1	1.1	3.7	4.0	1.1	0.0	1.1	1.9	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	38.2	42.2	21.1	8.1	8.4	53.3	0.0	49.5	53.6	0.0	50.3
LnGrp LOS	C	D	D	C	A	A	D	A	D	D	A	D
Approach Vol, veh/h		1554			1274			76			120	
Approach Delay, s/veh		39.1			8.8			51.3			52.1	
Approach LOS		D			A			D			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.9	48.6	48.5		17.9	11.5	85.6				
Change Period (Y+Rc), s		7.9	7.4	* 7.4		7.9	* 6.4	7.4				
Max Green Setting (Gmax), s		10.1	11.6	* 7.2		10.1	* 8.6	74.6				
Max Q Clear Time (g_c+I1), s		8.9	2.0	30.9		10.0	5.5	13.2				
Green Ext Time (p_c), s		0.0	0.0	10.2		0.0	0.0	7.8				

Intersection Summary

HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Notes

- User approved pedestrian interval to be less than phase max green.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
1: Carson St & William St

2022 PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	25	228	139	82	376	4	708	292	462	32
v/c Ratio	0.07	0.64	0.40	0.14	0.51	0.01	0.72	0.70	0.51	0.04
Control Delay	20.9	41.6	24.4	26.7	6.1	13.0	32.2	22.7	18.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.9	41.6	24.4	26.7	6.1	13.0	32.2	22.7	18.7	0.1
Queue Length 50th (ft)	8	111	50	29	0	1	171	84	151	0
Queue Length 95th (ft)	29	219	113	85	75	7	285	174	340	0
Internal Link Dist (ft)		326		637			201		484	
Turn Bay Length (ft)	80		100			130		140		
Base Capacity (vph)	480	1190	375	1205	1136	672	2068	537	1120	954
Starvation Cap Reductn	0	0	0	0	0	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	0.05	0.19	0.37	0.07	0.33	0.01	0.34	0.54	0.41	0.03

Intersection Summary

William Street Corridor
2: Stewart St & William St

2022 PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	17	633	217	446	173	670	43	228
v/c Ratio	0.06	0.82	0.74	0.36	0.32	0.89	0.23	0.34
Control Delay	23.9	53.1	41.1	30.2	19.4	47.9	20.9	32.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.9	53.1	41.1	30.2	19.4	47.9	20.9	32.2
Queue Length 50th (ft)	8	245	118	127	70	468	16	127
Queue Length 95th (ft)	23	336	182	198	142	#877	44	242
Internal Link Dist (ft)		637		869		563		312
Turn Bay Length (ft)	160		100				75	
Base Capacity (vph)	491	1302	368	1363	577	753	324	786
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.49	0.59	0.33	0.30	0.89	0.13	0.29

Intersection Summary

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

William Street Corridor
3: Roop St & William St

2022 PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	67	858	142	675	42	562	174	386
v/c Ratio	0.20	0.74	0.54	0.51	0.13	0.73	0.54	0.38
Control Delay	17.1	35.0	24.0	26.9	22.8	37.6	27.8	30.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.1	35.0	24.0	26.9	22.8	37.6	27.8	30.6
Queue Length 50th (ft)	21	243	48	171	16	142	71	100
Queue Length 95th (ft)	56	408	107	289	46	260	150	180
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	601	2176	635	2405	590	1467	517	1458
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.39	0.22	0.28	0.07	0.38	0.34	0.26

Intersection Summary

William Street Corridor
5: Saliman Rd & William St

2022 PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	47	1030	105	437	691	100	100	151	399	125	173
v/c Ratio	0.27	0.68	0.13	0.78	0.35	0.11	0.31	0.34	0.59	0.84	0.36
Control Delay	56.0	31.1	0.3	56.7	10.8	1.9	36.7	37.2	7.0	87.6	42.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.0	31.1	0.3	56.7	10.8	1.9	36.7	37.2	7.0	87.6	42.5
Queue Length 50th (ft)	17	313	0	153	157	11	60	94	0	91	56
Queue Length 95th (ft)	37	#533	0	231	94	1	95	136	70	153	86
Internal Link Dist (ft)		571			1368			439			691
Turn Bay Length (ft)	240		175	180		155	290			160	
Base Capacity (vph)	175	1525	805	847	1999	950	499	722	848	206	660
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.68	0.13	0.52	0.35	0.11	0.20	0.21	0.47	0.61	0.26

Intersection Summary

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

William Street Corridor
6: Gold Dust West Way & William St

2022 PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	77	1477	61	1213	37	39	65	55
v/c Ratio	0.25	0.42	0.22	0.35	0.22	0.17	0.38	0.23
Control Delay	10.1	10.3	18.8	12.0	42.8	17.1	48.1	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.1	10.3	18.8	12.0	42.8	17.1	48.1	14.1
Queue Length 50th (ft)	4	33	13	126	26	6	47	5
Queue Length 95th (ft)	m75	463	55	299	44	28	68	32
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	340	3715	374	3694	187	253	190	264
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.40	0.16	0.33	0.20	0.15	0.34	0.21

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
1: Carson St & William St

2030 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	97	3	144	283	170	13	251	74	262	406	49
Future Volume (veh/h)	12	97	3	144	283	170	13	251	74	262	406	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	105	3	157	308	185	14	273	80	285	441	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	347	10	380	382	321	424	1055	303	609	830	699
Arrive On Green	0.06	0.19	0.19	0.07	0.20	0.20	0.06	0.39	0.39	0.11	0.44	0.44
Sat Flow, veh/h	1781	1809	52	1781	1870	1573	1781	2722	781	1781	1870	1576
Grp Volume(v), veh/h	13	0	108	157	308	185	14	176	177	285	441	53
Grp Sat Flow(s),veh/h/ln	1781	0	1860	1781	1870	1573	1781	1777	1726	1781	1870	1576
Q Serve(g_s), s	0.5	0.0	4.5	6.0	14.1	9.5	0.4	6.1	6.3	8.2	15.4	1.7
Cycle Q Clear(g_c), s	0.5	0.0	4.5	6.0	14.1	9.5	0.4	6.1	6.3	8.2	15.4	1.7
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	221	0	357	380	382	321	424	688	669	609	830	699
V/C Ratio(X)	0.06	0.00	0.30	0.41	0.81	0.58	0.03	0.26	0.26	0.47	0.53	0.08
Avail Cap(c_a), veh/h	222	0	515	380	540	455	424	688	669	638	830	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	0.0	31.2	27.5	34.1	32.3	14.7	18.7	18.8	12.8	18.2	14.4
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.3	3.8	0.6	0.0	0.9	1.0	0.2	2.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.0	2.8	6.8	3.7	0.2	2.6	2.7	3.2	7.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.7	0.0	31.4	27.8	37.9	32.9	14.7	19.6	19.8	13.0	20.7	14.6
LnGrp LOS	C	A	C	C	D	C	B	B	B	B	C	B
Approach Vol, veh/h		121			650			367			779	
Approach Delay, s/veh		30.9			34.0			19.5			17.4	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.6	40.8	11.0	22.7	10.5	45.8	9.9	23.8				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 12	25.8	6.0	24.9	5.0	32.3	* 5	26.0				
Max Q Clear Time (g_c+I1), s	10.2	8.3	8.0	6.5	2.4	17.4	2.5	16.1				
Green Ext Time (p_c), s	0.1	1.3	0.0	0.3	0.0	1.8	0.0	1.2				

Intersection Summary

HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
2: Stewart St & William St

2030 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	332	111	276	522	12	68	85	113	25	247	12
Future Volume (veh/h)	6	332	111	276	522	12	68	85	113	25	247	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	361	121	300	567	13	74	92	123	27	268	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	402	964	318	525	1724	39	207	153	204	241	328	16
Arrive On Green	0.00	0.12	0.12	0.25	0.97	0.97	0.05	0.21	0.21	0.03	0.19	0.19
Sat Flow, veh/h	1781	2620	865	1781	3551	81	1781	722	966	1781	1768	86
Grp Volume(v), veh/h	7	243	239	300	284	296	74	0	215	27	0	281
Grp Sat Flow(s),veh/h/ln	1781	1777	1708	1781	1777	1855	1781	0	1688	1781	0	1854
Q Serve(g_s), s	0.2	11.3	11.6	9.4	0.6	0.6	3.0	0.0	10.4	1.1	0.0	13.1
Cycle Q Clear(g_c), s	0.2	11.3	11.6	9.4	0.6	0.6	3.0	0.0	10.4	1.1	0.0	13.1
Prop In Lane	1.00		0.51	1.00		0.04	1.00		0.57	1.00		0.05
Lane Grp Cap(c), veh/h	402	654	629	525	863	901	207	0	357	241	0	344
V/C Ratio(X)	0.02	0.37	0.38	0.57	0.33	0.33	0.36	0.00	0.60	0.11	0.00	0.82
Avail Cap(c_a), veh/h	485	654	629	552	863	901	231	0	525	291	0	556
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.89	0.89	0.89	0.87	0.87	0.87	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.6	30.0	30.1	12.1	0.7	0.7	28.7	0.0	32.0	28.7	0.0	35.2
Incr Delay (d2), s/veh	0.0	1.4	1.6	0.6	0.9	0.9	0.4	0.0	0.6	0.1	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	5.6	5.6	2.9	0.4	0.4	1.3	0.0	4.2	0.5	0.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	31.4	31.6	12.7	1.6	1.5	29.1	0.0	32.7	28.8	0.0	37.2
LnGrp LOS	B	C	C	B	A	A	C	A	C	C	A	D
Approach Vol, veh/h		489			880			289			308	
Approach Delay, s/veh		31.3			5.4			31.7			36.5	
Approach LOS		C			A			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	26.4	16.7	38.7	10.6	24.0	6.1	49.3				
Change Period (Y+Rc), s	5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	5	* 28	* 13	20.3	5.4	* 27	* 5	28.0				
Max Q Clear Time (g_c+1/3), s	13	12.4	11.4	13.6	5.0	15.1	2.2	2.6				
Green Ext Time (p_c), s	0.0	0.7	0.1	1.2	0.0	0.9	0.0	2.5				

Intersection Summary

HCM 6th Ctrl Delay	20.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2030 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	418	20	227	759	121	32	243	126	100	260	48
Future Volume (veh/h)	22	418	20	227	759	121	32	243	126	100	260	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	454	22	247	825	132	35	264	137	109	283	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	364	1408	68	526	1504	241	238	362	182	239	549	100
Arrive On Green	0.01	0.13	0.13	0.20	0.98	0.98	0.03	0.16	0.16	0.06	0.18	0.18
Sat Flow, veh/h	1781	3450	167	1781	3066	491	1781	2281	1147	1781	3000	544
Grp Volume(v), veh/h	24	233	243	247	478	479	35	204	197	109	166	169
Grp Sat Flow(s),veh/h/ln	1781	1777	1840	1781	1777	1780	1781	1777	1651	1781	1777	1767
Q Serve(g_s), s	0.7	10.7	10.7	7.2	1.0	1.0	1.5	9.8	10.3	4.6	7.6	7.8
Cycle Q Clear(g_c), s	0.7	10.7	10.7	7.2	1.0	1.0	1.5	9.8	10.3	4.6	7.6	7.8
Prop In Lane	1.00		0.09	1.00		0.28	1.00		0.69	1.00		0.31
Lane Grp Cap(c), veh/h	364	725	751	526	872	873	238	282	262	239	325	324
V/C Ratio(X)	0.07	0.32	0.32	0.47	0.55	0.55	0.15	0.72	0.75	0.46	0.51	0.52
Avail Cap(c_a), veh/h	418	725	751	543	872	873	280	434	404	239	436	434
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	27.7	27.7	11.3	0.4	0.4	30.2	36.0	36.2	29.6	33.1	33.2
Incr Delay (d2), s/veh	0.0	1.1	1.1	0.2	2.5	2.5	0.1	1.3	1.6	0.5	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	0.3	5.3	5.5	2.2	0.8	0.8	0.6	4.3	4.2	2.0	3.3	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.9	28.8	28.8	11.5	2.9	2.9	30.3	37.3	37.8	30.1	33.6	33.7
LnGrp LOS	B	C	C	B	A	A	C	D	D	C	C	C
Approach Vol, veh/h		500			1204			436			444	
Approach Delay, s/veh		28.1			4.7			37.0			32.8	
Approach LOS		C			A			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	1.0	20.7	15.2	43.1	8.8	22.9	7.8	50.5				
Change Period (Y+Rc), s	5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	5.8	22.0	10.0	28.2	5.0	22.1	5.0	33.7				
Max Q Clear Time (g_c+1/6), s	10.6	12.3	9.2	12.7	3.5	9.8	2.7	3.0				
Green Ext Time (p_c), s	0.0	1.0	0.0	1.8	0.0	1.1	0.0	4.2				

Intersection Summary

HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
4: William St & State St

2030 AM Peak Hour

Intersection						
Int Delay, s/veh	4.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑		↘	
Traffic Vol, veh/h	50	593	1048	116	107	59
Future Vol, veh/h	50	593	1048	116	107	59
Conflicting Peds, #/hr	5	0	0	5	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	645	1139	126	116	64

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1270	0	-	0	1638 643
Stage 1	-	-	-	-	1207 -
Stage 2	-	-	-	-	431 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	543	-	-	-	~91 416
Stage 1	-	-	-	-	246 -
Stage 2	-	-	-	-	623 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	540	-	-	-	~81 412
Mov Cap-2 Maneuver	-	-	-	-	202 -
Stage 1	-	-	-	-	220 -
Stage 2	-	-	-	-	620 -

Approach	EB	WB	SB
HCM Control Delay, s	1	0	51
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	540	-	-	-	247
HCM Lane V/C Ratio	0.101	-	-	-	0.731
HCM Control Delay (s)	12.4	-	-	-	51
HCM Lane LOS	B	-	-	-	F
HCM 95th %tile Q(veh)	0.3	-	-	-	5.1

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

William Street Corridor
5: Saliman Rd & William St

2030 AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	349	337	680	905	47	245	151	396	40	485	17
Future Volume (veh/h)	15	349	337	680	905	47	245	151	396	40	485	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	379	366	739	984	51	266	164	430	43	527	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	63	682	302	803	1439	640	300	671	567	164	576	20
Arrive On Green	0.01	0.06	0.06	0.23	0.40	0.40	0.12	0.36	0.36	0.16	0.16	0.16
Sat Flow, veh/h	3456	3554	1573	3456	3554	1579	1781	1870	1578	821	3505	120
Grp Volume(v), veh/h	16	379	366	739	984	51	266	164	430	43	267	278
Grp Sat Flow(s),veh/h/ln	1728	1777	1573	1728	1777	1579	1781	1870	1578	821	1777	1848
Q Serve(g_s), s	0.4	9.3	11.8	18.8	20.5	1.8	9.1	5.5	21.6	4.5	13.3	13.3
Cycle Q Clear(g_c), s	0.4	9.3	11.8	18.8	20.5	1.8	9.1	5.5	21.6	10.0	13.3	13.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	63	682	302	803	1439	640	300	671	567	164	292	304
V/C Ratio(X)	0.25	0.56	1.21	0.92	0.68	0.08	0.89	0.24	0.76	0.26	0.91	0.92
Avail Cap(c_a), veh/h	192	683	302	822	1439	640	308	671	567	164	292	304
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	38.4	19.7	33.7	22.0	16.5	37.2	20.3	25.4	38.2	37.0	37.0
Incr Delay (d2), s/veh	0.8	3.2	122.1	14.9	2.7	0.2	24.1	0.1	5.3	0.3	30.6	30.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.5	14.9	9.1	8.4	0.7	7.7	2.4	8.3	0.9	8.2	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.9	41.7	141.8	48.6	24.7	16.7	61.3	20.3	30.7	38.5	67.6	67.2
LnGrp LOS	D	D	F	D	C	B	E	C	C	D	E	E
Approach Vol, veh/h		761			1774			860			588	
Approach Delay, s/veh		89.9			34.4			38.2			65.3	
Approach LOS		F			C			D			E	
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		38.7	28.5	22.8	17.5	21.2	9.3	41.9				
Change Period (Y+Rc), s		6.4	7.6	5.5	6.4	* 6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		31.8	21.4	17.3	11.5	* 15	5.0	* 34				
Max Q Clear Time (g_c+I1), s		23.6	20.8	13.8	11.1	15.3	2.4	22.5				
Green Ext Time (p_c), s		1.1	0.1	1.2	0.0	0.0	0.0	4.6				
Intersection Summary												
HCM 6th Ctrl Delay			50.4									
HCM 6th LOS			D									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
6: Gold Dust West Way & William St

2030 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶ ↑↑↑ ↷			↶ ↑↑↑ ↷			↶ ↷	↶ ↷		↶ ↷	↶ ↷	
Traffic Volume (veh/h)	17	736	22	32	1614	22	13	0	12	9	0	10
Future Volume (veh/h)	17	736	22	32	1614	22	13	0	12	9	0	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		1.00	0.97		0.97	0.97		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	800	24	35	1754	24	14	0	13	10	0	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	1113	33	978	3608	49	130	0	67	128	0	67
Arrive On Green	0.02	0.22	0.22	0.49	0.70	0.70	0.04	0.00	0.04	0.04	0.00	0.04
Sat Flow, veh/h	1781	5092	152	1781	5190	71	1360	0	1542	1358	0	1542
Grp Volume(v), veh/h	18	534	290	35	1150	628	14	0	13	10	0	11
Grp Sat Flow(s),veh/h/ln	1781	1702	1841	1781	1702	1857	1360	0	1542	1358	0	1542
Q Serve(g_s), s	0.8	13.1	13.1	0.0	14.0	14.0	0.9	0.0	0.7	0.6	0.0	0.6
Cycle Q Clear(g_c), s	0.8	13.1	13.1	0.0	14.0	14.0	1.5	0.0	0.7	1.4	0.0	0.6
Prop In Lane	1.00		0.08	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	116	744	402	978	2366	1291	130	0	67	128	0	67
V/C Ratio(X)	0.16	0.72	0.72	0.04	0.49	0.49	0.11	0.00	0.19	0.08	0.00	0.16
Avail Cap(c_a), veh/h	211	2065	1117	978	2366	1291	178	0	122	176	0	122
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.3	32.6	32.6	10.2	6.3	6.3	42.2	0.0	41.5	42.2	0.0	41.5
Incr Delay (d2), s/veh	0.2	5.9	10.6	0.0	0.7	1.3	0.1	0.0	0.5	0.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	0.3	5.7	6.8	0.3	4.0	4.5	0.3	0.0	0.3	0.2	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	38.5	43.2	10.2	7.0	7.6	42.3	0.0	42.0	42.3	0.0	41.9
LnGrp LOS	C	D	D	B	A	A	D	A	D	D	A	D
Approach Vol, veh/h		842			1813			27				21
Approach Delay, s/veh		40.0			7.3			42.2				42.1
Approach LOS		D			A			D				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.8	51.1	27.1		11.8	8.2	70.0				
Change Period (Y+Rc), s		7.9	7.4	* 7.4		7.9	* 6.4	7.4				
Max Green Setting (Gmax), s		7.1	6.6	* 55		7.1	* 6.6	54.6				
Max Q Clear Time (g_c+I1), s		3.5	2.0	15.1		3.4	2.8	16.0				
Green Ext Time (p_c), s		0.0	0.0	4.5		0.0	0.0	13.5				

Intersection Summary

HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
1: Carson St & William St

2030 AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	13	108	157	308	185	14	353	285	441	53
v/c Ratio	0.06	0.44	0.47	0.67	0.33	0.03	0.24	0.45	0.41	0.06
Control Delay	20.2	38.9	14.8	23.0	4.8	11.1	17.1	12.5	14.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.2	38.9	14.8	23.0	4.8	11.1	17.1	12.5	14.9	0.1
Queue Length 50th (ft)	5	58	51	126	1	3	57	69	119	0
Queue Length 95th (ft)	16	88	11	258	111	14	111	153	312	0
Internal Link Dist (ft)		326		637			201		484	
Turn Bay Length (ft)	80		100			130		140		
Base Capacity (vph)	229	514	337	543	613	510	1496	648	1083	958
Starvation Cap Reductn	0	0	0	0	0	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	0.06	0.21	0.47	0.57	0.30	0.03	0.24	0.44	0.41	0.06

Intersection Summary

William Street Corridor
2: Stewart St & William St

2030 AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	7	482	300	580	74	215	27	281
v/c Ratio	0.02	0.41	0.61	0.32	0.26	0.42	0.08	0.74
Control Delay	10.8	21.3	12.7	7.2	19.8	18.3	16.8	44.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	21.3	12.7	7.2	19.8	18.3	16.8	44.2
Queue Length 50th (ft)	2	120	70	70	28	54	10	150
Queue Length 95th (ft)	m4	165	#51	148	49	118	23	207
Internal Link Dist (ft)		637		869		563		312
Turn Bay Length (ft)	160		100				75	
Base Capacity (vph)	373	1172	507	1807	288	592	344	556
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.41	0.59	0.32	0.26	0.36	0.08	0.51

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
3: Roop St & William St

2030 AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	24	476	247	957	35	401	109	335
v/c Ratio	0.08	0.32	0.46	0.50	0.14	0.69	0.44	0.51
Control Delay	5.9	15.9	9.7	9.1	22.2	32.7	28.6	32.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.9	15.9	9.7	9.1	22.2	32.7	28.6	32.8
Queue Length 50th (ft)	4	115	28	58	14	87	46	87
Queue Length 95th (ft)	m7	165	m90	m130	32	119	76	117
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	315	1502	551	1908	251	890	249	864
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.32	0.45	0.50	0.14	0.45	0.44	0.39

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
5: Saliman Rd & William St

2030 AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	16	379	366	739	984	51	266	164	430	43	545
v/c Ratio	0.08	0.57	0.68	0.93	0.58	0.06	0.75	0.24	0.51	0.20	0.87
Control Delay	43.8	32.1	13.0	51.2	14.2	0.1	44.3	21.3	4.6	34.9	52.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.8	32.1	13.0	51.2	14.2	0.1	44.3	21.3	4.6	34.9	52.9
Queue Length 50th (ft)	5	116	84	211	224	0	107	63	0	21	157
Queue Length 95th (ft)	m13	89	42	#298	146	1	#206	113	61	52	#264
Internal Link Dist (ft)		571			1368			439			691
Turn Bay Length (ft)	240		175	180		155	290			160	
Base Capacity (vph)	190	709	556	816	1691	854	363	681	842	214	625
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.53	0.66	0.91	0.58	0.06	0.73	0.24	0.51	0.20	0.87

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
6: Gold Dust West Way & William St

2030 AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	18	824	35	1778	14	13	10	11
v/c Ratio	0.09	0.23	0.05	0.44	0.12	0.04	0.08	0.04
Control Delay	13.5	8.3	6.2	6.4	40.2	0.2	39.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	8.3	6.2	6.4	40.2	0.2	39.3	0.2
Queue Length 50th (ft)	1	17	3	100	8	0	6	0
Queue Length 95th (ft)	m9	103	20	264	25	0	21	0
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	224	4035	687	4071	150	392	150	334
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.20	0.05	0.44	0.09	0.03	0.07	0.03

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
1: Carson St & William St

2030 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	120	5	157	131	303	8	487	118	253	484	34
Future Volume (veh/h)	20	120	5	157	131	303	8	487	118	253	484	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	130	5	171	142	329	9	529	128	275	526	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	336	411	16	410	453	382	325	983	237	440	759	639
Arrive On Green	0.06	0.23	0.23	0.02	0.08	0.08	0.06	0.35	0.35	0.12	0.41	0.41
Sat Flow, veh/h	1781	1788	69	1781	1870	1575	1781	2837	683	1781	1870	1575
Grp Volume(v), veh/h	22	0	135	171	142	329	9	330	327	275	526	37
Grp Sat Flow(s),veh/h/ln	1781	0	1857	1781	1870	1575	1781	1777	1744	1781	1870	1575
Q Serve(g_s), s	0.8	0.0	5.4	6.0	6.4	18.6	0.3	13.4	13.6	8.5	20.9	1.3
Cycle Q Clear(g_c), s	0.8	0.0	5.4	6.0	6.4	18.6	0.3	13.4	13.6	8.5	20.9	1.3
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	336	0	427	410	453	382	325	616	604	440	759	639
V/C Ratio(X)	0.07	0.00	0.32	0.42	0.31	0.86	0.03	0.54	0.54	0.62	0.69	0.06
Avail Cap(c_a), veh/h	336	0	514	410	540	455	325	616	604	472	759	639
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	0.0	28.8	26.4	34.3	39.9	17.5	23.6	23.6	16.2	22.1	16.3
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.2	0.1	11.4	0.0	3.3	3.4	1.6	5.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.4	3.0	3.1	9.0	0.1	6.1	6.1	3.5	10.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.5	0.0	28.9	26.6	34.5	51.3	17.5	26.9	27.1	17.7	27.3	16.5
LnGrp LOS	C	A	C	C	C	D	B	C	C	B	C	B
Approach Vol, veh/h		157			642			666			838	
Approach Delay, s/veh		28.2			41.0			26.9			23.7	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.8	37.1	11.0	26.1	10.5	42.4	9.9	27.2				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 12	25.4	6.0	24.9	5.0	32.3	* 5	26.0				
Max Q Clear Time (g_c+I1), s	10.5	15.6	8.0	7.4	2.3	22.9	2.8	20.6				
Green Ext Time (p_c), s	0.1	2.2	0.0	0.4	0.0	1.8	0.0	0.7				

Intersection Summary

HCM 6th Ctrl Delay	29.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
2: Stewart St & William St

2030 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	369	100	229	439	29	135	245	238	43	277	23
Future Volume (veh/h)	24	369	100	229	439	29	135	245	238	43	277	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	401	109	249	477	32	147	266	259	47	301	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	361	728	196	383	1165	78	346	281	273	170	476	40
Arrive On Green	0.01	0.09	0.09	0.22	0.69	0.69	0.08	0.32	0.32	0.04	0.28	0.28
Sat Flow, veh/h	1781	2763	743	1781	3379	226	1781	868	845	1781	1703	141
Grp Volume(v), veh/h	26	256	254	249	250	259	147	0	525	47	0	326
Grp Sat Flow(s),veh/h/ln	1781	1777	1728	1781	1777	1828	1781	0	1714	1781	0	1844
Q Serve(g_s), s	1.0	12.4	12.7	9.3	5.5	5.5	5.2	0.0	26.9	1.7	0.0	13.9
Cycle Q Clear(g_c), s	1.0	12.4	12.7	9.3	5.5	5.5	5.2	0.0	26.9	1.7	0.0	13.9
Prop In Lane	1.00		0.43	1.00		0.12	1.00		0.49	1.00		0.08
Lane Grp Cap(c), veh/h	361	468	456	383	613	630	346	0	554	170	0	516
V/C Ratio(X)	0.07	0.55	0.56	0.65	0.41	0.41	0.42	0.00	0.95	0.28	0.00	0.63
Avail Cap(c_a), veh/h	413	468	456	383	613	630	346	0	565	201	0	559
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.79	0.79	0.79	0.88	0.88	0.88	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.4	35.9	36.0	18.3	10.0	10.0	21.6	0.0	29.7	24.6	0.0	28.4
Incr Delay (d2), s/veh	0.0	3.6	3.8	2.7	1.8	1.7	0.3	0.0	24.7	0.3	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	6.4	6.3	3.4	2.0	2.1	2.1	0.0	14.3	0.7	0.0	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.5	39.5	39.9	21.0	11.8	11.7	21.9	0.0	54.4	24.9	0.0	29.7
LnGrp LOS	C	D	D	C	B	B	C	A	D	C	A	C
Approach Vol, veh/h		536			758			672			373	
Approach Delay, s/veh		38.9			14.8			47.3			29.1	
Approach LOS		D			B			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.3	36.4	15.0	29.3	13.2	32.5	7.7	36.6				
Change Period (Y+Rc), s	5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	5	* 30	* 9.8	21.6	6.8	* 27	* 5	26.3				
Max Q Clear Time (g_c+1/3), s	13.7	28.9	11.3	14.7	7.2	15.9	3.0	7.5				
Green Ext Time (p_c), s	0.0	0.2	0.0	1.3	0.0	1.0	0.0	2.0				

Intersection Summary

HCM 6th Ctrl Delay	32.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2030 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	574	35	216	593	108	47	311	167	156	311	65
Future Volume (veh/h)	47	574	35	216	593	108	47	311	167	156	311	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	624	38	235	645	117	51	338	182	170	338	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	403	1216	74	401	1270	230	274	424	224	271	668	139
Arrive On Green	0.01	0.12	0.12	0.20	0.85	0.85	0.04	0.19	0.19	0.09	0.23	0.23
Sat Flow, veh/h	1781	3402	207	1781	3003	544	1781	2241	1182	1781	2926	607
Grp Volume(v), veh/h	51	326	336	235	381	381	51	266	254	170	204	205
Grp Sat Flow(s),veh/h/ln	1781	1777	1832	1781	1777	1770	1781	1777	1646	1781	1777	1756
Q Serve(g_s), s	1.6	15.5	15.5	7.5	5.2	5.2	2.0	12.9	13.3	6.8	9.0	9.2
Cycle Q Clear(g_c), s	1.6	15.5	15.5	7.5	5.2	5.2	2.0	12.9	13.3	6.8	9.0	9.2
Prop In Lane	1.00		0.11	1.00		0.31	1.00		0.72	1.00		0.35
Lane Grp Cap(c), veh/h	403	635	655	401	751	749	274	336	312	271	405	401
V/C Ratio(X)	0.13	0.51	0.51	0.59	0.51	0.51	0.19	0.79	0.81	0.63	0.50	0.51
Avail Cap(c_a), veh/h	432	635	655	401	751	749	303	434	402	271	474	468
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.3	32.3	32.4	14.7	4.4	4.4	27.7	34.8	35.0	27.1	30.3	30.4
Incr Delay (d2), s/veh	0.0	2.6	2.5	1.5	2.4	2.5	0.1	5.6	7.4	3.4	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	0.7	7.8	8.0	2.5	1.7	1.7	0.9	6.0	5.9	3.1	3.9	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	34.9	34.9	16.2	6.9	6.9	27.8	40.4	42.3	30.5	30.6	30.7
LnGrp LOS	B	C	C	B	A	A	C	D	D	C	C	C
Approach Vol, veh/h		713		997		571		579				
Approach Delay, s/veh		33.6		9.1		40.1		30.6				
Approach LOS		C		A		D		C				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.0	23.4	15.0	38.6	9.5	26.9	9.1	44.5				
Change Period (Y+Rc), s	5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	7.8	22.0	9.0	27.2	5.1	24.0	5.1	31.6				
Max Q Clear Time (g_c+1/3), s	13.8	15.3	9.5	17.5	4.0	11.2	3.6	7.2				
Green Ext Time (p_c), s	0.0	1.1	0.0	2.1	0.0	1.4	0.0	3.0				

Intersection Summary

HCM 6th Ctrl Delay	25.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
4: William St & State St

2030 MD Peak Hour

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	92	804	850	97	81	66
Future Vol, veh/h	92	804	850	97	81	66
Conflicting Peds, #/hr	5	0	0	5	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	100	874	924	105	88	72

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1034	0	-	0	1619 525
Stage 1	-	-	-	-	982 -
Stage 2	-	-	-	-	637 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	668	-	-	-	94 497
Stage 1	-	-	-	-	323 -
Stage 2	-	-	-	-	489 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	665	-	-	-	~ 79 492
Mov Cap-2 Maneuver	-	-	-	-	235 -
Stage 1	-	-	-	-	273 -
Stage 2	-	-	-	-	487 -

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	28.8
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	665	-	-	-	307
HCM Lane V/C Ratio	0.15	-	-	-	0.52
HCM Control Delay (s)	11.4	-	-	-	28.8
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.5	-	-	-	2.8

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

William Street Corridor
5: Saliman Rd & William St

2030 MD Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	705	149	351	724	85	194	186	382	57	77	31
Future Volume (veh/h)	33	705	149	351	724	85	194	186	382	57	77	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	766	162	382	787	92	211	202	415	62	84	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	1306	580	457	1655	736	318	531	447	123	351	134
Arrive On Green	0.04	0.49	0.49	0.13	0.47	0.47	0.07	0.28	0.28	0.14	0.14	0.14
Sat Flow, veh/h	3456	3554	1579	3456	3554	1580	1781	1870	1577	803	2504	959
Grp Volume(v), veh/h	36	766	162	382	787	92	211	202	415	62	58	60
Grp Sat Flow(s),veh/h/ln	1728	1777	1579	1728	1777	1580	1781	1870	1577	803	1777	1686
Q Serve(g_s), s	0.9	13.9	3.7	9.7	13.7	3.0	0.4	7.8	23.0	4.8	2.6	2.8
Cycle Q Clear(g_c), s	0.9	13.9	3.7	9.7	13.7	3.0	0.4	7.8	23.0	12.6	2.6	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.57
Lane Grp Cap(c), veh/h	114	1306	580	457	1655	736	318	531	447	123	249	236
V/C Ratio(X)	0.32	0.59	0.28	0.84	0.48	0.13	0.66	0.38	0.93	0.50	0.23	0.25
Avail Cap(c_a), veh/h	192	1306	580	553	1655	736	357	553	466	123	249	236
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.0	18.1	7.3	38.1	16.5	13.6	36.7	25.9	31.3	43.3	34.4	34.5
Incr Delay (d2), s/veh	0.6	1.9	1.2	7.8	1.0	0.3	2.7	0.2	23.8	1.3	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.0	1.9	4.4	5.3	1.1	4.6	3.5	11.2	1.4	1.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.6	20.0	8.5	45.9	17.5	14.0	39.4	26.1	55.2	44.7	34.6	34.7
LnGrp LOS	D	C	A	D	B	B	D	C	E	D	C	C
Approach Vol, veh/h		964			1261			828			180	
Approach Delay, s/veh		18.9			25.9			44.1			38.1	
Approach LOS		B			C			D			D	
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		31.9	19.5	38.6	12.9	19.0	10.7	47.4				
Change Period (Y+Rc), s		6.4	7.6	5.5	6.4	* 6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		26.6	14.4	29.5	8.5	* 13	5.0	* 39				
Max Q Clear Time (g_c+I1), s		25.0	11.7	15.9	2.4	14.6	2.9	15.7				
Green Ext Time (p_c), s		0.4	0.2	4.2	0.2	0.0	0.0	5.0				
Intersection Summary												
HCM 6th Ctrl Delay			29.1									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
6: Gold Dust West Way & William St

2030 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↑↑↑			↔ ↑↑↑			↔ ↑	↑		↔ ↑	↑	
Traffic Volume (veh/h)	83	1045	33	62	1081	68	49	6	54	63	8	47
Future Volume (veh/h)	83	1045	33	62	1081	68	49	6	54	63	8	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	90	1136	36	67	1175	74	53	7	59	68	9	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	1509	48	705	2863	180	193	20	170	188	29	163
Arrive On Green	0.06	0.30	0.30	0.33	0.58	0.58	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	5083	161	1781	4908	309	1329	169	1424	1323	241	1364
Grp Volume(v), veh/h	90	761	411	67	815	434	53	0	66	68	0	60
Grp Sat Flow(s),veh/h/ln	1781	1702	1840	1781	1702	1813	1329	0	1593	1323	0	1604
Q Serve(g_s), s	3.6	18.2	18.2	0.0	11.8	11.8	3.4	0.0	3.4	4.5	0.0	3.1
Cycle Q Clear(g_c), s	3.6	18.2	18.2	0.0	11.8	11.8	6.5	0.0	3.4	7.9	0.0	3.1
Prop In Lane	1.00		0.09	1.00		0.17	1.00		0.89	1.00		0.85
Lane Grp Cap(c), veh/h	197	1011	546	705	1986	1058	193	0	190	188	0	192
V/C Ratio(X)	0.46	0.75	0.75	0.10	0.41	0.41	0.27	0.00	0.35	0.36	0.00	0.31
Avail Cap(c_a), veh/h	347	1649	891	705	1986	1058	272	0	285	266	0	287
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.1	28.6	28.6	18.4	10.3	10.3	39.2	0.0	36.4	40.0	0.0	36.2
Incr Delay (d2), s/veh	0.6	5.2	9.3	0.0	0.6	1.2	0.3	0.0	0.4	0.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	7.7	8.9	0.9	4.0	4.4	1.1	0.0	1.4	1.5	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.7	33.8	37.9	18.5	10.9	11.5	39.5	0.0	36.8	40.5	0.0	36.6
LnGrp LOS	C	C	D	B	B	B	D	A	D	D	A	D
Approach Vol, veh/h	1262				1316		119				128	
Approach Delay, s/veh	34.8				11.5		38.0				38.7	
Approach LOS	C				B		D				D	
Timer - Assigned Phs	2		3		4		6		7		8	
Phs Duration (G+Y+Rc), s	18.6		37.2		34.1		18.6		11.4		59.9	
Change Period (Y+Rc), s	7.9		7.4		* 7.4		7.9		* 6.4		7.4	
Max Green Setting (Gmax), s	16.1		8.6		* 44		16.1		* 13		39.6	
Max Q Clear Time (g_c+I1), s	8.5		2.0		20.2		9.9		5.6		13.8	
Green Ext Time (p_c), s	0.2		0.0		6.5		0.1		0.0		7.3	

Intersection Summary

HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
1: Carson St & William St

2030 MD Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	22	135	171	142	329	9	657	275	526	37
v/c Ratio	0.08	0.51	0.50	0.31	0.52	0.02	0.48	0.60	0.51	0.04
Control Delay	20.3	40.3	19.8	19.1	7.0	11.6	22.6	16.8	17.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	40.3	19.8	19.1	7.0	11.6	22.6	16.8	17.4	0.1
Queue Length 50th (ft)	9	73	37	27	0	2	140	70	162	0
Queue Length 95th (ft)	22	107	38	92	136	10	225	147	#424	0
Internal Link Dist (ft)		326		637			201		484	
Turn Bay Length (ft)	80		100			130		140		
Base Capacity (vph)	282	513	342	540	684	413	1367	471	1041	927
Starvation Cap Reductn	0	0	0	0	0	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	0.08	0.26	0.50	0.26	0.48	0.02	0.48	0.58	0.51	0.04

Intersection Summary

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

William Street Corridor
2: Stewart St & William St

2030 MD Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	510	249	509	147	525	47	326
v/c Ratio	0.07	0.51	0.67	0.36	0.43	0.87	0.22	0.71
Control Delay	11.5	22.6	26.4	8.6	19.8	42.0	16.2	38.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	22.6	26.4	8.6	19.8	42.0	16.2	38.2
Queue Length 50th (ft)	9	142	27	27	46	245	14	153
Queue Length 95th (ft)	m10	153	#143	42	85	#438	33	241
Internal Link Dist (ft)		637		869		563		312
Turn Bay Length (ft)	160		100				75	
Base Capacity (vph)	347	1041	382	1442	342	619	216	561
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.49	0.65	0.35	0.43	0.85	0.22	0.58

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
3: Roop St & William St

2030 MD Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	662	235	762	51	520	170	409
v/c Ratio	0.15	0.53	0.62	0.48	0.18	0.77	0.62	0.46
Control Delay	10.0	23.9	26.0	11.5	20.4	35.6	31.4	28.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	23.9	26.0	11.5	20.4	35.6	31.4	28.4
Queue Length 50th (ft)	7	146	50	77	19	120	68	102
Queue Length 95th (ft)	m32	m211	#153	106	41	161	108	137
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	331	1261	385	1578	281	893	277	961
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.52	0.61	0.48	0.18	0.58	0.61	0.43

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
5: Saliman Rd & William St

2030 MD Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	36	766	162	382	787	92	211	202	415	62	118
v/c Ratio	0.18	0.53	0.20	0.76	0.40	0.10	0.63	0.47	0.77	0.68	0.31
Control Delay	39.4	15.6	0.5	47.1	7.9	1.4	39.7	33.0	23.0	72.8	27.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	15.6	0.5	47.1	7.9	1.4	39.7	33.0	23.0	72.8	27.8
Queue Length 50th (ft)	9	107	0	72	173	6	105	100	93	34	23
Queue Length 95th (ft)	m19	141	0	155	24	0	157	151	188	#82	47
Internal Link Dist (ft)		571			1368			439			691
Turn Bay Length (ft)	240		175	180		155	290			160	
Base Capacity (vph)	195	1441	814	558	1959	956	388	550	629	122	501
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.53	0.20	0.68	0.40	0.10	0.54	0.37	0.66	0.51	0.24

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
6: Gold Dust West Way & William St

2030 MD Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	90	1172	67	1249	53	66	68	60
v/c Ratio	0.31	0.38	0.16	0.39	0.35	0.28	0.45	0.26
Control Delay	13.5	9.7	14.6	11.7	40.4	13.7	44.2	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	9.7	14.6	11.7	40.4	13.7	44.2	14.7
Queue Length 50th (ft)	16	83	15	129	29	4	37	5
Queue Length 95th (ft)	m33	105	46	235	56	36	69	35
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	381	3141	434	3225	250	347	249	342
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.37	0.15	0.39	0.21	0.19	0.27	0.18

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
1: Carson St & William St

2030 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	228	15	128	94	410	4	520	177	291	440	29
Future Volume (veh/h)	23	228	15	128	94	410	4	520	177	291	440	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	248	16	139	102	446	4	565	192	316	478	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	361	437	28	348	512	431	333	807	273	404	734	618
Arrive On Green	0.05	0.25	0.25	0.02	0.09	0.09	0.05	0.31	0.31	0.14	0.39	0.39
Sat Flow, veh/h	1781	1737	112	1781	1870	1576	1781	2602	882	1781	1870	1575
Grp Volume(v), veh/h	25	0	264	139	102	446	4	385	372	316	478	32
Grp Sat Flow(s),veh/h/ln	1781	0	1849	1781	1870	1576	1781	1777	1707	1781	1870	1575
Q Serve(g_s), s	0.9	0.0	11.8	5.4	4.8	26.0	0.1	18.1	18.2	10.9	19.8	1.2
Cycle Q Clear(g_c), s	0.9	0.0	11.8	5.4	4.8	26.0	0.1	18.1	18.2	10.9	19.8	1.2
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.52	1.00		1.00
Lane Grp Cap(c), veh/h	361	0	465	348	512	431	333	551	529	404	734	618
V/C Ratio(X)	0.07	0.00	0.57	0.40	0.20	1.03	0.01	0.70	0.70	0.78	0.65	0.05
Avail Cap(c_a), veh/h	361	0	465	348	512	431	333	551	529	482	734	618
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.4	0.0	31.0	25.6	33.6	43.2	20.1	28.9	28.9	20.0	23.5	17.9
Incr Delay (d2), s/veh	0.0	0.0	1.0	0.2	0.1	50.1	0.0	7.2	7.6	5.6	4.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	5.4	2.4	2.3	17.0	0.1	8.8	8.5	5.0	9.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.4	0.0	32.1	25.8	33.6	93.3	20.1	36.1	36.5	25.6	28.0	18.0
LnGrp LOS	C	A	C	C	C	F	C	D	D	C	C	B
Approach Vol, veh/h		289			687			761			826	
Approach Delay, s/veh		31.3			70.8			36.2			26.7	
Approach LOS		C			E			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.3	35.4	12.0	29.3	10.5	43.2	9.9	31.4				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 17	25.3	7.0	23.9	5.0	37.3	* 5	26.0				
Max Q Clear Time (g_c+I1), s	12.9	20.2	7.4	13.8	2.1	21.8	2.9	28.0				
Green Ext Time (p_c), s	0.1	1.7	0.0	0.7	0.0	2.0	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	41.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
2: Stewart St & William St

2030 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	526	129	207	401	28	230	303	317	40	211	16
Future Volume (veh/h)	44	526	129	207	401	28	230	303	317	40	211	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	572	140	225	436	30	250	329	345	43	229	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	305	660	161	282	1002	69	487	314	330	139	501	37
Arrive On Green	0.01	0.08	0.08	0.03	0.10	0.10	0.12	0.38	0.38	0.04	0.29	0.29
Sat Flow, veh/h	1781	2825	689	1781	3372	231	1781	834	875	1781	1719	128
Grp Volume(v), veh/h	48	359	353	225	229	237	250	0	674	43	0	246
Grp Sat Flow(s),veh/h/ln	1781	1777	1738	1781	1777	1826	1781	0	1709	1781	0	1847
Q Serve(g_s), s	1.9	19.0	19.1	8.7	11.5	11.6	8.9	0.0	35.8	1.6	0.0	10.3
Cycle Q Clear(g_c), s	1.9	19.0	19.1	8.7	11.5	11.6	8.9	0.0	35.8	1.6	0.0	10.3
Prop In Lane	1.00		0.40	1.00		0.13	1.00		0.51	1.00		0.07
Lane Grp Cap(c), veh/h	305	415	406	282	528	542	487	0	644	139	0	538
V/C Ratio(X)	0.16	0.86	0.87	0.80	0.43	0.44	0.51	0.00	1.05	0.31	0.00	0.46
Avail Cap(c_a), veh/h	333	415	406	282	528	542	530	0	644	170	0	538
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.57	0.57	0.57	0.87	0.87	0.87	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.8	42.3	42.4	27.3	35.3	35.4	19.2	0.0	29.6	26.1	0.0	27.5
Incr Delay (d2), s/veh	0.1	13.0	13.6	12.2	2.3	2.2	0.3	0.0	48.3	0.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	10.5	10.4	4.9	5.8	6.0	3.5	0.0	22.4	0.7	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.8	55.3	56.0	39.5	37.6	37.6	19.5	0.0	77.9	26.5	0.0	27.8
LnGrp LOS	C	E	E	D	D	D	B	A	F	C	A	C
Approach Vol, veh/h		760		691		924		289				
Approach Delay, s/veh		53.8		38.2		62.1		27.6				
Approach LOS		D		D		E		C				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	43.1	14.9	27.8	17.3	35.0	8.9	33.8				
Change Period (Y+Rc), s	5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	5	* 36	* 9.7	20.6	13.2	* 27	* 5.1	25.1				
Max Q Clear Time (g_c+13), s	13.6	37.8	10.7	21.1	10.9	12.3	3.9	13.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	0.8	0.0	1.5				

Intersection Summary

HCM 6th Ctrl Delay	49.8
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2030 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	90	731	83	170	537	115	39	342	243	202	336	68
Future Volume (veh/h)	90	731	83	170	537	115	39	342	243	202	336	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	98	795	90	185	584	125	42	372	264	220	365	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	382	1065	121	292	1085	232	311	427	299	301	838	168
Arrive On Green	0.02	0.11	0.11	0.18	0.75	0.75	0.04	0.21	0.21	0.11	0.28	0.28
Sat Flow, veh/h	1781	3216	364	1781	2911	621	1781	1992	1393	1781	2946	591
Grp Volume(v), veh/h	98	439	446	185	356	353	42	331	305	220	219	220
Grp Sat Flow(s),veh/h/ln	1781	1777	1803	1781	1777	1756	1781	1777	1608	1781	1777	1760
Q Serve(g_s), s	3.4	22.8	22.8	6.5	8.1	8.1	1.7	17.1	17.5	8.7	9.5	9.7
Cycle Q Clear(g_c), s	3.4	22.8	22.8	6.5	8.1	8.1	1.7	17.1	17.5	8.7	9.5	9.7
Prop In Lane	1.00		0.20	1.00		0.35	1.00		0.87	1.00		0.34
Lane Grp Cap(c), veh/h	382	588	597	292	662	654	311	381	345	301	506	501
V/C Ratio(X)	0.26	0.75	0.75	0.63	0.54	0.54	0.14	0.87	0.88	0.73	0.43	0.44
Avail Cap(c_a), veh/h	410	588	597	302	662	654	344	411	372	318	520	515
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.51	0.51	0.51	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.9	38.4	38.4	19.5	8.6	8.6	27.4	36.0	36.2	25.5	27.7	27.8
Incr Delay (d2), s/veh	0.1	4.4	4.4	3.0	3.1	3.2	0.1	15.9	19.3	6.7	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	11.5	11.7	2.5	2.7	2.7	0.7	9.0	8.7	4.2	4.1	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.0	42.9	42.8	22.5	11.7	11.8	27.5	51.9	55.5	32.2	27.9	28.0
LnGrp LOS	B	D	D	C	B	B	C	D	E	C	C	C
Approach Vol, veh/h		983			894			678			659	
Approach Delay, s/veh		40.6			14.0			52.0			29.4	
Approach LOS		D			B			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.9	26.8	14.5	37.9	9.2	33.4	10.5	41.8				
Change Period (Y+Rc), s	5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	18	22.0	9.0	28.4	5.1	27.8	6.5	31.4				
Max Q Clear Time (g_c+110), s	18	19.5	8.5	24.8	3.7	11.7	5.4	10.1				
Green Ext Time (p_c), s	0.0	0.7	0.0	1.5	0.0	1.7	0.0	2.7				

Intersection Summary

HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
4: William St & State St

2030 PM Peak Hour

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	91	1083	740	91	101	73
Future Vol, veh/h	91	1083	740	91	101	73
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	1177	804	99	110	79

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	908	0	-	0	1651 462
Stage 1	-	-	-	-	859 -
Stage 2	-	-	-	-	792 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	745	-	-	-	~ 89 547
Stage 1	-	-	-	-	375 -
Stage 2	-	-	-	-	407 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	741	-	-	-	~ 76 542
Mov Cap-2 Maneuver	-	-	-	-	249 -
Stage 1	-	-	-	-	323 -
Stage 2	-	-	-	-	405 -

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	30.9
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	741	-	-	-	322
HCM Lane V/C Ratio	0.133	-	-	-	0.587
HCM Control Delay (s)	10.6	-	-	-	30.9
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.5	-	-	-	3.5

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

William Street Corridor
5: Saliman Rd & William St

2030 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖↗	↑↑	↖	↖	↑	↖	↖	↑↑	↖
Traffic Volume (veh/h)	43	959	184	565	663	92	145	170	458	115	141	23
Future Volume (veh/h)	43	959	184	565	663	92	145	170	458	115	141	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	1042	200	614	721	100	158	185	498	125	153	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	129	1195	530	678	1755	781	259	491	413	123	438	70
Arrive On Green	0.04	0.34	0.34	0.20	0.49	0.49	0.05	0.26	0.26	0.14	0.14	0.14
Sat Flow, veh/h	3456	3554	1578	3456	3554	1580	1781	1870	1576	756	3062	491
Grp Volume(v), veh/h	47	1042	200	614	721	100	158	185	498	125	87	91
Grp Sat Flow(s),veh/h/ln	1728	1777	1578	1728	1777	1580	1781	1870	1576	756	1777	1776
Q Serve(g_s), s	1.3	26.2	6.7	16.5	12.2	3.2	0.0	7.7	24.9	5.9	4.2	4.4
Cycle Q Clear(g_c), s	1.3	26.2	6.7	16.5	12.2	3.2	0.0	7.7	24.9	13.6	4.2	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	129	1195	530	678	1755	781	259	491	413	123	254	254
V/C Ratio(X)	0.36	0.87	0.38	0.91	0.41	0.13	0.61	0.38	1.20	1.02	0.34	0.36
Avail Cap(c_a), veh/h	182	1195	530	706	1755	781	262	491	413	123	254	254
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	29.6	12.9	37.3	15.3	13.0	40.6	28.7	35.0	46.4	36.7	36.7
Incr Delay (d2), s/veh	0.6	8.9	2.0	14.4	0.7	0.3	2.9	0.2	112.9	86.1	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	11.9	3.4	8.0	4.7	1.1	3.7	3.5	22.0	5.8	1.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	38.5	14.9	51.8	16.0	13.3	43.5	28.9	148.0	132.5	37.0	37.1
LnGrp LOS	D	D	B	D	B	B	D	C	F	F	D	D
Approach Vol, veh/h		1289			1435			841			303	
Approach Delay, s/veh		35.1			31.1			102.1			76.4	
Approach LOS		D			C			F			E	
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		31.3	26.2	37.4	11.3	20.0	11.3	52.4				
Change Period (Y+Rc), s		6.4	7.6	5.5	6.4	* 6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		24.2	19.4	31.9	5.1	* 14	5.0	* 46				
Max Q Clear Time (g_c+I1), s		26.9	18.5	28.2	2.0	15.6	3.3	14.2				
Green Ext Time (p_c), s		0.0	0.1	2.3	0.1	0.0	0.0	4.8				

Intersection Summary

HCM 6th Ctrl Delay	51.4
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
6: Gold Dust West Way & William St

2030 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↑↑↑ ↗			↖ ↑↑↑ ↗			↖ ↗	↖ ↗		↖ ↗	↖ ↗	
Traffic Volume (veh/h)	82	1429	41	59	1230	69	46	8	35	71	6	57
Future Volume (veh/h)	82	1429	41	59	1230	69	46	8	35	71	6	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	1553	45	64	1337	75	50	9	38	77	7	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	213	1974	57	572	3007	169	172	35	147	192	18	161
Arrive On Green	0.05	0.39	0.39	0.26	0.61	0.61	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	5099	148	1781	4946	277	1319	309	1305	1344	161	1429
Grp Volume(v), veh/h	89	1037	561	64	920	492	50	0	47	77	0	69
Grp Sat Flow(s),veh/h/ln	1781	1702	1843	1781	1702	1819	1319	0	1615	1344	0	1590
Q Serve(g_s), s	3.3	25.5	25.5	0.0	13.8	13.8	3.5	0.0	2.5	5.3	0.0	3.8
Cycle Q Clear(g_c), s	3.3	25.5	25.5	0.0	13.8	13.8	7.3	0.0	2.5	7.8	0.0	3.8
Prop In Lane	1.00		0.08	1.00		0.15	1.00		0.81	1.00		0.90
Lane Grp Cap(c), veh/h	213	1318	713	572	2069	1106	172	0	182	192	0	180
V/C Ratio(X)	0.42	0.79	0.79	0.11	0.44	0.44	0.29	0.00	0.26	0.40	0.00	0.38
Avail Cap(c_a), veh/h	340	1741	943	572	2069	1106	246	0	274	268	0	270
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.4	25.7	25.7	23.7	10.0	10.0	42.5	0.0	38.5	42.1	0.0	39.1
Incr Delay (d2), s/veh	0.5	4.8	8.6	0.0	0.7	1.3	0.3	0.0	0.3	0.5	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	10.5	12.0	1.0	4.6	5.1	1.1	0.0	1.0	1.8	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.9	30.5	34.2	23.7	10.7	11.3	42.8	0.0	38.8	42.6	0.0	39.6
LnGrp LOS	C	C	C	C	B	B	D	A	D	D	A	D
Approach Vol, veh/h		1687			1476			97			146	
Approach Delay, s/veh		31.4			11.5			40.9			41.2	
Approach LOS		C			B			D			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.6	32.2	44.2		18.6	11.2	65.2				
Change Period (Y+Rc), s		7.9	7.4	* 7.4		7.9	* 6.4	7.4				
Max Green Setting (Gmax), s		16.1	8.6	* 49		16.1	* 12	45.6				
Max Q Clear Time (g_c+I1), s		9.3	2.0	27.5		9.8	5.3	15.8				
Green Ext Time (p_c), s		0.1	0.0	9.3		0.2	0.0	9.0				

Intersection Summary

HCM 6th Ctrl Delay	23.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
1: Carson St & William St

2030 PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	25	264	139	102	446	4	757	316	478	32
v/c Ratio	0.07	0.77	0.52	0.20	0.60	0.01	0.63	0.74	0.47	0.04
Control Delay	20.8	50.3	21.3	18.8	10.4	12.8	28.8	25.8	17.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.8	50.3	21.3	18.8	10.4	12.8	28.8	25.8	17.4	0.1
Queue Length 50th (ft)	10	150	31	20	151	1	192	96	164	0
Queue Length 95th (ft)	26	219	65	90	190	6	282	#220	341	0
Internal Link Dist (ft)		326		637			201		484	
Turn Bay Length (ft)	80		100			130		140		
Base Capacity (vph)	340	465	271	538	766	413	1206	458	1012	902
Starvation Cap Reductn	0	0	0	0	0	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	0.07	0.57	0.51	0.19	0.58	0.01	0.63	0.69	0.47	0.04

Intersection Summary

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

William Street Corridor
2: Stewart St & William St

2030 PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	48	712	225	466	250	674	43	246
v/c Ratio	0.15	0.83	0.83	0.39	0.51	0.96	0.26	0.49
Control Delay	17.1	37.4	38.1	16.3	18.9	52.5	17.4	32.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.1	37.4	38.1	16.3	18.9	52.5	17.4	32.1
Queue Length 50th (ft)	14	195	66	141	84	369	13	117
Queue Length 95th (ft)	m27	#256	#198	171	134	#613	30	194
Internal Link Dist (ft)		637		869		563		312
Turn Bay Length (ft)	160		100				75	
Base Capacity (vph)	319	862	274	1193	513	703	168	531
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.83	0.82	0.39	0.49	0.96	0.26	0.46

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
3: Roop St & William St

2030 PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	98	885	185	709	42	636	220	439
v/c Ratio	0.30	0.71	0.70	0.50	0.15	0.84	0.80	0.44
Control Delay	11.2	26.4	41.6	13.3	19.9	36.8	43.1	27.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.2	26.4	41.6	13.3	19.9	36.8	43.1	27.6
Queue Length 50th (ft)	19	250	67	67	16	141	91	111
Queue Length 95th (ft)	m32	m312	#158	117	36	197	#173	150
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	341	1239	277	1418	273	898	288	1051
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.71	0.67	0.50	0.15	0.71	0.76	0.42

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
5: Saliman Rd & William St

2030 PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	47	1042	200	614	721	100	158	185	498	125	178
v/c Ratio	0.26	0.84	0.27	0.90	0.37	0.11	0.47	0.40	0.81	0.90	0.37
Control Delay	44.7	28.5	0.8	53.5	9.5	1.7	35.5	32.7	24.6	96.4	36.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.7	28.5	0.8	53.5	9.5	1.7	35.5	32.7	24.6	96.4	36.0
Queue Length 50th (ft)	14	274	0	187	177	9	77	93	110	75	46
Queue Length 95th (ft)	m21	#414	m1	#265	26	0	133	155	#282	#178	79
Internal Link Dist (ft)		571			1368			439			691
Turn Bay Length (ft)	240		175	180		155	290			160	
Base Capacity (vph)	181	1236	731	702	1941	944	336	474	623	146	508
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.84	0.27	0.87	0.37	0.11	0.47	0.39	0.80	0.86	0.35

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
6: Gold Dust West Way & William St

2030 PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	89	1598	64	1412	50	47	77	69
v/c Ratio	0.33	0.48	0.23	0.43	0.33	0.22	0.50	0.29
Control Delay	9.2	6.7	17.7	11.6	42.4	16.5	49.0	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	6.7	17.7	11.6	42.4	16.5	49.0	14.2
Queue Length 50th (ft)	15	105	14	156	29	5	45	4
Queue Length 95th (ft)	m12	81	43	267	58	33	80	38
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	346	3358	321	3316	235	318	240	332
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.48	0.20	0.43	0.21	0.15	0.32	0.21

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
1: Carson St & William St

2050 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	100	3	149	312	207	22	277	83	309	420	49
Future Volume (veh/h)	14	100	3	149	312	207	22	277	83	309	420	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	109	3	162	339	225	24	301	90	336	457	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	217	378	10	400	414	348	393	959	281	581	798	672
Arrive On Green	0.06	0.21	0.21	0.04	0.15	0.15	0.06	0.35	0.35	0.13	0.43	0.43
Sat Flow, veh/h	1781	1811	50	1781	1870	1574	1781	2706	794	1781	1870	1576
Grp Volume(v), veh/h	15	0	112	162	339	225	24	196	195	336	457	53
Grp Sat Flow(s),veh/h/ln	1781	0	1861	1781	1870	1574	1781	1777	1723	1781	1870	1576
Q Serve(g_s), s	0.6	0.0	4.6	6.0	15.8	12.1	0.7	7.2	7.4	10.3	16.7	1.8
Cycle Q Clear(g_c), s	0.6	0.0	4.6	6.0	15.8	12.1	0.7	7.2	7.4	10.3	16.7	1.8
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.46	1.00		1.00
Lane Grp Cap(c), veh/h	217	0	389	400	414	348	393	630	611	581	798	672
V/C Ratio(X)	0.07	0.00	0.29	0.41	0.82	0.65	0.06	0.31	0.32	0.58	0.57	0.08
Avail Cap(c_a), veh/h	217	0	515	400	540	455	393	630	611	581	798	672
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	0.0	30.0	27.0	36.6	35.0	16.5	21.1	21.2	14.3	19.6	15.3
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.2	5.5	0.7	0.0	1.3	1.4	0.9	3.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.1	2.8	8.2	4.9	0.3	3.2	3.2	4.1	7.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	0.0	30.1	27.2	42.0	35.7	16.5	22.4	22.5	15.2	22.6	15.5
LnGrp LOS	C	A	C	C	D	D	B	C	C	B	C	B
Approach Vol, veh/h		127			726			415			846	
Approach Delay, s/veh		29.6			36.8			22.1			19.2	
Approach LOS		C			D			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	37.8	11.0	24.2	10.5	44.3	9.9	25.3				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 12	25.8	6.0	24.9	5.0	32.3	* 5	26.0				
Max Q Clear Time (g_c+I1), s	12.3	9.4	8.0	6.6	2.7	18.7	2.6	17.8				
Green Ext Time (p_c), s	0.0	1.5	0.0	0.3	0.0	1.8	0.0	1.3				

Intersection Summary

HCM 6th Ctrl Delay	26.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
2: Stewart St & William St

2050 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	353	150	284	592	12	85	103	136	25	254	12
Future Volume (veh/h)	6	353	150	284	592	12	85	103	136	25	254	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	384	163	309	643	13	92	112	148	27	276	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	365	847	354	489	1680	34	224	164	217	223	335	16
Arrive On Green	0.00	0.11	0.11	0.27	0.94	0.94	0.06	0.23	0.23	0.03	0.19	0.19
Sat Flow, veh/h	1781	2436	1019	1781	3562	72	1781	728	962	1781	1771	83
Grp Volume(v), veh/h	7	279	268	309	321	335	92	0	260	27	0	289
Grp Sat Flow(s),veh/h/ln	1781	1777	1678	1781	1777	1857	1781	0	1690	1781	0	1855
Q Serve(g_s), s	0.2	13.2	13.5	10.0	1.4	1.4	3.7	0.0	12.7	1.1	0.0	13.5
Cycle Q Clear(g_c), s	0.2	13.2	13.5	10.0	1.4	1.4	3.7	0.0	12.7	1.1	0.0	13.5
Prop In Lane	1.00		0.61	1.00		0.04	1.00		0.57	1.00		0.04
Lane Grp Cap(c), veh/h	365	618	584	489	838	876	224	0	381	223	0	351
V/C Ratio(X)	0.02	0.45	0.46	0.63	0.38	0.38	0.41	0.00	0.68	0.12	0.00	0.82
Avail Cap(c_a), veh/h	448	618	584	504	838	876	236	0	526	273	0	550
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	0.83	0.83	0.83	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.8	31.8	31.9	13.1	1.4	1.4	28.1	0.0	31.9	28.6	0.0	35.0
Incr Delay (d2), s/veh	0.0	2.0	2.2	1.5	1.1	1.1	0.4	0.0	0.8	0.1	0.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	6.6	6.4	3.2	0.6	0.6	1.5	0.0	5.1	0.5	0.0	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.8	33.8	34.1	14.6	2.5	2.4	28.5	0.0	32.7	28.6	0.0	38.0
LnGrp LOS	B	C	C	B	A	A	C	A	C	C	A	D
Approach Vol, veh/h		554		965		352		316				
Approach Delay, s/veh		33.8		6.3		31.6		37.2				
Approach LOS		C		A		C		D				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	27.6	17.3	36.9	11.5	24.3	6.1	48.0				
Change Period (Y+Rc), s	5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	5	* 28	* 13	20.3	5.7	* 27	* 5	28.0				
Max Q Clear Time (g_c+1), s	13	14.7	12.0	15.5	5.7	15.5	2.2	3.4				
Green Ext Time (p_c), s	0.0	0.8	0.0	1.1	0.0	0.9	0.0	2.9				

Intersection Summary

HCM 6th Ctrl Delay	21.8
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2050 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	453	21	273	817	121	41	306	126	104	275	49
Future Volume (veh/h)	23	453	21	273	817	121	41	306	126	104	275	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	492	23	297	888	132	45	333	137	113	299	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	336	1313	61	518	1494	222	244	433	175	219	561	98
Arrive On Green	0.01	0.13	0.13	0.24	0.96	0.96	0.04	0.18	0.18	0.06	0.19	0.19
Sat Flow, veh/h	1781	3456	161	1781	3102	461	1781	2464	994	1781	3019	528
Grp Volume(v), veh/h	25	253	262	297	509	511	45	238	232	113	174	178
Grp Sat Flow(s),veh/h/ln	1781	1777	1841	1781	1777	1786	1781	1777	1681	1781	1777	1770
Q Serve(g_s), s	0.8	11.7	11.8	9.2	2.2	2.2	1.8	11.5	11.9	4.7	8.0	8.2
Cycle Q Clear(g_c), s	0.8	11.7	11.8	9.2	2.2	2.2	1.8	11.5	11.9	4.7	8.0	8.2
Prop In Lane	1.00		0.09	1.00		0.26	1.00		0.59	1.00		0.30
Lane Grp Cap(c), veh/h	336	675	699	518	856	860	244	312	295	219	330	329
V/C Ratio(X)	0.07	0.37	0.38	0.57	0.59	0.59	0.18	0.76	0.78	0.51	0.53	0.54
Avail Cap(c_a), veh/h	389	675	699	518	856	860	277	448	424	219	434	433
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	29.5	29.6	11.9	0.9	0.9	28.9	35.3	35.5	29.3	33.1	33.1
Incr Delay (d2), s/veh	0.0	1.4	1.4	1.0	3.0	3.0	0.1	2.5	3.5	0.9	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.8	6.1	2.7	1.1	1.1	0.8	5.2	5.1	2.0	3.5	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.4	30.9	30.9	12.9	3.9	3.9	29.0	37.8	39.0	30.2	33.6	33.7
LnGrp LOS	B	C	C	B	A	A	C	D	D	C	C	C
Approach Vol, veh/h		540			1317			515			465	
Approach Delay, s/veh		30.3			5.9			37.6			32.8	
Approach LOS		C			A			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.2	17.0	40.6	9.3	23.1	7.8	49.8					
Change Period (Y+Rc), s	5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	22.7	11.0	27.3	5.0	22.0	5.0	33.8					
Max Q Clear Time (g_c+1/3), s	13.9	11.2	13.8	3.8	10.2	2.8	4.2					
Green Ext Time (p_c), s	0.0	1.1	0.0	1.8	0.0	1.1	0.0	4.5				

Intersection Summary

HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
4: William St & State St

2050 AM Peak Hour

Intersection						
Int Delay, s/veh	7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	620	1134	149	112	61
Future Vol, veh/h	55	620	1134	149	112	61
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	674	1233	162	122	66

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1400	0	-	0	1781 708
Stage 1	-	-	-	-	1319 -
Stage 2	-	-	-	-	462 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	484	-	-	-	~ 73 377
Stage 1	-	-	-	-	214 -
Stage 2	-	-	-	-	601 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	482	-	-	-	~ 63 373
Mov Cap-2 Maneuver	-	-	-	-	173 -
Stage 1	-	-	-	-	187 -
Stage 2	-	-	-	-	598 -

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	81.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	482	-	-	-	213
HCM Lane V/C Ratio	0.124	-	-	-	0.883
HCM Control Delay (s)	13.5	-	-	-	81.6
HCM Lane LOS	B	-	-	-	F
HCM 95th %tile Q(veh)	0.4	-	-	-	7

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

William Street Corridor
5: Saliman Rd & William St

2050 AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	384	337	662	1045	47	198	175	301	40	485	17
Future Volume (veh/h)	16	384	337	662	1045	47	198	175	301	40	485	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	417	366	720	1136	51	215	190	327	43	527	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	780	345	787	1517	674	249	629	530	164	599	20
Arrive On Green	0.04	0.44	0.44	0.23	0.43	0.43	0.09	0.34	0.34	0.17	0.17	0.17
Sat Flow, veh/h	3456	3554	1574	3456	3554	1579	1781	1870	1578	881	3505	120
Grp Volume(v), veh/h	17	417	366	720	1136	51	215	190	327	43	267	278
Grp Sat Flow(s),veh/h/ln	1728	1777	1574	1728	1777	1579	1781	1870	1578	881	1777	1848
Q Serve(g_s), s	0.4	7.7	14.0	18.3	24.2	1.7	6.5	6.8	15.6	4.2	13.2	13.2
Cycle Q Clear(g_c), s	0.4	7.7	14.0	18.3	24.2	1.7	6.5	6.8	15.6	10.9	13.2	13.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	66	780	345	787	1517	674	249	629	530	164	304	316
V/C Ratio(X)	0.26	0.53	1.06	0.91	0.75	0.08	0.86	0.30	0.62	0.26	0.88	0.88
Avail Cap(c_a), veh/h	192	780	345	822	1517	674	250	629	530	167	308	320
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	21.9	12.7	33.9	21.7	15.3	38.6	22.1	25.0	38.7	36.4	36.4
Incr Delay (d2), s/veh	0.7	2.6	65.0	13.9	3.4	0.2	24.3	0.1	1.6	0.3	22.9	22.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.9	9.3	8.8	9.9	0.6	6.3	3.0	5.7	0.9	7.6	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.4	24.5	77.7	47.8	25.2	15.5	63.0	22.2	26.6	39.0	59.3	59.0
LnGrp LOS	D	C	F	D	C	B	E	C	C	D	E	E
Approach Vol, veh/h		800			1907			732			588	
Approach Delay, s/veh		49.3			33.4			36.1			57.7	
Approach LOS		D			C			D			E	
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		36.6	28.1	25.2	14.9	21.8	9.4	43.9				
Change Period (Y+Rc), s		6.4	7.6	5.5	6.4	* 6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		29.6	21.4	19.5	8.5	* 16	5.0	* 36				
Max Q Clear Time (g_c+I1), s		17.6	20.3	16.0	8.5	15.2	2.4	26.2				
Green Ext Time (p_c), s		1.2	0.2	1.2	0.0	0.1	0.0	4.8				
Intersection Summary												
HCM 6th Ctrl Delay			40.6									
HCM 6th LOS			D									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
6: Gold Dust West Way & William St

2050 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶ ↑↑↑ ↷			↶ ↑↑↑ ↷			↶ ↷	↶ ↷		↶ ↷	↶ ↷	
Traffic Volume (veh/h)	19	635	54	179	1672	51	53	0	211	15	0	11
Future Volume (veh/h)	19	635	54	179	1672	51	53	0	211	15	0	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	690	59	195	1817	55	58	0	229	16	0	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	120	968	82	784	2894	88	304	0	264	110	0	264
Arrive On Green	0.02	0.20	0.20	0.38	0.57	0.57	0.17	0.00	0.17	0.17	0.00	0.17
Sat Flow, veh/h	1781	4789	407	1781	5092	154	1390	0	1571	1147	0	1571
Grp Volume(v), veh/h	21	489	260	195	1214	658	58	0	229	16	0	12
Grp Sat Flow(s),veh/h/ln	1781	1702	1791	1781	1702	1842	1390	0	1571	1147	0	1571
Q Serve(g_s), s	0.9	12.0	12.2	0.6	21.5	21.6	3.3	0.0	12.8	1.2	0.0	0.6
Cycle Q Clear(g_c), s	0.9	12.0	12.2	0.6	21.5	21.6	3.9	0.0	12.8	14.0	0.0	0.6
Prop In Lane	1.00		0.23	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	688	362	784	1935	1047	304	0	264	110	0	264
V/C Ratio(X)	0.17	0.71	0.72	0.25	0.63	0.63	0.19	0.00	0.87	0.15	0.00	0.05
Avail Cap(c_a), veh/h	191	1536	808	784	1935	1047	304	0	264	110	0	264
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.4	33.4	33.5	17.1	13.0	13.0	33.0	0.0	36.5	43.3	0.0	31.4
Incr Delay (d2), s/veh	0.3	6.1	11.6	0.1	1.6	2.9	0.1	0.0	24.3	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.3	6.2	2.4	7.4	8.5	1.1	0.0	6.6	0.4	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	39.6	45.1	17.2	14.6	15.9	33.1	0.0	60.8	43.5	0.0	31.4
LnGrp LOS	C	D	D	B	B	B	C	A	E	D	A	C
Approach Vol, veh/h		770			2067			287				28
Approach Delay, s/veh		41.3			15.2			55.2				38.4
Approach LOS		D			B			E				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	41.4	25.6		23.0	8.4	58.6				
Change Period (Y+Rc), s		7.9	7.4	* 7.4		7.9	* 6.4	7.4				
Max Green Setting (Gmax), s		15.1	12.6	* 41		15.1	* 5.6	47.6				
Max Q Clear Time (g_c+I1), s		14.8	2.6	14.2		16.0	2.9	23.6				
Green Ext Time (p_c), s		0.0	0.2	3.9		0.0	0.0	12.1				

Intersection Summary

HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
1: Carson St & William St

2050 AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	15	112	162	339	225	24	391	336	457	53
v/c Ratio	0.07	0.45	0.47	0.72	0.40	0.05	0.28	0.55	0.44	0.06
Control Delay	20.3	39.2	15.1	25.5	6.0	11.4	18.8	14.6	17.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	39.2	15.1	25.5	6.0	11.4	18.8	14.6	17.3	0.1
Queue Length 50th (ft)	6	60	53	176	28	5	70	85	127	0
Queue Length 95th (ft)	17	91	11	276	132	20	123	183	327	0
Internal Link Dist (ft)		326		637			201		484	
Turn Bay Length (ft)	80		100			130		140		
Base Capacity (vph)	218	514	348	547	616	475	1397	621	1027	917
Starvation Cap Reductn	0	0	0	0	0	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	0.07	0.22	0.47	0.62	0.37	0.05	0.28	0.54	0.44	0.06

Intersection Summary

William Street Corridor
2: Stewart St & William St

2050 AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	7	547	309	656	92	260	27	289
v/c Ratio	0.02	0.49	0.66	0.36	0.32	0.50	0.08	0.75
Control Delay	10.2	20.4	18.8	5.7	21.3	21.8	16.8	44.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.2	20.4	18.8	5.7	21.3	21.8	16.8	44.7
Queue Length 50th (ft)	2	140	64	75	34	73	9	154
Queue Length 95th (ft)	m4	157	#184	84	59	151	23	214
Internal Link Dist (ft)		637		869		563		312
Turn Bay Length (ft)	160		100				75	
Base Capacity (vph)	341	1123	474	1798	285	598	338	550
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.49	0.65	0.36	0.32	0.43	0.08	0.53

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
3: Roop St & William St

2050 AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	25	515	297	1020	45	470	113	352
v/c Ratio	0.09	0.37	0.58	0.55	0.17	0.74	0.49	0.50
Control Delay	5.8	19.7	13.5	7.2	22.1	37.0	30.2	32.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.8	19.7	13.5	7.2	22.1	37.0	30.2	32.2
Queue Length 50th (ft)	2	125	39	80	18	116	46	90
Queue Length 95th (ft)	m11	171	m99	m146	39	152	79	124
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	280	1389	527	1859	267	899	231	880
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.37	0.56	0.55	0.17	0.52	0.49	0.40

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
5: Saliman Rd & William St

2050 AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	17	417	366	720	1136	51	215	190	327	43	545
v/c Ratio	0.09	0.55	0.64	0.91	0.67	0.06	0.70	0.30	0.44	0.21	0.86
Control Delay	39.2	32.5	15.1	51.2	13.9	0.1	43.7	23.7	4.8	34.5	50.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	32.5	15.1	51.2	13.9	0.1	43.7	23.7	4.8	34.5	50.6
Queue Length 50th (ft)	0	61	10	205	238	0	87	76	0	20	154
Queue Length 95th (ft)	m12	147	127	#288	86	m0	#171	135	57	52	#253
Internal Link Dist (ft)		571			1368			439			691
Turn Bay Length (ft)	240		175	180		155	290			160	
Base Capacity (vph)	190	812	591	816	1685	852	313	637	748	208	645
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.51	0.62	0.88	0.67	0.06	0.69	0.30	0.44	0.21	0.84

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
6: Gold Dust West Way & William St

2050 AM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	21	749	195	1872	58	229	16	12
v/c Ratio	0.11	0.36	0.27	0.54	0.43	0.46	0.20	0.03
Control Delay	15.6	12.7	10.3	9.7	46.4	3.1	40.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	12.7	10.3	9.7	46.4	3.1	40.5	0.2
Queue Length 50th (ft)	3	46	25	130	32	0	9	0
Queue Length 95th (ft)	m11	80	91	328	65	0	27	0
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	196	2392	731	3436	233	579	141	445
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.31	0.27	0.54	0.25	0.40	0.11	0.03

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
1: Carson St & William St

2050 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	128	8	157	138	321	8	500	120	263	509	42
Future Volume (veh/h)	20	128	8	157	138	321	8	500	120	263	509	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	139	9	171	150	349	9	543	130	286	553	46
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	418	27	414	473	398	294	938	224	430	739	622
Arrive On Green	0.06	0.24	0.24	0.02	0.08	0.08	0.06	0.33	0.33	0.12	0.39	0.39
Sat Flow, veh/h	1781	1736	112	1781	1870	1576	1781	2843	678	1781	1870	1575
Grp Volume(v), veh/h	22	0	148	171	150	349	9	338	335	286	553	46
Grp Sat Flow(s),veh/h/ln	1781	0	1849	1781	1870	1576	1781	1777	1745	1781	1870	1575
Q Serve(g_s), s	0.8	0.0	5.9	6.0	6.8	19.7	0.3	14.2	14.3	9.0	22.9	1.6
Cycle Q Clear(g_c), s	0.8	0.0	5.9	6.0	6.8	19.7	0.3	14.2	14.3	9.0	22.9	1.6
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	338	0	445	414	473	398	294	586	575	430	739	622
V/C Ratio(X)	0.07	0.00	0.33	0.41	0.32	0.88	0.03	0.58	0.58	0.67	0.75	0.07
Avail Cap(c_a), veh/h	338	0	511	414	540	455	294	586	575	442	739	622
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.8	0.0	28.2	25.6	33.9	39.9	18.7	25.0	25.0	17.1	23.4	17.0
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.2	0.1	13.4	0.0	4.1	4.2	2.9	6.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.6	2.9	3.3	9.8	0.1	6.6	6.5	3.9	11.2	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.8	0.0	28.4	25.8	34.1	53.2	18.7	29.1	29.3	20.0	30.2	17.2
LnGrp LOS	C	A	C	C	C	D	B	C	C	C	C	B
Approach Vol, veh/h		170			670			682			885	
Approach Delay, s/veh		27.7			42.0			29.0			26.2	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.4	35.6	11.0	27.1	10.5	41.4	9.9	28.2				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 12	25.8	6.0	24.9	5.0	32.3	* 5	26.0				
Max Q Clear Time (g_c+I1), s	11.0	16.3	8.0	7.9	2.3	24.9	2.8	21.7				
Green Ext Time (p_c), s	0.0	2.2	0.0	0.5	0.0	1.7	0.0	0.6				

Intersection Summary

HCM 6th Ctrl Delay	31.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
2: Stewart St & William St

2050 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	390	100	243	452	29	152	258	250	43	310	23
Future Volume (veh/h)	31	390	100	243	452	29	152	258	250	43	310	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	424	109	264	491	32	165	280	272	47	337	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	362	720	183	369	1128	73	327	287	279	158	498	37
Arrive On Green	0.01	0.08	0.08	0.22	0.67	0.67	0.07	0.33	0.33	0.04	0.29	0.29
Sat Flow, veh/h	1781	2798	713	1781	3386	220	1781	869	844	1781	1719	128
Grp Volume(v), veh/h	34	268	265	264	257	266	165	0	552	47	0	362
Grp Sat Flow(s),veh/h/ln	1781	1777	1734	1781	1777	1829	1781	0	1714	1781	0	1847
Q Serve(g_s), s	1.3	13.1	13.3	9.8	6.1	6.2	5.9	0.0	28.6	1.6	0.0	15.6
Cycle Q Clear(g_c), s	1.3	13.1	13.3	9.8	6.1	6.2	5.9	0.0	28.6	1.6	0.0	15.6
Prop In Lane	1.00		0.41	1.00		0.12	1.00		0.49	1.00		0.07
Lane Grp Cap(c), veh/h	362	457	446	369	592	609	327	0	566	158	0	535
V/C Ratio(X)	0.09	0.59	0.59	0.71	0.43	0.44	0.50	0.00	0.98	0.30	0.00	0.68
Avail Cap(c_a), veh/h	404	457	446	369	592	609	327	0	566	189	0	566
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.76	0.76	0.76	0.87	0.87	0.87	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.7	36.6	36.7	19.5	11.0	11.0	21.8	0.0	29.8	24.5	0.0	28.3
Incr Delay (d2), s/veh	0.0	4.1	4.4	4.9	2.0	2.0	0.5	0.0	31.6	0.4	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	0.5	6.7	6.7	3.8	2.3	2.3	2.4	0.0	16.1	0.7	0.0	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.7	40.7	41.1	24.3	13.1	13.0	22.3	0.0	61.4	24.9	0.0	30.6
LnGrp LOS	C	D	D	C	B	B	C	A	E	C	A	C
Approach Vol, veh/h		567			787			717				409
Approach Delay, s/veh		39.9			16.8			52.4				29.9
Approach LOS		D			B			D				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.3	37.0	15.0	28.7	12.9	33.4	8.2	35.6				
Change Period (Y+Rc), s	5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	5	* 30	* 9.8	21.6	6.5	* 28	* 5	26.3				
Max Q Clear Time (g_c+1), s	13.6	30.6	11.8	15.3	7.9	17.6	3.3	8.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	0.0	1.1	0.0	2.1				

Intersection Summary

HCM 6th Ctrl Delay	34.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2050 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	593	47	246	620	108	49	342	178	156	323	65
Future Volume (veh/h)	47	593	47	246	620	108	49	342	178	156	323	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	645	51	267	674	117	53	372	193	170	351	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	386	1145	90	398	1271	220	273	454	232	254	679	136
Arrive On Green	0.01	0.11	0.11	0.22	0.84	0.84	0.04	0.20	0.20	0.08	0.23	0.23
Sat Flow, veh/h	1781	3335	263	1781	3026	525	1781	2270	1159	1781	2947	589
Grp Volume(v), veh/h	51	343	353	267	395	396	53	290	275	170	210	212
Grp Sat Flow(s),veh/h/ln	1781	1777	1822	1781	1777	1774	1781	1777	1651	1781	1777	1760
Q Serve(g_s), s	1.6	16.5	16.5	8.8	5.8	5.8	2.1	14.0	14.4	6.8	9.3	9.5
Cycle Q Clear(g_c), s	1.6	16.5	16.5	8.8	5.8	5.8	2.1	14.0	14.4	6.8	9.3	9.5
Prop In Lane	1.00		0.14	1.00		0.30	1.00		0.70	1.00		0.33
Lane Grp Cap(c), veh/h	386	610	625	398	746	745	273	355	330	254	409	405
V/C Ratio(X)	0.13	0.56	0.56	0.67	0.53	0.53	0.19	0.82	0.83	0.67	0.51	0.52
Avail Cap(c_a), veh/h	420	610	625	398	746	745	301	434	404	254	460	456
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	33.5	33.5	15.2	4.6	4.6	27.0	34.4	34.6	27.3	30.2	30.3
Incr Delay (d2), s/veh	0.0	3.1	3.1	3.6	2.7	2.7	0.1	7.9	9.9	5.4	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	8.3	8.6	3.1	1.9	1.9	0.9	6.8	6.6	3.3	4.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.2	36.6	36.6	18.8	7.3	7.3	27.1	42.4	44.5	32.7	30.6	30.7
LnGrp LOS	B	D	D	B	A	A	C	D	D	C	C	C
Approach Vol, veh/h		747			1058			618			592	
Approach Delay, s/veh		35.4			10.2			42.0			31.2	
Approach LOS		D			B			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	2.3	24.4	16.0	37.3	9.6	27.1	9.1	44.2				
Change Period (Y+Rc), s	5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	22.0	10.0	26.9	5.1	23.3	5.3	32.1					
Max Q Clear Time (g_c+1/3), s	16.4	10.8	18.5	4.1	11.5	3.6	7.8					
Green Ext Time (p_c), s	0.0	1.1	0.0	2.1	0.0	1.4	0.0	3.2				

Intersection Summary

HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
4: William St & State St

2050 MD Peak Hour

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	98	823	874	112	94	72
Future Vol, veh/h	98	823	874	112	94	72
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	107	895	950	122	102	78

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1077	0	-	0	1683 546
Stage 1	-	-	-	-	1016 -
Stage 2	-	-	-	-	667 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	643	-	-	-	~ 85 482
Stage 1	-	-	-	-	310 -
Stage 2	-	-	-	-	472 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	640	-	-	-	~ 70 477
Mov Cap-2 Maneuver	-	-	-	-	221 -
Stage 1	-	-	-	-	257 -
Stage 2	-	-	-	-	470 -

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	36.4
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	640	-	-	-	288
HCM Lane V/C Ratio	0.166	-	-	-	0.627
HCM Control Delay (s)	11.7	-	-	-	36.4
HCM Lane LOS	B	-	-	-	E
HCM 95th %tile Q(veh)	0.6	-	-	-	3.9

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

William Street Corridor
5: Saliman Rd & William St

2050 MD Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	756	149	287	794	86	168	195	322	64	86	31
Future Volume (veh/h)	33	756	149	287	794	86	168	195	322	64	86	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	822	162	312	863	93	183	212	350	70	93	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	1401	623	386	1678	746	298	518	437	130	390	136
Arrive On Green	0.07	0.79	0.79	0.11	0.47	0.47	0.05	0.28	0.28	0.15	0.15	0.15
Sat Flow, veh/h	3456	3554	1579	3456	3554	1580	1781	1870	1576	845	2578	897
Grp Volume(v), veh/h	36	822	162	312	863	93	183	212	350	70	63	64
Grp Sat Flow(s),veh/h/ln	1728	1777	1579	1728	1777	1580	1781	1870	1576	845	1777	1698
Q Serve(g_s), s	0.9	8.2	1.7	7.9	15.2	3.0	0.0	8.3	18.6	5.3	2.8	3.0
Cycle Q Clear(g_c), s	0.9	8.2	1.7	7.9	15.2	3.0	0.0	8.3	18.6	13.6	2.8	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	114	1401	623	386	1678	746	298	518	437	130	269	257
V/C Ratio(X)	0.32	0.59	0.26	0.81	0.51	0.12	0.62	0.41	0.80	0.54	0.23	0.25
Avail Cap(c_a), veh/h	192	1401	623	476	1678	746	348	553	466	130	269	257
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	6.6	2.9	39.0	16.6	13.3	37.4	26.5	30.2	43.1	33.6	33.7
Incr Delay (d2), s/veh	0.6	1.8	1.0	6.6	1.1	0.3	1.2	0.2	8.2	2.5	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.2	0.9	3.6	5.9	1.0	3.9	3.7	7.6	1.7	1.2	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	8.4	3.9	45.7	17.7	13.7	38.6	26.7	38.4	45.6	33.8	33.9
LnGrp LOS	D	A	A	D	B	B	D	C	D	D	C	C
Approach Vol, veh/h		1020			1268			745			197	
Approach Delay, s/veh		8.9			24.3			35.1			38.0	
Approach LOS		A			C			D			D	
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		31.3	17.7	41.0	11.3	20.0	10.7	48.0				
Change Period (Y+Rc), s		6.4	7.6	5.5	6.4	* 6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		26.6	12.4	31.5	7.5	* 14	5.0	* 39				
Max Q Clear Time (g_c+I1), s		20.6	9.9	10.2	2.0	15.6	2.9	17.2				
Green Ext Time (p_c), s		0.9	0.1	5.4	0.1	0.0	0.0	5.5				
Intersection Summary												
HCM 6th Ctrl Delay				22.8								
HCM 6th LOS				C								
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
6: Gold Dust West Way & William St

2050 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶ ↑↑↑ ↷			↶ ↑↑↑ ↷			↶ ↷	↶ ↷		↶ ↷	↶ ↷	
Traffic Volume (veh/h)	87	991	81	242	1042	90	93	6	237	82	8	49
Future Volume (veh/h)	87	991	81	242	1042	90	93	6	237	82	8	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	95	1077	88	263	1133	98	101	7	258	89	9	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	1329	108	553	2302	199	328	9	335	147	51	300
Arrive On Green	0.06	0.28	0.28	0.25	0.48	0.48	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	4807	392	1781	4784	413	1332	42	1539	1111	234	1377
Grp Volume(v), veh/h	95	762	403	263	806	425	101	0	265	89	0	62
Grp Sat Flow(s),veh/h/ln	1781	1702	1796	1781	1702	1793	1332	0	1581	1111	0	1611
Q Serve(g_s), s	3.9	18.8	18.8	5.6	14.5	14.5	6.0	0.0	14.2	5.4	0.0	2.8
Cycle Q Clear(g_c), s	3.9	18.8	18.8	5.6	14.5	14.5	8.8	0.0	14.2	19.6	0.0	2.8
Prop In Lane	1.00		0.22	1.00		0.23	1.00		0.97	1.00		0.85
Lane Grp Cap(c), veh/h	187	941	496	553	1638	863	328	0	344	147	0	351
V/C Ratio(X)	0.51	0.81	0.81	0.48	0.49	0.49	0.31	0.00	0.77	0.61	0.00	0.18
Avail Cap(c_a), veh/h	258	1123	593	553	1638	863	328	0	344	147	0	351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.6	30.4	30.4	25.9	15.9	15.9	32.2	0.0	33.1	43.0	0.0	28.6
Incr Delay (d2), s/veh	0.8	7.5	13.5	0.2	1.1	2.0	0.2	0.0	9.3	5.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	8.2	9.5	4.3	5.3	5.8	2.0	0.0	6.3	2.2	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.4	37.8	43.8	26.2	16.9	17.9	32.4	0.0	42.3	48.0	0.0	28.7
LnGrp LOS	C	D	D	C	B	B	C	A	D	D	A	C
Approach Vol, veh/h	1260				1494		366				151	
Approach Delay, s/veh	39.2				18.8		39.6				40.1	
Approach LOS	D				B		D				D	
Timer - Assigned Phs	2		3		4		6		7		8	
Phs Duration (G+Y+Rc), s	27.5		30.2		32.3		27.5		11.8		50.7	
Change Period (Y+Rc), s	7.9		7.4		* 7.4		7.9		* 6.4		7.4	
Max Green Setting (Gmax), s	19.6		19.0		* 30		19.6		* 9		39.7	
Max Q Clear Time (g_c+I1), s	16.2		7.6		20.8		21.6		5.9		16.5	
Green Ext Time (p_c), s	0.5		0.3		4.1		0.0		0.0		7.0	

Intersection Summary

HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
1: Carson St & William St

2050 MD Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	22	148	171	150	349	9	673	286	553	46
v/c Ratio	0.08	0.54	0.51	0.32	0.54	0.02	0.50	0.64	0.53	0.05
Control Delay	20.2	40.5	19.6	19.2	6.8	11.8	23.4	18.5	18.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.2	40.5	19.6	19.2	6.8	11.8	23.4	18.5	18.2	0.1
Queue Length 50th (ft)	9	79	33	29	6	2	148	75	175	0
Queue Length 95th (ft)	22	116	m39	m102	148	10	230	#161	#459	0
Internal Link Dist (ft)		326		637			201		484	
Turn Bay Length (ft)	80		100			130		140		
Base Capacity (vph)	286	512	335	541	699	388	1335	459	1037	924
Starvation Cap Reductn	0	0	0	0	0	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	0.08	0.29	0.51	0.28	0.50	0.02	0.50	0.62	0.53	0.05

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	34	533	264	523	165	552	47	362
v/c Ratio	0.10	0.55	0.75	0.40	0.51	0.89	0.22	0.75
Control Delay	12.0	23.8	30.4	11.1	21.8	44.0	16.2	39.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	23.8	30.4	11.1	21.8	44.0	16.2	39.9
Queue Length 50th (ft)	12	148	28	122	50	257	13	171
Queue Length 95th (ft)	m13	166	#159	73	94	#474	33	269
Internal Link Dist (ft)		637		869		563		312
Turn Bay Length (ft)	160		100				75	
Base Capacity (vph)	336	997	356	1344	325	630	209	572
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.53	0.74	0.39	0.51	0.88	0.22	0.63

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
3: Roop St & William St

2050 MD Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	696	267	791	53	565	170	422
v/c Ratio	0.16	0.59	0.73	0.51	0.18	0.80	0.66	0.46
Control Delay	9.9	25.5	36.0	11.7	20.3	37.2	34.8	28.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	25.5	36.0	11.7	20.3	37.2	34.8	28.6
Queue Length 50th (ft)	10	165	86	74	19	135	66	104
Queue Length 95th (ft)	m27	m222	#191	120	42	181	#125	144
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	317	1195	375	1558	290	890	259	948
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.58	0.71	0.51	0.18	0.63	0.66	0.45

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
5: Saliman Rd & William St

2050 MD Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	36	822	162	312	863	93	183	212	350	70	127
v/c Ratio	0.18	0.55	0.21	0.71	0.45	0.10	0.54	0.49	0.69	0.74	0.31
Control Delay	39.3	15.1	1.0	52.4	8.4	0.6	35.7	32.8	21.0	79.8	27.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	15.1	1.0	52.4	8.4	0.6	35.7	32.8	21.0	79.8	27.6
Queue Length 50th (ft)	9	116	0	57	204	5	88	104	81	39	25
Queue Length 95th (ft)	m18	144	m6	143	47	0	137	158	165	#93	50
Internal Link Dist (ft)		571			1368			439			691
Turn Bay Length (ft)	240		175	180		155	290			160	
Base Capacity (vph)	195	1488	777	482	1938	948	377	550	593	126	540
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.55	0.21	0.65	0.45	0.10	0.49	0.39	0.59	0.56	0.24

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
6: Gold Dust West Way & William St

2050 MD Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	95	1165	263	1231	101	265	89	62
v/c Ratio	0.38	0.47	0.65	0.44	0.52	0.59	0.92	0.22
Control Delay	16.6	11.2	30.3	13.9	43.0	10.3	107.2	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	11.2	30.3	13.9	43.0	10.3	107.2	12.8
Queue Length 50th (ft)	15	71	75	146	53	3	50	4
Queue Length 95th (ft)	m42	150	153	227	95	64	#111	36
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	282	2469	567	2819	291	545	145	393
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.47	0.46	0.44	0.35	0.49	0.61	0.16

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
1: Carson St & William St

2050 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	240	23	128	112	430	4	544	180	292	490	29
Future Volume (veh/h)	27	240	23	128	112	430	4	544	180	292	490	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	261	25	139	122	467	4	591	196	317	533	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	381	446	43	361	540	456	266	739	245	369	671	565
Arrive On Green	0.06	0.27	0.27	0.10	0.38	0.38	0.06	0.28	0.28	0.13	0.36	0.36
Sat Flow, veh/h	1781	1679	161	1781	1870	1577	1781	2619	867	1781	1870	1574
Grp Volume(v), veh/h	29	0	286	139	122	467	4	401	386	317	533	32
Grp Sat Flow(s),veh/h/ln	1781	0	1840	1781	1870	1577	1781	1777	1709	1781	1870	1574
Q Serve(g_s), s	1.0	0.0	12.2	5.0	4.0	26.0	0.1	18.8	18.9	10.9	23.0	1.2
Cycle Q Clear(g_c), s	1.0	0.0	12.2	5.0	4.0	26.0	0.1	18.8	18.9	10.9	23.0	1.2
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.51	1.00		1.00
Lane Grp Cap(c), veh/h	381	0	489	361	540	456	266	501	482	369	671	565
V/C Ratio(X)	0.08	0.00	0.59	0.39	0.23	1.03	0.02	0.80	0.80	0.86	0.79	0.06
Avail Cap(c_a), veh/h	381	0	489	361	540	456	266	501	482	369	671	565
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	28.7	21.4	20.9	27.7	21.2	29.9	30.0	20.9	25.9	18.9
Incr Delay (d2), s/veh	0.0	0.0	1.2	0.2	0.1	45.9	0.0	12.5	13.1	17.2	9.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	5.5	2.0	1.7	14.6	0.1	9.6	9.4	6.1	11.7	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	0.0	30.0	21.6	21.0	73.6	21.2	42.4	43.1	38.1	35.3	19.1
LnGrp LOS	C	A	C	C	C	F	C	D	D	D	D	B
Approach Vol, veh/h		315			728			791			882	
Approach Delay, s/veh		29.2			54.9			42.7			35.7	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.4	31.3	12.0	29.3	10.5	38.2	9.9	31.4				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 12	25.4	7.0	23.9	5.0	32.3	* 5	26.0				
Max Q Clear Time (g_c+I1), s	12.9	20.9	7.0	14.2	2.1	25.0	3.0	28.0				
Green Ext Time (p_c), s	0.0	1.6	0.0	0.8	0.0	1.5	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay	42.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
2: Stewart St & William St

2050 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	542	149	246	401	28	260	306	342	40	236	26
Future Volume (veh/h)	49	542	149	246	401	28	260	306	342	40	236	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	589	162	267	436	30	283	333	372	43	257	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	340	712	195	288	1062	73	413	275	307	145	430	47
Arrive On Green	0.01	0.09	0.09	0.07	0.21	0.21	0.11	0.34	0.34	0.04	0.26	0.26
Sat Flow, veh/h	1781	2749	754	1781	3372	231	1781	805	899	1781	1656	180
Grp Volume(v), veh/h	53	380	371	267	229	237	283	0	705	43	0	285
Grp Sat Flow(s),veh/h/ln	1781	1777	1726	1781	1777	1827	1781	0	1704	1781	0	1837
Q Serve(g_s), s	1.9	19.0	19.0	8.8	10.0	10.1	10.0	0.0	30.7	1.6	0.0	12.2
Cycle Q Clear(g_c), s	1.9	19.0	19.0	8.8	10.0	10.1	10.0	0.0	30.7	1.6	0.0	12.2
Prop In Lane	1.00		0.44	1.00		0.13	1.00		0.53	1.00		0.10
Lane Grp Cap(c), veh/h	340	460	447	288	559	575	413	0	581	145	0	477
V/C Ratio(X)	0.16	0.83	0.83	0.93	0.41	0.41	0.68	0.00	1.21	0.30	0.00	0.60
Avail Cap(c_a), veh/h	368	460	447	288	559	575	413	0	581	179	0	512
HCM Platoon Ratio	0.33	0.33	0.33	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.52	0.52	0.52	0.83	0.83	0.83	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.6	39.2	39.2	26.0	28.3	28.3	21.6	0.0	29.7	25.9	0.0	29.2
Incr Delay (d2), s/veh	0.0	8.7	9.1	29.9	1.8	1.8	3.9	0.0	111.1	0.4	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	0.8	10.1	9.9	6.6	4.8	4.9	4.5	0.0	29.7	0.7	0.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	47.9	48.3	55.9	30.1	30.1	25.4	0.0	140.7	26.3	0.0	30.2
LnGrp LOS	C	D	D	E	C	C	C	A	F	C	A	C
Approach Vol, veh/h		804		733		988		328				
Approach Delay, s/veh		46.5		39.5		107.7		29.7				
Approach LOS		D		D		F		C				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	38.0	14.0	28.9	16.4	30.7	9.0	33.9				
Change Period (Y+Rc), s	5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	5	* 31	* 8.8	21.6	10.0	* 25	* 5.1	25.2				
Max Q Clear Time (g_c+13), s	13.6	32.7	10.8	21.0	12.0	14.2	3.9	12.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.2	0.0	0.9	0.0	1.6				

Intersection Summary

HCM 6th Ctrl Delay	64.0
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2050 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	759	83	219	537	122	52	374	264	202	364	69
Future Volume (veh/h)	109	759	83	219	537	122	52	374	264	202	364	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	118	825	90	238	584	133	57	407	287	220	396	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	378	1006	110	295	1017	231	302	460	321	265	811	152
Arrive On Green	0.02	0.10	0.10	0.20	0.71	0.71	0.04	0.23	0.23	0.09	0.27	0.27
Sat Flow, veh/h	1781	3229	352	1781	2874	653	1781	1994	1392	1781	2983	560
Grp Volume(v), veh/h	118	454	461	238	360	357	57	362	332	220	234	237
Grp Sat Flow(s),veh/h/ln	1781	1777	1805	1781	1777	1750	1781	1777	1609	1781	1777	1766
Q Serve(g_s), s	4.0	22.5	22.5	8.6	9.0	9.0	2.2	17.7	18.0	8.2	10.0	10.1
Cycle Q Clear(g_c), s	4.0	22.5	22.5	8.6	9.0	9.0	2.2	17.7	18.0	8.2	10.0	10.1
Prop In Lane	1.00		0.20	1.00		0.37	1.00		0.86	1.00		0.32
Lane Grp Cap(c), veh/h	378	553	562	295	629	619	302	410	371	265	483	480
V/C Ratio(X)	0.31	0.82	0.82	0.81	0.57	0.58	0.19	0.88	0.89	0.83	0.49	0.49
Avail Cap(c_a), veh/h	406	553	562	295	629	619	327	434	393	265	483	480
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.37	0.37	0.37	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.9	37.9	37.9	19.5	9.8	9.8	24.8	33.4	33.5	26.1	27.5	27.5
Incr Delay (d2), s/veh	0.1	5.2	5.1	14.0	3.8	3.9	0.1	17.4	20.4	18.2	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	11.5	11.6	3.9	3.0	3.0	0.9	9.5	9.0	4.9	4.2	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.0	43.1	43.0	33.5	13.6	13.7	24.9	50.8	53.9	44.3	27.8	27.8
LnGrp LOS	B	D	D	C	B	B	C	D	D	D	C	C
Approach Vol, veh/h		1033			955			751			691	
Approach Delay, s/veh		40.4			18.6			50.2			33.1	
Approach LOS		D			B			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.4	27.2	15.0	34.4	9.7	30.9	11.2	38.3				
Change Period (Y+Rc), s	5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	22.0	22.0	9.0	26.8	5.1	24.4	7.1	29.2				
Max Q Clear Time (g_c+110), s	20.0	20.0	10.6	24.5	4.2	12.1	6.0	11.0				
Green Ext Time (p_c), s	0.0	0.6	0.0	1.0	0.0	1.6	0.0	2.7				

Intersection Summary

HCM 6th Ctrl Delay	35.0
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
4: William St & State St

2050 PM Peak Hour

Intersection						
Int Delay, s/veh	5.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	91	1157	779	105	132	82
Future Vol, veh/h	91	1157	779	105	132	82
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	1258	847	114	143	89

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	966	0	-	0	1741 491
Stage 1	-	-	-	-	909 -
Stage 2	-	-	-	-	832 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	709	-	-	-	~ 78 523
Stage 1	-	-	-	-	353 -
Stage 2	-	-	-	-	388 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	706	-	-	-	~ 66 518
Mov Cap-2 Maneuver	-	-	-	-	233 -
Stage 1	-	-	-	-	302 -
Stage 2	-	-	-	-	386 -

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	50.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	706	-	-	-	295
HCM Lane V/C Ratio	0.14	-	-	-	0.789
HCM Control Delay (s)	10.9	-	-	-	50.8
HCM Lane LOS	B	-	-	-	F
HCM 95th %tile Q(veh)	0.5	-	-	-	6.2

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

William Street Corridor
5: Saliman Rd & William St

2050 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖↗	↑↑	↖	↖	↑	↖	↖	↑↑	
Traffic Volume (veh/h)	45	1038	211	410	738	134	121	186	403	115	187	25
Future Volume (veh/h)	45	1038	211	410	738	134	121	186	403	115	187	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	1128	229	446	802	146	132	202	438	125	203	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	1316	584	513	1700	756	241	495	417	120	442	58
Arrive On Green	0.08	0.74	0.74	0.15	0.48	0.48	0.05	0.26	0.26	0.14	0.14	0.14
Sat Flow, veh/h	3456	3554	1579	3456	3554	1580	1781	1870	1576	787	3154	414
Grp Volume(v), veh/h	49	1128	229	446	802	146	132	202	438	125	113	117
Grp Sat Flow(s),veh/h/ln	1728	1777	1579	1728	1777	1580	1781	1870	1576	787	1777	1791
Q Serve(g_s), s	1.2	20.3	3.4	11.4	13.7	4.8	0.0	8.0	23.8	4.6	5.3	5.4
Cycle Q Clear(g_c), s	1.2	20.3	3.4	11.4	13.7	4.8	0.0	8.0	23.8	12.6	5.3	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	136	1316	584	513	1700	756	241	495	417	120	249	251
V/C Ratio(X)	0.36	0.86	0.39	0.87	0.47	0.19	0.55	0.41	1.05	1.04	0.45	0.47
Avail Cap(c_a), veh/h	192	1339	595	515	1700	756	247	495	417	120	249	251
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	10.0	4.0	37.5	15.8	13.5	39.0	27.3	33.1	44.2	35.5	35.6
Incr Delay (d2), s/veh	0.6	7.4	2.0	14.2	0.9	0.6	1.3	0.2	57.9	93.5	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.7	1.5	5.6	5.3	1.7	2.9	3.6	15.2	5.8	2.3	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	17.4	5.9	51.7	16.8	14.1	40.3	27.5	90.9	137.7	36.0	36.1
LnGrp LOS	D	B	A	D	B	B	D	C	F	F	D	D
Approach Vol, veh/h		1406			1394			772			355	
Approach Delay, s/veh		16.3			27.6			65.7			71.9	
Approach LOS		B			C			E			E	
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		30.2	21.0	38.8	11.2	19.0	11.2	48.6				
Change Period (Y+Rc), s		6.4	7.6	5.5	6.4	* 6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		23.2	13.4	33.9	5.1	* 13	5.0	* 42				
Max Q Clear Time (g_c+I1), s		25.8	13.4	22.3	2.0	14.6	3.2	15.7				
Green Ext Time (p_c), s		0.0	0.0	5.8	0.0	0.0	0.0	5.5				

Intersection Summary

HCM 6th Ctrl Delay	35.1
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
6: Gold Dust West Way & William St

2050 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↑↑↑ ↗			↖ ↑↑↑ ↗			↖ ↗	↖ ↗		↖ ↗	↖ ↗	
Traffic Volume (veh/h)	84	1392	100	345	1126	91	101	8	244	100	6	68
Future Volume (veh/h)	84	1392	100	345	1126	91	101	8	244	100	6	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	91	1513	109	375	1224	99	110	9	265	109	7	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	200	1697	122	462	2478	200	272	10	290	102	26	277
Arrive On Green	0.05	0.35	0.35	0.21	0.51	0.51	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1781	4859	350	1781	4813	389	1309	52	1529	1102	138	1457
Grp Volume(v), veh/h	91	1060	562	375	866	457	110	0	274	109	0	81
Grp Sat Flow(s),veh/h/ln	1781	1702	1804	1781	1702	1798	1309	0	1581	1102	0	1594
Q Serve(g_s), s	3.4	26.5	26.5	13.2	14.9	14.9	7.0	0.0	15.3	1.8	0.0	3.9
Cycle Q Clear(g_c), s	3.4	26.5	26.5	13.2	14.9	14.9	10.9	0.0	15.3	17.1	0.0	3.9
Prop In Lane	1.00		0.19	1.00		0.22	1.00		0.97	1.00		0.91
Lane Grp Cap(c), veh/h	200	1189	630	462	1753	926	272	0	300	102	0	303
V/C Ratio(X)	0.45	0.89	0.89	0.81	0.49	0.49	0.40	0.00	0.91	1.07	0.00	0.27
Avail Cap(c_a), veh/h	275	1233	654	462	1753	926	272	0	300	102	0	303
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.2	27.7	27.7	31.8	14.2	14.2	35.8	0.0	35.7	44.8	0.0	31.1
Incr Delay (d2), s/veh	0.6	10.3	17.4	9.9	1.0	1.9	0.4	0.0	29.8	108.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	11.6	13.6	8.5	5.3	5.9	2.3	0.0	8.3	5.3	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	38.0	45.0	41.7	15.2	16.1	36.1	0.0	65.5	152.8	0.0	31.3
LnGrp LOS	C	D	D	D	B	B	D	A	E	F	A	C
Approach Vol, veh/h		1713			1698			384			190	
Approach Delay, s/veh		39.6			21.3			57.1			101.0	
Approach LOS		D			C			E			F	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.0	26.2	38.8		25.0	11.3	53.7				
Change Period (Y+Rc), s		7.9	7.4	* 7.4		7.9	* 6.4	7.4				
Max Green Setting (Gmax), s		17.1	18.6	* 33		17.1	* 8.6	42.6				
Max Q Clear Time (g_c+I1), s		17.3	15.2	28.5		19.1	5.4	16.9				
Green Ext Time (p_c), s		0.0	0.2	2.9		0.0	0.0	7.9				

Intersection Summary

HCM 6th Ctrl Delay	36.4
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
1: Carson St & William St

2050 PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	29	286	139	122	467	4	787	317	533	32
v/c Ratio	0.08	0.77	0.51	0.23	0.66	0.01	0.72	0.80	0.55	0.04
Control Delay	18.7	47.4	23.9	22.9	11.2	12.8	30.9	35.1	20.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.7	47.4	23.9	22.9	11.2	12.8	30.9	35.1	20.0	0.1
Queue Length 50th (ft)	11	152	0	32	31	1	204	111	184	0
Queue Length 95th (ft)	27	222	m49	m92	194	7	274	#294	#432	0
Internal Link Dist (ft)		326		637			201		484	
Turn Bay Length (ft)	80		100			130		140		
Base Capacity (vph)	358	490	276	564	726	360	1095	398	967	872
Starvation Cap Reductn	0	0	0	0	0	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	0.08	0.58	0.50	0.22	0.64	0.01	0.72	0.80	0.55	0.04

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
2: Stewart St & William St

2050 PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	53	751	267	466	283	705	43	285
v/c Ratio	0.17	0.91	1.02	0.41	0.61	0.99	0.24	0.54
Control Delay	13.4	39.8	78.0	14.8	21.6	60.3	16.9	31.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	39.8	78.0	14.8	21.6	60.3	16.9	31.2
Queue Length 50th (ft)	14	190	~86	106	97	~444	13	135
Queue Length 95th (ft)	m21	#311	#240	154	155	#661	30	216
Internal Link Dist (ft)		637		869		563		312
Turn Bay Length (ft)	160		100				75	
Base Capacity (vph)	315	844	262	1128	467	710	178	532
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.89	1.02	0.41	0.61	0.99	0.24	0.54

Intersection Summary

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

William Street Corridor
3: Roop St & William St

2050 PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	118	915	238	717	57	694	220	471
v/c Ratio	0.37	0.82	0.82	0.56	0.20	0.84	0.89	0.52
Control Delay	11.9	28.9	54.9	15.6	19.8	34.6	58.2	29.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	28.9	54.9	15.6	19.8	34.6	58.2	29.4
Queue Length 50th (ft)	21	251	107	78	21	146	88	117
Queue Length 95th (ft)	m31	m281	#242	107	44	204	#198	160
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	333	1116	290	1277	284	947	248	971
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.82	0.82	0.56	0.20	0.73	0.89	0.49

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
5: Saliman Rd & William St

2050 PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	49	1128	229	446	802	146	132	202	438	125	230
v/c Ratio	0.26	0.84	0.29	0.89	0.43	0.16	0.39	0.42	0.78	0.92	0.47
Control Delay	40.2	22.3	0.9	73.1	5.9	0.3	31.7	31.2	26.8	100.3	37.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.2	22.3	0.9	73.1	5.9	0.3	31.7	31.2	26.8	100.3	37.0
Queue Length 50th (ft)	14	157	0	143	37	0	59	96	118	71	60
Queue Length 95th (ft)	m19	m208	m1	#221	50	0	108	160	#270	#177	97
Internal Link Dist (ft)		571			1368			439			691
Turn Bay Length (ft)	240		175	180		155	290			160	
Base Capacity (vph)	191	1350	781	512	1869	922	338	481	563	138	498
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.84	0.29	0.87	0.43	0.16	0.39	0.42	0.78	0.91	0.46

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
6: Gold Dust West Way & William St

2050 PM Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	91	1622	375	1323	110	274	109	81
v/c Ratio	0.40	0.77	0.96	0.49	0.50	0.57	0.95	0.25
Control Delay	17.3	16.2	66.8	15.0	41.9	9.9	110.1	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.3	16.2	66.8	15.0	41.9	9.9	110.1	11.2
Queue Length 50th (ft)	16	200	161	180	56	4	60	3
Queue Length 95th (ft)	m20	m#263	#322	228	108	70	#156	41
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	250	2120	455	2707	248	512	131	361
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.77	0.82	0.49	0.44	0.54	0.83	0.22

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
4: William St & State St

2030 AM Peak Hour - with Improvements

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	593	1048	116	0	59
Future Vol, veh/h	50	593	1048	116	0	59
Conflicting Peds, #/hr	5	0	0	5	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	645	1139	126	0	64

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1270	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	543	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	540	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	540	-	-	-	412
HCM Lane V/C Ratio	0.101	-	-	-	0.156
HCM Control Delay (s)	12.4	-	-	-	15.3
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	0.5

William Street Corridor
5: Saliman Rd & William St

2030 AM Peak Hour - with Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	242	337	680	905	47	245	151	396	147	485	17
Future Volume (veh/h)	15	242	337	680	905	47	245	151	396	147	485	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	263	366	739	984	51	266	164	430	160	527	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	63	742	328	803	1499	666	302	640	540	215	576	20
Arrive On Green	0.01	0.07	0.07	0.23	0.42	0.42	0.12	0.34	0.34	0.16	0.16	0.16
Sat Flow, veh/h	3456	3554	1574	3456	3554	1579	1781	1870	1578	820	3505	120
Grp Volume(v), veh/h	16	263	366	739	984	51	266	164	430	160	267	278
Grp Sat Flow(s),veh/h/ln	1728	1777	1574	1728	1777	1579	1781	1870	1578	820	1777	1848
Q Serve(g_s), s	0.4	6.4	18.8	18.8	19.9	1.7	10.5	5.7	22.2	14.8	13.3	13.3
Cycle Q Clear(g_c), s	0.4	6.4	18.8	18.8	19.9	1.7	10.5	5.7	22.2	14.8	13.3	13.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	63	742	328	803	1499	666	302	640	540	215	292	304
V/C Ratio(X)	0.25	0.35	1.11	0.92	0.66	0.08	0.88	0.26	0.80	0.74	0.91	0.92
Avail Cap(c_a), veh/h	192	742	328	822	1499	666	302	640	540	215	292	304
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	36.1	41.9	33.7	20.8	15.6	27.7	21.3	26.8	38.8	37.0	37.0
Incr Delay (d2), s/veh	0.8	1.3	84.2	14.9	2.3	0.2	23.9	0.1	7.5	11.8	30.6	30.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.9	15.5	9.1	8.0	0.6	6.6	2.5	8.9	4.3	8.2	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.9	37.4	126.1	48.6	23.1	15.8	51.6	21.4	34.3	50.5	67.6	67.2
LnGrp LOS	D	D	F	D	C	B	D	C	C	D	E	E
Approach Vol, veh/h		645			1774			860			705	
Approach Delay, s/veh		87.9			33.5			37.2			63.5	
Approach LOS		F			C			D			E	
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		37.2	28.5	24.3	16.0	21.2	9.3	43.5				
Change Period (Y+Rc), s		6.4	7.6	5.5	5.5	6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		30.8	21.4	18.3	10.5	14.8	5.0	* 35				
Max Q Clear Time (g_c+I1), s		24.2	20.8	20.8	12.5	16.8	2.4	21.9				
Green Ext Time (p_c), s		1.0	0.1	0.0	0.0	0.0	0.0	4.9				
Intersection Summary												
HCM 6th Ctrl Delay			48.4									
HCM 6th LOS			D									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
5: Saliman Rd & William St

2030 AM Peak Hour - with Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	16	263	366	739	984	51	266	164	430	160	545
v/c Ratio	0.08	0.46	0.72	0.93	0.62	0.06	0.71	0.23	0.49	0.80	0.93
Control Delay	43.5	28.9	17.3	47.8	18.0	0.3	33.5	20.0	4.4	65.1	61.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	28.9	17.3	47.8	18.0	0.3	33.5	20.0	4.4	65.1	61.1
Queue Length 50th (ft)	5	81	110	211	273	0	101	59	0	89	162
Queue Length 95th (ft)	m13	64	72	#298	318	3	#243	115	62	#195	#264
Internal Link Dist (ft)		571			1368			439			691
Turn Bay Length (ft)	240		175	180		155	290			160	
Base Capacity (vph)	190	719	558	816	1593	811	374	727	870	201	588
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.37	0.66	0.91	0.62	0.06	0.71	0.23	0.49	0.80	0.93

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
4: William St & State St

2030 MD Peak Hour - with Improvements

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	92	804	850	97	0	66
Future Vol, veh/h	92	804	850	97	0	66
Conflicting Peds, #/hr	5	0	0	5	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	100	874	924	105	0	72

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1034	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	3.32
Pot Cap-1 Maneuver	668	-	497
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	665	-	492
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	665	-	-	-	492
HCM Lane V/C Ratio	0.15	-	-	-	0.146
HCM Control Delay (s)	11.4	-	-	-	13.6
HCM Lane LOS	B	-	-	-	B
HCM 95th %tile Q(veh)	0.5	-	-	-	0.5

William Street Corridor
5: Saliman Rd & William St

2030 MD Peak Hour - with Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	624	149	351	724	85	194	186	382	138	77	31
Future Volume (veh/h)	33	624	149	351	724	85	194	186	382	138	77	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	678	162	382	787	92	211	202	415	150	84	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	1106	491	457	1454	646	439	636	537	237	490	188
Arrive On Green	0.07	0.62	0.62	0.13	0.41	0.41	0.08	0.34	0.34	0.20	0.20	0.20
Sat Flow, veh/h	3456	3554	1577	3456	3554	1579	1781	1870	1578	803	2505	960
Grp Volume(v), veh/h	36	678	162	382	787	92	211	202	415	150	58	60
Grp Sat Flow(s),veh/h/ln	1728	1777	1577	1728	1777	1579	1781	1870	1578	803	1777	1689
Q Serve(g_s), s	0.9	10.5	4.4	9.7	15.1	3.3	7.5	7.2	21.2	16.6	2.5	2.7
Cycle Q Clear(g_c), s	0.9	10.5	4.4	9.7	15.1	3.3	7.5	7.2	21.2	16.6	2.5	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.57
Lane Grp Cap(c), veh/h	114	1106	491	457	1454	646	439	636	537	237	347	330
V/C Ratio(X)	0.32	0.61	0.33	0.84	0.54	0.14	0.48	0.32	0.77	0.63	0.17	0.18
Avail Cap(c_a), veh/h	192	1106	491	553	1454	646	439	636	537	237	347	330
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	13.7	12.5	38.1	20.2	16.7	25.5	22.0	26.6	35.8	30.1	30.2
Incr Delay (d2), s/veh	0.6	2.5	1.8	7.8	1.4	0.5	0.3	0.1	6.3	4.1	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.3	1.5	4.4	6.1	1.2	3.6	3.1	8.4	3.5	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	16.2	14.3	45.9	21.6	17.1	25.8	22.1	32.9	39.9	30.2	30.3
LnGrp LOS	D	B	B	D	C	B	C	C	C	D	C	C
Approach Vol, veh/h		876			1261			828			268	
Approach Delay, s/veh		16.9			28.7			28.5			35.7	
Approach LOS		B			C			C			D	
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		37.0	19.5	33.5	13.0	24.0	10.7	42.3				
Change Period (Y+Rc), s		6.4	7.6	5.5	5.5	6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		30.6	14.4	25.5	7.5	17.6	5.0	* 35				
Max Q Clear Time (g_c+I1), s		23.2	11.7	12.5	9.5	18.6	2.9	17.1				
Green Ext Time (p_c), s		1.1	0.2	3.6	0.0	0.0	0.0	4.6				
Intersection Summary												
HCM 6th Ctrl Delay			26.0									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
5: Saliman Rd & William St

2030 MD Peak Hour - with Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	36	678	162	382	787	92	211	202	415	150	118
v/c Ratio	0.19	0.61	0.24	0.77	0.49	0.11	0.54	0.33	0.61	0.79	0.20
Control Delay	39.9	25.9	2.4	47.2	12.0	1.2	28.0	24.2	13.0	63.8	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.9	25.9	2.4	47.2	12.0	1.2	28.0	24.2	13.0	63.8	23.0
Queue Length 50th (ft)	10	88	0	79	190	6	86	83	63	81	21
Queue Length 95th (ft)	m18	201	20	169	73	0	146	141	160	#161	44
Internal Link Dist (ft)		571			1368			439			691
Turn Bay Length (ft)	240		175	180		155	290			160	
Base Capacity (vph)	191	1111	690	549	1629	825	394	638	704	229	686
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.61	0.23	0.70	0.48	0.11	0.54	0.32	0.59	0.66	0.17

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
4: William St & State St

2030 PM Peak Hour - with Improvements

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	91	1083	740	91	0	73
Future Vol, veh/h	91	1083	740	91	0	73
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	1177	804	99	0	79

Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	908	0	-	0	-	462
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	-	-	3.32
Pot Cap-1 Maneuver	745	-	-	-	0	547
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	741	-	-	-	-	542
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	741	-	-	-	542
HCM Lane V/C Ratio	0.133	-	-	-	0.146
HCM Control Delay (s)	10.6	-	-	-	12.8
HCM Lane LOS	B	-	-	-	B
HCM 95th %tile Q(veh)	0.5	-	-	-	0.5

William Street Corridor
5: Saliman Rd & William St

2030 PM Peak Hour - with Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	858	184	565	663	92	145	170	458	216	141	23
Future Volume (veh/h)	43	858	184	565	663	92	145	170	458	216	141	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	933	200	614	721	100	158	185	498	235	153	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	129	1021	453	655	1558	692	368	595	502	232	632	101
Arrive On Green	0.04	0.29	0.29	0.19	0.44	0.44	0.05	0.32	0.32	0.21	0.21	0.21
Sat Flow, veh/h	3456	3554	1577	3456	3554	1580	1781	1870	1578	756	3064	491
Grp Volume(v), veh/h	47	933	200	614	721	100	158	185	498	235	87	91
Grp Sat Flow(s),veh/h/ln	1728	1777	1577	1728	1777	1580	1781	1870	1578	756	1777	1778
Q Serve(g_s), s	1.3	24.1	9.8	16.6	13.6	3.6	5.1	7.1	29.9	19.6	3.9	4.0
Cycle Q Clear(g_c), s	1.3	24.1	9.8	16.6	13.6	3.6	5.1	7.1	29.9	19.6	3.9	4.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	129	1021	453	655	1558	692	368	595	502	232	367	367
V/C Ratio(X)	0.36	0.91	0.44	0.94	0.46	0.14	0.43	0.31	0.99	1.01	0.24	0.25
Avail Cap(c_a), veh/h	182	1021	453	655	1558	692	368	595	502	232	367	367
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	32.7	27.6	37.9	18.8	16.0	28.4	24.5	32.3	40.9	31.5	31.5
Incr Delay (d2), s/veh	0.6	13.8	3.1	21.0	1.0	0.4	0.3	0.1	38.3	62.8	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	11.7	3.9	8.6	5.4	1.3	0.7	3.2	16.0	9.5	1.7	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	46.5	30.7	58.9	19.8	16.4	28.7	24.6	70.5	103.7	31.6	31.7
LnGrp LOS	D	D	C	E	B	B	C	C	E	F	C	C
Approach Vol, veh/h		1180			1435			841			413	
Approach Delay, s/veh		43.8			36.3			52.6			72.6	
Approach LOS		D			D			D			E	
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		36.6	25.6	32.8	10.6	26.0	11.3	47.1				
Change Period (Y+Rc), s		6.4	7.6	5.5	5.5	6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		30.2	18.0	27.3	5.1	19.6	5.0	* 40				
Max Q Clear Time (g_c+I1), s		31.9	18.6	26.1	7.1	21.6	3.3	15.6				
Green Ext Time (p_c), s		0.0	0.0	0.7	0.0	0.0	0.0	4.6				
Intersection Summary												
HCM 6th Ctrl Delay			46.0									
HCM 6th LOS			D									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
5: Saliman Rd & William St

2030 PM Peak Hour - with Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	47	933	200	614	721	100	158	185	498	235	178
v/c Ratio	0.26	0.92	0.31	0.95	0.43	0.12	0.45	0.31	0.70	0.96	0.25
Control Delay	45.6	37.7	1.2	61.5	12.5	1.9	28.6	26.3	16.6	86.7	29.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	37.7	1.2	61.5	12.5	1.9	28.6	26.3	16.6	86.7	29.5
Queue Length 50th (ft)	14	196	1	190	186	9	70	84	95	141	43
Queue Length 95th (ft)	m20	#390	m1	#279	48	0	121	141	220	#288	72
Internal Link Dist (ft)		571			1368			439			691
Turn Bay Length (ft)	240		175	180		155	290			160	
Base Capacity (vph)	180	1016	645	650	1683	840	353	595	707	246	726
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.92	0.31	0.94	0.43	0.12	0.45	0.31	0.70	0.96	0.25

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
4: William St & State St

2050 AM Peak Hour - with Improvements

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	620	1134	149	0	61
Future Vol, veh/h	55	620	1134	149	0	61
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	674	1233	162	0	66

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1400	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	484	-	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	482	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	16.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	482	-	-	-	373
HCM Lane V/C Ratio	0.124	-	-	-	0.178
HCM Control Delay (s)	13.5	-	-	-	16.7
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	0.6

William Street Corridor
5: Saliman Rd & William St

2050 AM Peak Hour - with Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	272	337	662	1045	47	198	175	301	152	485	17
Future Volume (veh/h)	16	272	337	662	1045	47	198	175	301	152	485	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	296	366	720	1136	51	215	190	327	165	527	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	805	357	787	1543	686	271	615	519	233	608	21
Arrive On Green	0.03	0.38	0.38	0.23	0.43	0.43	0.09	0.33	0.33	0.17	0.17	0.17
Sat Flow, veh/h	3456	3554	1575	3456	3554	1580	1781	1870	1578	880	3505	120
Grp Volume(v), veh/h	17	296	366	720	1136	51	215	190	327	165	267	278
Grp Sat Flow(s),veh/h/ln	1728	1777	1575	1728	1777	1580	1781	1870	1578	880	1777	1848
Q Serve(g_s), s	0.4	5.4	20.4	18.3	23.9	1.7	8.5	6.8	15.8	15.6	13.1	13.2
Cycle Q Clear(g_c), s	0.4	5.4	20.4	18.3	23.9	1.7	8.5	6.8	15.8	15.6	13.1	13.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	66	805	357	787	1543	686	271	615	519	233	308	320
V/C Ratio(X)	0.26	0.37	1.03	0.91	0.74	0.07	0.79	0.31	0.63	0.71	0.87	0.87
Avail Cap(c_a), veh/h	192	805	357	822	1543	686	271	615	519	233	308	320
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	23.3	28.0	33.9	21.2	14.9	27.8	22.6	25.6	37.8	36.2	36.2
Incr Delay (d2), s/veh	0.7	1.3	54.4	13.9	3.2	0.2	13.6	0.1	1.9	8.3	21.2	20.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.2	11.1	8.8	9.7	0.6	4.7	3.0	5.8	4.2	7.5	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.7	24.6	82.3	47.8	24.4	15.1	41.4	22.7	27.4	46.1	57.3	57.0
LnGrp LOS	D	C	F	D	C	B	D	C	C	D	E	E
Approach Vol, veh/h		679			1907			732			710	
Approach Delay, s/veh		56.2			33.0			30.3			54.6	
Approach LOS		E			C			C			D	
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		36.0	28.1	25.9	14.0	22.0	9.4	44.6				
Change Period (Y+Rc), s		6.4	7.6	5.5	5.5	6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		29.6	21.4	19.5	8.5	15.6	5.0	* 36				
Max Q Clear Time (g_c+I1), s		17.8	20.3	22.4	10.5	17.6	2.4	25.9				
Green Ext Time (p_c), s		1.1	0.2	0.0	0.0	0.0	0.0	4.9				
Intersection Summary												
HCM 6th Ctrl Delay			40.2									
HCM 6th LOS			D									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
5: Saliman Rd & William St

2050 AM Peak Hour - with Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	17	296	366	720	1136	51	215	190	327	165	545
v/c Ratio	0.09	0.44	0.69	0.91	0.71	0.06	0.70	0.28	0.42	0.79	0.88
Control Delay	39.8	32.0	19.5	46.9	17.8	0.1	36.7	22.3	4.5	63.9	53.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	32.0	19.5	46.9	17.8	0.1	36.7	22.3	4.5	63.9	53.3
Queue Length 50th (ft)	0	37	11	205	276	0	81	71	0	91	160
Queue Length 95th (ft)	m11	110	145	#288	180	m0	#191	135	57	#199	#253
Internal Link Dist (ft)		571			1368			439			691
Turn Bay Length (ft)	240		175	180		155	290			160	
Base Capacity (vph)	190	783	572	816	1593	811	308	674	773	211	629
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.38	0.64	0.88	0.71	0.06	0.70	0.28	0.42	0.78	0.87

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
4: William St & State St

2050 MD Peak Hour - with Improvements

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	98	823	874	112	0	72
Future Vol, veh/h	98	823	874	112	0	72
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	107	895	950	122	0	78






























Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1077	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	3.32
Pot Cap-1 Maneuver	643	-	482
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	640	-	477
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	640	-	-	-	477
HCM Lane V/C Ratio	0.166	-	-	-	0.164
HCM Control Delay (s)	11.7	-	-	-	14
HCM Lane LOS	B	-	-	-	B
HCM 95th %tile Q(veh)	0.6	-	-	-	0.6

William Street Corridor
5: Saliman Rd & William St

2050 MD Peak Hour - with Improvements

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 						 	
Traffic Volume (veh/h)	33	662	149	287	794	86	168	195	322	158	86	31
Future Volume (veh/h)	33	662	149	287	794	86	168	195	322	158	86	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	720	162	312	863	93	183	212	350	172	93	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	1162	516	385	1437	639	431	645	544	268	574	200
Arrive On Green	0.07	0.65	0.65	0.11	0.40	0.40	0.06	0.34	0.34	0.22	0.22	0.22
Sat Flow, veh/h	3456	3554	1578	3456	3554	1579	1781	1870	1578	845	2580	899
Grp Volume(v), veh/h	36	720	162	312	863	93	183	212	350	172	63	64
Grp Sat Flow(s),veh/h/ln	1728	1777	1578	1728	1777	1579	1781	1870	1578	845	1777	1701
Q Serve(g_s), s	0.9	10.6	4.0	7.9	17.2	3.4	5.5	7.5	16.8	17.9	2.6	2.8
Cycle Q Clear(g_c), s	0.9	10.6	4.0	7.9	17.2	3.4	5.5	7.5	16.8	17.9	2.6	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	114	1162	516	385	1437	639	431	645	544	268	396	379
V/C Ratio(X)	0.32	0.62	0.31	0.81	0.60	0.15	0.43	0.33	0.64	0.64	0.16	0.17
Avail Cap(c_a), veh/h	192	1162	516	438	1437	639	431	657	554	274	407	389
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	12.3	11.2	39.1	21.1	17.0	25.3	21.8	24.8	34.1	28.2	28.3
Incr Delay (d2), s/veh	0.6	2.5	1.6	8.6	1.9	0.5	0.2	0.1	1.9	3.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.2	1.4	3.7	7.0	1.2	0.6	3.3	6.1	3.9	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	14.8	12.8	47.7	23.0	17.4	25.5	21.9	26.7	37.9	28.3	28.3
LnGrp LOS	D	B	B	D	C	B	C	C	C	D	C	C
Approach Vol, veh/h		918			1268			745			299	
Approach Delay, s/veh		15.5			28.6			25.0			33.8	
Approach LOS		B			C			C			C	
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		37.4	17.6	34.9	11.0	26.4	10.7	41.9				
Change Period (Y+Rc), s		6.4	7.6	5.5	5.5	6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		31.6	11.4	27.5	5.5	20.6	5.0	* 34				
Max Q Clear Time (g_c+I1), s		18.8	9.9	12.6	7.5	19.9	2.9	19.2				
Green Ext Time (p_c), s		1.3	0.1	4.1	0.0	0.1	0.0	4.7				
Intersection Summary												
HCM 6th Ctrl Delay			24.5									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
5: Saliman Rd & William St

2050 MD Peak Hour - with Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	36	720	162	312	863	93	183	212	350	172	127
v/c Ratio	0.19	0.62	0.25	0.75	0.54	0.11	0.47	0.34	0.54	0.80	0.19
Control Delay	40.8	21.0	2.9	49.0	13.8	1.5	25.8	23.8	12.6	61.2	21.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	21.0	2.9	49.0	13.8	1.5	25.8	23.8	12.6	61.2	21.9
Queue Length 50th (ft)	10	93	1	59	228	7	72	86	58	93	23
Queue Length 95th (ft)	m17	168	m15	#118	284	4	125	144	140	#172	45
Internal Link Dist (ft)		571			1368			439			691
Turn Bay Length (ft)	240		175	180		155	290			160	
Base Capacity (vph)	191	1180	653	441	1605	815	392	657	682	265	800
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.61	0.25	0.71	0.54	0.11	0.47	0.32	0.51	0.65	0.16

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
2: Stewart St & William St

2050 PM Peak Hour - with Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	542	149	246	401	28	260	306	342	40	236	26
Future Volume (veh/h)	49	542	149	246	401	28	260	306	342	40	236	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	589	162	267	436	30	283	333	372	43	257	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	403	865	237	363	1311	90	317	500	421	226	312	34
Arrive On Green	0.01	0.10	0.10	0.04	0.13	0.13	0.11	0.27	0.27	0.04	0.19	0.19
Sat Flow, veh/h	1781	2750	754	1781	3373	231	1781	1870	1576	1781	1656	180
Grp Volume(v), veh/h	53	380	371	267	229	237	283	333	372	43	0	285
Grp Sat Flow(s),veh/h/ln	1781	1777	1727	1781	1777	1827	1781	1870	1576	1781	0	1836
Q Serve(g_s), s	1.8	18.6	18.6	8.4	10.6	10.6	9.8	14.3	20.4	1.7	0.0	13.4
Cycle Q Clear(g_c), s	1.8	18.6	18.6	8.4	10.6	10.6	9.8	14.3	20.4	1.7	0.0	13.4
Prop In Lane	1.00		0.44	1.00		0.13	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	403	559	543	363	691	710	317	500	421	226	0	346
V/C Ratio(X)	0.13	0.68	0.68	0.74	0.33	0.33	0.89	0.67	0.88	0.19	0.00	0.82
Avail Cap(c_a), veh/h	431	559	543	370	691	710	317	584	492	259	0	463
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.52	0.52	0.52	0.83	0.83	0.83	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.9	36.0	36.0	21.3	28.6	28.6	28.4	29.4	31.6	28.0	0.0	35.1
Incr Delay (d2), s/veh	0.0	3.5	3.6	5.3	1.1	1.0	25.2	1.5	14.1	0.2	0.0	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	9.3	9.1	4.3	5.2	5.4	6.9	6.4	9.3	0.7	0.0	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.9	39.4	39.6	26.7	29.6	29.7	53.6	30.9	45.7	28.2	0.0	41.7
LnGrp LOS	B	D	D	C	C	C	D	C	D	C	A	D
Approach Vol, veh/h		804			733			988				328
Approach Delay, s/veh		38.2			28.6			43.0				39.9
Approach LOS		D			C			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	31.3	15.6	33.9	16.2	24.2	9.0	40.6				
Change Period (Y+Rc), s	* 5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	* 5	* 28	* 11	22.2	9.8	* 23	* 5.1	27.8				
Max Q Clear Time (g_c+I1), s	3.7	22.4	10.4	20.6	11.8	15.4	3.8	12.6				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.6	0.0	0.7	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay				37.6								
HCM 6th LOS				D								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
2: Stewart St & William St

2050 PM Peak Hour - with Improvements



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	53	751	267	466	283	333	372	43	285
v/c Ratio	0.15	0.77	0.80	0.33	0.79	0.58	0.52	0.13	0.79
Control Delay	11.6	28.9	31.9	18.4	37.1	31.3	6.9	17.1	48.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	28.9	31.9	18.4	37.1	31.3	6.9	17.1	48.6
Queue Length 50th (ft)	13	186	83	124	114	170	13	15	151
Queue Length 95th (ft)	m21	#304	#255	179	#187	245	80	32	225
Internal Link Dist (ft)		637		869		563			312
Turn Bay Length (ft)	160		100					75	
Base Capacity (vph)	361	979	335	1411	360	604	735	320	466
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.77	0.80	0.33	0.79	0.55	0.51	0.13	0.61

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
4: William St & State St

2050 PM Peak Hour - with Improvements

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	91	1157	779	105	0	82
Future Vol, veh/h	91	1157	779	105	0	82
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	1258	847	114	0	89





























Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	966	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	709	-	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	706	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	706	-	-	-	518
HCM Lane V/C Ratio	0.14	-	-	-	0.172
HCM Control Delay (s)	10.9	-	-	-	13.4
HCM Lane LOS	B	-	-	-	B
HCM 95th %tile Q(veh)	0.5	-	-	-	0.6

William Street Corridor
5: Saliman Rd & William St

2050 PM Peak Hour - with Improvements

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 						 	
Traffic Volume (veh/h)	45	906	211	410	738	134	121	186	403	247	187	25
Future Volume (veh/h)	45	906	211	410	738	134	121	186	403	247	187	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	985	229	446	802	146	132	202	438	268	203	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	1066	473	476	1412	628	380	646	545	260	722	95
Arrive On Green	0.05	0.40	0.40	0.14	0.40	0.40	0.06	0.35	0.35	0.23	0.23	0.23
Sat Flow, veh/h	3456	3554	1577	3456	3554	1579	1781	1870	1578	787	3155	414
Grp Volume(v), veh/h	49	985	229	446	802	146	132	202	438	268	113	117
Grp Sat Flow(s),veh/h/ln	1728	1777	1577	1728	1777	1579	1781	1870	1578	787	1777	1793
Q Serve(g_s), s	1.2	23.7	9.7	11.5	15.8	5.5	5.0	7.1	22.6	20.6	4.7	4.8
Cycle Q Clear(g_c), s	1.2	23.7	9.7	11.5	15.8	5.5	5.0	7.1	22.6	20.6	4.7	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	136	1066	473	476	1412	628	380	646	545	260	407	410
V/C Ratio(X)	0.36	0.92	0.48	0.94	0.57	0.23	0.35	0.31	0.80	1.03	0.28	0.28
Avail Cap(c_a), veh/h	192	1066	473	476	1412	628	380	646	545	260	407	410
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	26.1	21.9	38.4	21.1	18.0	23.7	21.6	26.7	37.9	28.6	28.6
Incr Delay (d2), s/veh	0.6	14.4	3.5	25.9	1.7	0.9	0.2	0.1	7.9	63.9	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	10.4	3.6	6.4	6.4	2.0	2.1	3.1	9.1	10.4	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.2	40.5	25.4	64.3	22.8	18.9	23.9	21.7	34.6	101.8	28.7	28.8
LnGrp LOS	D	D	C	E	C	B	C	C	C	F	C	C
Approach Vol, veh/h		1263			1394			772			498	
Approach Delay, s/veh		37.8			35.6			29.4			68.0	
Approach LOS		D			D			C			E	
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		37.5	20.0	32.5	10.5	27.0	11.2	41.3				
Change Period (Y+Rc), s		6.4	7.6	5.5	5.5	6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		31.1	12.4	27.0	5.0	20.6	5.0	* 34				
Max Q Clear Time (g_c+I1), s		24.6	13.5	25.7	7.0	22.6	3.2	17.8				
Green Ext Time (p_c), s		1.1	0.0	0.8	0.0	0.0	0.0	4.7				
Intersection Summary												
HCM 6th Ctrl Delay			39.2									
HCM 6th LOS			D									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
5: Saliman Rd & William St

2050 PM Peak Hour - with Improvements



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	49	985	229	446	802	146	132	202	438	268	230
v/c Ratio	0.26	0.93	0.38	0.94	0.52	0.18	0.36	0.31	0.67	1.00	0.29
Control Delay	44.0	33.8	3.6	58.6	21.6	8.3	23.5	23.3	20.1	92.4	27.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.0	33.8	3.6	58.6	21.6	8.3	23.5	23.3	20.1	92.4	27.8
Queue Length 50th (ft)	15	143	5	132	233	24	51	83	122	153	53
Queue Length 95th (ft)	m18	m#386	m12	#226	290	71	94	139	231	#311	85
Internal Link Dist (ft)		571			1368			439			691
Turn Bay Length (ft)	240		175	180		155	290			160	
Base Capacity (vph)	190	1061	608	472	1549	794	368	645	657	268	805
Starvation Cap Reductn	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
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.93	0.38	0.94	0.52	0.18	0.36	0.31	0.67	1.00	0.29

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



























William Street Corridor
1: Carson St & William St

2050 AM Peak Hour - Rt Turns Removed

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	100	3	149	312	207	22	277	83	309	420	49
Future Volume (veh/h)	14	100	3	149	312	207	22	277	83	309	420	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	109	3	162	339	225	24	301	90	336	457	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	555	15	533	334	222	278	785	230	450	615	517
Arrive On Green	0.06	0.31	0.31	0.11	0.53	0.53	0.06	0.29	0.29	0.10	0.33	0.33
Sat Flow, veh/h	1781	1811	50	1781	1047	695	1781	2705	794	1781	1870	1573
Grp Volume(v), veh/h	15	0	112	162	0	564	24	196	195	336	457	53
Grp Sat Flow(s),veh/h/ln	1781	0	1861	1781	0	1741	1781	1777	1723	1781	1870	1573
Q Serve(g_s), s	0.5	0.0	4.0	5.8	0.0	28.7	0.8	7.9	8.2	8.7	19.5	2.1
Cycle Q Clear(g_c), s	0.5	0.0	4.0	5.8	0.0	28.7	0.8	7.9	8.2	8.7	19.5	2.1
Prop In Lane	1.00		0.03	1.00		0.40	1.00		0.46	1.00		1.00
Lane Grp Cap(c), veh/h	179	0	571	533	0	555	278	515	500	450	615	517
V/C Ratio(X)	0.08	0.00	0.20	0.30	0.00	1.02	0.09	0.38	0.39	0.75	0.74	0.10
Avail Cap(c_a), veh/h	179	0	571	533	0	555	278	515	500	450	615	517
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	0.94	0.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.7	0.0	23.0	18.6	0.0	21.0	21.0	25.5	25.6	24.3	26.8	21.0
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.1	0.0	41.0	0.0	2.1	2.3	6.0	7.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.8	2.2	0.0	14.9	0.3	3.6	3.6	3.1	9.9	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.8	0.0	23.1	18.8	0.0	62.0	21.1	27.6	27.9	30.3	34.7	21.4
LnGrp LOS	C	A	C	B	A	F	C	C	C	C	C	C
Approach Vol, veh/h		127			726			415			846	
Approach Delay, s/veh		23.0			52.4			27.4			32.1	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	32.0	11.0	33.0	10.5	35.5	9.9	34.1				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 8.7	26.1	6.0	27.6	5.0	29.6	* 5	28.7				
Max Q Clear Time (g_c+I1), s	10.7	10.2	7.8	6.0	2.8	21.5	2.5	30.7				
Green Ext Time (p_c), s	0.0	1.5	0.0	0.4	0.0	1.4	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay				37.6								
HCM 6th LOS				D								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
5: Saliman Rd & William St

2050 AM Peak Hour - Rt Turns Removed

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 						 	
Traffic Volume (veh/h)	16	384	337	662	1045	47	198	175	301	40	485	17
Future Volume (veh/h)	16	384	337	662	1045	47	198	175	301	40	485	17
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	417	366	720	1136	51	215	190	327	43	527	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	425	371	781	1534	69	262	599	505	225	576	20
Arrive On Green	0.04	0.47	0.47	0.23	0.44	0.44	0.09	0.32	0.32	0.16	0.16	0.16
Sat Flow, veh/h	3456	1791	1563	3456	3463	155	1781	1870	1578	880	3505	120
Grp Volume(v), veh/h	17	414	369	720	583	604	215	190	327	43	267	278
Grp Sat Flow(s),veh/h/ln	1728	1777	1577	1728	1777	1842	1781	1870	1578	880	1777	1848
Q Serve(g_s), s	0.4	20.6	20.8	18.3	24.5	24.5	8.5	6.9	16.0	3.9	13.3	13.3
Cycle Q Clear(g_c), s	0.4	20.6	20.8	18.3	24.5	24.5	8.5	6.9	16.0	3.9	13.3	13.3
Prop In Lane	1.00		0.99	1.00		0.08	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	66	422	374	781	787	816	262	599	505	225	292	304
V/C Ratio(X)	0.26	0.98	0.99	0.92	0.74	0.74	0.82	0.32	0.65	0.19	0.91	0.92
Avail Cap(c_a), veh/h	192	422	374	783	787	816	262	599	505	225	292	304
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.6	23.4	23.5	34.0	20.8	20.8	28.5	23.2	26.2	33.0	37.0	37.0
Incr Delay (d2), s/veh	0.7	39.4	43.4	15.9	6.2	6.0	17.2	0.1	2.3	0.2	30.6	30.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	9.9	9.3	9.0	10.5	10.9	5.0	3.0	6.0	0.8	8.2	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.4	62.8	66.9	49.9	27.0	26.8	45.7	23.3	28.5	33.2	67.6	67.2
LnGrp LOS	D	E	E	D	C	C	D	C	C	C	E	E
Approach Vol, veh/h		800			1907			732			588	
Approach Delay, s/veh		64.3			35.6			32.2			64.9	
Approach LOS		E			D			C			E	
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		35.2	27.9	26.9	14.0	21.2	9.4	45.4				
Change Period (Y+Rc), s		6.4	7.6	5.5	5.5	6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		28.8	20.4	21.3	8.5	14.8	5.0	* 37				
Max Q Clear Time (g_c+I1), s		18.0	20.3	22.8	10.5	15.3	2.4	26.5				
Green Ext Time (p_c), s		1.1	0.0	0.0	0.0	0.0	0.0	4.7				
Intersection Summary												
HCM 6th Ctrl Delay			44.9									
HCM 6th LOS			D									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
1: Carson St & William St

2050 AM Peak Hour - Rt Turns Removed



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	15	112	162	564	24	391	336	457	53
v/c Ratio	0.08	0.26	0.33	0.86	0.07	0.36	0.71	0.55	0.07
Control Delay	16.1	27.0	10.9	31.6	14.5	23.3	27.3	24.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	27.0	10.9	31.6	14.5	23.3	27.3	24.5	0.2
Queue Length 50th (ft)	5	51	0	316	7	86	115	170	0
Queue Length 95th (ft)	16	87	20	#527	21	122	#245	344	0
Internal Link Dist (ft)		326		637		201		484	
Turn Bay Length (ft)	80		100		130		140		
Base Capacity (vph)	198	569	488	658	330	1103	474	824	766
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.20	0.33	0.86	0.07	0.35	0.71	0.55	0.07

Intersection Summary

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

William Street Corridor
5: Saliman Rd & William St

2050 AM Peak Hour - Rt Turns Removed



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	17	783	720	1187	215	190	327	43	545
v/c Ratio	0.09	0.84	0.94	0.70	0.80	0.31	0.45	0.22	0.93
Control Delay	39.8	30.8	52.0	17.9	48.1	24.6	4.9	36.0	62.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	30.8	52.0	17.9	48.1	24.6	4.9	36.0	62.0
Queue Length 50th (ft)	4	60	208	283	92	81	0	21	162
Queue Length 95th (ft)	m12	#205	#301	248	#190	137	58	53	#264
Internal Link Dist (ft)		571		1368		439			691
Turn Bay Length (ft)	240		180		290			160	
Base Capacity (vph)	190	949	778	1700	268	614	733	195	585
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.83	0.93	0.70	0.80	0.31	0.45	0.22	0.93

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.



























William Street Corridor
1: Carson St & William St

2050 MD Peak Hour - Rt Turns Removed

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	128	8	157	138	321	8	500	120	263	509	42
Future Volume (veh/h)	20	128	8	157	138	321	8	500	120	263	509	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	139	9	171	150	349	9	543	130	286	553	46
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	492	32	471	147	342	245	828	197	386	659	554
Arrive On Green	0.06	0.28	0.28	0.07	0.30	0.30	0.06	0.29	0.29	0.12	0.35	0.35
Sat Flow, veh/h	1781	1737	112	1781	498	1158	1781	2843	678	1781	1870	1574
Grp Volume(v), veh/h	22	0	148	171	0	499	9	339	334	286	553	46
Grp Sat Flow(s),veh/h/ln	1781	0	1849	1781	0	1655	1781	1777	1744	1781	1870	1574
Q Serve(g_s), s	0.7	0.0	5.6	6.0	0.0	26.6	0.3	15.0	15.1	9.8	24.5	1.8
Cycle Q Clear(g_c), s	0.7	0.0	5.6	6.0	0.0	26.6	0.3	15.0	15.1	9.8	24.5	1.8
Prop In Lane	1.00		0.06	1.00		0.70	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	179	0	524	471	0	489	245	517	508	386	659	554
V/C Ratio(X)	0.12	0.00	0.28	0.36	0.00	1.02	0.04	0.65	0.66	0.74	0.84	0.08
Avail Cap(c_a), veh/h	179	0	524	471	0	489	245	517	508	386	659	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	0.91	0.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	0.0	25.1	21.4	0.0	31.7	21.3	27.9	28.0	19.9	26.8	19.5
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.2	0.0	44.0	0.0	6.3	6.6	6.6	12.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.5	2.6	0.0	16.3	0.1	7.2	7.2	4.6	12.9	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	0.0	25.2	21.5	0.0	75.7	21.3	34.3	34.5	26.5	39.0	19.7
LnGrp LOS	C	A	C	C	A	F	C	C	C	C	D	B
Approach Vol, veh/h		170			670			682			885	
Approach Delay, s/veh		25.0			61.9			34.2			34.0	
Approach LOS		C			E			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	32.1	11.0	30.9	10.5	37.6	9.9	32.0				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 11	26.2	6.0	25.5	5.0	31.7	* 5	26.6				
Max Q Clear Time (g_c+I1), s	11.8	17.1	8.0	7.6	2.3	26.5	2.7	28.6				
Green Ext Time (p_c), s	0.0	2.1	0.0	0.5	0.0	1.3	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			41.2									
HCM 6th LOS			D									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
5: Saliman Rd & William St

2050 MD Peak Hour - Rt Turns Removed

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 						 	
Traffic Volume (veh/h)	33	756	149	287	794	86	168	195	322	64	86	31
Future Volume (veh/h)	33	756	149	287	794	86	168	195	322	64	86	31
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	822	162	312	863	93	183	212	350	70	93	34
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	1213	239	386	1578	170	337	489	412	169	273	95
Arrive On Green	0.07	0.82	0.82	0.11	0.49	0.49	0.09	0.26	0.26	0.11	0.11	0.11
Sat Flow, veh/h	3456	2957	583	3456	3235	349	1781	1870	1576	843	2576	895
Grp Volume(v), veh/h	36	494	490	312	474	482	183	212	350	70	63	64
Grp Sat Flow(s),veh/h/ln	1728	1777	1763	1728	1777	1806	1781	1870	1576	843	1777	1694
Q Serve(g_s), s	0.9	10.1	10.1	7.9	16.8	16.8	8.0	8.5	19.0	7.3	2.9	3.2
Cycle Q Clear(g_c), s	0.9	10.1	10.1	7.9	16.8	16.8	8.0	8.5	19.0	7.3	2.9	3.2
Prop In Lane	1.00		0.33	1.00		0.19	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	114	729	723	386	867	881	337	489	412	169	188	179
V/C Ratio(X)	0.32	0.68	0.68	0.81	0.55	0.55	0.54	0.43	0.85	0.41	0.33	0.36
Avail Cap(c_a), veh/h	196	729	723	476	867	881	337	511	431	179	209	200
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	5.7	5.7	39.0	16.1	16.1	30.5	27.7	31.6	39.2	37.3	37.4
Incr Delay (d2), s/veh	0.6	5.0	5.1	6.6	2.5	2.4	1.0	0.2	13.5	0.6	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.9	2.9	3.6	6.7	6.8	3.5	3.8	8.3	1.5	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	10.7	10.7	45.7	18.6	18.5	31.5	27.9	45.0	39.8	37.7	37.8
LnGrp LOS	D	B	B	D	B	B	C	C	D	D	D	D
Approach Vol, veh/h		1020			1268			745			197	
Approach Delay, s/veh		11.8			25.2			36.8			38.5	
Approach LOS		B			C			D			D	
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		29.9	17.7	42.4	14.0	15.9	10.7	49.4				
Change Period (Y+Rc), s		6.4	7.6	5.5	5.5	6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		24.6	12.4	33.5	8.5	10.6	5.1	* 41				
Max Q Clear Time (g_c+I1), s		21.0	9.9	12.1	10.0	9.3	2.9	18.8				
Green Ext Time (p_c), s		0.6	0.1	5.5	0.0	0.1	0.0	5.3				
Intersection Summary												
HCM 6th Ctrl Delay			24.5									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
1: Carson St & William St

2050 MD Peak Hour - Rt Turns Removed



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	22	148	171	499	9	673	286	553	46
v/c Ratio	0.13	0.45	0.49	0.92	0.03	0.52	0.68	0.56	0.05
Control Delay	19.2	34.2	16.6	36.7	12.9	24.3	22.5	20.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.2	34.2	16.6	36.7	12.9	24.3	22.5	20.2	0.1
Queue Length 50th (ft)	9	77	31	48	2	151	77	180	0
Queue Length 95th (ft)	22	114	m30	#373	11	228	#188	#466	0
Internal Link Dist (ft)		326		637		201		484	
Turn Bay Length (ft)	80		100		130		140		
Base Capacity (vph)	170	524	350	582	359	1297	426	996	894
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.28	0.49	0.86	0.03	0.52	0.67	0.56	0.05

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
5: Saliman Rd & William St

2050 MD Peak Hour - Rt Turns Removed



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	36	984	312	956	183	212	350	70	127
v/c Ratio	0.19	0.71	0.73	0.52	0.59	0.44	0.64	0.62	0.35
Control Delay	39.8	17.6	51.5	10.7	35.0	30.5	18.6	62.3	29.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	17.6	51.5	10.7	35.0	30.5	18.6	62.3	29.8
Queue Length 50th (ft)	10	130	46	244	81	97	73	38	25
Queue Length 95th (ft)	m18	182	132	41	142	164	169	#87	52
Internal Link Dist (ft)		571		1368		439			691
Turn Bay Length (ft)	240		180		290			160	
Base Capacity (vph)	194	1393	472	1835	312	513	567	136	428
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.71	0.66	0.52	0.59	0.41	0.62	0.51	0.30

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
1: Carson St & William St

2050 PM Peak Hour - Rt Turns Removed



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	240	23	128	112	430	4	544	180	292	490	29
Future Volume (veh/h)	27	240	23	128	112	430	4	544	180	292	490	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	261	25	139	122	467	4	591	196	317	533	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	446	43	361	98	373	266	739	245	369	671	565
Arrive On Green	0.06	0.27	0.27	0.03	0.10	0.10	0.06	0.28	0.28	0.13	0.36	0.36
Sat Flow, veh/h	1781	1679	161	1781	338	1292	1781	2619	867	1781	1870	1574
Grp Volume(v), veh/h	29	0	286	139	0	589	4	401	386	317	533	32
Grp Sat Flow(s),veh/h/ln	1781	0	1840	1781	0	1630	1781	1777	1709	1781	1870	1574
Q Serve(g_s), s	1.0	0.0	12.2	5.0	0.0	26.0	0.1	18.8	18.9	10.9	23.0	1.2
Cycle Q Clear(g_c), s	1.0	0.0	12.2	5.0	0.0	26.0	0.1	18.8	18.9	10.9	23.0	1.2
Prop In Lane	1.00		0.09	1.00		0.79	1.00		0.51	1.00		1.00
Lane Grp Cap(c), veh/h	179	0	489	361	0	471	266	501	482	369	671	565
V/C Ratio(X)	0.16	0.00	0.59	0.39	0.00	1.25	0.02	0.80	0.80	0.86	0.79	0.06
Avail Cap(c_a), veh/h	179	0	489	361	0	471	266	501	482	369	671	565
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.87	0.00	0.87	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.3	0.0	28.7	23.2	0.0	40.7	21.2	29.9	30.0	20.9	25.9	18.9
Incr Delay (d2), s/veh	0.2	0.0	1.2	0.2	0.0	127.6	0.0	12.5	13.1	17.2	9.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	5.5	2.2	0.0	28.0	0.1	9.6	9.4	6.1	11.7	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.4	0.0	30.0	23.5	0.0	168.3	21.2	42.4	43.1	38.1	35.3	19.1
LnGrp LOS	C	A	C	C	A	F	C	D	D	D	D	B
Approach Vol, veh/h		315			728			791			882	
Approach Delay, s/veh		29.5			140.7			42.7			35.7	
Approach LOS		C			F			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.4	31.3	12.0	29.3	10.5	38.2	9.9	31.4				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 12	25.4	7.0	23.9	5.0	32.3	* 5	26.0				
Max Q Clear Time (g_c+I1), s	12.9	20.9	7.0	14.2	2.1	25.0	3.0	28.0				
Green Ext Time (p_c), s	0.0	1.6	0.0	0.8	0.0	1.5	0.0	0.0				

Intersection Summary



























HCM 6th Ctrl Delay	65.1
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
5: Saliman Rd & William St

2050 PM Peak Hour - Rt Turns Removed

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 						 	
Traffic Volume (veh/h)	45	1038	211	410	738	134	121	186	403	115	187	25
Future Volume (veh/h)	45	1038	211	410	738	134	121	186	403	115	187	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	1128	229	446	802	146	132	202	438	125	203	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	1181	238	499	1516	276	248	445	375	174	378	50
Arrive On Green	0.08	0.80	0.80	0.14	0.51	0.51	0.06	0.24	0.24	0.12	0.12	0.12
Sat Flow, veh/h	3456	2943	594	3456	3001	546	1781	1870	1575	785	3153	413
Grp Volume(v), veh/h	49	678	679	446	475	473	132	202	438	125	113	117
Grp Sat Flow(s),veh/h/ln	1728	1777	1761	1728	1777	1770	1781	1870	1575	785	1777	1790
Q Serve(g_s), s	1.2	28.8	29.9	11.4	16.2	16.2	5.1	8.3	21.4	10.8	5.4	5.5
Cycle Q Clear(g_c), s	1.2	28.8	29.9	11.4	16.2	16.2	5.1	8.3	21.4	10.8	5.4	5.5
Prop In Lane	1.00		0.34	1.00		0.31	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	136	713	706	499	898	894	248	445	375	174	213	215
V/C Ratio(X)	0.36	0.95	0.96	0.89	0.53	0.53	0.53	0.45	1.17	0.72	0.53	0.54
Avail Cap(c_a), veh/h	192	713	706	499	898	894	248	445	375	174	213	215
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	8.2	8.3	37.8	15.0	15.0	32.4	29.3	34.3	40.9	37.2	37.3
Incr Delay (d2), s/veh	0.6	23.8	25.5	17.8	2.2	2.2	1.1	0.3	101.3	11.6	1.3	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	7.7	8.0	5.9	6.4	6.4	2.5	3.7	18.3	3.3	2.4	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.0	32.0	33.8	55.6	17.3	17.3	33.5	29.6	135.6	52.5	38.5	38.9
LnGrp LOS	D	C	C	E	B	B	C	C	F	D	D	D
Approach Vol, veh/h		1406			1394			772				355
Approach Delay, s/veh		33.2			29.5			90.4				43.6
Approach LOS		C			C			F				D
Timer - Assigned Phs		2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s		27.8	20.6	41.6	10.6	17.2	11.2	51.0				
Change Period (Y+Rc), s		6.4	7.6	5.5	5.5	6.4	7.7	* 5.5				
Max Green Setting (Gmax), s		21.4	13.0	36.1	5.1	10.8	5.0	* 44				
Max Q Clear Time (g_c+I1), s		23.4	13.4	31.9	7.1	12.8	3.2	18.2				
Green Ext Time (p_c), s		0.0	0.0	2.8	0.0	0.0	0.0	5.5				
Intersection Summary												
HCM 6th Ctrl Delay			44.1									
HCM 6th LOS			D									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
1: Carson St & William St

2050 PM Peak Hour - Rt Turns Removed



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	29	286	139	589	4	787	317	533	32
v/c Ratio	0.17	0.73	0.48	0.93	0.01	0.72	0.84	0.56	0.04
Control Delay	19.6	42.9	19.3	36.7	13.0	31.0	41.2	21.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	42.9	19.3	36.7	13.0	31.0	41.2	21.0	0.1
Queue Length 50th (ft)	11	147	33	190	1	204	116	195	0
Queue Length 95th (ft)	27	222	m70	#446	7	274	#294	#432	0
Internal Link Dist (ft)		326		637		201		484	
Turn Bay Length (ft)	80		100		130		140		
Base Capacity (vph)	171	490	291	648	342	1094	377	945	856
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.58	0.48	0.91	0.01	0.72	0.84	0.56	0.04

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
5: Saliman Rd & William St

2050 PM Peak Hour - Rt Turns Removed



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	49	1357	446	948	132	202	438	125	230
v/c Ratio	0.26	0.96	0.91	0.50	0.55	0.46	0.82	0.91	0.55
Control Delay	39.7	32.5	50.6	14.4	37.3	33.4	30.6	96.3	40.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.7	32.5	50.6	14.4	37.3	33.4	30.6	96.3	40.5
Queue Length 50th (ft)	13	183	119	247	61	99	122	71	62
Queue Length 95th (ft)	m19	m#517	#205	313	112	165	#284	#175	99
Internal Link Dist (ft)		571		1368		439			691
Turn Bay Length (ft)	240		180		290			160	
Base Capacity (vph)	190	1407	495	1903	242	442	535	140	427
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.96	0.90	0.50	0.55	0.46	0.82	0.89	0.54

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
2: Stewart St & William St

2050 AM Peak Hour - One EB Lane



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	353	150	284	592	12	85	103	136	25	254	12
Future Volume (veh/h)	6	353	150	284	592	12	85	103	136	25	254	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	384	163	309	643	13	92	112	148	27	276	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	389	483	205	396	1797	36	209	160	211	206	326	15
Arrive On Green	0.01	0.39	0.39	0.25	1.00	1.00	0.06	0.22	0.22	0.03	0.18	0.18
Sat Flow, veh/h	1781	1243	528	1781	3562	72	1781	726	959	1781	1771	83
Grp Volume(v), veh/h	7	0	547	309	321	335	92	0	260	27	0	289
Grp Sat Flow(s),veh/h/ln	1781	0	1771	1781	1777	1857	1781	0	1685	1781	0	1855
Q Serve(g_s), s	0.2	0.0	27.3	10.6	0.0	0.0	4.1	0.0	14.2	1.2	0.0	15.1
Cycle Q Clear(g_c), s	0.2	0.0	27.3	10.6	0.0	0.0	4.1	0.0	14.2	1.2	0.0	15.1
Prop In Lane	1.00		0.30	1.00		0.04	1.00		0.57	1.00		0.04
Lane Grp Cap(c), veh/h	389	0	688	396	897	937	209	0	371	206	0	341
V/C Ratio(X)	0.02	0.00	0.80	0.78	0.36	0.36	0.44	0.00	0.70	0.13	0.00	0.85
Avail Cap(c_a), veh/h	462	0	688	406	897	937	217	0	472	248	0	488
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.85	0.00	0.85	0.84	0.84	0.84	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.2	0.0	27.1	16.7	0.0	0.0	31.6	0.0	36.0	32.2	0.0	39.4
Incr Delay (d2), s/veh	0.0	0.0	8.0	7.1	0.9	0.9	0.5	0.0	2.0	0.1	0.0	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	12.9	4.0	0.2	0.2	1.8	0.0	5.9	0.5	0.0	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.2	0.0	35.0	23.8	0.9	0.9	32.2	0.0	37.9	32.3	0.0	46.1
LnGrp LOS	B	A	D	C	A	A	C	A	D	C	A	D
Approach Vol, veh/h		554			965			352				316
Approach Delay, s/veh		34.8			8.2			36.4				44.9
Approach LOS		C			A			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.4	29.3	17.8	44.4	12.1	25.7	6.2	56.1				
Change Period (Y+Rc), s	* 5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	* 5	* 28	* 13	29.9	6.1	* 26	* 5	38.0				
Max Q Clear Time (g_c+I1), s	3.2	16.2	12.6	29.3	6.1	17.1	2.2	2.0				
Green Ext Time (p_c), s	0.0	0.8	0.0	0.2	0.0	0.8	0.0	3.0				
Intersection Summary												
HCM 6th Ctrl Delay			24.8									
HCM 6th LOS			C									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
2: Stewart St & William St

2050 AM Peak Hour - One EB Lane



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	7	547	309	656	92	260	27	289
v/c Ratio	0.02	0.87	0.80	0.34	0.39	0.59	0.10	0.79
Control Delay	14.3	52.3	33.1	11.9	27.5	30.3	21.1	52.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	52.3	33.1	11.9	27.5	30.3	21.1	52.8
Queue Length 50th (ft)	2	~303	149	173	41	112	11	175
Queue Length 95th (ft)	m6	#588	#314	245	70	181	27	247
Internal Link Dist (ft)		637		869		563		312
Turn Bay Length (ft)	160		100				75	
Base Capacity (vph)	353	632	384	1949	239	522	280	487
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.87	0.80	0.34	0.38	0.50	0.10	0.59

Intersection Summary

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

William Street Corridor
3: Roop St & William St

2050 AM Peak Hour - One EB Lane



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	453	21	273	817	121	41	306	126	104	275	49
Future Volume (veh/h)	23	453	21	273	817	121	41	306	126	104	275	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	492	23	297	888	132	45	333	137	113	299	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	349	745	35	420	1605	239	226	420	169	199	542	95
Arrive On Green	0.01	0.14	0.14	0.23	1.00	1.00	0.04	0.17	0.17	0.05	0.18	0.18
Sat Flow, veh/h	1781	1772	83	1781	3102	461	1781	2464	994	1781	3019	528
Grp Volume(v), veh/h	25	0	515	297	509	511	45	238	232	113	174	178
Grp Sat Flow(s),veh/h/ln	1781	0	1855	1781	1777	1786	1781	1777	1681	1781	1777	1770
Q Serve(g_s), s	0.8	0.0	26.3	9.6	0.0	0.0	2.1	12.8	13.3	5.2	8.9	9.1
Cycle Q Clear(g_c), s	0.8	0.0	26.3	9.6	0.0	0.0	2.1	12.8	13.3	5.2	8.9	9.1
Prop In Lane	1.00		0.04	1.00		0.26	1.00		0.59	1.00		0.30
Lane Grp Cap(c), veh/h	349	0	780	420	920	924	226	303	286	199	319	318
V/C Ratio(X)	0.07	0.00	0.66	0.71	0.55	0.55	0.20	0.79	0.81	0.57	0.55	0.56
Avail Cap(c_a), veh/h	393	0	780	479	920	924	253	405	383	199	394	393
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.45	0.00	0.45	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	0.0	36.3	15.2	0.0	0.0	32.7	39.7	39.9	33.4	37.3	37.4
Incr Delay (d2), s/veh	0.0	0.0	2.0	3.1	2.4	2.4	0.2	5.1	6.7	2.4	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	13.5	3.1	0.6	0.6	0.9	6.0	6.0	2.4	3.9	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.9	0.0	38.3	18.3	2.4	2.4	32.8	44.8	46.6	35.8	37.8	38.0
LnGrp LOS	B	A	D	B	A	A	C	D	D	D	D	D
Approach Vol, veh/h		540			1317			515			465	
Approach Delay, s/veh		37.2			6.0			44.6			37.4	
Approach LOS		D			A			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.4	23.4	17.7	48.5	9.5	24.4	8.0	58.2				
Change Period (Y+Rc), s	* 5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	* 5.2	22.8	15.0	33.0	5.1	22.2	5.0	43.5				
Max Q Clear Time (g_c+I1), s	7.2	15.3	11.6	28.3	4.1	11.1	2.8	2.0				
Green Ext Time (p_c), s	0.0	1.0	0.1	1.1	0.0	1.1	0.0	4.7				

Intersection Summary

HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2050 AM Peak Hour - One EB Lane



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	25	515	297	1020	45	470	113	352
v/c Ratio	0.09	0.71	0.72	0.53	0.17	0.78	0.52	0.47
Control Delay	6.6	23.4	30.1	6.1	26.3	43.7	36.3	35.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	23.4	30.1	6.1	26.3	43.7	36.3	35.1
Queue Length 50th (ft)	4	282	51	67	20	134	52	101
Queue Length 95th (ft)	m6	m#386	m#178	84	45	176	92	141
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	282	724	435	1909	263	811	216	811
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.71	0.68	0.53	0.17	0.58	0.52	0.43

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
2: Stewart St & William St

2050 MD Peak Hour - One EB Lane



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	390	100	243	452	29	152	258	250	43	310	23
Future Volume (veh/h)	31	390	100	243	452	29	152	258	250	43	310	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	424	109	264	491	32	165	280	272	47	337	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	388	411	106	254	1192	77	305	270	262	148	459	34
Arrive On Green	0.01	0.09	0.09	0.20	0.70	0.70	0.08	0.31	0.31	0.04	0.27	0.27
Sat Flow, veh/h	1781	1432	368	1781	3386	220	1781	868	843	1781	1719	128
Grp Volume(v), veh/h	34	0	533	264	257	266	165	0	552	47	0	362
Grp Sat Flow(s),veh/h/ln	1781	0	1800	1781	1777	1829	1781	0	1711	1781	0	1847
Q Serve(g_s), s	1.2	0.0	25.8	8.8	5.4	5.5	6.0	0.0	28.0	1.7	0.0	16.1
Cycle Q Clear(g_c), s	1.2	0.0	25.8	8.8	5.4	5.5	6.0	0.0	28.0	1.7	0.0	16.1
Prop In Lane	1.00		0.20	1.00		0.12	1.00		0.49	1.00		0.07
Lane Grp Cap(c), veh/h	388	0	517	254	625	644	305	0	532	148	0	494
V/C Ratio(X)	0.09	0.00	1.03	1.04	0.41	0.41	0.54	0.00	1.04	0.32	0.00	0.73
Avail Cap(c_a), veh/h	430	0	517	254	625	644	305	0	532	179	0	525
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.00	0.76	0.89	0.89	0.89	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.7	0.0	40.7	21.5	9.4	9.4	23.1	0.0	31.0	25.5	0.0	30.1
Incr Delay (d2), s/veh	0.0	0.0	42.7	63.7	1.8	1.7	1.1	0.0	49.0	0.4	0.0	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	18.6	7.6	2.0	2.1	2.5	0.0	18.1	0.7	0.0	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.8	0.0	83.4	85.2	11.2	11.2	24.2	0.0	80.0	25.9	0.0	34.2
LnGrp LOS	C	A	F	F	B	B	C	A	F	C	A	C
Approach Vol, veh/h		567			787			717				409
Approach Delay, s/veh		79.7			36.0			67.2				33.3
Approach LOS		E			D			E				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.3	35.3	14.0	31.4	13.2	31.4	8.2	37.3				
Change Period (Y+Rc), s	* 5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	* 5	* 28	* 8.8	24.3	6.8	* 26	* 5	28.0				
Max Q Clear Time (g_c+I1), s	3.7	30.0	10.8	27.8	8.0	18.1	3.2	7.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.9	0.0	2.1				

Intersection Summary												
HCM 6th Ctrl Delay			54.6									
HCM 6th LOS			D									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
2: Stewart St & William St

2050 MD Peak Hour - One EB Lane



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	34	533	264	523	165	552	47	362
v/c Ratio	0.10	1.05	0.84	0.38	0.56	0.95	0.26	0.79
Control Delay	11.5	81.0	48.9	9.9	25.2	54.9	18.6	43.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	81.0	48.9	9.9	25.2	54.9	18.6	43.9
Queue Length 50th (ft)	11	~341	~116	70	56	282	15	181
Queue Length 95th (ft)	m15	#529	#243	79	98	#496	34	279
Internal Link Dist (ft)		637		869		563		312
Turn Bay Length (ft)	160		100				75	
Base Capacity (vph)	338	508	314	1387	296	583	182	526
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	1.05	0.84	0.38	0.56	0.95	0.26	0.69

Intersection Summary

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

William Street Corridor
3: Roop St & William St

2050 MD Peak Hour - One EB Lane



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	593	47	246	620	108	49	342	178	156	323	65
Future Volume (veh/h)	47	593	47	246	620	108	49	342	178	156	323	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	645	51	267	674	117	53	372	193	170	351	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	421	700	55	226	1336	232	249	455	232	215	615	123
Arrive On Green	0.01	0.14	0.14	0.13	0.88	0.88	0.04	0.20	0.20	0.06	0.21	0.21
Sat Flow, veh/h	1781	1710	135	1781	3026	525	1781	2270	1159	1781	2947	589
Grp Volume(v), veh/h	51	0	696	267	395	396	53	290	275	170	210	212
Grp Sat Flow(s),veh/h/ln	1781	0	1845	1781	1777	1774	1781	1777	1652	1781	1777	1759
Q Serve(g_s), s	1.5	0.0	33.5	6.0	4.2	4.2	2.1	14.0	14.4	5.1	9.5	9.8
Cycle Q Clear(g_c), s	1.5	0.0	33.5	6.0	4.2	4.2	2.1	14.0	14.4	5.1	9.5	9.8
Prop In Lane	1.00		0.07	1.00		0.30	1.00		0.70	1.00		0.33
Lane Grp Cap(c), veh/h	421	0	755	226	785	783	249	357	331	215	371	367
V/C Ratio(X)	0.12	0.00	0.92	1.18	0.50	0.50	0.21	0.81	0.83	0.79	0.57	0.58
Avail Cap(c_a), veh/h	451	0	755	226	785	783	275	446	415	215	434	430
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.13	0.00	0.13	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.5	0.0	37.5	23.5	3.2	3.2	27.2	34.4	34.5	32.4	32.0	32.0
Incr Delay (d2), s/veh	0.0	0.0	3.3	117.0	2.3	2.3	0.2	7.2	9.0	16.3	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	17.2	9.7	1.4	1.4	0.9	6.7	6.5	2.3	4.1	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.5	0.0	40.8	140.5	5.5	5.5	27.3	41.6	43.5	48.7	32.5	32.6
LnGrp LOS	B	A	D	F	A	A	C	D	D	D	C	C
Approach Vol, veh/h		747			1058			618			592	
Approach Delay, s/veh		39.0			39.6			41.2			37.2	
Approach LOS		D			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.3	24.5	12.0	43.2	9.6	25.2	9.1	46.1				
Change Period (Y+Rc), s	* 5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	* 5.1	22.6	6.0	32.3	5.0	22.0	5.1	33.7				
Max Q Clear Time (g_c+I1), s	7.1	16.4	8.0	35.5	4.1	11.8	3.5	6.2				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.0	0.0	1.3	0.0	3.2				

Intersection Summary

HCM 6th Ctrl Delay	39.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2050 MD Peak Hour - One EB Lane



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	696	267	791	53	565	170	422
v/c Ratio	0.15	1.05	0.86	0.47	0.20	0.79	0.83	0.52
Control Delay	7.4	61.1	55.7	13.5	22.4	36.7	58.8	31.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.4	61.1	55.7	13.5	22.4	36.7	58.8	31.1
Queue Length 50th (ft)	8	~432	123	74	21	134	73	111
Queue Length 95th (ft)	m14	m#442	#317	175	44	178	#149	147
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	343	663	312	1673	264	912	204	882
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	1.05	0.86	0.47	0.20	0.62	0.83	0.48

Intersection Summary

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

William Street Corridor
2: Stewart St & William St

2050 PM Peak Hour - One EB Lane



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	542	149	246	401	28	260	306	342	40	236	26
Future Volume (veh/h)	49	542	149	246	401	28	260	306	342	40	236	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	589	162	267	436	30	283	333	372	43	257	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	389	499	137	208	1338	92	371	253	283	125	356	39
Arrive On Green	0.01	0.12	0.12	0.03	0.13	0.13	0.13	0.32	0.32	0.03	0.22	0.22
Sat Flow, veh/h	1781	1410	388	1781	3373	231	1781	803	897	1781	1656	180
Grp Volume(v), veh/h	53	0	751	267	229	237	283	0	705	43	0	285
Grp Sat Flow(s),veh/h/ln	1781	0	1797	1781	1777	1827	1781	0	1700	1781	0	1836
Q Serve(g_s), s	2.1	0.0	38.9	8.8	12.9	13.0	13.3	0.0	34.7	2.0	0.0	15.9
Cycle Q Clear(g_c), s	2.1	0.0	38.9	8.8	12.9	13.0	13.3	0.0	34.7	2.0	0.0	15.9
Prop In Lane	1.00		0.22	1.00		0.13	1.00		0.53	1.00		0.10
Lane Grp Cap(c), veh/h	389	0	636	208	705	725	371	0	536	125	0	395
V/C Ratio(X)	0.14	0.00	1.18	1.28	0.32	0.33	0.76	0.00	1.31	0.34	0.00	0.72
Avail Cap(c_a), veh/h	406	0	636	208	705	725	371	0	536	146	0	417
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.53	0.00	0.53	0.91	0.91	0.91	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.9	0.0	48.6	33.0	34.4	34.5	28.6	0.0	37.7	34.4	0.0	40.1
Incr Delay (d2), s/veh	0.0	0.0	90.0	156.8	1.1	1.1	8.1	0.0	154.3	0.6	0.0	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	34.7	13.2	6.4	6.6	6.3	0.0	36.9	0.9	0.0	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.0	0.0	138.5	189.8	35.5	35.6	36.8	0.0	192.0	35.0	0.0	44.9
LnGrp LOS	C	A	F	F	D	D	D	A	F	C	A	D
Approach Vol, veh/h		804			733			988				328
Approach Delay, s/veh		130.8			91.7			147.5				43.6
Approach LOS		F			F			F				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.5	42.0	14.0	44.5	20.5	31.0	9.3	49.2				
Change Period (Y+Rc), s	* 5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	* 5	* 35	* 8.8	37.6	14.1	* 25	* 5.1	41.2				
Max Q Clear Time (g_c+I1), s	4.0	36.7	10.8	40.9	15.3	17.9	4.1	15.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.7	0.0	2.0				

Intersection Summary

HCM 6th Ctrl Delay	116.5
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
2: Stewart St & William St

2050 PM Peak Hour - One EB Lane



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	53	751	267	466	283	705	43	285
v/c Ratio	0.14	1.21	1.26	0.34	0.70	1.11	0.29	0.66
Control Delay	13.4	136.7	167.7	17.6	32.6	103.8	25.3	46.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	136.7	167.7	17.6	32.6	103.8	25.3	46.1
Queue Length 50th (ft)	17	~653	~168	136	135	~595	17	182
Queue Length 95th (ft)	m27	#878	#333	191	205	#828	40	277
Internal Link Dist (ft)		637		869		563		312
Turn Bay Length (ft)	160		100				75	
Base Capacity (vph)	385	621	212	1380	412	633	146	433
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	1.21	1.26	0.34	0.69	1.11	0.29	0.66

Intersection Summary

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

William Street Corridor
3: Roop St & William St

2050 PM Peak Hour - One EB Lane



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	759	83	219	537	122	52	374	264	202	364	69
Future Volume (veh/h)	109	759	83	219	537	122	52	374	264	202	364	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	118	825	90	238	584	133	57	407	287	220	396	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	398	741	81	179	1332	302	231	399	278	192	677	127
Arrive On Green	0.03	0.30	0.30	0.06	0.46	0.46	0.04	0.20	0.20	0.07	0.23	0.23
Sat Flow, veh/h	1781	1656	181	1781	2874	653	1781	1993	1391	1781	2982	560
Grp Volume(v), veh/h	118	0	915	238	360	357	57	362	332	220	234	237
Grp Sat Flow(s),veh/h/ln	1781	0	1837	1781	1777	1750	1781	1777	1608	1781	1777	1765
Q Serve(g_s), s	3.9	0.0	49.2	7.0	15.0	15.1	2.8	22.0	22.0	7.8	12.9	13.2
Cycle Q Clear(g_c), s	3.9	0.0	49.2	7.0	15.0	15.1	2.8	22.0	22.0	7.8	12.9	13.2
Prop In Lane	1.00		0.10	1.00		0.37	1.00		0.87	1.00		0.32
Lane Grp Cap(c), veh/h	398	0	822	179	823	811	231	355	322	192	403	401
V/C Ratio(X)	0.30	0.00	1.11	1.33	0.44	0.44	0.25	1.02	1.03	1.15	0.58	0.59
Avail Cap(c_a), veh/h	413	0	822	179	823	811	253	355	322	192	403	401
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.0	0.0	38.5	30.5	19.9	19.9	33.5	44.0	44.0	37.9	37.9	37.9
Incr Delay (d2), s/veh	0.0	0.0	53.0	182.1	1.7	1.7	0.2	52.8	58.6	110.2	1.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	35.1	11.9	6.4	6.3	1.2	14.9	14.0	7.4	5.8	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.0	0.0	91.5	212.6	21.6	21.6	33.7	96.8	102.6	148.2	39.3	39.5
LnGrp LOS	B	A	F	F	C	C	C	F	F	F	D	D
Approach Vol, veh/h		1033			955			751			691	
Approach Delay, s/veh		82.9			69.2			94.6			74.0	
Approach LOS		F			E			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	28.4	13.0	55.6	10.0	31.4	11.2	57.4				
Change Period (Y+Rc), s	* 5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	* 7.8	22.0	7.0	49.2	5.5	23.6	6.7	50.0				
Max Q Clear Time (g_c+I1), s	9.8	24.0	9.0	51.2	4.8	15.2	5.9	17.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.3	0.0	2.9				

Intersection Summary

HCM 6th Ctrl Delay	79.8
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2050 PM Peak Hour - One EB Lane























Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	118	915	238	717	57	694	220	471
v/c Ratio	0.32	1.11	1.21	0.44	0.25	0.93	1.15	0.59
Control Delay	7.1	80.2	160.7	20.1	29.4	53.9	141.8	40.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.1	80.2	160.7	20.1	29.4	53.9	141.8	40.4
Queue Length 50th (ft)	32	~741	~167	170	28	204	~131	153
Queue Length 95th (ft)	m29	m518	#327	221	58	#311	#288	210
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	380	822	196	1616	229	774	192	797
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	1.11	1.21	0.44	0.25	0.90	1.15	0.59

Intersection Summary

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

William Street Corridor
3: Roop St & William St

2050 AM Peak Hour - No RTOR

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	453	21	273	817	121	41	306	126	104	275	49
Future Volume (veh/h)	23	453	21	273	817	121	41	306	126	104	275	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	492	23	297	888	132	45	333	137	113	299	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	336	1313	61	518	1494	222	244	433	175	219	561	98
Arrive On Green	0.01	0.13	0.13	0.24	0.96	0.96	0.04	0.18	0.18	0.06	0.19	0.19
Sat Flow, veh/h	1781	3456	161	1781	3102	461	1781	2464	994	1781	3019	528
Grp Volume(v), veh/h	25	253	262	297	509	511	45	238	232	113	174	178
Grp Sat Flow(s),veh/h/ln	1781	1777	1841	1781	1777	1786	1781	1777	1681	1781	1777	1770
Q Serve(g_s), s	0.8	11.7	11.8	9.2	2.2	2.2	1.8	11.5	11.9	4.7	8.0	8.2
Cycle Q Clear(g_c), s	0.8	11.7	11.8	9.2	2.2	2.2	1.8	11.5	11.9	4.7	8.0	8.2
Prop In Lane	1.00		0.09	1.00		0.26	1.00		0.59	1.00		0.30
Lane Grp Cap(c), veh/h	336	675	699	518	856	860	244	312	295	219	330	329
V/C Ratio(X)	0.07	0.37	0.38	0.57	0.59	0.59	0.18	0.76	0.78	0.51	0.53	0.54
Avail Cap(c_a), veh/h	389	675	699	518	856	860	277	448	424	219	434	433
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	29.5	29.6	11.9	0.9	0.9	28.9	35.3	35.5	29.3	33.1	33.1
Incr Delay (d2), s/veh	0.0	1.4	1.4	1.0	3.0	3.0	0.1	2.5	3.5	0.9	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.8	6.1	2.7	1.1	1.1	0.8	5.2	5.1	2.0	3.5	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.4	30.9	30.9	12.9	3.9	3.9	29.0	37.8	39.0	30.2	33.6	33.7
LnGrp LOS	B	C	C	B	A	A	C	D	D	C	C	C
Approach Vol, veh/h		540			1317			515			465	
Approach Delay, s/veh		30.3			5.9			37.6			32.8	
Approach LOS		C			A			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.2	22.2	17.0	40.6	9.3	23.1	7.8	49.8				
Change Period (Y+Rc), s	* 5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	* 5	22.7	11.0	27.3	5.0	22.0	5.0	33.8				
Max Q Clear Time (g_c+I1), s	6.7	13.9	11.2	13.8	3.8	10.2	2.8	4.2				
Green Ext Time (p_c), s	0.0	1.1	0.0	1.8	0.0	1.1	0.0	4.5				
Intersection Summary												
HCM 6th Ctrl Delay			20.7									
HCM 6th LOS			C									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
3: Roop St & William St

2050 AM Peak Hour - No RTOR



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	25	515	297	1020	45	470	113	352
v/c Ratio	0.09	0.38	0.59	0.56	0.16	0.75	0.47	0.47
Control Delay	6.7	18.0	16.4	7.7	21.4	42.0	28.6	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.7	18.0	16.4	7.7	21.4	42.0	28.6	31.0
Queue Length 50th (ft)	5	128	36	65	17	134	45	88
Queue Length 95th (ft)	m7	173	m120	m96	39	172	79	124
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	271	1343	514	1816	281	848	242	892
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.38	0.58	0.56	0.16	0.55	0.47	0.39

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
3: Roop St & William St

2050 MD Peak Hour - No RTOR



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	593	47	246	620	108	49	342	178	156	323	65
Future Volume (veh/h)	47	593	47	246	620	108	49	342	178	156	323	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	645	51	267	674	117	53	372	193	170	351	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	386	1145	90	398	1271	220	273	454	232	254	679	136
Arrive On Green	0.01	0.11	0.11	0.22	0.84	0.84	0.04	0.20	0.20	0.08	0.23	0.23
Sat Flow, veh/h	1781	3335	263	1781	3026	525	1781	2270	1159	1781	2947	589
Grp Volume(v), veh/h	51	343	353	267	395	396	53	290	275	170	210	212
Grp Sat Flow(s),veh/h/ln	1781	1777	1822	1781	1777	1774	1781	1777	1651	1781	1777	1760
Q Serve(g_s), s	1.6	16.5	16.5	8.8	5.8	5.8	2.1	14.0	14.4	6.8	9.3	9.5
Cycle Q Clear(g_c), s	1.6	16.5	16.5	8.8	5.8	5.8	2.1	14.0	14.4	6.8	9.3	9.5
Prop In Lane	1.00		0.14	1.00		0.30	1.00		0.70	1.00		0.33
Lane Grp Cap(c), veh/h	386	610	625	398	746	745	273	355	330	254	409	405
V/C Ratio(X)	0.13	0.56	0.56	0.67	0.53	0.53	0.19	0.82	0.83	0.67	0.51	0.52
Avail Cap(c_a), veh/h	420	610	625	398	746	745	301	434	404	254	460	456
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	33.5	33.5	15.2	4.6	4.6	27.0	34.4	34.6	27.3	30.2	30.3
Incr Delay (d2), s/veh	0.0	3.1	3.1	3.6	2.7	2.7	0.1	7.9	9.9	5.4	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	8.3	8.6	3.1	1.9	1.9	0.9	6.8	6.6	3.3	4.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.2	36.6	36.6	18.8	7.3	7.3	27.1	42.4	44.5	32.7	30.6	30.7
LnGrp LOS	B	D	D	B	A	A	C	D	D	C	C	C
Approach Vol, veh/h		747			1058			618			592	
Approach Delay, s/veh		35.4			10.2			42.0			31.2	
Approach LOS		D			B			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.3	24.4	16.0	37.3	9.6	27.1	9.1	44.2				
Change Period (Y+Rc), s	* 5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	* 7.1	22.0	10.0	26.9	5.1	23.3	5.3	32.1				
Max Q Clear Time (g_c+I1), s	8.8	16.4	10.8	18.5	4.1	11.5	3.6	7.8				
Green Ext Time (p_c), s	0.0	1.1	0.0	2.1	0.0	1.4	0.0	3.2				

Intersection Summary

HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2050 MD Peak Hour - No RTOR



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	696	267	791	53	565	170	422
v/c Ratio	0.17	0.62	0.77	0.53	0.17	0.81	0.62	0.43
Control Delay	10.9	26.8	41.0	10.8	19.4	43.6	30.8	27.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.9	26.8	41.0	10.8	19.4	43.6	30.8	27.1
Queue Length 50th (ft)	13	176	104	75	19	161	64	101
Queue Length 95th (ft)	m27	m222	#200	94	42	212	#117	144
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	299	1157	354	1507	309	815	277	981
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.60	0.75	0.52	0.17	0.69	0.61	0.43

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
3: Roop St & William St

2050 PM Peak Hour - No RTOR



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	759	83	219	537	122	52	374	264	202	364	69
Future Volume (veh/h)	109	759	83	219	537	122	52	374	264	202	364	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	118	825	90	238	584	133	57	407	287	220	396	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	383	1056	115	286	1033	235	297	460	321	258	798	150
Arrive On Green	0.02	0.11	0.11	0.18	0.72	0.72	0.04	0.23	0.23	0.09	0.27	0.27
Sat Flow, veh/h	1781	3230	352	1781	2874	653	1781	1994	1392	1781	2983	560
Grp Volume(v), veh/h	118	454	461	238	360	357	57	362	332	220	234	237
Grp Sat Flow(s),veh/h/ln	1781	1777	1805	1781	1777	1750	1781	1777	1609	1781	1777	1766
Q Serve(g_s), s	3.9	22.4	22.4	8.0	8.6	8.7	2.2	17.7	18.0	7.8	10.0	10.2
Cycle Q Clear(g_c), s	3.9	22.4	22.4	8.0	8.6	8.7	2.2	17.7	18.0	7.8	10.0	10.2
Prop In Lane	1.00		0.20	1.00		0.37	1.00		0.86	1.00		0.32
Lane Grp Cap(c), veh/h	383	581	590	286	639	629	297	410	371	258	475	472
V/C Ratio(X)	0.31	0.78	0.78	0.83	0.56	0.57	0.19	0.88	0.89	0.85	0.49	0.50
Avail Cap(c_a), veh/h	413	581	590	286	639	629	323	434	393	258	475	472
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.37	0.37	0.37	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.0	37.0	37.0	20.9	9.3	9.3	24.9	33.4	33.5	27.5	27.8	27.9
Incr Delay (d2), s/veh	0.1	3.9	3.9	17.5	3.6	3.7	0.1	17.4	20.4	22.4	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	11.3	11.4	4.2	2.9	2.9	0.9	9.5	9.0	5.2	4.3	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.1	40.9	40.9	38.4	12.9	13.0	25.0	50.8	53.9	49.8	28.1	28.2
LnGrp LOS	B	D	D	D	B	B	C	D	D	D	C	C
Approach Vol, veh/h		1033			955			751			691	
Approach Delay, s/veh		38.4			19.3			50.2			35.1	
Approach LOS		D			B			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.0	27.2	14.0	35.8	9.7	30.5	11.1	38.7				
Change Period (Y+Rc), s	* 5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	* 7.8	22.0	8.0	28.2	5.1	24.0	7.1	29.6				
Max Q Clear Time (g_c+I1), s	9.8	20.0	10.0	24.4	4.2	12.2	5.9	10.7				
Green Ext Time (p_c), s	0.0	0.6	0.0	1.6	0.0	1.6	0.0	2.7				

Intersection Summary

HCM 6th Ctrl Delay	35.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2050 PM Peak Hour - No RTOR



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	118	915	238	717	57	694	220	471
v/c Ratio	0.40	0.86	0.90	0.61	0.18	0.90	0.86	0.47
Control Delay	12.1	30.2	66.7	15.0	18.9	49.4	53.4	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	30.2	66.7	15.0	18.9	49.4	53.4	27.4
Queue Length 50th (ft)	30	245	100	65	20	199	84	113
Queue Length 95th (ft)	m32	m274	#245	82	44	#294	#204	161
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	305	1099	264	1182	314	805	255	1011
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.83	0.90	0.61	0.18	0.86	0.86	0.47

Intersection Summary



























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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
5: Saliman Rd & William St

2050 AM Peak Hour - Lead Ped Interval

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 						 	
Traffic Volume (vph)	16	384	337	662	1045	47	198	175	301	40	485	17
Future Volume (vph)	16	384	337	662	1045	47	198	175	301	40	485	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		175	180		155	290		0	160		0
Storage Lanes	2		0	1		0	1		1	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00				0.98	1.00	1.00	
Frt		0.930			0.994				0.850		0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3266	0	3433	3515	0	1770	1863	1583	1770	3520	0
Flt Permitted	0.950			0.950			0.317			0.617		
Satd. Flow (perm)	3433	3266	0	3433	3515	0	590	1863	1559	1146	3520	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		216			5				327			3
Link Speed (mph)		40			40			25				25
Link Distance (ft)		651			1448			519				771
Travel Time (s)		11.1			24.7			14.2				21.0
Confl. Peds. (#/hr)			5			5			5	5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	417	366	720	1136	51	215	190	327	43	527	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	783	0	720	1187	0	215	190	327	43	545	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Perm		NA
Protected Phases	7	4		3	8		5	2				6
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		5	2	2	6		6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	12.7	15.5		12.6	15.4		10.5	11.4	11.4	11.4		11.4
Total Split (s)	12.7	21.9		26.0	35.2		12.5	32.1	32.1	19.6		19.6
Total Split (%)	14.1%	24.3%		28.9%	39.1%		13.9%	35.7%	35.7%	21.8%		21.8%
Maximum Green (s)	5.0	16.4		18.4	29.8		7.0	25.7	25.7	13.2		13.2
Yellow Time (s)	3.6	4.5		3.5	4.4		3.0	3.4	3.4	3.4		3.4
All-Red Time (s)	4.1	1.0		4.1	1.0		2.5	3.0	3.0	3.0		3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	7.7	5.5		7.6	5.4		5.5	6.4	6.4	6.4		6.4
Lead/Lag	Lag	Lead		Lag	Lead		Lag			Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	1.7	2.7		1.7	2.7		1.9	2.0	2.0	2.0		2.0

Lane Group	Ø11	Ø12
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	11	12
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0

William Street Corridor
5: Saliman Rd & William St

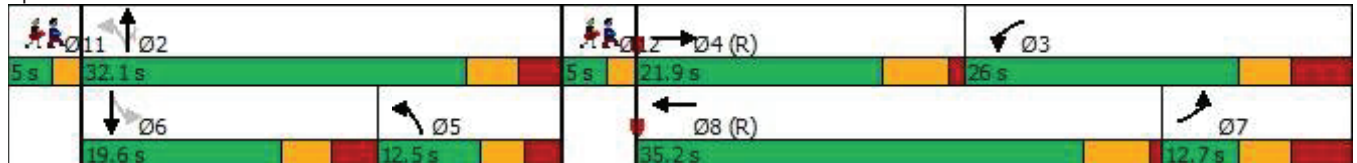
2050 AM Peak Hour - Lead Ped Interval

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)		9.0			8.0			9.0	9.0	14.0	14.0	
Flash Dont Walk (s)		21.0			20.0			28.0	28.0	28.0	28.0	
Pedestrian Calls (#/hr)		5			5			5	5	5	5	
Act Effct Green (s)	5.0	21.4		18.4	42.4		31.6	30.7	30.7	18.2	18.2	
Actuated g/C Ratio	0.06	0.24		0.20	0.47		0.35	0.34	0.34	0.20	0.20	
v/c Ratio	0.09	0.83		1.03	0.72		0.72	0.30	0.44	0.19	0.76	
Control Delay	38.8	24.3		77.8	23.5		44.9	23.4	4.6	32.3	41.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	38.8	24.3		77.8	23.5		44.9	23.4	4.6	32.3	41.8	
LOS	D	C		E	C		D	C	A	C	D	
Approach Delay		24.6			44.0			21.3			41.1	
Approach LOS		C			D			C			D	
Queue Length 50th (ft)	5	68		~227	237		89	78	0	20	154	
Queue Length 95th (ft)	m13	#152		#337	#428		#170	132	56	50	212	
Internal Link Dist (ft)		571			1368			439			691	
Turn Bay Length (ft)	240			180			290			160		
Base Capacity (vph)	190	941		701	1659		298	635	747	231	714	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.09	0.83		1.03	0.72		0.72	0.30	0.44	0.19	0.76	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 26 (29%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.03
 Intersection Signal Delay: 35.6 Intersection LOS: D
 Intersection Capacity Utilization 92.9% 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.
 m Volume for 95th percentile queue is metered by upstream signal.



























Splits and Phases: 5: Saliman Rd & William St



Lane Group	Ø11	Ø12
Recall Mode	None	None
Walk Time (s)	3.0	3.0
Flash Dont Walk (s)	0.0	0.0
Pedestrian Calls (#/hr)	0	0
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

William Street Corridor
5: Saliman Rd & William St

2050 MD Peak Hour - Lead Ped Interval



























												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 						 	
Traffic Volume (vph)	33	756	149	287	794	86	168	195	322	64	86	31
Future Volume (vph)	33	756	149	287	794	86	168	195	322	64	86	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		175	180		155	290		0	160		0
Storage Lanes	2		0	1		0	1		1	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00			1.00				0.98	1.00	1.00	
Frt		0.975			0.985				0.850		0.960	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3441	0	3433	3480	0	1770	1863	1583	1770	3384	0
Flt Permitted	0.950			0.950			0.671			0.497		
Satd. Flow (perm)	3433	3441	0	3433	3480	0	1250	1863	1559	923	3384	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			15				319			34
Link Speed (mph)		40			40			25				25
Link Distance (ft)		651			1448			519				771
Travel Time (s)		11.1			24.7			14.2				21.0
Confl. Peds. (#/hr)			5			5			5	5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	822	162	312	863	93	183	212	350	70	93	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	984	0	312	956	0	183	212	350	70	127	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Perm		NA
Protected Phases	7	4		3	8		5	2				6
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		5	2	2	6		6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	12.7	15.5		12.6	15.4		10.5	11.4	11.4	11.4		11.4
Total Split (s)	12.7	35.9		17.1	40.3		11.0	27.0	27.0	16.0		16.0
Total Split (%)	14.1%	39.9%		19.0%	44.8%		12.2%	30.0%	30.0%	17.8%		17.8%
Maximum Green (s)	5.0	30.4		9.5	34.9		5.5	20.6	20.6	9.6		9.6
Yellow Time (s)	3.6	4.5		3.5	4.4		3.0	3.4	3.4	3.4		3.4
All-Red Time (s)	4.1	1.0		4.1	1.0		2.5	3.0	3.0	3.0		3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	7.7	5.5		7.6	5.4		5.5	6.4	6.4	6.4		6.4
Lead/Lag	Lag	Lead		Lag	Lead		Lag			Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	1.7	2.7		1.7	2.7		1.9	2.0	2.0	2.0		2.0

Lane Group	Ø11	Ø12
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	11	12
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0

Lane Group	Ø11	Ø12
Recall Mode	None	None
Walk Time (s)	3.0	3.0
Flash Dont Walk (s)	0.0	0.0
Pedestrian Calls (#/hr)	0	0
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

William Street Corridor
5: Saliman Rd & William St

2050 PM Peak Hour - Lead Ped Interval

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 						 	
Traffic Volume (vph)	45	1038	211	410	738	134	121	186	403	115	187	25
Future Volume (vph)	45	1038	211	410	738	134	121	186	403	115	187	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		175	180		155	290		0	160		0
Storage Lanes	2		0	1		0	1		1	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00			1.00				0.98	1.00	1.00	
Frt		0.975			0.977				0.850		0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3441	0	3433	3449	0	1770	1863	1583	1770	3469	0
Flt Permitted	0.950			0.950			0.608			0.563		
Satd. Flow (perm)	3433	3441	0	3433	3449	0	1133	1863	1559	1046	3469	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			27				306		13	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		651			1448			519			771	
Travel Time (s)		11.1			24.7			14.2			21.0	
Confl. Peds. (#/hr)			5			5			5	5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	1128	229	446	802	146	132	202	438	125	203	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	1357	0	446	948	0	132	202	438	125	230	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		5	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.7	15.5		12.6	15.4		10.5	11.4	11.4	11.4	11.4	
Total Split (s)	12.7	34.5		18.0	39.8		10.5	27.5	27.5	17.0	17.0	
Total Split (%)	14.1%	38.3%		20.0%	44.2%		11.7%	30.6%	30.6%	18.9%	18.9%	
Maximum Green (s)	5.0	29.0		10.4	34.4		5.0	21.1	21.1	10.6	10.6	
Yellow Time (s)	3.6	4.5		3.5	4.4		3.0	3.4	3.4	3.4	3.4	
All-Red Time (s)	4.1	1.0		4.1	1.0		2.5	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.7	5.5		7.6	5.4		5.5	6.4	6.4	6.4	6.4	
Lead/Lag	Lag	Lead		Lag	Lead		Lag			Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	1.7	2.7		1.7	2.7		1.9	2.0	2.0	2.0	2.0	

Lane Group	Ø11	Ø12
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	11	12
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0

William Street Corridor
5: Saliman Rd & William St

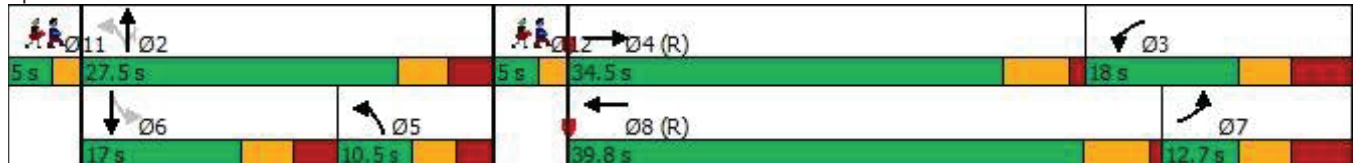
2050 PM Peak Hour - Lead Ped Interval

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)		9.0			8.0			9.0	9.0	14.0	14.0	
Flash Dont Walk (s)		21.0			20.0			28.0	28.0	28.0	28.0	
Pedestrian Calls (#/hr)		5			5			5	5	5	5	
Act Effct Green (s)	6.6	34.0		10.4	42.9		27.0	26.1	26.1	15.6	15.6	
Actuated g/C Ratio	0.07	0.38		0.12	0.48		0.30	0.29	0.29	0.17	0.17	
v/c Ratio	0.20	1.03		1.13	0.57		0.35	0.37	0.65	0.69	0.38	
Control Delay	38.5	47.5		117.9	11.6		28.4	27.9	13.8	56.5	33.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	38.5	47.5		117.9	11.6		28.4	27.9	13.8	56.5	33.0	
LOS	D	D		F	B		C	C	B	E	C	
Approach Delay		47.2			45.6			20.0				41.3
Approach LOS		D			D			B				D
Queue Length 50th (ft)	15	~438		~154	237		56	91	58	67	57	
Queue Length 95th (ft)	m21	#549		#250	292		103	153	164	#151	93	
Internal Link Dist (ft)		571			1368			439				691
Turn Bay Length (ft)	240			180			290			160		
Base Capacity (vph)	250	1317		396	1658		375	540	669	181	612	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.20	1.03		1.13	0.57		0.35	0.37	0.65	0.69	0.38	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 20 (22%), Referenced to phase 4:EBT and 8:WBT, Start of Green
 Natural Cycle: 130
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.13
 Intersection Signal Delay: 40.7 Intersection LOS: D
 Intersection Capacity Utilization 88.2% 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.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Saliman Rd & William St



Lane Group	Ø11	Ø12
Recall Mode	None	None
Walk Time (s)	3.0	3.0
Flash Dont Walk (s)	0.0	0.0
Pedestrian Calls (#/hr)	0	0
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

William Street Corridor
2: Stewart St & William St

2050 AM Peak Hour - with Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	353	150	284	592	12	85	103	136	25	254	12
Future Volume (veh/h)	6	353	150	284	592	12	85	103	136	25	254	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	384	163	309	643	13	92	112	148	27	276	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	827	346	253	1680	34	224	422	355	325	335	16
Arrive On Green	0.00	0.11	0.11	0.10	0.32	0.32	0.06	0.23	0.23	0.03	0.19	0.19
Sat Flow, veh/h	1781	2436	1019	1781	3562	72	1781	1870	1575	1781	1771	83
Grp Volume(v), veh/h	7	279	268	309	321	335	92	112	148	27	0	289
Grp Sat Flow(s),veh/h/ln	1781	1777	1678	1781	1777	1857	1781	1870	1575	1781	0	1855
Q Serve(g_s), s	0.4	13.2	13.5	12.8	12.6	12.6	3.7	4.4	7.2	1.1	0.0	13.5
Cycle Q Clear(g_c), s	0.4	13.2	13.5	12.8	12.6	12.6	3.7	4.4	7.2	1.1	0.0	13.5
Prop In Lane	1.00		0.61	1.00		0.04	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	16	603	570	253	838	876	224	422	355	325	0	351
V/C Ratio(X)	0.44	0.46	0.47	1.22	0.38	0.38	0.41	0.27	0.42	0.08	0.00	0.82
Avail Cap(c_a), veh/h	99	603	570	253	838	876	236	582	490	375	0	550
HCM Platoon Ratio	0.33	0.33	0.33	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	0.83	0.83	0.83	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.6	32.3	32.4	40.7	20.6	20.6	28.1	28.7	29.8	28.1	0.0	35.0
Incr Delay (d2), s/veh	5.9	2.1	2.3	124.8	1.1	1.1	0.4	0.1	0.3	0.0	0.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	6.6	6.4	14.6	5.8	6.1	1.5	2.0	2.8	0.5	0.0	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.5	34.4	34.7	165.5	21.7	21.6	28.5	28.8	30.1	28.1	0.0	38.0
LnGrp LOS	D	C	C	F	C	C	C	C	C	C	A	D
Approach Vol, veh/h		554			965			352			316	
Approach Delay, s/veh		34.8			67.7			29.3			37.1	
Approach LOS		C			E			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	27.6	18.0	36.2	11.5	24.3	6.1	48.0				
Change Period (Y+Rc), s	* 5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	* 5	* 28	* 13	20.3	5.7	* 27	* 5	28.0				
Max Q Clear Time (g_c+I1), s	3.1	9.2	14.8	15.5	5.7	15.5	2.4	14.6				
Green Ext Time (p_c), s	0.0	0.6	0.0	1.1	0.0	0.9	0.0	2.4				
Intersection Summary												
HCM 6th Ctrl Delay			48.8									
HCM 6th LOS			D									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
2: Stewart St & William St

2050 AM Peak Hour - with Improvements



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	7	547	309	656	92	112	148	27	289
v/c Ratio	0.07	0.66	0.72	0.36	0.33	0.22	0.25	0.07	0.75
Control Delay	48.7	28.9	38.0	6.8	21.5	25.1	1.5	16.9	44.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.7	28.9	38.0	6.8	21.5	25.1	1.5	16.9	44.7
Queue Length 50th (ft)	4	154	124	99	34	43	0	10	154
Queue Length 95th (ft)	m11	165	#368	153	59	87	8	23	214
Internal Link Dist (ft)		637		869		563			312
Turn Bay Length (ft)	160		100					75	
Base Capacity (vph)	98	872	428	1803	282	602	658	370	550
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.63	0.72	0.36	0.33	0.19	0.22	0.07	0.53

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
6: Gold Dust West Way & William St

2050 AM Peak Hour - with Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑↑		↖	↑↑↑		↖	↑		↖	↑	
Traffic Volume (veh/h)	19	635	54	179	1672	51	53	0	211	15	0	11
Future Volume (veh/h)	19	635	54	179	1672	51	53	0	211	15	0	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	690	59	195	1817	55	58	0	229	16	0	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	2210	188	231	2894	88	304	0	264	110	0	264
Arrive On Green	0.02	0.46	0.46	0.13	0.57	0.57	0.17	0.00	0.17	0.17	0.00	0.17
Sat Flow, veh/h	1781	4792	407	1781	5092	154	1390	0	1571	1147	0	1571
Grp Volume(v), veh/h	21	489	260	195	1214	658	58	0	229	16	0	12
Grp Sat Flow(s),veh/h/ln	1781	1702	1794	1781	1702	1842	1390	0	1571	1147	0	1571
Q Serve(g_s), s	1.0	8.1	8.2	9.6	21.5	21.6	3.3	0.0	12.8	1.2	0.0	0.6
Cycle Q Clear(g_c), s	1.0	8.1	8.2	9.6	21.5	21.6	3.9	0.0	12.8	14.0	0.0	0.6
Prop In Lane	1.00		0.23	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	40	1570	828	231	1935	1047	304	0	264	110	0	264
V/C Ratio(X)	0.52	0.31	0.31	0.84	0.63	0.63	0.19	0.00	0.87	0.15	0.00	0.05
Avail Cap(c_a), veh/h	111	1570	828	388	1935	1047	304	0	264	110	0	264
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.5	15.2	15.3	38.3	13.0	13.0	33.0	0.0	36.5	43.3	0.0	31.4
Incr Delay (d2), s/veh	3.8	0.5	1.0	3.4	1.6	2.9	0.1	0.0	24.3	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.0	3.3	4.3	7.4	8.5	1.1	0.0	6.6	0.4	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.3	15.8	16.3	41.7	14.6	15.9	33.1	0.0	60.8	43.5	0.0	31.4
LnGrp LOS	D	B	B	D	B	B	C	A	E	D	A	C
Approach Vol, veh/h		770			2067			287				28
Approach Delay, s/veh		16.8			17.6			55.2				38.4
Approach LOS		B			B			E				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	18.1	48.9		23.0	8.4	58.6				
Change Period (Y+Rc), s		7.9	6.4	7.4		7.9	* 6.4	7.4				
Max Green Setting (Gmax), s		15.1	19.6	33.6		15.1	* 5.6	47.6				
Max Q Clear Time (g_c+I1), s		14.8	11.6	10.2		16.0	3.0	23.6				
Green Ext Time (p_c), s		0.0	0.1	3.8		0.0	0.0	12.1				
Intersection Summary												
HCM 6th Ctrl Delay			21.0									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
6: Gold Dust West Way & William St

2050 AM Peak Hour - with Improvements



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	21	749	195	1872	58	229	16	12
v/c Ratio	0.20	0.30	0.70	0.55	0.43	0.47	0.20	0.04
Control Delay	50.5	12.6	49.3	9.8	46.4	3.2	40.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	12.6	49.3	9.8	46.4	3.2	40.5	0.2
Queue Length 50th (ft)	12	68	106	130	32	0	9	0
Queue Length 95th (ft)	m29	140	166	328	65	0	27	0
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	112	2537	385	3430	233	571	141	434
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.30	0.51	0.55	0.25	0.40	0.11	0.03

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
2: Stewart St & William St

2050 MD Peak Hour - with Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	390	100	243	452	29	152	258	250	43	310	23
Future Volume (veh/h)	31	390	100	243	452	29	152	258	250	43	310	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	424	109	264	491	32	165	280	272	47	337	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	57	792	202	259	1339	87	250	501	422	267	385	29
Arrive On Green	0.01	0.09	0.09	0.05	0.13	0.13	0.08	0.27	0.27	0.04	0.22	0.22
Sat Flow, veh/h	1781	2799	713	1781	3386	220	1781	1870	1576	1781	1719	128
Grp Volume(v), veh/h	34	268	265	264	257	266	165	280	272	47	0	362
Grp Sat Flow(s),veh/h/ln	1781	1777	1735	1781	1777	1829	1781	1870	1576	1781	0	1846
Q Serve(g_s), s	1.7	12.9	13.1	13.1	11.9	11.9	6.4	11.6	13.7	1.8	0.0	17.0
Cycle Q Clear(g_c), s	1.7	12.9	13.1	13.1	11.9	11.9	6.4	11.6	13.7	1.8	0.0	17.0
Prop In Lane	1.00		0.41	1.00		0.12	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	57	503	491	259	703	723	250	501	422	267	0	413
V/C Ratio(X)	0.60	0.53	0.54	1.02	0.37	0.37	0.66	0.56	0.64	0.18	0.00	0.88
Avail Cap(c_a), veh/h	119	503	491	259	703	723	250	582	490	297	0	525
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	0.76	0.87	0.87	0.87	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.0	35.1	35.2	42.8	28.8	28.8	26.3	28.4	29.2	25.5	0.0	33.7
Incr Delay (d2), s/veh	2.9	3.1	3.2	56.9	1.3	1.3	5.1	0.4	1.4	0.1	0.0	11.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.6	6.5	10.3	5.9	6.1	3.0	5.1	5.3	0.8	0.0	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.8	38.2	38.4	99.7	30.1	30.1	31.4	28.8	30.6	25.6	0.0	44.7
LnGrp LOS	D	D	D	F	C	C	C	C	C	C	A	D
Approach Vol, veh/h		567			787			717				409
Approach Delay, s/veh		38.8			53.4			30.0				42.5
Approach LOS		D			D			C				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.3	31.4	18.3	31.1	13.2	27.4	8.2	41.2				
Change Period (Y+Rc), s	* 5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	* 5	* 28	* 13	20.0	6.8	* 26	* 6	27.0				
Max Q Clear Time (g_c+I1), s	3.8	15.7	15.1	15.1	8.4	19.0	3.7	13.9				
Green Ext Time (p_c), s	0.0	1.3	0.0	1.1	0.0	0.9	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay			41.5									
HCM 6th LOS			D									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
2: Stewart St & William St

2050 MD Peak Hour - with Improvements



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	34	533	264	523	165	280	272	47	362
v/c Ratio	0.31	0.67	0.82	0.38	0.56	0.47	0.40	0.13	0.83
Control Delay	49.4	29.3	45.9	22.8	25.4	28.3	5.0	16.1	49.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.4	29.3	45.9	22.8	25.4	28.3	5.0	16.1	49.1
Queue Length 50th (ft)	20	150	142	152	59	134	0	15	192
Queue Length 95th (ft)	m36	175	#316	207	98	204	54	34	279
Internal Link Dist (ft)		637		869		563			312
Turn Bay Length (ft)	160		100					75	
Base Capacity (vph)	120	825	323	1370	295	607	690	374	526
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.65	0.82	0.38	0.56	0.46	0.39	0.13	0.69

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
6: Gold Dust West Way & William St

2050 MD Peak Hour - with Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑↑		↖	↑↑↑		↖	↑		↖	↑	
Traffic Volume (veh/h)	87	991	81	242	1042	90	93	6	237	82	8	49
Future Volume (veh/h)	87	991	81	242	1042	90	93	6	237	82	8	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	95	1077	88	263	1133	98	101	7	258	89	9	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	1873	153	300	2343	202	305	8	309	125	47	277
Arrive On Green	0.07	0.39	0.39	0.17	0.49	0.49	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	4808	392	1781	4784	413	1332	42	1538	1111	234	1377
Grp Volume(v), veh/h	95	762	403	263	806	425	101	0	265	89	0	62
Grp Sat Flow(s),veh/h/ln	1781	1702	1797	1781	1702	1793	1332	0	1580	1111	0	1610
Q Serve(g_s), s	4.7	15.8	15.9	13.0	14.2	14.3	6.1	0.0	14.5	3.6	0.0	2.9
Cycle Q Clear(g_c), s	4.7	15.8	15.9	13.0	14.2	14.3	9.0	0.0	14.5	18.1	0.0	2.9
Prop In Lane	1.00		0.22	1.00		0.23	1.00		0.97	1.00		0.85
Lane Grp Cap(c), veh/h	121	1326	700	300	1667	878	305	0	318	125	0	324
V/C Ratio(X)	0.78	0.57	0.58	0.88	0.48	0.48	0.33	0.00	0.83	0.71	0.00	0.19
Avail Cap(c_a), veh/h	210	1326	700	428	1667	878	305	0	318	125	0	324
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.3	21.6	21.6	36.5	15.4	15.4	33.6	0.0	34.5	44.1	0.0	29.9
Incr Delay (d2), s/veh	4.1	1.8	3.4	10.5	1.0	1.9	0.2	0.0	16.2	15.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.2	6.9	6.3	5.2	5.7	2.0	0.0	6.9	2.5	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	23.4	25.0	47.1	16.4	17.3	33.8	0.0	50.8	59.4	0.0	30.0
LnGrp LOS	D	C	C	D	B	B	C	A	D	E	A	C
Approach Vol, veh/h		1260			1494			366				151
Approach Delay, s/veh		25.6			22.0			46.1				47.3
Approach LOS		C			C			D				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.0	21.5	42.5		26.0	12.5	51.5				
Change Period (Y+Rc), s		7.9	6.4	7.4		7.9	* 6.4	7.4				
Max Green Setting (Gmax), s		18.1	21.6	28.6		18.1	* 11	39.6				
Max Q Clear Time (g_c+I1), s		16.5	15.0	17.9		20.1	6.7	16.3				
Green Ext Time (p_c), s		0.2	0.2	4.6		0.0	0.0	7.0				
Intersection Summary												
HCM 6th Ctrl Delay				27.3								
HCM 6th LOS				C								
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
 6: Gold Dust West Way & William St

2050 MD Peak Hour - with Improvements



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	95	1165	263	1231	101	265	89	62
v/c Ratio	0.56	0.55	0.79	0.45	0.53	0.59	0.95	0.22
Control Delay	56.6	16.2	50.9	14.7	44.1	10.7	119.0	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.6	16.2	50.9	14.7	44.1	10.7	119.0	13.2
Queue Length 50th (ft)	58	84	143	157	53	3	50	4
Queue Length 95th (ft)	m99	276	216	223	98	67	#123	37
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	208	2137	424	2735	267	521	130	364
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.55	0.62	0.45	0.38	0.51	0.68	0.17

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
2: Stewart St & William St

2050 PM Peak Hour - with Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	542	149	246	401	28	260	306	342	40	236	26
Future Volume (veh/h)	49	542	149	246	401	28	260	306	342	40	236	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	589	162	267	436	30	283	333	372	43	257	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	793	218	253	1312	90	313	500	421	225	323	35
Arrive On Green	0.01	0.10	0.10	0.05	0.13	0.13	0.10	0.27	0.27	0.04	0.19	0.19
Sat Flow, veh/h	1781	2749	754	1781	3373	231	1781	1870	1576	1781	1656	180
Grp Volume(v), veh/h	53	380	371	267	229	237	283	333	372	43	0	285
Grp Sat Flow(s),veh/h/ln	1781	1777	1727	1781	1777	1827	1781	1870	1576	1781	0	1836
Q Serve(g_s), s	2.7	18.7	18.8	12.8	10.6	10.6	9.2	14.3	20.4	1.7	0.0	13.3
Cycle Q Clear(g_c), s	2.7	18.7	18.8	12.8	10.6	10.6	9.2	14.3	20.4	1.7	0.0	13.3
Prop In Lane	1.00		0.44	1.00		0.13	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	73	513	498	253	691	710	313	500	421	225	0	358
V/C Ratio(X)	0.73	0.74	0.74	1.05	0.33	0.33	0.90	0.67	0.88	0.19	0.00	0.80
Avail Cap(c_a), veh/h	137	513	498	253	691	710	313	582	490	259	0	473
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.52	0.52	0.52	0.83	0.83	0.83	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.9	37.4	37.5	42.9	28.6	28.6	29.1	29.4	31.6	27.6	0.0	34.5
Incr Delay (d2), s/veh	2.7	5.0	5.2	66.4	1.1	1.0	27.2	1.5	14.2	0.2	0.0	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	9.6	9.4	10.8	5.2	5.4	4.0	6.4	9.3	0.7	0.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.6	42.5	42.7	109.3	29.6	29.7	56.3	30.9	45.9	27.8	0.0	39.6
LnGrp LOS	D	D	D	F	C	C	E	C	D	C	A	D
Approach Vol, veh/h		804			733			988				328
Approach Delay, s/veh		42.9			58.7			43.8				38.0
Approach LOS		D			E			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	31.3	18.0	31.6	15.6	24.8	9.0	40.6				
Change Period (Y+Rc), s	* 5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	* 5	* 28	* 13	20.3	9.2	* 23	* 6.9	26.1				
Max Q Clear Time (g_c+I1), s	3.7	22.4	14.8	20.8	11.2	15.3	4.7	12.6				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.0	0.0	0.7	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			46.7									
HCM 6th LOS			D									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
2: Stewart St & William St

2050 PM Peak Hour - with Improvements



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	53	751	267	466	283	333	372	43	285
v/c Ratio	0.43	0.91	0.78	0.33	0.83	0.60	0.51	0.13	0.78
Control Delay	43.2	43.6	39.6	17.2	43.2	32.4	5.5	17.2	48.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.2	43.6	39.6	17.2	43.2	32.4	5.5	17.2	48.0
Queue Length 50th (ft)	25	218	96	124	116	172	0	15	151
Queue Length 95th (ft)	m37	#327	#323	184	#196	245	62	32	223
Internal Link Dist (ft)		637		869		563			312
Turn Bay Length (ft)	160		100					75	
Base Capacity (vph)	139	823	342	1410	340	591	748	320	476
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.91	0.78	0.33	0.83	0.56	0.50	0.13	0.60

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
6: Gold Dust West Way & William St

2050 PM Peak Hour - with Improvements



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑↑		↖	↑↑↑		↖	↑		↖	↑	
Traffic Volume (veh/h)	84	1392	100	345	1126	91	101	8	244	100	6	68
Future Volume (veh/h)	84	1392	100	345	1126	91	101	8	244	100	6	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	91	1513	109	375	1224	99	110	9	265	109	7	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	1763	127	407	2531	205	241	9	256	80	23	244
Arrive On Green	0.07	0.36	0.36	0.23	0.53	0.53	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	4859	350	1781	4813	389	1308	52	1527	1102	138	1455
Grp Volume(v), veh/h	91	1060	562	375	866	457	110	0	274	109	0	81
Grp Sat Flow(s),veh/h/ln	1781	1702	1805	1781	1702	1798	1308	0	1579	1102	0	1593
Q Serve(g_s), s	4.5	25.9	25.9	18.5	14.6	14.6	7.2	0.0	15.1	0.0	0.0	4.0
Cycle Q Clear(g_c), s	4.5	25.9	25.9	18.5	14.6	14.6	11.3	0.0	15.1	15.1	0.0	4.0
Prop In Lane	1.00		0.19	1.00		0.22	1.00		0.97	1.00		0.91
Lane Grp Cap(c), veh/h	116	1235	655	407	1790	945	241	0	265	80	0	267
V/C Ratio(X)	0.78	0.86	0.86	0.92	0.48	0.48	0.46	0.00	1.03	1.36	0.00	0.30
Avail Cap(c_a), veh/h	202	1235	655	412	1790	945	241	0	265	80	0	267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.4	26.5	26.5	33.9	13.6	13.6	37.8	0.0	37.5	45.0	0.0	32.8
Incr Delay (d2), s/veh	4.3	7.8	13.7	25.4	0.9	1.8	0.5	0.0	64.4	224.6	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	11.0	12.8	10.4	5.2	5.7	2.3	0.0	10.5	6.8	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.7	34.4	40.2	59.4	14.5	15.3	38.3	0.0	101.9	269.6	0.0	33.1
LnGrp LOS	D	C	D	E	B	B	D	A	F	F	A	C
Approach Vol, veh/h		1713			1698			384			190	
Approach Delay, s/veh		36.9			24.6			83.7			168.7	
Approach LOS		D			C			F			F	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	26.9	40.1		23.0	12.3	54.7				
Change Period (Y+Rc), s		7.9	6.4	7.4		7.9	* 6.4	7.4				
Max Green Setting (Gmax), s		15.1	20.8	32.4		15.1	* 10	43.0				
Max Q Clear Time (g_c+I1), s		17.1	20.5	27.9		17.1	6.5	16.6				
Green Ext Time (p_c), s		0.0	0.0	3.2		0.0	0.0	8.0				

Intersection Summary

HCM 6th Ctrl Delay	42.5
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
6: Gold Dust West Way & William St

2050 PM Peak Hour - with Improvements



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	91	1622	375	1323	110	274	109	81
v/c Ratio	0.56	0.88	0.94	0.50	0.50	0.57	0.95	0.25
Control Delay	42.7	20.9	68.1	15.3	43.1	10.2	113.0	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.7	20.9	68.1	15.3	43.1	10.2	113.0	11.8
Queue Length 50th (ft)	52	160	209	178	58	4	62	3
Queue Length 95th (ft)	m61	m210	#375	226	111	73	#165	43
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	200	1848	409	2641	219	483	115	327
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.88	0.92	0.50	0.50	0.57	0.95	0.25

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
1: Carson St & William St

2030 AM Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	97	3	144	283	170	13	251	74	262	406	49
Future Volume (veh/h)	12	97	3	144	283	170	13	251	74	262	406	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	105	3	157	308	185	14	273	80	285	441	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	347	10	380	382	321	424	1054	302	609	830	699
Arrive On Green	0.06	0.19	0.19	0.07	0.20	0.20	0.06	0.39	0.39	0.11	0.44	0.44
Sat Flow, veh/h	1781	1809	52	1781	1870	1573	1781	2720	781	1781	1870	1576
Grp Volume(v), veh/h	13	0	108	157	308	185	14	176	177	285	441	53
Grp Sat Flow(s),veh/h/ln	1781	0	1860	1781	1870	1573	1781	1777	1724	1781	1870	1576
Q Serve(g_s), s	0.5	0.0	4.5	6.0	14.1	9.5	0.4	6.1	6.3	8.2	15.4	1.7
Cycle Q Clear(g_c), s	0.5	0.0	4.5	6.0	14.1	9.5	0.4	6.1	6.3	8.2	15.4	1.7
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	221	0	357	380	382	321	424	688	668	609	830	699
V/C Ratio(X)	0.06	0.00	0.30	0.41	0.81	0.58	0.03	0.26	0.26	0.47	0.53	0.08
Avail Cap(c_a), veh/h	222	0	515	380	540	455	424	688	668	637	830	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	0.0	31.2	27.5	34.1	32.3	14.7	18.7	18.8	12.8	18.2	14.4
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.3	3.9	0.6	0.0	0.9	1.0	0.2	2.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.0	2.8	6.8	3.7	0.2	2.6	2.7	3.2	7.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.7	0.0	31.4	27.8	38.1	32.9	14.7	19.6	19.8	13.0	20.7	14.6
LnGrp LOS	C	A	C	C	D	C	B	B	B	B	C	B
Approach Vol, veh/h		121			650			367			779	
Approach Delay, s/veh		30.9			34.1			19.5			17.4	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.6	40.8	11.0	22.7	10.5	45.8	9.9	23.8				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 12	25.8	6.0	24.9	5.0	32.3	* 5	26.0				
Max Q Clear Time (g_c+I1), s	10.2	8.3	8.0	6.5	2.4	17.4	2.5	16.1				
Green Ext Time (p_c), s	0.1	1.3	0.0	0.3	0.0	1.8	0.0	1.2				

Intersection Summary

HCM 6th Ctrl Delay	24.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
2: Stewart St & William St

2030 AM Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	332	111	276	522	12	68	85	113	25	247	12
Future Volume (veh/h)	6	332	111	276	522	12	68	85	113	25	247	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	361	121	300	567	13	74	92	123	27	268	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	925	306	253	1724	39	207	396	333	327	328	16
Arrive On Green	0.01	0.35	0.35	0.05	0.16	0.16	0.05	0.21	0.21	0.03	0.19	0.19
Sat Flow, veh/h	1781	2619	865	1781	3551	81	1781	1870	1574	1781	1768	86
Grp Volume(v), veh/h	7	243	239	300	284	296	74	92	123	27	0	281
Grp Sat Flow(s),veh/h/ln	1781	1777	1707	1781	1777	1855	1781	1870	1574	1781	0	1854
Q Serve(g_s), s	0.4	9.2	9.5	12.8	12.7	12.7	3.0	3.7	6.0	1.1	0.0	13.1
Cycle Q Clear(g_c), s	0.4	9.2	9.5	12.8	12.7	12.7	3.0	3.7	6.0	1.1	0.0	13.1
Prop In Lane	1.00		0.51	1.00		0.04	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	16	628	603	253	863	901	207	396	333	327	0	344
V/C Ratio(X)	0.44	0.39	0.40	1.18	0.33	0.33	0.36	0.23	0.37	0.08	0.00	0.82
Avail Cap(c_a), veh/h	99	628	603	253	863	901	231	582	490	377	0	556
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.4	21.8	21.9	42.9	24.8	24.8	28.7	29.4	30.3	28.3	0.0	35.2
Incr Delay (d2), s/veh	6.9	1.8	1.9	111.7	0.9	0.8	0.4	0.1	0.3	0.0	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	0.2	4.1	4.1	14.0	6.2	6.5	1.3	1.6	2.3	0.5	0.0	6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	23.6	23.8	154.6	25.7	25.6	29.1	29.5	30.6	28.4	0.0	37.2
LnGrp LOS	D	C	C	F	C	C	C	C	C	C	A	D
Approach Vol, veh/h		489			880			289			308	
Approach Delay, s/veh		24.1			69.6			29.9			36.5	
Approach LOS		C			E			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	26.4	18.0	37.4	10.6	24.0	6.1	49.3				
Change Period (Y+Rc), s	5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	5	* 28	* 13	20.3	5.4	* 27	* 5	28.0				
Max Q Clear Time (g_c+1), s	13	8.0	14.8	11.5	5.0	15.1	2.4	14.7				
Green Ext Time (p_c), s	0.0	0.5	0.0	1.4	0.0	0.9	0.0	2.1				

Intersection Summary

HCM 6th Ctrl Delay	47.3
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2030 AM Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	418	20	227	759	121	32	243	126	100	260	48
Future Volume (veh/h)	22	418	20	227	759	121	32	243	126	100	260	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	454	22	247	825	132	35	264	137	109	283	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	364	1408	68	526	1504	241	238	362	182	239	549	100
Arrive On Green	0.01	0.13	0.13	0.20	0.98	0.98	0.03	0.16	0.16	0.06	0.18	0.18
Sat Flow, veh/h	1781	3450	167	1781	3066	491	1781	2281	1147	1781	3000	544
Grp Volume(v), veh/h	24	233	243	247	478	479	35	204	197	109	166	169
Grp Sat Flow(s),veh/h/ln	1781	1777	1840	1781	1777	1780	1781	1777	1651	1781	1777	1767
Q Serve(g_s), s	0.7	10.7	10.7	7.2	1.0	1.0	1.5	9.8	10.3	4.6	7.6	7.8
Cycle Q Clear(g_c), s	0.7	10.7	10.7	7.2	1.0	1.0	1.5	9.8	10.3	4.6	7.6	7.8
Prop In Lane	1.00		0.09	1.00		0.28	1.00		0.69	1.00		0.31
Lane Grp Cap(c), veh/h	364	725	751	526	872	873	238	282	262	239	325	324
V/C Ratio(X)	0.07	0.32	0.32	0.47	0.55	0.55	0.15	0.72	0.75	0.46	0.51	0.52
Avail Cap(c_a), veh/h	418	725	751	543	872	873	280	434	404	239	436	434
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.87	0.87	0.87	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	27.7	27.7	11.3	0.4	0.4	30.2	36.0	36.2	29.6	33.1	33.2
Incr Delay (d2), s/veh	0.0	1.0	1.0	0.2	2.5	2.5	0.1	1.3	1.6	0.5	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	0.3	5.3	5.5	2.2	0.8	0.8	0.6	4.3	4.2	2.0	3.3	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.9	28.7	28.7	11.5	2.9	2.9	30.3	37.3	37.8	30.1	33.6	33.7
LnGrp LOS	B	C	C	B	A	A	C	D	D	C	C	C
Approach Vol, veh/h		500		1204			436			444		
Approach Delay, s/veh		28.0		4.7			37.0			32.8		
Approach LOS		C		A			D			C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	1.0	20.7	15.2	43.1	8.8	22.9	7.8	50.5				
Change Period (Y+Rc), s	5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	5.8	22.0	10.0	28.2	5.0	22.1	5.0	33.7				
Max Q Clear Time (g_c+1/6), s	10.6	12.3	9.2	12.7	3.5	9.8	2.7	3.0				
Green Ext Time (p_c), s	0.0	1.0	0.0	1.8	0.0	1.1	0.0	4.2				

Intersection Summary

HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
4: William St & State St

2030 AM Peak Hour - Proposed Corridor

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	593	1048	116	0	59
Future Vol, veh/h	50	593	1048	116	0	59
Conflicting Peds, #/hr	5	0	0	5	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	645	1139	126	0	64



























Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	1270	0	-	0	-	643
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	-	-	3.32
Pot Cap-1 Maneuver	543	-	-	-	0	416
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	540	-	-	-	-	412
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	540	-	-	-	412
HCM Lane V/C Ratio	0.101	-	-	-	0.156
HCM Control Delay (s)	12.4	-	-	-	15.3
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	0.5

William Street Corridor
5: Saliman Rd & William St

2030 AM Peak Hour - Proposed Corridor

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 						 	
Traffic Volume (vph)	15	242	337	680	905	47	245	151	396	147	485	17
Future Volume (vph)	15	242	337	680	905	47	245	151	396	147	485	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		175	180		155	290		0	160		0
Storage Lanes	2		0	2		0	1		1	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00		1.00		0.98	1.00	1.00	
Frt		0.913			0.993				0.850		0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3200	0	3433	3512	0	1770	1863	1583	1770	3520	0
Flt Permitted	0.950			0.950			0.315			0.603		
Satd. Flow (perm)	3433	3200	0	3433	3512	0	586	1863	1559	1120	3520	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		325			6				430			3
Link Speed (mph)		40			40			25				25
Link Distance (ft)		651			1448			519				771
Travel Time (s)		11.1			24.7			14.2				21.0
Confl. Peds. (#/hr)			5			5	5		5	5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	263	366	739	984	51	266	164	430	160	527	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	629	0	739	1035	0	266	164	430	160	545	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt		NA
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.7	15.5		12.6	15.4		10.5	11.4	11.4	10.5	11.4	11.4
Total Split (s)	12.7	17.5		27.0	31.8		15.2	24.1	24.1	11.4	20.3	20.3
Total Split (%)	14.1%	19.4%		30.0%	35.3%		16.9%	26.8%	26.8%	12.7%	22.6%	22.6%
Maximum Green (s)	5.0	12.0		19.4	26.4		9.7	17.7	17.7	5.9	13.9	13.9
Yellow Time (s)	3.6	4.5		3.5	4.4		3.0	3.4	3.4	3.0	3.4	3.4
All-Red Time (s)	4.1	1.0		4.1	1.0		2.5	3.0	3.0	2.5	3.0	3.0
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)	7.7	5.5		7.6	5.4		5.5	6.4	6.4	5.5	6.4	6.4
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.7	2.7		1.7	2.7		1.9	2.0	2.0	1.9	2.0	2.0

Lane Group	Ø11	Ø12
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	11	12
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0

William Street Corridor
5: Saliman Rd & William St

2030 AM Peak Hour - Proposed Corridor

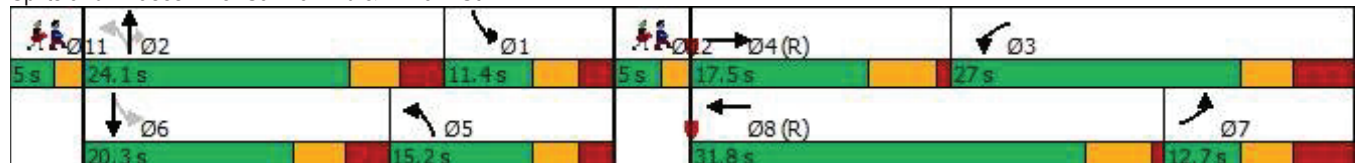


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)		9.0			8.0			9.0	9.0		14.0	
Flash Dont Walk (s)		21.0			20.0			28.0	28.0		28.0	
Pedestrian Calls (#/hr)		5			5			5	5		5	
Act Effct Green (s)	5.0	15.6		19.8	40.6		23.5	12.7	12.7	31.8	17.7	
Actuated g/C Ratio	0.06	0.17		0.22	0.45		0.26	0.14	0.14	0.35	0.20	
v/c Ratio	0.08	0.76		0.98	0.65		0.94	0.62	0.73	0.32	0.78	
Control Delay	29.5	30.4		57.9	21.1		74.8	46.2	11.5	24.0	44.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	29.5	30.4		57.9	21.1		74.8	46.2	11.5	24.0	44.4	
LOS	C	C		E	C		E	D	B	C	D	
Approach Delay		30.4			36.4			37.7			39.7	
Approach LOS		C			D			D			D	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.98
Intersection Signal Delay:	36.3
Intersection LOS:	D
Intersection Capacity Utilization	96.0%
ICU Level of Service	F
Analysis Period (min)	15

Splits and Phases: 5: Saliman Rd & William St



Lane Group	Ø11	Ø12
Recall Mode	None	None
Walk Time (s)	3.0	3.0
Flash Dont Walk (s)	0.0	0.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

William Street Corridor
6: Gold Dust West Way & William St

2030 AM Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑↑		↖	↑↑↑		↖	↑		↖	↑	
Traffic Volume (veh/h)	17	736	22	32	1614	22	13	0	12	9	0	10
Future Volume (veh/h)	17	736	22	32	1614	22	13	0	12	9	0	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.97		0.97	0.97		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	800	24	35	1754	24	14	0	13	10	0	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	3478	104	58	3608	49	130	0	67	128	0	67
Arrive On Green	0.02	0.68	0.68	0.03	0.70	0.70	0.04	0.00	0.04	0.04	0.00	0.04
Sat Flow, veh/h	1781	5094	153	1781	5190	71	1360	0	1542	1358	0	1542
Grp Volume(v), veh/h	18	534	290	35	1150	628	14	0	13	10	0	11
Grp Sat Flow(s),veh/h/ln	1781	1702	1842	1781	1702	1857	1360	0	1542	1358	0	1542
Q Serve(g_s), s	0.9	5.3	5.3	1.7	14.0	14.0	0.9	0.0	0.7	0.6	0.0	0.6
Cycle Q Clear(g_c), s	0.9	5.3	5.3	1.7	14.0	14.0	1.5	0.0	0.7	1.4	0.0	0.6
Prop In Lane	1.00		0.08	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	36	2325	1258	58	2366	1291	130	0	67	128	0	67
V/C Ratio(X)	0.50	0.23	0.23	0.61	0.49	0.49	0.11	0.00	0.19	0.08	0.00	0.16
Avail Cap(c_a), veh/h	131	2325	1258	170	2366	1291	178	0	122	176	0	122
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.6	5.4	5.4	43.0	6.3	6.3	42.2	0.0	41.5	42.2	0.0	41.5
Incr Delay (d2), s/veh	4.0	0.2	0.4	3.8	0.7	1.3	0.1	0.0	0.5	0.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	1.5	1.7	0.8	4.0	4.5	0.3	0.0	0.3	0.2	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.6	5.6	5.8	46.7	7.0	7.6	42.3	0.0	42.0	42.3	0.0	41.9
LnGrp LOS	D	A	A	D	A	A	D	A	D	D	A	D
Approach Vol, veh/h		842			1813			27				21
Approach Delay, s/veh		6.6			8.0			42.2				42.1
Approach LOS		A			A			D				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		11.8	9.3	68.9		11.8	8.2	70.0				
Change Period (Y+Rc), s		7.9	6.4	7.4		7.9	* 6.4	7.4				
Max Green Setting (Gmax), s		7.1	8.6	52.6		7.1	* 6.6	54.6				
Max Q Clear Time (g_c+I1), s		3.5	3.7	7.3		3.4	2.9	16.0				
Green Ext Time (p_c), s		0.0	0.0	4.6		0.0	0.0	13.5				
Intersection Summary												
HCM 6th Ctrl Delay			8.2									
HCM 6th LOS			A									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
1: Carson St & William St

2030 AM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	13	108	157	308	185	14	353	285	441	53
v/c Ratio	0.06	0.44	0.47	0.67	0.33	0.03	0.24	0.45	0.41	0.06
Control Delay	20.2	38.9	14.0	22.2	4.8	11.1	17.1	12.5	14.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.2	38.9	14.0	22.2	4.8	11.1	17.1	12.5	14.9	0.1
Queue Length 50th (ft)	5	58	40	136	9	3	57	69	119	0
Queue Length 95th (ft)	16	88	12	260	102	14	111	153	312	0
Internal Link Dist (ft)		326		302			201		484	
Turn Bay Length (ft)	80		100			130		140		
Base Capacity (vph)	229	514	337	543	613	510	1492	648	1083	958
Starvation Cap Reductn	0	0	0	0	0	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	0.06	0.21	0.47	0.57	0.30	0.03	0.24	0.44	0.41	0.06

Intersection Summary

William Street Corridor
2: Stewart St & William St

2030 AM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	7	482	300	580	74	92	123	27	281
v/c Ratio	0.07	0.58	0.70	0.32	0.26	0.18	0.21	0.07	0.74
Control Delay	44.0	31.9	34.4	10.6	20.0	24.6	0.8	16.8	44.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.0	31.9	34.4	10.6	20.0	24.6	0.8	16.8	44.2
Queue Length 50th (ft)	3	142	93	81	27	35	0	10	150
Queue Length 95th (ft)	m11	176	#356	224	49	74	0	23	207
Internal Link Dist (ft)		255		869		563			312
Turn Bay Length (ft)	160		100					75	
Base Capacity (vph)	98	882	427	1814	285	595	653	373	556
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.55	0.70	0.32	0.26	0.15	0.19	0.07	0.51

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
3: Roop St & William St

2030 AM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	24	476	247	957	35	401	109	335
v/c Ratio	0.08	0.33	0.48	0.52	0.13	0.71	0.41	0.46
Control Delay	7.7	12.0	10.9	7.6	21.2	41.8	26.4	30.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.7	12.0	10.9	7.6	21.2	41.8	26.4	30.9
Queue Length 50th (ft)	2	30	39	85	14	115	45	85
Queue Length 95th (ft)	m8	185	m62	m87	32	148	76	117
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	300	1431	533	1843	271	815	269	883
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.33	0.46	0.52	0.13	0.49	0.41	0.38

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
5: Saliman Rd & William St

2030 AM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	16	629	739	1035	266	164	430	160	545
v/c Ratio	0.08	0.76	0.98	0.65	0.94	0.62	0.73	0.32	0.78
Control Delay	29.5	30.4	57.9	21.1	74.8	46.2	11.5	24.0	44.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.5	30.4	57.9	21.1	74.8	46.2	11.5	24.0	44.4
Queue Length 50th (ft)	5	26	217	218	107	88	0	60	152
Queue Length 95th (ft)	m8	#197	#323	#427	#247	143	82	116	#275
Internal Link Dist (ft)		571		1368		439			691
Turn Bay Length (ft)	240		180		290			160	
Base Capacity (vph)	190	823	755	1585	282	366	652	502	695
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.76	0.98	0.65	0.94	0.45	0.66	0.32	0.78

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
 6: Gold Dust West Way & William St

2030 AM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	18	824	35	1778	14	13	10	11
v/c Ratio	0.17	0.21	0.28	0.44	0.11	0.04	0.08	0.05
Control Delay	41.1	5.8	44.8	6.4	40.5	0.2	39.7	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.1	5.8	44.8	6.4	40.5	0.2	39.7	0.4
Queue Length 50th (ft)	10	55	19	100	8	0	6	0
Queue Length 95th (ft)	m19	89	48	260	26	0	21	0
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	129	3879	169	4065	153	384	153	257
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.21	0.21	0.44	0.09	0.03	0.07	0.04

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
1: Carson St & William St

2030 MD Peak Hour - Proposed Corridor

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	120	5	157	131	303	8	487	118	253	484	34
Future Volume (veh/h)	20	120	5	157	131	303	8	487	118	253	484	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	130	5	171	142	329	9	529	128	275	526	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	340	404	16	404	445	375	330	997	240	443	766	646
Arrive On Green	0.06	0.23	0.23	0.07	0.24	0.24	0.06	0.35	0.35	0.12	0.41	0.41
Sat Flow, veh/h	1781	1788	69	1781	1870	1575	1781	2836	683	1781	1870	1575
Grp Volume(v), veh/h	22	0	135	171	142	329	9	331	326	275	526	37
Grp Sat Flow(s),veh/h/ln	1781	0	1857	1781	1870	1575	1781	1777	1742	1781	1870	1575
Q Serve(g_s), s	0.8	0.0	5.5	6.0	5.6	18.1	0.3	13.3	13.5	8.4	20.8	1.3
Cycle Q Clear(g_c), s	0.8	0.0	5.5	6.0	5.6	18.1	0.3	13.3	13.5	8.4	20.8	1.3
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	340	0	419	404	445	375	330	624	612	443	766	646
V/C Ratio(X)	0.06	0.00	0.32	0.42	0.32	0.88	0.03	0.53	0.53	0.62	0.69	0.06
Avail Cap(c_a), veh/h	340	0	514	404	540	455	330	624	612	476	766	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	29.1	25.6	28.3	33.0	17.3	23.3	23.3	15.9	21.8	16.1
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.3	0.2	13.6	0.0	3.2	3.3	1.5	5.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.4	2.9	2.5	8.2	0.1	6.1	6.0	3.5	9.9	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.7	0.0	29.3	25.9	28.4	46.6	17.3	26.4	26.6	17.4	26.8	16.2
LnGrp LOS	C	A	C	C	C	D	B	C	C	B	C	B
Approach Vol, veh/h		157			642			666			838	
Approach Delay, s/veh		28.5			37.1			26.4			23.2	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.8	37.5	11.0	25.7	10.5	42.8	9.9	26.8				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 12	25.4	6.0	24.9	5.0	32.3	* 5	26.0				
Max Q Clear Time (g_c+I1), s	10.4	15.5	8.0	7.5	2.3	22.8	2.8	20.1				
Green Ext Time (p_c), s	0.1	2.2	0.0	0.4	0.0	1.8	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay			28.4									
HCM 6th LOS			C									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
2: Stewart St & William St

2030 MD Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	369	100	229	439	29	135	245	238	43	277	23
Future Volume (veh/h)	24	369	100	229	439	29	135	245	238	43	277	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	401	109	249	477	32	147	266	259	47	301	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	47	845	227	257	1428	96	244	460	387	254	353	29
Arrive On Green	0.03	0.31	0.31	0.05	0.14	0.14	0.07	0.25	0.25	0.04	0.21	0.21
Sat Flow, veh/h	1781	2763	743	1781	3379	226	1781	1870	1575	1781	1702	141
Grp Volume(v), veh/h	26	256	254	249	250	259	147	266	259	47	0	326
Grp Sat Flow(s),veh/h/ln	1781	1777	1729	1781	1777	1828	1781	1870	1575	1781	0	1844
Q Serve(g_s), s	1.3	10.5	10.7	12.6	11.4	11.5	5.8	11.3	13.4	1.8	0.0	15.3
Cycle Q Clear(g_c), s	1.3	10.5	10.7	12.6	11.4	11.5	5.8	11.3	13.4	1.8	0.0	15.3
Prop In Lane	1.00		0.43	1.00		0.12	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	47	543	529	257	751	773	244	460	387	254	0	382
V/C Ratio(X)	0.55	0.47	0.48	0.97	0.33	0.33	0.60	0.58	0.67	0.19	0.00	0.85
Avail Cap(c_a), veh/h	111	543	529	257	751	773	244	582	490	285	0	535
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.3	25.3	25.4	42.6	27.3	27.3	27.1	29.8	30.6	26.6	0.0	34.3
Incr Delay (d2), s/veh	3.7	2.9	3.1	43.2	1.0	1.0	3.0	0.4	1.2	0.1	0.0	6.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.8	4.8	9.1	5.6	5.8	2.6	4.9	5.1	0.8	0.0	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.9	28.3	28.5	85.8	28.3	28.3	30.1	30.3	31.9	26.8	0.0	41.3
LnGrp LOS	D	C	C	F	C	C	C	C	C	C	A	D
Approach Vol, veh/h		536			758			672			373	
Approach Delay, s/veh		29.3			47.2			30.9			39.4	
Approach LOS		C			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.3	29.4	18.2	33.1	12.7	26.0	7.7	43.6				
Change Period (Y+Rc), s	5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	5	* 28	* 13	20.1	6.3	* 26	* 5.6	27.4				
Max Q Clear Time (g_c+13), s	13.8	15.4	14.6	12.7	7.8	17.3	3.3	13.5				
Green Ext Time (p_c), s	0.0	1.2	0.0	1.4	0.0	0.9	0.0	1.8				

Intersection Summary

HCM 6th Ctrl Delay	37.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2030 MD Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	574	35	216	593	108	47	311	167	156	311	65
Future Volume (veh/h)	47	574	35	216	593	108	47	311	167	156	311	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	624	38	235	645	117	51	338	182	170	338	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	403	1216	74	401	1270	230	274	424	224	271	668	139
Arrive On Green	0.01	0.12	0.12	0.20	0.85	0.85	0.04	0.19	0.19	0.09	0.23	0.23
Sat Flow, veh/h	1781	3402	207	1781	3003	544	1781	2241	1182	1781	2926	607
Grp Volume(v), veh/h	51	326	336	235	381	381	51	266	254	170	204	205
Grp Sat Flow(s),veh/h/ln	1781	1777	1832	1781	1777	1770	1781	1777	1646	1781	1777	1756
Q Serve(g_s), s	1.6	15.5	15.5	7.5	5.2	5.2	2.0	12.9	13.3	6.8	9.0	9.2
Cycle Q Clear(g_c), s	1.6	15.5	15.5	7.5	5.2	5.2	2.0	12.9	13.3	6.8	9.0	9.2
Prop In Lane	1.00		0.11	1.00		0.31	1.00		0.72	1.00		0.35
Lane Grp Cap(c), veh/h	403	635	655	401	751	749	274	336	312	271	405	401
V/C Ratio(X)	0.13	0.51	0.51	0.59	0.51	0.51	0.19	0.79	0.81	0.63	0.50	0.51
Avail Cap(c_a), veh/h	432	635	655	401	751	749	303	434	402	271	474	468
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.3	32.3	32.4	14.7	4.4	4.4	27.7	34.8	35.0	27.1	30.3	30.4
Incr Delay (d2), s/veh	0.0	2.5	2.4	1.5	2.4	2.5	0.1	5.6	7.4	3.4	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	0.7	7.8	8.0	2.5	1.7	1.7	0.9	6.0	5.9	3.1	3.9	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	34.8	34.8	16.2	6.9	6.9	27.8	40.4	42.3	30.5	30.6	30.7
LnGrp LOS	B	C	C	B	A	A	C	D	D	C	C	C
Approach Vol, veh/h		713		997		571		579				
Approach Delay, s/veh		33.6		9.1		40.1		30.6				
Approach LOS		C		A		D		C				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.0	23.4	15.0	38.6	9.5	26.9	9.1	44.5				
Change Period (Y+Rc), s	5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	7.8	22.0	9.0	27.2	5.1	24.0	5.1	31.6				
Max Q Clear Time (g_c+1/3), s	13.8	15.3	9.5	17.5	4.0	11.2	3.6	7.2				
Green Ext Time (p_c), s	0.0	1.1	0.0	2.1	0.0	1.4	0.0	3.0				

Intersection Summary

HCM 6th Ctrl Delay	25.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
4: William St & State St

2030 MD Peak Hour - Proposed Corridor

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	92	804	850	97	0	66
Future Vol, veh/h	92	804	850	97	0	66
Conflicting Peds, #/hr	5	0	0	5	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	100	874	924	105	0	72



























Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1034	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	3.32
Pot Cap-1 Maneuver	668	-	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	665	-	492
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	665	-	-	-	492
HCM Lane V/C Ratio	0.15	-	-	-	0.146
HCM Control Delay (s)	11.4	-	-	-	13.6
HCM Lane LOS	B	-	-	-	B
HCM 95th %tile Q(veh)	0.5	-	-	-	0.5

William Street Corridor
5: Saliman Rd & William St

2030 MD Peak Hour - Proposed Corridor

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 						 	
Traffic Volume (vph)	33	624	149	351	724	85	194	186	382	138	77	31
Future Volume (vph)	33	624	149	351	724	85	194	186	382	138	77	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		175	180		155	290		0	160		0
Storage Lanes	2		0	2		0	1		1	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00			1.00				0.98	1.00	1.00	
Fr _t		0.971			0.984				0.850		0.957	
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3426	0	3433	3476	0	1770	1863	1583	1770	3372	0
Fl _t Permitted	0.950			0.950			0.677			0.597		
Satd. Flow (perm)	3433	3426	0	3433	3476	0	1261	1863	1559	1109	3372	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			16				354		34	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		651			1448			519			771	
Travel Time (s)		11.1			24.7			14.2			21.0	
Confl. Peds. (#/hr)			5			5			5	5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	678	162	382	787	92	211	202	415	150	84	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	840	0	382	879	0	211	202	415	150	118	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.7	15.5		12.6	15.4		10.5	11.4	11.4	10.5	11.4	
Total Split (s)	12.7	31.8		19.0	38.1		14.3	18.2	18.2	11.0	14.9	
Total Split (%)	14.1%	35.3%		21.1%	42.3%		15.9%	20.2%	20.2%	12.2%	16.6%	
Maximum Green (s)	5.0	26.3		11.4	32.7		8.8	11.8	11.8	5.5	8.5	
Yellow Time (s)	3.6	4.5		3.5	4.4		3.0	3.4	3.4	3.0	3.4	
All-Red Time (s)	4.1	1.0		4.1	1.0		2.5	3.0	3.0	2.5	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.7	5.5		7.6	5.4		5.5	6.4	6.4	5.5	6.4	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.7	2.7		1.7	2.7		1.9	2.0	2.0	1.9	2.0	

Lane Group	Ø11	Ø12
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	11	12
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0

William Street Corridor
5: Saliman Rd & William St

2030 MD Peak Hour - Proposed Corridor

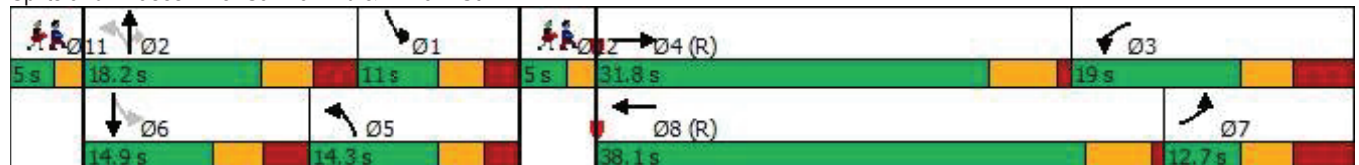


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)		9.0			8.0			9.0	9.0		14.0	
Flash Dont Walk (s)		21.0			20.0			28.0	28.0		28.0	
Pedestrian Calls (#/hr)		5			5			5	5		5	
Act Effct Green (s)	6.7	31.8		11.7	42.0		25.3	13.5	13.5	13.6	6.7	
Actuated g/C Ratio	0.07	0.35		0.13	0.47		0.28	0.15	0.15	0.15	0.07	
v/c Ratio	0.14	0.68		0.86	0.54		0.50	0.72	0.78	0.71	0.42	
Control Delay	31.8	23.6		51.9	12.1		32.4	52.9	18.6	49.7	32.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	31.8	23.6		51.9	12.1		32.4	52.9	18.6	49.7	32.7	
LOS	C	C		D	B		C	D	B	D	C	
Approach Delay		23.9			24.2			30.4			42.2	
Approach LOS		C			C			C			D	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	56 (62%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.86
Intersection Signal Delay:	27.2
Intersection LOS:	C
Intersection Capacity Utilization	76.5%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 5: Saliman Rd & William St



Lane Group	Ø11	Ø12
Recall Mode	None	None
Walk Time (s)	3.0	3.0
Flash Dont Walk (s)	0.0	0.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

William Street Corridor
6: Gold Dust West Way & William St

2030 MD Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑↑		↖	↑↑↑		↖	↑		↖	↑	
Traffic Volume (veh/h)	83	1045	33	62	1081	68	49	6	54	63	8	47
Future Volume (veh/h)	83	1045	33	62	1081	68	49	6	54	63	8	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	90	1136	36	67	1175	74	53	7	59	68	9	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	3004	95	86	2820	178	193	20	170	188	29	163
Arrive On Green	0.06	0.59	0.59	0.05	0.57	0.57	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	5084	161	1781	4908	309	1329	169	1424	1323	241	1364
Grp Volume(v), veh/h	90	761	411	67	815	434	53	0	66	68	0	60
Grp Sat Flow(s),veh/h/ln	1781	1702	1841	1781	1702	1813	1329	0	1593	1323	0	1604
Q Serve(g_s), s	4.5	10.6	10.6	3.3	12.0	12.1	3.4	0.0	3.4	4.5	0.0	3.1
Cycle Q Clear(g_c), s	4.5	10.6	10.6	3.3	12.0	12.1	6.5	0.0	3.4	7.9	0.0	3.1
Prop In Lane	1.00		0.09	1.00		0.17	1.00		0.89	1.00		0.85
Lane Grp Cap(c), veh/h	115	2012	1088	86	1956	1042	193	0	190	188	0	192
V/C Ratio(X)	0.78	0.38	0.38	0.78	0.42	0.42	0.27	0.00	0.35	0.36	0.00	0.31
Avail Cap(c_a), veh/h	269	2012	1088	230	1956	1042	272	0	285	266	0	287
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.4	9.7	9.7	42.3	10.7	10.7	39.2	0.0	36.4	40.0	0.0	36.2
Incr Delay (d2), s/veh	4.2	0.5	1.0	5.5	0.7	1.2	0.3	0.0	0.4	0.4	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	3.5	4.0	1.6	4.1	4.5	1.1	0.0	1.4	1.5	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.7	10.2	10.7	47.8	11.4	11.9	39.5	0.0	36.8	40.5	0.0	36.6
LnGrp LOS	D	B	B	D	B	B	D	A	D	D	A	D
Approach Vol, veh/h		1262			1316			119				128
Approach Delay, s/veh		12.9			13.4			38.0				38.7
Approach LOS		B			B			D				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.6	10.8	60.6		18.6	12.2	59.1				
Change Period (Y+Rc), s		7.9	6.4	7.4		7.9	* 6.4	7.4				
Max Green Setting (Gmax), s		16.1	11.6	40.6		16.1	* 14	38.6				
Max Q Clear Time (g_c+I1), s		8.5	5.3	12.6		9.9	6.5	14.1				
Green Ext Time (p_c), s		0.2	0.0	6.8		0.1	0.0	7.2				

Intersection Summary

HCM 6th Ctrl Delay	15.4
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
1: Carson St & William St

2030 MD Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	22	135	171	142	329	9	657	275	526	37
v/c Ratio	0.08	0.51	0.50	0.31	0.52	0.02	0.48	0.60	0.50	0.04
Control Delay	20.4	40.3	20.1	20.1	8.7	11.6	22.6	16.8	17.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.4	40.3	20.1	20.1	8.7	11.6	22.6	16.8	17.4	0.1
Queue Length 50th (ft)	9	73	82	65	78	2	140	70	162	0
Queue Length 95th (ft)	22	107	34	m112	188	10	225	147	#424	0
Internal Link Dist (ft)		326		302			201		484	
Turn Bay Length (ft)	80		100			130		140		
Base Capacity (vph)	282	513	342	540	684	413	1365	471	1042	928
Starvation Cap Reductn	0	0	0	0	0	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	0.08	0.26	0.50	0.26	0.48	0.02	0.48	0.58	0.50	0.04

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
2: Stewart St & William St

2030 MD Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	26	510	249	509	147	266	259	47	326
v/c Ratio	0.25	0.60	0.78	0.34	0.48	0.47	0.40	0.13	0.80
Control Delay	48.0	27.6	40.6	14.6	23.5	29.1	5.2	16.6	46.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.0	27.6	40.6	14.6	23.5	29.1	5.2	16.6	46.7
Queue Length 50th (ft)	15	146	80	65	52	128	0	16	173
Queue Length 95th (ft)	m27	164	#289	206	88	193	52	34	246
Internal Link Dist (ft)		255		869		563			312
Turn Bay Length (ft)	160		100					75	
Base Capacity (vph)	112	879	320	1513	305	598	675	365	536
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.58	0.78	0.34	0.48	0.44	0.38	0.13	0.61

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
3: Roop St & William St

2030 MD Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	662	235	762	51	520	170	409
v/c Ratio	0.16	0.56	0.67	0.51	0.17	0.79	0.58	0.42
Control Delay	9.5	19.2	29.2	13.5	19.3	42.9	28.0	26.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.5	19.2	29.2	13.5	19.3	42.9	28.0	26.8
Queue Length 50th (ft)	7	191	74	83	18	148	65	98
Queue Length 95th (ft)	m12	232	#169	163	41	194	108	137
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	312	1201	359	1521	302	814	298	983
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.55	0.65	0.50	0.17	0.64	0.57	0.42

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
5: Saliman Rd & William St

2030 MD Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	36	840	382	879	211	202	415	150	118
v/c Ratio	0.14	0.68	0.86	0.54	0.50	0.72	0.78	0.71	0.42
Control Delay	31.8	23.6	51.9	12.1	32.4	52.9	18.6	49.7	32.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.8	23.6	51.9	12.1	32.4	52.9	18.6	49.7	32.7
Queue Length 50th (ft)	10	102	118	222	92	107	30	63	24
Queue Length 95th (ft)	m17	#230	#192	75	167	#231	#177	#138	50
Internal Link Dist (ft)		571		1368		439			691
Turn Bay Length (ft)	240		180		290			160	
Base Capacity (vph)	253	1233	449	1632	426	287	539	211	349
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.68	0.85	0.54	0.50	0.70	0.77	0.71	0.34

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
6: Gold Dust West Way & William St

2030 MD Peak Hour - Proposed Corridor



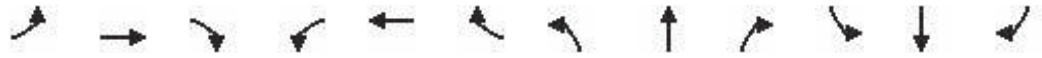
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	90	1172	67	1249	53	66	68	60
v/c Ratio	0.52	0.37	0.44	0.40	0.36	0.29	0.46	0.27
Control Delay	44.9	11.2	47.2	12.7	41.7	14.2	45.8	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.9	11.2	47.2	12.7	41.7	14.2	45.8	15.3
Queue Length 50th (ft)	51	119	37	139	29	4	37	5
Queue Length 95th (ft)	m54	238	75	241	58	37	71	36
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	267	3213	228	3137	245	340	243	336
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.36	0.29	0.40	0.22	0.19	0.28	0.18

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
1: Carson St & William St

2030 PM Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	228	15	128	94	410	4	520	177	291	440	29
Future Volume (veh/h)	23	228	15	128	94	410	4	520	177	291	440	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	248	16	139	102	446	4	565	192	316	478	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	347	415	27	321	486	410	361	895	303	419	791	667
Arrive On Green	0.05	0.24	0.24	0.07	0.26	0.26	0.05	0.34	0.34	0.13	0.42	0.42
Sat Flow, veh/h	1781	1737	112	1781	1870	1576	1781	2600	881	1781	1870	1576
Grp Volume(v), veh/h	25	0	264	139	102	446	4	386	371	316	478	32
Grp Sat Flow(s),veh/h/ln	1781	0	1849	1781	1870	1576	1781	1777	1704	1781	1870	1576
Q Serve(g_s), s	1.0	0.0	12.7	5.8	4.3	26.0	0.1	18.2	18.3	10.9	19.8	1.2
Cycle Q Clear(g_c), s	1.0	0.0	12.7	5.8	4.3	26.0	0.1	18.2	18.3	10.9	19.8	1.2
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.52	1.00		1.00
Lane Grp Cap(c), veh/h	347	0	442	321	486	410	361	612	587	419	791	667
V/C Ratio(X)	0.07	0.00	0.60	0.43	0.21	1.09	0.01	0.63	0.63	0.75	0.60	0.05
Avail Cap(c_a), veh/h	349	0	444	321	486	410	361	612	587	519	791	667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	0.0	33.8	26.8	29.0	37.0	19.1	27.5	27.5	19.2	22.4	17.0
Incr Delay (d2), s/veh	0.0	0.0	1.5	0.3	0.1	70.4	0.0	4.9	5.1	3.6	3.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	5.9	2.5	1.9	17.9	0.1	8.5	8.2	4.8	9.3	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.7	0.0	35.3	27.2	29.0	107.4	19.1	32.3	32.6	22.8	25.8	17.1
LnGrp LOS	C	A	D	C	C	F	B	C	C	C	C	B
Approach Vol, veh/h		289			687			761			826	
Approach Delay, s/veh		34.5			79.5			32.4			24.3	
Approach LOS		C			E			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.4	40.3	12.0	29.3	10.5	48.2	9.9	31.4				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 19	28.7	7.0	24.0	5.0	42.2	* 5.1	26.0				
Max Q Clear Time (g_c+I1), s	12.9	20.3	7.8	14.7	2.1	21.8	3.0	28.0				
Green Ext Time (p_c), s	0.2	2.3	0.0	0.7	0.0	2.1	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			42.7									
HCM 6th LOS			D									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
2: Stewart St & William St

2030 PM Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	526	129	207	401	28	230	303	317	40	211	16
Future Volume (veh/h)	44	526	129	207	401	28	230	303	317	40	211	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	572	140	225	436	30	250	329	345	43	229	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	953	233	369	1337	92	281	546	460	241	280	21
Arrive On Green	0.04	0.34	0.34	0.03	0.13	0.13	0.16	0.29	0.29	0.03	0.16	0.16
Sat Flow, veh/h	1781	2827	690	1781	3373	231	1781	1870	1577	1781	1718	128
Grp Volume(v), veh/h	48	359	353	225	229	237	250	329	345	43	0	246
Grp Sat Flow(s),veh/h/ln	1781	1777	1740	1781	1777	1827	1781	1870	1577	1781	0	1846
Q Serve(g_s), s	2.7	16.8	16.9	7.7	11.7	11.8	13.7	15.1	19.8	2.0	0.0	12.9
Cycle Q Clear(g_c), s	2.7	16.8	16.9	7.7	11.7	11.8	13.7	15.1	19.8	2.0	0.0	12.9
Prop In Lane	1.00		0.40	1.00		0.13	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	66	599	587	369	705	724	281	546	460	241	0	301
V/C Ratio(X)	0.73	0.60	0.60	0.61	0.33	0.33	0.89	0.60	0.75	0.18	0.00	0.82
Avail Cap(c_a), veh/h	125	599	587	389	705	724	314	658	555	268	0	406
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.7	27.5	27.6	21.1	31.3	31.3	41.3	30.4	32.1	33.0	0.0	40.4
Incr Delay (d2), s/veh	5.7	4.4	4.5	1.5	1.1	1.0	22.3	0.4	3.5	0.1	0.0	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	7.8	7.7	3.6	5.8	6.0	7.6	6.7	7.9	0.9	0.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.4	31.9	32.1	22.5	32.4	32.4	63.5	30.8	35.6	33.1	0.0	47.3
LnGrp LOS	D	C	C	C	C	C	E	C	D	C	A	D
Approach Vol, veh/h		760			691			924			289	
Approach Delay, s/veh		33.4			29.2			41.4			45.2	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.3	36.5	14.9	39.3	22.2	23.6	9.0	45.3				
Change Period (Y+Rc), s	5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	5	* 35	* 11	25.1	17.6	* 22	* 7	28.8				
Max Q Clear Time (g_c+14), s	14.8	21.8	9.7	18.9	15.7	14.9	4.7	13.8				
Green Ext Time (p_c), s	0.0	1.6	0.0	1.8	0.0	0.5	0.0	1.7				

Intersection Summary

HCM 6th Ctrl Delay	36.4
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2030 PM Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	731	83	170	537	115	39	342	243	202	336	68
Future Volume (veh/h)	90	731	83	170	537	115	39	342	243	202	336	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	98	795	90	185	584	125	42	372	264	220	365	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	395	1119	127	302	1130	241	305	425	297	295	837	168
Arrive On Green	0.03	0.23	0.23	0.17	0.78	0.78	0.03	0.21	0.21	0.11	0.28	0.28
Sat Flow, veh/h	1781	3216	364	1781	2911	621	1781	1992	1393	1781	2946	591
Grp Volume(v), veh/h	98	439	446	185	356	353	42	331	305	220	219	220
Grp Sat Flow(s),veh/h/ln	1781	1777	1803	1781	1777	1756	1781	1777	1608	1781	1777	1760
Q Serve(g_s), s	3.5	22.7	22.7	6.7	7.5	7.5	1.8	18.0	18.4	9.2	10.0	10.3
Cycle Q Clear(g_c), s	3.5	22.7	22.7	6.7	7.5	7.5	1.8	18.0	18.4	9.2	10.0	10.3
Prop In Lane	1.00		0.20	1.00		0.35	1.00		0.87	1.00		0.34
Lane Grp Cap(c), veh/h	395	618	627	302	690	682	305	379	343	295	505	500
V/C Ratio(X)	0.25	0.71	0.71	0.61	0.52	0.52	0.14	0.87	0.89	0.75	0.43	0.44
Avail Cap(c_a), veh/h	419	618	627	326	690	682	335	419	379	305	526	521
HCM Platoon Ratio	0.67	0.67	0.67	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.5	33.7	33.7	19.4	7.7	7.7	29.0	38.0	38.2	27.0	29.2	29.3
Incr Delay (d2), s/veh	0.1	5.4	5.4	1.9	2.7	2.8	0.1	15.8	19.3	8.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	11.2	11.4	2.5	2.5	2.5	0.8	9.5	9.1	4.5	4.3	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.6	39.1	39.1	21.3	10.4	10.5	29.1	53.8	57.5	35.1	29.5	29.5
LnGrp LOS	B	D	D	C	B	B	C	D	E	D	C	C
Approach Vol, veh/h		983			894			678			659	
Approach Delay, s/veh		37.2			12.7			54.0			31.4	
Approach LOS		D			B			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.4	27.7	14.7	41.2	9.3	34.8	10.6	45.2				
Change Period (Y+Rc), s	5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	18	23.6	10.0	30.6	5.1	29.6	6.5	34.6				
Max Q Clear Time (g_c+fl), s	18	20.4	8.7	24.7	3.8	12.3	5.5	9.5				
Green Ext Time (p_c), s	0.0	0.8	0.0	2.2	0.0	1.7	0.0	2.8				

Intersection Summary

HCM 6th Ctrl Delay	32.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
4: William St & State St

2030 PM Peak Hour - Proposed Corridor

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	91	1083	740	91	0	73
Future Vol, veh/h	91	1083	740	91	0	73
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	1177	804	99	0	79



























Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	908	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	745	-	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	741	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	741	-	-	-	542
HCM Lane V/C Ratio	0.133	-	-	-	0.146
HCM Control Delay (s)	10.6	-	-	-	12.8
HCM Lane LOS	B	-	-	-	B
HCM 95th %tile Q(veh)	0.5	-	-	-	0.5

William Street Corridor
5: Saliman Rd & William St

2030 PM Peak Hour - Proposed Corridor

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 						 	
Traffic Volume (vph)	43	858	184	565	663	92	145	170	458	216	141	23
Future Volume (vph)	43	858	184	565	663	92	145	170	458	216	141	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		175	180		155	290		0	160		0
Storage Lanes	2		0	2		0	1		1	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00			1.00				0.98		1.00	
Frt		0.974			0.982				0.850		0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3437	0	3433	3468	0	1770	1863	1583	1770	3457	0
Flt Permitted	0.950			0.950			0.640			0.460		
Satd. Flow (perm)	3433	3437	0	3433	3468	0	1192	1863	1558	857	3457	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27			19				356		15	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		651			1448			519			771	
Travel Time (s)		11.1			24.7			14.2			21.0	
Confl. Peds. (#/hr)			5			5			5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	933	200	614	721	100	158	185	498	235	153	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1133	0	614	821	0	158	185	498	235	178	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.7	15.5		12.6	15.4		10.5	11.4	11.4	10.5	11.4	
Total Split (s)	12.7	37.0		24.0	48.3		12.4	17.0	17.0	12.0	16.6	
Total Split (%)	12.7%	37.0%		24.0%	48.3%		12.4%	17.0%	17.0%	12.0%	16.6%	
Maximum Green (s)	5.0	31.5		16.4	42.9		6.9	10.6	10.6	6.5	10.2	
Yellow Time (s)	3.6	4.5		3.5	4.4		3.0	3.4	3.4	3.0	3.4	
All-Red Time (s)	4.1	1.0		4.1	1.0		2.5	3.0	3.0	2.5	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.7	5.5		7.6	5.4		5.5	6.4	6.4	5.5	6.4	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.7	2.7		1.7	2.7		1.9	2.0	2.0	1.9	2.0	

Lane Group	Ø11	Ø12
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	11	12
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	5%	5%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0

William Street Corridor
5: Saliman Rd & William St

2030 PM Peak Hour - Proposed Corridor

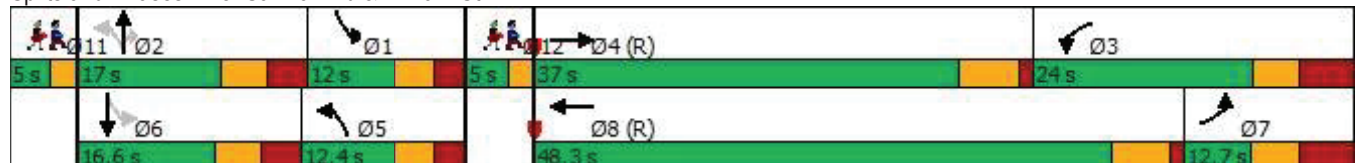


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)		9.0			8.0			9.0	9.0		14.0	
Flash Dont Walk (s)		21.0			20.0			28.0	28.0		28.0	
Pedestrian Calls (#/hr)		5			5			5	5		5	
Act Effct Green (s)	11.2	35.5		16.4	45.8		26.4	14.6	14.6	16.1	8.7	
Actuated g/C Ratio	0.11	0.36		0.16	0.46		0.26	0.15	0.15	0.16	0.09	
v/c Ratio	0.12	0.92		1.09	0.51		0.41	0.68	0.94	1.19	0.57	
Control Delay	32.4	32.0		101.6	14.8		35.6	55.6	40.3	161.2	47.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	32.4	32.0		101.6	14.8		35.6	55.6	40.3	161.2	47.0	
LOS	C	C		F	B		D	E	D	F	D	
Approach Delay		32.1			51.9			42.8			112.0	
Approach LOS		C			D			D			F	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	96 (96%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle:	130
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.19
Intersection Signal Delay:	50.3
Intersection LOS:	D
Intersection Capacity Utilization	90.9%
ICU Level of Service	E
Analysis Period (min)	15

Splits and Phases: 5: Saliman Rd & William St



Lane Group	Ø11	Ø12
Recall Mode	None	None
Walk Time (s)	3.0	3.0
Flash Dont Walk (s)	0.0	0.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

William Street Corridor
6: Gold Dust West Way & William St

2030 PM Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕↕↕↗		↖	↕↕↕↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	82	1429	41	59	1230	69	46	8	35	71	6	57
Future Volume (veh/h)	82	1429	41	59	1230	69	46	8	35	71	6	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	1553	45	64	1337	75	50	9	38	77	7	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	3189	92	83	3007	169	166	34	145	186	18	159
Arrive On Green	0.06	0.63	0.63	0.05	0.61	0.61	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	5099	148	1781	4946	277	1318	309	1305	1343	161	1429
Grp Volume(v), veh/h	89	1037	561	64	920	492	50	0	47	77	0	69
Grp Sat Flow(s),veh/h/ln	1781	1702	1843	1781	1702	1819	1318	0	1614	1343	0	1590
Q Serve(g_s), s	4.9	16.4	16.4	3.6	14.5	14.5	3.7	0.0	2.7	5.6	0.0	4.0
Cycle Q Clear(g_c), s	4.9	16.4	16.4	3.6	14.5	14.5	7.7	0.0	2.7	8.2	0.0	4.0
Prop In Lane	1.00		0.08	1.00		0.15	1.00		0.81	1.00		0.90
Lane Grp Cap(c), veh/h	114	2129	1153	83	2069	1106	166	0	180	186	0	177
V/C Ratio(X)	0.78	0.49	0.49	0.78	0.44	0.44	0.30	0.00	0.26	0.41	0.00	0.39
Avail Cap(c_a), veh/h	242	2129	1153	207	2069	1106	231	0	260	252	0	256
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.1	10.1	10.1	47.2	10.5	10.5	44.9	0.0	40.7	44.4	0.0	41.3
Incr Delay (d2), s/veh	4.4	0.8	1.5	5.7	0.7	1.3	0.4	0.0	0.3	0.5	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	5.5	6.2	1.7	5.0	5.5	1.2	0.0	1.1	1.9	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.5	10.9	11.6	52.9	11.2	11.8	45.2	0.0	41.0	45.0	0.0	41.8
LnGrp LOS	D	B	B	D	B	B	D	A	D	D	A	D
Approach Vol, veh/h		1687			1476			97				146
Approach Delay, s/veh		13.2			13.2			43.2				43.5
Approach LOS		B			B			D				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		19.0	11.0	69.9		19.0	12.8	68.2				
Change Period (Y+Rc), s		7.9	6.4	7.4		7.9	* 6.4	7.4				
Max Green Setting (Gmax), s		16.1	11.6	50.6		16.1	* 14	48.6				
Max Q Clear Time (g_c+I1), s		9.7	5.6	18.4		10.2	6.9	16.5				
Green Ext Time (p_c), s		0.1	0.0	10.9		0.2	0.0	9.1				
Intersection Summary												
HCM 6th Ctrl Delay			15.4									
HCM 6th LOS			B									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
1: Carson St & William St

2030 PM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	25	264	139	102	446	4	757	316	478	32
v/c Ratio	0.08	0.78	0.54	0.20	0.60	0.01	0.59	0.73	0.46	0.03
Control Delay	22.6	54.1	22.6	19.4	13.5	12.2	27.7	23.8	16.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	54.1	22.6	19.4	13.5	12.2	27.7	23.8	16.9	0.1
Queue Length 50th (ft)	11	160	64	47	138	1	197	101	171	0
Queue Length 95th (ft)	28	233	m88	m70	m196	6	287	190	338	0
Internal Link Dist (ft)		326		302			201		484	
Turn Bay Length (ft)	80		100			130		140		
Base Capacity (vph)	332	444	260	521	756	430	1282	476	1038	918
Starvation Cap Reductn	0	0	0	0	0	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	0.08	0.59	0.53	0.20	0.59	0.01	0.59	0.66	0.46	0.03

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
2: Stewart St & William St

2030 PM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	48	712	225	466	250	329	345	43	246
v/c Ratio	0.43	0.67	0.71	0.33	0.87	0.53	0.46	0.15	0.78
Control Delay	58.3	28.5	25.8	19.6	69.8	30.6	4.8	18.6	55.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.3	28.5	25.8	19.6	69.8	30.6	4.8	18.6	55.4
Queue Length 50th (ft)	30	190	94	144	154	176	0	16	149
Queue Length 95th (ft)	m52	#186	#188	200	#279	247	58	33	223
Internal Link Dist (ft)		255		869		563			312
Turn Bay Length (ft)	160		100					75	
Base Capacity (vph)	126	1068	323	1397	312	663	776	284	407
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.67	0.70	0.33	0.80	0.50	0.44	0.15	0.60

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
3: Roop St & William St

2030 PM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	98	885	185	709	42	636	220	439
v/c Ratio	0.32	0.74	0.74	0.51	0.14	0.88	0.75	0.40
Control Delay	11.5	27.4	47.5	13.8	20.0	52.5	37.7	27.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	27.4	47.5	13.8	20.0	52.5	37.7	27.0
Queue Length 50th (ft)	14	304	74	67	16	202	91	111
Queue Length 95th (ft)	m23	357	#152	153	37	#286	#158	157
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	318	1192	266	1378	297	777	304	1100
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.74	0.70	0.51	0.14	0.82	0.72	0.40

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
5: Saliman Rd & William St

2030 PM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	47	1133	614	821	158	185	498	235	178
v/c Ratio	0.12	0.92	1.09	0.51	0.41	0.68	0.94	1.19	0.57
Control Delay	32.4	32.0	101.6	14.8	35.6	55.6	40.3	161.2	47.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	32.0	101.6	14.8	35.6	55.6	40.3	161.2	47.0
Queue Length 50th (ft)	14	158	~235	233	79	112	92	~148	53
Queue Length 95th (ft)	m19	#306	#342	92	145	#251	#323	#323	87
Internal Link Dist (ft)		571		1368		439			691
Turn Bay Length (ft)	240		180		290			160	
Base Capacity (vph)	383	1237	563	1742	386	271	531	197	367
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.92	1.09	0.47	0.41	0.68	0.94	1.19	0.49

Intersection Summary

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

William Street Corridor
6: Gold Dust West Way & William St

2030 PM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	89	1598	64	1412	50	47	77	69
v/c Ratio	0.54	0.48	0.45	0.43	0.36	0.23	0.55	0.31
Control Delay	42.7	14.1	53.4	12.4	47.1	18.5	55.6	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.7	14.1	53.4	12.4	47.1	18.5	55.6	15.7
Queue Length 50th (ft)	50	295	40	173	30	5	48	4
Queue Length 95th (ft)	m49	m302	80	274	63	37	89	41
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	240	3360	205	3284	216	295	220	310
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.48	0.31	0.43	0.23	0.16	0.35	0.22

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
1: Carson St & William St

2050 AM Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	100	3	149	312	207	22	277	83	309	420	49
Future Volume (veh/h)	14	100	3	149	312	207	22	277	83	309	420	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	109	3	162	339	225	24	301	90	336	457	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	218	374	10	397	410	345	396	964	283	583	802	676
Arrive On Green	0.06	0.21	0.21	0.07	0.22	0.22	0.06	0.36	0.36	0.13	0.43	0.43
Sat Flow, veh/h	1781	1811	50	1781	1870	1574	1781	2704	793	1781	1870	1576
Grp Volume(v), veh/h	15	0	112	162	339	225	24	196	195	336	457	53
Grp Sat Flow(s),veh/h/ln	1781	0	1861	1781	1870	1574	1781	1777	1721	1781	1870	1576
Q Serve(g_s), s	0.6	0.0	4.6	6.0	15.6	11.7	0.7	7.2	7.4	10.3	16.6	1.8
Cycle Q Clear(g_c), s	0.6	0.0	4.6	6.0	15.6	11.7	0.7	7.2	7.4	10.3	16.6	1.8
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.46	1.00		1.00
Lane Grp Cap(c), veh/h	218	0	385	397	410	345	396	634	614	583	802	676
V/C Ratio(X)	0.07	0.00	0.29	0.41	0.83	0.65	0.06	0.31	0.32	0.58	0.57	0.08
Avail Cap(c_a), veh/h	218	0	515	397	540	455	396	634	614	583	802	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	0.0	30.1	26.6	33.5	32.0	16.3	20.9	21.0	14.1	19.4	15.2
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.3	6.2	0.8	0.0	1.3	1.4	0.9	2.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.1	2.8	7.7	4.5	0.3	3.2	3.2	4.1	7.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.9	0.0	30.3	26.8	39.7	32.8	16.4	22.2	22.4	15.0	22.4	15.4
LnGrp LOS	C	A	C	C	D	C	B	C	C	B	C	B
Approach Vol, veh/h		127			726			415			846	
Approach Delay, s/veh		29.8			34.7			21.9			19.0	
Approach LOS		C			C			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	38.0	11.0	24.0	10.5	44.5	9.9	25.1				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 12	25.8	6.0	24.9	5.0	32.3	* 5	26.0				
Max Q Clear Time (g_c+I1), s	12.3	9.4	8.0	6.6	2.7	18.6	2.6	17.6				
Green Ext Time (p_c), s	0.0	1.5	0.0	0.3	0.0	1.8	0.0	1.3				

Intersection Summary

HCM 6th Ctrl Delay	25.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
2: Stewart St & William St

2050 AM Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	353	150	284	592	12	85	103	136	25	254	12
Future Volume (veh/h)	6	353	150	284	592	12	85	103	136	25	254	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	384	163	309	643	13	92	112	148	27	276	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	827	346	253	1680	34	224	422	355	325	335	16
Arrive On Green	0.01	0.34	0.34	0.14	0.47	0.47	0.06	0.23	0.23	0.03	0.19	0.19
Sat Flow, veh/h	1781	2436	1019	1781	3562	72	1781	1870	1575	1781	1771	83
Grp Volume(v), veh/h	7	279	268	309	321	335	92	112	148	27	0	289
Grp Sat Flow(s),veh/h/ln	1781	1777	1678	1781	1777	1857	1781	1870	1575	1781	0	1855
Q Serve(g_s), s	0.4	11.1	11.3	12.8	10.5	10.5	3.7	4.4	7.2	1.1	0.0	13.5
Cycle Q Clear(g_c), s	0.4	11.1	11.3	12.8	10.5	10.5	3.7	4.4	7.2	1.1	0.0	13.5
Prop In Lane	1.00		0.61	1.00		0.04	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	16	603	570	253	838	876	224	422	355	325	0	351
V/C Ratio(X)	0.44	0.46	0.47	1.22	0.38	0.38	0.41	0.27	0.42	0.08	0.00	0.82
Avail Cap(c_a), veh/h	99	603	570	253	838	876	236	582	490	375	0	550
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.4	23.3	23.4	38.6	15.3	15.3	28.1	28.7	29.8	28.1	0.0	35.0
Incr Delay (d2), s/veh	6.9	2.5	2.8	124.5	1.1	1.0	0.4	0.1	0.3	0.0	0.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.0	4.9	14.3	4.4	4.6	1.5	2.0	2.8	0.5	0.0	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.3	25.8	26.2	163.1	16.4	16.4	28.5	28.8	30.1	28.1	0.0	38.0
LnGrp LOS	D	C	C	F	B	B	C	C	C	C	A	D
Approach Vol, veh/h		554			965			352			316	
Approach Delay, s/veh		26.3			63.4			29.3			37.1	
Approach LOS		C			E			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	27.6	18.0	36.2	11.5	24.3	6.1	48.0				
Change Period (Y+Rc), s	5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	5	* 28	* 13	20.3	5.7	* 27	* 5	28.0				
Max Q Clear Time (g_c+1), s	13	9.2	14.8	13.3	5.7	15.5	2.4	12.5				
Green Ext Time (p_c), s	0.0	0.6	0.0	1.4	0.0	0.9	0.0	2.6				

Intersection Summary

HCM 6th Ctrl Delay	44.7
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2050 AM Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	453	21	273	817	121	41	306	126	104	275	49
Future Volume (veh/h)	23	453	21	273	817	121	41	306	126	104	275	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	492	23	297	888	132	45	333	137	113	299	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	336	1313	61	518	1494	222	244	433	175	219	561	98
Arrive On Green	0.01	0.13	0.13	0.24	0.96	0.96	0.04	0.18	0.18	0.06	0.19	0.19
Sat Flow, veh/h	1781	3456	161	1781	3102	461	1781	2464	994	1781	3019	528
Grp Volume(v), veh/h	25	253	262	297	509	511	45	238	232	113	174	178
Grp Sat Flow(s),veh/h/ln	1781	1777	1841	1781	1777	1786	1781	1777	1681	1781	1777	1770
Q Serve(g_s), s	0.8	11.7	11.8	9.2	2.2	2.2	1.8	11.5	11.9	4.7	8.0	8.2
Cycle Q Clear(g_c), s	0.8	11.7	11.8	9.2	2.2	2.2	1.8	11.5	11.9	4.7	8.0	8.2
Prop In Lane	1.00		0.09	1.00		0.26	1.00		0.59	1.00		0.30
Lane Grp Cap(c), veh/h	336	675	699	518	856	860	244	312	295	219	330	329
V/C Ratio(X)	0.07	0.37	0.38	0.57	0.59	0.59	0.18	0.76	0.78	0.51	0.53	0.54
Avail Cap(c_a), veh/h	389	675	699	518	856	860	277	448	424	219	434	433
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.82	0.82	0.82	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.4	29.5	29.6	11.9	0.9	0.9	28.9	35.3	35.5	29.3	33.1	33.1
Incr Delay (d2), s/veh	0.0	1.3	1.3	1.0	3.0	3.0	0.1	2.5	3.5	0.9	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.8	6.0	2.7	1.1	1.1	0.8	5.2	5.1	2.0	3.5	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.4	30.8	30.8	12.9	3.9	3.9	29.0	37.8	39.0	30.2	33.6	33.7
LnGrp LOS	B	C	C	B	A	A	C	D	D	C	C	C
Approach Vol, veh/h		540			1317			515			465	
Approach Delay, s/veh		30.2			5.9			37.6			32.8	
Approach LOS		C			A			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.2	17.0	40.6	9.3	23.1	7.8	49.8					
Change Period (Y+Rc), s	5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	22.7	11.0	27.3	5.0	22.0	5.0	33.8					
Max Q Clear Time (g_c+1/3), s	13.9	11.2	13.8	3.8	10.2	2.8	4.2					
Green Ext Time (p_c), s	0.0	1.1	0.0	1.8	0.0	1.1	0.0	4.5				

Intersection Summary

HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
4: William St & State St

2050 AM Peak Hour - Proposed Corridor

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	620	1134	149	0	61
Future Vol, veh/h	55	620	1134	149	0	61
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	674	1233	162	0	66




























Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	1400	0	-	0	-	708
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	-	-	3.32
Pot Cap-1 Maneuver	484	-	-	-	0	377
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	482	-	-	-	-	373
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	16.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	482	-	-	-	373
HCM Lane V/C Ratio	0.124	-	-	-	0.178
HCM Control Delay (s)	13.5	-	-	-	16.7
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	0.6

William Street Corridor
5: Saliman Rd & William St

2050 AM Peak Hour - Proposed Corridor

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 						 	
Traffic Volume (vph)	16	272	337	662	1045	47	198	175	301	152	485	17
Future Volume (vph)	16	272	337	662	1045	47	198	175	301	152	485	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		175	180		155	290		0	160		0
Storage Lanes	2		0	2		0	1		1	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		0.99			1.00				0.98	1.00	1.00	
Frt		0.917			0.994				0.850		0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3216	0	3433	3515	0	1770	1863	1583	1770	3520	0
Flt Permitted	0.950			0.950			0.312			0.540		
Satd. Flow (perm)	3433	3216	0	3433	3515	0	581	1863	1559	1003	3520	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		295			5				327			3
Link Speed (mph)		40			40			25				25
Link Distance (ft)		651			1448			519				771
Travel Time (s)		11.1			24.7			14.2				21.0
Confl. Peds. (#/hr)			5			5			5	5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	296	366	720	1136	51	215	190	327	165	527	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	662	0	720	1187	0	215	190	327	165	545	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt		NA
Protected Phases	7	4		3	8		5	2		1		6
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		5	2	2	1		6
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	12.7	15.5		12.6	15.4		10.5	11.4	11.4	10.5		11.4
Total Split (s)	12.7	19.8		27.6	34.7		12.8	20.4	20.4	12.2		19.8
Total Split (%)	14.1%	22.0%		30.7%	38.6%		14.2%	22.7%	22.7%	13.6%		22.0%
Maximum Green (s)	5.0	14.3		20.0	29.3		7.3	14.0	14.0	6.7		13.4
Yellow Time (s)	3.6	4.5		3.5	4.4		3.0	3.4	3.4	3.0		3.4
All-Red Time (s)	4.1	1.0		4.1	1.0		2.5	3.0	3.0	2.5		3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	7.7	5.5		7.6	5.4		5.5	6.4	6.4	5.5		6.4
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead	Lead	Lag		Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	1.7	2.7		1.7	2.7		1.9	2.0	2.0	1.9		2.0

Lane Group	Ø11	Ø12
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	11	12
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0

William Street Corridor
5: Saliman Rd & William St

2050 AM Peak Hour - Proposed Corridor

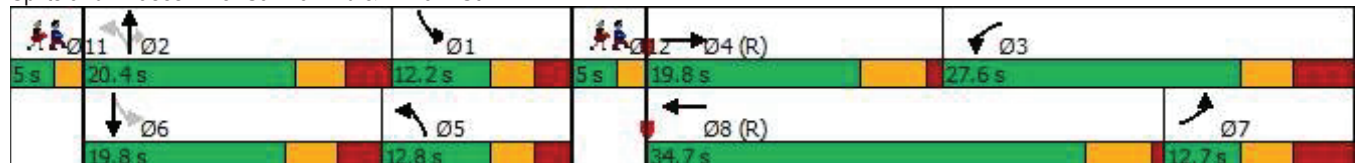


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)		9.0			8.0			9.0	9.0			14.0
Flash Dont Walk (s)		21.0			20.0			28.0	28.0			28.0
Pedestrian Calls (#/hr)		5			5			5	5			5
Act Effct Green (s)	5.0	17.6		19.9	40.2		21.4	12.8	12.8	29.8		17.7
Actuated g/C Ratio	0.06	0.20		0.22	0.45		0.24	0.14	0.14	0.33		0.20
v/c Ratio	0.09	0.76		0.95	0.76		0.90	0.72	0.65	0.38		0.78
Control Delay	32.9	32.4		50.1	23.1		70.6	52.5	10.9	27.6		44.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Total Delay	32.9	32.4		50.1	23.1		70.6	52.5	10.9	27.6		44.6
LOS	C	C		D	C		E	D	B	C		D
Approach Delay		32.4			33.3			39.2				40.6
Approach LOS		C			C			D				D

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	88 (98%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.95
Intersection Signal Delay:	35.5
Intersection LOS:	D
Intersection Capacity Utilization	92.9%
ICU Level of Service	F
Analysis Period (min)	15

Splits and Phases: 5: Saliman Rd & William St



Lane Group	Ø11	Ø12
Recall Mode	None	None
Walk Time (s)	3.0	3.0
Flash Dont Walk (s)	0.0	0.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

William Street Corridor
6: Gold Dust West Way & William St

2050 AM Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑↑		↖	↑↑↑		↖	↑		↖	↑	
Traffic Volume (veh/h)	19	635	54	179	1672	51	53	0	211	15	0	11
Future Volume (veh/h)	19	635	54	179	1672	51	53	0	211	15	0	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	690	59	195	1817	55	58	0	229	16	0	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	2210	188	231	2894	88	304	0	264	110	0	264
Arrive On Green	0.02	0.46	0.46	0.13	0.57	0.57	0.17	0.00	0.17	0.17	0.00	0.17
Sat Flow, veh/h	1781	4792	407	1781	5092	154	1390	0	1571	1147	0	1571
Grp Volume(v), veh/h	21	489	260	195	1214	658	58	0	229	16	0	12
Grp Sat Flow(s),veh/h/ln	1781	1702	1794	1781	1702	1842	1390	0	1571	1147	0	1571
Q Serve(g_s), s	1.0	8.1	8.2	9.6	21.5	21.6	3.3	0.0	12.8	1.2	0.0	0.6
Cycle Q Clear(g_c), s	1.0	8.1	8.2	9.6	21.5	21.6	3.9	0.0	12.8	14.0	0.0	0.6
Prop In Lane	1.00		0.23	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	40	1570	828	231	1935	1047	304	0	264	110	0	264
V/C Ratio(X)	0.52	0.31	0.31	0.84	0.63	0.63	0.19	0.00	0.87	0.15	0.00	0.05
Avail Cap(c_a), veh/h	111	1570	828	388	1935	1047	304	0	264	110	0	264
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.5	15.2	15.3	38.3	13.0	13.0	33.0	0.0	36.5	43.3	0.0	31.4
Incr Delay (d2), s/veh	3.8	0.5	1.0	3.4	1.6	2.9	0.1	0.0	24.3	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.0	3.3	4.3	7.4	8.5	1.1	0.0	6.6	0.4	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.3	15.8	16.3	41.7	14.6	15.9	33.1	0.0	60.8	43.5	0.0	31.4
LnGrp LOS	D	B	B	D	B	B	C	A	E	D	A	C
Approach Vol, veh/h		770			2067			287				28
Approach Delay, s/veh		16.8			17.6			55.2				38.4
Approach LOS		B			B			E				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	18.1	48.9		23.0	8.4	58.6				
Change Period (Y+Rc), s		7.9	6.4	7.4		7.9	* 6.4	7.4				
Max Green Setting (Gmax), s		15.1	19.6	33.6		15.1	* 5.6	47.6				
Max Q Clear Time (g_c+I1), s		14.8	11.6	10.2		16.0	3.0	23.6				
Green Ext Time (p_c), s		0.0	0.1	3.8		0.0	0.0	12.1				
Intersection Summary												
HCM 6th Ctrl Delay			21.0									
HCM 6th LOS			C									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
1: Carson St & William St

2050 AM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	15	112	162	339	225	24	391	336	457	53
v/c Ratio	0.07	0.45	0.47	0.72	0.40	0.05	0.28	0.55	0.44	0.06
Control Delay	20.3	39.2	14.7	25.1	6.7	11.4	18.8	14.6	17.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	39.2	14.7	25.1	6.7	11.4	18.8	14.6	17.3	0.1
Queue Length 50th (ft)	6	60	36	172	7	5	70	85	127	0
Queue Length 95th (ft)	17	91	11	276	163	20	123	183	327	0
Internal Link Dist (ft)		326		302			201		484	
Turn Bay Length (ft)	80		100			130		140		
Base Capacity (vph)	218	514	348	547	616	475	1394	621	1027	917
Starvation Cap Reductn	0	0	0	0	0	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	0.07	0.22	0.47	0.62	0.37	0.05	0.28	0.54	0.44	0.06

Intersection Summary

William Street Corridor
2: Stewart St & William St

2050 AM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	7	547	309	656	92	112	148	27	289
v/c Ratio	0.07	0.66	0.72	0.36	0.33	0.22	0.25	0.07	0.75
Control Delay	47.2	30.1	37.0	12.4	21.5	25.1	1.5	16.9	44.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.2	30.1	37.0	12.4	21.5	25.1	1.5	16.9	44.7
Queue Length 50th (ft)	4	157	120	113	34	43	0	10	154
Queue Length 95th (ft)	m11	175	#368	263	59	87	8	23	214
Internal Link Dist (ft)		255		869		563			312
Turn Bay Length (ft)	160		100					75	
Base Capacity (vph)	98	872	428	1803	282	602	658	370	550
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.63	0.72	0.36	0.33	0.19	0.22	0.07	0.53

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
3: Roop St & William St

2050 AM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	25	515	297	1020	45	470	113	352
v/c Ratio	0.09	0.38	0.59	0.56	0.16	0.75	0.47	0.47
Control Delay	9.0	14.0	20.6	14.3	21.4	42.0	28.6	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	14.0	20.6	14.3	21.4	42.0	28.6	31.0
Queue Length 50th (ft)	2	71	82	145	17	134	45	88
Queue Length 95th (ft)	m7	196	m121	m160	39	172	79	124
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	271	1343	514	1816	281	848	242	892
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.38	0.58	0.56	0.16	0.55	0.47	0.39

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
5: Saliman Rd & William St

2050 AM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	17	662	720	1187	215	190	327	165	545
v/c Ratio	0.09	0.76	0.95	0.76	0.90	0.72	0.65	0.38	0.78
Control Delay	32.9	32.4	50.1	23.1	70.6	52.5	10.9	27.6	44.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.9	32.4	50.1	23.1	70.6	52.5	10.9	27.6	44.6
Queue Length 50th (ft)	5	33	209	251	88	103	0	66	153
Queue Length 95th (ft)	m11	#215	#306	#492	#225	#185	76	125	#282
Internal Link Dist (ft)		571		1368		439			691
Turn Bay Length (ft)	240		180		290			160	
Base Capacity (vph)	190	867	762	1571	240	300	525	439	695
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.76	0.94	0.76	0.90	0.63	0.62	0.38	0.78

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
6: Gold Dust West Way & William St

2050 AM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	21	749	195	1872	58	229	16	12
v/c Ratio	0.20	0.30	0.70	0.55	0.43	0.47	0.20	0.04
Control Delay	41.4	13.5	49.3	9.8	46.4	3.2	40.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	13.5	49.3	9.8	46.4	3.2	40.5	0.2
Queue Length 50th (ft)	12	90	106	130	32	0	9	0
Queue Length 95th (ft)	m21	106	166	328	65	0	27	0
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	112	2537	385	3430	233	571	141	434
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.30	0.51	0.55	0.25	0.40	0.11	0.03

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
1: Carson St & William St

2050 MD Peak Hour - Proposed Corridor

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	128	8	157	138	321	8	500	120	263	509	42
Future Volume (veh/h)	20	128	8	157	138	321	8	500	120	263	509	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	139	9	171	150	349	9	543	130	286	553	46
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	343	410	27	408	465	392	299	951	227	433	747	629
Arrive On Green	0.06	0.24	0.24	0.07	0.25	0.25	0.06	0.33	0.33	0.12	0.40	0.40
Sat Flow, veh/h	1781	1736	112	1781	1870	1575	1781	2842	678	1781	1870	1575
Grp Volume(v), veh/h	22	0	148	171	150	349	9	339	334	286	553	46
Grp Sat Flow(s),veh/h/ln	1781	0	1849	1781	1870	1575	1781	1777	1742	1781	1870	1575
Q Serve(g_s), s	0.8	0.0	6.0	6.0	5.9	19.2	0.3	14.1	14.2	9.0	22.7	1.6
Cycle Q Clear(g_c), s	0.8	0.0	6.0	6.0	5.9	19.2	0.3	14.1	14.2	9.0	22.7	1.6
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.39	1.00		1.00
Lane Grp Cap(c), veh/h	343	0	437	408	465	392	299	595	583	433	747	629
V/C Ratio(X)	0.06	0.00	0.34	0.42	0.32	0.89	0.03	0.57	0.57	0.66	0.74	0.07
Avail Cap(c_a), veh/h	343	0	511	408	540	455	299	595	583	447	747	629
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	0.0	28.5	24.9	27.6	32.6	18.4	24.6	24.6	16.9	23.1	16.7
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.3	0.1	16.1	0.0	3.9	4.1	2.7	6.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.7	2.8	2.6	9.0	0.1	6.5	6.4	3.8	11.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	0.0	28.7	25.2	27.8	48.8	18.4	28.5	28.7	19.6	29.6	17.0
LnGrp LOS	C	A	C	C	C	D	B	C	C	B	C	B
Approach Vol, veh/h		170			670			682			885	
Approach Delay, s/veh		28.0			38.0			28.5			25.7	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.3	36.0	11.0	26.7	10.5	41.8	9.9	27.8				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 12	25.8	6.0	24.9	5.0	32.3	* 5	26.0				
Max Q Clear Time (g_c+I1), s	11.0	16.2	8.0	8.0	2.3	24.7	2.8	21.2				
Green Ext Time (p_c), s	0.0	2.2	0.0	0.5	0.0	1.7	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay			30.1									
HCM 6th LOS			C									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
2: Stewart St & William St

2050 MD Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	390	100	243	452	29	152	258	250	43	310	23
Future Volume (veh/h)	31	390	100	243	452	29	152	258	250	43	310	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	424	109	264	491	32	165	280	272	47	337	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	57	792	202	259	1339	87	250	501	422	267	385	29
Arrive On Green	0.03	0.28	0.28	0.05	0.13	0.13	0.08	0.27	0.27	0.04	0.22	0.22
Sat Flow, veh/h	1781	2799	713	1781	3386	220	1781	1870	1576	1781	1719	128
Grp Volume(v), veh/h	34	268	265	264	257	266	165	280	272	47	0	362
Grp Sat Flow(s),veh/h/ln	1781	1777	1735	1781	1777	1829	1781	1870	1576	1781	0	1846
Q Serve(g_s), s	1.7	11.4	11.7	13.1	11.9	11.9	6.4	11.6	13.7	1.8	0.0	17.0
Cycle Q Clear(g_c), s	1.7	11.4	11.7	13.1	11.9	11.9	6.4	11.6	13.7	1.8	0.0	17.0
Prop In Lane	1.00		0.41	1.00		0.12	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	57	503	491	259	703	723	250	501	422	267	0	413
V/C Ratio(X)	0.60	0.53	0.54	1.02	0.37	0.37	0.66	0.56	0.64	0.18	0.00	0.88
Avail Cap(c_a), veh/h	119	503	491	259	703	723	250	582	490	297	0	525
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.0	27.2	27.3	42.8	28.8	28.8	26.3	28.4	29.2	25.5	0.0	33.7
Incr Delay (d2), s/veh	3.7	4.0	4.2	56.3	1.3	1.2	5.1	0.4	1.4	0.1	0.0	11.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	5.4	5.4	10.3	5.9	6.1	3.0	5.1	5.3	0.8	0.0	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	31.3	31.6	99.1	30.1	30.1	31.4	28.8	30.6	25.6	0.0	44.7
LnGrp LOS	D	C	C	F	C	C	C	C	C	C	A	D
Approach Vol, veh/h		567			787			717			409	
Approach Delay, s/veh		32.3			53.2			30.0			42.5	
Approach LOS		C			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.3	31.4	18.3	31.1	13.2	27.4	8.2	41.2				
Change Period (Y+Rc), s	5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	5	* 28	* 13	20.0	6.8	* 26	* 6	27.0				
Max Q Clear Time (g_c+1), s	13.8	15.7	15.1	13.7	8.4	19.0	3.7	13.9				
Green Ext Time (p_c), s	0.0	1.3	0.0	1.3	0.0	0.9	0.0	1.8				

Intersection Summary

HCM 6th Ctrl Delay	40.0
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2050 MD Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	593	47	246	620	108	49	342	178	156	323	65
Future Volume (veh/h)	47	593	47	246	620	108	49	342	178	156	323	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	645	51	267	674	117	53	372	193	170	351	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	386	1145	90	398	1271	220	273	454	232	254	679	136
Arrive On Green	0.01	0.11	0.11	0.22	0.84	0.84	0.04	0.20	0.20	0.08	0.23	0.23
Sat Flow, veh/h	1781	3335	263	1781	3026	525	1781	2270	1159	1781	2947	589
Grp Volume(v), veh/h	51	343	353	267	395	396	53	290	275	170	210	212
Grp Sat Flow(s),veh/h/ln	1781	1777	1822	1781	1777	1774	1781	1777	1651	1781	1777	1760
Q Serve(g_s), s	1.6	16.5	16.5	8.8	5.8	5.8	2.1	14.0	14.4	6.8	9.3	9.5
Cycle Q Clear(g_c), s	1.6	16.5	16.5	8.8	5.8	5.8	2.1	14.0	14.4	6.8	9.3	9.5
Prop In Lane	1.00		0.14	1.00		0.30	1.00		0.70	1.00		0.33
Lane Grp Cap(c), veh/h	386	610	625	398	746	745	273	355	330	254	409	405
V/C Ratio(X)	0.13	0.56	0.56	0.67	0.53	0.53	0.19	0.82	0.83	0.67	0.51	0.52
Avail Cap(c_a), veh/h	420	610	625	398	746	745	301	434	404	254	460	456
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	33.5	33.5	15.2	4.6	4.6	27.0	34.4	34.6	27.3	30.2	30.3
Incr Delay (d2), s/veh	0.0	3.0	3.0	3.6	2.7	2.7	0.1	7.9	9.9	5.4	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	0.7	8.3	8.5	3.1	1.9	1.9	0.9	6.8	6.6	3.3	4.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.2	36.5	36.5	18.8	7.3	7.3	27.1	42.4	44.5	32.7	30.6	30.7
LnGrp LOS	B	D	D	B	A	A	C	D	D	C	C	C
Approach Vol, veh/h		747			1058			618			592	
Approach Delay, s/veh		35.3			10.2			42.0			31.2	
Approach LOS		D			B			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	2.3	24.4	16.0	37.3	9.6	27.1	9.1	44.2				
Change Period (Y+Rc), s	5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	22.0	10.0	26.9	5.1	23.3	5.3	32.1					
Max Q Clear Time (g_c+1/3), s	16.4	10.8	18.5	4.1	11.5	3.6	7.8					
Green Ext Time (p_c), s	0.0	1.1	0.0	2.1	0.0	1.4	0.0	3.2				

Intersection Summary

HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
4: William St & State St

2050 MD Peak Hour - Proposed Corridor

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	98	823	874	112	0	72
Future Vol, veh/h	98	823	874	112	0	72
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	107	895	950	122	0	78



























Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1077	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	3.32
Pot Cap-1 Maneuver	643	-	482
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	640	-	477
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	640	-	-	-	477
HCM Lane V/C Ratio	0.166	-	-	-	0.164
HCM Control Delay (s)	11.7	-	-	-	14
HCM Lane LOS	B	-	-	-	B
HCM 95th %tile Q(veh)	0.6	-	-	-	0.6

William Street Corridor
5: Saliman Rd & William St

2050 MD Peak Hour - Proposed Corridor

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 						 	
Traffic Volume (vph)	33	662	149	287	794	86	168	195	322	158	86	31
Future Volume (vph)	33	662	149	287	794	86	168	195	322	158	86	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		175	180		155	290		0	160		0
Storage Lanes	2		0	2		0	1		1	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00			1.00				0.98	1.00	1.00	
Frt		0.972			0.985				0.850		0.960	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3430	0	3433	3480	0	1770	1863	1583	1770	3384	0
Flt Permitted	0.950			0.950			0.671			0.588		
Satd. Flow (perm)	3433	3430	0	3433	3480	0	1250	1863	1559	1092	3384	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			14				324		34	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		651			1448			519			771	
Travel Time (s)		11.1			24.7			14.2			21.0	
Confl. Peds. (#/hr)			5			5			5	5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	720	162	312	863	93	183	212	350	172	93	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	882	0	312	956	0	183	212	350	172	127	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.7	15.5		12.6	15.4		10.5	11.4	11.4	10.5	11.4	
Total Split (s)	12.7	32.6		17.1	37.0		15.6	18.3	18.3	12.0	14.7	
Total Split (%)	14.1%	36.2%		19.0%	41.1%		17.3%	20.3%	20.3%	13.3%	16.3%	
Maximum Green (s)	5.0	27.1		9.5	31.6		10.1	11.9	11.9	6.5	8.3	
Yellow Time (s)	3.6	4.5		3.5	4.4		3.0	3.4	3.4	3.0	3.4	
All-Red Time (s)	4.1	1.0		4.1	1.0		2.5	3.0	3.0	2.5	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.7	5.5		7.6	5.4		5.5	6.4	6.4	5.5	6.4	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.7	2.7		1.7	2.7		1.9	2.0	2.0	1.9	2.0	

Lane Group	Ø11	Ø12
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	11	12
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0

William Street Corridor
5: Saliman Rd & William St

2050 MD Peak Hour - Proposed Corridor

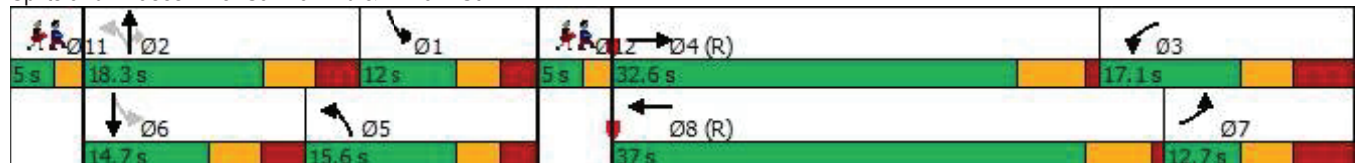


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)		9.0			8.0			9.0	9.0		14.0	
Flash Dont Walk (s)		21.0			20.0			28.0	28.0		28.0	
Pedestrian Calls (#/hr)		5			5			5	5		5	
Act Effct Green (s)	5.5	32.4		9.9	41.9		26.7	14.0	14.0	14.4	6.8	
Actuated g/C Ratio	0.06	0.36		0.11	0.47		0.30	0.16	0.16	0.16	0.08	
v/c Ratio	0.17	0.70		0.83	0.59		0.41	0.73	0.68	0.76	0.44	
Control Delay	35.2	21.7		49.9	12.2		29.2	52.9	13.2	53.3	33.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	35.2	21.7		49.9	12.2		29.2	52.9	13.2	53.3	33.7	
LOS	D	C		D	B		C	D	B	D	C	
Approach Delay		22.2			21.5			28.4			45.0	
Approach LOS		C			C			C			D	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	50 (56%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	25.5
Intersection LOS:	C
Intersection Capacity Utilization	76.2%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 5: Saliman Rd & William St



Lane Group	Ø11	Ø12
Recall Mode	None	None
Walk Time (s)	3.0	3.0
Flash Dont Walk (s)	0.0	0.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

William Street Corridor
6: Gold Dust West Way & William St

2050 MD Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑↑		↖	↑↑↑		↖	↑		↖	↑	
Traffic Volume (veh/h)	87	991	81	242	1042	90	93	6	237	82	8	49
Future Volume (veh/h)	87	991	81	242	1042	90	93	6	237	82	8	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	95	1077	88	263	1133	98	101	7	258	89	9	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	121	1873	153	300	2343	202	305	8	309	125	47	277
Arrive On Green	0.07	0.39	0.39	0.17	0.49	0.49	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	4808	392	1781	4784	413	1332	42	1538	1111	234	1377
Grp Volume(v), veh/h	95	762	403	263	806	425	101	0	265	89	0	62
Grp Sat Flow(s),veh/h/ln	1781	1702	1797	1781	1702	1793	1332	0	1580	1111	0	1610
Q Serve(g_s), s	4.7	15.8	15.9	13.0	14.2	14.3	6.1	0.0	14.5	3.6	0.0	2.9
Cycle Q Clear(g_c), s	4.7	15.8	15.9	13.0	14.2	14.3	9.0	0.0	14.5	18.1	0.0	2.9
Prop In Lane	1.00		0.22	1.00		0.23	1.00		0.97	1.00		0.85
Lane Grp Cap(c), veh/h	121	1326	700	300	1667	878	305	0	318	125	0	324
V/C Ratio(X)	0.78	0.57	0.58	0.88	0.48	0.48	0.33	0.00	0.83	0.71	0.00	0.19
Avail Cap(c_a), veh/h	210	1326	700	428	1667	878	305	0	318	125	0	324
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.3	21.6	21.6	36.5	15.4	15.4	33.6	0.0	34.5	44.1	0.0	29.9
Incr Delay (d2), s/veh	4.1	1.8	3.4	10.5	1.0	1.9	0.2	0.0	16.2	15.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.2	6.9	6.3	5.2	5.7	2.0	0.0	6.9	2.5	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.4	23.4	25.0	47.1	16.4	17.3	33.8	0.0	50.8	59.4	0.0	30.0
LnGrp LOS	D	C	C	D	B	B	C	A	D	E	A	C
Approach Vol, veh/h		1260			1494			366				151
Approach Delay, s/veh		25.6			22.0			46.1				47.3
Approach LOS		C			C			D				D
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.0	21.5	42.5		26.0	12.5	51.5				
Change Period (Y+Rc), s		7.9	6.4	7.4		7.9	* 6.4	7.4				
Max Green Setting (Gmax), s		18.1	21.6	28.6		18.1	* 11	39.6				
Max Q Clear Time (g_c+I1), s		16.5	15.0	17.9		20.1	6.7	16.3				
Green Ext Time (p_c), s		0.2	0.2	4.6		0.0	0.0	7.0				
Intersection Summary												
HCM 6th Ctrl Delay				27.3								
HCM 6th LOS				C								
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
1: Carson St & William St

2050 MD Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	22	148	171	150	349	9	673	286	553	46
v/c Ratio	0.08	0.54	0.51	0.32	0.54	0.02	0.50	0.63	0.53	0.05
Control Delay	20.2	40.5	19.3	19.4	8.4	11.8	23.4	18.5	18.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.2	40.5	19.3	19.4	8.4	11.8	23.4	18.5	18.1	0.1
Queue Length 50th (ft)	9	79	31	27	6	2	148	75	175	0
Queue Length 95th (ft)	22	116	m42	m129	183	10	230	#160	#459	0
Internal Link Dist (ft)		326		302			201		484	
Turn Bay Length (ft)	80		100			130		140		
Base Capacity (vph)	286	512	333	541	699	389	1333	460	1037	924
Starvation Cap Reductn	0	0	0	0	0	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	0.08	0.29	0.51	0.28	0.50	0.02	0.50	0.62	0.53	0.05

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
2: Stewart St & William St

2050 MD Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	34	533	264	523	165	280	272	47	362
v/c Ratio	0.31	0.67	0.82	0.38	0.56	0.47	0.40	0.13	0.83
Control Delay	49.5	29.2	44.9	21.6	25.4	28.3	5.0	16.1	49.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	29.2	44.9	21.6	25.4	28.3	5.0	16.1	49.1
Queue Length 50th (ft)	20	150	145	148	59	134	0	15	192
Queue Length 95th (ft)	m36	175	#317	207	98	204	54	34	279
Internal Link Dist (ft)		255		869		563			312
Turn Bay Length (ft)	160		100					75	
Base Capacity (vph)	120	825	323	1370	295	607	690	374	526
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.65	0.82	0.38	0.56	0.46	0.39	0.13	0.69

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
3: Roop St & William St

2050 MD Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	696	267	791	53	565	170	422
v/c Ratio	0.17	0.62	0.77	0.53	0.17	0.81	0.62	0.43
Control Delay	9.0	17.2	41.0	17.2	19.4	43.6	30.8	27.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	17.2	41.0	17.2	19.4	43.6	30.8	27.1
Queue Length 50th (ft)	7	140	112	115	19	161	64	101
Queue Length 95th (ft)	m16	260	#190	180	42	212	#117	144
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	299	1157	354	1507	309	815	277	981
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.60	0.75	0.52	0.17	0.69	0.61	0.43

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
5: Saliman Rd & William St

2050 MD Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	36	882	312	956	183	212	350	172	127
v/c Ratio	0.17	0.70	0.83	0.59	0.41	0.73	0.68	0.76	0.44
Control Delay	35.2	21.7	49.9	12.2	29.2	52.9	13.2	53.3	33.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	21.7	49.9	12.2	29.2	52.9	13.2	53.3	33.7
Queue Length 50th (ft)	10	113	94	64	77	111	12	72	26
Queue Length 95th (ft)	m17	#205	#165	85	144	#244	#106	#160	54
Internal Link Dist (ft)		571		1368		439			691
Turn Bay Length (ft)	240		180		290			160	
Base Capacity (vph)	208	1254	379	1628	451	295	519	228	342
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.70	0.82	0.59	0.41	0.72	0.67	0.75	0.37

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
 6: Gold Dust West Way & William St

2050 MD Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	95	1165	263	1231	101	265	89	62
v/c Ratio	0.56	0.55	0.79	0.45	0.53	0.59	0.95	0.22
Control Delay	45.6	23.2	50.9	14.7	44.1	10.7	119.0	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	23.2	50.9	14.7	44.1	10.7	119.0	13.2
Queue Length 50th (ft)	48	217	143	157	53	3	50	4
Queue Length 95th (ft)	m63	257	216	223	98	67	#123	37
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	208	2137	424	2735	267	521	130	364
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.55	0.62	0.45	0.38	0.51	0.68	0.17

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
1: Carson St & William St

2050 PM Peak Hour - Proposed Corridor

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	240	23	128	112	430	4	544	180	292	490	29
Future Volume (veh/h)	27	240	23	128	112	430	4	544	180	292	490	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	261	25	139	122	467	4	591	196	317	533	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	376	446	43	361	540	456	266	738	244	369	671	565
Arrive On Green	0.06	0.27	0.27	0.08	0.29	0.29	0.06	0.28	0.28	0.13	0.36	0.36
Sat Flow, veh/h	1781	1679	161	1781	1870	1577	1781	2616	866	1781	1870	1574
Grp Volume(v), veh/h	29	0	286	139	122	467	4	401	386	317	533	32
Grp Sat Flow(s),veh/h/ln	1781	0	1840	1781	1870	1577	1781	1777	1705	1781	1870	1574
Q Serve(g_s), s	1.0	0.0	12.2	5.0	4.5	26.0	0.1	18.8	18.9	10.9	23.0	1.2
Cycle Q Clear(g_c), s	1.0	0.0	12.2	5.0	4.5	26.0	0.1	18.8	18.9	10.9	23.0	1.2
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.51	1.00		1.00
Lane Grp Cap(c), veh/h	376	0	489	361	540	456	266	501	481	369	671	565
V/C Ratio(X)	0.08	0.00	0.59	0.39	0.23	1.03	0.02	0.80	0.80	0.86	0.79	0.06
Avail Cap(c_a), veh/h	376	0	489	361	540	456	266	501	481	369	671	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	28.7	22.0	24.3	32.0	21.2	29.9	30.0	20.9	25.9	18.9
Incr Delay (d2), s/veh	0.0	0.0	1.2	0.3	0.1	48.7	0.0	12.6	13.2	17.3	9.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	5.5	2.1	2.0	15.8	0.1	9.7	9.4	6.1	11.7	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	0.0	30.0	22.2	24.4	80.7	21.2	42.5	43.2	38.2	35.3	19.1
LnGrp LOS	C	A	C	C	C	F	C	D	D	D	D	B
Approach Vol, veh/h		315			728			791			882	
Approach Delay, s/veh		29.2			60.1			42.7			35.7	
Approach LOS		C			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.4	31.3	12.0	29.3	10.5	38.2	9.9	31.4				
Change Period (Y+Rc), s	* 5.3	5.9	5.0	5.4	5.5	5.9	* 4.9	5.4				
Max Green Setting (Gmax), s	* 12	25.4	7.0	23.9	5.0	32.3	* 5	26.0				
Max Q Clear Time (g_c+I1), s	12.9	20.9	7.0	14.2	2.1	25.0	3.0	28.0				
Green Ext Time (p_c), s	0.0	1.6	0.0	0.8	0.0	1.5	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			43.5									
HCM 6th LOS			D									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

William Street Corridor
2: Stewart St & William St

2050 PM Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	542	149	246	401	28	260	306	342	40	236	26
Future Volume (veh/h)	49	542	149	246	401	28	260	306	342	40	236	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	589	162	267	436	30	283	333	372	43	257	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	793	218	253	1312	90	313	500	421	225	323	35
Arrive On Green	0.04	0.29	0.29	0.05	0.13	0.13	0.10	0.27	0.27	0.04	0.19	0.19
Sat Flow, veh/h	1781	2749	754	1781	3373	231	1781	1870	1576	1781	1656	180
Grp Volume(v), veh/h	53	380	371	267	229	237	283	333	372	43	0	285
Grp Sat Flow(s),veh/h/ln	1781	1777	1727	1781	1777	1827	1781	1870	1576	1781	0	1836
Q Serve(g_s), s	2.6	17.4	17.5	12.8	10.6	10.6	9.2	14.3	20.4	1.7	0.0	13.3
Cycle Q Clear(g_c), s	2.6	17.4	17.5	12.8	10.6	10.6	9.2	14.3	20.4	1.7	0.0	13.3
Prop In Lane	1.00		0.44	1.00		0.13	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	73	513	498	253	691	710	313	500	421	225	0	358
V/C Ratio(X)	0.73	0.74	0.74	1.05	0.33	0.33	0.90	0.67	0.88	0.19	0.00	0.80
Avail Cap(c_a), veh/h	137	513	498	253	691	710	313	582	490	259	0	473
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.79	0.79	0.79	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.7	29.0	29.0	42.9	28.6	28.6	29.1	29.4	31.6	27.6	0.0	34.5
Incr Delay (d2), s/veh	5.1	9.3	9.7	65.1	1.0	1.0	27.2	1.5	14.2	0.2	0.0	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	8.6	8.5	10.7	5.2	5.4	4.0	6.4	9.3	0.7	0.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.8	38.3	38.7	108.0	29.6	29.6	56.3	30.9	45.9	27.8	0.0	39.6
LnGrp LOS	D	D	D	F	C	C	E	C	D	C	A	D
Approach Vol, veh/h		804			733			988			328	
Approach Delay, s/veh		39.1			58.2			43.8			38.0	
Approach LOS		D			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	31.3	18.0	31.6	15.6	24.8	9.0	40.6				
Change Period (Y+Rc), s	5.8	* 7.3	* 5.2	5.6	6.4	* 7.3	* 5.3	5.6				
Max Green Setting (Gmax), s	5	* 28	* 13	20.3	9.2	* 23	* 6.9	26.1				
Max Q Clear Time (g_c+13), s	13.7	22.4	14.8	19.5	11.2	15.3	4.6	12.6				
Green Ext Time (p_c), s	0.0	1.1	0.0	0.3	0.0	0.7	0.0	1.6				

Intersection Summary

HCM 6th Ctrl Delay	45.5
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
3: Roop St & William St

2050 PM Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	759	83	219	537	122	52	374	264	202	364	69
Future Volume (veh/h)	109	759	83	219	537	122	52	374	264	202	364	69
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	118	825	90	238	584	133	57	407	287	220	396	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	383	1056	115	304	1032	234	297	460	321	258	798	150
Arrive On Green	0.08	0.43	0.43	0.18	0.72	0.72	0.04	0.23	0.23	0.09	0.27	0.27
Sat Flow, veh/h	1781	3230	352	1781	2874	653	1781	1994	1392	1781	2983	560
Grp Volume(v), veh/h	118	454	461	238	360	357	57	362	332	220	234	237
Grp Sat Flow(s),veh/h/ln	1781	1777	1805	1781	1777	1750	1781	1777	1609	1781	1777	1766
Q Serve(g_s), s	3.9	19.7	19.7	8.0	8.7	8.7	2.2	17.7	18.0	7.8	10.0	10.2
Cycle Q Clear(g_c), s	3.9	19.7	19.7	8.0	8.7	8.7	2.2	17.7	18.0	7.8	10.0	10.2
Prop In Lane	1.00		0.20	1.00		0.37	1.00		0.86	1.00		0.32
Lane Grp Cap(c), veh/h	383	581	590	304	638	628	297	410	371	258	475	472
V/C Ratio(X)	0.31	0.78	0.78	0.78	0.56	0.57	0.19	0.88	0.89	0.85	0.49	0.50
Avail Cap(c_a), veh/h	413	581	590	304	638	628	323	434	393	258	475	472
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.57	0.57	0.57	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	22.7	22.7	20.3	9.3	9.3	24.9	33.4	33.5	27.5	27.8	27.9
Incr Delay (d2), s/veh	0.1	5.9	5.9	11.4	3.6	3.7	0.1	17.4	20.4	22.4	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	8.2	8.3	3.8	2.9	2.9	0.9	9.5	9.0	5.2	4.3	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	28.6	28.5	31.6	12.9	13.0	25.0	50.8	53.9	49.8	28.1	28.2
LnGrp LOS	B	C	C	C	B	B	C	D	D	D	C	C
Approach Vol, veh/h		1033			955			751			691	
Approach Delay, s/veh		27.4			17.6			50.2			35.1	
Approach LOS		C			B			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.0	27.2	14.0	35.8	9.7	30.5	11.1	38.7				
Change Period (Y+Rc), s	5.2	6.4	6.0	6.4	5.9	6.4	5.5	6.4				
Max Green Setting (Gmax), s	7.8	22.0	8.0	28.2	5.1	24.0	7.1	29.6				
Max Q Clear Time (g_c+1), s	19.8	20.0	10.0	21.7	4.2	12.2	5.9	10.7				
Green Ext Time (p_c), s	0.0	0.6	0.0	2.4	0.0	1.6	0.0	2.7				

Intersection Summary

HCM 6th Ctrl Delay		31.2										
HCM 6th LOS			C									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
4: William St & State St

2050 PM Peak Hour - Proposed Corridor

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↑↑	↑↑			↔
Traffic Vol, veh/h	91	1157	779	105	0	82
Future Vol, veh/h	91	1157	779	105	0	82
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	99	1258	847	114	0	89



























Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	966	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.14	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.22	-	-
Pot Cap-1 Maneuver	709	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	706	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	706	-	-	-	518
HCM Lane V/C Ratio	0.14	-	-	-	0.172
HCM Control Delay (s)	10.9	-	-	-	13.4
HCM Lane LOS	B	-	-	-	B
HCM 95th %tile Q(veh)	0.5	-	-	-	0.6

William Street Corridor
5: Saliman Rd & William St

2050 PM Peak Hour - Proposed Corridor

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 						 	
Traffic Volume (vph)	45	906	211	410	738	134	121	186	403	247	187	25
Future Volume (vph)	45	906	211	410	738	134	121	186	403	247	187	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	240		175	180		155	290		0	160		0
Storage Lanes	2		0	2		0	1		1	1		0
Taper Length (ft)	90			90			90			90		
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor		1.00			1.00				0.98	1.00	1.00	
Frt		0.972			0.977				0.850		0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3429	0	3433	3449	0	1770	1863	1583	1770	3469	0
Flt Permitted	0.950			0.950			0.608			0.430		
Satd. Flow (perm)	3433	3429	0	3433	3449	0	1133	1863	1559	799	3469	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			27				283		13	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		651			1448			519			771	
Travel Time (s)		11.1			24.7			14.2			21.0	
Confl. Peds. (#/hr)			5			5			5	5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	985	229	446	802	146	132	202	438	268	203	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	1214	0	446	948	0	132	202	438	268	230	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2	6		
Detector Phase	7	4		3	8		5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.7	15.5		12.6	15.4		10.5	11.4	11.4	10.5	11.4	
Total Split (s)	12.7	34.0		18.0	39.3		11.6	15.0	15.0	13.0	16.4	
Total Split (%)	14.1%	37.8%		20.0%	43.7%		12.9%	16.7%	16.7%	14.4%	18.2%	
Maximum Green (s)	5.0	28.5		10.4	33.9		6.1	8.6	8.6	7.5	10.0	
Yellow Time (s)	3.6	4.5		3.5	4.4		3.0	3.4	3.4	3.0	3.4	
All-Red Time (s)	4.1	1.0		4.1	1.0		2.5	3.0	3.0	2.5	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.7	5.5		7.6	5.4		5.5	6.4	6.4	5.5	6.4	
Lead/Lag	Lag	Lead		Lag	Lead		Lag	Lead	Lead	Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	1.7	2.7		1.7	2.7		1.9	2.0	2.0	1.9	2.0	

Lane Group	Ø11	Ø12
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	11	12
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0
Minimum Split (s)	5.0	5.0
Total Split (s)	5.0	5.0
Total Split (%)	6%	6%
Maximum Green (s)	3.0	3.0
Yellow Time (s)	2.0	2.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0

William Street Corridor
5: Saliman Rd & William St

2050 PM Peak Hour - Proposed Corridor

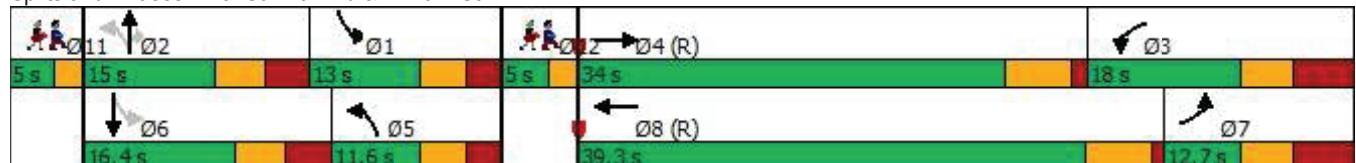


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)		9.0			8.0			9.0	9.0			14.0
Flash Dont Walk (s)		21.0			20.0			28.0	28.0			28.0
Pedestrian Calls (#/hr)		5			5			5	5			5
Act Effct Green (s)	6.4	32.5		10.4	41.6		24.0	12.6	12.6	17.7		9.3
Actuated g/C Ratio	0.07	0.36		0.12	0.46		0.27	0.14	0.14	0.20		0.10
v/c Ratio	0.20	0.96		1.13	0.59		0.35	0.78	0.95	1.13		0.62
Control Delay	35.3	32.2		128.4	23.8		30.3	60.2	47.3	131.1		43.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0
Total Delay	35.3	32.2		128.4	23.8		30.3	60.2	47.3	131.1		43.8
LOS	D	C		F	C		C	E	D	F		D
Approach Delay		32.3			57.3			47.8				90.8
Approach LOS		C			E			D				F

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle:	120
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.13
Intersection Signal Delay:	51.6
Intersection LOS:	D
Intersection Capacity Utilization:	91.1%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 5: Saliman Rd & William St



Lane Group	Ø11	Ø12
Recall Mode	None	None
Walk Time (s)	3.0	3.0
Flash Dont Walk (s)	0.0	0.0
Pedestrian Calls (#/hr)	5	5
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Intersection Summary		

William Street Corridor
6: Gold Dust West Way & William St

2050 PM Peak Hour - Proposed Corridor



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑↑		↖	↑↑↑		↖	↑		↖	↑	
Traffic Volume (veh/h)	84	1392	100	345	1126	91	101	8	244	100	6	68
Future Volume (veh/h)	84	1392	100	345	1126	91	101	8	244	100	6	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	0.99		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	91	1513	109	375	1224	99	110	9	265	109	7	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	1763	127	407	2531	205	241	9	256	80	23	244
Arrive On Green	0.07	0.36	0.36	0.23	0.53	0.53	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	4859	350	1781	4813	389	1308	52	1527	1102	138	1455
Grp Volume(v), veh/h	91	1060	562	375	866	457	110	0	274	109	0	81
Grp Sat Flow(s),veh/h/ln	1781	1702	1805	1781	1702	1798	1308	0	1579	1102	0	1593
Q Serve(g_s), s	4.5	25.9	25.9	18.5	14.6	14.6	7.2	0.0	15.1	0.0	0.0	4.0
Cycle Q Clear(g_c), s	4.5	25.9	25.9	18.5	14.6	14.6	11.3	0.0	15.1	15.1	0.0	4.0
Prop In Lane	1.00		0.19	1.00		0.22	1.00		0.97	1.00		0.91
Lane Grp Cap(c), veh/h	116	1235	655	407	1790	945	241	0	265	80	0	267
V/C Ratio(X)	0.78	0.86	0.86	0.92	0.48	0.48	0.46	0.00	1.03	1.36	0.00	0.30
Avail Cap(c_a), veh/h	202	1235	655	412	1790	945	241	0	265	80	0	267
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.4	26.5	26.5	33.9	13.6	13.6	37.8	0.0	37.5	45.0	0.0	32.8
Incr Delay (d2), s/veh	4.3	7.8	13.7	25.4	0.9	1.8	0.5	0.0	64.4	224.6	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	11.0	12.8	10.4	5.2	5.7	2.3	0.0	10.5	6.8	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.7	34.4	40.2	59.4	14.5	15.3	38.3	0.0	101.9	269.6	0.0	33.1
LnGrp LOS	D	C	D	E	B	B	D	A	F	F	A	C
Approach Vol, veh/h		1713			1698			384			190	
Approach Delay, s/veh		36.9			24.6			83.7			168.7	
Approach LOS		D			C			F			F	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0	26.9	40.1		23.0	12.3	54.7				
Change Period (Y+Rc), s		7.9	6.4	7.4		7.9	* 6.4	7.4				
Max Green Setting (Gmax), s		15.1	20.8	32.4		15.1	* 10	43.0				
Max Q Clear Time (g_c+I1), s		17.1	20.5	27.9		17.1	6.5	16.6				
Green Ext Time (p_c), s		0.0	0.0	3.2		0.0	0.0	8.0				

Intersection Summary

HCM 6th Ctrl Delay	42.5
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

William Street Corridor
1: Carson St & William St

2050 PM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	29	286	139	122	467	4	787	317	533	32
v/c Ratio	0.08	0.77	0.51	0.23	0.66	0.01	0.72	0.80	0.55	0.04
Control Delay	18.7	47.4	25.1	22.2	12.4	12.8	31.0	35.2	20.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.7	47.4	25.1	22.2	12.4	12.8	31.0	35.2	20.0	0.1
Queue Length 50th (ft)	11	152	38	33	45	1	204	111	184	0
Queue Length 95th (ft)	27	222	m55	m58	m202	7	275	#294	#432	0
Internal Link Dist (ft)		326		302			201		484	
Turn Bay Length (ft)	80		100			130		140		
Base Capacity (vph)	358	490	276	564	726	360	1092	398	967	872
Starvation Cap Reductn	0	0	0	0	0	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	0.08	0.58	0.50	0.22	0.64	0.01	0.72	0.80	0.55	0.04

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
2: Stewart St & William St

2050 PM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	53	751	267	466	283	333	372	43	285
v/c Ratio	0.43	0.91	0.78	0.33	0.83	0.60	0.51	0.13	0.78
Control Delay	43.2	43.6	37.9	16.7	43.2	32.4	5.5	17.2	48.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.2	43.6	37.9	16.7	43.2	32.4	5.5	17.2	48.0
Queue Length 50th (ft)	25	219	105	120	116	172	0	15	151
Queue Length 95th (ft)	m37	#327	#318	181	#196	245	62	32	223
Internal Link Dist (ft)		255		869		563			312
Turn Bay Length (ft)	160		100					75	
Base Capacity (vph)	139	823	342	1410	340	591	748	320	476
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.91	0.78	0.33	0.83	0.56	0.50	0.13	0.60

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
3: Roop St & William St

2050 PM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	118	915	238	717	57	694	220	471
v/c Ratio	0.40	0.86	0.90	0.61	0.18	0.90	0.86	0.47
Control Delay	11.9	24.6	66.8	22.3	18.9	49.4	53.4	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	24.6	66.8	22.3	18.9	49.4	53.4	27.4
Queue Length 50th (ft)	15	271	109	94	20	199	84	113
Queue Length 95th (ft)	m28	m322	#240	192	44	#294	#204	161
Internal Link Dist (ft)		869		2210		439		430
Turn Bay Length (ft)	100		280		260		105	
Base Capacity (vph)	305	1099	264	1182	314	805	255	1011
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.83	0.90	0.61	0.18	0.86	0.86	0.47

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

William Street Corridor
5: Saliman Rd & William St

2050 PM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	49	1214	446	948	132	202	438	268	230
v/c Ratio	0.20	0.96	1.13	0.59	0.35	0.78	0.95	1.13	0.62
Control Delay	35.3	32.2	128.4	23.8	30.3	60.2	47.3	131.1	43.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.3	32.2	128.4	23.8	30.3	60.2	47.3	131.1	43.8
Queue Length 50th (ft)	14	158	~159	277	56	111	89	~140	62
Queue Length 95th (ft)	m18	m#521	#258	349	111	#270	#308	#325	100
Internal Link Dist (ft)		571		1368		439			691
Turn Bay Length (ft)	240		180		290			160	
Base Capacity (vph)	244	1259	396	1606	378	260	461	238	406
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.96	1.13	0.59	0.35	0.78	0.95	1.13	0.57

Intersection Summary

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

William Street Corridor
 6: Gold Dust West Way & William St

2050 PM Peak Hour - Proposed Corridor



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	91	1622	375	1323	110	274	109	81
v/c Ratio	0.56	0.88	0.94	0.50	0.50	0.57	0.95	0.25
Control Delay	48.2	16.4	68.1	15.3	43.1	10.2	113.0	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.2	16.4	68.1	15.3	43.1	10.2	113.0	11.8
Queue Length 50th (ft)	52	257	209	178	58	4	62	3
Queue Length 95th (ft)	m50	m195	#375	226	111	73	#165	43
Internal Link Dist (ft)		502		691		342		203
Turn Bay Length (ft)	250		200		115			
Base Capacity (vph)	200	1848	409	2641	219	483	115	327
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.88	0.92	0.50	0.50	0.57	0.95	0.25

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.