# APPENDIX A

## AIR QUALITY CONSISTENCY DETERMINATION

row

# MBUAPCD CONSISTENCY DETERMINATION PROCEDURE Ver. 4.0

| | | | |
|---|---|---|---|
| | *Data entry* | 10/8/2013 | *Data entered by user.* |
| | *Consistency Finding* | NO / YES | |

| | | | | | |
|---|---|---|---|---|---|
| 6 | Jurisdiction: | **Hollister** | | | *Lead Agency selects from pull down* |
| 7 | Project Name: | **Gonzales Borelli PreZone** | | | *Lead Agency enters* |
| 8 | Base Year for this determination: | **2010** | Project Buildout/ Occupancy Year | **2025** | *Lead Agency enters* |
| 9 | | | Proposed Project Occupied DU | **336** | *Total buildout of Project. Sum of all years, row 26.* |

## JURISDICTION DATA FROM AQMP & DOF (no data entry)

| | | Base Year | Period ending January 1st of: | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **2010** | **2015** | **2020** | **2025** | **2030** | **2035** | ***Notes*** |
| 14 | DOF Population | 37,301 | *From Calif. Dept of Finance. Est. for Jan 1 -- released in June of each year.* | | | | | |
| 15 | AMBAG DU Forecast for Jurisdiction | 11,544 | 12,816 | 14,085 | 15,605 | 17,108 | 18,221 | *DUs from AMBAG Travel Model, current version.* |
| 16 | AMBAG Pop Forecast for Jurisdiction | 40,415 | 44,613 | 49,064 | 54,143 | 59,259 | 62,756 | *Latest AMBAG Pop. & Employment forecasts.* |
| 17 | AMBAG Forecast Population/ DU | 3.50 | 3.48 | 3.48 | 3.47 | 3.46 | 3.44 | *Row 16/ row 15* |
| 18 | Estimated Built DUs | 10,610 | *Entry for 2010 is the DOF 1/2010 Housing Unit Estimate. Lead agency may overwrite if they have better data.* | | | | | |

## JURISDICTION DUs w/o PROJECT

| | | **2010** | **2015** | **2020** | **2025** | **2030** | **2035** | |
|---|---|---|---|---|---|---|---|---|
| 21 | Housing Stock (Built DUs, Total) | 10,610 | 10,855 | 11,855 | 12,855 | 0 | 0 | *2010 Housing Stock is baseline across the project life* |
| 22 | Approved but not Built DUs | | 2,250 | 1,250 | 250 | 0 | 0 | *Lead Agency estimates value at period end.* |
| 23 | Total Built & Approved DUs | 10,610 | 13,105 | 13,105 | 13,105 | 0 | 0 | *Sum of Row 21 + 22* |

## PROPOSED NEW PROJECT DUs

| | | **2015** | **2020** | **2025** | **2030** | **2035** | |
|---|---|---|---|---|---|---|---|
| 26 | Proposed New Project DUs | **0** | **0** | **336** | **0** | **0** | *Data entry by Lead Agency.* |
| 27 | TOTAL, New Project + Built & Approved DUs | **13,105** | **13,105** | **13,441** | **0** | **0** | *Sum of Row 23 + 26* |

## NEW PROJECT CONSISTENCY DETERMINATION

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 29 | Over (Under) AQMP DUs | **289** | **(980)** | **(2,164)** | **(17,108)** | **(18,221)** | *Row 27 - Row 15* |
| 30 | Is the project consistent in this Period? | NO | YES | YES | YES | YES | *If Row 30 is (negative) = YES, if positive = NO.* |

## OPTIONS IF INCONSISTENT (Choose one):

| | Year: | **2015** | **2020** | **2025** | **2030** | **2035** | |
|---|---|---|---|---|---|---|---|
| 38 | **A. Consult CEQA Statute and Guidelines for appropriate mitigation options** | **289** | | | | | |
| | **B. Lead Agency preparation of consistency determination via an alternative method** | **289** | | | | | |
| 40 | **C. Regional offset of significant cumulative air quality impact; For EIRs, declare Statement of Overriding Consideration** | | | | | | |

# APPENDIX B

## GREENHOUSE GAS MEMO

EMC PLANNING GROUP INC.
A LAND USE PLANNING & DESIGN FIRM

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**To:** Teri Wissler Adam, Project Manager

**From:** Stefanie Krantz

**Cc:** File

**Date:** April 16, 2015

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**Re:** Borelli Prezone Initial Study: GHG/AQ Emissions Quantification - Methodology and Assumptions

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## *Background and Scope of Assessment*

Project-related air and greenhouse gas (GHG) emissions for the proposed project were estimated using California Emissions Estimator Model (CalEEMod) Version 2013.2.2 software. The use of CalEEMod is recommended by the California Air Resources Board (CARB) and accepted by the Monterey Bay Unified Air Quality Management District (MBUAPCD). Criteria air pollutant emissions are reported in pounds per day; GHG emissions are reported in metric tons of carbon dioxide equivalents (MT CO2e) per year. An initial study is being prepared to analyze the environmental impacts of the anticipated emissions from future development of the 37.28-acre project site with residential uses. The number of units was derived by taking 75 percent of the gross project site acreage to determine the net acreage and multiply by 12 units, the maximum number of units allowed per net acre by the City's R3 M/PZ zone district regulations. This assessment quantifies construction and operational air and GHG emissions that would result from development of the site with 336 residential units and related infrastructure improvements.

### Emissions Model

The CalEEMod platform allows calculations of both construction emissions and operational emissions from land use projects. It calculates the daily maximum and annual average for criteria pollutants as well as total or annual GHG emissions. The CalEEMod software utilizes emissions models USEPA AP-42 emission factors, CARB vehicle emission models studies and studies

commissioned by other California agencies such as the California Energy Commission and CalRecycle. The MBUAPCD has not yet adopted thresholds for GHG emissions and recommends referring to the San Luis Obispo Air Pollution Control District (SLOAPCD) for guidance on emissions analyses. MBUAPCD and the SLOAPCD recommend using the model's default parameters to calculate estimated construction emissions when specific construction details are not available (Clymo 2013; Guise 2013). Both air districts recommend amortizing construction GHG emissions over a 30-year period and include the results in the amount of annual GHG emissions attributable to a project.

### Project Background

The project site is generally located north of the City of Hollister (City), and is within the City's 20 year Planning Area and Sphere of Influence but not within the city limits. Most of the site appears to be recently plowed and is being used for agricultural production with the exception of four single-family homes located along Buena Vista Road at the southern extent of the site (Google Maps 2014). Single-family homes and an orchard are located to the south. Areas to the north, east, and west (unincorporated San Benito County) are primarily in agricultural production (row crops and orchard).

The City has received an application for annexation and prezone for the site. The proposed project does not include specific development details and would not change the existing land use designations for the site as identified in the general plan. This assessment addresses only the requested entitlements and future development consistent with general plan land use designations that would result from them.

## *Methodology*

This assessment quantifies operational criteria air pollutant and GHG emissions for existing conditions and construction and operational criteria air pollutant and GHG emissions for the proposed project. Per MBUAPCD and SLOAPCD guidance, construction emissions of criteria air pollutants are quantified based on CalEEMod construction defaults. Because development plans are not yet available in detail sufficient to analyze site-specific future development of individual lots, this assessment includes a number of assumptions based on aggregate proposed land uses and anticipated improvements. Unless otherwise noted, data inputs for the model are based on observed existing conditions and anticipated future development consistent with the project description (City of Hollister 2014) and aerial photography. All other model defaults were used.

For modeling purposes, data inputs to the model take into account the type and size of existing and proposed uses utilizing CalEEMod default land uses, size metrics, and related default emissions factors. For ease of reference, existing and proposed land uses and their respective CalEEMod land use categories used in this assessment are shown in Table 1, Land Use Categories.

**Table 1 Land Use Categories**

| Existing and Proposed Land Use Types | CalEEMod Land Use Default Categories[1] |
|---|---|
| Very Low Density Residential | Single-family Housing[2] |
| Low Density Residential | Single-family Housing[2] |
| Medium Density Residential | Single-family Housing[2] |
| Agriculture | Cropland |

***Source:*** Google Earth 2015; Project Description from City of Hollister 2014; EMC Planning Group 2015

***Notes***: 1. Descriptions of the model's default land use categories are found in the CalEEMod User Guide (ENVIRON 2013) available online at: http://www.aqmd.gov/caleemod/guide.htm
2. The model default for Single-family Housing includes all densities assuming one dwelling unit per lot

It is assumed that full buildout of the project site would not occur earlier than 2025, which represents the limits of the data sets and assumptions that underlie the CalEEMod default emissions factors. Therefore, the operational date of the proposed project is assumed to be 2025.

## Operational Emissions Data Inputs

For operational emissions, the model calculates indirect criteria pollutant and GHG emissions from processes "downstream" of the project under evaluation such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. In addition to the data inputs listed in Table 1, estimates of the project's energy use, water and wastewater demand, and solid waste generation are generated by model default emissions factors.

## Construction Emissions Data Inputs

The CalEEMod program models construction emissions associated with land use development projects and allows for the input of project-specific construction information including phasing (demolition, site preparation, grading, paving, architectural, and finishing) and equipment information, if known. CalEEMod default construction parameters allow estimates of construction emissions based upon empirical data collected and analyzed by CARB. Both MBUAPCD and the SLOAPCD recommend using the model's default parameters to calculate estimated construction

emissions when specific construction details are not available (Clymo 2013; Guise 2013). Detailed information regarding the construction (phasing, number and type of equipment by phase, etc) is not yet available for future development consistent with the project concept plan; therefore, construction emissions estimates are based on CalEEMod default construction factors.

### Carbon Offsets and Sequestration Inputs

CalEEMod also estimates a one-time only change in sequestration potential resulting from converting plant communities to development. Project-specific data inputs to determine the one-time only loss of sequestration potential are derived from a comparison of existing and proposed conditions on a project site, based upon changes in land use and vegetation. An estimate of the loss of sequestration potential resulting from the conversion of cropland to urban development is included in this assessment.

The model can also calculate a carbon "offset" based upon the number of net new trees proposed as part of a development, averaged over a 20-year growth cycle. However, only new tree plantings in an amount greater than a 1:1 replacement planting ratio would yield a measureable carbon offset. Project information of the number of trees that would be removed and planted as part of future development is not yet available to enable determination of the carbon sequestration savings that would be yielded by new tree plantings greater than a 1:1 replacement planting ratio. Therefore, estimates of emissions from potential future carbon offsets are not included in this assessment.

### Model Baseline

The baseline for criteria air pollutant emissions are already quantified in air quality management plans. CalEEMod default values for baseline conditions assume new development on a vacant site. For development that replaces existing improvements on specific sites, project-specific contributions to regional GHG emissions can be derived by comparing project-specific GHG emissions to the baseline GHG emissions under existing conditions. The difference between the two (net emissions) would be the project's contribution to operational GHG emissions.

## *Model Scenarios*

### Existing Conditions

Existing uses within the site include agriculture, rural residences, and farm buildings. A majority of the site, approximately 34.7 acres, consists of active agricultural land. Active agriculture is not included as a source of significant emissions according to CalEEMod. However, the model does

consider cropland as a habitat classification for determining project-related losses to sequestration potential. The remainder of the site consists of rural residences and outbuildings (2.62 acres). These uses are presented in Table 2, Existing Conditions.

**Table 2 Existing Conditions**

| Land Use | Acres | Existing Development |
|---|---|---|
| | | Residential[1] (units) |
| Single-family Housing | 2.62 | 4 |
| Cropland | 34.66 | - |
| Total[3]: | 37.28 | 4 |

***Source:*** Google Earth 2015; Project Description from City of Hollister 2014; EMC Planning Group 2015

### Proposed Land Uses

Operational emissions are quantified for 336 single-family residential units on the 37.28 acre site.

## *Results*

Operational GHG emissions model results are reported on an annual basis in metric tons of carbon dioxide equivalent ($CO_2e$). Operational and Construction criteria air pollutant emissions are expressed in pounds per day. Project-related Construction GHG emissions are short term emissions amortized over 30 years and thus captured in the total annual GHG emissions. Detailed model results for winter and summer criteria pollutant, and annual GHG emissions are included as attachments to this assessment.

### Operational Criteria Air Pollutant Emissions

Estimated operational criteria air pollutant emissions are presented in Table 3, Operational Criteria Air Pollutant Emissions.

**Table 3 Operational Criteria Air Pollutant Emissions**

| | ROG | NOx | $PM_{10}$ | $PM_{25}$ |
|---|---|---|---|---|
| Summer (Unmitigated) | 544.50 | 36.36 | 117.00 | 97.10 |
| Summer (Mitigated) | 30.87 | 29.38 | 28.41 | 8.51 |
| Winter (Unmitigated) | 545.08 | 39.83 | 117.00 | 97.10 |
| Winter (Mitigated) | 31.46 | 32.86 | 28.41 | 8.51 |

***Source:*** EMC Planning Group Inc. 2015.

Estimated unmitigated construction criteria air pollutant emissions are presented in Table 4, Construction Criteria Air Pollutant Emissions.

**Table 4 Construction Criteria Pollutant Emissions**

| | ROG | NOx | $PM_{10}$ | $PM_{25}$ |
|---|---|---|---|---|
| Summer (Unmitigated) | 358.66 | 156.21 | 31.24 | 18.55 |
| Winter (Unmitigated) | 358.94 | 157.33 | 31.24 | 18.55 |

***Source:*** EMC Planning Group Inc. 2015.

## Greenhouse Gas Emissions

A comparison of model results and net emissions are presented in Table 5, Operational GHG Emissions.

**Table 5 Operational GHG Emissions (metric tons per year)**

| GHG Emissions ($CO_2e$) | | |
|---|---|---|
| **Existing** | **Proposed** | **Net Emissions** |
| 90.66[1] | 6,541.52[2] | 6,450.86 |

***Source:*** CalEEMod Results EMC Planning Group 2015

***Note:*** 1. Unmitigated

***2.*** Mitigated, includes compliance with MBUAPCD rules prohibiting woodburning fireplaces/stoves

According to the model results, during construction the proposed project would generate 2,081.52 metric tons of $CO_2e$ (carbon dioxide equivalents, or GHGs). Amortized over a 30-year period, the proposed project would result in equivalent annual construction emissions of 69.32 metric tons CO2e per year.

The conversion of cropland to urban uses would result in a one-time loss of 214.89 metric tons CO2e, which, when amortized over a 30-year period, results in an additional 7.16 metric tons CO2e per year. Total GHG emissions attributable to the proposed project are presented in Table 6, Total Project GHG Emissions (metric tons per year).

**Table 6 Total Project GHG Emissions (metric tons per year)**

| Amortized Construction | Operational | Amortized Loss of Sequestration Potential | Total Annual Emissions |
|---|---|---|---|
| 69.32 | 6,450.86 | 7.16 | 6,527.34 |

***Source:*** EMC Planning Group Inc. 2015.

## Sources

1. Clymo, Amy, Air Pollution Control Officer, Monterey Bay Unified Air Pollution Control District (MBUAPCD). Telephone Conversation with Consultant, August 26, 2013.

2. EMC Planning Group Inc. Results of CalEEMod modeling for Borelli Prezone Initial Study. March, 2015. Included as an attachment.

3. Environ International Corporation. *California Emission Estimator Model User's Guide Version 2013.2. July 2013*. Available online at: http://www.aqmd.gov/caleemod/guide.htm.

4. Environ International Corporation. *CalEEMod User's Tips (Version 2013.2.2)* October 2013. Available online at: http://www.aqmd.gov/caleemod/guide.htm.

5. Guise, Melissa, San Luis Obispo Air Pollution Control District (SLOAPCD). Telephone Conversation with Consultant, December 2, 2013.

6. MBUAPCD. CEQA Air Quality Guidelines. 2008. http://www.mbuapcd.org/mbuapcd/pdf/mbuapcd/pdf/CEQA_full.pdf

7. San Benito Engineering and Surveying, Inc. Buena Vista Road Prezoning Map. May 14, 2014.

8. SLOAPCD CEQA Air Quality Handbook, a Guide for Assessing the Air Quality Impacts for Projects Subject to CEQA Review. April 2012.

# APPENDIX C

## PLAN FOR SERVICES

# PLAN FOR SERVICES

RECEIVED
MAY 16 2014
CITY OF HOLLISTER
DEVELOPMENT SERVICES

| | |
|---|---|
| *Property Owner Name:* | Fernando Gonzalez and Frank Borelli |
| *Applicant Name:* | Gonzalez Annexation |
| *Assessor Parcel Numbers:* | 19-11-31, 19-12-38 |

This Plan for Services accompanies the application of pre-zoning for property by the City of Hollister for purposes of annexation. The property to be annexed comprises 36.69 acres. The intent of the application is to allow for annexation only – no development is proposed as part of this application. The annexation site is located on the northwest corner of Buena Vista Road and Miller Road – see attached map. The owner is requesting a pre-zoning of Medium Density Residential (MDR), which is consistent with the City of Hollister General Plan.

Pursuant to Section 56653 of the Cortese/Knox Act, the City of Hollister must file a plan for providing services for the affected area of the annexation as part of the submission of the Resolution of Application. Section 56653 requires that the plan for providing services include the following information:

1. An enumeration and description of the services to be extended to the affected (annexed) property.
2. The level and range of those services.
3. An indication of when those services can feasibly be extended to the affected property.
4. An indication of any improvements or upgrading of structures, roads, sewer or water facilities, or other conditions the local agency would impose or require within the affected territory if the change or organization (annexation) is completed.
5. Information with respect to how those services will be financed.

In addition, San Benito County LAFCO policy also requires a clear quantifiable mechanism to provide adequate services.

Below is an analysis of the services that will be required for the annexation of the affective property pursuant to the requirements set forth by Section 56653 of the Act.

***

The Gonzalez Annexation consists of 36.69 acres located at the northwest corner of the intersection of Buena Vista Road and Miller Road. The applicant is requesting pre-zoning and annexation under the City's Planning and Development Policies contained in their General Plan.

The following is a list of services that would be provided to the Gonzalez Annexation. They will be provided by the City of Hollister unless otherwise noted:

- General Government
- Police Service
- Fire Service
- Water Service
- Sewer Service
- Storm Drainage
- Road Construction
- Street and Utility Maintenance
- Parks and Recreation

## *General Government*

General Government Services include the City Council, City Administration (City Manager, City Attorney), City Finance (Payment of Utility Bills), Building, Planning, Engineering and Animal Control. These services are currently being provided to the City populous at large. Annexation of the affected area in its current condition will not cause any increase in City General Government services. Development of the site, if annexed, will cause a minor increase in General Government Service for the City Council, City Administration, City Finance and Animal Control. These will be financed through an incremental increase in General Fund Revenues, such as property and sales taxes. The City is also requiring that all projects requesting annexation enter into an agreement to be fiscally neutral (project will provide all revenues necessary to provide public service). The incremental increase in services for Building, Planning and Engineering will be financed through permit fees.

## *Police Service*

Police service to the affected area will be provided by the Hollister Police Department upon annexation. The Police Department provides this service throughout the city based on staffing levels set by the City Council. The proposed annexation is contiguous to the current City limits (current service area). The annexation will extend the boundary of police service currently in effect.

Upon annexation and development, the project will include roadways that would affect traffic enforcement/collision investigation responsibilities, and an incremental increase in staffing levels and capital equipment due to the increase in population. The increase in police service will be financed by the imposition of a Mello-Roos Community Facilities public safety tax. The increase in capital equipment

will be financed through the imposition of police impact fees collected at the time of building permit issuance or prior to occupancy of the site. The annexation of the area will not create the need for any police related structures or improvements.

### *Fire Service*

Fire service to the affected area will be provided by the Hollister Fire Department upon annexation. The Fire Department provides this service throughout the city and adjoining County areas, via a mutual aide agreement, based on staffing levels set by the City Council. The Fire Department houses its personnel at its stations located at the northwest corner of Fifth Street & Sally Street and Union Road & Valley View Road. The proposed annexation is contiguous to the current City limits (current service area), and will extend the boundary of fire service currently in effect. The area is within the five minute first response of the city Fire Station 1. Upon annexation and development, the project will require an incremental increase in staffing levels and capital equipment due to the increase in population. The increase in fire service will be financed by the imposition of a Mello-Roos Community Facilities public safety tax. The increase in capital equipment will be financed through the imposition of fire impact fees collected at the time of building permit issuance or prior to occupancy of the site. The annexation of the area will not create the need for any fire related structures or improvements.

### *Water Service*

Once annexed the property will be within the City of Hollister's service area. The annexation would have no effect on the provision of the service by the City of Hollister. All plans for water service will need to be approved by Hollister's Engineering Department. No specific development is proposed at this time, so no increased water demand is specifically calculated. A conservative estimate would be to assume full medium density residential on 36.69 acres. With a 25% loss to roads and infrastructure, and at City of Hollister standards of 12 dwelling units per acres (DU/acre), it would result in a potential 330 medium density residential dwelling units. The Hollister Urban Area Water and Wastewater Master Plan determined a usage value of 312 gallons per day per dwelling unit (gpd/DU) for single family residential homes. Using these numbers, demand would be 102,960 gallons of water per day. An existing 12" water main is located in Buena Vista Road along the full frontage. A developer will be required to fund the installation of the water lines to all City of Hollister standards.

### *Sewer Service*

Four residential structures currently occupy the site, all four are served by existing septic tanks. Development of the site after annexation will require City of Hollister sewer service. The City of Hollister currently provides sewer service to and with the Hollister Domestic Wastewater Treatment Plant (DWTP), which serves within the city limits and portions of unincorporated San Bento County. No specific development is proposed at this time, so no specific sewer service demand is calculated. For a conservative estimate, using the 330 MDRU explained above and the city Q Average Coefficient of 160

gpd/MFDU, the development would generate an anticipated flow of 52,800 gallons per day of wastewater.

Sewage or wastewater flows are transported to the treatment plant via a series of transmission lines. The project would be served by an existing 8" sanitary sewer line in Buena Vista Road which currently overlaps the annexation areas' south-eastern border with Buena Vista road for 373 linear feet west of the intersection with Miller Drive. In the event that property to the north, east and/or west is developed in the future, gravity flow through those developments can be reconsidered at that time. Any development would be required to provide access from Buena Vista Road with a connection to the 8" sanitary sewer line. This sanitary sewer line flows under gravity to the DWTP with no required lift stations. Per the City of Hollister Sanitary Sewer Collection System Master Plan adopted in August, 2010, this entire property is included in the study area. The collection system for this area was found adequate under anticipated future flows with the exception of a 971 LF section of existing 21" and 36" VCP on San Juan Hollister Road from Graf Road to Valona Way and a 370 LF section of existing 8" VCP on Miller Road from San Juan Hollister Road towards Central Ave. These portions are planned upgrades as Long Term Project No. 6: Miller Road Sewer Pipe Upgrade and the Near Term Project No. 1 Bridge Road Interconnect, respectively. However, since these upgrades location are approximately 1,500 LF from the subject property, there is a large number of potential developments contributory to that upgrade. To offset the use of the capacity for the transmission lines, any development will be assessed an impact fee at the time of building permit issuance. A sewer treatment impact fee will also be assessed to provide funding for additional capacity at the sewer plant.

### *Storm Drainage*

The City of Hollister maintains a series of transmission lines that convey storm flows within the city and some adjoining areas of unincorporated San Benito County to either the San Benito River or the Santa Ana Creek. This property is within the San Benito River drainage area. In accordance with the Low Impact Development requirements of the City of Hollister Grading and Best Management Practices Control Ordinance (Ord. #1053) more water will be retained on site than in traditional development methods, but some will still be sent to the city storm system. The system will be accessed through the existing 18" storm drain line in Gonzales Dr 250 LF to the south, which connects to the San Benito River, by way of an existing box culvert in Miller Road. In the event that property to the north, east and/or west is developed in the future, gravity flow through those developments can be reconsidered at that time. A developer will be required to fund the installation of the storm drain system to all COH standards.

### *Road Construction*

The City of Hollister requires that there be adequate roadways to serve the transportation needs of the City residents. The City, private developers or a combination of both, funds roadways. The property frontage is on Buena Vista Road. Upon development, it will require the widening improvement of the property frontage to City of Hollister standards. The development proponent will be required to fund these improvements. The development may also require, on an incremental basis, the need for expanded roadway facilities in the City and the County. To offset these incremental costs, any development will be assessed a traffic impact fee at the time of final occupancy for a building permit.

### *Street and Utility Maintenance*

Annexation of the property in its current state will not require an increase in the funding for the street or utility maintenance. Development of the site will require maintenance of city streets, landscaping and utility facilities that will serve the site, as well as streets and utility systems within the development. The area street maintenance is funded by the City of Hollister state-collected taxes. City utility systems are currently funded by City user fees, however as a part of any development agreement, the property will be required to annex to a new lighting and landscaping district for the maintenance of lighting, landscaping and utility services that will serve the site.

### *Parks and Recreation*

Annexation of the property in its current state will not require any additional park facilities or recreational programs. Development of projects generally requires an increase in park facilities to serve the new residents. The degree to which an increase in park facilities will be required will be determined at the time of review of the development application. The City of Hollister requires residential projects either dedicate land and/or pay park-in-lieu impact fees for the incremental need to expand park facilities. At the time of review of the development application, the projects financial contribution for park lands or facilities will be determined.

The city of Hollister generally funds a number of recreation programs to serve the needs of city residents. These programs are funded at a level of 75 percent by user's fees. The remaining costs are funded by the City of Hollister General Fund. The City will enter into an annexation agreement with the owner of the property to ensure that development of the site is fiscally neutral, which would include the City portion of the funding required for recreational programs.

# APPENDIX D

TRAFFIC IMPACT ANALYSIS

Hatch Mott MacDonald
Delivering Solutions

# GONZALES – BORELLI
# PRE ZONE

# TRAFFIC IMPACT ANALYSIS

## HOLLISTER, CALIFORNIA

Final Report

Prepared For

**EMC Planning Group**
**Monterey, CA**

March 27, 2015
Revised December 7, 2015

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K. Warrant Worksheets

# 1 INTRODUCTION

This traffic study analyzes the potential traffic impacts associated with the proposed annexation of property located on Buena Vista Road in Hollister, California. The property is approximately 37 acres, which, under the proposed City of Hollister residential zoning, would allow up to 336 homes. The site is located at the northwestern corner of Miller Road and Buena Vista Road, and will potentially have access to both roadways. The project is also located approximately three blocks west of Calaveras Elementary School, which is also located on Buena Vista Road. The surrounding neighborhood features both residential neighborhoods and agricultural parcels. **Exhibit 1** depicts the location of the proposed annexation and study area. **Exhibit 2** shows the proposed annexation area itself, as no formal site plan has been proposed as this time.

## 1.1 Scope of Work

The project would add new trips to the road network. Weekday AM and PM peak hour traffic conditions were analyzed at the following five study intersections:

1. State Route 156 (SR 156) / Buena Vista Road;
2. Miller Road / Buena Vista Road;
3. Westside Boulevard – Westside Road / Buena Vista Road;
4. Live Oak Drive – Miller Road / San Juan Road; and
5. Westside Boulevard / San Juan Road – Fourth Street.

In addition, potential access to the surrounding street network (one on Miller Road and one on Buena Vista Road) were also analyzed.

**Exhibit 1** depicts the location of the study intersections.

Traffic operations for the following development scenarios were analyzed:

- Existing Conditions
- Existing Plus Project Conditions
- Background Conditions
- Background Plus Project Conditions
- Cumulative Without Project Conditions
- Cumulative Plus Project Conditions

Improvements recommended for existing traffic conditions as well as mitigations for impacts created by the proposed project are recommended where warranted.

One of the study intersections is an intersection with a state highway – SR 156. This analysis is also compliant with the requirements in *Guidelines for the Preparation of Traffic Impact Studies*, California Department of Transportation (Caltrans), December 2002.

## 1.2 Traffic Operation Evaluation Methodologies and Level of Service Standards

Intersection traffic operations were evaluated based on the level of service (LOS) concept. LOS is a qualitative description of an intersection's operation, ranging from LOS A to LOS F. Level of Service A represents free flow uncongested traffic conditions. Level of service F represents highly congested traffic conditions with unacceptable delay to vehicles at intersections. The intermediate levels of service represent incremental levels of congestion and delay between these two extremes. LOS descriptions for unsignalized intersections are included as **Appendix A**.

At signalized intersections, such as Intersections #4 and #5 – Live Oak Drive – Miller Road / San Juan Road and Westside Boulevard / San Juan Road, respectively – Fourth Street – the traffic signal essentially allocates time among conflicting traffic movements that seek to use the same space. The way in which time is allocated significantly affects the operation and the capacity of the intersection and its approaches. For this reason, delay can vary depending upon the demand on each approach and the direction of travel for each vehicle at the intersection. The overall delay (and corresponding level of service) is therefore the criteria used to evaluate signalized intersections.

At two-way stop-controlled (TWSC) intersections, such as Intersections #1, #2 and #3 – SR 156 / Buena Vista Road, Miller Road / Buena Vista Road and Westside Boulevard – Westside Road / Buena Vista Road, respectively – only the side street approaches must stop before entering the intersection; traffic on the major street is allowed to pass freely through the intersection. The side-street delay (and corresponding level of service) is therefore the criteria used to evaluate TWSC intersections, although the overall intersection delay (and corresponding level of service) is also reported to provide overall context to the side-street operations.

Caltrans, which has jurisdiction over Intersection #1 – SR 156 / Buena Vista Road – has established a level of service (LOS) standard of the transition from LOS C to LOS D (hereby referred to as "LOS C/D"). The City of Hollister, which has jurisdiction over the remaining study intersections, has established a LOS of "C" for the accepted minimum standard of operation for intersections. Therefore, LOS C was considered the minimum acceptable level of service for overall intersection operations. The Synchro software program (Version 8.0) was utilized to calculate the LOS values for the study intersections, based on technical procedures documented in the *2010 Highway Capacity Manual*.

Both the Caltrans signal and all-way stop warrants were evaluated for the study intersections where appropriate.

## 1.3 Significance Criteria

Two of the study intersections are signalized. For signalized intersections, the project would create a significant adverse impact on traffic conditions if either of the following criteria are met:

Signal (#4 – Live Oak – Miller / San Juan and #5 – Westside / San Juan - Fourth):

1. The average overall peak hour level of service at the intersection is LOS C or better without the project: The project traffic causes the peak hour level of service to degrade from an acceptable LOS C or better under no project conditions to an unacceptable LOS D or worse under project conditions.

2. The average overall peak hour level of service is already at an unacceptable LOS D or worse without the project: The addition of project traffic causes the average overall delay to increase five (5) or more seconds.

The remaining three study intersections are unsignalized one- or two-way stop controlled intersections. For these unsignalized intersections, the project would create a significant adverse impact on traffic conditions if either of the following criteria is met:

One-or two-way stop (#1 – SR 156 / Buena Vista, #2 – Miller / Buena Vista and #3 – Westside / Buena Vista):

1. The peak hour delay on the worst approach at a one- or two-way stop-controlled intersection is LOS C or better without the project: The peak hour delay on the worst approach at a one- or two-way stop-controlled intersection degrades from an acceptable LOS C or better under no project conditions to an unacceptable LOS D or worse under project conditions and the traffic volumes at the intersection under project conditions are high enough to satisfy the peak-hour volume traffic signal warrant adopted by Caltrans.

2. The peak hour delay on the worst approach at a one- or two-way stop-controlled intersection is already at an unacceptable LOS D or worse without the project: The traffic volumes at the intersection under project conditions are high enough to satisfy the peak-hour volume traffic signal warrant adopted by Caltrans, and the addition of project traffic causes the delay on the worst stop-controlled approach to increase beyond what it was without the project.

## 2. EXISTING CONDITIONS

This section of the report evaluates existing conditions and includes a description of the project setting.

### 2.1 Existing Road Network

Regional access to the project area is provided by Highways 25 and 156. Direct access to the project area is provided by project-constructed connections to Buena Vista Road and Miller Road.

State Route 25 (SR 25) is a major north-south highway through Monterey, San Benito, and Santa Clara Counties. SR 25 provides primary access between San Benito and Santa Clara Counties via its connection to US 101 south of Gilroy. SR 25 is also a major arterial through the City of Hollister. It also provides primary north-south access through San Benito County south of Hollister as Airline Highway.

State Route 156 (SR 156) is a major east-west highway connecting northern Monterey County and the Central Valley over two distinct segments. The easternmost segment extends from US 101 west of San Juan Bautista to State Route 152 north of Hollister, and is a major freight and commuter route.

Buena Vista Road is a two-lane, east-west collector in western Hollister. It connects SR 156 with the neighborhoods west of San Benito Street and north of Fourth Street and San Juan Road.

Miller Road is a two-lane, north-south collector in western Hollister. It connects San Juan Road with Buena Vista Road. A shopping center is located at the corner of Miller Road and San Juan Road.

San Juan Road - Fourth Street is a two-lane, east-west major thoroughfare in western and central Hollister. To the west, San Juan Road connects to SR 156, and is a major commute corridor into and out of the Hollister area. Further east, Fourth Street provides access to downtown Hollister and various San Benito County government buildings, such as the County Administration Building and the county courthouse.

Westside Boulevard is a two-lane, north-south collector in western Hollister that extends between Nash Road and Buena Vista Road. North of Buena Vista Road, Westside Boulevard changes designation to Westside Road.

Live Oak Drive is a local residential street that provides access to a mobile home park.

## 2.2 Existing Pedestrian Network

While sidewalks are continuous along both directions of Miller Road between Buena Vista Road and San Juan Road, they are not present along Miller Road north of Buena Vista Road. Sidewalks are also not present along the north side of Buena Vista Road, and are discontinuous along the south side of that roadway. This includes the approximately three blocks west of Calaveras Elementary School, although they are present along the school frontage and between the school and Westside Boulevard.

## 2.3 Existing Bicycle Network

Within the study area and the area surrounding the project site, formal bike lanes are only provided along both sides of Westside Boulevard, south of Buena Vista Road. Bicycle paths are not provided, and no routes are designated as bike routes.

## 2.4 Existing Transit Network

San Benito County Express, operated and administered by the San Benito County Local Transportation Authority (LTA), operates three fixed-route transit routes – Green Line, Blue Line and Red Line. **Exhibit 3** depicts their routes. The Green and Blue Lines traverse the central, western, eastern, and southern portions of Hollister, with the Green Line traveling in a clockwise direction and the Blue Line traveling in a counter-clockwise direction. The Red Line travels in a primarily north-south orientation, from the southern portions of Hollister, through downtown, to the northern business parks.

LTA also offers two other transit services. It offers two "Intercounty" transit routes – Gilroy Caltrain and Gilroy Gavilan College – which provide limited service between the cities of Hollister (in San Benito County) and Gilroy (in Santa Clara County). LTA also offers a dial-a-ride service that provides point-to-point service within and between Hollister, San Juan Bautista, and Tres Pinos.

Both the Green and Blue Lines stop at the same bus stop along Central Street at Miller Road, roughly one block south of the project site. The Red Line does not stop in the project vicinity.

## 2.5 Existing Conditions Traffic Volumes

To ascertain the existing weekday AM and PM peak hour traffic conditions, weekday turning movement counts were collected at the study intersections. Traffic counts at the study intersections were conducted on Tuesday, March 10, 2015 from 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. The existing weekday AM and PM peak hour traffic volumes at the study intersections are shown on **Exhibit 4**. The peak hour traffic volume counts are contained within **Appendix B**.

## 2.6 Existing Conditions Intersection Operations

Weekday AM and PM peak hour intersection levels of service are summarized in **Exhibit 5A**. Level of service calculation worksheets are included as **Appendix C**.

Most of the five existing study intersections operate at acceptable levels of service under Existing traffic conditions during the weekday AM and PM peak hour. However, the Westside / San Juan –Fourth intersection operates at an acceptable LOS C (AM) and unacceptable LOS D (PM).

# 3 EXISTING PLUS PROJECT CONDITIONS

This section of the report describes the analyses of the study road network under Existing Plus Project traffic conditions. The section includes the analysis of project trip generation, distribution and assignment.

## 3.1 Project Description

The proposed project involves the annexation of 37 acres of property for future residential development in the City of Hollister. Per the proposed city zoning of the property, a maximum of 336 homes are allowed on this parcel. To be conservative, this report documents traffic operations and impacts for the maximum 336 homes.

## 3.2 Project Trip Generation

The estimated trip generation for the project is shown on **Exhibit 6**. Based upon trip generation rates published by the Institute of Transportation Engineers in *Trip Generation Manual*, 9th Edition, 2012, the project is estimated to generate 3,199 trips per day, with 252 trips generated during the AM peak hour (63 in, 189 out) and 336 trips generated during the PM peak hour (212 in, 124 out).

## 3.3 Project Trip Distribution and Assignment

The project trip distribution was estimated based upon existing traffic patterns and the locations of complementary land uses. The project trip distribution is summarized in the following table and on **Exhibit 7A**:

| To / From | Percentage |
|---|---|
| East via Fourth Street | 30% |
| South via Westside Boulevard | 30% |
| West via Buena Vista Road | 25% |
| West via San Juan Road | 10% |
| Miller / San Juan Shopping Center | 5% |
| **Total** | **100%** |

The project AM and PM peak hour trips were assigned to the local road network based on the preceding trip distribution percentages. The project AM and PM peak hour trip assignment is shown on **Exhibit 7B**.

The project is anticipated to have vehicle access off of both Miller and Buena Vista Roads. For the purposes of this analysis, it is assumed that the project will have a single vehicular access off of both roadways. **Exhibit 7B** also depicts the project trips at both vehicle access points.

### 3.5 Existing Plus Project Traffic Volumes

Trips generated by the project were combined with existing traffic volumes to obtain Existing Plus Project traffic volumes, which are shown on **Exhibit 8**.

### 3.6 Existing Plus Project Conditions Intersection Operations

Weekday AM and PM peak hour intersection levels of service are summarized on **Exhibit 5A**, while recommended improvements are indicated on **Exhibit 5B**. Level of service calculation worksheets are included in **Appendix D**.

Most of the study intersections are projected to continue to operate at acceptable levels of service under Existing Plus Project conditions. However, two intersections would experience unacceptable operations – Intersections #1 (SR 156 / Buena Vista) and #5 (Westside / San Juan – Fourth). Each is described below.

<u>Intersection #1 – SR 156 / Buena Vista:</u>
Although the intersection would operate at acceptable overall operations of LOS A and acceptable side-street operations during the AM peak hour, the westbound Buena Vista Road approach to the intersection would operate at LOS D during the PM peak hour, a change from LOS C under Existing conditions. The Caltrans Peak Hour signal warrant (see **Appendix K**) was found to be met at this intersection under Existing Plus Project conditions.

Based upon the significance criteria identified in Section 1.3 of this report, the project would represent a significant impact upon the operations of this intersection. Signalization of this intersection is recommended. The project would be responsible for payment of the San Benito County Transportation Impact Mitigation Fee (SBCTIMF). Although payment of a fee alone would not guarantee the timely construction of the identified improvement to immediately mitigate the project impact by the time the project is fully occupied, improvements to the State Highway are outside of local control; therefore, the payment of local fees toward future improvements is the only feasible mitigation available for this project. As such, payment of the SBCTIMF would reduce the project's impact to a less-than-significant level.

<u>Intersection #5 – Westside Boulevard / San Juan Road – Fourth Street:</u>
This intersection would operate at an overall LOS D during both the AM and PM peak hours. This would be a change from LOS C operations during the Existing AM peak hour, and would represent an overall delay increase of 6.1 seconds during the PM peak hour.

Based upon the significance criteria identified in Section 1.3 of this report, the project would represent a significant impact upon the operations of this intersection. Optimization of the signal timing on various phases of this signal is recommended. The project would be responsible for the cost of this improvement, to be implemented by the City of Hollister. With implementation of this mitigation, the project's impact would reduce to a less-than-significant level.

The project would be responsible for payment of the San Benito County Transportation Impact Mitigation Fee. As noted earlier, the project's payment of this fee will also reduce its impact at Intersection #1 – SR 156 / Buena Vista Road – to a less-than-significant level.

# 4 BACKGROUND CONDITIONS

This section of the report describes the analyses of the study road network under background traffic conditions. Background conditions models traffic conditions with traffic from approved but not yet constructed developments added to the study intersections.

## 4.1 Background Conditions Traffic Volumes

A listing of approved but not yet constructed or occupied projects within San Benito County and the City of Hollister are included in **Appendix E**. The list of approved projects was referenced from *Gonzales Property Residential Transportation Impact Analysis*, Hexagon Transportation Consultants, October 30, 2014.

Weekday AM and PM peak hour traffic generated by approved projects were estimated and assigned to the local road network and combined with existing peak hour traffic volumes to obtain background condition AM and PM peak hour traffic volumes, which are shown on **Exhibit 9**. The analysis of Background Conditions assumes full development of the approved projects.

## 4.2 Background Conditions Intersection Operations

Intersection levels of service for the Background Condition are summarized on **Exhibit 5A**. Level of service calculation worksheets are included in **Appendix F**.

Most of the study intersections would continue to operate at acceptable levels of service under Background Conditions during the AM and PM peak hours. However, two intersections would operate at unacceptable levels of service. The SR 156 / Buena Vista intersection (Intersection #1) would have its westbound approach operate at LOS D during the PM peak hour, while and the Westside / San Juan – Fourth intersection (Intersection #5) would operate at LOS D (AM) and LOS E (PM).

# 5 BACKGROUND PLUS PROJECT CONDITIONS

This section of the report describes the analysis of the study road network under Background Plus Project traffic conditions. Background Plus Project conditions includes traffic from approved but not yet constructed developments and project traffic added to the existing traffic volumes at the study intersections.

## 5.1 Background Plus Project Conditions Traffic Volumes

The aforementioned project trip assignment (**Exhibit 7B**) were combined with the Background peak hour volumes to obtain Background Plus Project Buildout conditions traffic volumes, which are shown in **Exhibit 10**.

## 5.2 Background Plus Project Conditions Intersection Operations

Intersection levels of service for the Background Plus Project Conditions are summarized on **Exhibit 5A**, while recommended improvements are indicated on **Exhibit 5B**. LOS calculation worksheets are included in **Appendix G**.

Some of the study intersections are projected to continue to operate at acceptable levels of service under Background Plus Project conditions. However, three intersections would experience unacceptable operations – Intersections #1 (SR 156 / Buena Vista), #3 (Westside / Buena Vista) and #5 (Westside / San Juan – Fourth). Each is described below.

<u>Intersection #1 – SR 156 / Buena Vista Road:</u>
Although the intersection would continue to operate at acceptable overall operations of LOS A and acceptable side-street operations during the AM peak hour, the westbound Buena Vista Road approach to the intersection would again operate at LOS D during the PM peak hour, at a delay higher than under Background conditions. The Caltrans Peak Hour signal warrant (see **Appendix K**) was found to be met at this intersection under Background Plus Project conditions.

Based upon the significance criteria identified in Section 1.3 of this report, the project would represent a significant impact upon the operations of this intersection. Signalization of this intersection is again recommended. The project would be responsible for payment of the San Benito County Transportation Impact Mitigation Fee (SBCTIMF). Although payment of a fee alone would not guarantee the timely construction of the identified improvement to immediately mitigate the project impact by the time the project is fully occupied, improvements to the State Highway are outside of local control; therefore, the payment of local fees toward future improvements is the only feasible mitigation available for this project. As such, payment of the SBCTIMF would reduce the project's impact to a less-than-significant level.

Intersection #3 – Westside Boulevard – Westside Road / Buena Vista Road:
Although the intersection would continue to operate at acceptable overall operations of LOS A and acceptable side-street operations during the AM peak hour, the northbound Westside Boulevard approach to the intersection would operate at LOS D during the PM peak hour, a change from LOS C under Background conditions. However, the Caltrans Peak Hour signal warrant (see **Appendix K**) was not found to be met at this intersection under Background Plus Project conditions.

Based upon the significance criteria identified in Section 1.3 of this report, the project would not represent a significant impact upon the operations of this intersection. No mitigation would be required.

Intersection #5 – Westside Boulevard / San Juan Road – Fourth Street:
This intersection would operate at an overall LOS D (AM) and LOS E (PM) under Background Plus Project conditions. The increase in delay over Background conditions would be 7.0 seconds (AM) and 9.3 seconds (PM).

Based upon the significance criteria identified in Section 1.3 of this report, the project would represent a significant impact upon the operations of this intersection. Optimization of the signal timing on various phases of this signal is again recommended. The project would be responsible for the cost of this improvement, with implementation by the City of Hollister. With implementation of this mitigation, the project's impact would reduce to a less-than-significant level.

# 6 CUMULATIVE WITHOUT PROJECT CONDITIONS

This section of the report describes the analyses of the study road network under Cumulative Without Project traffic conditions. The cumulative conditions analysis is primarily based off of forecasts included within *Gonzales Property Residential Transportation Impact Analysis*, Hexagon Transportation Consultants, October 30, 2014, plus other proposed projects in the region.

## 6.1 Cumulative Without Project Conditions Traffic Volumes

Future growth was quantified at the study intersections, based primarily off of forecasts included within *Gonzales Property Residential Transportation Impact Analysis*, Hexagon Transportation Consultants ("Hexagon"), October 30, 2014. Trips from other proposed projects in the regional were also added, including the Homestead Avenue (Sywak) subdivision and the Gonzales property on Buena Vista Road (which was the study project within the aforementioned Hexagon traffic impact analysis). A listing of the cumulative projects within San Benito County and the City of Hollister that were used to derive the Cumulative forecasts are included in **Appendix H**. Cumulative Without Project conditions traffic volumes without the proposed project are shown on **Exhibit 11**.

Note that trips from the study project were <u>not</u> included under this scenario. Please see Chapter 7, Cumulative Plus Project Conditions, for information as to how the project may impact Cumulative condition operations.

Also note that these forecasts include completion of the proposed North Street extension, which would connect Buena Vista Road with North Street and Santa Ana Road. Although this street network improvement was not identified in the aforementioned Hexagon report, a review of growth patterns along the Buena Vista Road and San Juan Road-Fourth Street corridors indicated its presence in the future traffic forecasts. The City of Hollister Capital Improvement Projects Program (CIPP) does not fully fund this extension, but the County of San Benito Transportation Impact Mitigation Fee does fund the extension.

## 6.2 Cumulative Without Project Conditions Intersection Operations

Intersection levels of service under Cumulative Without Project conditions are summarized in **Exhibit 5A**. LOS calculation worksheets are included in **Appendix I**.

Some of the study intersections would continue to operate at acceptable levels of service under Cumulative Without Project Conditions during the AM and PM peak hours. However, three intersections would operate at unacceptable levels of service. The SR 156 / Buena Vista intersection (Intersection #1) would have its westbound approach operate at LOS F during the PM peak hour. The Westside / Buena Vista intersection (Intersection #3) would have it northbound approach operate at LOS F during the AM peak hour. Finally, the Westside / San Juan – Fourth intersection (Intersection #5) would operate at LOS D (AM) and LOS E (PM).

# 7 CUMULATIVE PLUS PROJECT CONDITIONS

This section of the report describes the analyses of the study road network under Cumulative Plus Project traffic conditions, which add trips from the study project to the Cumulative Without Project condition volumes.

## 7.1 Cumulative Plus Project Conditions Traffic Volumes

Cumulative Plus Project volumes were created by adding the study project trips to projected growth under Cumulative Without Project conditions (see Chapter 6).

Under Cumulative Plus Project conditions, the project trip distribution was modified slightly to account for the opening of the North Street extension to Buena Vista Road. The revised project trip distribution is summarized in the following table, with the modifications indicated in *italics*:

| To / From | Percentage |
|---|---|
| *East via Fourth Street* | *20%* |
| South via Westside Boulevard | 30% |
| West via Buena Vista Road | 25% |
| West via San Juan Road | 10% |
| *East via Buena Vista Road – North Street* | *10%* |
| Miller / San Juan Shopping Center | 5% |
| **Total** | **100%** |

The revised trip distribution under Cumulative Plus Project conditions is also shown on **Exhibit 12A**. This was used to derive the revised trip assignment under Cumulative Plus Project conditions, which is shown on **Exhibit 12B**. This revised trip assignment was added to the Cumulative Without Project volumes to create the Cumulative Plus Project volumes shown on **Exhibit 13**.

## 7.2 Cumulative Plus Project Conditions Intersection Operations

Intersection levels of service under Cumulative Plus Project conditions are summarized in **Exhibit 5A**, while recommended improvements are indicated on **Exhibit 5B**. LOS calculation worksheets are included in **Appendix J**.

Only the Live Oak – Miller / San Juan intersection (Intersection #4) is projected to continue to operate at acceptable levels of service under Cumulative Plus Project conditions. The remaining four study intersections would experience unacceptable operations – Intersections #1 (SR 156 / Buena Vista), #2 (Miller / Buena Vista), #3 (Westside / Buena Vista) and #5 (Westside / San Juan – Fourth). Each is described on the following pages.

Intersection #1 – SR 156 / Buena Vista Road:
Although the intersection would continue to operate at acceptable overall operations of LOS A (AM) and LOS C (PM) and acceptable side-street operations during the AM peak hour, the westbound Buena Vista Road approach to the intersection would operate at an unacceptable LOS F during the PM peak hour, at a delay higher than under Cumulative Without Project conditions. The Caltrans Peak Hour signal warrant (see **Appendix K**) was found to be met at this intersection under Cumulative Plus Project conditions.

Based upon the significance criteria identified in Section 1.3 of this report, the project would represent a significant impact upon the operations of this intersection. Signalization of this intersection is again recommended. The project would be responsible for payment of the San Benito County Transportation Impact Mitigation Fee (SBCTIMF). Although payment of a fee alone would not guarantee the timely construction of the identified improvement to immediately mitigate the project impact by the time the project is fully occupied, improvements to the State Highway are outside of local control; therefore, the payment of local fees toward future improvements is the only feasible mitigation available for this project. As such, payment of the SBCTIMF would reduce the project's impact to a less-than-significant level.

Intersection #2 – Miller Road / Buena Vista Road:
Although the intersection would continue to operate at acceptable overall operations of LOS B (AM) and LOS A (PM), the northbound and southbound Miller Road approaches to the intersection would both operate at LOS E during the AM peak hour, a change from LOS C under Background conditions. The northbound Miller Road approach would also operate at LOS D during the PM peak hour. However, the Caltrans Peak Hour signal warrant (see **Appendix K**) was not found to be met at this intersection under Cumulative Plus Project conditions.

Based upon the significance criteria identified in Section 1.3 of this report, the project would not represent a significant impact upon the operations of this intersection. No mitigation would be required.

Intersection #3 – Westside Boulevard – Westside Road / Buena Vista Road:
Overall operations of the intersection would operate at an unacceptable LOS F during the AM peak hour, and the northbound Westside Boulevard approach would also operate at an unacceptable LOS F. The northbound Westside Boulevard approach would operate at an unacceptable LOS D during the PM peak hour. The overall level of service is a change from LOS C, the side-street operations during the AM peak hour are an increase in delay, and the side-street operations in the PM are a change from LOS C, all compared with Cumulative Without Project conditions. The Caltrans Peak Hour signal warrant (see **Appendix K**) was found to be met during the AM peak hour but not found to be met during the PM peak hour.

Based upon the significance criteria identified in Section 1.3 of this report, the project would represent a significant impact upon the operations of this intersection, but only during the AM peak hour. For this reason, signalization of this intersection is not recommended. Instead, the all-way stop control warrant was partially evaluated at this intersection. Based on just the AM and PM peak hour volumes (i.e. two out of eight hours of an average day), the all-way stop

warrant would be met at this intersection. The fact that both roadways are designated as collector streets would also bolster the need for all-way stop control. It is thus recommended that the Westside / Buena Vista be converted to all-way stop control, and that an eastbound right turn lane be striped on Buena Vista Road. Implementation of these improvements is not included with the City of Hollister Capital Improvement Projects Program (CIPP). The project would be responsible for a fair-share of these improvements. With implementation of this mitigation, the project's impact would reduce to a less-than-significant level.

Intersection #5 – Westside Boulevard / San Juan Road – Fourth Street:
This intersection would operate at an overall LOS D (AM) and LOS F (PM) under Cumulative Plus Project conditions. The increase in delay over Cumulative conditions would be 6.8 seconds (AM) and 11.4 seconds (PM).

Based upon the significance criteria identified in Section 1.3 of this report, the project would represent a significant impact upon the operations of this intersection. Optimization of the signal timing on various phases of this signal is again recommended. The project would be responsible for funding this improvement, to be implemented by the City of Hollister. With implementation of this mitigation, the project's impact would reduce to a less-than-significant level.

## 8 SAFE ROUTES TO SCHOOL IMPROVEMENTS

In February 2014, a Safe Routes to School needs assessment was prepared for nearby Calaveras Elementary School on Buena Vista Road, about three blocks east of the project site. **Exhibit 14** identifies the opportunities and recommended improvements from this report that would be applicable to the study project (i.e. would be directly affected by students from the project traversing to the school).

The improvements included on **Exhibit 14** include curb extensions, pavement striping, and sidewalk improvements on Buena Vista Road between the project site and Calaveras Elementary. The project should contribute a fair-share towards these improvements.

In addition to the improvements identified on **Exhibit 14**, it is also recommended that the project construct a curb extension at the northwest corner of the Miller / Buena Vista intersection, as well as stripe a high visibility yellow crosswalk across the west leg of the intersection. These would be additional improvements that would connect the project site to the school for future students that would live within the project site. The project would be responsible for the implementation of these additional improvements.

# 9 CONCLUSIONS

This traffic impact analysis evaluated the potential impacts from the traffic that would be generated by development of the proposed residential annexation project on Buena Vista Road upon the surrounding road network.

Development of the project would create significant traffic impacts to the intersections that were studied. Specific mitigations at the study intersections are:

1. Signalization of the SR 156 / Buena Vista Road intersection (Intersection #1). The project would be responsible for payment of the San Benito County Transportation Impact Mitigation Fee (SBCTIMF). Although payment of a fee alone would not guarantee the timely construction of the identified improvement to immediately mitigate the project impact by the time the project is fully occupied, improvements to the State Highway are outside of local control; therefore, the payment of local fees toward future improvements is the only feasible mitigation available for this project. As such, payment of the SBCTIMF would reduce the project's impact to a less-than-significant level. The project's payment of the San Benito County Transportation Impact Mitigation Fee would reduce the project's impact to a less-than-significant level.

2. Convert the Westside / Buena Vista intersection (Intersection #3) to all-way stop control. Stripe an eastbound Buena Vista Road right turn lane. The project would be responsible for a fair-share of this improvement. With implementation of this mitigation, the project's impact would reduce to a less-than-significant level.

3. Optimize of the signal timing on various phases at the Westside / San Juan – Fourth intersection (Intersection #5). The project would be responsible for funding this improvement, with implementation by the City of Hollister. With implementation of this mitigation, the project's impact would reduce to a less-than-significant level.

The project would be responsible for payment of the San Benito County Transportation Impact Mitigation Fee. As noted earlier, the project's payment of this fee will also reduce its impact at Intersection #1 – SR 156 / Buena Vista Road – to a less-than-significant level.

The project should also contribute a fair-share towards proposed Safe Route to School improvements near Calaveras Elementary School, specifically curb extensions, pavement striping, and sidewalk improvements on Buena Vista Road between the project site and Calaveras Elementary. The project would be fully responsible for construction of an additional curb extension at the northwest corner of the Miller / Buena Vista intersection and the additional striping of a high visibility yellow crosswalk across the west leg of the intersection.

# 10 REFERENCES

## 10.1 List of References

1. *Guidelines for the Preparation of Traffic Impact Studies*, California Department of Transportation (Caltrans), December 2002.
2. *Gonzales Property Residential Transportation Impact Analysis*, Hexagon Transportation Consultants, October 30, 2014.
3. *City of Hollister General Plan*, Moore Iacofano Goltsman, December 2005.
4. *California Manual on Uniform Traffic Control Devices*, California Department of Transportation (Caltrans), 2012.
5. *City of Hollister Capital Improvement Projects Program – Fiscal Year 2014/2015,* City of Hollister, November 3, 2014.
6. *Transportation Impact Mitigation Fee (TIMF) Nexus Study, Willdan Financial Services, Kimley-Horn and Associates, and Urban Economics, March 21, 2011.*
7. *Safe Routes to School Need Assessment and Preliminary Recommendations – Calaveras Elementary & R. O. Hardin Elementary*, Alta Planning and Design, February 2014.

## 10.2 List of Contacts

1. Polaris Kinison Brown, EMC Planning Group, Monterey, California.
2. Teri Wissler Adam, EMC Planning Group, Monterey, California.

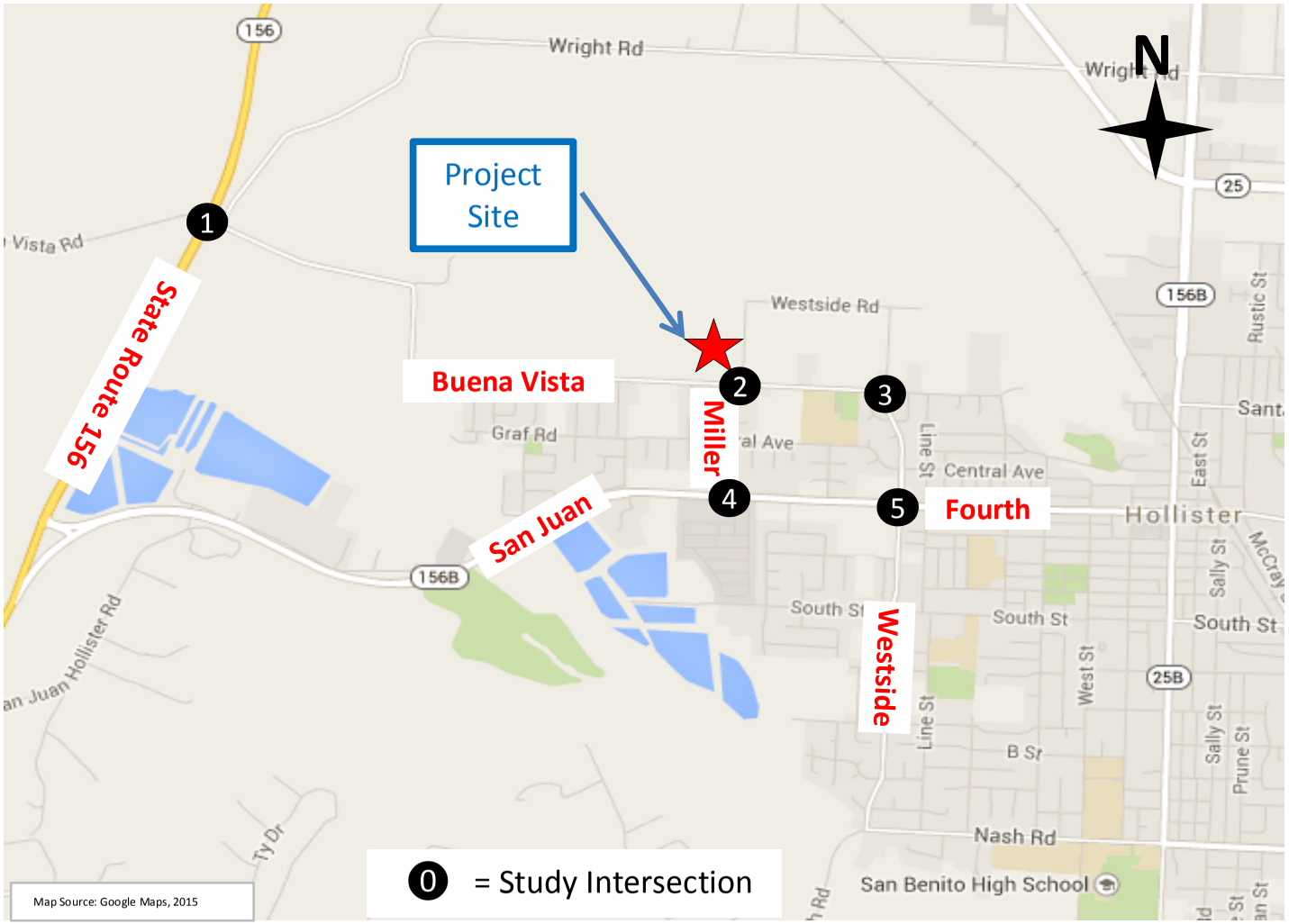
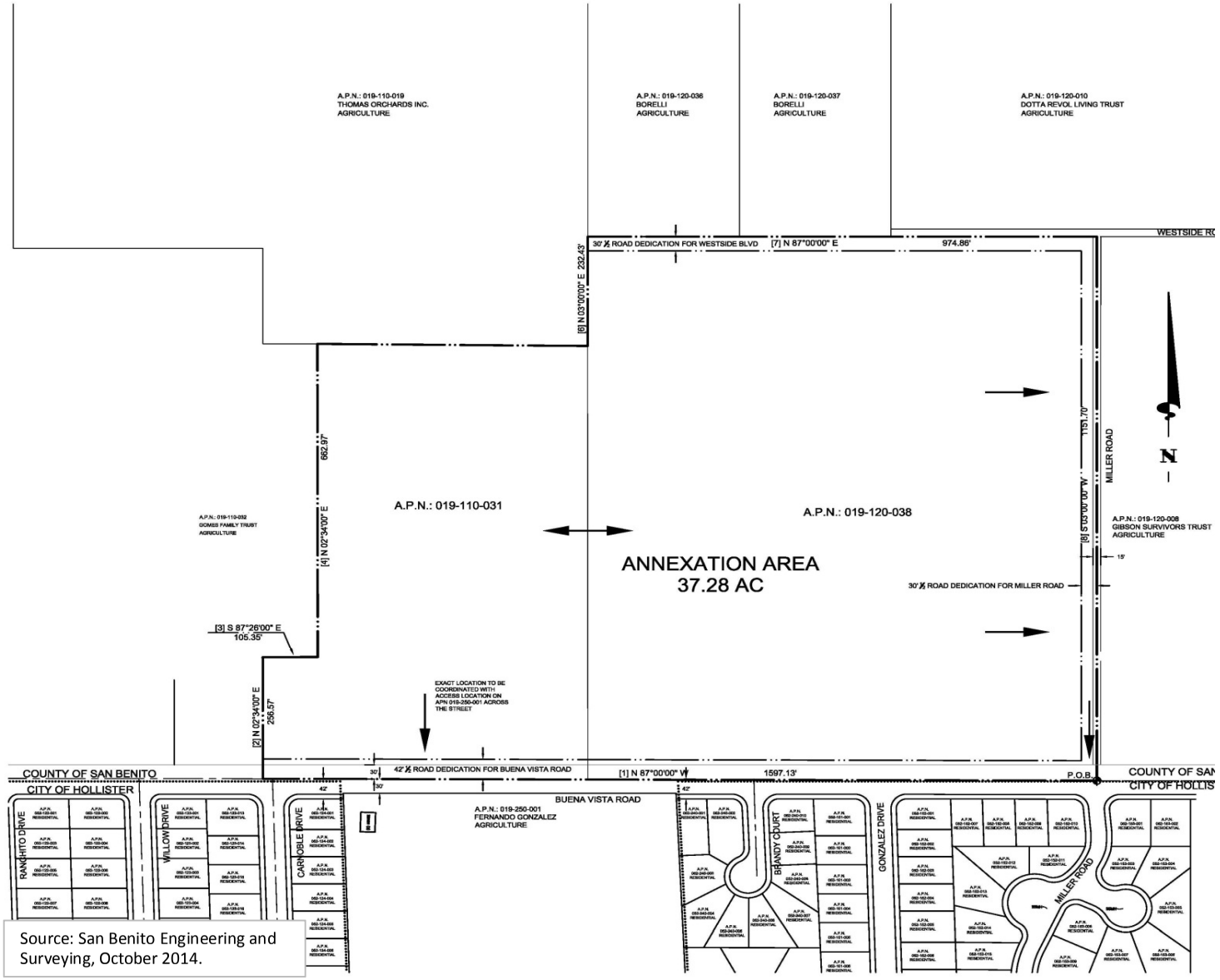


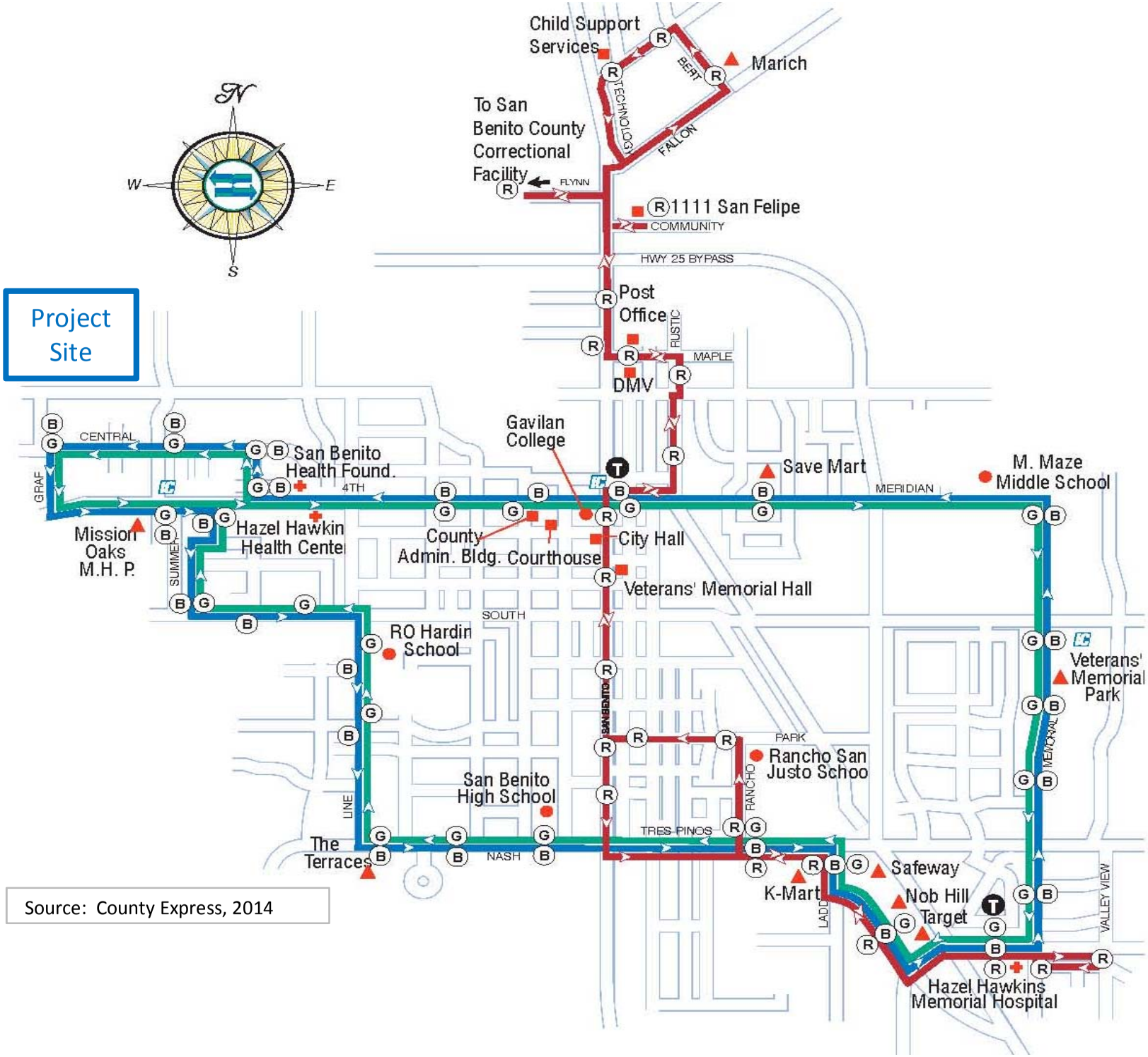

**EXHIBIT 1**
**Project Location Map**




Source: San Benito Engineering and Surveying, October 2014.

**EXHIBIT 2**
**Project Annexation Area**

**Hatch Mott MacDonald**

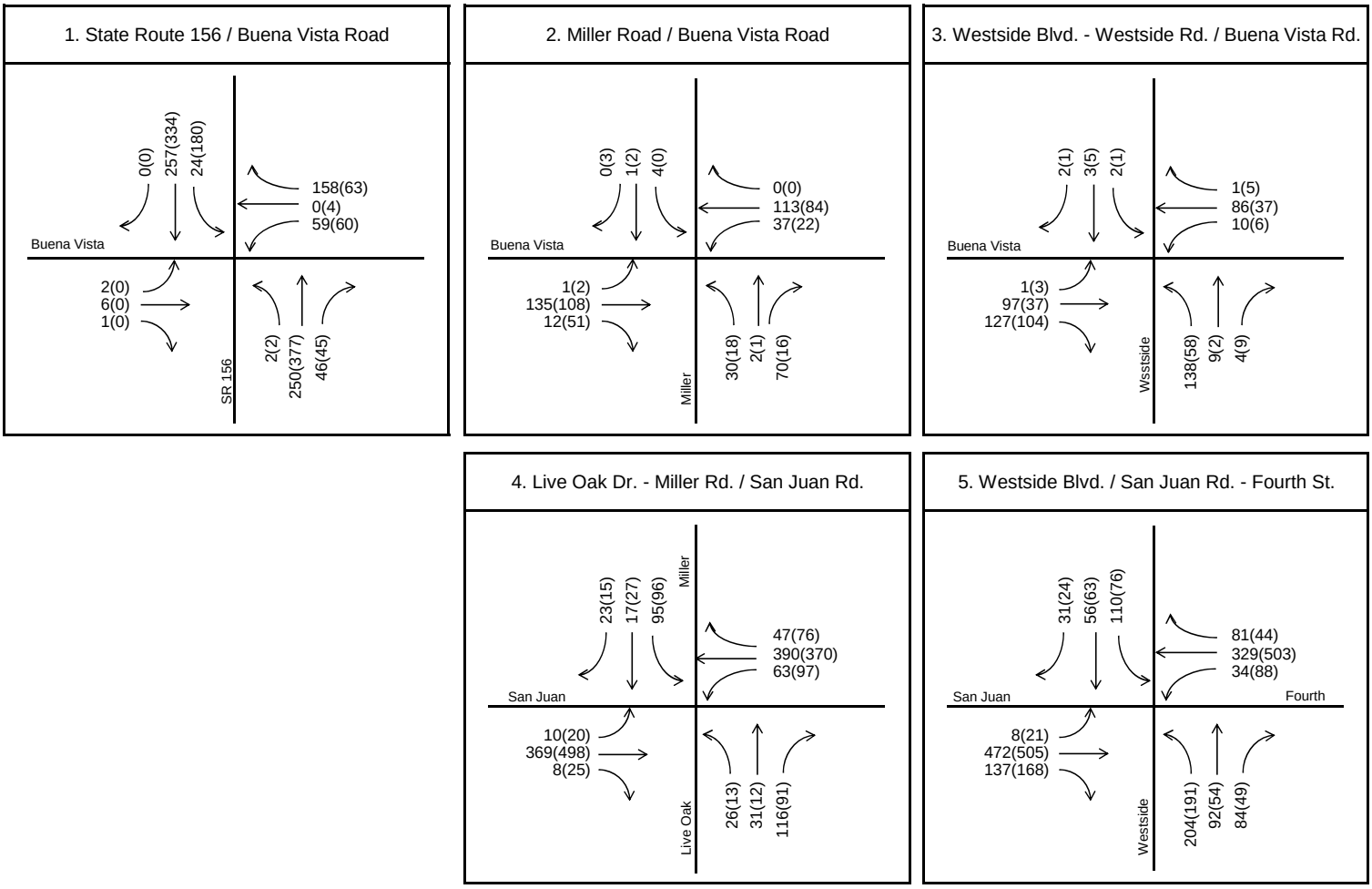



Source: County Express, 2014

**EXHIBIT 3**
**Existing**
**Transit Routes**

**Hatch Mott MacDonald**

353309 Exhibits1.xls - Transit Routes




XX (YY) = AM (PM)

Hatch Mott MacDonald

EXHIBIT 4

Existing Conditions

AM & PM Peak Hour Volumes

353309 Volumes1.xls

| | N-S Street | E-W Street | Existing Lane Configuration | Existing Intersection Control | LOS Standard | Existing Conditions | | | | Existing Plus Project Conditions | | | | Background Conditions | | | | Background Plus Project Conditions | | | | Cumulative Without Project Conditions | | | | Cumulative Plus Project Conditions | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | AM Peak Hr. | | PM Peak Hr. | | AM Peak Hr. | | PM Peak Hr. | | AM Peak Hr. | | PM Peak Hr. | | AM Peak Hr. | | PM Peak Hr. | | AM Peak Hr. | | PM Peak Hr. | | AM Peak Hr. | | PM Peak Hr. | |
| | | | | | | Delay (sec) | LOS | Delay (sec) | LOS | Delay (sec) | LOS | Delay (sec) | LOS | Delay (sec) | LOS | Delay (sec) | LOS | Delay (sec) | LOS | Delay (sec) | LOS | Delay (sec) | LOS | Delay (sec) | LOS | Delay (sec) | LOS | Delay (sec) | LOS |
| 1 | State Route 156 | Buena Vista Road | NB 1-L/T/R<br>SB 1-L/T/R<br>EB 1-L/T/R<br>WB 1-L/T/R | Two-Way Stop (EB/WB)<br>Eastbound Approach<br>Westbound Approach | C/D | 3.7<br>14.1<br>12.2 | A<br>B<br>B | 4.4<br>0.0<br>24.0 | A<br>A<br>C | 4.4<br>14.8<br>12.5<br>*17.4* | A<br>B<br>B<br>*A* | 5.5<br>0.0<br>**26.5**<br>*10.8* | A<br>A<br>D<br>*A* | 4.2<br>14.8<br>12.5 | A<br>B<br>B | 5.1<br>0.0<br>25.1 | A<br>A<br>D | 4.8<br>15.7<br>12.9<br>*25.1* | A<br>C<br>B<br>*A* | 6.5<br>0.0<br>**29.0**<br>*12.4* | A<br>A<br>D<br>*A* | 5.6<br>17.0<br>14.5 | A<br>C<br>B | 12.2<br>0.0<br>60.4 | B<br>A<br>F | 6.3<br>18.3<br>15.3<br>*30.1* | A<br>C<br>C<br>*A* | 19.0<br>0.0<br>**97.1**<br>*25.0* | C<br>A<br>F<br>*A* |
| 2 | Miller Road | Buena Vista Road | NB 1-L/T/R<br>SB 1-L/T/R<br>EB 1-L/T/R<br>WB 1-L/T/R | Two-Way Stop (NB/SB)<br>Northbound Approach<br>Southbound Approach<br>*With Improvement* | C<br>(C)<br>(C) | 3.9<br>11.9<br>14.2 | A<br>B<br>B | 2.0<br>10.4<br>9.9 | A<br>B<br>A | 7.2<br>16.9<br>19.9 | A<br>C<br>C | 5.5<br>15.4<br>13.8 | A<br>C<br>B | 3.6<br>12.4<br>15.2 | A<br>B<br>C | 1.7<br>10.9<br>10.3 | A<br>B<br>B | 7.4<br>18.5<br>22.2 | A<br>C<br>C | 5.4<br>17.2<br>14.9 | A<br>C<br>B | 3.6<br>17.8<br>22.1 | A<br>C<br>C | 1.4<br>14.2<br>12.2 | A<br>B<br>B | 12.5<br>44.5<br>46.5 | B<br>E<br>E | 6.9<br>32.0<br>21.8 | A<br>D<br>C |
| 3 | Westside Boulevard - Westside Road | Buena Vista Road | NB 1-L/T/R<br>SB 1-L/T/R<br>EB 1-L/T/R<br>WB 1-L/T/R | Two-Way Stop (NB/SB)<br>Northbound Approach<br>Southbound Approach<br>*With Improvement* | C<br>(C)<br>(C) | 5.9<br>17.6<br>12.0 | A<br>C<br>B | 3.2<br>10.3<br>10.3 | A<br>B<br>B | 6.7<br>20.9<br>12.6 | A<br>C<br>B | 4.5<br>11.4<br>10.6 | A<br>B<br>B | 7.2<br>20.5<br>12.1 | A<br>C<br>B | 3.6<br>10.9<br>10.6 | A<br>B<br>B | 8.6<br>25.1<br>12.7 | A<br>D<br>B | 4.8<br>12.1<br>10.9 | A<br>B<br>B | 24.8<br>150.6<br>21.2 | C<br>F<br>C | 5.0<br>19.9<br>15.9 | A<br>C<br>C | **55.3**<br>**246.5**<br>23.3<br>*18.2* | F<br>F<br>C<br>*C* | 8.2<br>31.4<br>17.0<br>*12.0* | A<br>D<br>C<br>*A* |
| 4 | Live Oak Drive - Miller Road | San Juan Road | NB 1-L/T/R<br>SB 1-L/T/R<br>EB 1-L/T/R<br>WB 1-L/T/R | Signal | C | 15.5 | B | 18.3 | B | 15.5 | B | 18.4 | B | 17.0 | B | 23.4 | C | 17.1 | B | 23.0 | C | 17.7 | B | 27.3 | C | 17.8 | B | 27.0 | C |
| 5 | Westside Boulevard | San Juan Road - Fourth Street | NB 1-L/T/R<br>SB 1-L/T/R<br>EB 1-L/T/R<br>WB 1-L/T/R | Signal<br>*With Improvement* | C | 32.8 | C | 38.1 | D | **37.9**<br>*33.8* | D<br>*C* | **44.2**<br>*39.0* | D<br>*D* | 45.4 | D | 65.0 | E | **52.4**<br>*34.4* | D<br>*C* | **74.3**<br>*40.1* | E<br>*D* | 47.4 | D | 70.8 | E | **54.2**<br>*34.3* | D<br>*C* | **82.2**<br>*76.3* | F<br>*E* |
| 6 | Project Driveway #1 | Buena Vista Road | N/A | N/A | C | N/A | | | | 2.8<br>11.1 | A<br>B | 2.3<br>11.3 | A<br>B | N/A | | | | 2.7<br>11.6 | A<br>B | 2.1<br>11.8 | A<br>B | N/A | | | | 2.2<br>14.3 | A<br>B | 1.7<br>14.8 | A<br>B |
| 7 | Miller Road | Project Driveway #2 | N/A | N/A | C | N/A | | | | 8.2<br>8.6 | A<br>A | 7.8<br>8.5 | A<br>A | N/A | | | | 8.2<br>8.6 | A<br>A | 7.8<br>8.5 | A<br>A | N/A | | | | 8.2<br>8.6 | A<br>A | 7.8<br>8.5 | A<br>A |

Notes:
1. L, T, R = Left, Through, Right
2. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound
3. N/A = Not Applicable. Intersection does not exist under this conditions.
4. Analysis performed using 2010 Highway Capacity Manual methodologies.
5. Level of service standard for the City of Hollister is LOS C.
6. Items highlighted in pink operate below the level of service standard for the City of Hollister (i.e. LOS C).
7. Items in **bold** indicate a significant impact.

Hatch Mott MacDonald

353309 LOS1.xlsx

# EXHIBIT 5A
# Intersection Levels of Service

| | N-S Street | E-W Street | Existing Lane Configuration | Existing Intersection Control | Existing Plus Project Conditions | Background Plus Project Conditions | Cumulative Plus Project Conditions |
|---|---|---|---|---|---|---|---|
| 1 | State Route 156 | Buena Vista Road | NB 1-L/T/R<br>SB 1-L/T/R<br>EB 1-L/T/R<br>WB 1-L/T/R | Two-Way Stop (EB/WB)<br>Eastbound Approach<br>Westbound Approach | **Signalize Intersection** | **Signalize Intersection** | **Signalize Intersection** |
| 2 | Miller Road | Buena Vista Road | NB 1-L/T/R<br>SB 1-L/T/R<br>EB 1-L/T/R<br>WB 1-L/T/R | Two-Way Stop (NB/SB)<br>Northbound Approach<br>Southbound Approach | **None Required** | **None Required** | **None Required** |
| 3 | Westside Boulevard - Westside Road | Buena Vista Road | NB 1-L/T/R<br>SB 1-L/T/R<br>EB 1-L/T/R<br>WB 1-L/T/R | Two-Way Stop (NB/SB)<br>Northbound Approach<br>Southbound Approach | **None Required** | **None Required** | **a. Convert to All-Way Stop Control<br>b. Add an EB R** |
| 4 | Miller Road - Live Oak Drive | San Juan Road | NB 1-L/T/R<br>SB 1-L/T/R<br>EB 1-L/T/R<br>WB 1-L/T/R | Signal | **None Required** | **None Required** | **None Required** |
| 5 | Westside Boulevard | San Juan Road - Fourth Street | NB 1-L/T/R<br>SB 1-L/T/R<br>EB 1-L/T/R<br>WB 1-L/T/R | Signal | **Optimize Signal Timing** | **Optimize Signal Timing** | **Optimize Signal Timing** |
| 6 | Project Driveway #1 | Buena Vista Road | N/A | N/A | **None Required** | **None Required** | **None Required** |
| 7 | Miller Road | Project Driveway #2 | N/A | N/A | **None Required** | **None Required** | **None Required** |

Notes:
1. L, T, R = Left, Through, Right
2. NB, SB, EB, WB = Northbound, Southbound, Eastbound, Westbound
3. N/A = Not Applicable. Intersection does not exist under this condition.

# EXHIBIT 5B
# Recommended Intersection Improvements

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353309 LOS1.xlsx

## Project Trip Generation

| TRIP GENERATION RATES | ITE LAND USE CODE | DAILY TRIP RATE | AM PEAK HOUR PEAK HOUR RATE | AM PEAK HOUR % OF ADT | AM PEAK HOUR % IN | AM PEAK HOUR % OUT | PM PEAK HOUR PEAK HOUR RATE | PM PEAK HOUR % OF ADT | PM PEAK HOUR % IN | PM PEAK HOUR % OUT |
|---|---|---|---|---|---|---|---|---|---|---|
| Single-Family Detached Housing (per dwelling unit) | 210 | 9.52 | 0.75 | 8% | 25% | 75% | 1.00 | 11% | 63% | 37% |

| GENERATED TRIPS | PROJECT SIZE | DAILY TRIPS | AM PEAK HOUR PEAK HOUR TRIPS | AM PEAK HOUR % OF ADT | AM PEAK HOUR TRIPS IN | AM PEAK HOUR TRIPS OUT | PM PEAK HOUR PEAK HOUR TRIPS | PM PEAK HOUR % OF ADT | PM PEAK HOUR TRIPS IN | PM PEAK HOUR TRIPS OUT |
|---|---|---|---|---|---|---|---|---|---|---|
| Single-Family Detached Housing | 336 units | 3,199 | 252 | 8% | 63 | 189 | 336 | 11% | 212 | 124 |
| **Total Project Trip Generation:** | | **3,199** | **252** | | **63** | **189** | **336** | | **212** | **124** |

Notes:

1. Trip generation rates from Institute of Transportation Engineers, "Trip Generation Manual," 9th Edition, 2012, unless otherwise noted.

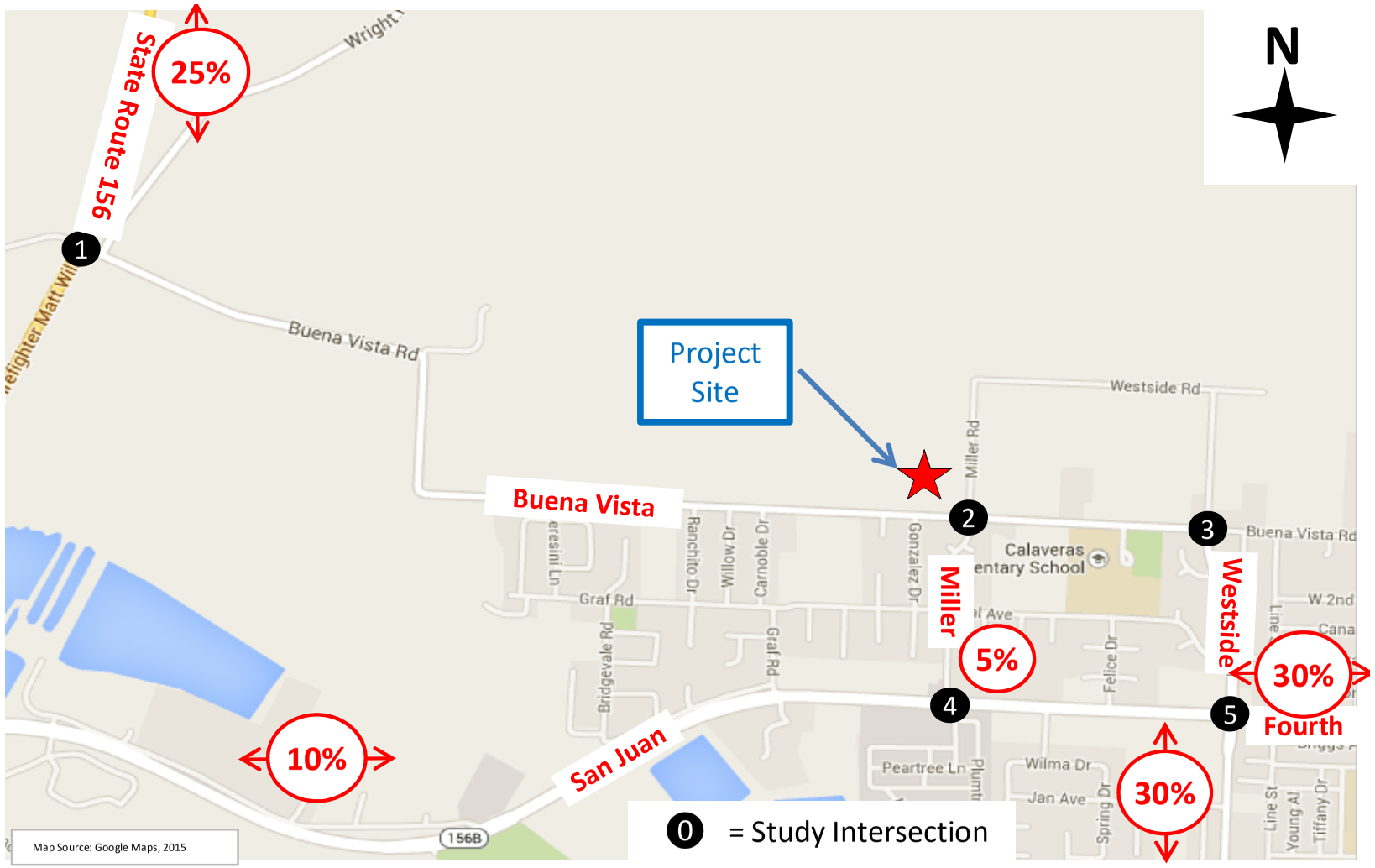
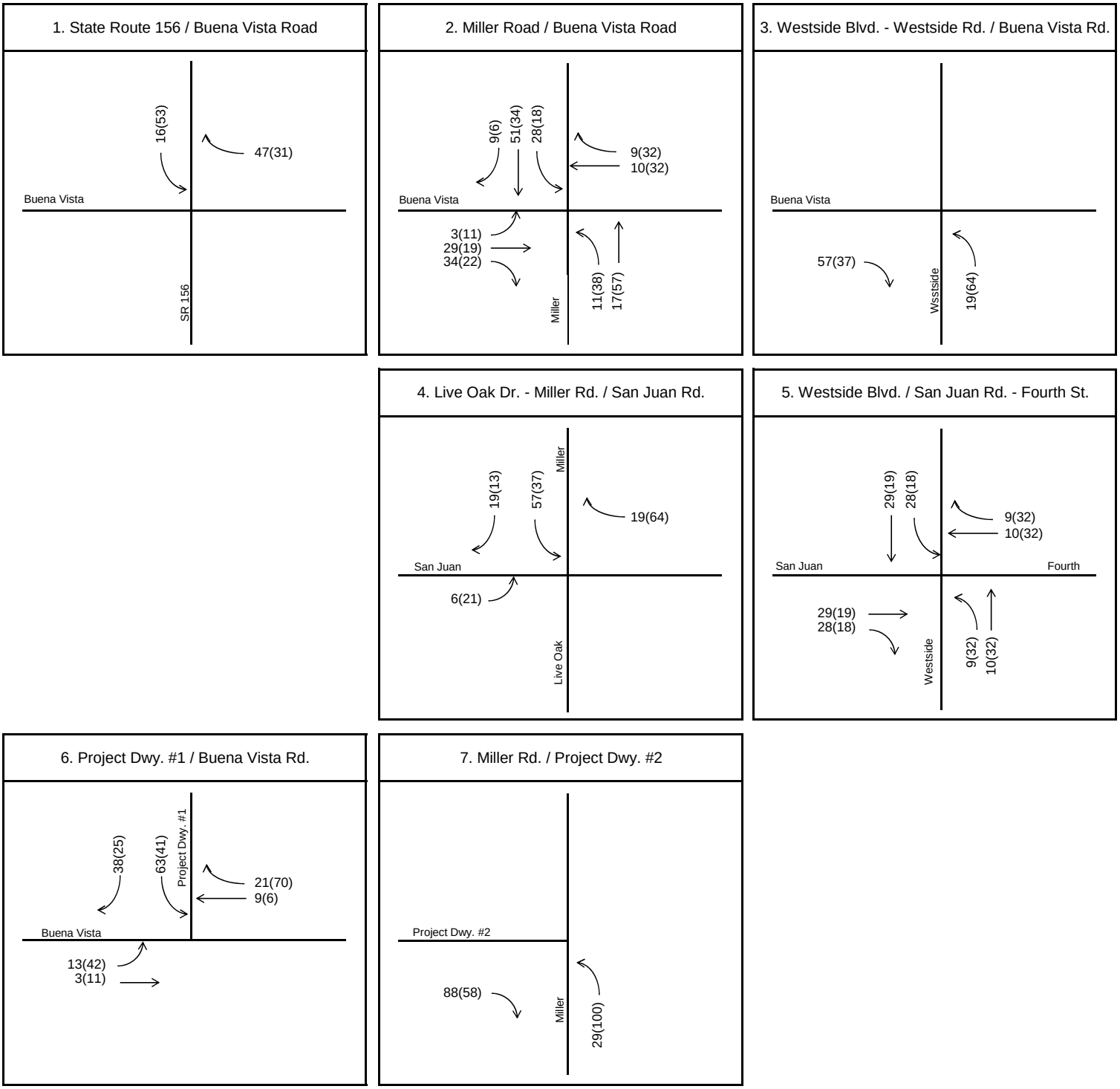



**EXHIBIT 7A**
**Project**
**Trip Distribution**

**Hatch Mott MacDonald**

353309 Exhibits1.xls - TripDist




XX (YY) = AM (PM)

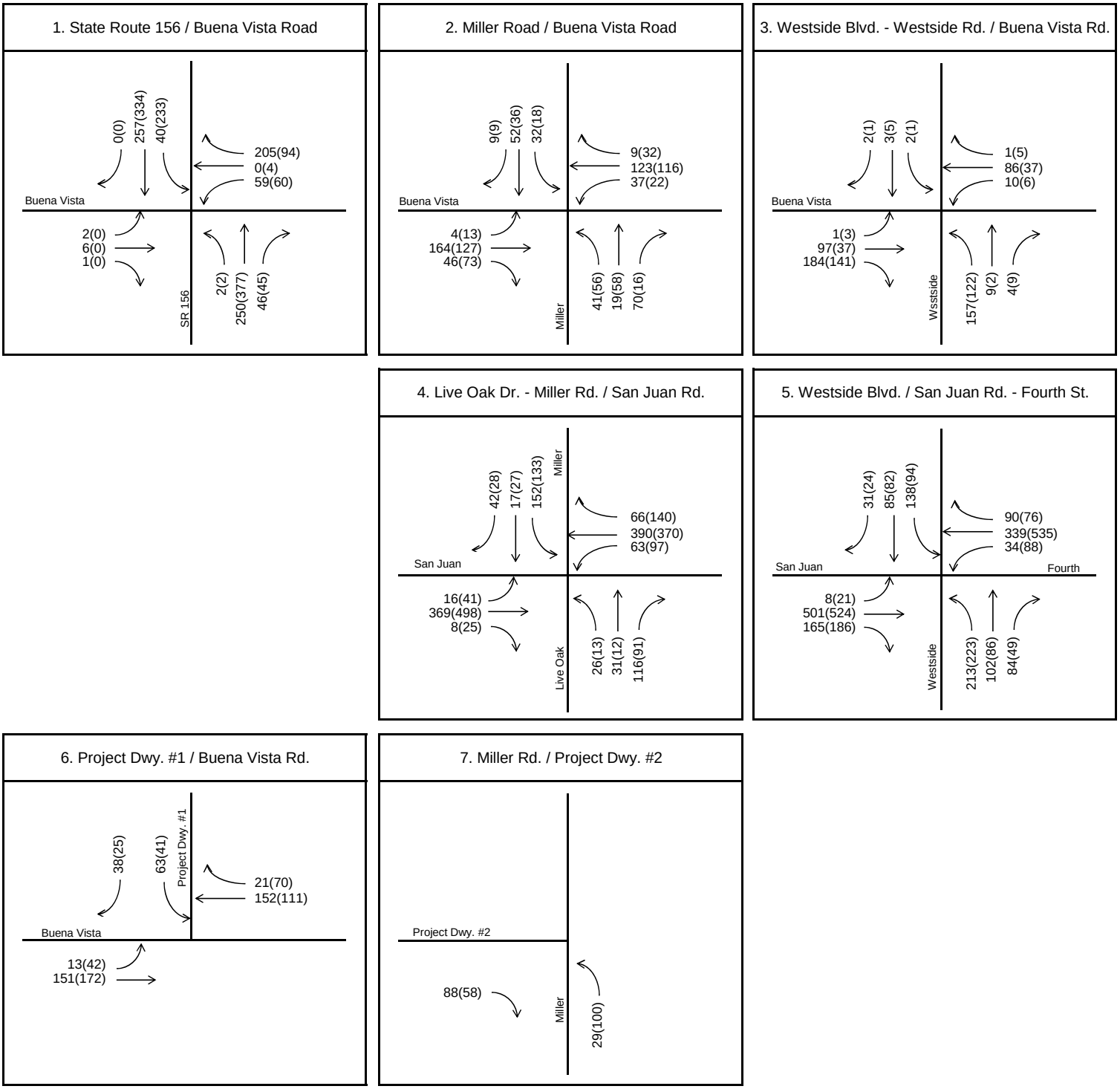
Hatch Mott MacDonald

EXHIBIT 7B

Project Trip Assignment

AM & PM Peak Hour Volumes

353309 Volumes1.xls




XX (YY) = AM (PM)

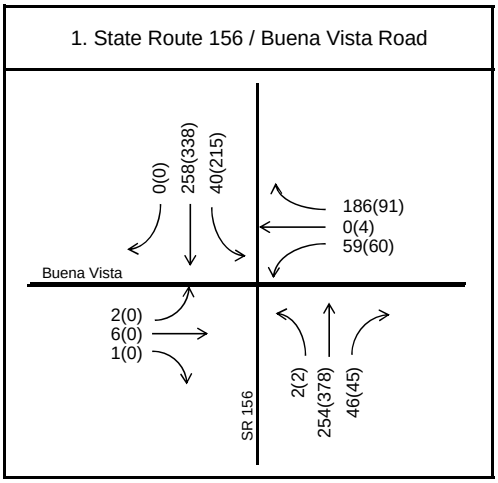
Hatch Mott MacDonald

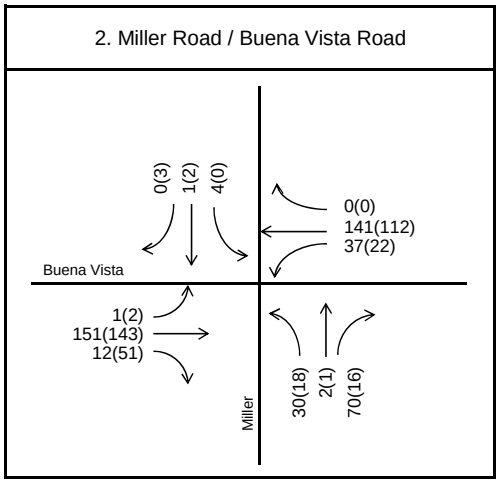
EXHIBIT 8

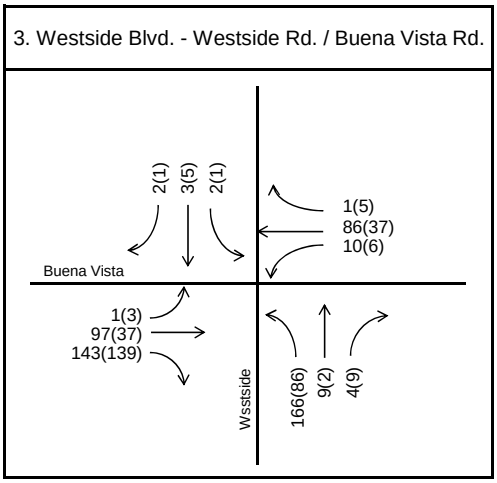
Existing + Project Conditions

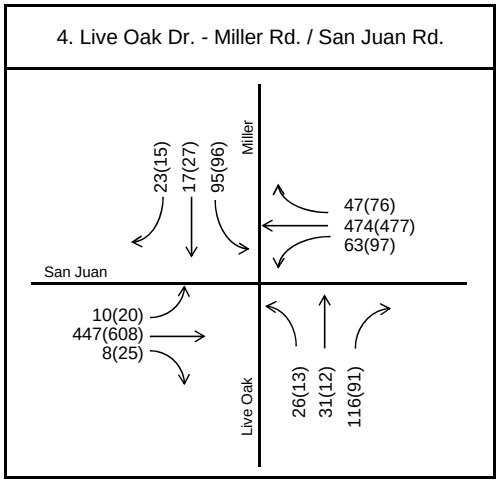
AM & PM Peak Hour Volumes

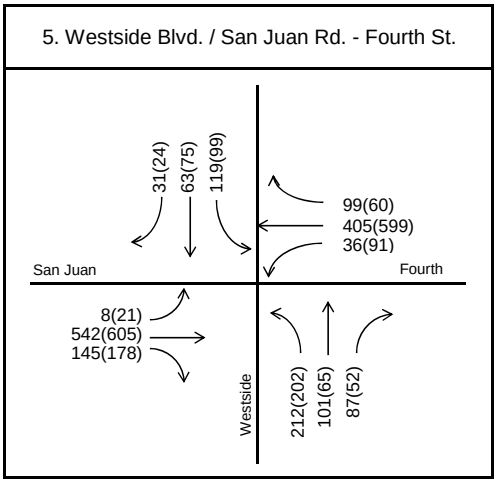
353309 Volumes1.xls




XX (YY) = AM (PM)

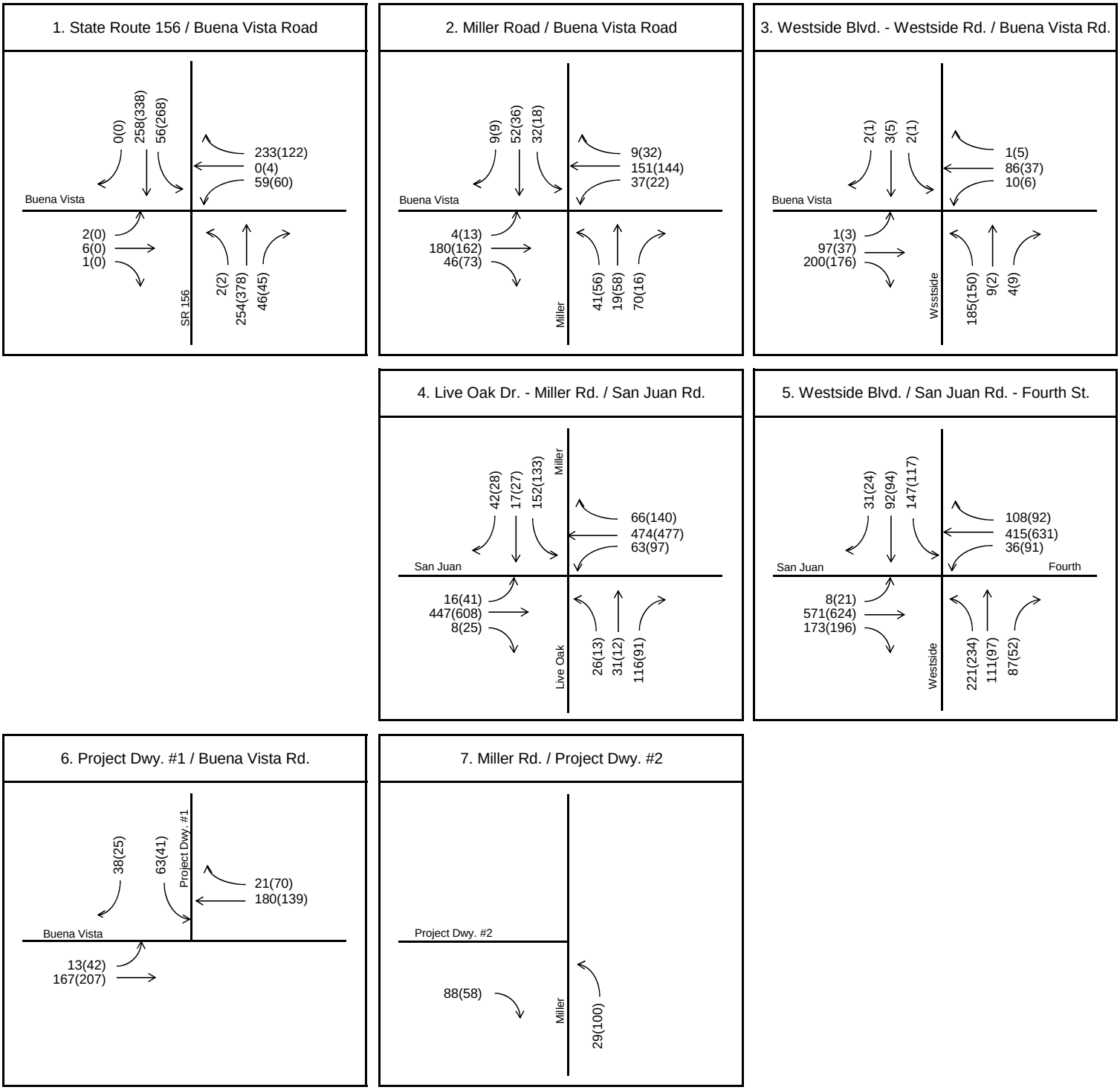
Hatch Mott MacDonald

EXHIBIT 9

Background Conditions

AM & PM Peak Hour Volumes

353309 Volumes1.xls




XX (YY) = AM (PM)

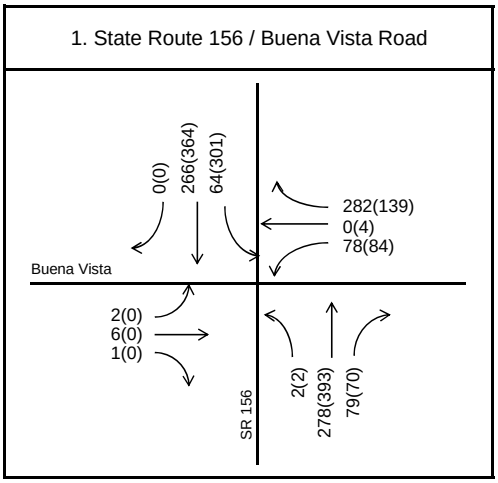
Hatch Mott MacDonald

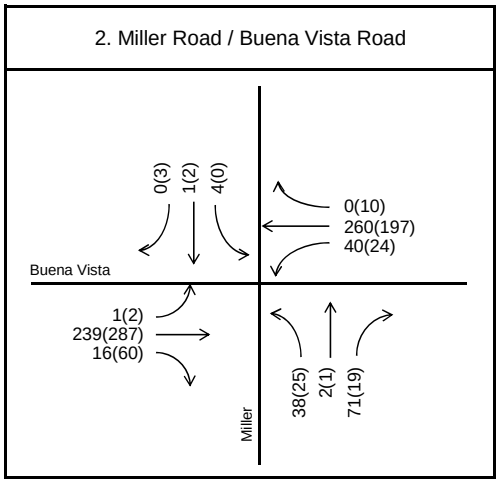
EXHIBIT 10

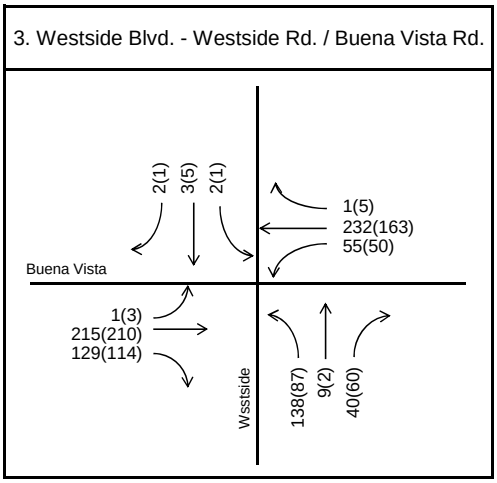
Background + Project Conditions

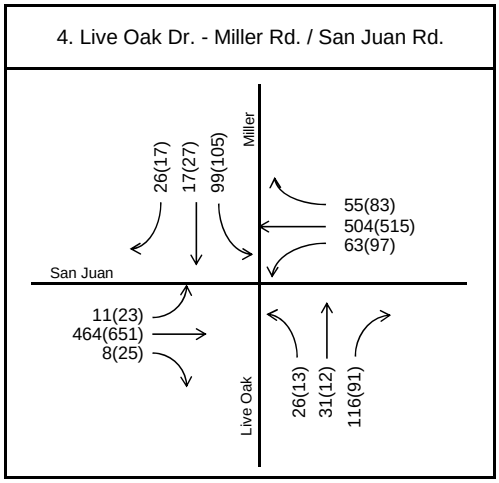
AM & PM Peak Hour Volumes

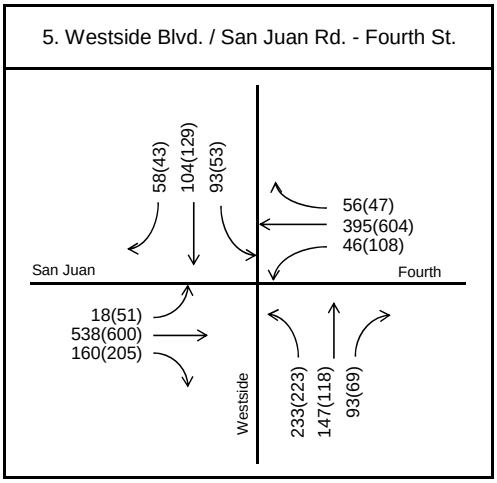
353309 Volumes1.xls




XX (YY) = AM (PM)

Hatch Mott MacDonald

EXHIBIT 11

Cumulative Without Project Conditions

AM & PM Peak Hour Volumes

353309 Volumes1.xls

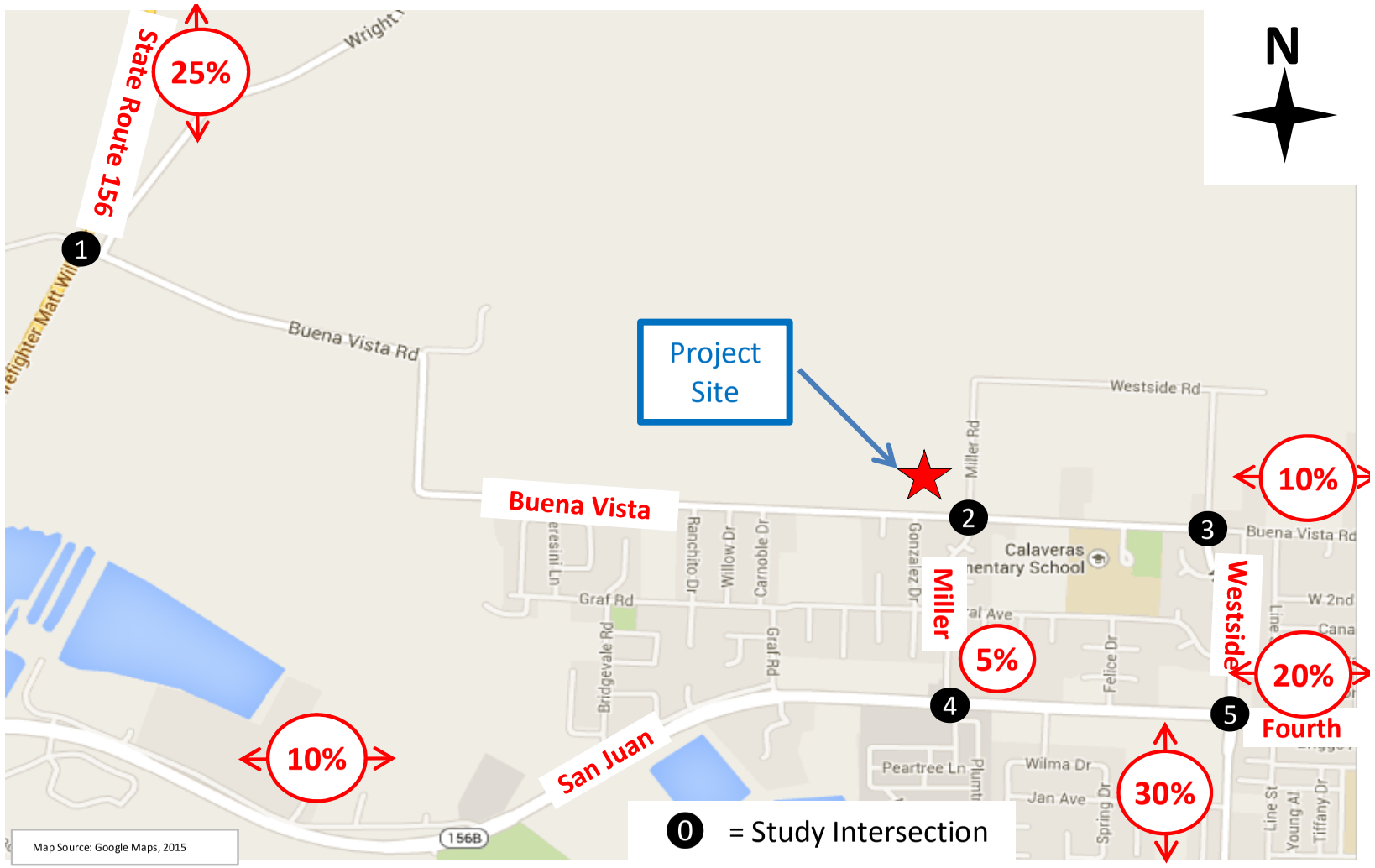
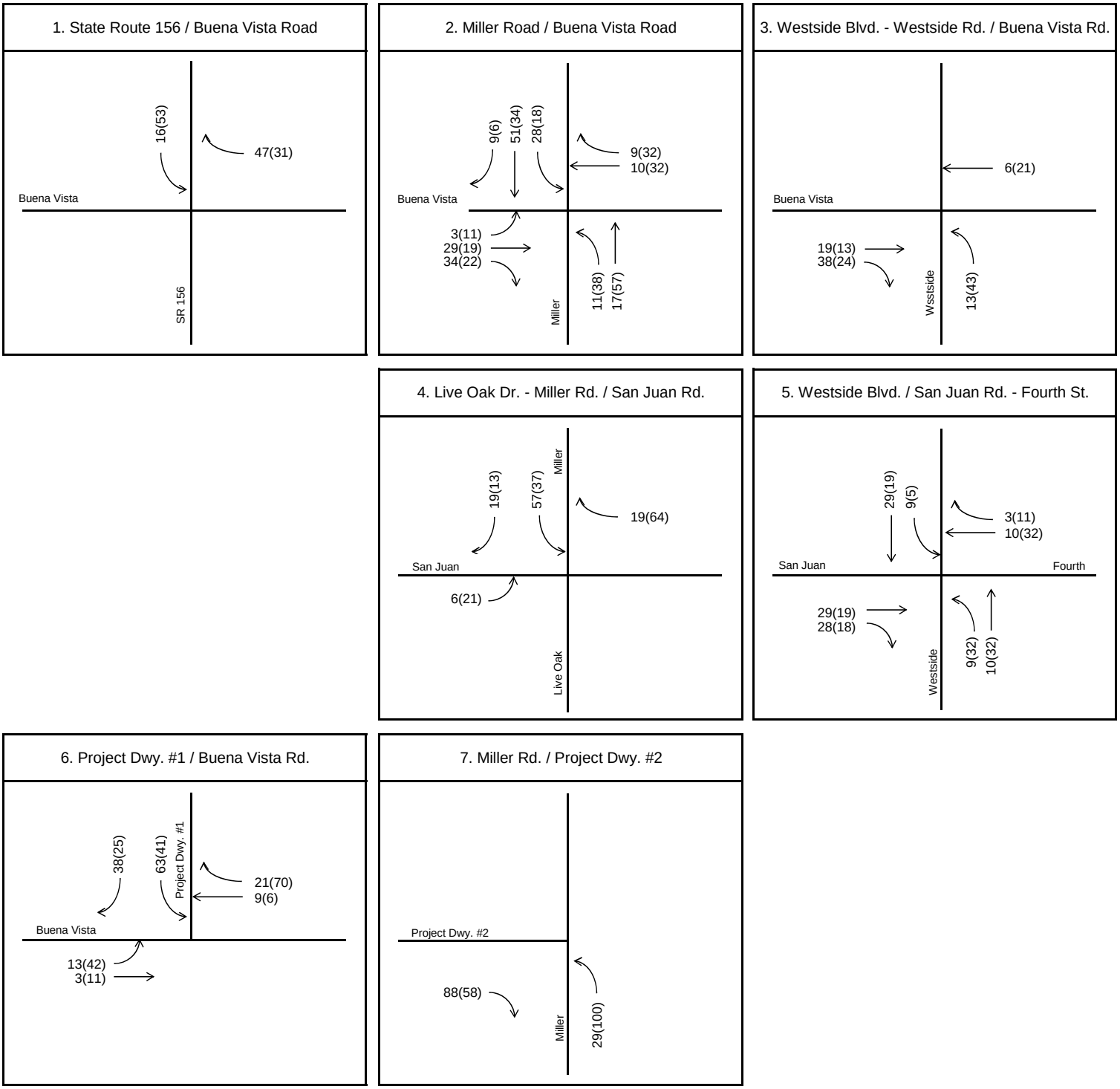



**EXHIBIT 12A**
**Project**
**Trip Distribution**
**(Cumulative Condition)**




XX (YY) = AM (PM)

Hatch Mott MacDonald

EXHIBIT 12B

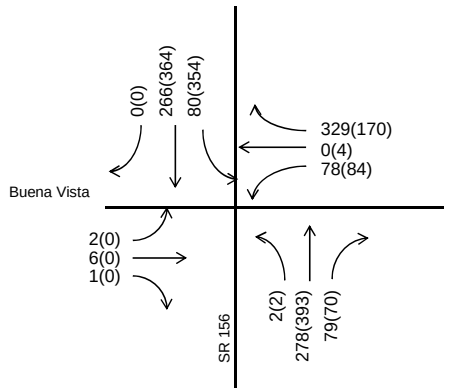
Project Trip Assignment

(Cumulative Condition)

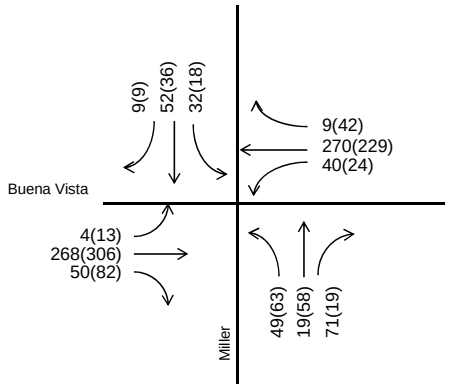
AM & PM Peak Hour Volumes

353309 Volumes1.xls

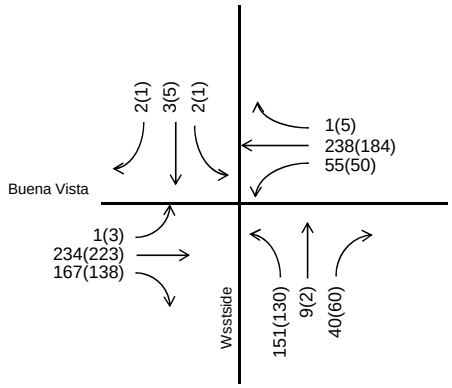
1. State Route 156 / Buena Vista Road



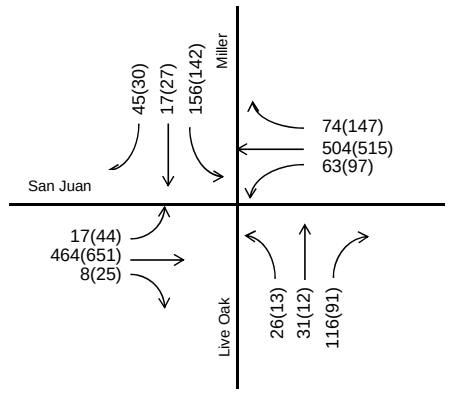

2. Miller Road / Buena Vista Road



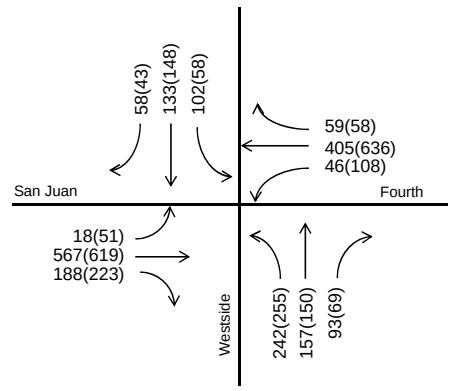

3. Westside Blvd. - Westside Rd. / Buena Vista Rd.



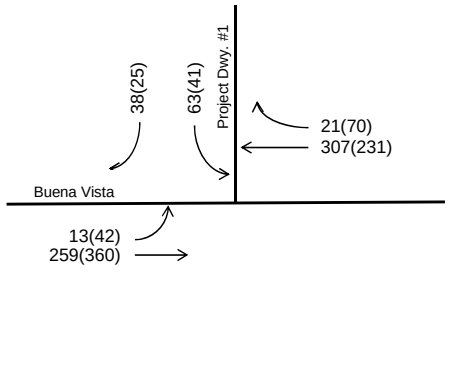

4. Live Oak Dr. - Miller Rd. / San Juan Rd.



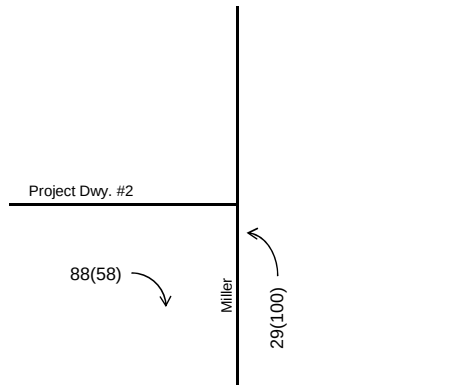

5. Westside Blvd. / San Juan Rd. - Fourth St.




6. Project Dwy. #1 / Buena Vista Rd.




7. Miller Rd. / Project Dwy. #2




XX (YY) = AM (PM)

Hatch Mott MacDonald

EXHIBIT 13

Cumulative + Project Conditions

AM & PM Peak Hour Volumes

353309 Volumes1.xls

| Location | Reported or Observed Challenge | Recommended Improvement | Lead Agency |
|---|---|---|---|
| 3. Buena Vista Road and Miller Road | Cars routinely stop well past northbound limit line at this intersection because it is difficult to see traffic on Buena Vista Road. | a. Construct curb extensions at southeast and southwest corners.<br>b. Stripe high visibility yellow crosswalk on south leg.<br>c. Stripe advance top line on south leg. | City of Hollister |
| 6. Buena Vista Road (west of school, south side) | No sidewalk, children walk in roadway. | Construct sidewalk along frontage of undeveloped property. | City of Hollister |

Source: *Safe Routes to School Needs Assessment and Preliminary Recommendations - Calaveras Elementary and R. O. Hardin Elementary* , Alta Planning and Design and Harris & Associates, February 2014.

**EXHIBIT 14**
**Opportunities and Recommended Improvements near Calaveras Elementary**

# Appendix A

## Level of Service (LOS) Description

A1. Signalized Intersections
A2. Unsignalized Intersections with All-Way Stop Control (AWSC)
A3. Unsignalized Intersections with Two-Way Stop Control (TWSC)

## APPENDIX A1

## LEVEL OF SERVICE (LOS) DESCRIPTION
## SIGNALIZED INTERSECTIONS

The capacity of an urban street is related primarily to the signal timing and the geometric characteristics of the facility as well as to the composition of traffic on the facility. Geometrics are a fixed characteristic of a facility. Thus, while traffic composition may vary somewhat over time, the capacity of a facility is generally a stable value that can be significantly improved only by initiating geometric improvements. A traffic signal essentially allocates time among conflicting traffic movements that seek to use the same space. The way in which time is allocated significantly affects the operation and the capacity of the intersection and its approaches.

The methodology for signalized intersection is designed to consider individual intersection approaches and individual lane groups within approaches. A lane group consists of one or more lanes on an intersection approach. The outputs from application of the method described in the HCM 2010 are reported on the basis of each lane. For a given lane group at a signalized intersection, three indications are displayed: green, yellow and red. The red indication may include a short period during which all indications are red, referred to as an all-red interval and the yellow indication forms the change and clearance interval between two green phases.

The methodology for analyzing the capacity and level of service must consider a wide variety of prevailing conditions, including the amount and distribution of traffic movements, traffic composition, geometric characteristics, and details of intersection signalization. The methodology addresses the capacity, LOS, and other performance measures for lane groups and the intersection approaches and the LOS for the intersection as a whole.

Capacity is evaluated in terms of the ratio of demand flow rate to capacity (v/c ratio), whereas LOS is evaluated on the basis of control delay per vehicle (in seconds per vehicle). The methodology does not take into account the potential impact of downstream congestion on intersection operation, nor does the methodology detect and adjust for the impacts of turn-pocket overflows on through traffic and intersection operation.

### LEVEL OF SERVICE (LOS) CRITERIA FOR SIGNALIZED INTERSECTIONS

(Reference 2010 Highway Capacity Manual)

| Level of Service | Control Delay (seconds / vehicle) |
|---|---|
| **A** | **<10** |
| **B** | **>10 - 20** |
| **C** | **>20 - 35** |
| **D** | **>35 - 55** |
| **E** | **>55 - 80** |
| **F** | **>80** |

## APPENDIX A2

## LEVEL OF SERVICE (LOS) DESCRIPTION
## UNSIGNALIZED INTERSECTIONS WITH ALL-WAY STOP CONTROL (AWSC)

AWSC intersections require every vehicle to stop at the intersection before proceeding. Since each driver must stop, the judgement as to whether to proceed into the intersection is a function of traffic conditions on the other approaches. While giving priority to the driver on the right is a recognized rule in some areas, it is not a good descriptor of actual intersection operations. What happens is the development of a consensus of right-of-way that alternates between the drivers on the intersection approaches, a consensus that depends primarily on the intersection geometry and the arrival patterns at the stop line.

If no traffic is present on the other approaches, a driver can proceed immediately after the stop is made. If there is traffic on one or more of the other approaches, a driver proceeds only after determining that there are no vehicles currently in the intersection and that it is the driver's turn to proceed. Since no traffic signal controls the stream movement or allocates the right-of-way to each conflicting stream, the rate of departure is controlled by the interaction between the traffic streams themselves.

For AWSC intersections, the average control delay (in seconds per vehicle) is used as the primary measure of performance. Control delay is the increased time of travel for a vehicle approaching and passing through an AWSC intersection, compared with a free-flow vehicle if it were not required to slow down or stop at the intersection.

The criteria for AWSC intersections have different threshold values than do those for signalized intersections, primarily because drivers expect different levels of performance from different kinds of traffic control devices (i.e. traffic signals, two way stop or all way stop, etc.). The expectation is that a signalized intersection is designed to carry higher traffic volumes than an AWSC intersection and a higher level of control delay is acceptable at a signalized intersection for the same LOS.

For AWSC analysis using the HCM 2010 method, the LOS shown reflects the weighted average of the delay on each of the approaches.

**LEVEL OF SERVICE (LOS) CRITERIA FOR AWSC INTERSECTIONS**
(Reference 2010 Highway Capacity Manual)

| Level of Service | Control Delay (seconds / vehicle) |
|---|---|
| **A** | **0 - 10** |
| **B** | **>10 - 15** |
| **C** | **>15 - 25** |
| **D** | **>25 - 35** |
| **E** | **>35 - 50** |
| **F** | **>50** |

## APPENDIX A3

## LEVEL OF SERVICE (LOS) DESCRIPTION
## UNSIGNALIZED INTERSECTIONS WITH TWO-WAY STOP CONTROL (TWSC)

TWSC intersections are widely used and stop signs are used to control vehicle movements at such intersections. At TWSC intersections, the stop-controlled approaches are referred to as the minor street approaches; they can be either public streets or private driveways. The intersection approaches that are not controlled by stop signs are referred to as the major street approaches. A three-leg intersection is considered to be a standard type of TWSC intersection if the single minor street approach (i.e. the stem of the T configuration) is controlled by a stop sign. Three-leg intersections where two of the three approaches are controlled by stop signs are a special form of unsignalized intersection control.

At TWSC intersections, drivers on the controlled approaches are required to select gaps in the major street flow through which to execute crossing or turning maneuvers on the basis of judgment. In the presence of a queue, each driver on the controlled approach must use some time to move into the front-of-queue position and prepare to evaluate gaps in the major street flow. Capacity analysis at TWSC intersections depends on a clear description and understanding of the interaction of drivers on the minor or stop-controlled approach with drivers on the major street. Both gap acceptance and empirical models have been developed to describe this interaction.

Thus, the capacity of the controlled legs is based on three factors:

- the distribution of gaps in the major street traffic stream;
- driver judgment in selecting gaps through which to execute the desired maneuvers; and
- the follow-up time required by each driver in a queue.

The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions, in the absence of incident, control, traffic or geometric delay. Average control delay for any particular minor movement is a function of the capacity of the approach and the degree of saturation and referred to as level of service.

### LEVEL OF SERVICE (LOS) CRITERIA FOR TWSC INTERSECTIONS

(Reference 2010 Highway Capacity Manual)

| Level of Service | Control Delay (seconds / vehicle) |
|---|---|
| **A** | **0 - 10** |
| **B** | **>10 - 15** |
| **C** | **>15 - 25** |
| **D** | **>25 - 35** |
| **E** | **>35 - 50** |
| **F** | **>50** |

# Appendix B

## Traffic Counts

# Traffic Data Service

Campbell, CA
**(408) 377-2988**
*tdsbay@cs.com*

File Name : 1AM FINAL
Site Code : 00000001
Start Date : 3/10/2015
Page No : 1

Groups Printed- Vehicles - Buses - Trucks

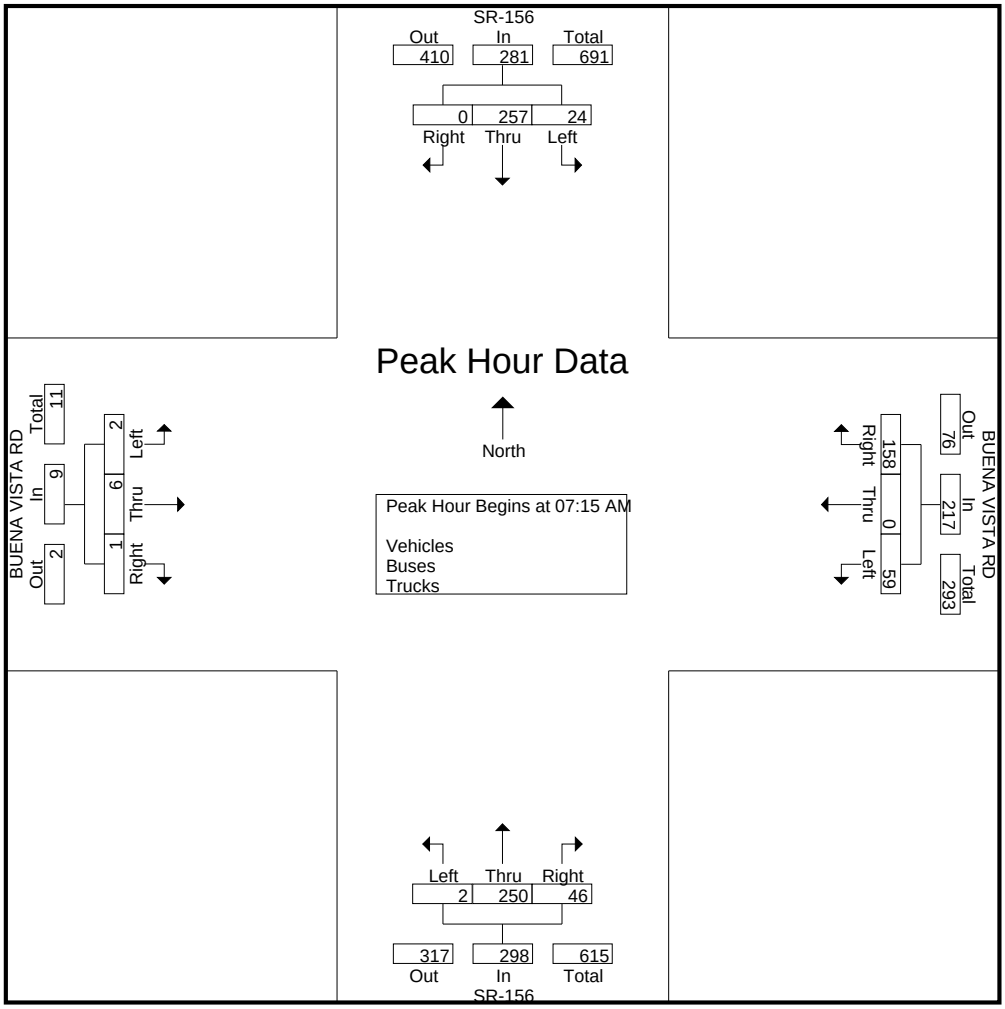
| | SR-156 Southbound | | | | | BUENA VISTA RD Westbound | | | | | SR-156 Northbound | | | | | BUENA VISTA RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 0 | 61 | 4 | 0 | 65 | 36 | 0 | 8 | 0 | 44 | 6 | 70 | 0 | 0 | 76 | 0 | 0 | 1 | 0 | 1 | 186 |
| 07:15 AM | 0 | 68 | 7 | 0 | 75 | 42 | 0 | 20 | 0 | 62 | 11 | 63 | 0 | 0 | 74 | 0 | 0 | 0 | 0 | 0 | 211 |
| 07:30 AM | 0 | 48 | 7 | 0 | 55 | 65 | 0 | 13 | 0 | 78 | 11 | 60 | 0 | 0 | 71 | 0 | 1 | 2 | 0 | 3 | 207 |
| 07:45 AM | 0 | 70 | 5 | 0 | 75 | 28 | 0 | 13 | 0 | 41 | 17 | 58 | 1 | 0 | 76 | 0 | 2 | 0 | 0 | 2 | 194 |
| Total | 0 | 247 | 23 | 0 | 270 | 171 | 0 | 54 | 0 | 225 | 45 | 251 | 1 | 0 | 297 | 0 | 3 | 3 | 0 | 6 | 798 |
| 08:00 AM | 0 | 71 | 5 | 0 | 76 | 23 | 0 | 13 | 0 | 36 | 7 | 69 | 1 | 0 | 77 | 1 | 3 | 0 | 0 | 4 | 193 |
| 08:15 AM | 0 | 69 | 8 | 0 | 77 | 19 | 1 | 12 | 0 | 32 | 12 | 70 | 0 | 0 | 82 | 0 | 1 | 0 | 0 | 1 | 192 |
| 08:30 AM | 0 | 66 | 10 | 0 | 76 | 16 | 1 | 10 | 0 | 27 | 18 | 55 | 2 | 0 | 75 | 0 | 0 | 0 | 0 | 0 | 178 |
| 08:45 AM | 1 | 62 | 4 | 0 | 67 | 18 | 0 | 10 | 0 | 28 | 10 | 71 | 0 | 0 | 81 | 0 | 0 | 0 | 0 | 0 | 176 |
| Total | 1 | 268 | 27 | 0 | 296 | 76 | 2 | 45 | 0 | 123 | 47 | 265 | 3 | 0 | 315 | 1 | 4 | 0 | 0 | 5 | 739 |
| Grand Total | 1 | 515 | 50 | 0 | 566 | 247 | 2 | 99 | 0 | 348 | 92 | 516 | 4 | 0 | 612 | 1 | 7 | 3 | 0 | 11 | 1537 |
| Apprch % | 0.2 | 91 | 8.8 | 0 | | 71 | 0.6 | 28.4 | 0 | | 15 | 84.3 | 0.7 | 0 | | 9.1 | 63.6 | 27.3 | 0 | | |
| Total % | 0.1 | 33.5 | 3.3 | 0 | 36.8 | 16.1 | 0.1 | 6.4 | 0 | 22.6 | 6 | 33.6 | 0.3 | 0 | 39.8 | 0.1 | 0.5 | 0.2 | 0 | 0.7 | |
| Vehicles | 1 | 384 | 48 | 0 | 433 | 242 | 2 | 92 | 0 | 336 | 91 | 421 | 4 | 0 | 516 | 1 | 7 | 3 | 0 | 11 | 1296 |
| % Vehicles | 100 | 74.6 | 96 | 0 | 76.5 | 98 | 100 | 92.9 | 0 | 96.6 | 98.9 | 81.6 | 100 | 0 | 84.3 | 100 | 100 | 100 | 0 | 100 | 84.3 |
| Buses | 0 | 0 | 2 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 6 |
| % Buses | 0 | 0 | 4 | 0 | 0.4 | 0.4 | 0 | 0 | 0 | 0.3 | 1.1 | 0.4 | 0 | 0 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0.4 |
| Trucks | 0 | 131 | 0 | 0 | 131 | 4 | 0 | 7 | 0 | 11 | 0 | 93 | 0 | 0 | 93 | 0 | 0 | 0 | 0 | 0 | 235 |
| % Trucks | 0 | 25.4 | 0 | 0 | 23.1 | 1.6 | 0 | 7.1 | 0 | 3.2 | 0 | 18 | 0 | 0 | 15.2 | 0 | 0 | 0 | 0 | 0 | 15.3 |

| | SR-156 Southbound | | | | BUENA VISTA RD Westbound | | | | SR-156 Northbound | | | | BUENA VISTA RD Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:15 AM | | | | | | | | | | | | | | | | | |
| 07:15 AM | 0 | 68 | **7** | 75 | 42 | 0 | **20** | 62 | 11 | 63 | 0 | 74 | 0 | 0 | 0 | 0 | **211** |
| 07:30 AM | 0 | 48 | 7 | 55 | **65** | 0 | 13 | **78** | 11 | 60 | 0 | 71 | 0 | 1 | **2** | 3 | 207 |
| 07:45 AM | 0 | 70 | 5 | 75 | 28 | 0 | 13 | 41 | **17** | 58 | **1** | 76 | 0 | 2 | 0 | 2 | 194 |
| 08:00 AM | 0 | **71** | 5 | **76** | 23 | 0 | 13 | 36 | 7 | **69** | 1 | **77** | **1** | **3** | 0 | **4** | 193 |
| Total Volume | 0 | 257 | 24 | 281 | 158 | 0 | 59 | 217 | 46 | 250 | 2 | 298 | 1 | 6 | 2 | 9 | 805 |
| % App. Total | 0 | 91.5 | 8.5 | | 72.8 | 0 | 27.2 | | 15.4 | 83.9 | 0.7 | | 11.1 | 66.7 | 22.2 | | |
| PHF | .000 | .905 | .857 | .924 | .608 | .000 | .738 | .696 | .676 | .906 | .500 | .968 | .250 | .500 | .250 | .563 | .954 |

# Traffic Data Service

Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 1AM FINAL
Site Code : 00000001
Start Date : 3/10/2015
Page No : 2



# Traffic Data Service

Campbell, CA
**(408) 377-2988**
*tdsbay@cs.com*

File Name : 2AM FINAL
Site Code : 00000002
Start Date : 3/10/2015
Page No : 1

Groups Printed- Vehicles - Buses - Trucks

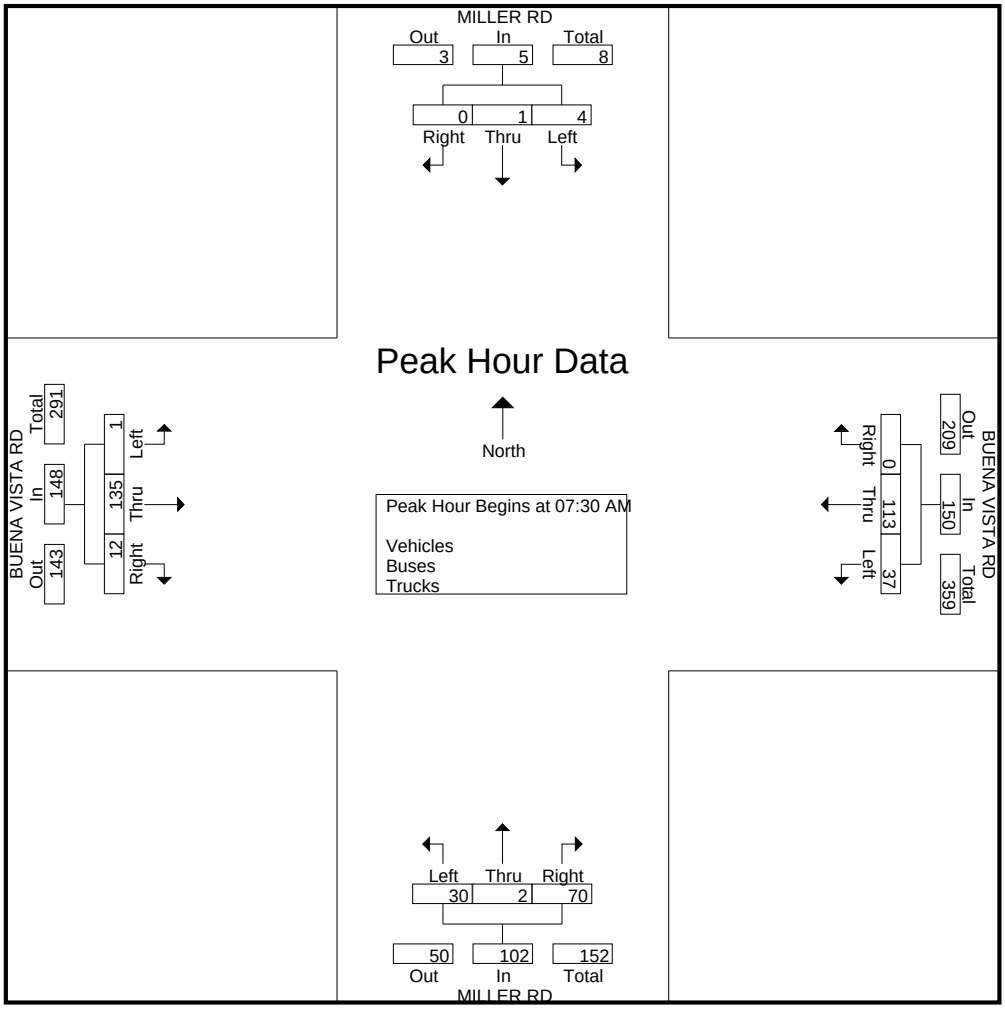
| | MILLER RD Southbound | | | | | BUENA VISTA RD Westbound | | | | | MILLER RD Northbound | | | | | BUENA VISTA RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 2 | 0 | 14 | 1 | 0 | 9 | 0 | 10 | 2 | 8 | 0 | 0 | 10 | 34 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 1 | 0 | 25 | 1 | 0 | 8 | 1 | 10 | 1 | 13 | 0 | 1 | 15 | 50 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 2 | 1 | 25 | 11 | 0 | 12 | 0 | 23 | 3 | 12 | 0 | 0 | 15 | 63 |
| 07:45 AM | 0 | 0 | 1 | 0 | 1 | 0 | 33 | 9 | 0 | 42 | 21 | 0 | 11 | 6 | 38 | 4 | 51 | 0 | 0 | 55 | 136 |
| Total | 0 | 0 | 1 | 0 | 1 | 0 | 91 | 14 | 1 | 106 | 34 | 0 | 40 | 7 | 81 | 10 | 84 | 0 | 1 | 95 | 283 |
| 08:00 AM | 0 | 1 | 3 | 0 | 4 | 0 | 37 | 16 | 0 | 53 | 31 | 0 | 4 | 1 | 36 | 1 | 49 | 1 | 0 | 51 | 144 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 10 | 0 | 31 | 7 | 2 | 3 | 2 | 14 | 4 | 23 | 0 | 0 | 27 | 72 |
| 08:30 AM | 0 | 1 | 0 | 0 | 1 | 0 | 14 | 2 | 0 | 16 | 2 | 0 | 4 | 0 | 6 | 4 | 12 | 0 | 0 | 16 | 39 |
| 08:45 AM | 0 | 0 | 2 | 0 | 2 | 0 | 15 | 0 | 0 | 15 | 2 | 1 | 10 | 0 | 13 | 1 | 8 | 0 | 0 | 9 | 39 |
| Total | 0 | 2 | 5 | 0 | 7 | 0 | 87 | 28 | 0 | 115 | 42 | 3 | 21 | 3 | 69 | 10 | 92 | 1 | 0 | 103 | 294 |
| Grand Total | 0 | 2 | 6 | 0 | 8 | 0 | 178 | 42 | 1 | 221 | 76 | 3 | 61 | 10 | 150 | 20 | 176 | 1 | 1 | 198 | 577 |
| Apprch % | 0 | 25 | 75 | 0 | | 0 | 80.5 | 19 | 0.5 | | 50.7 | 2 | 40.7 | 6.7 | | 10.1 | 88.9 | 0.5 | 0.5 | | |
| Total % | 0 | 0.3 | 1 | 0 | 1.4 | 0 | 30.8 | 7.3 | 0.2 | 38.3 | 13.2 | 0.5 | 10.6 | 1.7 | 26 | 3.5 | 30.5 | 0.2 | 0.2 | 34.3 | |
| Vehicles | 0 | 2 | 6 | 0 | 8 | 0 | 178 | 41 | 1 | 220 | 76 | 3 | 59 | 10 | 148 | 20 | 173 | 1 | 1 | 195 | 571 |
| % Vehicles | 0 | 100 | 100 | 0 | 100 | 0 | 100 | 97.6 | 100 | 99.5 | 100 | 100 | 96.7 | 100 | 98.7 | 100 | 98.3 | 100 | 100 | 98.5 | 99 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 3 | 0 | 0 | 3 | 5 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.4 | 0 | 0.5 | 0 | 0 | 1.6 | 0 | 0.7 | 0 | 1.7 | 0 | 0 | 1.5 | 0.9 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.6 | 0 | 0.7 | 0 | 0 | 0 | 0 | 0 | 0.2 |

| | MILLER RD Southbound | | | | BUENA VISTA RD Westbound | | | | MILLER RD Northbound | | | | BUENA VISTA RD Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 22 | 2 | 24 | 11 | 0 | **12** | 23 | 3 | 12 | 0 | 15 | 62 |
| 07:45 AM | 0 | 0 | 1 | 1 | 0 | 33 | 9 | 42 | 21 | 0 | 11 | 32 | **4** | **51** | 0 | **55** | 130 |
| 08:00 AM | 0 | **1** | **3** | **4** | 0 | **37** | **16** | **53** | **31** | 0 | 4 | **35** | 1 | 49 | **1** | 51 | **143** |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 21 | 10 | 31 | 7 | **2** | 3 | 12 | 4 | 23 | 0 | 27 | 70 |
| Total Volume | 0 | 1 | 4 | 5 | 0 | 113 | 37 | 150 | 70 | 2 | 30 | 102 | 12 | 135 | 1 | 148 | 405 |
| % App. Total | 0 | 20 | 80 | | 0 | 75.3 | 24.7 | | 68.6 | 2 | 29.4 | | 8.1 | 91.2 | 0.7 | | |
| PHF | .000 | .250 | .333 | .313 | .000 | .764 | .578 | .708 | .565 | .250 | .625 | .729 | .750 | .662 | .250 | .673 | .708 |

# Traffic Data Service

Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 2AM FINAL
Site Code : 00000002
Start Date : 3/10/2015
Page No : 2



# Traffic Data Service

Campbell, CA
**(408) 377-2988**
*tdsbay@cs.com*

File Name : 3AM FINAL
Site Code : 00000003
Start Date : 3/10/2015
Page No : 1

Groups Printed- Vehicles - Buses - Trucks

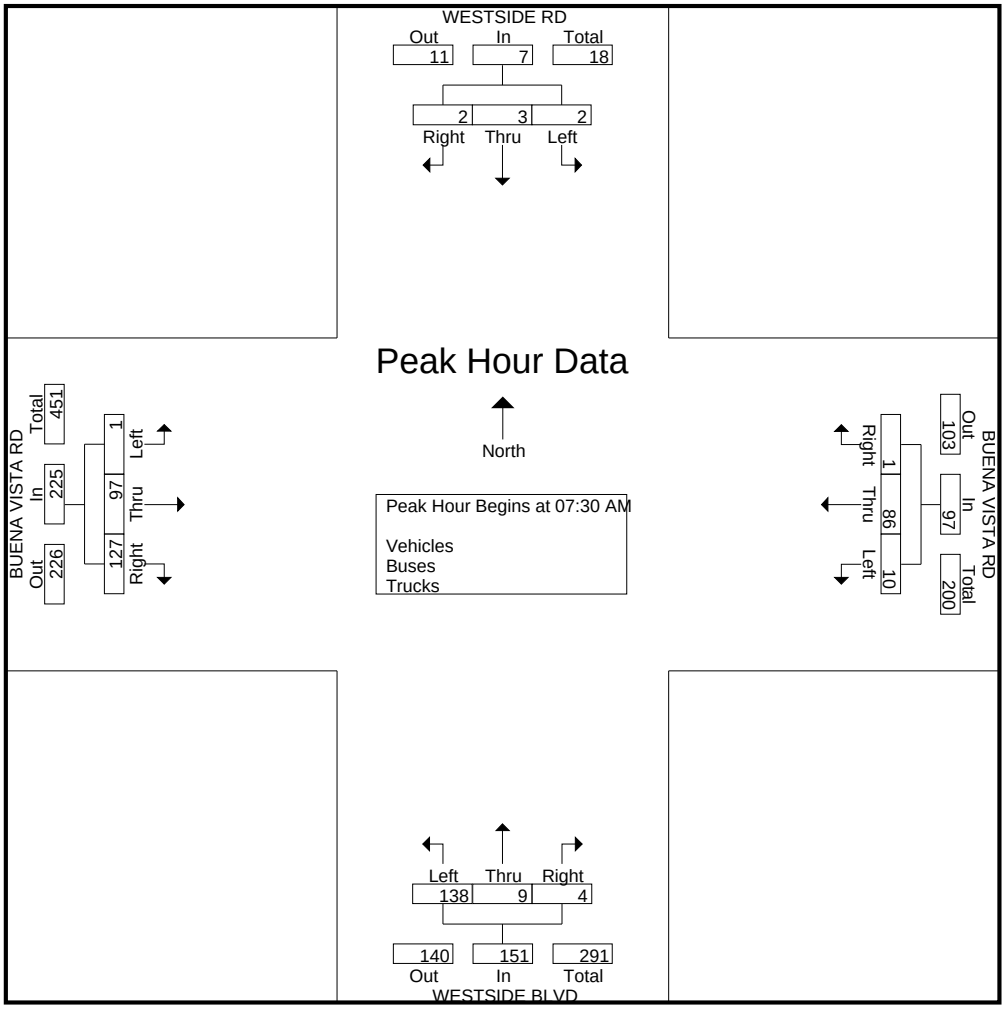
| | WESTSIDE RD Southbound | | | | | BUENA VISTA RD Westbound | | | | | WESTSIDE BLVD Northbound | | | | | BUENA VISTA RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 1 | 0 | 4 | 0 | 0 | 12 | 3 | 15 | 8 | 5 | 0 | 0 | 13 | 33 |
| 07:15 AM | 1 | 0 | 0 | 0 | 1 | 0 | 8 | 1 | 0 | 9 | 1 | 0 | 23 | 1 | 25 | 9 | 4 | 0 | 0 | 13 | 48 |
| 07:30 AM | 1 | 0 | 0 | 0 | 1 | 0 | 15 | 1 | 0 | 16 | 0 | 1 | 33 | 4 | 38 | 12 | 10 | 0 | 0 | 22 | 77 |
| 07:45 AM | 1 | 0 | 1 | 0 | 2 | 0 | 34 | 3 | 0 | 37 | 0 | 1 | 51 | 10 | 62 | 34 | 28 | 1 | 0 | 63 | 164 |
| Total | 3 | 1 | 1 | 0 | 5 | 0 | 60 | 6 | 0 | 66 | 1 | 2 | 119 | 18 | 140 | 63 | 47 | 1 | 0 | 111 | 322 |
| 08:00 AM | 0 | 2 | 1 | 0 | 3 | 0 | 27 | 5 | 0 | 32 | 3 | 6 | 36 | 5 | 50 | 57 | 43 | 0 | 0 | 100 | 185 |
| 08:15 AM | 0 | 1 | 0 | 0 | 1 | 1 | 10 | 1 | 0 | 12 | 1 | 1 | 18 | 0 | 20 | 24 | 16 | 0 | 0 | 40 | 73 |
| 08:30 AM | 0 | 1 | 0 | 0 | 1 | 1 | 11 | 2 | 0 | 14 | 3 | 0 | 11 | 1 | 15 | 10 | 6 | 0 | 0 | 16 | 46 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 8 | 1 | 2 | 9 | 0 | 12 | 9 | 5 | 0 | 0 | 14 | 34 |
| Total | 0 | 4 | 1 | 0 | 5 | 2 | 55 | 9 | 0 | 66 | 8 | 9 | 74 | 6 | 97 | 100 | 70 | 0 | 0 | 170 | 338 |
| Grand Total | 3 | 5 | 2 | 0 | 10 | 2 | 115 | 15 | 0 | 132 | 9 | 11 | 193 | 24 | 237 | 163 | 117 | 1 | 0 | 281 | 660 |
| Apprch % | 30 | 50 | 20 | 0 | | 1.5 | 87.1 | 11.4 | 0 | | 3.8 | 4.6 | 81.4 | 10.1 | | 58 | 41.6 | 0.4 | 0 | | |
| Total % | 0.5 | 0.8 | 0.3 | 0 | 1.5 | 0.3 | 17.4 | 2.3 | 0 | 20 | 1.4 | 1.7 | 29.2 | 3.6 | 35.9 | 24.7 | 17.7 | 0.2 | 0 | 42.6 | |
| Vehicles | 3 | 5 | 2 | 0 | 10 | 2 | 113 | 14 | 0 | 129 | 8 | 11 | 191 | 24 | 234 | 159 | 115 | 1 | 0 | 275 | 648 |
| % Vehicles | 100 | 100 | 100 | 0 | 100 | 100 | 98.3 | 93.3 | 0 | 97.7 | 88.9 | 100 | 99 | 100 | 98.7 | 97.5 | 98.3 | 100 | 0 | 97.9 | 98.2 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 1 | 0 | 1 | 0 | 2 | 3 | 1 | 0 | 0 | 4 | 8 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0.9 | 6.7 | 0 | 1.5 | 11.1 | 0 | 0.5 | 0 | 0.8 | 1.8 | 0.9 | 0 | 0 | 1.4 | 1.2 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 2 | 4 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0.9 | 0 | 0 | 0.8 | 0 | 0 | 0.5 | 0 | 0.4 | 0.6 | 0.9 | 0 | 0 | 0.7 | 0.6 |

| | WESTSIDE RD Southbound | | | | BUENA VISTA RD Westbound | | | | WESTSIDE BLVD Northbound | | | | BUENA VISTA RD Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | |
| 07:30 AM | **1** | 0 | 0 | 1 | 0 | 15 | 1 | 16 | 0 | 1 | 33 | 34 | 12 | 10 | 0 | 22 | 73 |
| 07:45 AM | 1 | 0 | **1** | 2 | 0 | **34** | 3 | **37** | 0 | 1 | **51** | **52** | 34 | 28 | **1** | 63 | 154 |
| 08:00 AM | 0 | **2** | 1 | **3** | 0 | 27 | **5** | 32 | **3** | **6** | 36 | 45 | **57** | **43** | 0 | **100** | **180** |
| 08:15 AM | 0 | 1 | 0 | 1 | **1** | 10 | 1 | 12 | 1 | 1 | 18 | 20 | 24 | 16 | 0 | 40 | 73 |
| Total Volume | 2 | 3 | 2 | 7 | 1 | 86 | 10 | 97 | 4 | 9 | 138 | 151 | 127 | 97 | 1 | 225 | 480 |
| % App. Total | 28.6 | 42.9 | 28.6 | | 1 | 88.7 | 10.3 | | 2.6 | 6 | 91.4 | | 56.4 | 43.1 | 0.4 | | |
| PHF | .500 | .375 | .500 | .583 | .250 | .632 | .500 | .655 | .333 | .375 | .676 | .726 | .557 | .564 | .250 | .563 | .667 |

# Traffic Data Service

Campbell, CA
**(408) 377-2988**
***tdsbay@cs.com***

File Name : 3AM FINAL
Site Code : 00000003
Start Date : 3/10/2015
Page No : 2



# Traffic Data Service

Campbell, CA
**(408) 377-2988**
*tdsbay@cs.com*

File Name : 4AM FINAL
Site Code : 00000004
Start Date : 3/10/2015
Page No : 1

Groups Printed- Vehicles - Buses - Trucks

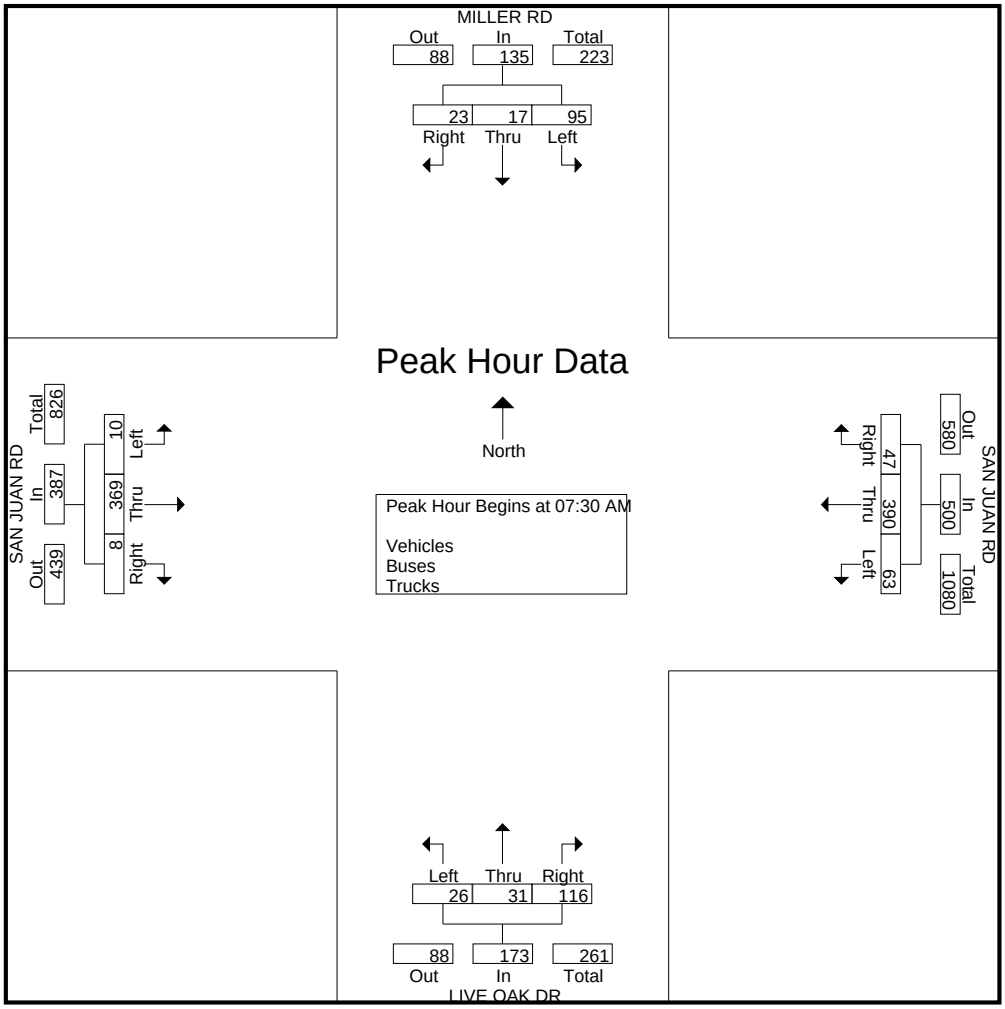
| | MILLER RD Southbound | | | | | SAN JUAN RD Westbound | | | | | LIVE OAK DR Northbound | | | | | SAN JUAN RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 6 | 1 | 11 | 0 | 18 | 6 | 118 | 3 | 2 | 129 | 13 | 4 | 8 | 0 | 25 | 2 | 64 | 0 | 0 | 66 | 238 |
| 07:15 AM | 2 | 0 | 18 | 1 | 21 | 10 | 134 | 9 | 3 | 156 | 14 | 1 | 3 | 0 | 18 | 3 | 43 | 2 | 0 | 48 | 243 |
| 07:30 AM | 3 | 2 | 20 | 0 | 25 | 9 | 102 | 11 | 5 | 127 | 19 | 7 | 8 | 0 | 34 | 3 | 87 | 4 | 0 | 94 | 280 |
| 07:45 AM | 10 | 4 | 24 | 0 | 38 | 15 | 91 | 10 | 11 | 127 | 39 | 10 | 7 | 0 | 56 | 2 | 112 | 3 | 0 | 117 | 338 |
| Total | 21 | 7 | 73 | 1 | 102 | 40 | 445 | 33 | 21 | 539 | 85 | 22 | 26 | 0 | 133 | 10 | 306 | 9 | 0 | 325 | 1099 |
| 08:00 AM | 6 | 10 | 24 | 0 | 40 | 15 | 93 | 26 | 2 | 136 | 36 | 11 | 6 | 0 | 53 | 0 | 77 | 2 | 0 | 79 | 308 |
| 08:15 AM | 4 | 1 | 27 | 0 | 32 | 8 | 104 | 16 | 3 | 131 | 22 | 3 | 5 | 4 | 34 | 3 | 93 | 1 | 0 | 97 | 294 |
| 08:30 AM | 5 | 4 | 18 | 3 | 30 | 16 | 87 | 11 | 0 | 114 | 20 | 4 | 4 | 2 | 30 | 0 | 57 | 0 | 0 | 57 | 231 |
| 08:45 AM | 3 | 2 | 14 | 0 | 19 | 19 | 75 | 15 | 2 | 111 | 11 | 1 | 3 | 0 | 15 | 1 | 88 | 3 | 0 | 92 | 237 |
| Total | 18 | 17 | 83 | 3 | 121 | 58 | 359 | 68 | 7 | 492 | 89 | 19 | 18 | 6 | 132 | 4 | 315 | 6 | 0 | 325 | 1070 |
| Grand Total | 39 | 24 | 156 | 4 | 223 | 98 | 804 | 101 | 28 | 1031 | 174 | 41 | 44 | 6 | 265 | 14 | 621 | 15 | 0 | 650 | 2169 |
| Apprch % | 17.5 | 10.8 | 70 | 1.8 | | 9.5 | 78 | 9.8 | 2.7 | | 65.7 | 15.5 | 16.6 | 2.3 | | 2.2 | 95.5 | 2.3 | 0 | | |
| Total % | 1.8 | 1.1 | 7.2 | 0.2 | 10.3 | 4.5 | 37.1 | 4.7 | 1.3 | 47.5 | 8 | 1.9 | 2 | 0.3 | 12.2 | 0.6 | 28.6 | 0.7 | 0 | 30 | |
| Vehicles | 39 | 24 | 153 | 4 | 220 | 94 | 776 | 99 | 28 | 997 | 173 | 41 | 41 | 6 | 261 | 13 | 596 | 15 | 0 | 624 | 2102 |
| % Vehicles | 100 | 100 | 98.1 | 100 | 98.7 | 95.9 | 96.5 | 98 | 100 | 96.7 | 99.4 | 100 | 93.2 | 100 | 98.5 | 92.9 | 96 | 100 | 0 | 96 | 96.9 |
| Buses | 0 | 0 | 3 | 0 | 3 | 3 | 6 | 2 | 0 | 11 | 1 | 0 | 2 | 0 | 3 | 1 | 9 | 0 | 0 | 10 | 27 |
| % Buses | 0 | 0 | 1.9 | 0 | 1.3 | 3.1 | 0.7 | 2 | 0 | 1.1 | 0.6 | 0 | 4.5 | 0 | 1.1 | 7.1 | 1.4 | 0 | 0 | 1.5 | 1.2 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 1 | 22 | 0 | 0 | 23 | 0 | 0 | 1 | 0 | 1 | 0 | 16 | 0 | 0 | 16 | 40 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 1 | 2.7 | 0 | 0 | 2.2 | 0 | 0 | 2.3 | 0 | 0.4 | 0 | 2.6 | 0 | 0 | 2.5 | 1.8 |

| | MILLER RD Southbound | | | | SAN JUAN RD Westbound | | | | LIVE OAK DR Northbound | | | | SAN JUAN RD Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | |
| 07:30 AM | 3 | 2 | 20 | 25 | 9 | 102 | 11 | 122 | 19 | 7 | **8** | 34 | **3** | 87 | **4** | 94 | 275 |
| 07:45 AM | **10** | 4 | 24 | 38 | **15** | 91 | 10 | 116 | **39** | 10 | 7 | **56** | 2 | **112** | 3 | **117** | **327** |
| 08:00 AM | 6 | **10** | 24 | **40** | 15 | 93 | **26** | **134** | 36 | **11** | 6 | 53 | 0 | 77 | 2 | 79 | 306 |
| 08:15 AM | 4 | 1 | **27** | 32 | 8 | **104** | 16 | 128 | 22 | 3 | 5 | 30 | 3 | 93 | 1 | 97 | 287 |
| Total Volume | 23 | 17 | 95 | 135 | 47 | 390 | 63 | 500 | 116 | 31 | 26 | 173 | 8 | 369 | 10 | 387 | 1195 |
| % App. Total | 17 | 12.6 | 70.4 | | 9.4 | 78 | 12.6 | | 67.1 | 17.9 | 15 | | 2.1 | 95.3 | 2.6 | | |
| PHF | .575 | .425 | .880 | .844 | .783 | .938 | .606 | .933 | .744 | .705 | .813 | .772 | .667 | .824 | .625 | .827 | .914 |

# Traffic Data Service

Campbell, CA
**(408) 377-2988**
*tdsbay@cs.com*

File Name : 4AM FINAL
Site Code : 00000004
Start Date : 3/10/2015
Page No : 2



# Traffic Data Service

Campbell, CA
**(408) 377-2988**
*tdsbay@cs.com*

File Name : 5AM FINAL
Site Code : 00000005
Start Date : 3/10/2015
Page No : 1

Groups Printed- Vehicles - Buses - Trucks

| | WESTSIDE BLVD Southbound | | | | | SAN JUAN RD Westbound | | | | | WESTSIDE BLVD Northbound | | | | | SAN JUAN RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 07:00 AM | 7 | 10 | 8 | 0 | 25 | 4 | 71 | 7 | 0 | 82 | 17 | 7 | 34 | 1 | 59 | 12 | 67 | 0 | 2 | 81 | 247 |
| 07:15 AM | 4 | 11 | 8 | 3 | 26 | 7 | 84 | 6 | 3 | 100 | 13 | 14 | 40 | 1 | 68 | 29 | 63 | 0 | 0 | 92 | 286 |
| 07:30 AM | 4 | 6 | 15 | 0 | 25 | 22 | 77 | 4 | 1 | 104 | 20 | 22 | 55 | 1 | 98 | 29 | 101 | 1 | 0 | 131 | 358 |
| 07:45 AM | 8 | 14 | 29 | 5 | 56 | 28 | 68 | 9 | 1 | 106 | 20 | 29 | 50 | 2 | 101 | 50 | 124 | 0 | 0 | 174 | 437 |
| Total | 23 | 41 | 60 | 8 | 132 | 61 | 300 | 26 | 5 | 392 | 70 | 72 | 179 | 5 | 326 | 120 | 355 | 1 | 2 | 478 | 1328 |
| 08:00 AM | 13 | 26 | 40 | 2 | 81 | 20 | 86 | 7 | 0 | 113 | 24 | 34 | 50 | 0 | 108 | 34 | 110 | 6 | 0 | 150 | 452 |
| 08:15 AM | 6 | 10 | 26 | 3 | 45 | 11 | 98 | 14 | 0 | 123 | 20 | 7 | 49 | 1 | 77 | 24 | 137 | 1 | 0 | 162 | 407 |
| 08:30 AM | 5 | 12 | 12 | 1 | 30 | 11 | 93 | 8 | 1 | 113 | 16 | 13 | 33 | 1 | 63 | 32 | 73 | 1 | 0 | 106 | 312 |
| 08:45 AM | 3 | 6 | 14 | 2 | 25 | 5 | 80 | 9 | 4 | 98 | 8 | 9 | 45 | 1 | 63 | 25 | 110 | 0 | 1 | 136 | 322 |
| Total | 27 | 54 | 92 | 8 | 181 | 47 | 357 | 38 | 5 | 447 | 68 | 63 | 177 | 3 | 311 | 115 | 430 | 8 | 1 | 554 | 1493 |
| Grand Total | 50 | 95 | 152 | 16 | 313 | 108 | 657 | 64 | 10 | 839 | 138 | 135 | 356 | 8 | 637 | 235 | 785 | 9 | 3 | 1032 | 2821 |
| Apprch % | 16 | 30.4 | 48.6 | 5.1 | | 12.9 | 78.3 | 7.6 | 1.2 | | 21.7 | 21.2 | 55.9 | 1.3 | | 22.8 | 76.1 | 0.9 | 0.3 | | |
| Total % | 1.8 | 3.4 | 5.4 | 0.6 | 11.1 | 3.8 | 23.3 | 2.3 | 0.4 | 29.7 | 4.9 | 4.8 | 12.6 | 0.3 | 22.6 | 8.3 | 27.8 | 0.3 | 0.1 | 36.6 | |
| Vehicles | 48 | 94 | 147 | 16 | 305 | 107 | 629 | 63 | 10 | 809 | 132 | 132 | 352 | 8 | 624 | 230 | 758 | 9 | 3 | 1000 | 2738 |
| % Vehicles | 96 | 98.9 | 96.7 | 100 | 97.4 | 99.1 | 95.7 | 98.4 | 100 | 96.4 | 95.7 | 97.8 | 98.9 | 100 | 98 | 97.9 | 96.6 | 100 | 100 | 96.9 | 97.1 |
| Buses | 2 | 1 | 3 | 0 | 6 | 1 | 9 | 0 | 0 | 10 | 1 | 1 | 1 | 0 | 3 | 3 | 5 | 0 | 0 | 8 | 27 |
| % Buses | 4 | 1.1 | 2 | 0 | 1.9 | 0.9 | 1.4 | 0 | 0 | 1.2 | 0.7 | 0.7 | 0.3 | 0 | 0.5 | 1.3 | 0.6 | 0 | 0 | 0.8 | 1 |
| Trucks | 0 | 0 | 2 | 0 | 2 | 0 | 19 | 1 | 0 | 20 | 5 | 2 | 3 | 0 | 10 | 2 | 22 | 0 | 0 | 24 | 56 |
| % Trucks | 0 | 0 | 1.3 | 0 | 0.6 | 0 | 2.9 | 1.6 | 0 | 2.4 | 3.6 | 1.5 | 0.8 | 0 | 1.6 | 0.9 | 2.8 | 0 | 0 | 2.3 | 2 |

| | WESTSIDE BLVD Southbound | | | | SAN JUAN RD Westbound | | | | WESTSIDE BLVD Northbound | | | | SAN JUAN RD Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | |
| 07:30 AM | 4 | 6 | 15 | 25 | 22 | 77 | 4 | 103 | 20 | 22 | **55** | 97 | 29 | 101 | 1 | 131 | 356 |
| 07:45 AM | 8 | 14 | 29 | 51 | **28** | 68 | 9 | 105 | 20 | 29 | 50 | 99 | **50** | 124 | 0 | **174** | 429 |
| 08:00 AM | **13** | **26** | **40** | **79** | 20 | 86 | 7 | 113 | **24** | **34** | 50 | **108** | 34 | 110 | **6** | 150 | **450** |
| 08:15 AM | 6 | 10 | 26 | 42 | 11 | **98** | **14** | **123** | 20 | 7 | 49 | 76 | 24 | **137** | 1 | 162 | 403 |
| Total Volume | 31 | 56 | 110 | 197 | 81 | 329 | 34 | 444 | 84 | 92 | 204 | 380 | 137 | 472 | 8 | 617 | 1638 |
| % App. Total | 15.7 | 28.4 | 55.8 | | 18.2 | 74.1 | 7.7 | | 22.1 | 24.2 | 53.7 | | 22.2 | 76.5 | 1.3 | | |
| PHF | .596 | .538 | .688 | .623 | .723 | .839 | .607 | .902 | .875 | .676 | .927 | .880 | .685 | .861 | .333 | .886 | .910 |

# Traffic Data Service

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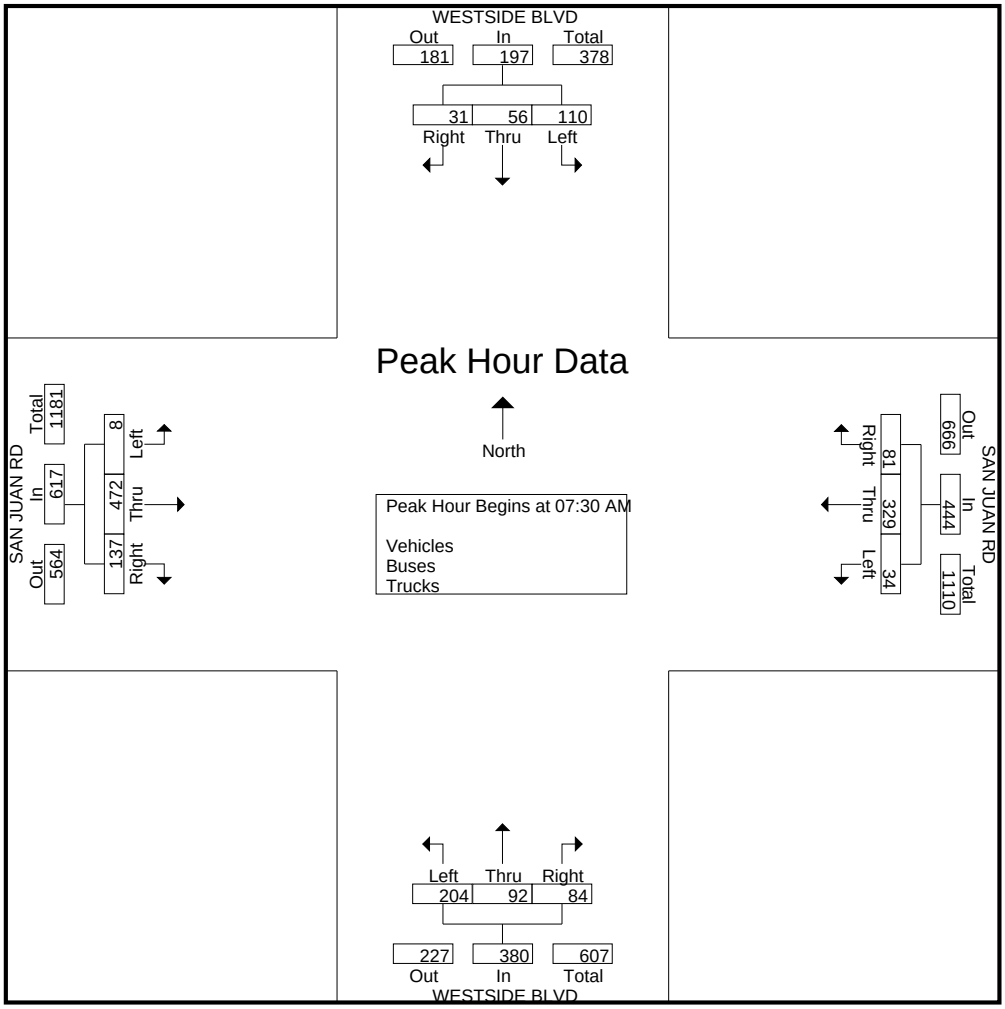
File Name : 5AM FINAL
Site Code : 00000005
Start Date : 3/10/2015
Page No : 2



# Traffic Data Service

Campbell, CA
**(408) 377-2988**
*tdsbay@cs.com*

File Name : 1PM FINAL
Site Code : 00000001
Start Date : 3/10/2015
Page No : 1

Groups Printed- Vehicles - Buses - Trucks

| | SR-156 Southbound | | | | | BUENA VISTA RD Westbound | | | | | SR-156 Northbound | | | | | BUENA VISTA RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 0 | 81 | 36 | 0 | 117 | 14 | 0 | 24 | 0 | 38 | 5 | 96 | 0 | 0 | 101 | 0 | 0 | 0 | 0 | 0 | 256 |
| 04:15 PM | 0 | 93 | 29 | 0 | 122 | 19 | 0 | 12 | 0 | 31 | 11 | 93 | 0 | 0 | 104 | 0 | 0 | 0 | 0 | 0 | 257 |
| 04:30 PM | 0 | 81 | 47 | 0 | 128 | 19 | 2 | 16 | 0 | 37 | 14 | 85 | 1 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 265 |
| 04:45 PM | 0 | 90 | 43 | 0 | 133 | 12 | 1 | 14 | 0 | 27 | 14 | 93 | 0 | 0 | 107 | 0 | 0 | 0 | 0 | 0 | 267 |
| Total | 0 | 345 | 155 | 0 | 500 | 64 | 3 | 66 | 0 | 133 | 44 | 367 | 1 | 0 | 412 | 0 | 0 | 0 | 0 | 0 | 1045 |
| 05:00 PM | 0 | 80 | 40 | 0 | 120 | 12 | 0 | 16 | 0 | 28 | 7 | 110 | 0 | 0 | 117 | 0 | 0 | 0 | 0 | 0 | 265 |
| 05:15 PM | 0 | 83 | 50 | 0 | 133 | 20 | 1 | 14 | 0 | 35 | 10 | 89 | 1 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 268 |
| 05:30 PM | 1 | 89 | 44 | 0 | 134 | 12 | 0 | 8 | 0 | 20 | 10 | 58 | 1 | 0 | 69 | 0 | 3 | 0 | 0 | 3 | 226 |
| 05:45 PM | 1 | 53 | 45 | 0 | 99 | 5 | 1 | 10 | 0 | 16 | 6 | 76 | 0 | 0 | 82 | 0 | 0 | 0 | 0 | 0 | 197 |
| Total | 2 | 305 | 179 | 0 | 486 | 49 | 2 | 48 | 0 | 99 | 33 | 333 | 2 | 0 | 368 | 0 | 3 | 0 | 0 | 3 | 956 |
| Grand Total | 2 | 650 | 334 | 0 | 986 | 113 | 5 | 114 | 0 | 232 | 77 | 700 | 3 | 0 | 780 | 0 | 3 | 0 | 0 | 3 | 2001 |
| Apprch % | 0.2 | 65.9 | 33.9 | 0 | | 48.7 | 2.2 | 49.1 | 0 | | 9.9 | 89.7 | 0.4 | 0 | | 0 | 100 | 0 | 0 | | |
| Total % | 0.1 | 32.5 | 16.7 | 0 | 49.3 | 5.6 | 0.2 | 5.7 | 0 | 11.6 | 3.8 | 35 | 0.1 | 0 | 39 | 0 | 0.1 | 0 | 0 | 0.1 | |
| Vehicles | 2 | 548 | 332 | 0 | 882 | 112 | 5 | 110 | 0 | 227 | 71 | 599 | 3 | 0 | 673 | 0 | 3 | 0 | 0 | 3 | 1785 |
| % Vehicles | 100 | 84.3 | 99.4 | 0 | 89.5 | 99.1 | 100 | 96.5 | 0 | 97.8 | 92.2 | 85.6 | 100 | 0 | 86.3 | 0 | 100 | 0 | 0 | 100 | 89.2 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.9 | 0 | 0.4 | 1.3 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0 | 0 | 0 | 0.1 |
| Trucks | 0 | 102 | 2 | 0 | 104 | 1 | 0 | 3 | 0 | 4 | 5 | 101 | 0 | 0 | 106 | 0 | 0 | 0 | 0 | 0 | 214 |
| % Trucks | 0 | 15.7 | 0.6 | 0 | 10.5 | 0.9 | 0 | 2.6 | 0 | 1.7 | 6.5 | 14.4 | 0 | 0 | 13.6 | 0 | 0 | 0 | 0 | 0 | 10.7 |

| | SR-156 Southbound | | | | BUENA VISTA RD Westbound | | | | SR-156 Northbound | | | | BUENA VISTA RD Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | |
| 04:30 PM | 0 | 81 | 47 | 128 | 19 | **2** | **16** | **37** | **14** | 85 | **1** | 100 | 0 | 0 | 0 | 0 | 265 |
| 04:45 PM | 0 | **90** | 43 | **133** | 12 | 1 | 14 | 27 | 14 | 93 | 0 | 107 | 0 | 0 | 0 | 0 | 267 |
| 05:00 PM | 0 | 80 | 40 | 120 | 12 | 0 | 16 | 28 | 7 | **110** | 0 | **117** | 0 | 0 | 0 | 0 | 265 |
| 05:15 PM | 0 | 83 | **50** | 133 | **20** | 1 | 14 | 35 | 10 | 89 | 1 | 100 | 0 | 0 | 0 | 0 | **268** |
| Total Volume | 0 | 334 | 180 | 514 | 63 | 4 | 60 | 127 | 45 | 377 | 2 | 424 | 0 | 0 | 0 | 0 | 1065 |
| % App. Total | 0 | 65 | 35 | | 49.6 | 3.1 | 47.2 | | 10.6 | 88.9 | 0.5 | | 0 | 0 | 0 | | |
| PHF | .000 | .928 | .900 | .966 | .788 | .500 | .938 | .858 | .804 | .857 | .500 | .906 | .000 | .000 | .000 | .000 | .993 |

# Traffic Data Service

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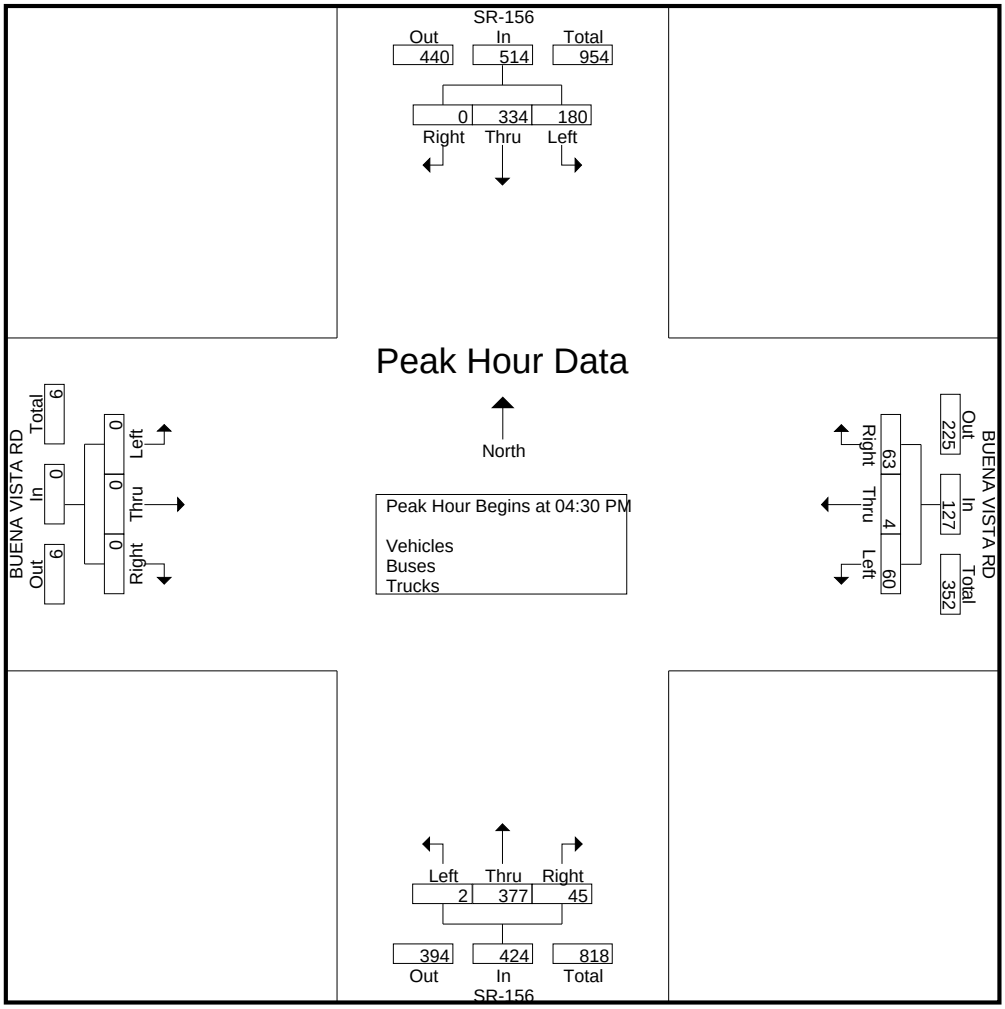
File Name : 1PM FINAL
Site Code : 00000001
Start Date : 3/10/2015
Page No : 2



# Traffic Data Service

Campbell, CA
**(408) 377-2988**
*tdsbay@cs.com*

File Name : 2PM FINAL
Site Code : 00000002
Start Date : 3/10/2015
Page No : 1

Groups Printed- Vehicles - Buses - Trucks

| | MILLER RD Southbound | | | | | BUENA VISTA RD Westbound | | | | | MILLER RD Northbound | | | | | BUENA VISTA RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 2 | 0 | 19 | 3 | 1 | 4 | 0 | 8 | 6 | 22 | 2 | 0 | 30 | 57 |
| 04:15 PM | 0 | 1 | 0 | 1 | 2 | 0 | 22 | 2 | 1 | 25 | 1 | 0 | 9 | 0 | 10 | 14 | 24 | 1 | 0 | 39 | 76 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 3 | 0 | 27 | 2 | 0 | 4 | 0 | 6 | 9 | 23 | 0 | 0 | 32 | 65 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 3 | 0 | 14 | 4 | 0 | 1 | 0 | 5 | 17 | 24 | 0 | 0 | 41 | 60 |
| Total | 0 | 1 | 0 | 1 | 2 | 0 | 74 | 10 | 1 | 85 | 10 | 1 | 18 | 0 | 29 | 46 | 93 | 3 | 0 | 142 | 258 |
| 05:00 PM | 1 | 0 | 0 | 0 | 1 | 0 | 19 | 2 | 0 | 21 | 2 | 1 | 6 | 0 | 9 | 11 | 27 | 1 | 0 | 39 | 70 |
| 05:15 PM | 1 | 0 | 0 | 0 | 1 | 0 | 16 | 2 | 0 | 18 | 3 | 0 | 6 | 0 | 9 | 16 | 25 | 1 | 0 | 42 | 70 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 6 | 0 | 36 | 7 | 0 | 5 | 1 | 13 | 15 | 30 | 0 | 0 | 45 | 94 |
| 05:45 PM | 1 | 2 | 0 | 0 | 3 | 0 | 19 | 12 | 0 | 31 | 4 | 0 | 1 | 4 | 9 | 9 | 26 | 0 | 0 | 35 | 78 |
| Total | 3 | 2 | 0 | 0 | 5 | 0 | 84 | 22 | 0 | 106 | 16 | 1 | 18 | 5 | 40 | 51 | 108 | 2 | 0 | 161 | 312 |
| Grand Total | 3 | 3 | 0 | 1 | 7 | 0 | 158 | 32 | 1 | 191 | 26 | 2 | 36 | 5 | 69 | 97 | 201 | 5 | 0 | 303 | 570 |
| Apprch % | 42.9 | 42.9 | 0 | 14.3 | | 0 | 82.7 | 16.8 | 0.5 | | 37.7 | 2.9 | 52.2 | 7.2 | | 32 | 66.3 | 1.7 | 0 | | |
| Total % | 0.5 | 0.5 | 0 | 0.2 | 1.2 | 0 | 27.7 | 5.6 | 0.2 | 33.5 | 4.6 | 0.4 | 6.3 | 0.9 | 12.1 | 17 | 35.3 | 0.9 | 0 | 53.2 | |
| Vehicles | 3 | 3 | 0 | 1 | 7 | 0 | 157 | 32 | 1 | 190 | 26 | 2 | 36 | 5 | 69 | 96 | 198 | 5 | 0 | 299 | 565 |
| % Vehicles | 100 | 100 | 0 | 100 | 100 | 0 | 99.4 | 100 | 100 | 99.5 | 100 | 100 | 100 | 100 | 100 | 99 | 98.5 | 100 | 0 | 98.7 | 99.1 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 0 | 0 | 0.3 | 0.2 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 3 | 4 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 | 0 | 0 | 0.5 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0.7 |

| | MILLER RD Southbound | | | | BUENA VISTA RD Westbound | | | | MILLER RD Northbound | | | | BUENA VISTA RD Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | |
| 05:00 PM | **1** | 0 | 0 | 1 | 0 | 19 | 2 | 21 | 2 | **1** | **6** | 9 | 11 | 27 | **1** | 39 | 70 |
| 05:15 PM | 1 | 0 | 0 | 1 | 0 | 16 | 2 | 18 | 3 | 0 | 6 | 9 | **16** | 25 | 1 | 42 | 70 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | **30** | 6 | **36** | **7** | 0 | 5 | **12** | 15 | **30** | 0 | **45** | **93** |
| 05:45 PM | 1 | **2** | 0 | **3** | 0 | 19 | **12** | 31 | 4 | 0 | 1 | 5 | 9 | 26 | 0 | 35 | 74 |
| Total Volume | 3 | 2 | 0 | 5 | 0 | 84 | 22 | 106 | 16 | 1 | 18 | 35 | 51 | 108 | 2 | 161 | 307 |
| % App. Total | 60 | 40 | 0 | | 0 | 79.2 | 20.8 | | 45.7 | 2.9 | 51.4 | | 31.7 | 67.1 | 1.2 | | |
| PHF | .750 | .250 | .000 | .417 | .000 | .700 | .458 | .736 | .571 | .250 | .750 | .729 | .797 | .900 | .500 | .894 | .825 |

# Traffic Data Service

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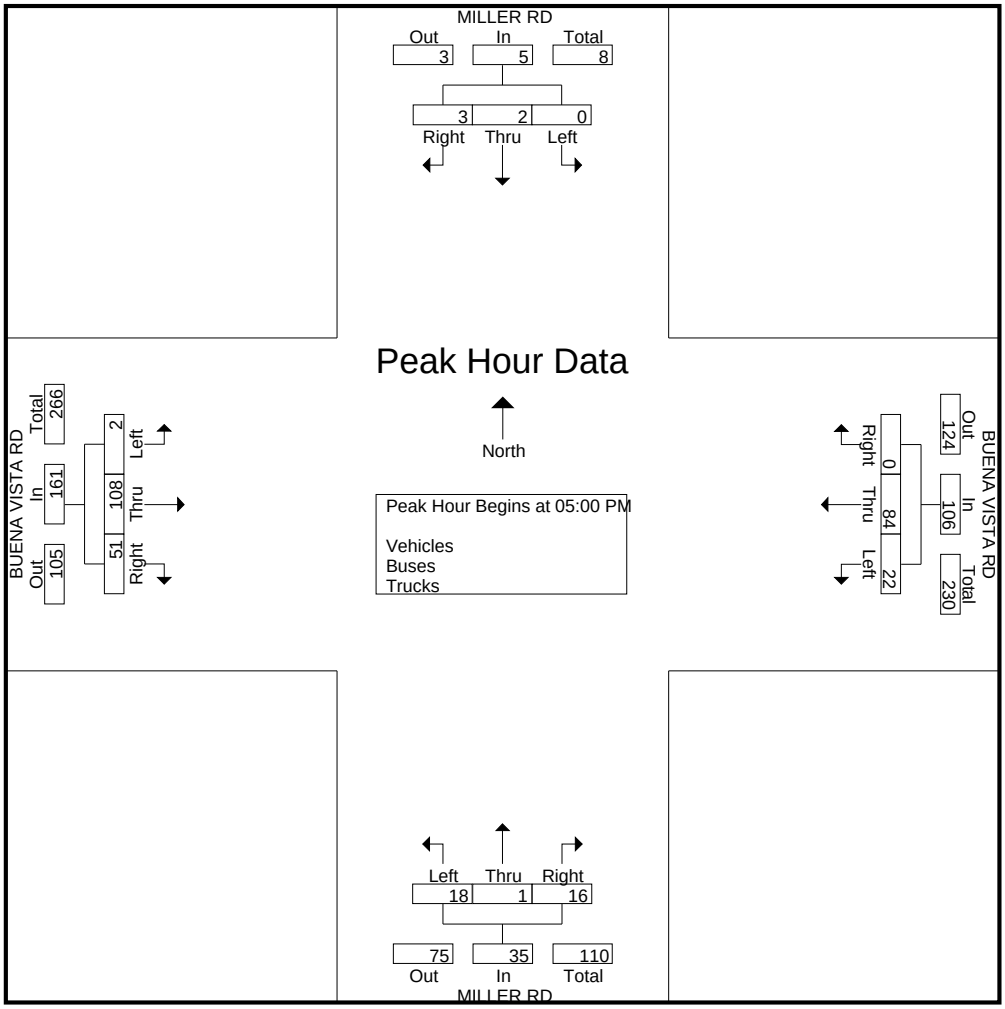
File Name : 2PM FINAL
Site Code : 00000002
Start Date : 3/10/2015
Page No : 2



# Traffic Data Service

Campbell, CA
**(408) 377-2988**
*tdsbay@cs.com*

File Name : 3PM FINAL
Site Code : 00000003
Start Date : 3/10/2015
Page No : 1

Groups Printed- Vehicles - Buses - Trucks

| | WESTSIDE RD Southbound | | | | | BUENA VISTA RD Westbound | | | | | WESTSIDE BLVD Northbound | | | | | BUENA VISTA RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 0 | 2 | 1 | 0 | 3 | 3 | 6 | 1 | 0 | 10 | 1 | 0 | 14 | 1 | 16 | 16 | 10 | 0 | 0 | 26 | 55 |
| 04:15 PM | 1 | 2 | 1 | 0 | 4 | 1 | 11 | 3 | 0 | 15 | 2 | 1 | 20 | 1 | 24 | 28 | 14 | 0 | 0 | 42 | 85 |
| 04:30 PM | 0 | 1 | 0 | 0 | 1 | 1 | 8 | 0 | 0 | 9 | 4 | 0 | 17 | 1 | 22 | 33 | 8 | 2 | 0 | 43 | 75 |
| 04:45 PM | 0 | 1 | 0 | 0 | 1 | 2 | 7 | 2 | 0 | 11 | 2 | 1 | 9 | 3 | 15 | 21 | 6 | 0 | 0 | 27 | 54 |
| Total | 1 | 6 | 2 | 0 | 9 | 7 | 32 | 6 | 0 | 45 | 9 | 2 | 60 | 6 | 77 | 98 | 38 | 2 | 0 | 138 | 269 |
| 05:00 PM | 0 | 1 | 0 | 0 | 1 | 1 | 11 | 1 | 0 | 13 | 1 | 0 | 12 | 0 | 13 | 22 | 9 | 1 | 0 | 32 | 59 |
| 05:15 PM | 0 | 2 | 0 | 0 | 2 | 3 | 11 | 2 | 0 | 16 | 2 | 3 | 9 | 0 | 14 | 14 | 11 | 2 | 0 | 27 | 59 |
| 05:30 PM | 0 | 0 | 2 | 0 | 2 | 0 | 21 | 2 | 0 | 23 | 1 | 0 | 12 | 5 | 18 | 23 | 14 | 0 | 0 | 37 | 80 |
| 05:45 PM | 0 | 0 | 1 | 0 | 1 | 0 | 11 | 5 | 0 | 16 | 0 | 2 | 16 | 1 | 19 | 20 | 14 | 0 | 0 | 34 | 70 |
| Total | 0 | 3 | 3 | 0 | 6 | 4 | 54 | 10 | 0 | 68 | 4 | 5 | 49 | 6 | 64 | 79 | 48 | 3 | 0 | 130 | 268 |
| Grand Total | 1 | 9 | 5 | 0 | 15 | 11 | 86 | 16 | 0 | 113 | 13 | 7 | 109 | 12 | 141 | 177 | 86 | 5 | 0 | 268 | 537 |
| Apprch % | 6.7 | 60 | 33.3 | 0 | | 9.7 | 76.1 | 14.2 | 0 | | 9.2 | 5 | 77.3 | 8.5 | | 66 | 32.1 | 1.9 | 0 | | |
| Total % | 0.2 | 1.7 | 0.9 | 0 | 2.8 | 2 | 16 | 3 | 0 | 21 | 2.4 | 1.3 | 20.3 | 2.2 | 26.3 | 33 | 16 | 0.9 | 0 | 49.9 | |
| Vehicles | 1 | 9 | 5 | 0 | 15 | 11 | 85 | 16 | 0 | 112 | 13 | 6 | 109 | 12 | 140 | 174 | 86 | 5 | 0 | 265 | 532 |
| % Vehicles | 100 | 100 | 100 | 0 | 100 | 100 | 98.8 | 100 | 0 | 99.1 | 100 | 85.7 | 100 | 100 | 99.3 | 98.3 | 100 | 100 | 0 | 98.9 | 99.1 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.6 | 0 | 0 | 0 | 0.4 | 0.2 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 4 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 1.2 | 0 | 0 | 0.9 | 0 | 14.3 | 0 | 0 | 0.7 | 1.1 | 0 | 0 | 0 | 0.7 | 0.7 |

| | WESTSIDE RD Southbound | | | | BUENA VISTA RD Westbound | | | | WESTSIDE BLVD Northbound | | | | BUENA VISTA RD Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:15 PM | | | | | | | | | | | | | | | | | |
| 04:15 PM | **1** | **2** | **1** | **4** | 1 | **11** | **3** | **15** | 2 | **1** | **20** | **23** | 28 | **14** | 0 | 42 | **84** |
| 04:30 PM | 0 | 1 | 0 | 1 | 1 | 8 | 0 | 9 | **4** | 0 | 17 | 21 | **33** | 8 | **2** | **43** | 74 |
| 04:45 PM | 0 | 1 | 0 | 1 | **2** | 7 | 2 | 11 | 2 | 1 | 9 | 12 | 21 | 6 | 0 | 27 | 51 |
| 05:00 PM | 0 | 1 | 0 | 1 | 1 | 11 | 1 | 13 | 1 | 0 | 12 | 13 | 22 | 9 | 1 | 32 | 59 |
| Total Volume | 1 | 5 | 1 | 7 | 5 | 37 | 6 | 48 | 9 | 2 | 58 | 69 | 104 | 37 | 3 | 144 | 268 |
| % App. Total | 14.3 | 71.4 | 14.3 | | 10.4 | 77.1 | 12.5 | | 13 | 2.9 | 84.1 | | 72.2 | 25.7 | 2.1 | | |
| PHF | .250 | .625 | .250 | .438 | .625 | .841 | .500 | .800 | .563 | .500 | .725 | .750 | .788 | .661 | .375 | .837 | .798 |

# Traffic Data Service

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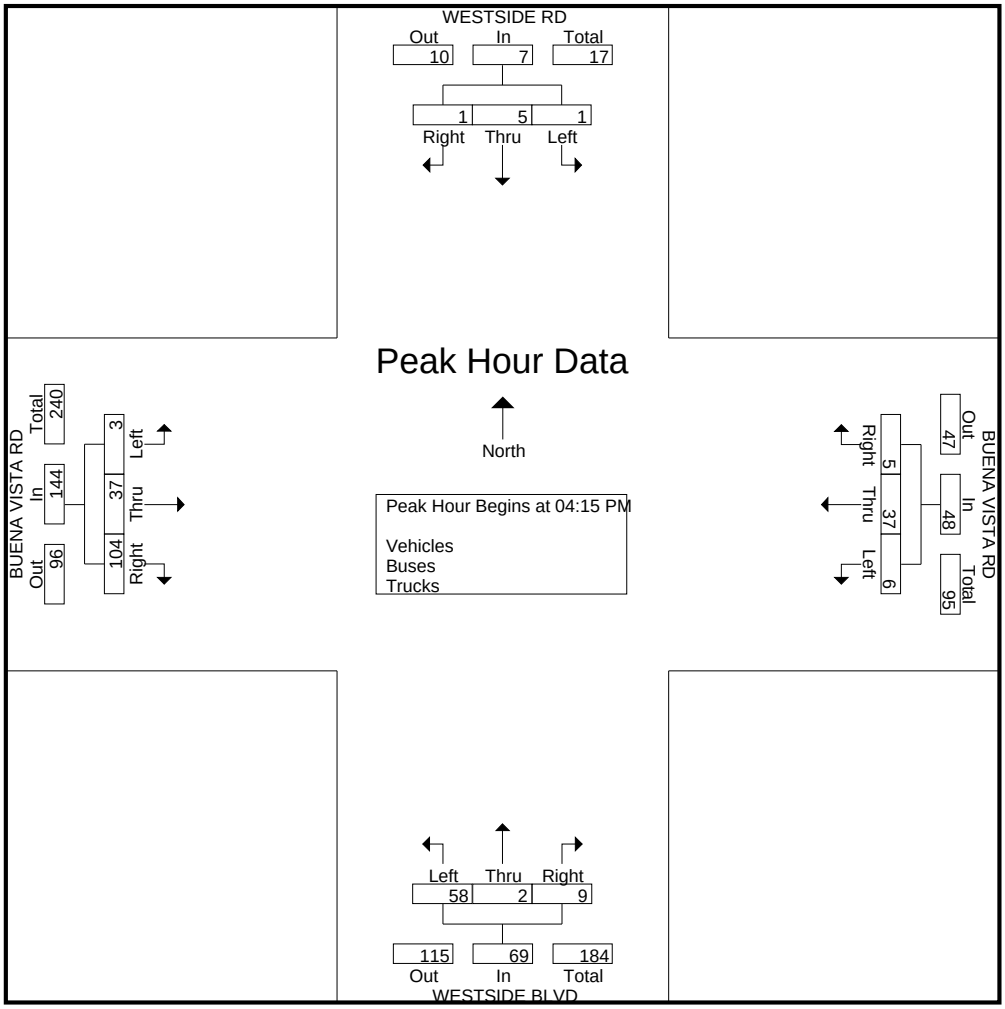
File Name : 3PM FINAL
Site Code : 00000003
Start Date : 3/10/2015
Page No : 2



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*tdsbay@cs.com*

File Name : 4PM FINAL
Site Code : 00000004
Start Date : 3/10/2015
Page No : 1

Groups Printed- Vehicles - Buses - Trucks

| | MILLER RD Southbound | | | | | SAN JUAN RD Westbound | | | | | LIVE OAK DR Northbound | | | | | SAN JUAN RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 3 | 1 | 22 | 0 | 26 | 18 | 93 | 18 | 0 | 129 | 25 | 2 | 2 | 0 | 29 | 2 | 136 | 5 | 0 | 143 | 327 |
| 04:15 PM | 7 | 7 | 22 | 1 | 37 | 15 | 88 | 14 | 1 | 118 | 14 | 6 | 2 | 0 | 22 | 9 | 136 | 2 | 0 | 147 | 324 |
| 04:30 PM | 5 | 3 | 19 | 0 | 27 | 20 | 100 | 23 | 2 | 145 | 12 | 3 | 4 | 0 | 19 | 3 | 128 | 2 | 0 | 133 | 324 |
| 04:45 PM | 1 | 4 | 27 | 0 | 32 | 25 | 96 | 23 | 6 | 150 | 19 | 2 | 1 | 0 | 22 | 6 | 110 | 4 | 0 | 120 | 324 |
| Total | 16 | 15 | 90 | 1 | 122 | 78 | 377 | 78 | 9 | 542 | 70 | 13 | 9 | 0 | 92 | 20 | 510 | 13 | 0 | 543 | 1299 |
| 05:00 PM | 4 | 2 | 25 | 0 | 31 | 16 | 105 | 25 | 2 | 148 | 23 | 2 | 3 | 0 | 28 | 5 | 109 | 6 | 0 | 120 | 327 |
| 05:15 PM | 4 | 10 | 22 | 0 | 36 | 20 | 102 | 27 | 0 | 149 | 20 | 3 | 7 | 2 | 32 | 9 | 120 | 5 | 0 | 134 | 351 |
| 05:30 PM | 6 | 11 | 22 | 0 | 39 | 15 | 67 | 22 | 9 | 113 | 29 | 5 | 2 | 0 | 36 | 5 | 159 | 5 | 0 | 169 | 357 |
| 05:45 PM | 4 | 12 | 14 | 1 | 31 | 24 | 67 | 23 | 4 | 118 | 23 | 6 | 2 | 0 | 31 | 2 | 116 | 10 | 0 | 128 | 308 |
| Total | 18 | 35 | 83 | 1 | 137 | 75 | 341 | 97 | 15 | 528 | 95 | 16 | 14 | 2 | 127 | 21 | 504 | 26 | 0 | 551 | 1343 |
| Grand Total | 34 | 50 | 173 | 2 | 259 | 153 | 718 | 175 | 24 | 1070 | 165 | 29 | 23 | 2 | 219 | 41 | 1014 | 39 | 0 | 1094 | 2642 |
| Apprch % | 13.1 | 19.3 | 66.8 | 0.8 | | 14.3 | 67.1 | 16.4 | 2.2 | | 75.3 | 13.2 | 10.5 | 0.9 | | 3.7 | 92.7 | 3.6 | 0 | | |
| Total % | 1.3 | 1.9 | 6.5 | 0.1 | 9.8 | 5.8 | 27.2 | 6.6 | 0.9 | 40.5 | 6.2 | 1.1 | 0.9 | 0.1 | 8.3 | 1.6 | 38.4 | 1.5 | 0 | 41.4 | |
| Vehicles | 34 | 49 | 173 | 2 | 258 | 153 | 710 | 174 | 24 | 1061 | 163 | 29 | 23 | 2 | 217 | 40 | 993 | 38 | 0 | 1071 | 2607 |
| % Vehicles | 100 | 98 | 100 | 100 | 99.6 | 100 | 98.9 | 99.4 | 100 | 99.2 | 98.8 | 100 | 100 | 100 | 99.1 | 97.6 | 97.9 | 97.4 | 0 | 97.9 | 98.7 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 10 | 0 | 0 | 11 | 13 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 | 0.1 | 0.6 | 0 | 0 | 0 | 0.5 | 2.4 | 1 | 0 | 0 | 1 | 0.5 |
| Trucks | 0 | 1 | 0 | 0 | 1 | 0 | 7 | 1 | 0 | 8 | 1 | 0 | 0 | 0 | 1 | 0 | 11 | 1 | 0 | 12 | 22 |
| % Trucks | 0 | 2 | 0 | 0 | 0.4 | 0 | 1 | 0.6 | 0 | 0.7 | 0.6 | 0 | 0 | 0 | 0.5 | 0 | 1.1 | 2.6 | 0 | 1.1 | 0.8 |

| | MILLER RD Southbound | | | | SAN JUAN RD Westbound | | | | LIVE OAK DR Northbound | | | | SAN JUAN RD Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | |
| 04:45 PM | 1 | 4 | **27** | 32 | **25** | 96 | 23 | 144 | 19 | 2 | 1 | 22 | 6 | 110 | 4 | 120 | 318 |
| 05:00 PM | 4 | 2 | 25 | 31 | 16 | **105** | 25 | 146 | 23 | 2 | 3 | 28 | 5 | 109 | **6** | 120 | 325 |
| 05:15 PM | 4 | 10 | 22 | 36 | 20 | 102 | **27** | **149** | 20 | 3 | **7** | 30 | **9** | 120 | 5 | 134 | **349** |
| 05:30 PM | **6** | **11** | 22 | **39** | 15 | 67 | 22 | 104 | **29** | **5** | 2 | **36** | 5 | **159** | 5 | **169** | 348 |
| Total Volume | 15 | 27 | 96 | 138 | 76 | 370 | 97 | 543 | 91 | 12 | 13 | 116 | 25 | 498 | 20 | 543 | 1340 |
| % App. Total | 10.9 | 19.6 | 69.6 | | 14 | 68.1 | 17.9 | | 78.4 | 10.3 | 11.2 | | 4.6 | 91.7 | 3.7 | | |
| PHF | .625 | .614 | .889 | .885 | .760 | .881 | .898 | .911 | .784 | .600 | .464 | .806 | .694 | .783 | .833 | .803 | .960 |

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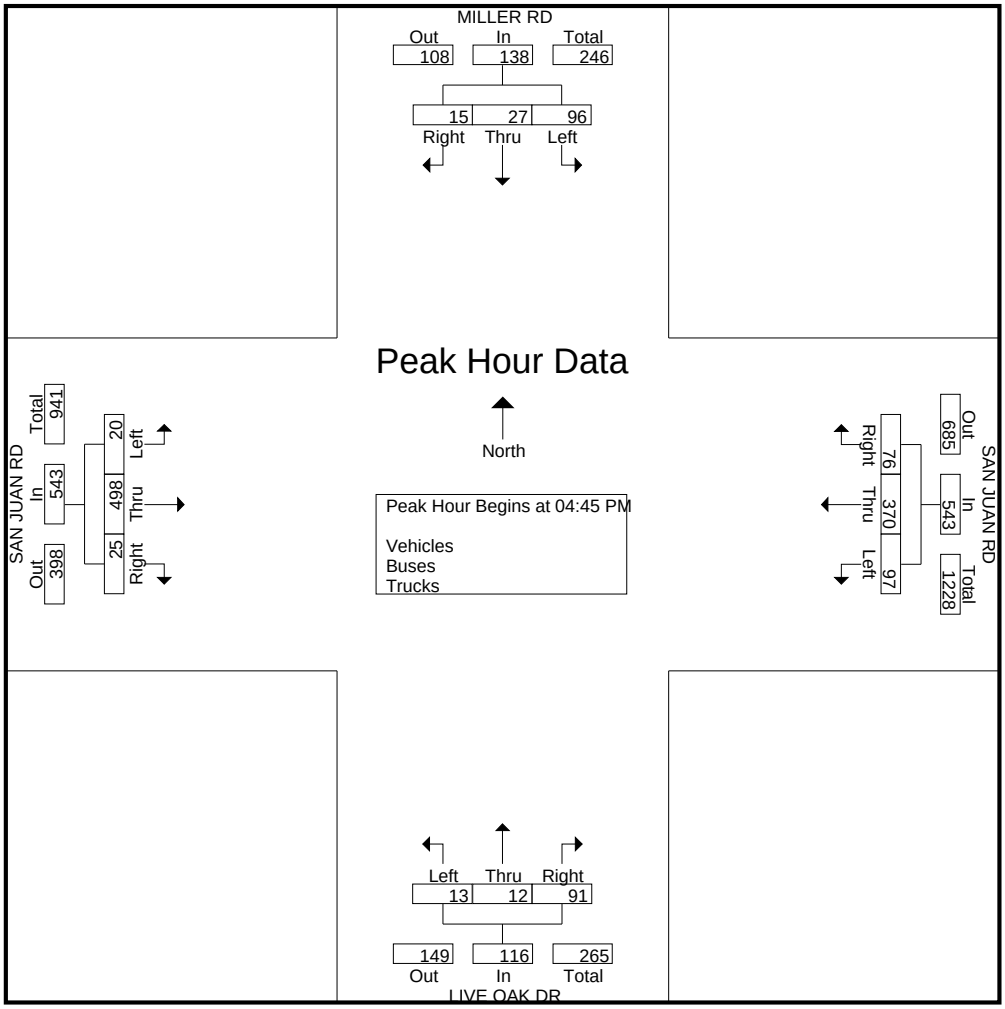

# Traffic Data Service

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*tdsbay@cs.com*

File Name : 5PM FINAL
Site Code : 00000005
Start Date : 3/10/2015
Page No : 1

Groups Printed- Vehicles - Buses - Trucks

| | WESTSIDE BLVD Southbound | | | | | SAN JUAN RD Westbound | | | | | WESTSIDE BLVD Northbound | | | | | SAN JUAN RD Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 04:00 PM | 2 | 18 | 18 | 2 | 40 | 13 | 112 | 23 | 2 | 150 | 9 | 12 | 40 | 2 | 63 | 41 | 132 | 1 | 6 | 180 | 433 |
| 04:15 PM | 5 | 20 | 25 | 3 | 53 | 14 | 93 | 13 | 1 | 121 | 12 | 16 | 50 | 0 | 78 | 39 | 132 | 2 | 1 | 174 | 426 |
| 04:30 PM | 4 | 23 | 26 | 0 | 53 | 11 | 128 | 21 | 0 | 160 | 17 | 16 | 44 | 0 | 77 | 36 | 131 | 5 | 0 | 172 | 462 |
| 04:45 PM | 8 | 12 | 15 | 0 | 35 | 7 | 113 | 21 | 0 | 141 | 18 | 16 | 48 | 0 | 82 | 51 | 127 | 6 | 1 | 185 | 443 |
| Total | 19 | 73 | 84 | 5 | 181 | 45 | 446 | 78 | 3 | 572 | 56 | 60 | 182 | 2 | 300 | 167 | 522 | 14 | 8 | 711 | 1764 |
| 05:00 PM | 6 | 18 | 17 | 0 | 41 | 11 | 121 | 22 | 0 | 154 | 6 | 9 | 63 | 1 | 79 | 37 | 111 | 4 | 0 | 152 | 426 |
| 05:15 PM | 6 | 10 | 18 | 1 | 35 | 15 | 141 | 24 | 0 | 180 | 8 | 13 | 36 | 2 | 59 | 44 | 136 | 6 | 2 | 188 | 462 |
| 05:30 PM | 2 | 19 | 18 | 1 | 40 | 15 | 92 | 18 | 4 | 129 | 18 | 8 | 36 | 2 | 64 | 62 | 129 | 7 | 0 | 198 | 431 |
| 05:45 PM | 4 | 18 | 22 | 0 | 44 | 12 | 87 | 20 | 0 | 119 | 15 | 14 | 33 | 0 | 62 | 40 | 122 | 3 | 0 | 165 | 390 |
| Total | 18 | 65 | 75 | 2 | 160 | 53 | 441 | 84 | 4 | 582 | 47 | 44 | 168 | 5 | 264 | 183 | 498 | 20 | 2 | 703 | 1709 |
| Grand Total | 37 | 138 | 159 | 7 | 341 | 98 | 887 | 162 | 7 | 1154 | 103 | 104 | 350 | 7 | 564 | 350 | 1020 | 34 | 10 | 1414 | 3473 |
| Apprch % | 10.9 | 40.5 | 46.6 | 2.1 | | 8.5 | 76.9 | 14 | 0.6 | | 18.3 | 18.4 | 62.1 | 1.2 | | 24.8 | 72.1 | 2.4 | 0.7 | | |
| Total % | 1.1 | 4 | 4.6 | 0.2 | 9.8 | 2.8 | 25.5 | 4.7 | 0.2 | 33.2 | 3 | 3 | 10.1 | 0.2 | 16.2 | 10.1 | 29.4 | 1 | 0.3 | 40.7 | |
| Vehicles | 36 | 136 | 158 | 7 | 337 | 96 | 876 | 161 | 7 | 1140 | 103 | 100 | 347 | 7 | 557 | 350 | 1000 | 33 | 10 | 1393 | 3427 |
| % Vehicles | 97.3 | 98.6 | 99.4 | 100 | 98.8 | 98 | 98.8 | 99.4 | 100 | 98.8 | 100 | 96.2 | 99.1 | 100 | 98.8 | 100 | 98 | 97.1 | 100 | 98.5 | 98.7 |
| Buses | 1 | 1 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 4 | 0 | 2 | 0 | 0 | 2 | 0 | 8 | 0 | 0 | 8 | 16 |
| % Buses | 2.7 | 0.7 | 0 | 0 | 0.6 | 1 | 0.3 | 0 | 0 | 0.3 | 0 | 1.9 | 0 | 0 | 0.4 | 0 | 0.8 | 0 | 0 | 0.6 | 0.5 |
| Trucks | 0 | 1 | 1 | 0 | 2 | 1 | 8 | 1 | 0 | 10 | 0 | 2 | 3 | 0 | 5 | 0 | 12 | 1 | 0 | 13 | 30 |
| % Trucks | 0 | 0.7 | 0.6 | 0 | 0.6 | 1 | 0.9 | 0.6 | 0 | 0.9 | 0 | 1.9 | 0.9 | 0 | 0.9 | 0 | 1.2 | 2.9 | 0 | 0.9 | 0.9 |

| | WESTSIDE BLVD Southbound | | | | SAN JUAN RD Westbound | | | | WESTSIDE BLVD Northbound | | | | SAN JUAN RD Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | |
| 04:30 PM | 4 | **23** | **26** | **53** | 11 | 128 | 21 | 160 | 17 | **16** | 44 | 77 | 36 | 131 | 5 | 172 | **462** |
| 04:45 PM | **8** | 12 | 15 | 35 | 7 | 113 | 21 | 141 | **18** | 16 | 48 | **82** | **51** | 127 | **6** | 184 | 442 |
| 05:00 PM | 6 | 18 | 17 | 41 | 11 | 121 | 22 | 154 | 6 | 9 | **63** | 78 | 37 | 111 | 4 | 152 | 425 |
| 05:15 PM | 6 | 10 | 18 | 34 | **15** | **141** | **24** | **180** | 8 | 13 | 36 | 57 | 44 | **136** | 6 | **186** | 457 |
| Total Volume | 24 | 63 | 76 | 163 | 44 | 503 | 88 | 635 | 49 | 54 | 191 | 294 | 168 | 505 | 21 | 694 | 1786 |
| % App. Total | 14.7 | 38.7 | 46.6 | | 6.9 | 79.2 | 13.9 | | 16.7 | 18.4 | 65 | | 24.2 | 72.8 | 3 | | |
| PHF | .750 | .685 | .731 | .769 | .733 | .892 | .917 | .882 | .681 | .844 | .758 | .896 | .824 | .928 | .875 | .933 | .966 |

# Traffic Data Service

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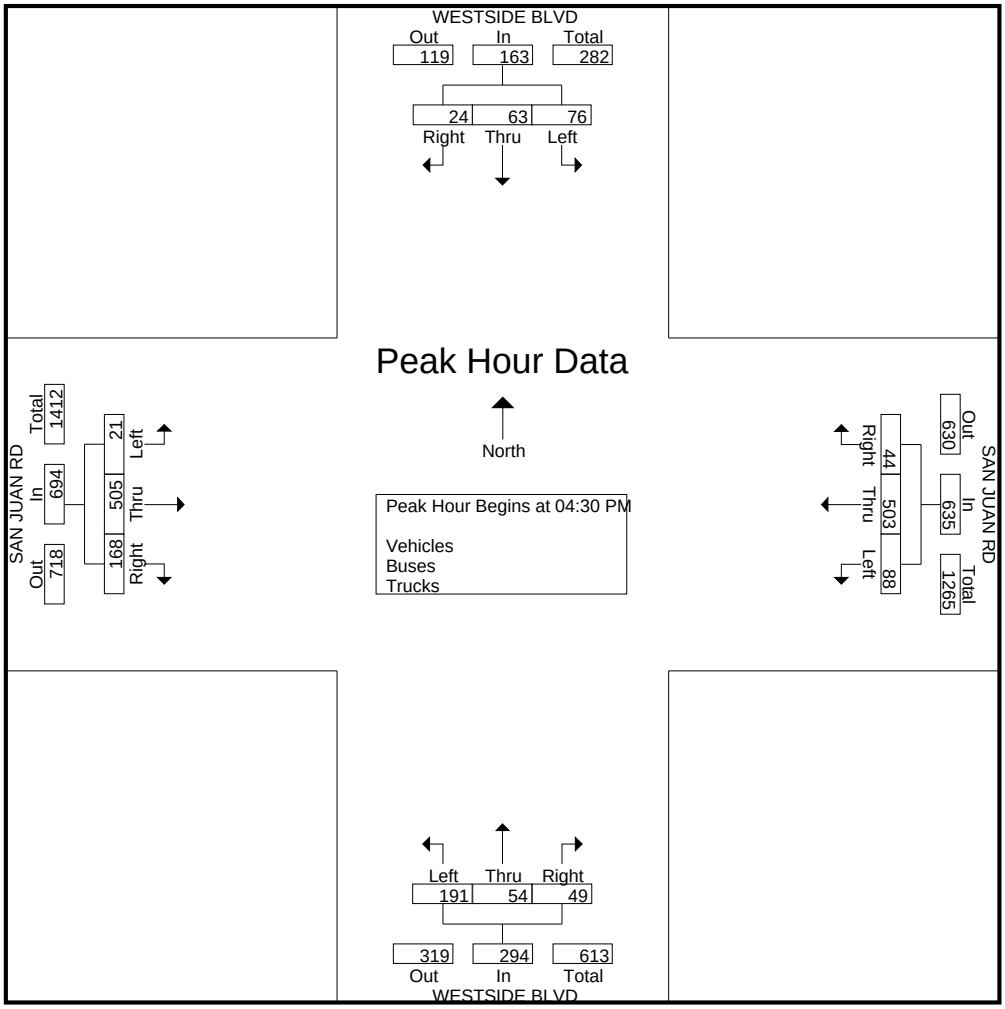
File Name : 5PM FINAL
Site Code : 00000005
Start Date : 3/10/2015
Page No : 2



# Appendix C

## Intersection Level of Service Calculations

## Existing Conditions

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 2 | 6 | 1 | 59 | 0 | 158 | 2 | 250 | 46 | 24 | 257 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 325 | - | 70 | 520 | - | 520 | 515 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 12 | 12 | 12 | 26 | 26 | 26 |
| Mvmt Flow | 2 | 6 | 1 | 62 | 0 | 166 | 2 | 263 | 48 | 25 | 271 | 0 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 588 | 588 | 271 | 591 | 588 | 263 | 271 | 0 | 0 | 263 | 0 | 0 |
| Stage 1 | 321 | 321 | - | 267 | 267 | - | - | - | - | - | - | - |
| Stage 2 | 267 | 267 | - | 324 | 321 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.22 | - | - | 4.36 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.308 | - | - | 2.434 | - | - |
| Pot Cap-1 Maneuver | 421 | 421 | 768 | 419 | 421 | 776 | 1237 | - | - | 1174 | - | - |
| Stage 1 | 691 | 652 | - | 738 | 688 | - | - | - | - | - | - | - |
| Stage 2 | 738 | 688 | - | 688 | 652 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 325 | 411 | 768 | 406 | 411 | 776 | 1237 | - | - | 1174 | - | - |
| Mov Cap-2 Maneuver | 325 | 411 | - | 406 | 411 | - | - | - | - | - | - | - |
| Stage 1 | 690 | 638 | - | 737 | 687 | - | - | - | - | - | - | - |
| Stage 2 | 579 | 687 | - | 666 | 638 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 14.1 | 12.2 | 0.1 | 0.7 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1237 | - | - | 385 | 768 | 406 | - | 776 | 1174 | - | - |
| HCM Lane V/C Ratio | 0.002 | - | - | 0.022 | 0.001 | 0.153 | - | 0.214 | 0.022 | - | - |
| HCM Control Delay (s) | 7.9 | - | - | 14.6 | 9.7 | 15.5 | 0 | 10.9 | 8.1 | - | - |
| HCM Lane LOS | A | - | - | B | A | C | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 0 | 0.5 | - | 0.8 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 1 | 135 | 12 | 37 | 113 | 0 | 30 | 2 | 70 | 4 | 1 | 0 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 9 | 9 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 190 | 17 | 52 | 159 | 0 | 42 | 3 | 99 | 6 | 1 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 168 | 0 | 0 | 216 | 0 | 0 | 483 | 482 | 209 | 533 | 491 | 169 |
| Stage 1 | - | - | - | - | - | - | 210 | 210 | - | 272 | 272 | - |
| Stage 2 | - | - | - | - | - | - | 273 | 272 | - | 261 | 219 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1410 | - | - | 1354 | - | - | 494 | 484 | 831 | 458 | 478 | 875 |
| Stage 1 | - | - | - | - | - | - | 792 | 728 | - | 734 | 685 | - |
| Stage 2 | - | - | - | - | - | - | 733 | 685 | - | 744 | 722 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1409 | - | - | 1353 | - | - | 473 | 456 | 824 | 385 | 451 | 868 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 473 | 456 | - | 385 | 451 | - |
| Stage 1 | - | - | - | - | - | - | 785 | 722 | - | 728 | 651 | - |
| Stage 2 | - | - | - | - | - | - | 700 | 651 | - | 651 | 716 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 1.9 | 11.9 | 14.2 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 668 | 1409 | - | - | 1353 | - | - | 397 |
| HCM Lane V/C Ratio | 0.215 | 0.001 | - | - | 0.039 | - | - | 0.018 |
| HCM Control Delay (s) | 11.9 | 7.6 | 0 | - | 7.8 | 0 | - | 14.2 |
| HCM Lane LOS | B | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.8 | 0 | - | - | 0.1 | - | - | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 1 | 97 | 127 | 10 | 86 | 1 | 138 | 9 | 4 | 2 | 3 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 19 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 145 | 190 | 15 | 128 | 1 | 206 | 13 | 6 | 3 | 4 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 149 | 0 | 0 | 353 | 0 | 0 | 444 | 441 | 259 | 449 | 534 | 148 |
| Stage 1 | - | - | - | - | - | - | 262 | 262 | - | 178 | 178 | - |
| Stage 2 | - | - | - | - | - | - | 182 | 179 | - | 271 | 356 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1432 | - | - | 1206 | - | - | 524 | 510 | 780 | 520 | 452 | 899 |
| Stage 1 | - | - | - | - | - | - | 743 | 691 | - | 824 | 752 | - |
| Stage 2 | - | - | - | - | - | - | 820 | 751 | - | 735 | 629 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1432 | - | - | 1206 | - | - | 504 | 487 | 768 | 492 | 432 | 885 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 504 | 487 | - | 492 | 432 | - |
| Stage 1 | - | - | - | - | - | - | 731 | 679 | - | 810 | 730 | - |
| Stage 2 | - | - | - | - | - | - | 802 | 730 | - | 714 | 618 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0.8 | 17.6 | 12 |
| HCM LOS | | | C | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 508 | 1432 | - | - | 1206 | - | - | 528 |
| HCM Lane V/C Ratio | 0.444 | 0.001 | - | - | 0.012 | - | - | 0.02 |
| HCM Control Delay (s) | 17.6 | 7.5 | 0 | - | 8 | 0 | - | 12 |
| HCM Lane LOS | C | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 2.2 | 0 | - | - | 0 | - | - | 0.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 10 | 369 | 8 | 63 | 390 | 47 | 26 | 31 | 116 | 95 | 17 | 23 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.97 | 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 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1845 | 1845 | 1845 | 1900 | 1863 | 1900 | 1900 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 11 | 405 | 9 | 69 | 429 | 52 | 29 | 34 | 127 | 104 | 19 | 25 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 20 | 574 | 13 | 87 | 665 | 549 | 134 | 157 | 416 | 487 | 92 | 93 |
| Arrive On Green | 0.01 | 0.32 | 0.32 | 0.05 | 0.36 | 0.36 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 |
| Sat Flow, veh/h | 1740 | 1780 | 40 | 1757 | 1845 | 1522 | 129 | 407 | 1080 | 944 | 239 | 240 |
| Grp Volume(v), veh/h | 11 | 0 | 414 | 69 | 429 | 52 | 190 | 0 | 0 | 148 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 0 | 1820 | 1757 | 1845 | 1522 | 1616 | 0 | 0 | 1423 | 0 | 0 |
| Q Serve(g_s), s | 0.3 | 0.0 | 9.8 | 1.9 | 9.6 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.3 | 0.0 | 9.8 | 1.9 | 9.6 | 1.1 | 3.9 | 0.0 | 0.0 | 2.7 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.02 | 1.00 | | 1.00 | 0.15 | | 0.67 | 0.70 | | 0.17 |
| Lane Grp Cap(c), veh/h | 20 | 0 | 587 | 87 | 665 | 549 | 706 | 0 | 0 | 672 | 0 | 0 |
| V/C Ratio(X) | 0.56 | 0.00 | 0.71 | 0.79 | 0.64 | 0.09 | 0.27 | 0.00 | 0.00 | 0.22 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 141 | 0 | 848 | 214 | 934 | 771 | 706 | 0 | 0 | 672 | 0 | 0 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 24.3 | 0.0 | 14.7 | 23.2 | 13.1 | 10.4 | 10.5 | 0.0 | 0.0 | 10.2 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 22.3 | 0.0 | 1.6 | 14.7 | 1.1 | 0.1 | 0.9 | 0.0 | 0.0 | 0.8 | 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 | 0.3 | 0.0 | 5.2 | 1.3 | 5.0 | 0.5 | 2.0 | 0.0 | 0.0 | 1.5 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 46.6 | 0.0 | 16.2 | 37.9 | 14.2 | 10.5 | 11.5 | 0.0 | 0.0 | 10.9 | 0.0 | 0.0 |
| LnGrp LOS | D | | B | D | B | B | B | | | B | | |
| Approach Vol, veh/h | | 425 | | | 550 | | | 190 | | | 148 | |
| Approach Delay, s/veh | | 17.0 | | | 16.8 | | | 11.5 | | | 10.9 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 23.0 | 6.4 | 19.9 | | 23.0 | 4.6 | 21.8 |
| Change Period (Y+Rc), s | | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | | 19.0 | 6.0 | 23.0 | | 19.0 | 4.0 | 25.0 |
| Max Q Clear Time (g_c+I1), s | | 5.9 | 3.9 | 11.8 | | 4.7 | 2.3 | 11.6 |
| Green Ext Time (p_c), s | | 1.7 | 0.0 | 4.0 | | 1.8 | 0.0 | 4.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 15.5 |
| HCM 2010 LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 8 | 472 | 137 | 34 | 329 | 81 | 204 | 92 | 84 | 110 | 56 | 31 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 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 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 9 | 519 | 151 | 37 | 362 | 89 | 224 | 101 | 92 | 121 | 62 | 34 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 16 | 557 | 474 | 53 | 596 | 505 | 251 | 290 | 264 | 154 | 503 | 420 |
| Arrive On Green | 0.01 | 0.30 | 0.30 | 0.03 | 0.32 | 0.32 | 0.14 | 0.33 | 0.33 | 0.09 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1563 | 1757 | 888 | 809 | 1774 | 1863 | 1554 |
| Grp Volume(v), veh/h | 9 | 519 | 151 | 37 | 362 | 89 | 224 | 0 | 193 | 121 | 62 | 34 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1563 | 1757 | 0 | 1696 | 1774 | 1863 | 1554 |
| Q Serve(g_s), s | 0.3 | 17.2 | 4.7 | 1.3 | 10.4 | 2.6 | 7.9 | 0.0 | 5.4 | 4.2 | 1.6 | 1.0 |
| Cycle Q Clear(g_c), s | 0.3 | 17.2 | 4.7 | 1.3 | 10.4 | 2.6 | 7.9 | 0.0 | 5.4 | 4.2 | 1.6 | 1.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.48 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 16 | 557 | 474 | 53 | 596 | 505 | 251 | 0 | 553 | 154 | 503 | 420 |
| V/C Ratio(X) | 0.55 | 0.93 | 0.32 | 0.70 | 0.61 | 0.18 | 0.89 | 0.00 | 0.35 | 0.78 | 0.12 | 0.08 |
| Avail Cap(c_a), veh/h | 112 | 557 | 474 | 112 | 596 | 505 | 251 | 0 | 553 | 197 | 503 | 420 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.0 | 21.3 | 17.0 | 30.2 | 17.9 | 15.3 | 26.5 | 0.0 | 16.1 | 28.1 | 17.3 | 17.1 |
| Incr Delay (d2), s/veh | 26.2 | 22.6 | 0.4 | 15.1 | 1.8 | 0.2 | 30.1 | 0.0 | 1.7 | 14.5 | 0.5 | 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 | 0.3 | 12.2 | 2.1 | 0.8 | 5.5 | 1.1 | 5.9 | 0.0 | 2.8 | 2.7 | 0.9 | 0.5 |
| LnGrp Delay(d),s/veh | 57.3 | 43.9 | 17.3 | 45.3 | 19.7 | 15.4 | 56.6 | 0.0 | 17.8 | 42.6 | 17.8 | 17.5 |
| LnGrp LOS | E | D | B | D | B | B | E | | B | D | B | B |
| Approach Vol, veh/h | | 679 | | | 488 | | | 417 | | | 217 | |
| Approach Delay, s/veh | | 38.2 | | | 20.9 | | | 38.7 | | | 31.6 | |
| Approach LOS | | D | | | C | | | D | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 9.5 | 24.5 | 5.9 | 23.0 | 13.0 | 21.0 | 4.6 | 24.3 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | 19.0 | 4.0 | 19.0 | 9.0 | 17.0 | 4.0 | 19.0 |
| Max Q Clear Time (g_c+I1), s | 6.2 | 7.4 | 3.3 | 19.2 | 9.9 | 3.6 | 2.3 | 12.4 |
| Green Ext Time (p_c), s | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 | 1.3 | 0.0 | 3.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 32.8 |
| HCM 2010 LOS | C |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 0 | 0 | 60 | 4 | 63 | 2 | 377 | 45 | 180 | 334 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 325 | - | 70 | 520 | - | 520 | 515 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 13 | 13 | 13 | 10 | 10 | 10 |
| Mvmt Flow | 0 | 0 | 0 | 61 | 4 | 64 | 2 | 381 | 45 | 182 | 337 | 0 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1088 | 1086 | 337 | 1086 | 1086 | 381 | 337 | 0 | 0 | 381 | 0 | 0 |
| Stage 1 | 701 | 701 | - | 385 | 385 | - | - | - | - | - | - | - |
| Stage 2 | 387 | 385 | - | 701 | 701 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.23 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.317 | - | - | 2.29 | - | - |
| Pot Cap-1 Maneuver | 193 | 216 | 705 | 194 | 216 | 666 | 1163 | - | - | 1135 | - | - |
| Stage 1 | 429 | 441 | - | 638 | 611 | - | - | - | - | - | - | - |
| Stage 2 | 637 | 611 | - | 429 | 441 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 150 | 181 | 705 | 170 | 181 | 666 | 1163 | - | - | 1135 | - | - |
| Mov Cap-2 Maneuver | 150 | 181 | - | 170 | 181 | - | - | - | - | - | - | - |
| Stage 1 | 428 | 370 | - | 637 | 610 | - | - | - | - | - | - | - |
| Stage 2 | 571 | 610 | - | 360 | 370 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 24 | 0 | 3.1 |
| HCM LOS | A | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1163 | - | - | - | - | 170 | 181 | 666 | 1135 | - | - |
| HCM Lane V/C Ratio | 0.002 | - | - | - | - | 0.357 | 0.022 | 0.096 | 0.16 | - | - |
| HCM Control Delay (s) | 8.1 | - | - | 0 | 0 | 37.5 | 25.3 | 11 | 8.8 | - | - |
| HCM Lane LOS | A | - | - | A | A | E | D | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - | 1.5 | 0.1 | 0.3 | 0.6 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 2 | 108 | 51 | 22 | 84 | 0 | 18 | 1 | 16 | 0 | 2 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2 | 126 | 59 | 26 | 98 | 0 | 21 | 1 | 19 | 0 | 2 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 103 | 0 | 0 | 190 | 0 | 0 | 322 | 319 | 160 | 329 | 349 | 103 |
| Stage 1 | - | - | - | - | - | - | 165 | 165 | - | 154 | 154 | - |
| Stage 2 | - | - | - | - | - | - | 157 | 154 | - | 175 | 195 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1489 | - | - | 1384 | - | - | 631 | 598 | 885 | 624 | 575 | 952 |
| Stage 1 | - | - | - | - | - | - | 837 | 762 | - | 848 | 770 | - |
| Stage 2 | - | - | - | - | - | - | 845 | 770 | - | 827 | 739 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1489 | - | - | 1384 | - | - | 614 | 580 | 881 | 597 | 558 | 948 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 614 | 580 | - | 597 | 558 | - |
| Stage 1 | - | - | - | - | - | - | 832 | 757 | - | 843 | 751 | - |
| Stage 2 | - | - | - | - | - | - | 822 | 751 | - | 807 | 734 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 1.6 | 10.4 | 9.9 |
| HCM LOS | | | B | A |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 711 | 1489 | - | - | 1384 | - | - | 741 |
| HCM Lane V/C Ratio | 0.057 | 0.002 | - | - | 0.018 | - | - | 0.008 |
| HCM Control Delay (s) | 10.4 | 7.4 | 0 | - | 7.7 | 0 | - | 9.9 |
| HCM Lane LOS | B | A | A | - | A | A | - | A |
| HCM 95th %tile Q(veh) | 0.2 | 0 | - | - | 0.1 | - | - | 0 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 3 | 37 | 104 | 6 | 37 | 5 | 58 | 2 | 9 | 1 | 5 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 46 | 130 | 8 | 46 | 6 | 72 | 2 | 11 | 1 | 6 | 1 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 58 | 0 | 0 | 181 | 0 | 0 | 197 | 197 | 116 | 200 | 258 | 54 |
| Stage 1 | - | - | - | - | - | - | 124 | 124 | - | 69 | 69 | - |
| Stage 2 | - | - | - | - | - | - | 73 | 73 | - | 131 | 189 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1546 | - | - | 1394 | - | - | 762 | 699 | 936 | 759 | 646 | 1013 |
| Stage 1 | - | - | - | - | - | - | 880 | 793 | - | 941 | 837 | - |
| Stage 2 | - | - | - | - | - | - | 937 | 834 | - | 873 | 744 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1546 | - | - | 1394 | - | - | 747 | 687 | 932 | 740 | 635 | 1009 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 747 | 687 | - | 740 | 635 | - |
| Stage 1 | - | - | - | - | - | - | 874 | 787 | - | 934 | 829 | - |
| Stage 2 | - | - | - | - | - | - | 923 | 826 | - | 857 | 739 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0.9 | 10.3 | 10.3 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 765 | 1546 | - | - | 1394 | - | - | 685 |
| HCM Lane V/C Ratio | 0.113 | 0.002 | - | - | 0.005 | - | - | 0.013 |
| HCM Control Delay (s) | 10.3 | 7.3 | 0 | - | 7.6 | 0 | - | 10.3 |
| HCM Lane LOS | B | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.4 | 0 | - | - | 0 | - | - | 0 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 20 | 498 | 25 | 97 | 370 | 76 | 13 | 12 | 91 | 96 | 27 | 15 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1900 | 1863 | 1900 | 1900 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 21 | 519 | 26 | 101 | 385 | 79 | 14 | 12 | 95 | 100 | 28 | 16 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 35 | 635 | 32 | 129 | 771 | 642 | 101 | 92 | 437 | 442 | 119 | 56 |
| Arrive On Green | 0.02 | 0.36 | 0.36 | 0.07 | 0.41 | 0.41 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 |
| Sat Flow, veh/h | 1774 | 1759 | 88 | 1774 | 1863 | 1551 | 81 | 264 | 1261 | 952 | 342 | 162 |
| Grp Volume(v), veh/h | 21 | 0 | 545 | 101 | 385 | 79 | 121 | 0 | 0 | 144 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1847 | 1774 | 1863 | 1551 | 1606 | 0 | 0 | 1455 | 0 | 0 |
| Q Serve(g_s), s | 0.6 | 0.0 | 14.6 | 3.1 | 8.4 | 1.7 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.6 | 0.0 | 14.6 | 3.1 | 8.4 | 1.7 | 2.9 | 0.0 | 0.0 | 3.2 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.05 | 1.00 | | 1.00 | 0.12 | | 0.79 | 0.69 | | 0.11 |
| Lane Grp Cap(c), veh/h | 35 | 0 | 667 | 129 | 771 | 642 | 630 | 0 | 0 | 616 | 0 | 0 |
| V/C Ratio(X) | 0.59 | 0.00 | 0.82 | 0.78 | 0.50 | 0.12 | 0.19 | 0.00 | 0.00 | 0.23 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 130 | 0 | 776 | 194 | 850 | 708 | 630 | 0 | 0 | 616 | 0 | 0 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 26.6 | 0.0 | 15.9 | 25.0 | 11.9 | 9.9 | 12.6 | 0.0 | 0.0 | 12.7 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 14.8 | 0.0 | 6.0 | 11.0 | 0.5 | 0.1 | 0.7 | 0.0 | 0.0 | 0.9 | 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 | 0.0 | 8.5 | 1.9 | 4.4 | 0.7 | 1.4 | 0.0 | 0.0 | 1.7 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 41.4 | 0.0 | 21.9 | 36.0 | 12.4 | 10.0 | 13.3 | 0.0 | 0.0 | 13.6 | 0.0 | 0.0 |
| LnGrp LOS | D | | C | D | B | A | B | | | B | | |
| Approach Vol, veh/h | | 566 | | | 565 | | | 121 | | | 144 | |
| Approach Delay, s/veh | | 22.6 | | | 16.3 | | | 13.3 | | | 13.6 | |
| Approach LOS | | C | | | B | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 23.0 | 8.0 | 23.8 | | 23.0 | 5.1 | 26.7 |
| Change Period (Y+Rc), s | | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | | 19.0 | 6.0 | 23.0 | | 19.0 | 4.0 | 25.0 |
| Max Q Clear Time (g_c+I1), s | | 4.9 | 5.1 | 16.6 | | 5.2 | 2.6 | 10.4 |
| Green Ext Time (p_c), s | | 1.3 | 0.0 | 3.1 | | 1.3 | 0.0 | 5.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 18.3 |
| HCM 2010 LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 21 | 505 | 168 | 88 | 503 | 44 | 191 | 54 | 49 | 76 | 63 | 24 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 22 | 521 | 173 | 91 | 519 | 45 | 197 | 56 | 51 | 78 | 65 | 25 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 35 | 541 | 460 | 108 | 617 | 525 | 239 | 304 | 277 | 100 | 489 | 415 |
| Arrive On Green | 0.02 | 0.29 | 0.29 | 0.06 | 0.33 | 0.33 | 0.14 | 0.34 | 0.34 | 0.06 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 889 | 809 | 1774 | 1863 | 1580 |
| Grp Volume(v), veh/h | 22 | 521 | 173 | 91 | 519 | 45 | 197 | 0 | 107 | 78 | 65 | 25 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 0 | 1698 | 1774 | 1863 | 1580 |
| Q Serve(g_s), s | 0.8 | 18.0 | 5.7 | 3.3 | 16.9 | 1.3 | 7.1 | 0.0 | 2.9 | 2.8 | 1.7 | 0.8 |
| Cycle Q Clear(g_c), s | 0.8 | 18.0 | 5.7 | 3.3 | 16.9 | 1.3 | 7.1 | 0.0 | 2.9 | 2.8 | 1.7 | 0.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.48 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 35 | 541 | 460 | 108 | 617 | 525 | 239 | 0 | 580 | 100 | 489 | 415 |
| V/C Ratio(X) | 0.62 | 0.96 | 0.38 | 0.84 | 0.84 | 0.09 | 0.82 | 0.00 | 0.18 | 0.78 | 0.13 | 0.06 |
| Avail Cap(c_a), veh/h | 108 | 541 | 460 | 108 | 617 | 525 | 244 | 0 | 580 | 192 | 489 | 415 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.5 | 22.6 | 18.2 | 30.1 | 20.0 | 14.8 | 27.2 | 0.0 | 15.0 | 30.2 | 18.3 | 17.9 |
| Incr Delay (d2), s/veh | 16.4 | 29.6 | 0.5 | 41.3 | 10.1 | 0.1 | 19.8 | 0.0 | 0.7 | 12.3 | 0.6 | 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 | 13.6 | 2.5 | 2.8 | 10.2 | 0.6 | 4.8 | 0.0 | 1.5 | 1.7 | 1.0 | 0.4 |
| LnGrp Delay(d),s/veh | 47.9 | 52.1 | 18.7 | 71.4 | 30.1 | 14.8 | 47.0 | 0.0 | 15.7 | 42.5 | 18.8 | 18.2 |
| LnGrp LOS | D | D | B | E | C | B | D | | B | D | B | B |
| Approach Vol, veh/h | | 716 | | | 655 | | | 304 | | | 168 | |
| Approach Delay, s/veh | | 43.9 | | | 34.8 | | | 36.0 | | | 29.7 | |
| Approach LOS | | D | | | C | | | D | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 7.7 | 26.2 | 8.0 | 23.0 | 12.8 | 21.0 | 5.3 | 25.7 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | 19.0 | 4.0 | 19.0 | 9.0 | 17.0 | 4.0 | 19.0 |
| Max Q Clear Time (g_c+I1), s | 4.8 | 4.9 | 5.3 | 20.0 | 9.1 | 3.7 | 2.8 | 18.9 |
| Green Ext Time (p_c), s | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 38.1 |
| HCM 2010 LOS | D |

Appendix D

Intersection
Level of Service
Calculations

Existing Plus Project
Conditions

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 2 | 6 | 1 | 59 | 0 | 205 | 2 | 250 | 46 | 40 | 257 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 325 | - | 70 | 520 | - | 520 | 515 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 12 | 12 | 12 | 26 | 26 | 26 |
| Mvmt Flow | 2 | 6 | 1 | 62 | 0 | 216 | 2 | 263 | 48 | 42 | 271 | 0 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 622 | 622 | 271 | 625 | 622 | 263 | 271 | 0 | 0 | 263 | 0 | 0 |
| Stage 1 | 355 | 355 | - | 267 | 267 | - | - | - | - | - | - | - |
| Stage 2 | 267 | 267 | - | 358 | 355 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.22 | - | - | 4.36 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.308 | - | - | 2.434 | - | - |
| Pot Cap-1 Maneuver | 399 | 403 | 768 | 397 | 403 | 776 | 1237 | - | - | 1174 | - | - |
| Stage 1 | 662 | 630 | - | 738 | 688 | - | - | - | - | - | - | - |
| Stage 2 | 738 | 688 | - | 660 | 630 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 280 | 388 | 768 | 380 | 388 | 776 | 1237 | - | - | 1174 | - | - |
| Mov Cap-2 Maneuver | 280 | 388 | - | 380 | 388 | - | - | - | - | - | - | - |
| Stage 1 | 661 | 607 | - | 737 | 687 | - | - | - | - | - | - | - |
| Stage 2 | 532 | 687 | - | 629 | 607 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 14.8 | 12.5 | 0.1 | 1.1 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1237 | - | - | 354 | 768 | 380 | - | 776 | 1174 | - | - |
| HCM Lane V/C Ratio | 0.002 | - | - | 0.024 | 0.001 | 0.163 | - | 0.278 | 0.036 | - | - |
| HCM Control Delay (s) | 7.9 | - | - | 15.4 | 9.7 | 16.3 | 0 | 11.4 | 8.2 | - | - |
| HCM Lane LOS | A | - | - | C | A | C | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 0 | 0.6 | - | 1.1 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 4 | 164 | 46 | 37 | 123 | 9 | 41 | 19 | 70 | 32 | 52 | 9 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 9 | 9 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 6 | 231 | 65 | 52 | 173 | 13 | 58 | 27 | 99 | 45 | 73 | 13 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 195 | 0 | 0 | 305 | 0 | 0 | 620 | 583 | 273 | 639 | 609 | 190 |
| Stage 1 | - | - | - | - | - | - | 284 | 284 | - | 293 | 293 | - |
| Stage 2 | - | - | - | - | - | - | 336 | 299 | - | 346 | 316 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1378 | - | - | 1256 | - | - | 400 | 424 | 766 | 389 | 410 | 852 |
| Stage 1 | - | - | - | - | - | - | 723 | 676 | - | 715 | 670 | - |
| Stage 2 | - | - | - | - | - | - | 678 | 666 | - | 670 | 655 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1377 | - | - | 1255 | - | - | 321 | 396 | 760 | 306 | 383 | 845 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 321 | 396 | - | 306 | 383 | - |
| Stage 1 | - | - | - | - | - | - | 714 | 668 | - | 706 | 634 | - |
| Stage 2 | - | - | - | - | - | - | 563 | 631 | - | 556 | 647 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 1.7 | 16.9 | 19.9 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 485 | 1377 | - | - | 1255 | - | - | 371 |
| HCM Lane V/C Ratio | 0.378 | 0.004 | - | - | 0.042 | - | - | 0.353 |
| HCM Control Delay (s) | 16.9 | 7.6 | 0 | - | 8 | 0 | - | 19.9 |
| HCM Lane LOS | C | A | A | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 1.7 | 0 | - | - | 0.1 | - | - | 1.6 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 6.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 1 | 97 | 184 | 10 | 86 | 1 | 157 | 9 | 4 | 2 | 3 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 19 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 145 | 275 | 15 | 128 | 1 | 234 | 13 | 6 | 3 | 4 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 149 | 0 | 0 | 438 | 0 | 0 | 486 | 483 | 301 | 492 | 619 | 148 |
| Stage 1 | - | - | - | - | - | - | 304 | 304 | - | 178 | 178 | - |
| Stage 2 | - | - | - | - | - | - | 182 | 179 | - | 314 | 441 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1432 | - | - | 1122 | - | - | 492 | 483 | 739 | 487 | 404 | 899 |
| Stage 1 | - | - | - | - | - | - | 705 | 663 | - | 824 | 752 | - |
| Stage 2 | - | - | - | - | - | - | 820 | 751 | - | 697 | 577 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1432 | - | - | 1122 | - | - | 473 | 461 | 727 | 459 | 385 | 885 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 473 | 461 | - | 459 | 385 | - |
| Stage 1 | - | - | - | - | - | - | 693 | 652 | - | 810 | 730 | - |
| Stage 2 | - | - | - | - | - | - | 801 | 729 | - | 676 | 567 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0.9 | 20.9 | 12.6 |
| HCM LOS | | | C | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 476 | 1432 | - | - | 1122 | - | - | 486 |
| HCM Lane V/C Ratio | 0.533 | 0.001 | - | - | 0.013 | - | - | 0.021 |
| HCM Control Delay (s) | 20.9 | 7.5 | 0 | - | 8.3 | 0 | - | 12.6 |
| HCM Lane LOS | C | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 3.1 | 0 | - | - | 0 | - | - | 0.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 16 | 369 | 8 | 63 | 390 | 66 | 26 | 31 | 116 | 152 | 17 | 42 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.97 | 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 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1845 | 1845 | 1845 | 1900 | 1863 | 1900 | 1900 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 18 | 405 | 9 | 69 | 429 | 73 | 29 | 34 | 127 | 167 | 19 | 46 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 31 | 575 | 13 | 87 | 655 | 540 | 134 | 156 | 415 | 496 | 65 | 108 |
| Arrive On Green | 0.02 | 0.32 | 0.32 | 0.05 | 0.35 | 0.35 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 |
| Sat Flow, veh/h | 1740 | 1780 | 40 | 1757 | 1845 | 1522 | 129 | 406 | 1079 | 964 | 169 | 280 |
| Grp Volume(v), veh/h | 18 | 0 | 414 | 69 | 429 | 73 | 190 | 0 | 0 | 232 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 0 | 1820 | 1757 | 1845 | 1522 | 1614 | 0 | 0 | 1412 | 0 | 0 |
| Q Serve(g_s), s | 0.5 | 0.0 | 9.8 | 1.9 | 9.7 | 1.6 | 0.0 | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.5 | 0.0 | 9.8 | 1.9 | 9.7 | 1.6 | 3.9 | 0.0 | 0.0 | 4.8 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.02 | 1.00 | | 1.00 | 0.15 | | 0.67 | 0.72 | | 0.20 |
| Lane Grp Cap(c), veh/h | 31 | 0 | 588 | 87 | 655 | 540 | 704 | 0 | 0 | 668 | 0 | 0 |
| V/C Ratio(X) | 0.58 | 0.00 | 0.70 | 0.79 | 0.66 | 0.14 | 0.27 | 0.00 | 0.00 | 0.35 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 141 | 0 | 847 | 213 | 933 | 770 | 704 | 0 | 0 | 668 | 0 | 0 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 24.1 | 0.0 | 14.7 | 23.2 | 13.4 | 10.8 | 10.6 | 0.0 | 0.0 | 10.8 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 16.3 | 0.0 | 1.6 | 14.7 | 1.1 | 0.1 | 0.9 | 0.0 | 0.0 | 1.4 | 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 | 0.0 | 5.2 | 1.3 | 5.1 | 0.7 | 2.0 | 0.0 | 0.0 | 2.5 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 40.4 | 0.0 | 16.2 | 38.0 | 14.5 | 10.9 | 11.5 | 0.0 | 0.0 | 12.2 | 0.0 | 0.0 |
| LnGrp LOS | D | | B | D | B | B | B | | | B | | |
| Approach Vol, veh/h | | 432 | | | 571 | | | 190 | | | 232 | |
| Approach Delay, s/veh | | 17.2 | | | 16.9 | | | 11.5 | | | 12.2 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 23.0 | 6.4 | 20.0 | | 23.0 | 4.9 | 21.5 |
| Change Period (Y+Rc), s | | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | | 19.0 | 6.0 | 23.0 | | 19.0 | 4.0 | 25.0 |
| Max Q Clear Time (g_c+I1), s | | 5.9 | 3.9 | 11.8 | | 6.8 | 2.5 | 11.7 |
| Green Ext Time (p_c), s | | 2.2 | 0.0 | 4.1 | | 2.2 | 0.0 | 4.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 15.5 |
| HCM 2010 LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 8 | 501 | 165 | 34 | 339 | 90 | 213 | 102 | 84 | 138 | 85 | 31 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 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 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 9 | 551 | 181 | 37 | 373 | 99 | 234 | 112 | 92 | 152 | 93 | 34 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 16 | 557 | 474 | 53 | 596 | 505 | 251 | 286 | 235 | 190 | 503 | 420 |
| Arrive On Green | 0.01 | 0.30 | 0.30 | 0.03 | 0.32 | 0.32 | 0.14 | 0.31 | 0.31 | 0.11 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1563 | 1757 | 935 | 768 | 1774 | 1863 | 1554 |
| Grp Volume(v), veh/h | 9 | 551 | 181 | 37 | 373 | 99 | 234 | 0 | 204 | 152 | 93 | 34 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1563 | 1757 | 0 | 1703 | 1774 | 1863 | 1554 |
| Q Serve(g_s), s | 0.3 | 18.7 | 5.7 | 1.3 | 10.8 | 2.9 | 8.3 | 0.0 | 5.9 | 5.3 | 2.4 | 1.0 |
| Cycle Q Clear(g_c), s | 0.3 | 18.7 | 5.7 | 1.3 | 10.8 | 2.9 | 8.3 | 0.0 | 5.9 | 5.3 | 2.4 | 1.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.45 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 16 | 557 | 474 | 53 | 596 | 505 | 251 | 0 | 521 | 190 | 503 | 420 |
| V/C Ratio(X) | 0.55 | 0.99 | 0.38 | 0.70 | 0.63 | 0.20 | 0.93 | 0.00 | 0.39 | 0.80 | 0.18 | 0.08 |
| Avail Cap(c_a), veh/h | 112 | 557 | 474 | 112 | 596 | 505 | 251 | 0 | 521 | 197 | 503 | 420 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.0 | 21.8 | 17.3 | 30.2 | 18.1 | 15.4 | 26.6 | 0.0 | 17.2 | 27.4 | 17.6 | 17.1 |
| Incr Delay (d2), s/veh | 26.2 | 35.2 | 0.5 | 15.1 | 2.1 | 0.2 | 38.5 | 0.0 | 2.2 | 19.7 | 0.8 | 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 | 0.3 | 14.8 | 2.5 | 0.8 | 5.8 | 1.3 | 6.7 | 0.0 | 3.1 | 3.6 | 1.4 | 0.5 |
| LnGrp Delay(d),s/veh | 57.3 | 57.0 | 17.8 | 45.3 | 20.1 | 15.6 | 65.1 | 0.0 | 19.4 | 47.1 | 18.4 | 17.5 |
| LnGrp LOS | E | E | B | D | C | B | E | | B | D | B | B |
| Approach Vol, veh/h | | 741 | | | 509 | | | 438 | | | 279 | |
| Approach Delay, s/veh | | 47.5 | | | 21.1 | | | 43.8 | | | 33.9 | |
| Approach LOS | | D | | | C | | | D | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.8 | 23.2 | 5.9 | 23.0 | 13.0 | 21.0 | 4.6 | 24.3 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | 19.0 | 4.0 | 19.0 | 9.0 | 17.0 | 4.0 | 19.0 |
| Max Q Clear Time (g_c+I1), s | 7.3 | 7.9 | 3.3 | 20.7 | 10.3 | 4.4 | 2.3 | 12.8 |
| Green Ext Time (p_c), s | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 1.5 | 0.0 | 3.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 37.9 |
| HCM 2010 LOS | D |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.8 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 13 | 151 | 152 | 21 | 63 | 38 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 14 | 164 | 165 | 23 | 68 | 41 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 188 | 0 | - | 0 | 369 | 177 |
| Stage 1 | - | - | - | - | 177 | - |
| Stage 2 | - | - | - | - | 192 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1386 | - | - | - | 631 | 866 |
| Stage 1 | - | - | - | - | 854 | - |
| Stage 2 | - | - | - | - | 841 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1386 | - | - | - | 624 | 866 |
| Mov Cap-2 Maneuver | - | - | - | - | 624 | - |
| Stage 1 | - | - | - | - | 854 | - |
| Stage 2 | - | - | - | - | 832 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.6 | 0 | 11.1 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1386 | - | - | - | 697 |
| HCM Lane V/C Ratio | 0.01 | - | - | - | 0.158 |
| HCM Control Delay (s) | 7.6 | 0 | - | - | 11.1 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.6 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 88 | 29 | 0 | 1 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 96 | 32 | 0 | 1 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 64 | 1 | 1 | 0 | - | 0 |
| Stage 1 | 1 | - | - | - | - | - |
| Stage 2 | 63 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 942 | 1084 | 1622 | - | - | - |
| Stage 1 | 1022 | - | - | - | - | - |
| Stage 2 | 960 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 923 | 1084 | 1622 | - | - | - |
| Mov Cap-2 Maneuver | 923 | - | - | - | - | - |
| Stage 1 | 1022 | - | - | - | - | - |
| Stage 2 | 941 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.6 | 7.3 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1622 | - | 1084 | - | - |
| HCM Lane V/C Ratio | 0.019 | - | 0.088 | - | - |
| HCM Control Delay (s) | 7.3 | 0 | 8.6 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 0.3 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 0 | 0 | 60 | 4 | 94 | 2 | 377 | 45 | 233 | 334 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 325 | - | 70 | 520 | - | 520 | 515 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 13 | 13 | 13 | 10 | 10 | 10 |
| Mvmt Flow | 0 | 0 | 0 | 61 | 4 | 95 | 2 | 381 | 45 | 235 | 337 | 0 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1195 | 1193 | 337 | 1193 | 1193 | 381 | 337 | 0 | 0 | 381 | 0 | 0 |
| Stage 1 | 808 | 808 | - | 385 | 385 | - | - | - | - | - | - | - |
| Stage 2 | 387 | 385 | - | 808 | 808 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.23 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.317 | - | - | 2.29 | - | - |
| Pot Cap-1 Maneuver | 163 | 187 | 705 | 164 | 187 | 666 | 1163 | - | - | 1135 | - | - |
| Stage 1 | 375 | 394 | - | 638 | 611 | - | - | - | - | - | - | - |
| Stage 2 | 637 | 611 | - | 375 | 394 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 115 | 148 | 705 | 138 | 148 | 666 | 1163 | - | - | 1135 | - | - |
| Mov Cap-2 Maneuver | 115 | 148 | - | 138 | 148 | - | - | - | - | - | - | - |
| Stage 1 | 374 | 312 | - | 637 | 610 | - | - | - | - | - | - | - |
| Stage 2 | 542 | 610 | - | 297 | 312 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 26.5 | 0 | 3.7 |
| HCM LOS | A | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1163 | - | - | - | - | 138 | 148 | 666 | 1135 | - | - |
| HCM Lane V/C Ratio | 0.002 | - | - | - | - | 0.439 | 0.027 | 0.143 | 0.207 | - | - |
| HCM Control Delay (s) | 8.1 | - | - | 0 | 0 | 50.1 | 30 | 11.3 | 9 | - | - |
| HCM Lane LOS | A | - | - | A | A | F | D | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - | 2 | 0.1 | 0.5 | 0.8 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 13 | 127 | 73 | 22 | 116 | 32 | 56 | 58 | 16 | 18 | 36 | 9 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 15 | 148 | 85 | 26 | 135 | 37 | 65 | 67 | 19 | 21 | 42 | 10 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 177 | 0 | 0 | 238 | 0 | 0 | 461 | 453 | 195 | 478 | 478 | 158 |
| Stage 1 | - | - | - | - | - | - | 225 | 225 | - | 210 | 210 | - |
| Stage 2 | - | - | - | - | - | - | 236 | 228 | - | 268 | 268 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1399 | - | - | 1329 | - | - | 511 | 503 | 846 | 498 | 486 | 887 |
| Stage 1 | - | - | - | - | - | - | 778 | 718 | - | 792 | 728 | - |
| Stage 2 | - | - | - | - | - | - | 767 | 715 | - | 738 | 687 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1399 | - | - | 1329 | - | - | 456 | 482 | 842 | 422 | 466 | 883 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 456 | 482 | - | 422 | 466 | - |
| Stage 1 | - | - | - | - | - | - | 765 | 706 | - | 779 | 709 | - |
| Stage 2 | - | - | - | - | - | - | 697 | 696 | - | 645 | 676 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.5 | 1 | 15.4 | 13.8 |
| HCM LOS | | | C | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 496 | 1399 | - | - | 1329 | - | - | 484 |
| HCM Lane V/C Ratio | 0.305 | 0.011 | - | - | 0.019 | - | - | 0.151 |
| HCM Control Delay (s) | 15.4 | 7.6 | 0 | - | 7.8 | 0 | - | 13.8 |
| HCM Lane LOS | C | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 1.3 | 0 | - | - | 0.1 | - | - | 0.5 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 3 | 37 | 141 | 6 | 37 | 5 | 122 | 2 | 9 | 1 | 5 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 46 | 176 | 8 | 46 | 6 | 152 | 2 | 11 | 1 | 6 | 1 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 58 | 0 | 0 | 228 | 0 | 0 | 220 | 220 | 139 | 223 | 304 | 54 |
| Stage 1 | - | - | - | - | - | - | 147 | 147 | - | 69 | 69 | - |
| Stage 2 | - | - | - | - | - | - | 73 | 73 | - | 154 | 235 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1546 | - | - | 1340 | - | - | 736 | 678 | 909 | 733 | 609 | 1013 |
| Stage 1 | - | - | - | - | - | - | 856 | 775 | - | 941 | 837 | - |
| Stage 2 | - | - | - | - | - | - | 937 | 834 | - | 848 | 710 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1546 | - | - | 1340 | - | - | 721 | 666 | 905 | 714 | 599 | 1009 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 721 | 666 | - | 714 | 599 | - |
| Stage 1 | - | - | - | - | - | - | 850 | 769 | - | 934 | 829 | - |
| Stage 2 | - | - | - | - | - | - | 923 | 826 | - | 832 | 705 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 1 | 11.4 | 10.6 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 730 | 1546 | - | - | 1340 | - | - | 652 |
| HCM Lane V/C Ratio | 0.228 | 0.002 | - | - | 0.006 | - | - | 0.013 |
| HCM Control Delay (s) | 11.4 | 7.3 | 0 | - | 7.7 | 0 | - | 10.6 |
| HCM Lane LOS | B | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.9 | 0 | - | - | 0 | - | - | 0 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 41 | 498 | 25 | 97 | 370 | 140 | 13 | 12 | 91 | 133 | 27 | 28 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1900 | 1863 | 1900 | 1900 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 43 | 519 | 26 | 101 | 385 | 146 | 14 | 12 | 95 | 139 | 28 | 29 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 62 | 637 | 32 | 129 | 745 | 620 | 101 | 91 | 436 | 447 | 91 | 74 |
| Arrive On Green | 0.04 | 0.36 | 0.36 | 0.07 | 0.40 | 0.40 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 |
| Sat Flow, veh/h | 1774 | 1759 | 88 | 1774 | 1863 | 1550 | 81 | 264 | 1260 | 968 | 262 | 214 |
| Grp Volume(v), veh/h | 43 | 0 | 545 | 101 | 385 | 146 | 121 | 0 | 0 | 196 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1847 | 1774 | 1863 | 1550 | 1604 | 0 | 0 | 1443 | 0 | 0 |
| Q Serve(g_s), s | 1.3 | 0.0 | 14.6 | 3.1 | 8.6 | 3.4 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 1.3 | 0.0 | 14.6 | 3.1 | 8.6 | 3.4 | 2.9 | 0.0 | 0.0 | 4.9 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.05 | 1.00 | | 1.00 | 0.12 | | 0.79 | 0.71 | | 0.15 |
| Lane Grp Cap(c), veh/h | 62 | 0 | 669 | 129 | 745 | 620 | 629 | 0 | 0 | 612 | 0 | 0 |
| V/C Ratio(X) | 0.69 | 0.00 | 0.81 | 0.78 | 0.52 | 0.24 | 0.19 | 0.00 | 0.00 | 0.32 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 129 | 0 | 774 | 194 | 848 | 706 | 629 | 0 | 0 | 612 | 0 | 0 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 26.2 | 0.0 | 15.8 | 25.0 | 12.4 | 10.9 | 12.7 | 0.0 | 0.0 | 13.2 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 12.8 | 0.0 | 5.9 | 11.1 | 0.6 | 0.2 | 0.7 | 0.0 | 0.0 | 1.4 | 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 | 0.9 | 0.0 | 8.5 | 1.9 | 4.5 | 1.5 | 1.4 | 0.0 | 0.0 | 2.4 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 39.0 | 0.0 | 21.7 | 36.1 | 13.0 | 11.1 | 13.4 | 0.0 | 0.0 | 14.6 | 0.0 | 0.0 |
| LnGrp LOS | D | | C | D | B | B | B | | | B | | |
| Approach Vol, veh/h | | 588 | | | 632 | | | 121 | | | 196 | |
| Approach Delay, s/veh | | 23.0 | | | 16.3 | | | 13.4 | | | 14.6 | |
| Approach LOS | | C | | | B | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 23.0 | 8.0 | 23.9 | | 23.0 | 5.9 | 26.0 |
| Change Period (Y+Rc), s | | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | | 19.0 | 6.0 | 23.0 | | 19.0 | 4.0 | 25.0 |
| Max Q Clear Time (g_c+I1), s | | 4.9 | 5.1 | 16.6 | | 6.9 | 3.3 | 10.6 |
| Green Ext Time (p_c), s | | 1.6 | 0.0 | 3.2 | | 1.5 | 0.0 | 5.5 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 18.4 |
| HCM 2010 LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 21 | 524 | 186 | 88 | 535 | 76 | 223 | 86 | 49 | 94 | 82 | 24 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 22 | 540 | 192 | 91 | 552 | 78 | 230 | 89 | 51 | 97 | 85 | 25 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 35 | 539 | 458 | 108 | 616 | 523 | 243 | 363 | 208 | 125 | 487 | 413 |
| Arrive On Green | 0.02 | 0.29 | 0.29 | 0.06 | 0.33 | 0.33 | 0.14 | 0.33 | 0.33 | 0.07 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 1100 | 630 | 1774 | 1863 | 1580 |
| Grp Volume(v), veh/h | 22 | 540 | 192 | 91 | 552 | 78 | 230 | 0 | 140 | 97 | 85 | 25 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 0 | 1730 | 1774 | 1863 | 1580 |
| Q Serve(g_s), s | 0.8 | 19.0 | 6.4 | 3.3 | 18.5 | 2.3 | 8.4 | 0.0 | 3.8 | 3.5 | 2.3 | 0.8 |
| Cycle Q Clear(g_c), s | 0.8 | 19.0 | 6.4 | 3.3 | 18.5 | 2.3 | 8.4 | 0.0 | 3.8 | 3.5 | 2.3 | 0.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.36 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 35 | 539 | 458 | 108 | 616 | 523 | 243 | 0 | 571 | 125 | 487 | 413 |
| V/C Ratio(X) | 0.62 | 1.00 | 0.42 | 0.84 | 0.90 | 0.15 | 0.95 | 0.00 | 0.25 | 0.78 | 0.17 | 0.06 |
| Avail Cap(c_a), veh/h | 108 | 539 | 458 | 108 | 616 | 523 | 243 | 0 | 571 | 191 | 487 | 413 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.6 | 23.0 | 18.5 | 30.2 | 20.6 | 15.2 | 27.8 | 0.0 | 15.9 | 29.7 | 18.6 | 18.0 |
| Incr Delay (d2), s/veh | 16.4 | 39.1 | 0.6 | 41.9 | 15.9 | 0.1 | 42.8 | 0.0 | 1.0 | 10.5 | 0.8 | 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 | 0.6 | 15.4 | 2.9 | 2.9 | 12.1 | 1.0 | 7.0 | 0.0 | 2.0 | 2.1 | 1.3 | 0.4 |
| LnGrp Delay(d),s/veh | 48.0 | 62.1 | 19.2 | 72.1 | 36.5 | 15.3 | 70.5 | 0.0 | 16.9 | 40.2 | 19.3 | 18.3 |
| LnGrp LOS | D | F | B | E | D | B | E | | B | D | B | B |
| Approach Vol, veh/h | | 754 | | | 721 | | | 370 | | | 207 | |
| Approach Delay, s/veh | | 50.8 | | | 38.7 | | | 50.2 | | | 29.0 | |
| Approach LOS | | D | | | D | | | D | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 8.6 | 25.4 | 8.0 | 23.0 | 13.0 | 21.0 | 5.3 | 25.7 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | 19.0 | 4.0 | 19.0 | 9.0 | 17.0 | 4.0 | 19.0 |
| Max Q Clear Time (g_c+I1), s | 5.5 | 5.8 | 5.3 | 21.0 | 10.4 | 4.3 | 2.8 | 20.5 |
| Green Ext Time (p_c), s | 0.0 | 1.1 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 44.2 |
| HCM 2010 LOS | D |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.3 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 42 | 172 | 111 | 70 | 41 | 25 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 46 | 187 | 121 | 76 | 45 | 27 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 197 | 0 | - | 0 | 437 | 159 |
| Stage 1 | - | - | - | - | 159 | - |
| Stage 2 | - | - | - | - | 278 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1376 | - | - | - | 577 | 886 |
| Stage 1 | - | - | - | - | 870 | - |
| Stage 2 | - | - | - | - | 769 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1376 | - | - | - | 556 | 886 |
| Mov Cap-2 Maneuver | - | - | - | - | 556 | - |
| Stage 1 | - | - | - | - | 870 | - |
| Stage 2 | - | - | - | - | 741 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1.5 | 0 | 11.3 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1376 | - | - | - | 647 |
| HCM Lane V/C Ratio | 0.033 | - | - | - | 0.111 |
| HCM Control Delay (s) | 7.7 | 0 | - | - | 11.3 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.4 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 58 | 100 | 0 | 1 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 63 | 109 | 0 | 1 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 218 | 1 | 1 | 0 | - | 0 |
| Stage 1 | 1 | - | - | - | - | - |
| Stage 2 | 217 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 770 | 1084 | 1622 | - | - | - |
| Stage 1 | 1022 | - | - | - | - | - |
| Stage 2 | 819 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 718 | 1084 | 1622 | - | - | - |
| Mov Cap-2 Maneuver | 718 | - | - | - | - | - |
| Stage 1 | 1022 | - | - | - | - | - |
| Stage 2 | 764 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.5 | 7.4 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1622 | - | 1084 | - | - |
| HCM Lane V/C Ratio | 0.067 | - | 0.058 | - | - |
| HCM Control Delay (s) | 7.4 | 0 | 8.5 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 0.2 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 2 | 6 | 1 | 59 | 0 | 205 | 2 | 250 | 46 | 40 | 257 | 0 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1696 | 1696 | 1696 | 1508 | 1508 | 1900 |
| Adj Flow Rate, veh/h | 2 | 6 | 1 | 62 | 0 | 216 | 2 | 263 | 48 | 42 | 271 | 0 |
| Adj No. of Lanes | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 12 | 12 | 12 | 26 | 26 | 26 |
| Cap, veh/h | 4 | 13 | 15 | 287 | 301 | 256 | 5 | 461 | 391 | 56 | 465 | 0 |
| Arrive On Green | 0.01 | 0.01 | 0.01 | 0.16 | 0.00 | 0.16 | 0.00 | 0.27 | 0.27 | 0.04 | 0.31 | 0.00 |
| Sat Flow, veh/h | 460 | 1380 | 1583 | 1774 | 1863 | 1583 | 1616 | 1696 | 1442 | 1436 | 1508 | 0 |
| Grp Volume(v), veh/h | 8 | 0 | 1 | 62 | 0 | 216 | 2 | 263 | 48 | 42 | 271 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1840 | 0 | 1583 | 1774 | 1863 | 1583 | 1616 | 1696 | 1442 | 1436 | 1508 | 0 |
| Q Serve(g_s), s | 0.1 | 0.0 | 0.0 | 0.9 | 0.0 | 4.1 | 0.0 | 4.1 | 0.8 | 0.9 | 4.7 | 0.0 |
| Cycle Q Clear(g_c), s | 0.1 | 0.0 | 0.0 | 0.9 | 0.0 | 4.1 | 0.0 | 4.1 | 0.8 | 0.9 | 4.7 | 0.0 |
| Prop In Lane | 0.25 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 18 | 0 | 15 | 287 | 301 | 256 | 5 | 461 | 391 | 56 | 465 | 0 |
| V/C Ratio(X) | 0.45 | 0.00 | 0.07 | 0.22 | 0.00 | 0.84 | 0.38 | 0.57 | 0.12 | 0.75 | 0.58 | 0.00 |
| Avail Cap(c_a), veh/h | 953 | 0 | 820 | 287 | 301 | 256 | 209 | 988 | 840 | 232 | 927 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 15.2 | 0.0 | 15.2 | 11.2 | 0.0 | 12.6 | 15.4 | 9.7 | 8.5 | 14.7 | 9.0 | 0.0 |
| Incr Delay (d2), s/veh | 16.9 | 0.0 | 1.8 | 0.4 | 0.0 | 21.7 | 40.2 | 1.1 | 0.1 | 17.6 | 1.2 | 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 | 0.0 | 0.5 | 0.0 | 3.3 | 0.1 | 2.0 | 0.3 | 0.6 | 2.0 | 0.0 |
| LnGrp Delay(d),s/veh | 32.2 | 0.0 | 16.9 | 11.6 | 0.0 | 34.3 | 55.6 | 10.8 | 8.6 | 32.3 | 10.2 | 0.0 |
| LnGrp LOS | C | | B | B | | C | E | B | A | C | B | |
| Approach Vol, veh/h | | 9 | | | 278 | | | 313 | | | 313 | |
| Approach Delay, s/veh | | 30.5 | | | 29.2 | | | 10.8 | | | 13.1 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 5.2 | 12.4 | | 4.3 | 4.1 | 13.5 | | 9.0 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 5.0 | 18.0 | | 16.0 | 4.0 | 19.0 | | 5.0 |
| Max Q Clear Time (g_c+I1), s | 2.9 | 6.1 | | 2.1 | 2.0 | 6.7 | | 6.1 |
| Green Ext Time (p_c), s | 0.0 | 2.3 | | 0.0 | 0.0 | 2.3 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 17.4 |
| HCM 2010 LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 8 | 501 | 165 | 34 | 339 | 90 | 213 | 102 | 84 | 138 | 85 | 31 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 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 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 9 | 551 | 181 | 37 | 373 | 99 | 234 | 112 | 92 | 152 | 93 | 34 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 16 | 586 | 499 | 53 | 625 | 530 | 251 | 271 | 222 | 191 | 474 | 395 |
| Arrive On Green | 0.01 | 0.32 | 0.32 | 0.03 | 0.34 | 0.34 | 0.14 | 0.29 | 0.29 | 0.11 | 0.25 | 0.25 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1563 | 1757 | 935 | 768 | 1774 | 1863 | 1552 |
| Grp Volume(v), veh/h | 9 | 551 | 181 | 37 | 373 | 99 | 234 | 0 | 204 | 152 | 93 | 34 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1563 | 1757 | 0 | 1703 | 1774 | 1863 | 1552 |
| Q Serve(g_s), s | 0.3 | 18.3 | 5.6 | 1.3 | 10.5 | 2.8 | 8.3 | 0.0 | 6.1 | 5.3 | 2.5 | 1.1 |
| Cycle Q Clear(g_c), s | 0.3 | 18.3 | 5.6 | 1.3 | 10.5 | 2.8 | 8.3 | 0.0 | 6.1 | 5.3 | 2.5 | 1.1 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.45 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 16 | 586 | 499 | 53 | 625 | 530 | 251 | 0 | 493 | 191 | 474 | 395 |
| V/C Ratio(X) | 0.55 | 0.94 | 0.36 | 0.70 | 0.60 | 0.19 | 0.93 | 0.00 | 0.41 | 0.80 | 0.20 | 0.09 |
| Avail Cap(c_a), veh/h | 112 | 586 | 499 | 112 | 625 | 530 | 251 | 0 | 493 | 226 | 474 | 395 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.0 | 20.9 | 16.5 | 30.2 | 17.2 | 14.7 | 26.6 | 0.0 | 18.0 | 27.4 | 18.4 | 17.9 |
| Incr Delay (d2), s/veh | 26.2 | 23.3 | 0.4 | 15.1 | 1.6 | 0.2 | 38.5 | 0.0 | 2.5 | 15.3 | 0.9 | 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 | 0.3 | 13.0 | 2.5 | 0.8 | 5.6 | 1.2 | 6.7 | 0.0 | 3.2 | 3.4 | 1.4 | 0.5 |
| LnGrp Delay(d),s/veh | 57.3 | 44.1 | 17.0 | 45.3 | 18.8 | 14.8 | 65.1 | 0.0 | 20.6 | 42.7 | 19.3 | 18.3 |
| LnGrp LOS | E | D | B | D | B | B | E | | C | D | B | B |
| Approach Vol, veh/h | | 741 | | | 509 | | | 438 | | | 279 | |
| Approach Delay, s/veh | | 37.7 | | | 19.9 | | | 44.4 | | | 31.9 | |
| Approach LOS | | D | | | B | | | D | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.8 | 22.2 | 5.9 | 24.0 | 13.0 | 20.0 | 4.6 | 25.3 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 8.0 | 17.0 | 4.0 | 20.0 | 9.0 | 16.0 | 4.0 | 20.0 |
| Max Q Clear Time (g_c+I1), s | 7.3 | 8.1 | 3.3 | 20.3 | 10.3 | 4.5 | 2.3 | 12.5 |
| Green Ext Time (p_c), s | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 | 1.4 | 0.0 | 4.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 33.8 |
| HCM 2010 LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 0 | 0 | 0 | 60 | 4 | 94 | 2 | 377 | 45 | 233 | 334 | 0 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1681 | 1681 | 1681 | 1727 | 1727 | 1900 |
| Adj Flow Rate, veh/h | 0 | 0 | 0 | 61 | 4 | 95 | 2 | 381 | 45 | 235 | 337 | 0 |
| Adj No. of Lanes | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 13 | 13 | 13 | 10 | 10 | 10 |
| Cap, veh/h | 0 | 6 | 5 | 169 | 178 | 151 | 5 | 579 | 492 | 299 | 904 | 0 |
| Arrive On Green | 0.00 | 0.00 | 0.00 | 0.10 | 0.10 | 0.10 | 0.00 | 0.34 | 0.34 | 0.18 | 0.52 | 0.00 |
| Sat Flow, veh/h | 0 | 1863 | 1583 | 1774 | 1863 | 1583 | 1601 | 1681 | 1429 | 1645 | 1727 | 0 |
| Grp Volume(v), veh/h | 0 | 0 | 0 | 61 | 4 | 95 | 2 | 381 | 45 | 235 | 337 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1863 | 1583 | 1774 | 1863 | 1583 | 1601 | 1681 | 1429 | 1645 | 1727 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 1.0 | 0.1 | 1.8 | 0.0 | 6.1 | 0.7 | 4.3 | 3.7 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 0.0 | 1.0 | 0.1 | 1.8 | 0.0 | 6.1 | 0.7 | 4.3 | 3.7 | 0.0 |
| Prop In Lane | 0.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 0 | 6 | 5 | 169 | 178 | 151 | 5 | 579 | 492 | 299 | 904 | 0 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.00 | 0.36 | 0.02 | 0.63 | 0.40 | 0.66 | 0.09 | 0.79 | 0.37 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 941 | 800 | 224 | 235 | 200 | 202 | 956 | 812 | 571 | 1364 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 0.0 | 13.4 | 13.0 | 13.8 | 15.8 | 8.8 | 7.0 | 12.4 | 4.5 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.0 | 1.3 | 0.1 | 4.3 | 43.4 | 1.3 | 0.1 | 4.6 | 0.3 | 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 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 1.0 | 0.1 | 3.0 | 0.3 | 2.3 | 1.7 | 0.0 |
| LnGrp Delay(d),s/veh | 0.0 | 0.0 | 0.0 | 14.7 | 13.0 | 18.0 | 59.2 | 10.1 | 7.1 | 17.0 | 4.7 | 0.0 |
| LnGrp LOS | | | | B | B | B | E | B | A | B | A | |
| Approach Vol, veh/h | | 0 | | | 160 | | | 428 | | | 572 | |
| Approach Delay, s/veh | | 0.0 | | | 16.6 | | | 10.0 | | | 9.7 | |
| Approach LOS | | | | | B | | | B | | | A | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 9.7 | 14.9 | | 0.0 | 4.1 | 20.6 | | 7.0 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 11.0 | 18.0 | | 16.0 | 4.0 | 25.0 | | 4.0 |
| Max Q Clear Time (g_c+I1), s | 6.3 | 8.1 | | 0.0 | 2.0 | 5.7 | | 3.8 |
| Green Ext Time (p_c), s | 0.3 | 2.8 | | 0.0 | 0.0 | 3.7 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 10.8 |
| HCM 2010 LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 21 | 524 | 186 | 88 | 535 | 76 | 223 | 86 | 49 | 94 | 82 | 24 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 22 | 540 | 192 | 91 | 552 | 78 | 230 | 89 | 51 | 97 | 85 | 25 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 35 | 568 | 482 | 108 | 644 | 547 | 243 | 345 | 198 | 125 | 459 | 389 |
| Arrive On Green | 0.02 | 0.31 | 0.31 | 0.06 | 0.35 | 0.35 | 0.14 | 0.31 | 0.31 | 0.07 | 0.25 | 0.25 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 1100 | 630 | 1774 | 1863 | 1580 |
| Grp Volume(v), veh/h | 22 | 540 | 192 | 91 | 552 | 78 | 230 | 0 | 140 | 97 | 85 | 25 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 0 | 1730 | 1774 | 1863 | 1580 |
| Q Serve(g_s), s | 0.8 | 18.6 | 6.3 | 3.3 | 18.1 | 2.2 | 8.4 | 0.0 | 3.9 | 3.5 | 2.3 | 0.8 |
| Cycle Q Clear(g_c), s | 0.8 | 18.6 | 6.3 | 3.3 | 18.1 | 2.2 | 8.4 | 0.0 | 3.9 | 3.5 | 2.3 | 0.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.36 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 35 | 568 | 482 | 108 | 644 | 547 | 243 | 0 | 543 | 125 | 459 | 389 |
| V/C Ratio(X) | 0.62 | 0.95 | 0.40 | 0.84 | 0.86 | 0.14 | 0.95 | 0.00 | 0.26 | 0.77 | 0.19 | 0.06 |
| Avail Cap(c_a), veh/h | 108 | 568 | 482 | 108 | 644 | 547 | 243 | 0 | 543 | 246 | 459 | 389 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.6 | 22.0 | 17.8 | 30.2 | 19.7 | 14.5 | 27.8 | 0.0 | 16.6 | 29.7 | 19.4 | 18.8 |
| Incr Delay (d2), s/veh | 16.4 | 26.1 | 0.5 | 41.9 | 11.1 | 0.1 | 42.8 | 0.0 | 1.1 | 9.7 | 0.9 | 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 | 0.6 | 13.6 | 2.8 | 2.9 | 11.2 | 1.0 | 7.0 | 0.0 | 2.0 | 2.0 | 1.3 | 0.4 |
| LnGrp Delay(d),s/veh | 48.0 | 48.2 | 18.3 | 72.1 | 30.8 | 14.6 | 70.5 | 0.0 | 17.8 | 39.4 | 20.2 | 19.1 |
| LnGrp LOS | D | D | B | E | C | B | E | | B | D | C | B |
| Approach Vol, veh/h | | 754 | | | 721 | | | 370 | | | 207 | |
| Approach Delay, s/veh | | 40.5 | | | 34.2 | | | 50.6 | | | 29.1 | |
| Approach LOS | | D | | | C | | | D | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 8.6 | 24.4 | 8.0 | 24.0 | 13.0 | 20.0 | 5.3 | 26.7 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 9.0 | 16.0 | 4.0 | 20.0 | 9.0 | 16.0 | 4.0 | 20.0 |
| Max Q Clear Time (g_c+I1), s | 5.5 | 5.9 | 5.3 | 20.6 | 10.4 | 4.3 | 2.8 | 20.1 |
| Green Ext Time (p_c), s | 0.1 | 0.9 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 39.0 |
| HCM 2010 LOS | D |

# Appendix E

## Approved Projects within Hollister

**APPROVED DEVELOPMENT PROJECTS**

| Project Name | Location | Project Description | | Daily Trips | AM Peak Hour In | AM Peak Hour Out | AM Peak Hour Total | PM Peak Hour In | PM Peak Hour Out | PM Peak Hour Total |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 Fairfield Inn & Suites Marriot Hotel | 380 Gateway Drive | Hotel | 81 rooms | 723 | 31 | 23 | 54 | 28 | 29 | 57 |
| 2 Community Food Bank of San Benito County | 172 McCloskey Road | Office | 3,072 SF | 34 | 4 | 1 | 5 | 1 | 4 | 5 |
| | | Warehouse | 10,560 SF | 38 | 2 | 1 | 3 | 1 | 2 | 3 |
| 3 1980 Airway Drive | 1980 Airway Drive | Industrial | 15,600 SF | 109 | 12 | 2 | 14 | 2 | 13 | 15 |
| | | Mech. Shop/Office | 6,250 Sf | 69 | 9 | 1 | 10 | 2 | 7 | 9 |
| 4 North Florida Development (Ladd Lane) | W/o Ladd Lane, at Hillock Drive | Medical Office/Retail | 12,420 SF | 449 | 24 | 6 | 30 | 12 | 32 | 44 |
| | | Retail | 20,500 SF | 909 | 67 | 73 | 140 | 25 | 31 | 56 |
| | | Apartments | 63 Units | 419 | 6 | 26 | 32 | 25 | 14 | 39 |
| | | Courtyard Units | 25 Units | 238 | 5 | 14 | 19 | 16 | 9 | 25 |
| | | Single Family | 13 Units | 124 | 3 | 7 | 10 | 8 | 5 | 13 |
| 5 Airport Business Park | Flynn Rd, betweeen SR 25 and San Felipe Rd | Industrial | 12,100 SF | 84 | 10 | 1 | 11 | 1 | 11 | 12 |
| 6 Hollister Business Park | Fallon Rd | Warehouse | 49,569 SF | 176 | 12 | 3 | 15 | 4 | 12 | 16 |
| 7 Legacy Guerra (Lowes Project -190 Hillcreset Rd) | W/o Hwy 25 bypass between Meridian St and Hillcrest Rd | Home Impr | 150,000 SF | 4,611 | 128 | 96 | 224 | 172 | 178 | 350 |
| | | Commercial | 100,480 SF | 4,290 | 60 | 36 | 96 | 179 | 194 | 373 |
| | | Apartments | 120 Units | 798 | 12 | 49 | 61 | 48 | 26 | 74 |
| 8 Cerrato Estates | Between Meridian St and Hillcrest Rd, w/o Memorial Drive | Residential | 241 Units | 2,294 | 45 | 136 | 181 | 152 | 89 | 241 |
| 9 Villages Brigantino | North of Brigantino Drive | Residential | 154 Units | 1,466 | 29 | 87 | 116 | 97 | 57 | 154 |
| 10 CSDC | Westside Blvd between 4th Street and South Street | Apartments | 15 Units | 100 | 2 | 6 | 8 | 6 | 3 | 9 |
| 11 Pacific West Communities | NE corner of Miller Rd/San Juan Rd | Apartments | 57 Units | 379 | 6 | 23 | 29 | 23 | 12 | 35 |
| 12 Valles | E/o Cushman Street, S/o Nash Rd | Apartments | 50 Units | 333 | 5 | 21 | 26 | 20 | 11 | 31 |
| 13 Silver Oaks | W/o Valley View, s/o Hazel Hawkins Hospital, e/o Airline, n/o Valle Way | Senior Apartments | 170 Units | 585 | 11 | 21 | 32 | 23 | 16 | 39 |
| 14 Braer | N/w of San Benito St/South St | Apartments | 6 Units | 40 | 1 | 2 | 3 | 3 | 1 | 4 |
| 15 Eden West | Between Apricot KLn, Line St, Steinbeck Dr, and Cannery Row | Residential | 55 Units | 524 | 10 | 31 | 41 | 35 | 20 | 55 |
| 16 Rajkovich | W/o San Benito St and Cienega Rd | Residential | 81 Units | 771 | 15 | 46 | 61 | 51 | 30 | 81 |
| | | Apartments | 100 Units | 665 | 10 | 41 | 51 | 40 | 22 | 62 |
| 17 Coria | W/o Westside Blvd at Jan Avenue | Residential | 7 Units | 67 | 1 | 4 | 5 | 4 | 3 | 7 |
| 18 Hillview 2 | Buena Vista Rd, w/o Ranchito Dr | Residential | 30 Units | 286 | 6 | 17 | 23 | 19 | 11 | 30 |
| 19 Award Homes | W/o Fairview, s/o St. Benedict's Church, e/o Calistoga Dr | Residential | 567 Units | 5,398 | 106 | 319 | 425 | 357 | 210 | 567 |
| | | Apartments | 100 Units | 665 | 10 | 41 | 51 | 40 | 22 | 62 |
| 20 Givson/Sunnyslope | Between sr 25 and Black Forest | Residential | 29 Units | 276 | 6 | 16 | 22 | 18 | 11 | 29 |
| 21 Las Brisas 7 | N/o Sunnuyslope, E and W of Clearview along Marily Ct and McDonald Ct | Residential | 3 Units | 29 | 1 | 1 | 2 | 2 | 1 | 3 |
| 22 Las Brisas 8 | N/o Sunnyslope, E and W of Clearview along Marily Ct and McDonald Ct | Residential | 11 Units | 105 | 2 | 6 | 8 | 7 | 4 | 11 |
| 23 Santana Ranch | E/o Fairview Rd from Hillcrest to Sunnyslope | Net Trips | | 13,273 | 401 | 767 | 1,168 | 864 | 607 | 1,471 |
| 1,092 residential, 800 student elementary school | | | | | | | | | | |
| 65,000 sf commercial | | | | | | | | | | |
| 24 Fairview Corners Residential | N/E Corners of Fairview Rd and Airline Hwy | Single Family | 220 Units | 2,094 | 41 | 124 | 165 | 139 | 81 | 220 |
| 25 Creekside 5 & 6 | Los Altos Dr, south of Hillcrest | Residential | 14 Lots | 133 | 3 | 8 | 11 | 9 | 5 | 14 |
| 26 Humboldt West | Southside/Airline | Residential | 16 Lots | 152 | 3 | 9 | 12 | 10 | 6 | 16 |
| 27 Easde | Southside/Airline | Residential | 5 Lots | 48 | 1 | 3 | 4 | 3 | 2 | 5 |
| 28 Don Marcus | Santa Ana Valley Road | Residential | 4 Lots | 38 | 1 | 2 | 3 | 3 | 1 | 4 |
| 29 VLM/Mendonsa | Santa Ana Valley Road | Residential | 3 Lots | 29 | 1 | 1 | 2 | 2 | 1 | 3 |
| 30 Chamber's Equestrian Center | SR 25 and Shore Rd | Horse Show | | - | - | - | - | - | - | - |

# Appendix F

## Intersection Level of Service Calculations

## Background Conditions

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 2 | 6 | 1 | 59 | 0 | 186 | 2 | 254 | 46 | 40 | 258 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 325 | - | 70 | 520 | - | 520 | 515 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 12 | 12 | 12 | 26 | 26 | 26 |
| Mvmt Flow | 2 | 6 | 1 | 62 | 0 | 196 | 2 | 267 | 48 | 42 | 272 | 0 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 628 | 628 | 272 | 631 | 628 | 267 | 272 | 0 | 0 | 267 | 0 | 0 |
| Stage 1 | 356 | 356 | - | 272 | 272 | - | - | - | - | - | - | - |
| Stage 2 | 272 | 272 | - | 359 | 356 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.22 | - | - | 4.36 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.308 | - | - | 2.434 | - | - |
| Pot Cap-1 Maneuver | 395 | 400 | 767 | 394 | 400 | 772 | 1236 | - | - | 1170 | - | - |
| Stage 1 | 661 | 629 | - | 734 | 685 | - | - | - | - | - | - | - |
| Stage 2 | 734 | 685 | - | 659 | 629 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 286 | 385 | 767 | 377 | 385 | 772 | 1236 | - | - | 1170 | - | - |
| Mov Cap-2 Maneuver | 286 | 385 | - | 377 | 385 | - | - | - | - | - | - | - |
| Stage 1 | 660 | 606 | - | 733 | 684 | - | - | - | - | - | - | - |
| Stage 2 | 547 | 684 | - | 628 | 606 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 14.8 | 12.5 | 0.1 | 1.1 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1236 | - | - | 354 | 767 | 377 | - | 772 | 1170 | - | - |
| HCM Lane V/C Ratio | 0.002 | - | - | 0.024 | 0.001 | 0.165 | - | 0.254 | 0.036 | - | - |
| HCM Control Delay (s) | 7.9 | - | - | 15.4 | 9.7 | 16.4 | 0 | 11.2 | 8.2 | - | - |
| HCM Lane LOS | A | - | - | C | A | C | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 0 | 0.6 | - | 1 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 1 | 151 | 12 | 37 | 141 | 0 | 30 | 2 | 70 | 4 | 1 | 0 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 9 | 9 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 213 | 17 | 52 | 199 | 0 | 42 | 3 | 99 | 6 | 1 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 208 | 0 | 0 | 239 | 0 | 0 | 546 | 545 | 231 | 596 | 553 | 209 |
| Stage 1 | - | - | - | - | - | - | 233 | 233 | - | 312 | 312 | - |
| Stage 2 | - | - | - | - | - | - | 313 | 312 | - | 284 | 241 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1363 | - | - | 1328 | - | - | 448 | 446 | 808 | 415 | 441 | 831 |
| Stage 1 | - | - | - | - | - | - | 770 | 712 | - | 699 | 658 | - |
| Stage 2 | - | - | - | - | - | - | 698 | 658 | - | 723 | 706 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1362 | - | - | 1327 | - | - | 428 | 420 | 801 | 347 | 415 | 824 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 428 | 420 | - | 347 | 415 | - |
| Stage 1 | - | - | - | - | - | - | 763 | 706 | - | 693 | 624 | - |
| Stage 2 | - | - | - | - | - | - | 665 | 624 | - | 630 | 700 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 1.6 | 12.4 | 15.2 |
| HCM LOS | | | B | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 629 | 1362 | - | - | 1327 | - | - | 359 |
| HCM Lane V/C Ratio | 0.228 | 0.001 | - | - | 0.039 | - | - | 0.02 |
| HCM Control Delay (s) | 12.4 | 7.6 | 0 | - | 7.8 | 0 | - | 15.2 |
| HCM Lane LOS | B | A | A | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 0.9 | 0 | - | - | 0.1 | - | - | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 1 | 97 | 143 | 10 | 86 | 1 | 166 | 9 | 4 | 2 | 3 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 19 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 145 | 213 | 15 | 128 | 1 | 248 | 13 | 6 | 3 | 4 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 149 | 0 | 0 | 377 | 0 | 0 | 455 | 452 | 270 | 461 | 558 | 148 |
| Stage 1 | - | - | - | - | - | - | 273 | 273 | - | 178 | 178 | - |
| Stage 2 | - | - | - | - | - | - | 182 | 179 | - | 283 | 380 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1432 | - | - | 1181 | - | - | 515 | 503 | 769 | 511 | 438 | 899 |
| Stage 1 | - | - | - | - | - | - | 733 | 684 | - | 824 | 752 | - |
| Stage 2 | - | - | - | - | - | - | 820 | 751 | - | 724 | 614 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1432 | - | - | 1181 | - | - | 495 | 480 | 757 | 483 | 418 | 885 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 495 | 480 | - | 483 | 418 | - |
| Stage 1 | - | - | - | - | - | - | 721 | 672 | - | 810 | 730 | - |
| Stage 2 | - | - | - | - | - | - | 801 | 729 | - | 703 | 604 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0.8 | 20.3 | 12.1 |
| HCM LOS | | | C | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 498 | 1432 | - | - | 1181 | - | - | 516 |
| HCM Lane V/C Ratio | 0.536 | 0.001 | - | - | 0.013 | - | - | 0.02 |
| HCM Control Delay (s) | 20.3 | 7.5 | 0 | - | 8.1 | 0 | - | 12.1 |
| HCM Lane LOS | C | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 3.1 | 0 | - | - | 0 | - | - | 0.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 10 | 447 | 8 | 63 | 474 | 47 | 26 | 31 | 116 | 95 | 17 | 23 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.97 | 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 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1845 | 1845 | 1845 | 1900 | 1863 | 1900 | 1900 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 11 | 491 | 9 | 69 | 521 | 52 | 29 | 34 | 127 | 104 | 19 | 25 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 20 | 641 | 12 | 86 | 731 | 605 | 126 | 148 | 392 | 462 | 87 | 88 |
| Arrive On Green | 0.01 | 0.36 | 0.36 | 0.05 | 0.40 | 0.40 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 |
| Sat Flow, veh/h | 1740 | 1788 | 33 | 1757 | 1845 | 1526 | 129 | 407 | 1080 | 950 | 240 | 242 |
| Grp Volume(v), veh/h | 11 | 0 | 500 | 69 | 521 | 52 | 190 | 0 | 0 | 148 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 0 | 1821 | 1757 | 1845 | 1526 | 1616 | 0 | 0 | 1433 | 0 | 0 |
| Q Serve(g_s), s | 0.3 | 0.0 | 12.7 | 2.0 | 12.4 | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.3 | 0.0 | 12.7 | 2.0 | 12.4 | 1.1 | 4.3 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.02 | 1.00 | | 1.00 | 0.15 | | 0.67 | 0.70 | | 0.17 |
| Lane Grp Cap(c), veh/h | 20 | 0 | 653 | 86 | 731 | 605 | 666 | 0 | 0 | 637 | 0 | 0 |
| V/C Ratio(X) | 0.56 | 0.00 | 0.77 | 0.80 | 0.71 | 0.09 | 0.29 | 0.00 | 0.00 | 0.23 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 133 | 0 | 800 | 201 | 881 | 729 | 666 | 0 | 0 | 637 | 0 | 0 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 25.7 | 0.0 | 14.8 | 24.6 | 13.3 | 9.9 | 12.0 | 0.0 | 0.0 | 11.6 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 22.6 | 0.0 | 3.6 | 15.5 | 2.2 | 0.1 | 1.1 | 0.0 | 0.0 | 0.9 | 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 | 0.3 | 0.0 | 6.9 | 1.3 | 6.7 | 0.5 | 2.2 | 0.0 | 0.0 | 1.6 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 48.3 | 0.0 | 18.4 | 40.1 | 15.4 | 9.9 | 13.1 | 0.0 | 0.0 | 12.4 | 0.0 | 0.0 |
| LnGrp LOS | D | | B | D | B | A | B | | | B | | |
| Approach Vol, veh/h | | 511 | | | 642 | | | 190 | | | 148 | |
| Approach Delay, s/veh | | 19.1 | | | 17.6 | | | 13.1 | | | 12.4 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 23.0 | 6.6 | 22.8 | | 23.0 | 4.6 | 24.7 |
| Change Period (Y+Rc), s | | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | | 19.0 | 6.0 | 23.0 | | 19.0 | 4.0 | 25.0 |
| Max Q Clear Time (g_c+I1), s | | 6.3 | 4.0 | 14.7 | | 5.0 | 2.3 | 14.4 |
| Green Ext Time (p_c), s | | 1.7 | 0.0 | 4.1 | | 1.8 | 0.0 | 4.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 17.0 |
| HCM 2010 LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 8 | 542 | 145 | 36 | 405 | 99 | 212 | 101 | 87 | 119 | 63 | 31 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 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 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 9 | 596 | 159 | 40 | 445 | 109 | 233 | 111 | 96 | 131 | 69 | 34 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 16 | 556 | 473 | 56 | 598 | 507 | 251 | 291 | 251 | 166 | 503 | 419 |
| Arrive On Green | 0.01 | 0.30 | 0.30 | 0.03 | 0.32 | 0.32 | 0.14 | 0.32 | 0.32 | 0.09 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1563 | 1757 | 911 | 788 | 1774 | 1863 | 1554 |
| Grp Volume(v), veh/h | 9 | 596 | 159 | 40 | 445 | 109 | 233 | 0 | 207 | 131 | 69 | 34 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1563 | 1757 | 0 | 1700 | 1774 | 1863 | 1554 |
| Q Serve(g_s), s | 0.3 | 19.0 | 5.0 | 1.4 | 13.5 | 3.2 | 8.3 | 0.0 | 6.0 | 4.6 | 1.8 | 1.0 |
| Cycle Q Clear(g_c), s | 0.3 | 19.0 | 5.0 | 1.4 | 13.5 | 3.2 | 8.3 | 0.0 | 6.0 | 4.6 | 1.8 | 1.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.46 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 16 | 556 | 473 | 56 | 598 | 507 | 251 | 0 | 542 | 166 | 503 | 419 |
| V/C Ratio(X) | 0.55 | 1.07 | 0.34 | 0.71 | 0.74 | 0.22 | 0.93 | 0.00 | 0.38 | 0.79 | 0.14 | 0.08 |
| Avail Cap(c_a), veh/h | 112 | 556 | 473 | 112 | 598 | 507 | 251 | 0 | 542 | 197 | 503 | 419 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.1 | 22.0 | 17.1 | 30.2 | 19.0 | 15.5 | 26.7 | 0.0 | 16.6 | 27.9 | 17.4 | 17.2 |
| Incr Delay (d2), s/veh | 26.3 | 58.8 | 0.4 | 15.3 | 5.0 | 0.2 | 38.0 | 0.0 | 2.0 | 16.3 | 0.6 | 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 | 0.3 | 18.7 | 2.2 | 0.9 | 7.6 | 1.4 | 6.7 | 0.0 | 3.1 | 3.0 | 1.0 | 0.5 |
| LnGrp Delay(d),s/veh | 57.3 | 80.8 | 17.5 | 45.6 | 24.0 | 15.7 | 64.7 | 0.0 | 18.7 | 44.3 | 18.0 | 17.6 |
| LnGrp LOS | E | F | B | D | C | B | E | | B | D | B | B |
| Approach Vol, veh/h | | 764 | | | 594 | | | 440 | | | 234 | |
| Approach Delay, s/veh | | 67.3 | | | 23.9 | | | 43.0 | | | 32.6 | |
| Approach LOS | | E | | | C | | | D | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 9.9 | 24.1 | 6.0 | 23.0 | 13.0 | 21.0 | 4.6 | 24.4 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | 19.0 | 4.0 | 19.0 | 9.0 | 17.0 | 4.0 | 19.0 |
| Max Q Clear Time (g_c+I1), s | 6.6 | 8.0 | 3.4 | 21.0 | 10.3 | 3.8 | 2.3 | 15.5 |
| Green Ext Time (p_c), s | 0.0 | 1.3 | 0.0 | 0.0 | 0.0 | 1.4 | 0.0 | 2.3 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 45.4 |
| HCM 2010 LOS | D |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 0 | 0 | 60 | 4 | 91 | 2 | 378 | 45 | 215 | 338 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 325 | - | 70 | 520 | - | 520 | 515 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 13 | 13 | 13 | 10 | 10 | 10 |
| Mvmt Flow | 0 | 0 | 0 | 61 | 4 | 92 | 2 | 382 | 45 | 217 | 341 | 0 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1164 | 1162 | 341 | 1162 | 1162 | 382 | 341 | 0 | 0 | 382 | 0 | 0 |
| Stage 1 | 776 | 776 | - | 386 | 386 | - | - | - | - | - | - | - |
| Stage 2 | 388 | 386 | - | 776 | 776 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.23 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.317 | - | - | 2.29 | - | - |
| Pot Cap-1 Maneuver | 171 | 195 | 701 | 172 | 195 | 665 | 1159 | - | - | 1134 | - | - |
| Stage 1 | 390 | 407 | - | 637 | 610 | - | - | - | - | - | - | - |
| Stage 2 | 636 | 610 | - | 390 | 407 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 123 | 157 | 701 | 147 | 157 | 665 | 1159 | - | - | 1134 | - | - |
| Mov Cap-2 Maneuver | 123 | 157 | - | 147 | 157 | - | - | - | - | - | - | - |
| Stage 1 | 389 | 329 | - | 636 | 609 | - | - | - | - | - | - | - |
| Stage 2 | 544 | 609 | - | 315 | 329 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 25.1 | 0 | 3.5 |
| HCM LOS | A | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1159 | - | - | - | - | 147 | 157 | 665 | 1134 | - | - |
| HCM Lane V/C Ratio | 0.002 | - | - | - | - | 0.412 | 0.026 | 0.138 | 0.192 | - | - |
| HCM Control Delay (s) | 8.1 | - | - | 0 | 0 | 45.7 | 28.5 | 11.3 | 8.9 | - | - |
| HCM Lane LOS | A | - | - | A | A | E | D | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - | 1.8 | 0.1 | 0.5 | 0.7 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 2 | 143 | 51 | 22 | 112 | 0 | 18 | 1 | 16 | 0 | 2 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2 | 166 | 59 | 26 | 130 | 0 | 21 | 1 | 19 | 0 | 2 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 135 | 0 | 0 | 231 | 0 | 0 | 395 | 392 | 201 | 401 | 421 | 135 |
| Stage 1 | - | - | - | - | - | - | 206 | 206 | - | 186 | 186 | - |
| Stage 2 | - | - | - | - | - | - | 189 | 186 | - | 215 | 235 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1449 | - | - | 1337 | - | - | 565 | 544 | 840 | 560 | 524 | 914 |
| Stage 1 | - | - | - | - | - | - | 796 | 731 | - | 816 | 746 | - |
| Stage 2 | - | - | - | - | - | - | 813 | 746 | - | 787 | 710 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1449 | - | - | 1337 | - | - | 549 | 527 | 837 | 535 | 508 | 910 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 549 | 527 | - | 535 | 508 | - |
| Stage 1 | - | - | - | - | - | - | 791 | 726 | - | 811 | 727 | - |
| Stage 2 | - | - | - | - | - | - | 790 | 727 | - | 767 | 706 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 1.3 | 10.9 | 10.3 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 651 | 1449 | - | - | 1337 | - | - | 691 |
| HCM Lane V/C Ratio | 0.063 | 0.002 | - | - | 0.019 | - | - | 0.008 |
| HCM Control Delay (s) | 10.9 | 7.5 | 0 | - | 7.7 | 0 | - | 10.3 |
| HCM Lane LOS | B | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.2 | 0 | - | - | 0.1 | - | - | 0 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 3 | 37 | 139 | 6 | 37 | 5 | 86 | 2 | 9 | 1 | 5 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 46 | 174 | 8 | 46 | 6 | 108 | 2 | 11 | 1 | 6 | 1 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 58 | 0 | 0 | 225 | 0 | 0 | 219 | 219 | 138 | 222 | 302 | 54 |
| Stage 1 | - | - | - | - | - | - | 146 | 146 | - | 69 | 69 | - |
| Stage 2 | - | - | - | - | - | - | 73 | 73 | - | 153 | 233 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1546 | - | - | 1344 | - | - | 737 | 679 | 910 | 734 | 611 | 1013 |
| Stage 1 | - | - | - | - | - | - | 857 | 776 | - | 941 | 837 | - |
| Stage 2 | - | - | - | - | - | - | 937 | 834 | - | 849 | 712 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1546 | - | - | 1344 | - | - | 722 | 667 | 906 | 715 | 600 | 1009 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 722 | 667 | - | 715 | 600 | - |
| Stage 1 | - | - | - | - | - | - | 851 | 770 | - | 934 | 829 | - |
| Stage 2 | - | - | - | - | - | - | 923 | 826 | - | 833 | 707 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 1 | 10.9 | 10.6 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 735 | 1546 | - | - | 1344 | - | - | 653 |
| HCM Lane V/C Ratio | 0.165 | 0.002 | - | - | 0.006 | - | - | 0.013 |
| HCM Control Delay (s) | 10.9 | 7.3 | 0 | - | 7.7 | 0 | - | 10.6 |
| HCM Lane LOS | B | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.6 | 0 | - | - | 0 | - | - | 0 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 20 | 608 | 25 | 97 | 477 | 76 | 13 | 12 | 91 | 96 | 27 | 15 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1900 | 1863 | 1900 | 1900 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 21 | 633 | 26 | 101 | 497 | 79 | 14 | 12 | 95 | 100 | 28 | 16 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 35 | 689 | 28 | 129 | 821 | 684 | 97 | 87 | 417 | 422 | 113 | 54 |
| Arrive On Green | 0.02 | 0.39 | 0.39 | 0.07 | 0.44 | 0.44 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1774 | 1777 | 73 | 1774 | 1863 | 1553 | 81 | 264 | 1260 | 955 | 343 | 162 |
| Grp Volume(v), veh/h | 21 | 0 | 659 | 101 | 497 | 79 | 121 | 0 | 0 | 144 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1850 | 1774 | 1863 | 1553 | 1605 | 0 | 0 | 1460 | 0 | 0 |
| Q Serve(g_s), s | 0.7 | 0.0 | 19.5 | 3.2 | 11.7 | 1.7 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.7 | 0.0 | 19.5 | 3.2 | 11.7 | 1.7 | 3.1 | 0.0 | 0.0 | 3.4 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.04 | 1.00 | | 1.00 | 0.12 | | 0.79 | 0.69 | | 0.11 |
| Lane Grp Cap(c), veh/h | 35 | 0 | 717 | 129 | 821 | 684 | 601 | 0 | 0 | 589 | 0 | 0 |
| V/C Ratio(X) | 0.60 | 0.00 | 0.92 | 0.78 | 0.61 | 0.12 | 0.20 | 0.00 | 0.00 | 0.24 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 123 | 0 | 740 | 185 | 821 | 684 | 601 | 0 | 0 | 589 | 0 | 0 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 27.9 | 0.0 | 16.7 | 26.2 | 12.3 | 9.5 | 13.9 | 0.0 | 0.0 | 14.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 15.1 | 0.0 | 16.3 | 12.6 | 1.3 | 0.1 | 0.8 | 0.0 | 0.0 | 1.0 | 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 | 0.0 | 13.1 | 2.0 | 6.2 | 0.7 | 1.5 | 0.0 | 0.0 | 1.8 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 43.1 | 0.0 | 33.0 | 38.8 | 13.5 | 9.5 | 14.7 | 0.0 | 0.0 | 15.0 | 0.0 | 0.0 |
| LnGrp LOS | D | | C | D | B | A | B | | | B | | |
| Approach Vol, veh/h | | 680 | | | 677 | | | 121 | | | 144 | |
| Approach Delay, s/veh | | 33.3 | | | 16.8 | | | 14.7 | | | 15.0 | |
| Approach LOS | | C | | | B | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 23.0 | 8.2 | 26.3 | | 23.0 | 5.1 | 29.3 |
| Change Period (Y+Rc), s | | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | | 19.0 | 6.0 | 23.0 | | 19.0 | 4.0 | 25.0 |
| Max Q Clear Time (g_c+I1), s | | 5.1 | 5.2 | 21.5 | | 5.4 | 2.7 | 13.7 |
| Green Ext Time (p_c), s | | 1.3 | 0.0 | 0.8 | | 1.3 | 0.0 | 5.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 23.4 |
| HCM 2010 LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 21 | 605 | 178 | 91 | 599 | 60 | 202 | 65 | 52 | 99 | 75 | 24 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 22 | 624 | 184 | 94 | 618 | 62 | 208 | 67 | 54 | 102 | 77 | 25 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 35 | 539 | 458 | 108 | 616 | 523 | 243 | 308 | 248 | 131 | 487 | 413 |
| Arrive On Green | 0.02 | 0.29 | 0.29 | 0.06 | 0.33 | 0.33 | 0.14 | 0.33 | 0.33 | 0.07 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 945 | 761 | 1774 | 1863 | 1580 |
| Grp Volume(v), veh/h | 22 | 624 | 184 | 94 | 618 | 62 | 208 | 0 | 121 | 102 | 77 | 25 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 0 | 1706 | 1774 | 1863 | 1580 |
| Q Serve(g_s), s | 0.8 | 19.0 | 6.1 | 3.4 | 21.7 | 1.8 | 7.5 | 0.0 | 3.3 | 3.7 | 2.1 | 0.8 |
| Cycle Q Clear(g_c), s | 0.8 | 19.0 | 6.1 | 3.4 | 21.7 | 1.8 | 7.5 | 0.0 | 3.3 | 3.7 | 2.1 | 0.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.45 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 35 | 539 | 458 | 108 | 616 | 523 | 243 | 0 | 557 | 131 | 487 | 413 |
| V/C Ratio(X) | 0.62 | 1.16 | 0.40 | 0.87 | 1.00 | 0.12 | 0.86 | 0.00 | 0.22 | 0.78 | 0.16 | 0.06 |
| Avail Cap(c_a), veh/h | 108 | 539 | 458 | 108 | 616 | 523 | 243 | 0 | 557 | 191 | 487 | 413 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.6 | 23.0 | 18.4 | 30.2 | 21.7 | 15.0 | 27.4 | 0.0 | 15.9 | 29.6 | 18.5 | 18.0 |
| Incr Delay (d2), s/veh | 16.4 | 90.1 | 0.6 | 48.4 | 37.3 | 0.1 | 24.5 | 0.0 | 0.9 | 11.7 | 0.7 | 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 | 0.6 | 23.1 | 2.7 | 3.1 | 17.3 | 0.8 | 5.3 | 0.0 | 1.7 | 2.2 | 1.2 | 0.4 |
| LnGrp Delay(d),s/veh | 48.0 | 113.1 | 19.0 | 78.6 | 58.9 | 15.1 | 51.9 | 0.0 | 16.8 | 41.3 | 19.2 | 18.3 |
| LnGrp LOS | D | F | B | E | F | B | D | | B | D | B | B |
| Approach Vol, veh/h | | 830 | | | 774 | | | 329 | | | 204 | |
| Approach Delay, s/veh | | 90.5 | | | 57.8 | | | 39.0 | | | 30.1 | |
| Approach LOS | | F | | | E | | | D | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 8.8 | 25.2 | 8.0 | 23.0 | 13.0 | 21.0 | 5.3 | 25.7 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | 19.0 | 4.0 | 19.0 | 9.0 | 17.0 | 4.0 | 19.0 |
| Max Q Clear Time (g_c+I1), s | 5.7 | 5.3 | 5.4 | 21.0 | 9.5 | 4.1 | 2.8 | 23.7 |
| Green Ext Time (p_c), s | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 65.0 |
| HCM 2010 LOS | E |

Appendix G

Intersection
Level of Service
Calculations

Background Plus Project
Conditions

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 2 | 6 | 1 | 59 | 0 | 233 | 2 | 254 | 46 | 56 | 258 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 325 | - | 70 | 520 | - | 520 | 515 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 12 | 12 | 12 | 26 | 26 | 26 |
| Mvmt Flow | 2 | 6 | 1 | 62 | 0 | 245 | 2 | 267 | 48 | 59 | 272 | 0 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 661 | 661 | 272 | 665 | 661 | 267 | 272 | 0 | 0 | 267 | 0 | 0 |
| Stage 1 | 389 | 389 | - | 272 | 272 | - | - | - | - | - | - | - |
| Stage 2 | 272 | 272 | - | 393 | 389 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.22 | - | - | 4.36 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.308 | - | - | 2.434 | - | - |
| Pot Cap-1 Maneuver | 376 | 383 | 767 | 374 | 383 | 772 | 1236 | - | - | 1170 | - | - |
| Stage 1 | 635 | 608 | - | 734 | 685 | - | - | - | - | - | - | - |
| Stage 2 | 734 | 685 | - | 632 | 608 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 246 | 363 | 767 | 354 | 363 | 772 | 1236 | - | - | 1170 | - | - |
| Mov Cap-2 Maneuver | 246 | 363 | - | 354 | 363 | - | - | - | - | - | - | - |
| Stage 1 | 634 | 577 | - | 733 | 684 | - | - | - | - | - | - | - |
| Stage 2 | 500 | 684 | - | 593 | 577 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 15.7 | 12.9 | 0.1 | 1.5 |
| HCM LOS | C | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1236 | - | - | 324 | 767 | 354 | - | 772 | 1170 | - | - |
| HCM Lane V/C Ratio | 0.002 | - | - | 0.026 | 0.001 | 0.175 | - | 0.318 | 0.05 | - | - |
| HCM Control Delay (s) | 7.9 | - | - | 16.4 | 9.7 | 17.3 | 0 | 11.8 | 8.2 | - | - |
| HCM Lane LOS | A | - | - | C | A | C | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 0 | 0.6 | - | 1.4 | 0.2 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 4 | 180 | 46 | 37 | 151 | 9 | 41 | 19 | 70 | 32 | 52 | 9 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 9 | 9 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 6 | 254 | 65 | 52 | 213 | 13 | 58 | 27 | 99 | 45 | 73 | 13 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 234 | 0 | 0 | 327 | 0 | 0 | 681 | 645 | 296 | 701 | 671 | 229 |
| Stage 1 | - | - | - | - | - | - | 306 | 306 | - | 332 | 332 | - |
| Stage 2 | - | - | - | - | - | - | 375 | 339 | - | 369 | 339 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1333 | - | - | 1233 | - | - | 364 | 391 | 743 | 353 | 378 | 810 |
| Stage 1 | - | - | - | - | - | - | 704 | 662 | - | 681 | 644 | - |
| Stage 2 | - | - | - | - | - | - | 646 | 640 | - | 651 | 640 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1332 | - | - | 1232 | - | - | 287 | 364 | 737 | 275 | 352 | 803 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 287 | 364 | - | 275 | 352 | - |
| Stage 1 | - | - | - | - | - | - | 695 | 653 | - | 672 | 608 | - |
| Stage 2 | - | - | - | - | - | - | 532 | 605 | - | 537 | 631 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 1.5 | 18.5 | 22.2 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 448 | 1332 | - | - | 1232 | - | - | 338 |
| HCM Lane V/C Ratio | 0.409 | 0.004 | - | - | 0.042 | - | - | 0.388 |
| HCM Control Delay (s) | 18.5 | 7.7 | 0 | - | 8.1 | 0 | - | 22.2 |
| HCM Lane LOS | C | A | A | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 2 | 0 | - | - | 0.1 | - | - | 1.8 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 1 | 97 | 200 | 10 | 86 | 1 | 185 | 9 | 4 | 2 | 3 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 19 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 145 | 299 | 15 | 128 | 1 | 276 | 13 | 6 | 3 | 4 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 149 | 0 | 0 | 462 | 0 | 0 | 498 | 495 | 313 | 504 | 643 | 148 |
| Stage 1 | - | - | - | - | - | - | 316 | 316 | - | 178 | 178 | - |
| Stage 2 | - | - | - | - | - | - | 182 | 179 | - | 326 | 465 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1432 | - | - | 1099 | - | - | 483 | 476 | 727 | 478 | 392 | 899 |
| Stage 1 | - | - | - | - | - | - | 695 | 655 | - | 824 | 752 | - |
| Stage 2 | - | - | - | - | - | - | 820 | 751 | - | 687 | 563 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1432 | - | - | 1099 | - | - | 464 | 454 | 715 | 450 | 374 | 885 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 464 | 454 | - | 450 | 374 | - |
| Stage 1 | - | - | - | - | - | - | 683 | 644 | - | 810 | 729 | - |
| Stage 2 | - | - | - | - | - | - | 800 | 728 | - | 666 | 554 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0.9 | 25.1 | 12.7 |
| HCM LOS | | | D | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 467 | 1432 | - | - | 1099 | - | - | 475 |
| HCM Lane V/C Ratio | 0.633 | 0.001 | - | - | 0.014 | - | - | 0.022 |
| HCM Control Delay (s) | 25.1 | 7.5 | 0 | - | 8.3 | 0 | - | 12.7 |
| HCM Lane LOS | D | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 4.3 | 0 | - | - | 0 | - | - | 0.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 16 | 447 | 8 | 63 | 474 | 66 | 26 | 31 | 116 | 152 | 17 | 42 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.97 | 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 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1845 | 1845 | 1845 | 1900 | 1863 | 1900 | 1900 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 18 | 491 | 9 | 69 | 521 | 73 | 29 | 34 | 127 | 167 | 19 | 46 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 31 | 642 | 12 | 86 | 721 | 596 | 126 | 147 | 391 | 470 | 61 | 102 |
| Arrive On Green | 0.02 | 0.36 | 0.36 | 0.05 | 0.39 | 0.39 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 |
| Sat Flow, veh/h | 1740 | 1788 | 33 | 1757 | 1845 | 1526 | 129 | 406 | 1078 | 970 | 169 | 282 |
| Grp Volume(v), veh/h | 18 | 0 | 500 | 69 | 521 | 73 | 190 | 0 | 0 | 232 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 0 | 1821 | 1757 | 1845 | 1526 | 1613 | 0 | 0 | 1422 | 0 | 0 |
| Q Serve(g_s), s | 0.5 | 0.0 | 12.7 | 2.0 | 12.6 | 1.6 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.5 | 0.0 | 12.7 | 2.0 | 12.6 | 1.6 | 4.3 | 0.0 | 0.0 | 5.2 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.02 | 1.00 | | 1.00 | 0.15 | | 0.67 | 0.72 | | 0.20 |
| Lane Grp Cap(c), veh/h | 31 | 0 | 654 | 86 | 721 | 596 | 664 | 0 | 0 | 634 | 0 | 0 |
| V/C Ratio(X) | 0.59 | 0.00 | 0.76 | 0.80 | 0.72 | 0.12 | 0.29 | 0.00 | 0.00 | 0.37 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 133 | 0 | 800 | 201 | 880 | 728 | 664 | 0 | 0 | 634 | 0 | 0 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 25.5 | 0.0 | 14.8 | 24.7 | 13.6 | 10.2 | 12.0 | 0.0 | 0.0 | 12.2 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 16.6 | 0.0 | 3.6 | 15.4 | 2.3 | 0.1 | 1.1 | 0.0 | 0.0 | 1.6 | 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 | 0.0 | 6.9 | 1.3 | 6.8 | 0.7 | 2.2 | 0.0 | 0.0 | 2.7 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 42.2 | 0.0 | 18.4 | 40.1 | 15.9 | 10.3 | 13.1 | 0.0 | 0.0 | 13.9 | 0.0 | 0.0 |
| LnGrp LOS | D | | B | D | B | B | B | | | B | | |
| Approach Vol, veh/h | | 518 | | | 663 | | | 190 | | | 232 | |
| Approach Delay, s/veh | | 19.2 | | | 17.8 | | | 13.1 | | | 13.9 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 23.0 | 6.6 | 22.8 | | 23.0 | 4.9 | 24.5 |
| Change Period (Y+Rc), s | | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | | 19.0 | 6.0 | 23.0 | | 19.0 | 4.0 | 25.0 |
| Max Q Clear Time (g_c+I1), s | | 6.3 | 4.0 | 14.7 | | 7.2 | 2.5 | 14.6 |
| Green Ext Time (p_c), s | | 2.2 | 0.0 | 4.1 | | 2.1 | 0.0 | 4.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 17.1 |
| HCM 2010 LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 8 | 571 | 173 | 36 | 415 | 108 | 221 | 111 | 87 | 147 | 92 | 31 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 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 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 9 | 627 | 190 | 40 | 456 | 119 | 243 | 122 | 96 | 162 | 101 | 34 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 16 | 556 | 473 | 56 | 598 | 507 | 251 | 288 | 227 | 197 | 503 | 419 |
| Arrive On Green | 0.01 | 0.30 | 0.30 | 0.03 | 0.32 | 0.32 | 0.14 | 0.30 | 0.30 | 0.11 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1563 | 1757 | 955 | 751 | 1774 | 1863 | 1554 |
| Grp Volume(v), veh/h | 9 | 627 | 190 | 40 | 456 | 119 | 243 | 0 | 218 | 162 | 101 | 34 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1563 | 1757 | 0 | 1706 | 1774 | 1863 | 1554 |
| Q Serve(g_s), s | 0.3 | 19.0 | 6.1 | 1.4 | 14.0 | 3.5 | 8.7 | 0.0 | 6.4 | 5.6 | 2.6 | 1.0 |
| Cycle Q Clear(g_c), s | 0.3 | 19.0 | 6.1 | 1.4 | 14.0 | 3.5 | 8.7 | 0.0 | 6.4 | 5.6 | 2.6 | 1.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.44 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 16 | 556 | 473 | 56 | 598 | 507 | 251 | 0 | 514 | 197 | 503 | 419 |
| V/C Ratio(X) | 0.55 | 1.13 | 0.40 | 0.71 | 0.76 | 0.23 | 0.97 | 0.00 | 0.42 | 0.82 | 0.20 | 0.08 |
| Avail Cap(c_a), veh/h | 112 | 556 | 473 | 112 | 598 | 507 | 251 | 0 | 514 | 197 | 503 | 419 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.1 | 22.0 | 17.5 | 30.2 | 19.1 | 15.6 | 26.9 | 0.0 | 17.6 | 27.4 | 17.8 | 17.2 |
| Incr Delay (d2), s/veh | 26.3 | 78.3 | 0.6 | 15.3 | 5.8 | 0.2 | 47.9 | 0.0 | 2.5 | 23.5 | 0.9 | 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 | 0.3 | 21.7 | 2.7 | 0.9 | 8.0 | 1.5 | 7.5 | 0.0 | 3.4 | 4.0 | 1.5 | 0.5 |
| LnGrp Delay(d),s/veh | 57.3 | 100.3 | 18.0 | 45.6 | 24.9 | 15.8 | 74.7 | 0.0 | 20.2 | 50.9 | 18.7 | 17.6 |
| LnGrp LOS | E | F | B | D | C | B | E | | C | D | B | B |
| Approach Vol, veh/h | | 826 | | | 615 | | | 461 | | | 297 | |
| Approach Delay, s/veh | | 80.9 | | | 24.5 | | | 48.9 | | | 36.1 | |
| Approach LOS | | F | | | C | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 11.0 | 23.0 | 6.0 | 23.0 | 13.0 | 21.0 | 4.6 | 24.4 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | 19.0 | 4.0 | 19.0 | 9.0 | 17.0 | 4.0 | 19.0 |
| Max Q Clear Time (g_c+I1), s | 7.6 | 8.4 | 3.4 | 21.0 | 10.7 | 4.6 | 2.3 | 16.0 |
| Green Ext Time (p_c), s | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 1.6 | 0.0 | 2.1 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 52.4 |
| HCM 2010 LOS | D |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.7 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 13 | 167 | 180 | 21 | 63 | 38 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 14 | 182 | 196 | 23 | 68 | 41 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 218 | 0 | - | 0 | 417 | 207 |
| Stage 1 | - | - | - | - | 207 | - |
| Stage 2 | - | - | - | - | 210 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1352 | - | - | - | 592 | 833 |
| Stage 1 | - | - | - | - | 828 | - |
| Stage 2 | - | - | - | - | 825 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1352 | - | - | - | 585 | 833 |
| Mov Cap-2 Maneuver | - | - | - | - | 585 | - |
| Stage 1 | - | - | - | - | 828 | - |
| Stage 2 | - | - | - | - | 815 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.6 | 0 | 11.6 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1352 | - | - | - | 659 |
| HCM Lane V/C Ratio | 0.01 | - | - | - | 0.167 |
| HCM Control Delay (s) | 7.7 | 0 | - | - | 11.6 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.6 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 88 | 29 | 0 | 1 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 96 | 32 | 0 | 1 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 64 | 1 | 1 | 0 | - | 0 |
| Stage 1 | 1 | - | - | - | - | - |
| Stage 2 | 63 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 942 | 1084 | 1622 | - | - | - |
| Stage 1 | 1022 | - | - | - | - | - |
| Stage 2 | 960 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 923 | 1084 | 1622 | - | - | - |
| Mov Cap-2 Maneuver | 923 | - | - | - | - | - |
| Stage 1 | 1022 | - | - | - | - | - |
| Stage 2 | 941 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.6 | 7.3 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1622 | - | 1084 | - | - |
| HCM Lane V/C Ratio | 0.019 | - | 0.088 | - | - |
| HCM Control Delay (s) | 7.3 | 0 | 8.6 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 0.3 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 6.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 0 | 0 | 60 | 4 | 122 | 2 | 378 | 45 | 268 | 338 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 325 | - | 70 | 520 | - | 520 | 515 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 13 | 13 | 13 | 10 | 10 | 10 |
| Mvmt Flow | 0 | 0 | 0 | 61 | 4 | 123 | 2 | 382 | 45 | 271 | 341 | 0 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1271 | 1269 | 341 | 1269 | 1269 | 382 | 341 | 0 | 0 | 382 | 0 | 0 |
| Stage 1 | 883 | 883 | - | 386 | 386 | - | - | - | - | - | - | - |
| Stage 2 | 388 | 386 | - | 883 | 883 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.23 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.317 | - | - | 2.29 | - | - |
| Pot Cap-1 Maneuver | 145 | 168 | 701 | 145 | 168 | 665 | 1159 | - | - | 1134 | - | - |
| Stage 1 | 340 | 364 | - | 637 | 610 | - | - | - | - | - | - | - |
| Stage 2 | 636 | 610 | - | 340 | 364 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 94 | 128 | 701 | 118 | 128 | 665 | 1159 | - | - | 1134 | - | - |
| Mov Cap-2 Maneuver | 94 | 128 | - | 118 | 128 | - | - | - | - | - | - | - |
| Stage 1 | 339 | 277 | - | 636 | 609 | - | - | - | - | - | - | - |
| Stage 2 | 514 | 609 | - | 259 | 277 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 29 | 0 | 4.1 |
| HCM LOS | A | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1159 | - | - | - | - | 118 | 128 | 665 | 1134 | - | - |
| HCM Lane V/C Ratio | 0.002 | - | - | - | - | 0.514 | 0.032 | 0.185 | 0.239 | - | - |
| HCM Control Delay (s) | 8.1 | - | - | 0 | 0 | 64 | 34 | 11.6 | 9.2 | - | - |
| HCM Lane LOS | A | - | - | A | A | F | D | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - | 2.4 | 0.1 | 0.7 | 0.9 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 13 | 162 | 73 | 22 | 144 | 32 | 56 | 58 | 16 | 18 | 36 | 9 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 15 | 188 | 85 | 26 | 167 | 37 | 65 | 67 | 19 | 21 | 42 | 10 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 210 | 0 | 0 | 278 | 0 | 0 | 534 | 527 | 236 | 551 | 550 | 191 |
| Stage 1 | - | - | - | - | - | - | 266 | 266 | - | 242 | 242 | - |
| Stage 2 | - | - | - | - | - | - | 268 | 261 | - | 309 | 308 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1361 | - | - | 1285 | - | - | 457 | 456 | 803 | 445 | 443 | 851 |
| Stage 1 | - | - | - | - | - | - | 739 | 689 | - | 762 | 705 | - |
| Stage 2 | - | - | - | - | - | - | 738 | 692 | - | 701 | 660 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1361 | - | - | 1285 | - | - | 404 | 436 | 800 | 371 | 424 | 847 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 404 | 436 | - | 371 | 424 | - |
| Stage 1 | - | - | - | - | - | - | 726 | 677 | - | 749 | 686 | - |
| Stage 2 | - | - | - | - | - | - | 669 | 673 | - | 608 | 649 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.4 | 0.9 | 17.2 | 14.9 |
| HCM LOS | | | C | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 446 | 1361 | - | - | 1285 | - | - | 437 |
| HCM Lane V/C Ratio | 0.339 | 0.011 | - | - | 0.02 | - | - | 0.168 |
| HCM Control Delay (s) | 17.2 | 7.7 | 0 | - | 7.9 | 0 | - | 14.9 |
| HCM Lane LOS | C | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 1.5 | 0 | - | - | 0.1 | - | - | 0.6 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 3 | 37 | 176 | 6 | 37 | 5 | 150 | 2 | 9 | 1 | 5 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 46 | 220 | 8 | 46 | 6 | 188 | 2 | 11 | 1 | 6 | 1 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 58 | 0 | 0 | 271 | 0 | 0 | 242 | 242 | 161 | 245 | 348 | 54 |
| Stage 1 | - | - | - | - | - | - | 169 | 169 | - | 69 | 69 | - |
| Stage 2 | - | - | - | - | - | - | 73 | 73 | - | 176 | 279 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1546 | - | - | 1292 | - | - | 712 | 660 | 884 | 709 | 576 | 1013 |
| Stage 1 | - | - | - | - | - | - | 833 | 759 | - | 941 | 837 | - |
| Stage 2 | - | - | - | - | - | - | 937 | 834 | - | 826 | 680 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1546 | - | - | 1292 | - | - | 697 | 649 | 880 | 690 | 566 | 1009 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 697 | 649 | - | 690 | 566 | - |
| Stage 1 | - | - | - | - | - | - | 827 | 754 | - | 934 | 829 | - |
| Stage 2 | - | - | - | - | - | - | 923 | 826 | - | 810 | 675 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 1 | 12.1 | 10.9 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 705 | 1546 | - | - | 1292 | - | - | 621 |
| HCM Lane V/C Ratio | 0.285 | 0.002 | - | - | 0.006 | - | - | 0.014 |
| HCM Control Delay (s) | 12.1 | 7.3 | 0 | - | 7.8 | 0 | - | 10.9 |
| HCM Lane LOS | B | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 1.2 | 0 | - | - | 0 | - | - | 0 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 41 | 608 | 25 | 97 | 477 | 140 | 13 | 12 | 91 | 133 | 27 | 28 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1900 | 1863 | 1900 | 1900 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 43 | 633 | 26 | 101 | 497 | 146 | 14 | 12 | 95 | 139 | 28 | 29 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 61 | 694 | 29 | 129 | 799 | 666 | 96 | 87 | 414 | 426 | 86 | 70 |
| Arrive On Green | 0.03 | 0.39 | 0.39 | 0.07 | 0.43 | 0.43 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1774 | 1777 | 73 | 1774 | 1863 | 1552 | 81 | 264 | 1259 | 971 | 262 | 214 |
| Grp Volume(v), veh/h | 43 | 0 | 659 | 101 | 497 | 146 | 121 | 0 | 0 | 196 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1850 | 1774 | 1863 | 1552 | 1604 | 0 | 0 | 1448 | 0 | 0 |
| Q Serve(g_s), s | 1.4 | 0.0 | 19.5 | 3.2 | 12.0 | 3.4 | 0.0 | 0.0 | 0.0 | 2.2 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 1.4 | 0.0 | 19.5 | 3.2 | 12.0 | 3.4 | 3.1 | 0.0 | 0.0 | 5.3 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.04 | 1.00 | | 1.00 | 0.12 | | 0.79 | 0.71 | | 0.15 |
| Lane Grp Cap(c), veh/h | 61 | 0 | 723 | 129 | 799 | 666 | 597 | 0 | 0 | 583 | 0 | 0 |
| V/C Ratio(X) | 0.70 | 0.00 | 0.91 | 0.78 | 0.62 | 0.22 | 0.20 | 0.00 | 0.00 | 0.34 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 123 | 0 | 736 | 184 | 806 | 671 | 597 | 0 | 0 | 583 | 0 | 0 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 27.6 | 0.0 | 16.7 | 26.3 | 12.8 | 10.4 | 14.1 | 0.0 | 0.0 | 14.7 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 13.6 | 0.0 | 15.5 | 12.8 | 1.5 | 0.2 | 0.8 | 0.0 | 0.0 | 1.6 | 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 | 0.9 | 0.0 | 13.0 | 2.0 | 6.4 | 1.5 | 1.5 | 0.0 | 0.0 | 2.6 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 41.2 | 0.0 | 32.2 | 39.2 | 14.3 | 10.6 | 14.8 | 0.0 | 0.0 | 16.2 | 0.0 | 0.0 |
| LnGrp LOS | D | | C | D | B | B | B | | | B | | |
| Approach Vol, veh/h | | 702 | | | 744 | | | 121 | | | 196 | |
| Approach Delay, s/veh | | 32.7 | | | 17.0 | | | 14.8 | | | 16.2 | |
| Approach LOS | | C | | | B | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 23.0 | 8.2 | 26.6 | | 23.0 | 6.0 | 28.8 |
| Change Period (Y+Rc), s | | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | | 19.0 | 6.0 | 23.0 | | 19.0 | 4.0 | 25.0 |
| Max Q Clear Time (g_c+I1), s | | 5.1 | 5.2 | 21.5 | | 7.3 | 3.4 | 14.0 |
| Green Ext Time (p_c), s | | 1.6 | 0.0 | 1.1 | | 1.5 | 0.0 | 5.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 23.0 |
| HCM 2010 LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 21 | 624 | 196 | 91 | 631 | 92 | 234 | 97 | 52 | 117 | 94 | 24 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 22 | 643 | 202 | 94 | 651 | 95 | 241 | 100 | 54 | 121 | 97 | 25 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 35 | 539 | 458 | 108 | 616 | 523 | 243 | 353 | 190 | 154 | 487 | 413 |
| Arrive On Green | 0.02 | 0.29 | 0.29 | 0.06 | 0.33 | 0.33 | 0.14 | 0.31 | 0.31 | 0.09 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 1126 | 608 | 1774 | 1863 | 1580 |
| Grp Volume(v), veh/h | 22 | 643 | 202 | 94 | 651 | 95 | 241 | 0 | 154 | 121 | 97 | 25 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 0 | 1734 | 1774 | 1863 | 1580 |
| Q Serve(g_s), s | 0.8 | 19.0 | 6.8 | 3.4 | 21.7 | 2.8 | 8.9 | 0.0 | 4.4 | 4.3 | 2.6 | 0.8 |
| Cycle Q Clear(g_c), s | 0.8 | 19.0 | 6.8 | 3.4 | 21.7 | 2.8 | 8.9 | 0.0 | 4.4 | 4.3 | 2.6 | 0.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.35 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 35 | 539 | 458 | 108 | 616 | 523 | 243 | 0 | 543 | 154 | 487 | 413 |
| V/C Ratio(X) | 0.62 | 1.19 | 0.44 | 0.87 | 1.06 | 0.18 | 0.99 | 0.00 | 0.28 | 0.79 | 0.20 | 0.06 |
| Avail Cap(c_a), veh/h | 108 | 539 | 458 | 108 | 616 | 523 | 243 | 0 | 543 | 191 | 487 | 413 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.6 | 23.0 | 18.7 | 30.2 | 21.7 | 15.4 | 28.0 | 0.0 | 16.8 | 29.1 | 18.7 | 18.0 |
| Incr Delay (d2), s/veh | 16.4 | 103.9 | 0.7 | 48.4 | 52.5 | 0.2 | 55.0 | 0.0 | 1.3 | 15.6 | 0.9 | 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 | 0.6 | 25.1 | 3.0 | 3.1 | 19.9 | 1.2 | 8.0 | 0.0 | 2.3 | 2.8 | 1.5 | 0.4 |
| LnGrp Delay(d),s/veh | 48.0 | 126.9 | 19.4 | 78.6 | 74.1 | 15.5 | 82.9 | 0.0 | 18.1 | 44.7 | 19.6 | 18.3 |
| LnGrp LOS | D | F | B | E | F | B | F | | B | D | B | B |
| Approach Vol, veh/h | | 867 | | | 840 | | | 395 | | | 243 | |
| Approach Delay, s/veh | | 99.8 | | | 68.0 | | | 57.7 | | | 32.0 | |
| Approach LOS | | F | | | E | | | E | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 9.6 | 24.4 | 8.0 | 23.0 | 13.0 | 21.0 | 5.3 | 25.7 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | 19.0 | 4.0 | 19.0 | 9.0 | 17.0 | 4.0 | 19.0 |
| Max Q Clear Time (g_c+I1), s | 6.3 | 6.4 | 5.4 | 21.0 | 10.9 | 4.6 | 2.8 | 23.7 |
| Green Ext Time (p_c), s | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 74.3 |
| HCM 2010 LOS | E |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.1 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 42 | 207 | 139 | 70 | 41 | 25 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 46 | 225 | 151 | 76 | 45 | 27 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 227 | 0 | - | 0 | 505 | 189 |
| Stage 1 | - | - | - | - | 189 | - |
| Stage 2 | - | - | - | - | 316 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1341 | - | - | - | 527 | 853 |
| Stage 1 | - | - | - | - | 843 | - |
| Stage 2 | - | - | - | - | 739 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1341 | - | - | - | 506 | 853 |
| Mov Cap-2 Maneuver | - | - | - | - | 506 | - |
| Stage 1 | - | - | - | - | 843 | - |
| Stage 2 | - | - | - | - | 710 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 1.3 | 0 | 11.8 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1341 | - | - | - | 598 |
| HCM Lane V/C Ratio | 0.034 | - | - | - | 0.12 |
| HCM Control Delay (s) | 7.8 | 0 | - | - | 11.8 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.4 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 58 | 100 | 0 | 1 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 63 | 109 | 0 | 1 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 218 | 1 | 1 | 0 | - | 0 |
| Stage 1 | 1 | - | - | - | - | - |
| Stage 2 | 217 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 770 | 1084 | 1622 | - | - | - |
| Stage 1 | 1022 | - | - | - | - | - |
| Stage 2 | 819 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 718 | 1084 | 1622 | - | - | - |
| Mov Cap-2 Maneuver | 718 | - | - | - | - | - |
| Stage 1 | 1022 | - | - | - | - | - |
| Stage 2 | 764 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.5 | 7.4 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1622 | - | 1084 | - | - |
| HCM Lane V/C Ratio | 0.067 | - | 0.058 | - | - |
| HCM Control Delay (s) | 7.4 | 0 | 8.5 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 0.2 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 2 | 6 | 1 | 59 | 0 | 233 | 2 | 254 | 46 | 56 | 258 | 0 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1696 | 1696 | 1696 | 1508 | 1508 | 1900 |
| Adj Flow Rate, veh/h | 2 | 6 | 1 | 62 | 0 | 245 | 2 | 267 | 48 | 59 | 272 | 0 |
| Adj No. of Lanes | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 12 | 12 | 12 | 26 | 26 | 26 |
| Cap, veh/h | 4 | 13 | 15 | 283 | 297 | 252 | 5 | 457 | 388 | 74 | 480 | 0 |
| Arrive On Green | 0.01 | 0.01 | 0.01 | 0.16 | 0.00 | 0.16 | 0.00 | 0.27 | 0.27 | 0.05 | 0.32 | 0.00 |
| Sat Flow, veh/h | 460 | 1380 | 1583 | 1774 | 1863 | 1583 | 1616 | 1696 | 1442 | 1436 | 1508 | 0 |
| Grp Volume(v), veh/h | 8 | 0 | 1 | 62 | 0 | 245 | 2 | 267 | 48 | 59 | 272 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1840 | 0 | 1583 | 1774 | 1863 | 1583 | 1616 | 1696 | 1442 | 1436 | 1508 | 0 |
| Q Serve(g_s), s | 0.1 | 0.0 | 0.0 | 1.0 | 0.0 | 4.8 | 0.0 | 4.3 | 0.8 | 1.3 | 4.7 | 0.0 |
| Cycle Q Clear(g_c), s | 0.1 | 0.0 | 0.0 | 1.0 | 0.0 | 4.8 | 0.0 | 4.3 | 0.8 | 1.3 | 4.7 | 0.0 |
| Prop In Lane | 0.25 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 18 | 0 | 15 | 283 | 297 | 252 | 5 | 457 | 388 | 74 | 480 | 0 |
| V/C Ratio(X) | 0.45 | 0.00 | 0.07 | 0.22 | 0.00 | 0.97 | 0.39 | 0.58 | 0.12 | 0.80 | 0.57 | 0.00 |
| Avail Cap(c_a), veh/h | 939 | 0 | 808 | 283 | 297 | 252 | 206 | 920 | 782 | 275 | 914 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 15.4 | 0.0 | 15.4 | 11.5 | 0.0 | 13.1 | 15.6 | 9.9 | 8.7 | 14.7 | 8.9 | 0.0 |
| Incr Delay (d2), s/veh | 17.0 | 0.0 | 1.8 | 0.4 | 0.0 | 48.2 | 41.6 | 1.2 | 0.1 | 17.8 | 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 | 0.2 | 0.0 | 0.0 | 0.5 | 0.0 | 5.4 | 0.1 | 2.2 | 0.3 | 0.9 | 2.0 | 0.0 |
| LnGrp Delay(d),s/veh | 32.4 | 0.0 | 17.2 | 11.9 | 0.0 | 61.3 | 57.2 | 11.1 | 8.8 | 32.5 | 9.9 | 0.0 |
| LnGrp LOS | C | | B | B | | E | E | B | A | C | A | |
| Approach Vol, veh/h | | 9 | | | 307 | | | 317 | | | 331 | |
| Approach Delay, s/veh | | 30.7 | | | 51.3 | | | 11.1 | | | 14.0 | |
| Approach LOS | | C | | | D | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 5.6 | 12.4 | | 4.3 | 4.1 | 14.0 | | 9.0 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 6.0 | 17.0 | | 16.0 | 4.0 | 19.0 | | 5.0 |
| Max Q Clear Time (g_c+I1), s | 3.3 | 6.3 | | 2.1 | 2.0 | 6.7 | | 6.8 |
| Green Ext Time (p_c), s | 0.0 | 2.2 | | 0.0 | 0.0 | 2.3 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 25.1 |
| HCM 2010 LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 8 | 571 | 173 | 36 | 415 | 108 | 221 | 111 | 87 | 147 | 92 | 31 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 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 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 9 | 627 | 190 | 40 | 456 | 119 | 243 | 122 | 96 | 162 | 101 | 34 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 16 | 670 | 569 | 54 | 709 | 601 | 266 | 261 | 205 | 200 | 437 | 363 |
| Arrive On Green | 0.01 | 0.36 | 0.36 | 0.03 | 0.38 | 0.38 | 0.15 | 0.27 | 0.27 | 0.11 | 0.23 | 0.23 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1564 | 1757 | 955 | 751 | 1774 | 1863 | 1550 |
| Grp Volume(v), veh/h | 9 | 627 | 190 | 40 | 456 | 119 | 243 | 0 | 218 | 162 | 101 | 34 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1564 | 1757 | 0 | 1706 | 1774 | 1863 | 1550 |
| Q Serve(g_s), s | 0.4 | 23.8 | 6.4 | 1.6 | 14.7 | 3.7 | 9.9 | 0.0 | 7.7 | 6.5 | 3.2 | 1.2 |
| Cycle Q Clear(g_c), s | 0.4 | 23.8 | 6.4 | 1.6 | 14.7 | 3.7 | 9.9 | 0.0 | 7.7 | 6.5 | 3.2 | 1.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.44 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 16 | 670 | 569 | 54 | 709 | 601 | 266 | 0 | 466 | 200 | 437 | 363 |
| V/C Ratio(X) | 0.56 | 0.94 | 0.33 | 0.75 | 0.64 | 0.20 | 0.91 | 0.00 | 0.47 | 0.81 | 0.23 | 0.09 |
| Avail Cap(c_a), veh/h | 97 | 687 | 584 | 97 | 709 | 601 | 266 | 0 | 466 | 220 | 437 | 363 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 35.8 | 22.3 | 16.7 | 34.9 | 18.3 | 14.9 | 30.3 | 0.0 | 22.0 | 31.4 | 22.5 | 21.7 |
| Incr Delay (d2), s/veh | 27.1 | 20.1 | 0.3 | 18.4 | 2.0 | 0.2 | 33.0 | 0.0 | 3.3 | 18.6 | 1.2 | 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 | 15.8 | 2.8 | 1.1 | 7.9 | 1.6 | 7.2 | 0.0 | 4.1 | 4.2 | 1.8 | 0.6 |
| LnGrp Delay(d),s/veh | 62.9 | 42.4 | 17.1 | 53.3 | 20.3 | 15.0 | 63.3 | 0.0 | 25.3 | 50.0 | 23.7 | 22.3 |
| LnGrp LOS | E | D | B | D | C | B | E | | C | D | C | C |
| Approach Vol, veh/h | | 826 | | | 615 | | | 461 | | | 297 | |
| Approach Delay, s/veh | | 36.8 | | | 21.4 | | | 45.3 | | | 37.9 | |
| Approach LOS | | D | | | C | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 12.2 | 23.8 | 6.2 | 30.3 | 15.0 | 21.0 | 4.7 | 31.9 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 9.0 | 19.0 | 4.0 | 27.0 | 11.0 | 17.0 | 4.0 | 27.0 |
| Max Q Clear Time (g_c+I1), s | 8.5 | 9.7 | 3.6 | 25.8 | 11.9 | 5.2 | 2.4 | 16.7 |
| Green Ext Time (p_c), s | 0.0 | 1.3 | 0.0 | 0.5 | 0.0 | 1.5 | 0.0 | 5.8 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 34.4 |
| HCM 2010 LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 0 | 0 | 0 | 60 | 4 | 122 | 2 | 378 | 45 | 268 | 338 | 0 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1681 | 1681 | 1681 | 1727 | 1727 | 1900 |
| Adj Flow Rate, veh/h | 0 | 0 | 0 | 61 | 4 | 123 | 2 | 382 | 45 | 271 | 341 | 0 |
| Adj No. of Lanes | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 13 | 13 | 13 | 10 | 10 | 10 |
| Cap, veh/h | 0 | 5 | 5 | 197 | 207 | 176 | 5 | 555 | 472 | 341 | 924 | 0 |
| Arrive On Green | 0.00 | 0.00 | 0.00 | 0.11 | 0.11 | 0.11 | 0.00 | 0.33 | 0.33 | 0.21 | 0.54 | 0.00 |
| Sat Flow, veh/h | 0 | 1863 | 1583 | 1774 | 1863 | 1583 | 1601 | 1681 | 1429 | 1645 | 1727 | 0 |
| Grp Volume(v), veh/h | 0 | 0 | 0 | 61 | 4 | 123 | 2 | 382 | 45 | 271 | 341 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1863 | 1583 | 1774 | 1863 | 1583 | 1601 | 1681 | 1429 | 1645 | 1727 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 1.1 | 0.1 | 2.6 | 0.0 | 6.7 | 0.7 | 5.3 | 3.9 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 0.0 | 1.1 | 0.1 | 2.6 | 0.0 | 6.7 | 0.7 | 5.3 | 3.9 | 0.0 |
| Prop In Lane | 0.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 0 | 5 | 5 | 197 | 207 | 176 | 5 | 555 | 472 | 341 | 924 | 0 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.00 | 0.31 | 0.02 | 0.70 | 0.43 | 0.69 | 0.10 | 0.80 | 0.37 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 873 | 742 | 208 | 218 | 186 | 188 | 838 | 712 | 578 | 1265 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 0.0 | 14.0 | 13.5 | 14.6 | 17.0 | 9.9 | 7.9 | 12.8 | 4.6 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 | 10.4 | 51.3 | 1.5 | 0.1 | 4.2 | 0.2 | 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 | 0.0 | 0.0 | 0.0 | 0.6 | 0.0 | 1.6 | 0.1 | 3.3 | 0.3 | 2.8 | 1.9 | 0.0 |
| LnGrp Delay(d),s/veh | 0.0 | 0.0 | 0.0 | 14.8 | 13.6 | 25.1 | 68.3 | 11.4 | 8.0 | 17.1 | 4.8 | 0.0 |
| LnGrp LOS | | | | B | B | C | E | B | A | B | A | |
| Approach Vol, veh/h | | 0 | | | 188 | | | 429 | | | 612 | |
| Approach Delay, s/veh | | 0.0 | | | 21.5 | | | 11.3 | | | 10.3 | |
| Approach LOS | | | | | C | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 11.1 | 15.3 | | 0.0 | 4.1 | 22.3 | | 7.8 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 12.0 | 17.0 | | 16.0 | 4.0 | 25.0 | | 4.0 |
| Max Q Clear Time (g_c+I1), s | 7.3 | 8.7 | | 0.0 | 2.0 | 5.9 | | 4.6 |
| Green Ext Time (p_c), s | 0.3 | 2.5 | | 0.0 | 0.0 | 3.8 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 12.4 |
| HCM 2010 LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 21 | 624 | 196 | 91 | 631 | 92 | 234 | 97 | 52 | 117 | 94 | 24 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 22 | 643 | 202 | 94 | 651 | 95 | 241 | 100 | 54 | 121 | 97 | 25 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 34 | 664 | 564 | 117 | 751 | 638 | 258 | 307 | 166 | 155 | 397 | 337 |
| Arrive On Green | 0.02 | 0.36 | 0.36 | 0.07 | 0.41 | 0.41 | 0.15 | 0.27 | 0.27 | 0.09 | 0.21 | 0.21 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 1126 | 608 | 1774 | 1863 | 1580 |
| Grp Volume(v), veh/h | 22 | 643 | 202 | 94 | 651 | 95 | 241 | 0 | 154 | 121 | 97 | 25 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 0 | 1733 | 1774 | 1863 | 1580 |
| Q Serve(g_s), s | 0.9 | 25.7 | 7.1 | 4.0 | 24.3 | 2.9 | 10.2 | 0.0 | 5.3 | 5.0 | 3.2 | 0.9 |
| Cycle Q Clear(g_c), s | 0.9 | 25.7 | 7.1 | 4.0 | 24.3 | 2.9 | 10.2 | 0.0 | 5.3 | 5.0 | 3.2 | 0.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.35 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 34 | 664 | 564 | 117 | 751 | 638 | 258 | 0 | 473 | 155 | 397 | 337 |
| V/C Ratio(X) | 0.64 | 0.97 | 0.36 | 0.80 | 0.87 | 0.15 | 0.94 | 0.00 | 0.33 | 0.78 | 0.24 | 0.07 |
| Avail Cap(c_a), veh/h | 94 | 664 | 564 | 117 | 751 | 638 | 258 | 0 | 473 | 260 | 397 | 337 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.5 | 23.6 | 17.6 | 34.5 | 20.4 | 14.0 | 31.6 | 0.0 | 21.8 | 33.5 | 24.5 | 23.6 |
| Incr Delay (d2), s/veh | 18.0 | 27.1 | 0.4 | 31.8 | 10.5 | 0.1 | 38.9 | 0.0 | 1.8 | 8.4 | 1.5 | 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 | 0.6 | 18.0 | 3.1 | 2.9 | 14.5 | 1.2 | 7.7 | 0.0 | 2.8 | 2.8 | 1.8 | 0.4 |
| LnGrp Delay(d),s/veh | 54.5 | 50.7 | 18.0 | 66.3 | 30.9 | 14.1 | 70.5 | 0.0 | 23.6 | 41.9 | 25.9 | 24.0 |
| LnGrp LOS | D | D | B | E | C | B | E | | C | D | C | C |
| Approach Vol, veh/h | | 867 | | | 840 | | | 395 | | | 243 | |
| Approach Delay, s/veh | | 43.2 | | | 33.0 | | | 52.2 | | | 33.7 | |
| Approach LOS | | D | | | C | | | D | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.5 | 24.5 | 9.0 | 31.0 | 15.0 | 20.0 | 5.5 | 34.5 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 11.0 | 16.0 | 5.0 | 27.0 | 11.0 | 16.0 | 4.0 | 28.0 |
| Max Q Clear Time (g_c+I1), s | 7.0 | 7.3 | 6.0 | 27.7 | 12.2 | 5.2 | 2.9 | 26.3 |
| Green Ext Time (p_c), s | 0.1 | 0.9 | 0.0 | 0.0 | 0.0 | 1.1 | 0.0 | 1.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 40.1 |
| HCM 2010 LOS | D |

# Appendix H

# Cumulative Projects within Hollister

**Table 9**
**Pending Development Projects**

| Applicant/Owner/Project Name | Address/Location | Proposed Project Description |
|---|---|---|
| Chaney | S/o Union Rd at Calistoga Dr | 46 multi-family homes |
| West Gateway Mixed-Use | Gateway Dr | 19,163 s.f. commercial building |
| Buena Vista Apartments | Buena Vista Rd between Westside Blvd and Locust St | 80 Apartments |
| Apricot Ln | W/o Westside Blvd between Steinbeck Dr and Apricot Ln | 173 homes |
| Rajkovich/Ivancovich | W/o Buena Vista Rd/Miller Rd | 103 homes |
| Gonzales | W/o Buena Vista Rd/Miller Rd | 92 homes |
| King | Memorial Dr, South of Sunset Dr | 8 homes |
| KT Orchard Park | Between Buena Vista Rd and Central Av, E/o Miller Rd | 91 small lots |
| Roberts Ranch | N/e of Enterprise/Airline | 206 residential lots |
| Ladd Ranch | E/o San Benito St and Cienega Rd | 82 homes |
| Pivetti | Valley View Rd between Sunnyslope Rd and Sunset Dr | 24 Apartments |
| Saroyan/Howard | San Juan Rd, between Graf Rd and Miller Rd | 97 Condos |
| Sywak | SW corner of Westside Bl/South St | 8 homes |
| Dike | SW corner of Westside Bl/South St | 39 homes |
| Thorning | S/o 4th Street, between Westside Bl and Rajkovich Wy | 10 row houses, 74 apartments |

Source: City of Hollister and San Benito County Planning Departments (August 2014)

**Table 4**
**Project Trip Generation Estimates**

| Land Use | ITE Land Use | Size | | Daily Trip Rate /a/ | Daily Trips | AM Peak Hour Pk-Hr Rate /a/ | AM Splits In | AM Splits Out | AM Trips In | AM Trips Out | AM Trips Total | PM Peak Hour Pk-Hr Rate /a/ | PM Splits In | PM Splits Out | PM Trips In | PM Trips Out | PM Trips Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Gonzales** | | | | | | | | | | | | | | | | | |
| Single Family Homes | 210 - Single-Family Detached Housing | 92 | D.U. | 9.52 | 876 | 0.75 | 25% | 75% | 17 | 52 | 69 | 1.00 | 63% | 37% | 58 | 34 | 92 |

Source: ITE Trip Generation, 9th Edition, 2012.
/a/ Based on the average trip generation rate from the ITE Trip Generation Manual.

## Project Trip Generation - Homestead Ave. (Sywak)

| TRIP GENERATION RATES | ITE LAND USE CODE | DAILY TRIP RATE | AM PEAK HOUR | | | | PM PEAK HOUR | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | PEAK HOUR RATE | % OF ADT | % IN | % OUT | PEAK HOUR RATE | % OF ADT | % IN | % OUT |
| Single-Family Detached Housing (per dwelling unit) | 210 | 9.52 | 0.75 | 8% | 25% | 75% | 1.00 | 11% | 63% | 37% |

| GENERATED TRIPS | PROJECT SIZE | DAILY TRIPS | AM PEAK HOUR | | | | PM PEAK HOUR | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | PEAK HOUR TRIPS | % OF ADT | TRIPS IN | TRIPS OUT | PEAK HOUR TRIPS | % OF ADT | TRIPS IN | TRIPS OUT |
| Single-Family Detached Housing | 63 units | 600 | 47 | 8% | 12 | 35 | 63 | 11% | 40 | 23 |
| **Total Project Trip Generation:** | | **600** | **47** | | **12** | **35** | **63** | | **40** | **23** |

Notes:

1. Trip generation rates from Institute of Transportation Engineers, "Trip Generation Manual," 9th Edition, 2012, unless otherwise noted.

# Appendix I

## Intersection
## Level of Service
## Calculations

## Cumulative Without Project
## Conditions

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 2 | 6 | 1 | 78 | 0 | 282 | 2 | 278 | 79 | 64 | 266 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 325 | - | 70 | 520 | - | 520 | 515 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 12 | 12 | 12 | 26 | 26 | 26 |
| Mvmt Flow | 2 | 6 | 1 | 82 | 0 | 297 | 2 | 293 | 83 | 67 | 280 | 0 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 712 | 712 | 280 | 715 | 712 | 293 | 280 | 0 | 0 | 293 | 0 | 0 |
| Stage 1 | 415 | 415 | - | 297 | 297 | - | - | - | - | - | - | - |
| Stage 2 | 297 | 297 | - | 418 | 415 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.22 | - | - | 4.36 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.308 | - | - | 2.434 | - | - |
| Pot Cap-1 Maneuver | 347 | 358 | 759 | 346 | 358 | 746 | 1227 | - | - | 1143 | - | - |
| Stage 1 | 615 | 592 | - | 712 | 668 | - | - | - | - | - | - | - |
| Stage 2 | 712 | 668 | - | 612 | 592 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 199 | 336 | 759 | 325 | 336 | 746 | 1227 | - | - | 1143 | - | - |
| Mov Cap-2 Maneuver | 199 | 336 | - | 325 | 336 | - | - | - | - | - | - | - |
| Stage 1 | 614 | 557 | - | 711 | 667 | - | - | - | - | - | - | - |
| Stage 2 | 428 | 667 | - | 569 | 557 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 17 | 14.5 | 0 | 1.6 |
| HCM LOS | C | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1227 | - | - | 287 | 759 | 325 | - | 746 | 1143 | - | - |
| HCM Lane V/C Ratio | 0.002 | - | - | 0.029 | 0.001 | 0.253 | - | 0.398 | 0.059 | - | - |
| HCM Control Delay (s) | 7.9 | - | - | 17.9 | 9.8 | 19.8 | 0 | 13 | 8.3 | - | - |
| HCM Lane LOS | A | - | - | C | A | C | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 0 | 1 | - | 1.9 | 0.2 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 1 | 239 | 16 | 40 | 260 | 0 | 38 | 2 | 71 | 4 | 1 | 0 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 9 | 9 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 337 | 23 | 56 | 366 | 0 | 54 | 3 | 100 | 6 | 1 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 375 | 0 | 0 | 368 | 0 | 0 | 849 | 848 | 358 | 899 | 859 | 376 |
| Stage 1 | - | - | - | - | - | - | 360 | 360 | - | 488 | 488 | - |
| Stage 2 | - | - | - | - | - | - | 489 | 488 | - | 411 | 371 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1183 | - | - | 1191 | - | - | 281 | 298 | 686 | 260 | 294 | 670 |
| Stage 1 | - | - | - | - | - | - | 658 | 626 | - | 561 | 550 | - |
| Stage 2 | - | - | - | - | - | - | 561 | 550 | - | 618 | 620 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1182 | - | - | 1190 | - | - | 265 | 276 | 680 | 208 | 272 | 664 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 265 | 276 | - | 208 | 272 | - |
| Stage 1 | - | - | - | - | - | - | 652 | 621 | - | 556 | 514 | - |
| Stage 2 | - | - | - | - | - | - | 526 | 514 | - | 524 | 615 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 1.1 | 17.8 | 22.1 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 435 | 1182 | - | - | 1190 | - | - | 218 |
| HCM Lane V/C Ratio | 0.359 | 0.001 | - | - | 0.047 | - | - | 0.032 |
| HCM Control Delay (s) | 17.8 | 8 | 0 | - | 8.2 | 0 | - | 22.1 |
| HCM Lane LOS | C | A | A | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 1.6 | 0 | - | - | 0.1 | - | - | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 34.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 1 | 215 | 129 | 55 | 232 | 1 | 138 | 9 | 40 | 2 | 3 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 19 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 321 | 193 | 82 | 346 | 1 | 206 | 13 | 60 | 3 | 4 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 367 | 0 | 0 | 532 | 0 | 0 | 973 | 970 | 436 | 1006 | 1065 | 366 |
| Stage 1 | - | - | - | - | - | - | 439 | 439 | - | 530 | 530 | - |
| Stage 2 | - | - | - | - | - | - | 534 | 531 | - | 476 | 535 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1192 | - | - | 1036 | - | - | 231 | 253 | 620 | 220 | 223 | 679 |
| Stage 1 | - | - | - | - | - | - | 597 | 578 | - | 533 | 527 | - |
| Stage 2 | - | - | - | - | - | - | 530 | 526 | - | 570 | 524 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1192 | - | - | 1036 | - | - | 206 | 221 | 610 | 172 | 195 | 668 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 206 | 221 | - | 172 | 195 | - |
| Stage 1 | - | - | - | - | - | - | 587 | 568 | - | 524 | 468 | - |
| Stage 2 | - | - | - | - | - | - | 471 | 467 | - | 502 | 515 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 1.7 | 150.6 | 21.2 |
| HCM LOS | | | F | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 241 | 1192 | - | - | 1036 | - | - | 233 |
| HCM Lane V/C Ratio | 1.158 | 0.001 | - | - | 0.079 | - | - | 0.045 |
| HCM Control Delay (s) | 150.6 | 8 | 0 | - | 8.8 | 0 | - | 21.2 |
| HCM Lane LOS | F | A | A | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 12.9 | 0 | - | - | 0.3 | - | - | 0.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 11 | 464 | 8 | 63 | 504 | 55 | 26 | 31 | 116 | 99 | 17 | 26 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.97 | 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 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1845 | 1845 | 1845 | 1900 | 1863 | 1900 | 1900 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 12 | 510 | 9 | 69 | 554 | 60 | 29 | 34 | 127 | 109 | 19 | 29 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 21 | 655 | 12 | 86 | 744 | 616 | 125 | 146 | 387 | 452 | 83 | 95 |
| Arrive On Green | 0.01 | 0.37 | 0.37 | 0.05 | 0.40 | 0.40 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 |
| Sat Flow, veh/h | 1740 | 1790 | 32 | 1757 | 1845 | 1527 | 129 | 406 | 1080 | 939 | 232 | 265 |
| Grp Volume(v), veh/h | 12 | 0 | 519 | 69 | 554 | 60 | 190 | 0 | 0 | 157 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 0 | 1821 | 1757 | 1845 | 1527 | 1615 | 0 | 0 | 1436 | 0 | 0 |
| Q Serve(g_s), s | 0.4 | 0.0 | 13.4 | 2.1 | 13.6 | 1.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.4 | 0.0 | 13.4 | 2.1 | 13.6 | 1.3 | 4.4 | 0.0 | 0.0 | 3.3 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.02 | 1.00 | | 1.00 | 0.15 | | 0.67 | 0.69 | | 0.18 |
| Lane Grp Cap(c), veh/h | 21 | 0 | 667 | 86 | 744 | 616 | 657 | 0 | 0 | 630 | 0 | 0 |
| V/C Ratio(X) | 0.56 | 0.00 | 0.78 | 0.80 | 0.75 | 0.10 | 0.29 | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 131 | 0 | 790 | 199 | 870 | 720 | 657 | 0 | 0 | 630 | 0 | 0 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 26.0 | 0.0 | 14.9 | 24.9 | 13.5 | 9.8 | 12.3 | 0.0 | 0.0 | 12.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 21.4 | 0.0 | 4.2 | 15.4 | 3.0 | 0.1 | 1.1 | 0.0 | 0.0 | 0.9 | 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 | 0.3 | 0.0 | 7.4 | 1.4 | 7.4 | 0.5 | 2.2 | 0.0 | 0.0 | 1.8 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 47.4 | 0.0 | 19.1 | 40.3 | 16.5 | 9.9 | 13.4 | 0.0 | 0.0 | 12.9 | 0.0 | 0.0 |
| LnGrp LOS | D | | B | D | B | A | B | | | B | | |
| Approach Vol, veh/h | | 531 | | | 683 | | | 190 | | | 157 | |
| Approach Delay, s/veh | | 19.7 | | | 18.3 | | | 13.4 | | | 12.9 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 23.0 | 6.6 | 23.4 | | 23.0 | 4.6 | 25.4 |
| Change Period (Y+Rc), s | | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | | 19.0 | 6.0 | 23.0 | | 19.0 | 4.0 | 25.0 |
| Max Q Clear Time (g_c+I1), s | | 6.4 | 4.1 | 15.4 | | 5.3 | 2.4 | 15.6 |
| Green Ext Time (p_c), s | | 1.7 | 0.0 | 4.0 | | 1.8 | 0.0 | 4.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 17.7 |
| HCM 2010 LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 18 | 538 | 160 | 46 | 395 | 56 | 233 | 147 | 93 | 93 | 104 | 58 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 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 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 20 | 591 | 176 | 51 | 434 | 62 | 256 | 162 | 102 | 102 | 114 | 64 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 33 | 553 | 470 | 66 | 588 | 498 | 250 | 356 | 224 | 131 | 500 | 417 |
| Arrive On Green | 0.02 | 0.30 | 0.30 | 0.04 | 0.32 | 0.32 | 0.14 | 0.34 | 0.34 | 0.07 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1563 | 1757 | 1057 | 666 | 1774 | 1863 | 1554 |
| Grp Volume(v), veh/h | 20 | 591 | 176 | 51 | 434 | 62 | 256 | 0 | 264 | 102 | 114 | 64 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1563 | 1757 | 0 | 1723 | 1774 | 1863 | 1554 |
| Q Serve(g_s), s | 0.7 | 19.0 | 5.6 | 1.8 | 13.3 | 1.8 | 9.0 | 0.0 | 7.6 | 3.6 | 3.0 | 2.0 |
| Cycle Q Clear(g_c), s | 0.7 | 19.0 | 5.6 | 1.8 | 13.3 | 1.8 | 9.0 | 0.0 | 7.6 | 3.6 | 3.0 | 2.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.39 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 33 | 553 | 470 | 66 | 588 | 498 | 250 | 0 | 580 | 131 | 500 | 417 |
| V/C Ratio(X) | 0.61 | 1.07 | 0.37 | 0.78 | 0.74 | 0.12 | 1.03 | 0.00 | 0.46 | 0.78 | 0.23 | 0.15 |
| Avail Cap(c_a), veh/h | 111 | 553 | 470 | 111 | 588 | 498 | 250 | 0 | 580 | 196 | 500 | 417 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 30.9 | 22.2 | 17.5 | 30.2 | 19.2 | 15.3 | 27.2 | 0.0 | 16.5 | 28.8 | 18.1 | 17.7 |
| Incr Delay (d2), s/veh | 16.7 | 57.9 | 0.5 | 17.5 | 4.9 | 0.1 | 63.9 | 0.0 | 2.6 | 10.8 | 1.1 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.5 | 18.4 | 2.5 | 1.2 | 7.6 | 0.8 | 8.7 | 0.0 | 4.0 | 2.2 | 1.7 | 0.9 |
| LnGrp Delay(d),s/veh | 47.6 | 80.1 | 18.0 | 47.7 | 24.2 | 15.4 | 91.1 | 0.0 | 19.0 | 39.7 | 19.1 | 18.5 |
| LnGrp LOS | D | F | B | D | C | B | F | | B | D | B | B |
| Approach Vol, veh/h | | 787 | | | 547 | | | 520 | | | 280 | |
| Approach Delay, s/veh | | 65.4 | | | 25.4 | | | 54.5 | | | 26.5 | |
| Approach LOS | | E | | | C | | | D | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 8.7 | 25.3 | 6.4 | 23.0 | 13.0 | 21.0 | 5.2 | 24.2 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | 19.0 | 4.0 | 19.0 | 9.0 | 17.0 | 4.0 | 19.0 |
| Max Q Clear Time (g_c+I1), s | 5.6 | 9.6 | 3.8 | 21.0 | 11.0 | 5.0 | 2.7 | 15.3 |
| Green Ext Time (p_c), s | 0.0 | 1.7 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 2.4 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 47.4 |
| HCM 2010 LOS | D |

| Intersection | |
|---|---|
| Int Delay, s/veh | 12.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 0 | 0 | 84 | 4 | 139 | 2 | 393 | 70 | 301 | 364 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 325 | - | 70 | 520 | - | 520 | 515 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 13 | 13 | 13 | 10 | 10 | 10 |
| Mvmt Flow | 0 | 0 | 0 | 85 | 4 | 140 | 2 | 397 | 71 | 304 | 368 | 0 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1379 | 1377 | 368 | 1377 | 1377 | 397 | 368 | 0 | 0 | 397 | 0 | 0 |
| Stage 1 | 976 | 976 | - | 401 | 401 | - | - | - | - | - | - | - |
| Stage 2 | 403 | 401 | - | 976 | 976 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.23 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.317 | - | - | 2.29 | - | - |
| Pot Cap-1 Maneuver | 122 | 145 | 677 | 122 | 145 | 652 | 1132 | - | - | 1119 | - | - |
| Stage 1 | 302 | 329 | - | 626 | 601 | - | - | - | - | - | - | - |
| Stage 2 | 624 | 601 | - | 302 | 329 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 73 | 105 | 677 | 96 | 105 | 652 | 1132 | - | - | 1119 | - | - |
| Mov Cap-2 Maneuver | 73 | 105 | - | 96 | 105 | - | - | - | - | - | - | - |
| Stage 1 | 301 | 240 | - | 625 | 600 | - | - | - | - | - | - | - |
| Stage 2 | 485 | 600 | - | 220 | 240 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 60.4 | 0 | 4.3 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1132 | - | - | - | - | 96 | 105 | 652 | 1119 | - | - |
| HCM Lane V/C Ratio | 0.002 | - | - | - | - | 0.884 | 0.038 | 0.215 | 0.272 | - | - |
| HCM Control Delay (s) | 8.2 | - | - | 0 | 0 | 141.3 | 40.7 | 12 | 9.4 | - | - |
| HCM Lane LOS | A | - | - | A | A | F | E | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - | 5 | 0.1 | 0.8 | 1.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 2 | 287 | 60 | 24 | 197 | 10 | 25 | 1 | 19 | 0 | 2 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2 | 334 | 70 | 28 | 229 | 12 | 29 | 1 | 22 | 0 | 2 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 246 | 0 | 0 | 408 | 0 | 0 | 677 | 680 | 374 | 686 | 709 | 240 |
| Stage 1 | - | - | - | - | - | - | 378 | 378 | - | 296 | 296 | - |
| Stage 2 | - | - | - | - | - | - | 299 | 302 | - | 390 | 413 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1320 | - | - | 1151 | - | - | 367 | 373 | 672 | 362 | 359 | 799 |
| Stage 1 | - | - | - | - | - | - | 644 | 615 | - | 712 | 668 | - |
| Stage 2 | - | - | - | - | - | - | 710 | 664 | - | 634 | 594 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1320 | - | - | 1151 | - | - | 354 | 359 | 669 | 340 | 345 | 796 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 354 | 359 | - | 340 | 345 | - |
| Stage 1 | - | - | - | - | - | - | 640 | 611 | - | 708 | 647 | - |
| Stage 2 | - | - | - | - | - | - | 685 | 643 | - | 611 | 590 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0.9 | 14.2 | 12 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 442 | 1320 | - | - | 1151 | - | - | 523 |
| HCM Lane V/C Ratio | 0.118 | 0.002 | - | - | 0.024 | - | - | 0.011 |
| HCM Control Delay (s) | 14.2 | 7.7 | 0 | - | 8.2 | 0 | - | 12 |
| HCM Lane LOS | B | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.4 | 0 | - | - | 0.1 | - | - | 0 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 3 | 210 | 114 | 50 | 163 | 5 | 87 | 2 | 60 | 1 | 5 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 262 | 142 | 62 | 204 | 6 | 109 | 2 | 75 | 1 | 6 | 1 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 215 | 0 | 0 | 410 | 0 | 0 | 687 | 686 | 339 | 722 | 755 | 212 |
| Stage 1 | - | - | - | - | - | - | 346 | 346 | - | 337 | 337 | - |
| Stage 2 | - | - | - | - | - | - | 341 | 340 | - | 385 | 418 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1355 | - | - | 1149 | - | - | 361 | 370 | 703 | 342 | 338 | 828 |
| Stage 1 | - | - | - | - | - | - | 670 | 635 | - | 677 | 641 | - |
| Stage 2 | - | - | - | - | - | - | 674 | 639 | - | 638 | 591 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1355 | - | - | 1149 | - | - | 336 | 343 | 700 | 287 | 313 | 825 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 336 | 343 | - | 287 | 313 | - |
| Stage 1 | - | - | - | - | - | - | 665 | 630 | - | 671 | 599 | - |
| Stage 2 | - | - | - | - | - | - | 625 | 597 | - | 565 | 586 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 1.9 | 19.9 | 15.9 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 425 | 1355 | - | - | 1149 | - | - | 339 |
| HCM Lane V/C Ratio | 0.438 | 0.003 | - | - | 0.054 | - | - | 0.026 |
| HCM Control Delay (s) | 19.9 | 7.7 | 0 | - | 8.3 | 0 | - | 15.9 |
| HCM Lane LOS | C | A | A | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 2.2 | 0 | - | - | 0.2 | - | - | 0.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 23 | 651 | 25 | 97 | 515 | 83 | 13 | 12 | 91 | 105 | 27 | 17 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1900 | 1863 | 1900 | 1900 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 24 | 678 | 26 | 101 | 536 | 86 | 14 | 12 | 95 | 109 | 28 | 18 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 39 | 704 | 27 | 129 | 830 | 692 | 95 | 86 | 411 | 421 | 104 | 55 |
| Arrive On Green | 0.02 | 0.39 | 0.39 | 0.07 | 0.45 | 0.45 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1774 | 1782 | 68 | 1774 | 1863 | 1553 | 81 | 264 | 1260 | 967 | 320 | 169 |
| Grp Volume(v), veh/h | 24 | 0 | 704 | 101 | 536 | 86 | 121 | 0 | 0 | 155 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1851 | 1774 | 1863 | 1553 | 1605 | 0 | 0 | 1457 | 0 | 0 |
| Q Serve(g_s), s | 0.8 | 0.0 | 21.6 | 3.3 | 13.0 | 1.9 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.8 | 0.0 | 21.6 | 3.3 | 13.0 | 1.9 | 3.1 | 0.0 | 0.0 | 3.9 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.04 | 1.00 | | 1.00 | 0.12 | | 0.79 | 0.70 | | 0.12 |
| Lane Grp Cap(c), veh/h | 39 | 0 | 731 | 129 | 830 | 692 | 593 | 0 | 0 | 580 | 0 | 0 |
| V/C Ratio(X) | 0.61 | 0.00 | 0.96 | 0.78 | 0.65 | 0.12 | 0.20 | 0.00 | 0.00 | 0.27 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 122 | 0 | 731 | 183 | 830 | 692 | 593 | 0 | 0 | 580 | 0 | 0 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 28.2 | 0.0 | 17.2 | 26.5 | 12.6 | 9.5 | 14.3 | 0.0 | 0.0 | 14.5 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 14.5 | 0.0 | 24.5 | 13.1 | 1.7 | 0.1 | 0.8 | 0.0 | 0.0 | 1.1 | 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 | 0.0 | 15.9 | 2.1 | 7.0 | 0.8 | 1.5 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 42.7 | 0.0 | 41.7 | 39.6 | 14.3 | 9.6 | 15.1 | 0.0 | 0.0 | 15.6 | 0.0 | 0.0 |
| LnGrp LOS | D | | D | D | B | A | B | | | B | | |
| Approach Vol, veh/h | | 728 | | | 723 | | | 121 | | | 155 | |
| Approach Delay, s/veh | | 41.8 | | | 17.3 | | | 15.1 | | | 15.6 | |
| Approach LOS | | D | | | B | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 23.0 | 8.2 | 27.0 | | 23.0 | 5.3 | 30.0 |
| Change Period (Y+Rc), s | | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | | 19.0 | 6.0 | 23.0 | | 19.0 | 4.0 | 25.0 |
| Max Q Clear Time (g_c+I1), s | | 5.1 | 5.3 | 23.6 | | 5.9 | 2.8 | 15.0 |
| Green Ext Time (p_c), s | | 1.4 | 0.0 | 0.0 | | 1.3 | 0.0 | 5.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 27.3 |
| HCM 2010 LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 51 | 600 | 205 | 108 | 604 | 47 | 223 | 118 | 69 | 53 | 129 | 43 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 53 | 619 | 211 | 111 | 623 | 48 | 230 | 122 | 71 | 55 | 133 | 44 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 67 | 539 | 458 | 108 | 583 | 495 | 243 | 395 | 230 | 69 | 487 | 413 |
| Arrive On Green | 0.04 | 0.29 | 0.29 | 0.06 | 0.32 | 0.32 | 0.14 | 0.36 | 0.36 | 0.04 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 1093 | 636 | 1774 | 1863 | 1580 |
| Grp Volume(v), veh/h | 53 | 619 | 211 | 111 | 623 | 48 | 230 | 0 | 193 | 55 | 133 | 44 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 0 | 1729 | 1774 | 1863 | 1580 |
| Q Serve(g_s), s | 1.9 | 19.0 | 7.2 | 4.0 | 20.5 | 1.4 | 8.4 | 0.0 | 5.2 | 2.0 | 3.7 | 1.4 |
| Cycle Q Clear(g_c), s | 1.9 | 19.0 | 7.2 | 4.0 | 20.5 | 1.4 | 8.4 | 0.0 | 5.2 | 2.0 | 3.7 | 1.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.37 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 67 | 539 | 458 | 108 | 583 | 495 | 243 | 0 | 624 | 69 | 487 | 413 |
| V/C Ratio(X) | 0.80 | 1.15 | 0.46 | 1.03 | 1.07 | 0.10 | 0.95 | 0.00 | 0.31 | 0.80 | 0.27 | 0.11 |
| Avail Cap(c_a), veh/h | 108 | 539 | 458 | 108 | 583 | 495 | 243 | 0 | 624 | 191 | 487 | 413 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.0 | 23.0 | 18.8 | 30.5 | 22.2 | 15.7 | 27.8 | 0.0 | 14.9 | 31.0 | 19.1 | 18.2 |
| Incr Delay (d2), s/veh | 18.9 | 86.5 | 0.7 | 93.9 | 57.1 | 0.1 | 42.8 | 0.0 | 1.3 | 18.3 | 1.4 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.3 | 22.5 | 3.1 | 4.7 | 19.6 | 0.6 | 7.0 | 0.0 | 2.7 | 1.3 | 2.1 | 0.7 |
| LnGrp Delay(d),s/veh | 49.9 | 109.5 | 19.5 | 124.8 | 79.3 | 15.8 | 70.5 | 0.0 | 16.2 | 49.3 | 20.5 | 18.7 |
| LnGrp LOS | D | F | B | F | F | B | E | | B | D | C | B |
| Approach Vol, veh/h | | 883 | | | 782 | | | 423 | | | 232 | |
| Approach Delay, s/veh | | 84.4 | | | 81.9 | | | 45.8 | | | 27.0 | |
| Approach LOS | | F | | | F | | | D | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 6.5 | 27.5 | 8.0 | 23.0 | 13.0 | 21.0 | 6.5 | 24.5 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | 19.0 | 4.0 | 19.0 | 9.0 | 17.0 | 4.0 | 19.0 |
| Max Q Clear Time (g_c+I1), s | 4.0 | 7.2 | 6.0 | 21.0 | 10.4 | 5.7 | 3.9 | 22.5 |
| Green Ext Time (p_c), s | 0.0 | 1.6 | 0.0 | 0.0 | 0.0 | 1.5 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 70.8 |
| HCM 2010 LOS | E |

Appendix J

Intersection
Level of Service
Calculations

Cumulative Plus Project
Conditions

| Intersection | |
|---|---|
| Int Delay, s/veh | 6.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 2 | 6 | 1 | 78 | 0 | 329 | 2 | 278 | 79 | 80 | 266 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 325 | - | 70 | 520 | - | 520 | 515 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 12 | 12 | 12 | 26 | 26 | 26 |
| Mvmt Flow | 2 | 6 | 1 | 82 | 0 | 346 | 2 | 293 | 83 | 84 | 280 | 0 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 745 | 745 | 280 | 749 | 745 | 293 | 280 | 0 | 0 | 293 | 0 | 0 |
| Stage 1 | 448 | 448 | - | 297 | 297 | - | - | - | - | - | - | - |
| Stage 2 | 297 | 297 | - | 452 | 448 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.22 | - | - | 4.36 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.308 | - | - | 2.434 | - | - |
| Pot Cap-1 Maneuver | 330 | 342 | 759 | 328 | 342 | 746 | 1227 | - | - | 1143 | - | - |
| Stage 1 | 590 | 573 | - | 712 | 668 | - | - | - | - | - | - | - |
| Stage 2 | 712 | 668 | - | 587 | 573 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 167 | 316 | 759 | 304 | 316 | 746 | 1227 | - | - | 1143 | - | - |
| Mov Cap-2 Maneuver | 167 | 316 | - | 304 | 316 | - | - | - | - | - | - | - |
| Stage 1 | 589 | 531 | - | 711 | 667 | - | - | - | - | - | - | - |
| Stage 2 | 381 | 667 | - | 537 | 531 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 18.3 | 15.3 | 0 | 1.9 |
| HCM LOS | C | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1227 | - | - | 258 | 759 | 304 | - | 746 | 1143 | - | - |
| HCM Lane V/C Ratio | 0.002 | - | - | 0.033 | 0.001 | 0.27 | - | 0.464 | 0.074 | - | - |
| HCM Control Delay (s) | 7.9 | - | - | 19.4 | 9.8 | 21.2 | 0 | 13.9 | 8.4 | - | - |
| HCM Lane LOS | A | - | - | C | A | C | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 0 | 1.1 | - | 2.5 | 0.2 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 12.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 4 | 268 | 50 | 40 | 270 | 9 | 49 | 19 | 71 | 32 | 52 | 9 |
| Conflicting Peds, #/hr | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 9 | 9 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 | 71 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 6 | 377 | 70 | 56 | 380 | 13 | 69 | 27 | 100 | 45 | 73 | 13 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 402 | 0 | 0 | 457 | 0 | 0 | 984 | 948 | 423 | 1004 | 976 | 397 |
| Stage 1 | - | - | - | - | - | - | 433 | 433 | - | 508 | 508 | - |
| Stage 2 | - | - | - | - | - | - | 551 | 515 | - | 496 | 468 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1157 | - | - | 1104 | - | - | 228 | 261 | 631 | 220 | 251 | 652 |
| Stage 1 | - | - | - | - | - | - | 601 | 582 | - | 547 | 539 | - |
| Stage 2 | - | - | - | - | - | - | 519 | 535 | - | 556 | 561 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1156 | - | - | 1103 | - | - | 158 | 239 | 626 | 159 | 230 | 647 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 158 | 239 | - | 159 | 230 | - |
| Stage 1 | - | - | - | - | - | - | 592 | 574 | - | 539 | 500 | - |
| Stage 2 | - | - | - | - | - | - | 406 | 496 | - | 442 | 553 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 1.1 | 44.5 | 46.5 |
| HCM LOS | | | E | E |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 276 | 1156 | - | - | 1103 | - | - | 211 |
| HCM Lane V/C Ratio | 0.709 | 0.005 | - | - | 0.051 | - | - | 0.621 |
| HCM Control Delay (s) | 44.5 | 8.1 | 0 | - | 8.4 | 0 | - | 46.5 |
| HCM Lane LOS | E | A | A | - | A | A | - | E |
| HCM 95th %tile Q(veh) | 4.9 | 0 | - | - | 0.2 | - | - | 3.6 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 55.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 1 | 234 | 167 | 55 | 238 | 1 | 151 | 9 | 40 | 2 | 3 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 19 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1 | 349 | 249 | 82 | 355 | 1 | 225 | 13 | 60 | 3 | 4 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 376 | 0 | 0 | 618 | 0 | 0 | 1039 | 1036 | 493 | 1071 | 1159 | 375 |
| Stage 1 | - | - | - | - | - | - | 496 | 496 | - | 539 | 539 | - |
| Stage 2 | - | - | - | - | - | - | 543 | 540 | - | 532 | 620 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1182 | - | - | 962 | - | - | ~ 209 | 232 | 576 | 198 | 196 | 671 |
| Stage 1 | - | - | - | - | - | - | 556 | 545 | - | 527 | 522 | - |
| Stage 2 | - | - | - | - | - | - | 524 | 521 | - | 531 | 480 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1182 | - | - | 962 | - | - | ~ 184 | 201 | 567 | 152 | 170 | 660 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | ~ 184 | 201 | - | 152 | 170 | - |
| Stage 1 | - | - | - | - | - | - | 547 | 536 | - | 518 | 459 | - |
| Stage 2 | - | - | - | - | - | - | 462 | 458 | - | 463 | 472 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 1.7 | 246.5 | 23.3 |
| HCM LOS | | | F | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 214 | 1182 | - | - | 962 | - | - | 207 |
| HCM Lane V/C Ratio | 1.395 | 0.001 | - | - | 0.085 | - | - | 0.05 |
| HCM Control Delay (s) | 246.5 | 8.1 | 0 | - | 9.1 | 0 | - | 23.3 |
| HCM Lane LOS | F | A | A | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 17.1 | 0 | - | - | 0.3 | - | - | 0.2 |

Notes

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 17 | 464 | 8 | 63 | 504 | 74 | 26 | 31 | 116 | 156 | 17 | 45 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.97 | 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 |
| Adj Sat Flow, veh/h/ln | 1827 | 1827 | 1900 | 1845 | 1845 | 1845 | 1900 | 1863 | 1900 | 1900 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 19 | 510 | 9 | 69 | 554 | 81 | 29 | 34 | 127 | 171 | 19 | 49 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 4 | 4 | 4 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 32 | 656 | 12 | 86 | 733 | 607 | 124 | 145 | 386 | 462 | 60 | 105 |
| Arrive On Green | 0.02 | 0.37 | 0.37 | 0.05 | 0.40 | 0.40 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 |
| Sat Flow, veh/h | 1740 | 1790 | 32 | 1757 | 1845 | 1527 | 129 | 406 | 1078 | 966 | 167 | 292 |
| Grp Volume(v), veh/h | 19 | 0 | 519 | 69 | 554 | 81 | 190 | 0 | 0 | 239 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1740 | 0 | 1821 | 1757 | 1845 | 1527 | 1613 | 0 | 0 | 1425 | 0 | 0 |
| Q Serve(g_s), s | 0.6 | 0.0 | 13.4 | 2.1 | 13.7 | 1.8 | 0.0 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.6 | 0.0 | 13.4 | 2.1 | 13.7 | 1.8 | 4.4 | 0.0 | 0.0 | 5.6 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.02 | 1.00 | | 1.00 | 0.15 | | 0.67 | 0.72 | | 0.21 |
| Lane Grp Cap(c), veh/h | 32 | 0 | 668 | 86 | 733 | 607 | 656 | 0 | 0 | 627 | 0 | 0 |
| V/C Ratio(X) | 0.59 | 0.00 | 0.78 | 0.80 | 0.76 | 0.13 | 0.29 | 0.00 | 0.00 | 0.38 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 131 | 0 | 790 | 199 | 869 | 719 | 656 | 0 | 0 | 627 | 0 | 0 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 25.8 | 0.0 | 14.9 | 25.0 | 13.8 | 10.2 | 12.3 | 0.0 | 0.0 | 12.6 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 16.2 | 0.0 | 4.2 | 15.4 | 3.2 | 0.1 | 1.1 | 0.0 | 0.0 | 1.8 | 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 | 0.0 | 7.4 | 1.4 | 7.6 | 0.8 | 2.2 | 0.0 | 0.0 | 2.9 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 42.1 | 0.0 | 19.1 | 40.3 | 17.0 | 10.3 | 13.5 | 0.0 | 0.0 | 14.4 | 0.0 | 0.0 |
| LnGrp LOS | D | | B | D | B | B | B | | | B | | |
| Approach Vol, veh/h | | 538 | | | 704 | | | 190 | | | 239 | |
| Approach Delay, s/veh | | 19.9 | | | 18.5 | | | 13.5 | | | 14.4 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 23.0 | 6.6 | 23.5 | | 23.0 | 5.0 | 25.1 |
| Change Period (Y+Rc), s | | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | | 19.0 | 6.0 | 23.0 | | 19.0 | 4.0 | 25.0 |
| Max Q Clear Time (g_c+I1), s | | 6.4 | 4.1 | 15.4 | | 7.6 | 2.6 | 15.7 |
| Green Ext Time (p_c), s | | 2.2 | 0.0 | 4.1 | | 2.1 | 0.0 | 4.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 17.8 |
| HCM 2010 LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 18 | 567 | 188 | 46 | 405 | 59 | 242 | 157 | 93 | 102 | 133 | 58 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 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 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 20 | 623 | 207 | 51 | 445 | 65 | 266 | 173 | 102 | 112 | 146 | 64 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 33 | 553 | 470 | 66 | 588 | 498 | 250 | 358 | 211 | 143 | 500 | 417 |
| Arrive On Green | 0.02 | 0.30 | 0.30 | 0.04 | 0.32 | 0.32 | 0.14 | 0.33 | 0.33 | 0.08 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1563 | 1757 | 1086 | 641 | 1774 | 1863 | 1554 |
| Grp Volume(v), veh/h | 20 | 623 | 207 | 51 | 445 | 65 | 266 | 0 | 275 | 112 | 146 | 64 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1563 | 1757 | 0 | 1727 | 1774 | 1863 | 1554 |
| Q Serve(g_s), s | 0.7 | 19.0 | 6.7 | 1.8 | 13.7 | 1.9 | 9.0 | 0.0 | 8.0 | 3.9 | 3.9 | 2.0 |
| Cycle Q Clear(g_c), s | 0.7 | 19.0 | 6.7 | 1.8 | 13.7 | 1.9 | 9.0 | 0.0 | 8.0 | 3.9 | 3.9 | 2.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.37 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 33 | 553 | 470 | 66 | 588 | 498 | 250 | 0 | 569 | 143 | 500 | 417 |
| V/C Ratio(X) | 0.61 | 1.13 | 0.44 | 0.78 | 0.76 | 0.13 | 1.07 | 0.00 | 0.48 | 0.78 | 0.29 | 0.15 |
| Avail Cap(c_a), veh/h | 111 | 553 | 470 | 111 | 588 | 498 | 250 | 0 | 569 | 196 | 500 | 417 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 30.9 | 22.2 | 17.9 | 30.2 | 19.4 | 15.4 | 27.2 | 0.0 | 16.9 | 28.6 | 18.4 | 17.7 |
| Incr Delay (d2), s/veh | 16.7 | 78.0 | 0.6 | 17.5 | 5.6 | 0.1 | 75.6 | 0.0 | 2.9 | 13.0 | 1.5 | 0.8 |
| 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 | 0.5 | 21.5 | 3.0 | 1.2 | 7.8 | 0.8 | 9.5 | 0.0 | 4.3 | 2.4 | 2.2 | 0.9 |
| LnGrp Delay(d),s/veh | 47.6 | 100.2 | 18.5 | 47.7 | 25.0 | 15.5 | 102.7 | 0.0 | 19.9 | 41.6 | 19.9 | 18.5 |
| LnGrp LOS | D | F | B | D | C | B | F | | B | D | B | B |
| Approach Vol, veh/h | | 850 | | | 561 | | | 541 | | | 322 | |
| Approach Delay, s/veh | | 79.1 | | | 26.0 | | | 60.6 | | | 27.1 | |
| Approach LOS | | E | | | C | | | E | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 9.1 | 24.9 | 6.4 | 23.0 | 13.0 | 21.0 | 5.2 | 24.2 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | 19.0 | 4.0 | 19.0 | 9.0 | 17.0 | 4.0 | 19.0 |
| Max Q Clear Time (g_c+I1), s | 5.9 | 10.0 | 3.8 | 21.0 | 11.0 | 5.9 | 2.7 | 15.7 |
| Green Ext Time (p_c), s | 0.0 | 1.9 | 0.0 | 0.0 | 0.0 | 2.1 | 0.0 | 2.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 54.2 |
| HCM 2010 LOS | D |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.2 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 13 | 259 | 307 | 21 | 63 | 38 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 14 | 282 | 334 | 23 | 68 | 41 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 357 | 0 | - | 0 | 655 | 345 |
| Stage 1 | - | - | - | - | 345 | - |
| Stage 2 | - | - | - | - | 310 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1202 | - | - | - | 431 | 698 |
| Stage 1 | - | - | - | - | 717 | - |
| Stage 2 | - | - | - | - | 744 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1202 | - | - | - | 425 | 698 |
| Mov Cap-2 Maneuver | - | - | - | - | 425 | - |
| Stage 1 | - | - | - | - | 717 | - |
| Stage 2 | - | - | - | - | 734 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.4 | 0 | 14.3 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1202 | - | - | - | 498 |
| HCM Lane V/C Ratio | 0.012 | - | - | - | 0.22 |
| HCM Control Delay (s) | 8 | 0 | - | - | 14.3 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.8 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 88 | 29 | 0 | 1 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 96 | 32 | 0 | 1 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 64 | 1 | 1 | 0 | - | 0 |
| Stage 1 | 1 | - | - | - | - | - |
| Stage 2 | 63 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 942 | 1084 | 1622 | - | - | - |
| Stage 1 | 1022 | - | - | - | - | - |
| Stage 2 | 960 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 923 | 1084 | 1622 | - | - | - |
| Mov Cap-2 Maneuver | 923 | - | - | - | - | - |
| Stage 1 | 1022 | - | - | - | - | - |
| Stage 2 | 941 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.6 | 7.3 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1622 | - | 1084 | - | - |
| HCM Lane V/C Ratio | 0.019 | - | 0.088 | - | - |
| HCM Control Delay (s) | 7.3 | 0 | 8.6 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 0.3 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 19 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 0 | 0 | 84 | 4 | 170 | 2 | 393 | 70 | 354 | 424 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 50 | 325 | - | 70 | 520 | - | 520 | 515 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 | 99 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 13 | 13 | 13 | 10 | 10 | 10 |
| Mvmt Flow | 0 | 0 | 0 | 85 | 4 | 172 | 2 | 397 | 71 | 358 | 428 | 0 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1546 | 1544 | 428 | 1544 | 1544 | 397 | 428 | 0 | 0 | 397 | 0 | 0 |
| Stage 1 | 1143 | 1143 | - | 401 | 401 | - | - | - | - | - | - | - |
| Stage 2 | 403 | 401 | - | 1143 | 1143 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.23 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.317 | - | - | 2.29 | - | - |
| Pot Cap-1 Maneuver | 93 | 115 | 627 | 94 | 115 | 652 | 1075 | - | - | 1119 | - | - |
| Stage 1 | 243 | 275 | - | 626 | 601 | - | - | - | - | - | - | - |
| Stage 2 | 624 | 601 | - | 243 | 275 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 50 | 78 | 627 | ~ 71 | 78 | 652 | 1075 | - | - | 1119 | - | - |
| Mov Cap-2 Maneuver | 50 | 78 | - | ~ 71 | 78 | - | - | - | - | - | - | - |
| Stage 1 | 243 | 187 | - | 625 | 600 | - | - | - | - | - | - | - |
| Stage 2 | 456 | 600 | - | 165 | 187 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 97.1 | 0 | 4.4 |
| HCM LOS | A | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | WBLn2 | WBLn3 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1075 | - | - | - | - | 71 | 78 | 652 | 1119 | - | - |
| HCM Lane V/C Ratio | 0.002 | - | - | - | - | 1.195 | 0.052 | 0.263 | 0.32 | - | - |
| HCM Control Delay (s) | 8.4 | - | - | 0 | 0 | 270.5 | 53.7 | 12.5 | 9.7 | - | - |
| HCM Lane LOS | A | - | - | A | A | F | F | B | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - | - | 6.6 | 0.2 | 1.1 | 1.4 | - | - |

Notes

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 6.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 13 | 306 | 82 | 24 | 229 | 42 | 63 | 58 | 19 | 18 | 36 | 9 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 15 | 356 | 95 | 28 | 266 | 49 | 73 | 67 | 22 | 21 | 42 | 10 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 320 | 0 | 0 | 456 | 0 | 0 | 817 | 815 | 408 | 835 | 838 | 296 |
| Stage 1 | - | - | - | - | - | - | 439 | 439 | - | 352 | 352 | - |
| Stage 2 | - | - | - | - | - | - | 378 | 376 | - | 483 | 486 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1240 | - | - | 1105 | - | - | 295 | 312 | 643 | 287 | 302 | 743 |
| Stage 1 | - | - | - | - | - | - | 597 | 578 | - | 665 | 632 | - |
| Stage 2 | - | - | - | - | - | - | 644 | 616 | - | 565 | 551 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1240 | - | - | 1105 | - | - | 248 | 295 | 640 | 220 | 286 | 740 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 248 | 295 | - | 220 | 286 | - |
| Stage 1 | - | - | - | - | - | - | 585 | 566 | - | 652 | 610 | - |
| Stage 2 | - | - | - | - | - | - | 573 | 594 | - | 473 | 540 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.3 | 0.7 | 32 | 21.8 |
| HCM LOS | | | D | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 291 | 1240 | - | - | 1105 | - | - | 287 |
| HCM Lane V/C Ratio | 0.559 | 0.012 | - | - | 0.025 | - | - | 0.255 |
| HCM Control Delay (s) | 32 | 7.9 | 0 | - | 8.3 | 0 | - | 21.8 |
| HCM Lane LOS | D | A | A | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 3.2 | 0 | - | - | 0.1 | - | - | 1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 3 | 223 | 138 | 50 | 184 | 5 | 130 | 2 | 60 | 1 | 5 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 279 | 172 | 62 | 230 | 6 | 162 | 2 | 75 | 1 | 6 | 1 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 241 | 0 | 0 | 456 | 0 | 0 | 745 | 744 | 370 | 779 | 827 | 238 |
| Stage 1 | - | - | - | - | - | - | 378 | 378 | - | 363 | 363 | - |
| Stage 2 | - | - | - | - | - | - | 367 | 366 | - | 416 | 464 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1326 | - | - | 1105 | - | - | 330 | 343 | 676 | 313 | 307 | 801 |
| Stage 1 | - | - | - | - | - | - | 644 | 615 | - | 656 | 625 | - |
| Stage 2 | - | - | - | - | - | - | 653 | 623 | - | 614 | 564 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1326 | - | - | 1105 | - | - | 305 | 316 | 673 | 261 | 283 | 798 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 305 | 316 | - | 261 | 283 | - |
| Stage 1 | - | - | - | - | - | - | 639 | 610 | - | 651 | 581 | - |
| Stage 2 | - | - | - | - | - | - | 602 | 579 | - | 541 | 559 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 1.8 | 31.4 | 17 |
| HCM LOS | | | D | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 368 | 1326 | - | - | 1105 | - | - | 308 |
| HCM Lane V/C Ratio | 0.652 | 0.003 | - | - | 0.057 | - | - | 0.028 |
| HCM Control Delay (s) | 31.4 | 7.7 | 0 | - | 8.5 | 0 | - | 17 |
| HCM Lane LOS | D | A | A | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 4.4 | 0 | - | - | 0.2 | - | - | 0.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 44 | 651 | 25 | 97 | 515 | 147 | 13 | 12 | 91 | 142 | 27 | 30 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1863 | 1863 | 1900 | 1863 | 1863 | 1863 | 1900 | 1863 | 1900 | 1900 | 1863 | 1900 |
| Adj Flow Rate, veh/h | 46 | 678 | 26 | 101 | 536 | 153 | 14 | 12 | 95 | 148 | 28 | 31 |
| Adj No. of Lanes | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 64 | 704 | 27 | 129 | 804 | 670 | 95 | 86 | 411 | 426 | 82 | 71 |
| Arrive On Green | 0.04 | 0.39 | 0.39 | 0.07 | 0.43 | 0.43 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1774 | 1782 | 68 | 1774 | 1863 | 1552 | 81 | 264 | 1259 | 980 | 250 | 217 |
| Grp Volume(v), veh/h | 46 | 0 | 704 | 101 | 536 | 153 | 121 | 0 | 0 | 207 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1774 | 0 | 1851 | 1774 | 1863 | 1552 | 1604 | 0 | 0 | 1446 | 0 | 0 |
| Q Serve(g_s), s | 1.5 | 0.0 | 21.6 | 3.3 | 13.4 | 3.6 | 0.0 | 0.0 | 0.0 | 2.7 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 1.5 | 0.0 | 21.6 | 3.3 | 13.4 | 3.6 | 3.1 | 0.0 | 0.0 | 5.8 | 0.0 | 0.0 |
| Prop In Lane | 1.00 | | 0.04 | 1.00 | | 1.00 | 0.12 | | 0.79 | 0.71 | | 0.15 |
| Lane Grp Cap(c), veh/h | 64 | 0 | 731 | 129 | 804 | 670 | 592 | 0 | 0 | 578 | 0 | 0 |
| V/C Ratio(X) | 0.72 | 0.00 | 0.96 | 0.78 | 0.67 | 0.23 | 0.20 | 0.00 | 0.00 | 0.36 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 122 | 0 | 731 | 183 | 804 | 670 | 592 | 0 | 0 | 578 | 0 | 0 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 27.8 | 0.0 | 17.2 | 26.5 | 13.2 | 10.4 | 14.3 | 0.0 | 0.0 | 15.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 14.0 | 0.0 | 24.5 | 13.1 | 2.1 | 0.2 | 0.8 | 0.0 | 0.0 | 1.7 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.0 | 0.0 | 15.9 | 2.1 | 7.3 | 1.6 | 1.5 | 0.0 | 0.0 | 2.8 | 0.0 | 0.0 |
| LnGrp Delay(d),s/veh | 41.8 | 0.0 | 41.7 | 39.6 | 15.3 | 10.6 | 15.1 | 0.0 | 0.0 | 16.8 | 0.0 | 0.0 |
| LnGrp LOS | D | | D | D | B | B | B | | | B | | |
| Approach Vol, veh/h | | 750 | | | 790 | | | 121 | | | 207 | |
| Approach Delay, s/veh | | 41.7 | | | 17.5 | | | 15.1 | | | 16.8 | |
| Approach LOS | | D | | | B | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | | 2 | 3 | 4 | | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | | 23.0 | 8.2 | 27.0 | | 23.0 | 6.1 | 29.1 |
| Change Period (Y+Rc), s | | 4.0 | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | | 19.0 | 6.0 | 23.0 | | 19.0 | 4.0 | 25.0 |
| Max Q Clear Time (g_c+I1), s | | 5.1 | 5.3 | 23.6 | | 7.8 | 3.5 | 15.4 |
| Green Ext Time (p_c), s | | 1.7 | 0.0 | 0.0 | | 1.5 | 0.0 | 5.7 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 27.0 |
| HCM 2010 LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 51 | 619 | 223 | 108 | 636 | 58 | 255 | 150 | 69 | 58 | 148 | 43 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 53 | 638 | 230 | 111 | 656 | 60 | 263 | 155 | 71 | 60 | 153 | 44 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 67 | 539 | 458 | 108 | 583 | 495 | 243 | 428 | 196 | 76 | 487 | 413 |
| Arrive On Green | 0.04 | 0.29 | 0.29 | 0.06 | 0.32 | 0.32 | 0.14 | 0.36 | 0.36 | 0.04 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 1197 | 548 | 1774 | 1863 | 1580 |
| Grp Volume(v), veh/h | 53 | 638 | 230 | 111 | 656 | 60 | 263 | 0 | 226 | 60 | 153 | 44 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 0 | 1745 | 1774 | 1863 | 1580 |
| Q Serve(g_s), s | 1.9 | 19.0 | 7.9 | 4.0 | 20.5 | 1.8 | 9.0 | 0.0 | 6.2 | 2.2 | 4.3 | 1.4 |
| Cycle Q Clear(g_c), s | 1.9 | 19.0 | 7.9 | 4.0 | 20.5 | 1.8 | 9.0 | 0.0 | 6.2 | 2.2 | 4.3 | 1.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.31 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 67 | 539 | 458 | 108 | 583 | 495 | 243 | 0 | 623 | 76 | 487 | 413 |
| V/C Ratio(X) | 0.80 | 1.18 | 0.50 | 1.03 | 1.13 | 0.12 | 1.08 | 0.00 | 0.36 | 0.79 | 0.31 | 0.11 |
| Avail Cap(c_a), veh/h | 108 | 539 | 458 | 108 | 583 | 495 | 243 | 0 | 623 | 191 | 487 | 413 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.0 | 23.0 | 19.1 | 30.5 | 22.2 | 15.8 | 28.0 | 0.0 | 15.4 | 30.8 | 19.3 | 18.2 |
| Incr Delay (d2), s/veh | 18.9 | 100.2 | 0.9 | 93.9 | 76.9 | 0.1 | 81.0 | 0.0 | 1.6 | 16.5 | 1.7 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.3 | 24.6 | 3.5 | 4.7 | 22.8 | 0.8 | 9.8 | 0.0 | 3.2 | 1.4 | 2.4 | 0.7 |
| LnGrp Delay(d),s/veh | 49.9 | 123.2 | 19.9 | 124.8 | 99.1 | 15.9 | 109.0 | 0.0 | 17.1 | 47.3 | 21.0 | 18.7 |
| LnGrp LOS | D | F | B | F | F | B | F | | B | D | C | B |
| Approach Vol, veh/h | | 921 | | | 827 | | | 489 | | | 257 | |
| Approach Delay, s/veh | | 93.2 | | | 96.5 | | | 66.5 | | | 26.8 | |
| Approach LOS | | F | | | F | | | E | | | C | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 6.8 | 27.2 | 8.0 | 23.0 | 13.0 | 21.0 | 6.5 | 24.5 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | 19.0 | 4.0 | 19.0 | 9.0 | 17.0 | 4.0 | 19.0 |
| Max Q Clear Time (g_c+I1), s | 4.2 | 8.2 | 6.0 | 21.0 | 11.0 | 6.3 | 3.9 | 22.5 |
| Green Ext Time (p_c), s | 0.0 | 1.8 | 0.0 | 0.0 | 0.0 | 1.8 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 82.2 |
| HCM 2010 LOS | F |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.7 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 42 | 360 | 231 | 70 | 41 | 25 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 46 | 391 | 251 | 76 | 45 | 27 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 327 | 0 | - | 0 | 772 | 289 |
| Stage 1 | - | - | - | - | 289 | - |
| Stage 2 | - | - | - | - | 483 | - |
| Critical Hdwy | 4.12 | - | - | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | 1233 | - | - | - | 368 | 750 |
| Stage 1 | - | - | - | - | 760 | - |
| Stage 2 | - | - | - | - | 620 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1233 | - | - | - | 350 | 750 |
| Mov Cap-2 Maneuver | - | - | - | - | 350 | - |
| Stage 1 | - | - | - | - | 760 | - |
| Stage 2 | - | - | - | - | 590 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0.8 | 0 | 14.8 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1233 | - | - | - | 439 |
| HCM Lane V/C Ratio | 0.037 | - | - | - | 0.163 |
| HCM Control Delay (s) | 8 | 0 | - | - | 14.8 |
| HCM Lane LOS | A | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.6 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 58 | 100 | 0 | 1 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 63 | 109 | 0 | 1 | 0 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 218 | 1 | 1 | 0 | - | 0 |
| Stage 1 | 1 | - | - | - | - | - |
| Stage 2 | 217 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 770 | 1084 | 1622 | - | - | - |
| Stage 1 | 1022 | - | - | - | - | - |
| Stage 2 | 819 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 718 | 1084 | 1622 | - | - | - |
| Mov Cap-2 Maneuver | 718 | - | - | - | - | - |
| Stage 1 | 1022 | - | - | - | - | - |
| Stage 2 | 764 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.5 | 7.4 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1622 | - | 1084 | - | - |
| HCM Lane V/C Ratio | 0.067 | - | 0.058 | - | - |
| HCM Control Delay (s) | 7.4 | 0 | 8.5 | - | - |
| HCM Lane LOS | A | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | 0.2 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 2 | 6 | 1 | 78 | 0 | 329 | 2 | 278 | 79 | 80 | 266 | 0 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1696 | 1696 | 1696 | 1508 | 1508 | 1900 |
| Adj Flow Rate, veh/h | 2 | 6 | 1 | 82 | 0 | 346 | 2 | 293 | 83 | 84 | 280 | 0 |
| Adj No. of Lanes | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 12 | 12 | 12 | 26 | 26 | 26 |
| Cap, veh/h | 4 | 13 | 15 | 383 | 402 | 342 | 4 | 470 | 400 | 94 | 514 | 0 |
| Arrive On Green | 0.01 | 0.01 | 0.01 | 0.22 | 0.00 | 0.22 | 0.00 | 0.28 | 0.28 | 0.07 | 0.34 | 0.00 |
| Sat Flow, veh/h | 460 | 1380 | 1583 | 1774 | 1863 | 1583 | 1616 | 1696 | 1442 | 1436 | 1508 | 0 |
| Grp Volume(v), veh/h | 8 | 0 | 1 | 82 | 0 | 346 | 2 | 293 | 83 | 84 | 280 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1840 | 0 | 1583 | 1774 | 1863 | 1583 | 1616 | 1696 | 1442 | 1436 | 1508 | 0 |
| Q Serve(g_s), s | 0.2 | 0.0 | 0.0 | 1.4 | 0.0 | 8.0 | 0.0 | 5.6 | 1.6 | 2.2 | 5.6 | 0.0 |
| Cycle Q Clear(g_c), s | 0.2 | 0.0 | 0.0 | 1.4 | 0.0 | 8.0 | 0.0 | 5.6 | 1.6 | 2.2 | 5.6 | 0.0 |
| Prop In Lane | 0.25 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 18 | 0 | 15 | 383 | 402 | 342 | 4 | 470 | 400 | 94 | 514 | 0 |
| V/C Ratio(X) | 0.46 | 0.00 | 0.07 | 0.21 | 0.00 | 1.01 | 0.46 | 0.62 | 0.21 | 0.89 | 0.54 | 0.00 |
| Avail Cap(c_a), veh/h | 794 | 0 | 683 | 383 | 402 | 342 | 174 | 961 | 817 | 349 | 1058 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 18.3 | 0.0 | 18.2 | 11.9 | 0.0 | 14.5 | 18.5 | 11.7 | 10.3 | 17.2 | 9.9 | 0.0 |
| Incr Delay (d2), s/veh | 17.3 | 0.0 | 1.8 | 0.3 | 0.0 | 51.9 | 60.6 | 1.4 | 0.3 | 22.7 | 0.9 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.2 | 0.0 | 0.0 | 0.7 | 0.0 | 8.3 | 0.1 | 2.8 | 0.7 | 1.4 | 2.4 | 0.0 |
| LnGrp Delay(d),s/veh | 35.5 | 0.0 | 20.0 | 12.2 | 0.0 | 66.5 | 79.0 | 13.1 | 10.5 | 39.9 | 10.8 | 0.0 |
| LnGrp LOS | D | | C | B | | F | E | B | B | D | B | |
| Approach Vol, veh/h | | 9 | | | 428 | | | 378 | | | 364 | |
| Approach Delay, s/veh | | 33.8 | | | 56.1 | | | 12.9 | | | 17.5 | |
| Approach LOS | | C | | | E | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 6.4 | 14.3 | | 4.4 | 4.1 | 16.6 | | 12.0 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 9.0 | 21.0 | | 16.0 | 4.0 | 26.0 | | 8.0 |
| Max Q Clear Time (g_c+I1), s | 4.2 | 7.6 | | 2.2 | 2.0 | 7.6 | | 10.0 |
| Green Ext Time (p_c), s | 0.1 | 2.7 | | 0.0 | 0.0 | 3.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 30.1 |
| HCM 2010 LOS | C |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 18.2 |
| Intersection LOS | C |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 1 | 234 | 167 | 0 | 55 | 238 | 1 | 0 | 151 | 9 | 40 |
| Peak Hour Factor | 0.92 | 0.67 | 0.67 | 0.67 | 0.92 | 0.67 | 0.67 | 0.67 | 0.92 | 0.67 | 0.67 | 0.67 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 1 | 349 | 249 | 0 | 82 | 355 | 1 | 0 | 225 | 13 | 60 |
| Number of Lanes | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | SB |
| Opposing Lanes | 1 | 2 | 1 |
| Conflicting Approach Left | SB | NB | EB |
| Conflicting Lanes Left | 1 | 1 | 2 |
| Conflicting Approach Right | NB | SB | WB |
| Conflicting Lanes Right | 1 | 1 | 1 |
| HCM Control Delay | 15.6 | 22.9 | 16.8 |
| HCM LOS | C | C | C |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 76% | 0% | 0% | 19% | 29% |
| Vol Thru, % | 4% | 100% | 0% | 81% | 43% |
| Vol Right, % | 20% | 0% | 100% | 0% | 29% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 200 | 235 | 167 | 294 | 7 |
| LT Vol | 151 | 1 | 0 | 55 | 2 |
| Through Vol | 9 | 234 | 0 | 238 | 3 |
| RT Vol | 40 | 0 | 167 | 1 | 2 |
| Lane Flow Rate | 299 | 351 | 249 | 439 | 10 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.535 | 0.608 | 0.383 | 0.721 | 0.021 |
| Departure Headway (Hd) | 6.45 | 6.24 | 5.525 | 5.916 | 7.407 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 555 | 575 | 648 | 610 | 486 |
| Service Time | 4.52 | 4.01 | 3.295 | 3.982 | 5.407 |
| HCM Lane V/C Ratio | 0.539 | 0.61 | 0.384 | 0.72 | 0.021 |
| HCM Control Delay | 16.8 | 18.3 | 11.7 | 22.9 | 10.6 |
| HCM Lane LOS | C | C | B | C | B |
| HCM 95th-tile Q | 3.1 | 4.1 | 1.8 | 6 | 0.1 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | |
| Intersection LOS | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Vol, veh/h | 0 | 2 | 3 | 2 |
| Peak Hour Factor | 0.92 | 0.67 | 0.67 | 0.67 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 3 | 4 | 3 |
| Number of Lanes | 0 | 0 | 1 | 0 |

| Approach | SB |
|---|---|
| Opposing Approach | NB |
| Opposing Lanes | 1 |
| Conflicting Approach Left | WB |
| Conflicting Lanes Left | 1 |
| Conflicting Approach Right | EB |
| Conflicting Lanes Right | 2 |
| HCM Control Delay | 10.6 |
| HCM LOS | B |

| Lane |
|---|

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 18 | 567 | 188 | 46 | 405 | 59 | 242 | 157 | 93 | 102 | 133 | 58 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | | 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 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 20 | 623 | 207 | 51 | 445 | 65 | 266 | 173 | 102 | 112 | 146 | 64 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 32 | 671 | 570 | 64 | 705 | 597 | 305 | 340 | 201 | 142 | 409 | 340 |
| Arrive On Green | 0.02 | 0.36 | 0.36 | 0.04 | 0.38 | 0.38 | 0.17 | 0.31 | 0.31 | 0.08 | 0.22 | 0.22 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1564 | 1757 | 1086 | 640 | 1774 | 1863 | 1547 |
| Grp Volume(v), veh/h | 20 | 623 | 207 | 51 | 445 | 65 | 266 | 0 | 275 | 112 | 146 | 64 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1564 | 1757 | 0 | 1727 | 1774 | 1863 | 1547 |
| Q Serve(g_s), s | 0.9 | 25.1 | 7.5 | 2.2 | 15.2 | 2.1 | 11.4 | 0.0 | 10.1 | 4.8 | 5.1 | 2.6 |
| Cycle Q Clear(g_c), s | 0.9 | 25.1 | 7.5 | 2.2 | 15.2 | 2.1 | 11.4 | 0.0 | 10.1 | 4.8 | 5.1 | 2.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.37 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 32 | 671 | 570 | 64 | 705 | 597 | 305 | 0 | 541 | 142 | 409 | 340 |
| V/C Ratio(X) | 0.63 | 0.93 | 0.36 | 0.80 | 0.63 | 0.11 | 0.87 | 0.00 | 0.51 | 0.79 | 0.36 | 0.19 |
| Avail Cap(c_a), veh/h | 91 | 691 | 588 | 91 | 705 | 597 | 318 | 0 | 541 | 161 | 409 | 340 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.7 | 23.7 | 18.0 | 37.0 | 19.5 | 15.4 | 31.1 | 0.0 | 21.7 | 34.9 | 25.6 | 24.6 |
| Incr Delay (d2), s/veh | 18.8 | 18.7 | 0.4 | 26.8 | 1.8 | 0.1 | 21.8 | 0.0 | 3.4 | 20.5 | 2.4 | 1.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.6 | 16.1 | 3.3 | 1.6 | 8.0 | 0.9 | 7.4 | 0.0 | 5.3 | 3.1 | 2.9 | 1.2 |
| LnGrp Delay(d),s/veh | 56.5 | 42.3 | 18.4 | 63.8 | 21.3 | 15.5 | 53.0 | 0.0 | 25.1 | 55.5 | 28.0 | 25.8 |
| LnGrp LOS | E | D | B | E | C | B | D | | C | E | C | C |
| Approach Vol, veh/h | | 850 | | | 561 | | | 541 | | | 322 | |
| Approach Delay, s/veh | | 36.9 | | | 24.5 | | | 38.8 | | | 37.1 | |
| Approach LOS | | D | | | C | | | D | | | D | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 10.2 | 28.2 | 6.8 | 32.1 | 17.4 | 21.0 | 5.4 | 33.5 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 7.0 | 24.0 | 4.0 | 29.0 | 14.0 | 17.0 | 4.0 | 29.0 |
| Max Q Clear Time (g_c+I1), s | 6.8 | 12.1 | 4.2 | 27.1 | 13.4 | 7.1 | 2.9 | 17.2 |
| Green Ext Time (p_c), s | 0.0 | 2.2 | 0.0 | 1.0 | 0.1 | 2.0 | 0.0 | 6.2 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 34.3 |
| HCM 2010 LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 0 | 0 | 0 | 84 | 4 | 170 | 2 | 393 | 70 | 354 | 424 | 0 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1900 | 1863 | 1863 | 1863 | 1863 | 1863 | 1681 | 1681 | 1681 | 1727 | 1727 | 1900 |
| Adj Flow Rate, veh/h | 0 | 0 | 0 | 85 | 4 | 172 | 2 | 397 | 71 | 358 | 428 | 0 |
| Adj No. of Lanes | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| Peak Hour Factor | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 13 | 13 | 13 | 10 | 10 | 10 |
| Cap, veh/h | 0 | 5 | 4 | 172 | 181 | 154 | 4 | 582 | 494 | 438 | 1053 | 0 |
| Arrive On Green | 0.00 | 0.00 | 0.00 | 0.10 | 0.10 | 0.10 | 0.00 | 0.35 | 0.35 | 0.27 | 0.61 | 0.00 |
| Sat Flow, veh/h | 0 | 1863 | 1583 | 1774 | 1863 | 1583 | 1601 | 1681 | 1429 | 1645 | 1727 | 0 |
| Grp Volume(v), veh/h | 0 | 0 | 0 | 85 | 4 | 172 | 2 | 397 | 71 | 358 | 428 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1863 | 1583 | 1774 | 1863 | 1583 | 1601 | 1681 | 1429 | 1645 | 1727 | 0 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 1.9 | 0.1 | 4.0 | 0.1 | 8.3 | 1.4 | 8.4 | 5.3 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 0.0 | 1.9 | 0.1 | 4.0 | 0.1 | 8.3 | 1.4 | 8.4 | 5.3 | 0.0 |
| Prop In Lane | 0.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 0 | 5 | 4 | 172 | 181 | 154 | 4 | 582 | 494 | 438 | 1053 | 0 |
| V/C Ratio(X) | 0.00 | 0.00 | 0.00 | 0.49 | 0.02 | 1.12 | 0.52 | 0.68 | 0.14 | 0.82 | 0.41 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 723 | 614 | 172 | 181 | 154 | 155 | 978 | 832 | 798 | 1675 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 0.0 | 0.0 | 17.7 | 16.9 | 18.6 | 20.6 | 11.5 | 9.3 | 14.2 | 4.2 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.0 | 2.2 | 0.0 | 108.5 | 78.3 | 1.4 | 0.1 | 3.8 | 0.3 | 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 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 6.3 | 0.1 | 4.1 | 0.6 | 4.2 | 2.6 | 0.0 |
| LnGrp Delay(d),s/veh | 0.0 | 0.0 | 0.0 | 19.8 | 16.9 | 127.1 | 98.9 | 13.0 | 9.4 | 18.0 | 4.4 | 0.0 |
| LnGrp LOS | | | | B | B | F | F | B | A | B | A | |
| Approach Vol, veh/h | | 0 | | | 261 | | | 470 | | | 786 | |
| Approach Delay, s/veh | | 0.0 | | | 90.5 | | | 12.8 | | | 10.6 | |
| Approach LOS | | | | | F | | | B | | | B | |

| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
| Phs Duration (G+Y+Rc), s | 15.0 | 18.3 | | 0.0 | 4.1 | 29.2 | | 8.0 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | | 4.0 | 4.0 | 4.0 | | 4.0 |
| Max Green Setting (Gmax), s | 20.0 | 24.0 | | 16.0 | 4.0 | 40.0 | | 4.0 |
| Max Q Clear Time (g_c+I1), s | 10.4 | 10.3 | | 0.0 | 2.1 | 7.3 | | 6.0 |
| Green Ext Time (p_c), s | 0.7 | 3.9 | | 0.0 | 0.0 | 5.0 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 25.0 |
| HCM 2010 LOS | C |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 12 |
| Intersection LOS | B |

| Movement | EBU | EBL | EBT | EBR | WBU | WBL | WBT | WBR | NBU | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vol, veh/h | 0 | 3 | 223 | 138 | 0 | 50 | 184 | 5 | 0 | 130 | 2 | 60 |
| Peak Hour Factor | 0.92 | 0.80 | 0.80 | 0.80 | 0.92 | 0.80 | 0.80 | 0.80 | 0.92 | 0.80 | 0.80 | 0.80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 4 | 279 | 172 | 0 | 62 | 230 | 6 | 0 | 162 | 2 | 75 |
| Number of Lanes | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB |
|---|---|---|---|
| Opposing Approach | WB | EB | SB |
| Opposing Lanes | 1 | 2 | 1 |
| Conflicting Approach Left | SB | NB | EB |
| Conflicting Lanes Left | 1 | 1 | 2 |
| Conflicting Approach Right | NB | SB | WB |
| Conflicting Lanes Right | 1 | 1 | 1 |
| HCM Control Delay | 11.4 | 12.7 | 12.2 |
| HCM LOS | B | B | B |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 68% | 1% | 0% | 21% | 14% |
| Vol Thru, % | 1% | 99% | 0% | 77% | 71% |
| Vol Right, % | 31% | 0% | 100% | 2% | 14% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 192 | 226 | 138 | 239 | 7 |
| LT Vol | 130 | 3 | 0 | 50 | 1 |
| Through Vol | 2 | 223 | 0 | 184 | 5 |
| RT Vol | 60 | 0 | 138 | 5 | 1 |
| Lane Flow Rate | 240 | 282 | 172 | 299 | 9 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.379 | 0.444 | 0.237 | 0.447 | 0.015 |
| Departure Headway (Hd) | 5.688 | 5.659 | 4.944 | 5.389 | 6.225 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 634 | 638 | 726 | 669 | 574 |
| Service Time | 3.718 | 3.385 | 2.67 | 3.416 | 4.274 |
| HCM Lane V/C Ratio | 0.379 | 0.442 | 0.237 | 0.447 | 0.016 |
| HCM Control Delay | 12.2 | 12.8 | 9.2 | 12.7 | 9.4 |
| HCM Lane LOS | B | B | A | B | A |
| HCM 95th-tile Q | 1.8 | 2.3 | 0.9 | 2.3 | 0 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | |
| Intersection LOS | |

| Movement | SBU | SBL | SBT | SBR |
|---|---|---|---|---|
| Vol, veh/h | 0 | 1 | 5 | 1 |
| Peak Hour Factor | 0.92 | 0.80 | 0.80 | 0.80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 1 | 6 | 1 |
| Number of Lanes | 0 | 0 | 1 | 0 |

| Approach | SB |
|---|---|
| Opposing Approach | NB |
| Opposing Lanes | 1 |
| Conflicting Approach Left | WB |
| Conflicting Lanes Left | 1 |
| Conflicting Approach Right | EB |
| Conflicting Lanes Right | 2 |
| HCM Control Delay | 9.4 |
| HCM LOS | A |

| Lane |
|---|

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Volume (veh/h) | 51 | 619 | 223 | 108 | 636 | 58 | 255 | 150 | 69 | 58 | 148 | 43 |
| Number | 7 | 4 | 14 | 3 | 8 | 18 | 5 | 2 | 12 | 1 | 6 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj Sat Flow, veh/h/ln | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1845 | 1900 | 1863 | 1863 | 1863 |
| Adj Flow Rate, veh/h | 53 | 638 | 230 | 111 | 656 | 60 | 263 | 155 | 71 | 60 | 153 | 44 |
| Adj No. of Lanes | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 |
| Cap, veh/h | 67 | 568 | 482 | 108 | 611 | 520 | 216 | 409 | 187 | 76 | 487 | 413 |
| Arrive On Green | 0.04 | 0.31 | 0.31 | 0.06 | 0.33 | 0.33 | 0.12 | 0.34 | 0.34 | 0.04 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 1197 | 548 | 1774 | 1863 | 1580 |
| Grp Volume(v), veh/h | 53 | 638 | 230 | 111 | 656 | 60 | 263 | 0 | 226 | 60 | 153 | 44 |
| Grp Sat Flow(s),veh/h/ln | 1757 | 1845 | 1568 | 1757 | 1845 | 1568 | 1757 | 0 | 1745 | 1774 | 1863 | 1580 |
| Q Serve(g_s), s | 1.9 | 20.0 | 7.7 | 4.0 | 21.5 | 1.7 | 8.0 | 0.0 | 6.4 | 2.2 | 4.3 | 1.4 |
| Cycle Q Clear(g_c), s | 1.9 | 20.0 | 7.7 | 4.0 | 21.5 | 1.7 | 8.0 | 0.0 | 6.4 | 2.2 | 4.3 | 1.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.31 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 67 | 568 | 482 | 108 | 611 | 520 | 216 | 0 | 597 | 76 | 487 | 413 |
| V/C Ratio(X) | 0.80 | 1.12 | 0.48 | 1.03 | 1.07 | 0.12 | 1.22 | 0.00 | 0.38 | 0.79 | 0.31 | 0.11 |
| Avail Cap(c_a), veh/h | 108 | 568 | 482 | 108 | 611 | 520 | 216 | 0 | 597 | 164 | 487 | 413 |
| 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 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.0 | 22.5 | 18.3 | 30.5 | 21.7 | 15.1 | 28.5 | 0.0 | 16.2 | 30.8 | 19.3 | 18.2 |
| Incr Delay (d2), s/veh | 18.9 | 76.7 | 0.7 | 93.9 | 57.7 | 0.1 | 131.9 | 0.0 | 1.8 | 16.7 | 1.7 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.3 | 22.2 | 3.4 | 4.7 | 20.7 | 0.8 | 11.8 | 0.0 | 3.4 | 1.4 | 2.4 | 0.7 |
| LnGrp Delay(d),s/veh | 49.9 | 99.2 | 19.0 | 124.8 | 79.4 | 15.2 | 160.4 | 0.0 | 18.0 | 47.5 | 21.0 | 18.7 |
| LnGrp LOS | D | F | B | F | F | B | F | | B | D | C | B |
| Approach Vol, veh/h | | 921 | | | 827 | | | 489 | | | 257 | |
| Approach Delay, s/veh | | 76.4 | | | 80.8 | | | 94.6 | | | 26.8 | |
| Approach LOS | | E | | | F | | | F | | | C | |

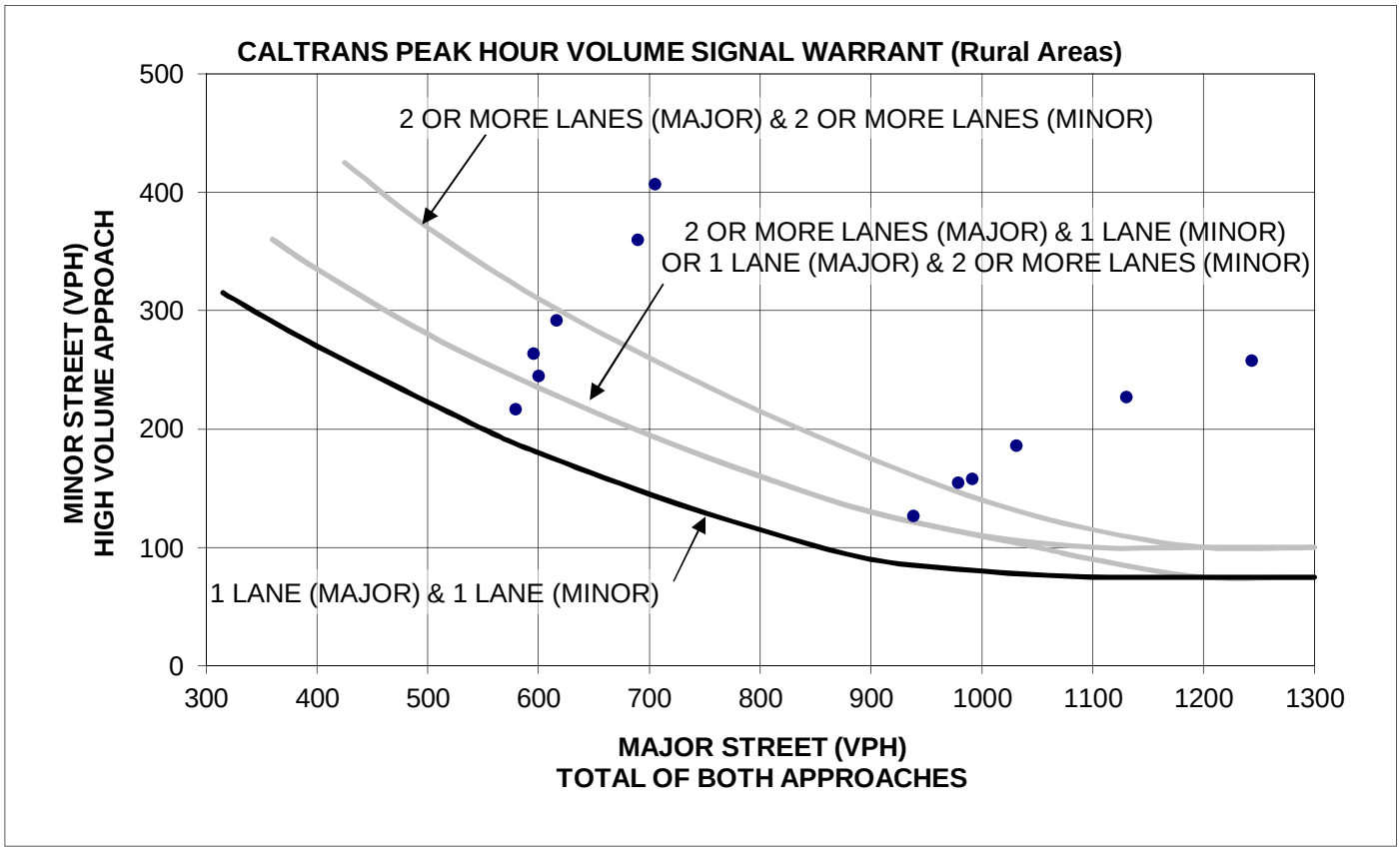
| Timer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Phs Duration (G+Y+Rc), s | 6.8 | 26.2 | 8.0 | 24.0 | 12.0 | 21.0 | 6.5 | 25.5 |
| Change Period (Y+Rc), s | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Max Green Setting (Gmax), s | 6.0 | 19.0 | 4.0 | 20.0 | 8.0 | 17.0 | 4.0 | 20.0 |
| Max Q Clear Time (g_c+I1), s | 4.2 | 8.4 | 6.0 | 22.0 | 10.0 | 6.3 | 3.9 | 23.5 |
| Green Ext Time (p_c), s | 0.0 | 1.8 | 0.0 | 0.0 | 0.0 | 1.8 | 0.0 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 2010 Ctrl Delay | 76.3 |
| HCM 2010 LOS | E |

# Appendix K

## Warrant Worksheets

# Warrant 3B - Peak-Hour Delay




| Scenario | SR 156 North/South | Buena Vista East/West | Warrant Met? |
|---|---|---|---|
| A. Existing AM | 579 | 217 | Yes |
| B. Existing PM | 938 | 127 | Yes |
| C. Ex+Pro AM | 595 | 264 | Yes |
| D. Ex+Pro PM | 991 | 158 | Yes |
| E. Bkgnd AM | 600 | 245 | Yes |
| F. Bkgnd PM | 978 | 155 | Yes |
| G. Bk+Pro AM | 616 | 292 | Yes |
| H. Bk+Pro PM | 1031 | 186 | Yes |
| I. CumNoPro AM | 689 | 360 | Yes |
| J. CumNoPro PM | 1130 | 227 | Yes |
| K. Cum+Pro AM | 705 | 407 | Yes |
| L. Cum+Pro PM | 1243 | 258 | Yes |

Notes:

1. 100 VPH applies as the lower threshold volume for a minor street approach with two or more lanes

# Warrant 3B - Peak-Hour Delay

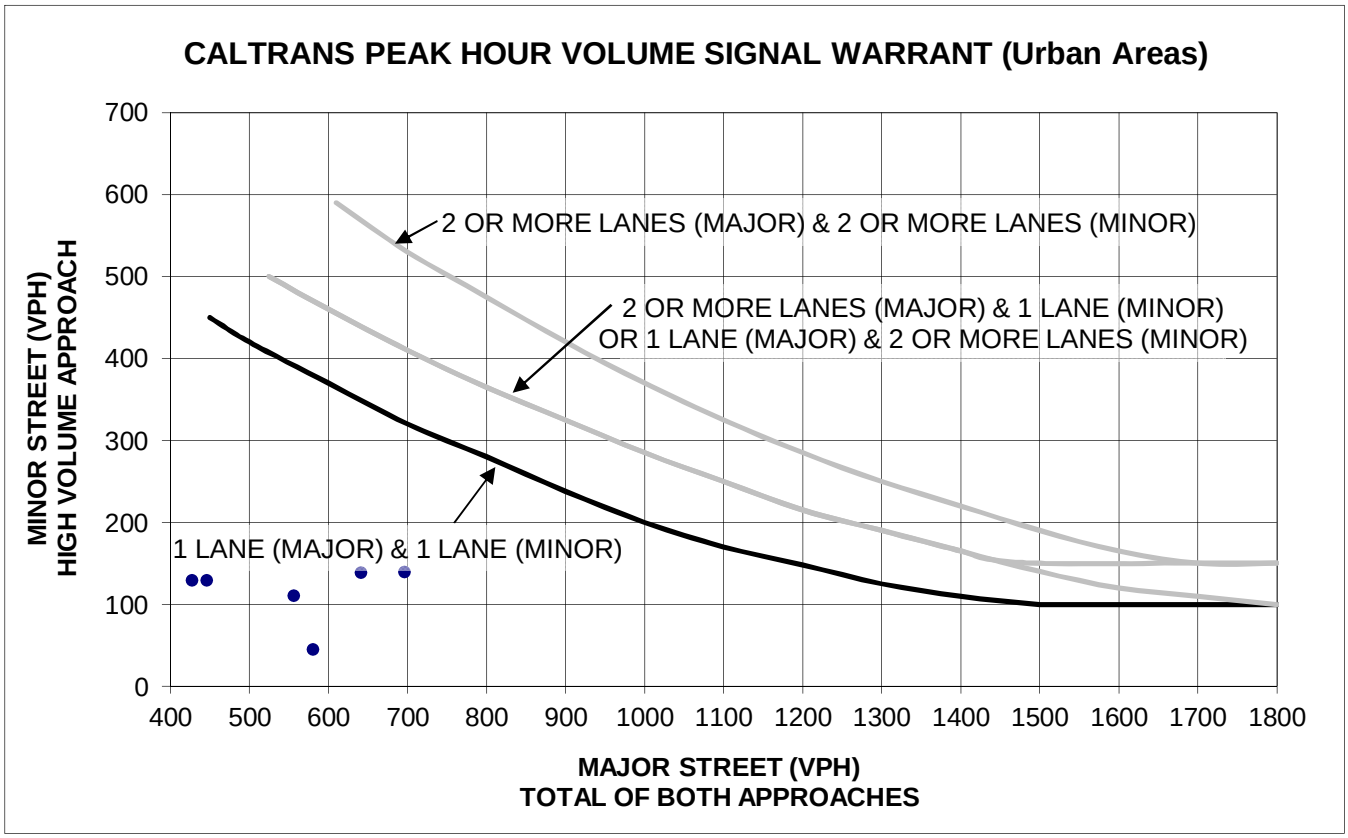
**Warrant 3 (Part B) - Peak Hour Delay**
**State Route 156 / Buena Vista Road**

| | | | | |
|---|---|---|---|---|
| Number of Approaches to Intersection: | | 4 approaches | **Minimum Entering Vehicles:** | **800** |
| Total Entering Volumes: | Existing AM: | 805 vehicles | Bk+Pro AM: | 917 vehicles |
| | Existing PM: | 1065 vehicles | Bk+Pro PM: | 1217 vehicles |
| | Ex+Pro AM: | 868 vehicles | CumNoPro AM: | 1058 vehicles |
| | Ex+Pro PM: | 1149 vehicles | CumNoPro PM: | 1357 vehicles |
| | Bkgnd AM: | 854 vehicles | Cum+Pro AM: | 1121 vehicles |
| | Bkgnd PM: | 1133 vehicles | Cum+Pro PM: | 1501 vehicles |

| Street | Direction | Scenario | Peak Hour | No. of Stopped Vehicles | Average Vehicle Delay (sec) | Total Vehicle Delay (sec) | Total Delay (hours) | Min. 4 Veh-Hrs of Delay? (Approach) | At least 100 Veh? (Approach) | At least 800 Veh? (Intersection) | Warrant Met? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Buena Vista | EB | Existing | AM | 9 | 14.1 | 127 | 0.04 | NO | NO | Yes | **NO** |
| Buena Vista | WB | Existing | AM | 217 | 12.2 | 2647 | 0.74 | NO | Yes | Yes | **NO** |
| Buena Vista | EB | Existing | PM | 0 | 0.0 | 0 | 0.00 | NO | NO | Yes | **NO** |
| Buena Vista | WB | Existing | PM | 127 | 24.0 | 3048 | 0.85 | NO | Yes | Yes | **NO** |
| Buena Vista | EB | Ex+Pro | AM | 9 | 14.8 | 133 | 0.04 | NO | NO | Yes | **NO** |
| Buena Vista | WB | Ex+Pro | AM | 264 | 12.5 | 3300 | 0.92 | NO | Yes | Yes | **NO** |
| Buena Vista | EB | Ex+Pro | PM | 0 | 0.0 | 0 | 0.00 | NO | NO | Yes | **NO** |
| Buena Vista | WB | Ex+Pro | PM | 158 | 26.5 | 4187 | 1.16 | NO | Yes | Yes | **NO** |
| Buena Vista | EB | Bkgnd | AM | 9 | 14.8 | 133 | 0.04 | NO | NO | Yes | **NO** |
| Buena Vista | WB | Bkgnd | AM | 245 | 12.5 | 3063 | 0.85 | NO | Yes | Yes | **NO** |
| Buena Vista | EB | Bkgnd | PM | 0 | 0.0 | 0 | 0.00 | NO | NO | Yes | **NO** |
| Buena Vista | WB | Bkgnd | PM | 155 | 25.1 | 3891 | 1.08 | NO | Yes | Yes | **NO** |
| Buena Vista | EB | Bk+Pro | AM | 9 | 15.7 | 141 | 0.04 | NO | NO | Yes | **NO** |
| Buena Vista | WB | Bk+Pro | AM | 292 | 12.9 | 3767 | 1.05 | NO | Yes | Yes | **NO** |
| Buena Vista | EB | Bk+Pro | PM | 0 | 0.0 | 0 | 0.00 | NO | NO | Yes | **NO** |
| Buena Vista | WB | Bk+Pro | PM | 186 | 29.0 | 5394 | 1.50 | NO | Yes | Yes | **NO** |
| Buena Vista | EB | CumNoPro | AM | 9 | 17.0 | 153 | 0.04 | NO | NO | Yes | **NO** |
| Buena Vista | WB | CumNoPro | AM | 360 | 14.5 | 5220 | 1.45 | NO | Yes | Yes | **NO** |
| Buena Vista | EB | CumNoPro | PM | 0 | 0.0 | 0 | 0.00 | NO | NO | Yes | **NO** |
| Buena Vista | WB | CumNoPro | PM | 227 | 60.4 | 13711 | 3.81 | NO | Yes | Yes | **NO** |
| Buena Vista | EB | Cum+Pro | AM | 9 | 18.3 | 165 | 0.05 | NO | NO | Yes | **NO** |
| Buena Vista | WB | Cum+Pro | AM | 407 | 15.3 | 6227 | 1.73 | NO | Yes | Yes | **NO** |
| Buena Vista | EB | Cum+Pro | PM | 0 | 0.0 | 0 | 0.00 | NO | NO | Yes | **NO** |
| Buena Vista | WB | Cum+Pro | PM | 258 | 97.1 | 25052 | 6.96 | Yes | Yes | Yes | **Yes** |

Notes:
1. Warrant based on level of service calculations. PM peak hour average approach delays are estimated.
2. Cumult. = Cumulative

# Warrant 3B - Peak-Hour Delay




| Scenario | Buena Vista East/West | Miller North/South | Warrant Met? |
|---|---|---|---|
| A. Existing AM | 198 | 102 | No |
| B. Existing PM | 267 | 35 | No |
| C. Ex+Pro AM | 383 | 130 | No |
| D. Ex+Pro PM | 383 | 130 | No |
| E. Bkgnd AM | 342 | 102 | No |
| F. Bkgnd PM | 330 | 35 | No |
| G. Bk+Pro AM | 427 | 130 | No |
| H. Bk+Pro PM | 446 | 130 | No |
| I. CumNoPro AM | 556 | 111 | No |
| J. CumNoPro PM | 580 | 45 | No |
| K. Cum+Pro AM | 641 | 139 | No |
| L. Cum+Pro PM | 696 | 140 | No |

Notes:

1. 150 VPH applies as the lower threshold volume for a minor street approach with two or more lanes and 100 VPH applies as the lower threshold volume for a minor street approaching with one lane.

2. Bold line applies to intersection geometry.

# Warrant 3B - Peak-Hour Delay

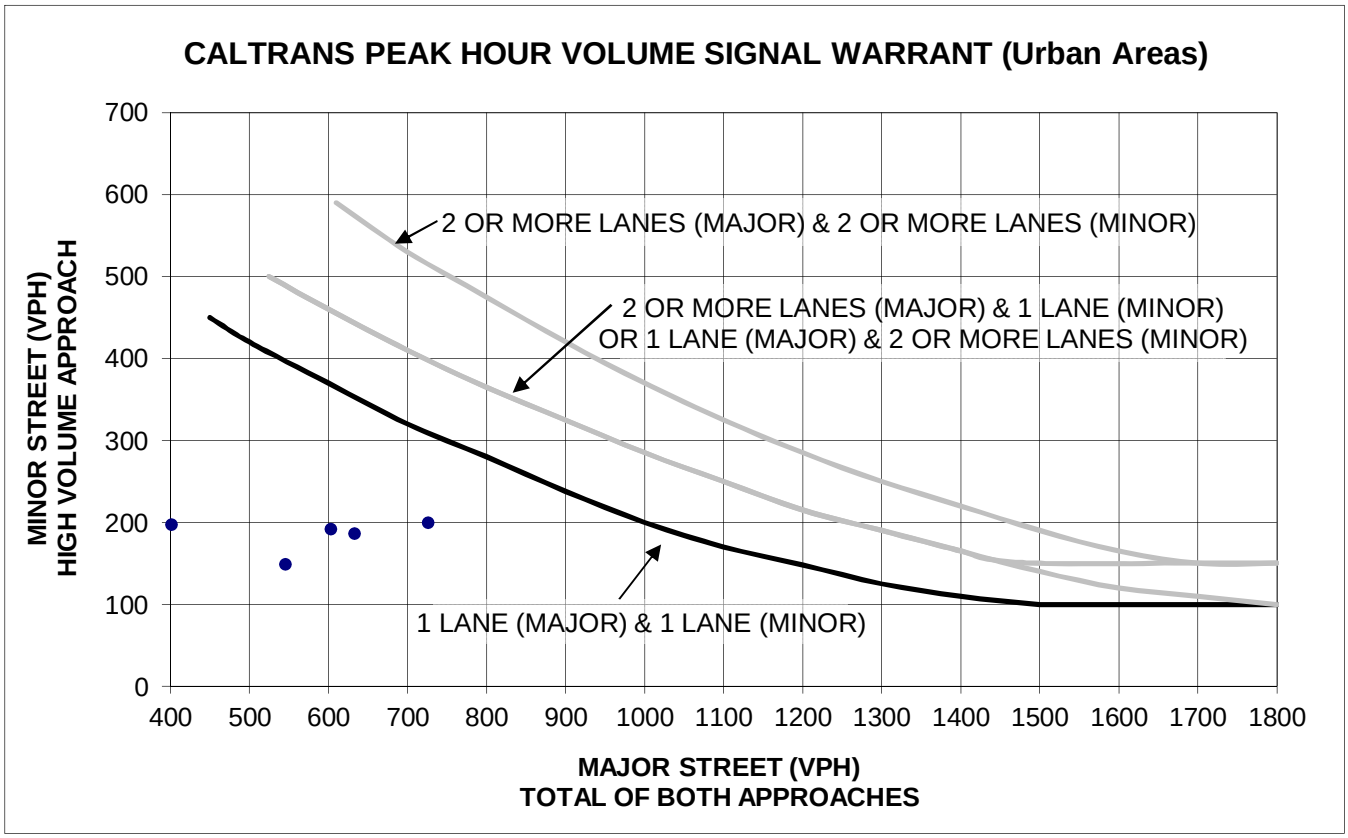
**Warrant 3 (Part B) - Peak Hour Delay**
**Miller Road / Buena Vista Road**

| | | | | |
|---|---|---|---|---|
| Number of Approaches to Intersection: | | 4 approaches | **Minimum Entering Vehicles:** | **800** |
| Total Entering Volumes: | Existing AM: | 305 vehicles | Bk+Pro AM: | 650 vehicles |
| | Existing PM: | 307 vehicles | Bk+Pro PM: | 639 vehicles |
| | Ex+Pro AM: | 606 vehicles | CumNoPro AM: | 672 vehicles |
| | Ex+Pro PM: | 576 vehicles | CumNoPro PM: | 630 vehicles |
| | Bkgnd AM: | 449 vehicles | Cum+Pro AM: | 873 vehicles |
| | Bkgnd PM: | 370 vehicles | Cum+Pro PM: | 899 vehicles |

| Street | Direction | Scenario | Peak Hour | No. of Stopped Vehicles | Average Vehicle Delay (sec) | Total Vehicle Delay (sec) | Total Delay (hours) | Min. 4 Veh-Hrs of Delay? (Approach) | At least 100 Veh? (Approach) | At least 800 Veh? (Intersection) | Warrant Met? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Miller | NB | Existing | AM | 102 | 11.9 | 1214 | 0.34 | NO | Yes | NO | **NO** |
| Miller | SB | Existing | AM | 5 | 14.2 | 71 | 0.02 | NO | NO | NO | **NO** |
| Miller | NB | Existing | PM | 35 | 10.4 | 364 | 0.10 | NO | NO | NO | **NO** |
| Miller | SB | Existing | PM | 5 | 9.9 | 50 | 0.01 | NO | NO | NO | **NO** |
| Miller | NB | Ex+Pro | AM | 130 | 16.9 | 2197 | 0.61 | NO | Yes | NO | **NO** |
| Miller | SB | Ex+Pro | AM | 93 | 19.9 | 1851 | 0.51 | NO | NO | NO | **NO** |
| Miller | NB | Ex+Pro | PM | 130 | 15.4 | 2002 | 0.56 | NO | Yes | NO | **NO** |
| Miller | SB | Ex+Pro | PM | 63 | 13.8 | 869 | 0.24 | NO | NO | NO | **NO** |
| Miller | NB | Bkgnd | AM | 102 | 12.4 | 1265 | 0.35 | NO | Yes | NO | **NO** |
| Miller | SB | Bkgnd | AM | 5 | 15.2 | 76 | 0.02 | NO | NO | NO | **NO** |
| Miller | NB | Bkgnd | PM | 35 | 10.9 | 382 | 0.11 | NO | NO | NO | **NO** |
| Miller | SB | Bkgnd | PM | 5 | 10.3 | 52 | 0.01 | NO | NO | NO | **NO** |
| Miller | NB | Bk+Pro | AM | 130 | 18.5 | 2405 | 0.67 | NO | Yes | NO | **NO** |
| Miller | SB | Bk+Pro | AM | 93 | 22.2 | 2065 | 0.57 | NO | NO | NO | **NO** |
| Miller | NB | Bk+Pro | PM | 130 | 17.2 | 2236 | 0.62 | NO | Yes | NO | **NO** |
| Miller | SB | Bk+Pro | PM | 63 | 14.9 | 939 | 0.26 | NO | NO | NO | **NO** |
| Miller | NB | CumNoPro | AM | 111 | 17.8 | 1976 | 0.55 | NO | Yes | NO | **NO** |
| Miller | SB | CumNoPro | AM | 5 | 22.1 | 111 | 0.03 | NO | NO | NO | **NO** |
| Miller | NB | CumNoPro | PM | 45 | 14.2 | 639 | 0.18 | NO | NO | NO | **NO** |
| Miller | SB | CumNoPro | PM | 5 | 12.2 | 61 | 0.02 | NO | NO | NO | **NO** |
| Miller | NB | Cum+Pro | AM | 139 | 44.5 | 6186 | 1.72 | NO | Yes | Yes | **NO** |
| Miller | SB | Cum+Pro | AM | 93 | 46.5 | 4325 | 1.20 | NO | NO | Yes | **NO** |
| Miller | NB | Cum+Pro | PM | 140 | 32.0 | 4480 | 1.24 | NO | Yes | Yes | **NO** |
| Miller | SB | Cum+Pro | PM | 63 | 21.8 | 1373 | 0.38 | NO | NO | Yes | **NO** |

Notes:
1. Warrant based on level of service calculations. PM peak hour average approach delays are estimated.
2. Cumult. = Cumulative

# Warrant 3B - Peak-Hour Delay




| Scenario | Buena Vista East/West | Westside North/South | Warrant Met? |
|---|---|---|---|
| A. Existing AM | 322 | 151 | No |
| B. Existing PM | 192 | 69 | No |
| C. Ex+Pro AM | 379 | 170 | No |
| D. Ex+Pro PM | 229 | 133 | No |
| E. Bkgnd AM | 338 | 179 | No |
| F. Bkgnd PM | 227 | 97 | No |
| G. Bk+Pro AM | 401 | 198 | No |
| H. Bk+Pro PM | 264 | 161 | No |
| I. CumNoPro AM | 633 | 187 | No |
| J. CumNoPro PM | 545 | 149 | No |
| K. Cum+Pro AM | 726 | 200 | No |
| L. Cum+Pro PM | 603 | 192 | No |

Notes:

1. 150 VPH applies as the lower threshold volume for a minor street approach with two or more lanes and 100 VPH applies as the lower threshold volume for a minor street approaching with one lane.

2. Bold line applies to intersection geometry.

# Warrant 3B - Peak-Hour Delay

**Warrant 3 (Part B) - Peak Hour Delay**
**Westside Blvd. - Westside Road / Buena Vista Road**

| | | | | |
|---|---|---|---|---|
| Number of Approaches to Intersection: | | 4 approaches | **Minimum Entering Vehicles:** | **800** |
| Total Entering Volumes: | Existing AM: | 480 vehicles | Bk+Pro AM: | 606 vehicles |
| | Existing PM: | 268 vehicles | Bk+Pro PM: | 432 vehicles |
| | Ex+Pro AM: | 556 vehicles | CumNoPro AM: | 827 vehicles |
| | Ex+Pro PM: | 369 vehicles | CumNoPro PM: | 701 vehicles |
| | Bkgnd AM: | 524 vehicles | Cum+Pro AM: | 933 vehicles |
| | Bkgnd PM: | 331 vehicles | Cum+Pro PM: | 802 vehicles |

| Street | Direction | Scenario | Peak Hour | No. of Stopped Vehicles | Average Vehicle Delay (sec) | Total Vehicle Delay (sec) | Total Delay (hours) | Min. 4 Veh-Hrs of Delay? (Approach) | At least 100 Veh? (Approach) | At least 800 Veh? (Intersection) | Warrant Met? |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Westside | NB | Existing | AM | 151 | 17.6 | 2658 | 0.74 | NO | Yes | NO | **NO** |
| Westside | SB | Existing | AM | 7 | 12 | 84 | 0.02 | NO | NO | NO | **NO** |
| Westside | NB | Existing | PM | 69 | 10.3 | 711 | 0.20 | NO | NO | NO | **NO** |
| Westside | SB | Existing | PM | 7 | 10.3 | 72 | 0.02 | NO | NO | NO | **NO** |
| Westside | NB | Ex+Pro | AM | 170 | 20.9 | 3553 | 0.99 | NO | Yes | NO | **NO** |
| Westside | SB | Ex+Pro | AM | 7 | 12.6 | 88 | 0.02 | NO | NO | NO | **NO** |
| Westside | NB | Ex+Pro | PM | 133 | 11.4 | 1516 | 0.42 | NO | Yes | NO | **NO** |
| Westside | SB | Ex+Pro | PM | 7 | 10.6 | 74 | 0.02 | NO | NO | NO | **NO** |
| Westside | NB | Bkgnd | AM | 179 | 20.5 | 3670 | 1.02 | NO | Yes | NO | **NO** |
| Westside | SB | Bkgnd | AM | 7 | 12.1 | 85 | 0.02 | NO | NO | NO | **NO** |
| Westside | NB | Bkgnd | PM | 97 | 10.9 | 1057 | 0.29 | NO | NO | NO | **NO** |
| Westside | SB | Bkgnd | PM | 7 | 10.6 | 74 | 0.02 | NO | NO | NO | **NO** |
| Westside | NB | Bk+Pro | AM | 198 | 25.1 | 4970 | 1.38 | NO | Yes | NO | **NO** |
| Westside | SB | Bk+Pro | AM | 7 | 12.7 | 89 | 0.02 | NO | NO | NO | **NO** |
| Westside | NB | Bk+Pro | PM | 161 | 12.1 | 1948 | 0.54 | NO | Yes | NO | **NO** |
| Westside | SB | Bk+Pro | PM | 7 | 10.9 | 76 | 0.02 | NO | NO | NO | **NO** |
| Westside | NB | CumNoPro | AM | 187 | 150.6 | 28162 | 7.82 | Yes | Yes | Yes | **Yes** |
| Westside | SB | CumNoPro | AM | 7 | 21.2 | 148 | 0.04 | NO | NO | Yes | **NO** |
| Westside | NB | CumNoPro | PM | 149 | 19.1 | 2846 | 0.79 | NO | Yes | NO | **NO** |
| Westside | SB | CumNoPro | PM | 7 | 15.9 | 111 | 0.03 | NO | NO | NO | **NO** |
| Westside | NB | Cum+Pro | AM | 200 | 293.3 | 58660 | 16.29 | Yes | Yes | Yes | **Yes** |
| Westside | SB | Cum+Pro | AM | 7 | 24.8 | 174 | 0.05 | NO | NO | Yes | **NO** |
| Westside | NB | Cum+Pro | PM | 192 | 31.4 | 6029 | 1.67 | NO | Yes | Yes | **NO** |
| Westside | SB | Cum+Pro | PM | 7 | 17.0 | 119 | 0.03 | NO | NO | Yes | **NO** |

Notes:
1. Warrant based on level of service calculations. PM peak hour average approach delays are estimated.
2. Cumult. = Cumulative

**All-Way Stop Warrant**
**353309 - Hollister Northwest Residential Annexation**

Existing Plus Project Conditions
Miller Road / Buena Vista Road

**Major Street Approach:** **Buena Vista Road**
≥300 vph 80% = 240
Minor Street Approach: Miller Road
≥200 vph 80% = 160

| Hour | | Miller Road | | | Buena Vista Road | | | 80% met? | |
|---|---|---|---|---|---|---|---|---|---|
| | | from N | from S | Both | from E | from W | Both | Miller | Buena Vista |
| 1 | AM Peak | 93 | 130 | 223 | 169 | 214 | 383 | Yes | Yes |
| 2 | PM Peak | 63 | 130 | 193 | 170 | 213 | 383 | Yes | Yes |
| 3 | N/A | | | | | | | | |
| 4 | N/A | | | | | | | | |
| 5 | N/A | | | | | | | | |
| 6 | N/A | | | | | | | | |
| 7 | N/A | | | | | | | | |
| 8 | N/A | | | | | | | | |
| Average | | | | 208 | | | 383 | | |

**All-Way Stop Warrant**
**353309 - Hollister Northwest Residential Annexation**

Background Plus Project Conditions
Miller Road / Buena Vista Road

**Major Street Approach:** **Buena Vista Road**
≥300 vph 80% = 240
Minor Street Approach: Miller Road
≥200 vph 80% = 160

| Hour | | Miller Road | | | Buena Vista Road | | | 80% met? | |
|---|---|---|---|---|---|---|---|---|---|
| | | from N | from S | Both | from E | from W | Both | Miller | Buena Vista |
| 1 | AM Peak | 93 | 130 | 223 | 197 | 230 | 427 | Yes | Yes |
| 2 | PM Peak | 63 | 130 | 193 | 198 | 248 | 446 | Yes | Yes |
| 3 | N/A | | | | | | | | |
| 4 | N/A | | | | | | | | |
| 5 | N/A | | | | | | | | |
| 6 | N/A | | | | | | | | |
| 7 | N/A | | | | | | | | |
| 8 | N/A | | | | | | | | |
| Average | | | | 208 | | | 436.5 | | |

**All-Way Stop Warrant**
**353309 - Hollister Northwest Residential Annexation**

Cumulative Plus Project Conditions
Miller Road / Buena Vista Road

**Major Street Approach:** **Buena Vista Road**
≥300 vph 80% = 240
Minor Street Approach: Miller Road
≥200 uph 80% = 160

| Hour | | Miller Road | | | Buena Vista Road | | | 80% met? | |
|---|---|---|---|---|---|---|---|---|---|
| | | from N | from S | Both | from E | from W | Both | Miller | Buena Vista |
| 1 | AM Peak | 93 | 139 | 232 | 319 | 322 | 641 | Yes | Yes |
| 2 | PM Peak | 59 | 140 | 199 | 295 | 401 | 696 | Yes | Yes |
| 3 | N/A | | | | | | | | |
| 4 | N/A | | | | | | | | |
| 5 | N/A | | | | | | | | |
| 6 | N/A | | | | | | | | |
| 7 | N/A | | | | | | | | |
| 8 | N/A | | | | | | | | |
| Average | | | | 215.5 | | | 668.5 | | |

**All-Way Stop Warrant**
**353309 - Hollister Northwest Residential Annexation**

Existing Plus Project Conditions
Westside Boulevard - Westside Road / Buena Vista Road

**Major Street Approach:** **Buena Vista Road**
≥300 vph 80% = 240
Minor Street Approach: Westside Blvd - Westside Road
≥200 vph 80% = 160

| Hour | | Westside Bl. - Westside Rd. | | | Buena Vista Road | | | 80% met? | |
|---|---|---|---|---|---|---|---|---|---|
| | | from N | from S | Both | from E | from W | Both | Westside | Buena Vista |
| 1 | AM Peak | 7 | 170 | 177 | 97 | 282 | 379 | Yes | Yes |
| 2 | PM Peak | 7 | 133 | 140 | 48 | 181 | 229 | No | No |
| 3 | N/A | | | | | | | | |
| 4 | N/A | | | | | | | | |
| 5 | N/A | | | | | | | | |
| 6 | N/A | | | | | | | | |
| 7 | N/A | | | | | | | | |
| 8 | | | | | | | | | |
| Average | | | | 158.5 | | | 304 | | |

**All-Way Stop Warrant**
**353309 - Hollister Northwest Residential Annexation**

Background Plus Project Conditions
Westside Boulevard - Westside Road / Buena Vista Road

**Major Street Approach:** **Buena Vista Road**
≥300 vph 80% = 240
Minor Street Approach: Westside Blvd - Westside Road
≥200 vph 80% = 160

| Hour | | Westside Bl. - Westside Rd. | | | Buena Vista Road | | | 80% met? | |
|---|---|---|---|---|---|---|---|---|---|
| | | from N | from S | Both | from E | from W | Both | Westside | Buena Vista |
| 1 | AM Peak | 7 | 198 | 205 | 97 | 298 | 395 | Yes | Yes |
| 2 | PM Peak | 7 | 161 | 168 | 48 | 216 | 264 | Yes | Yes |
| 3 | N/A | | | | | | | | |
| 4 | N/A | | | | | | | | |
| 5 | N/A | | | | | | | | |
| 6 | N/A | | | | | | | | |
| 7 | N/A | | | | | | | | |
| 8 | N/A | | | | | | | | |
| Average | | | | 186.5 | | | 329.5 | | |

**All-Way Stop Warrant**
**353309 - Hollister Northwest Residential Annexation**

Cumulative Plus Project Conditions
Westside Boulevard - Westside Road / Buena Vista Road

**Major Street Approach:** **Buena Vista Road**
≥300 vph 80% = 240
Minor Street Approach: Westside Blvd - Westside Road
≥200 uph 80% = 160

| Hour | | Westside Bl. - Westside Rd. | | | Buena Vista Road | | | 80% met? | |
|---|---|---|---|---|---|---|---|---|---|
| | | from N | from S | Both | from E | from W | Both | Westside | Buena Vista |
| 1 | AM Peak | 7 | 200 | 207 | 324 | 402 | 726 | Yes | Yes |
| 2 | PM Peak | 7 | 192 | 199 | 239 | 364 | 603 | Yes | Yes |
| 3 | N/A | | | | | | | | |
| 4 | N/A | | | | | | | | |
| 5 | N/A | | | | | | | | |
| 6 | N/A | | | | | | | | |
| 7 | N/A | | | | | | | | |
| 8 | N/A | | | | | | | | |
| Average | | | | 203 | | | 664.5 | | |