# FINAL EIR

FOR THE

# MOSSDALE LANDING WEST SPECIFIC PLAN

APRIL 2025

*Prepared for:*

City of Lathrop, Community Development Department
390 Towne Centre Drive
Lathrop, CA 95330
(209) 941-7260

*Prepared by:*

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 580-9818

De Novo Planning Group

A Land Use Planning, Design, and Environmental Firm

# FINAL EIR

FOR THE

# MOSSDALE LANDING WEST SPECIFIC PLAN

APRIL 2025

*Prepared for:*

City of Lathrop, Community Development Department
390 Towne Centre Drive
Lathrop, CA 95330
(209) 941-7260

*Prepared by:*

De Novo Planning Group
1020 Suncast Lane, Suite 106
El Dorado Hills, CA 95762
(916) 580-9818

# FINAL EIR

## Chapter — Page Number

Executive Summary ..... ES-1

1.0 Introduction ..... 1.0-1

1.1 Purpose and Intended Uses of the EIR ..... 1.0-1

1.2 Environmental Review Process ..... 1.0-2

1.3 Organization of the Final EIR ..... 1.0-3

2.0 Comments on Draft EIR and Responses ..... 2.0-1

2.1 Introduction ..... 2.0-1

2.2 List of Commenters ..... 2.0-1

2.3 Comments and Responses ..... 2.0-1

3.0 Revisions ..... 3.0-1

3.1 Revisions to the Draft EIR ..... 3.0-1

4.0 Final Mitigation Monitoring and Reporting Program ..... 4.0-1

4.1 Mitigation Monitoring and Reporting Program ..... 4.0-1

## Tables — Page Number

Table 2.0-1: List of Commenters on Draft EIR ..... 2.0-1

Table 4.0-1: Mitigation Monitoring and Reporting Program ..... 4.0-2

## Appendices

Appendix A: Traffic Impact Analysis Report (Updated March 10, 2025)

Appendix B: Lathrop Traffic Monitoring Program (2024) Figures

*This page left intentionally blank.*

# INTRODUCTION

The City of Lathrop (City) determined that a project-level environmental impact report (EIR) was required for the proposed Mossdale Landing West Specific Plan (Project) pursuant to the requirements of the California Environmental Quality Act (CEQA).

The project-level analysis considers the broad environmental effects of the proposed Project.

This EIR has been prepared as a Project-level EIR, described in State CEQA Guidelines § 15161 as: "The most common type of EIR (which) examines the environmental impacts of a specific development project. This type of EIR should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction, and operation. The project-level analysis considers the broad environmental effects of the proposed Project..

# PROJECT DESCRIPTION

The following provides a brief summary and overview of the Project. Chapter 2.0 of the Draft EIR includes a detailed description of the Project, including maps and graphics. The reader is referred to Chapter 2.0 for a more complete and thorough description of the components of the Project.

The Project site includes two distinct planning boundaries defined below. The following terms are used throughout this Draft EIR to describe the planning boundaries within the Project site:

- **Mossdale Landing West Specific Plan Area (Specific Plan Area, Plan Area, or Project site)** – totals 225.86 acres and includes the whole of the Project, including the proposed 167.42-acre Development Area, and land along the San Joaquin River (which would not be developed as part of the proposed Project).
- **Development Area** – includes 167.42 acres that is intended for development.

The majority of the Plan Area is currently undeveloped. There is a two-story single-family residential structure east of River Islands Parkway near the San Joaquin River. There are approximately six other structures associated with the residence, such as a barn structure and shed structures. Surrounding land uses include the San Joaquin River and associated tributaries to the north, west, and south, vacant agricultural land San Joaquin County to the north and west, Mossdale Landing, a mixed use master planned community with largely single-family residences in the Project vicinity to the east, and single-family residential uses to the west and south.

The Mossdale Landing West Specific Plan would include the construction and associated operation of up to 912 residential units with associated park, circulation, and utility improvements over five phases. The Mossdale Landing West Specific Plan is based upon the Mossdale Village plan and policies presented in the West Lathrop Specific Plan (WLSP), which is consistent with the City of Lathrop's General Plan.

The underlying purpose of the proposed Project is the approval and subsequent implementation of the Specific Plan as a means of increasing the housing supply in San Joaquin County and the State of California.

Refer to Chapter 2.0, Project Description, for a more complete description of the details of the proposed Project.

## ALTERNATIVES TO THE PROJECT

Section 15126.6 of the CEQA Guidelines requires an EIR to describe a reasonable range of alternatives to the project or to the location of the project which would reduce or avoid significant impacts, and which could feasibly accomplish the basic objectives of the Project. Three alternatives to the proposed Project were developed based on input from City staff, and the technical analysis performed to identify the environmental effects of the proposed Project. The alternatives analyzed in this EIR include the following three alternatives in addition to the proposed Project.

- **No Project (No Build) Alternative**: Under this alternative, development of the Plan Area would not occur, and the Plan Area would remain in its current existing condition.
- **Increased Density Alternative:** Under this alternative, the proposed Project would be developed with the same amenities as described in the Project Description, but the density of the residential uses would be increased, and the total development footprint would be equal to the proposed Specific Plan.
- **Lower Density Alternative:** Under this alternative, the proposed Project would be developed in such a way to promote larger lot sizes and to reduce the overall number of residential units.

A comparative analysis of the Project and each of the Project alternatives is provided in Table ES-1. As shown in Table ES-1, the No Project (No Build) Alternative is the environmentally superior alternative. However, as required by CEQA, when the No Project (No Build) Alternative is the environmentally superior alternative, the environmentally superior alternative among the others must be identified. The Increased Density Alternative would reduce impacts related to 25 impact statements, increase impacts related to one impact statement, and equal impacts related to 40 impact statements. The Lower Density Alternative would reduce impacts related to 31 impact statements and would have equal impacts related to 36 impact statements. Therefore, the Lower Density Alternative would be the next environmentally superior alternative.

## COMMENTS RECEIVED

The Draft EIR addressed environmental impacts associated with the Project that are known to the City, were raised during the Notice of Preparation (NOP) process, or raised during preparation of the Draft EIR. The Draft EIR discussed potentially significant impacts associated with aesthetics, agricultural resources, air quality, biological resources, cultural and tribal resources, geology and soils, greenhouse gases and energy, hazards and hazardous materials, hydrology and water quality, land use, noise, population and housing, public services and recreation, transportation and circulation, and utilities.

During the NOP process, several comments were received related to the analysis that should be included in the Draft EIR. These comments are included as Appendix A of the Draft EIR, and were considered during preparation of the Draft EIR.

The City received eight comment letters regarding the Draft EIR from public and private agencies and one resident. These comment letters on the Draft EIR are identified in Table 2.0-1 of this Final EIR. The comments received during the Draft EIR review processes are addressed within this Final EIR.

*This page left intentionally blank.*

This Final Environmental Impact Report (Final EIR) was prepared in accordance with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines (Section 15132). The City of Lathrop (City) is the lead agency for the environmental review of the Mossdale Landing West Specific Plan (Project) and has the principal responsibility for approving the Project. This Final EIR assesses the expected environmental impacts resulting from approval of the Project and associated impacts from subsequent development and operation of the Project, as well as responds to comments received on the Draft Environmental Impact Report (Draft EIR).

## 1.1 PURPOSE AND INTENDED USES OF THE EIR

### CEQA REQUIREMENTS FOR A FINAL EIR

This Final EIR for the Project has been prepared in accordance with the State CEQA Guidelines. State CEQA Guidelines Section 15132 requires that a Final EIR consist of the following:

- the Draft EIR or a revision of the draft;
- comments and recommendations received on the Draft EIR, either verbatim or in summary;
- a list of persons, organizations, and public agencies commenting on the Draft EIR;
- the responses of the lead agency to significant environmental concerns raised in the review and consultation process; and
- any other information added by the lead agency.

In accordance with State CEQA Guidelines Section 15132(a), the Draft EIR is incorporated by reference into this Final EIR.

An EIR must disclose the expected environmental impacts, including impacts that cannot be avoided, growth-inducing effects, impacts found not to be significant, and significant cumulative impacts, as well as identify mitigation measures and alternatives to the Project that could reduce or avoid its adverse environmental impacts. CEQA requires government agencies to consider and, where feasible, minimize environmental impacts of proposed development, and an obligation to balance a variety of public objectives, including economic, environmental, and social factors.

### PURPOSE AND USE

The City, as the lead agency, has prepared this Final EIR to provide the public and responsible and trustee agencies with an objective analysis of the potential environmental impacts resulting from approval, construction, and operation of the Project. Responsible and trustee agencies that may use the EIR are identified in Chapters 1.0 and 2.0 of the Draft EIR.

The environmental review process enables interested parties to evaluate the Project in terms of its environmental consequences, to examine and recommend methods to eliminate or reduce potential adverse impacts, and to consider a reasonable range of alternatives to the Project. While CEQA requires that consideration be given to avoiding adverse environmental effects, the lead

agency must balance adverse environmental effects against other public objectives, including the economic and social benefits of a project, in determining whether a project should be approved.

This EIR will be used as the primary environmental document to evaluate all aspects of construction and operation of the Project. The details and operational characteristics of the Project are identified in Chapter 2.0, Project Description, of the Draft EIR (January 2025).

## 1.2 ENVIRONMENTAL REVIEW PROCESS

The review and certification process for the EIR has involved, or will involve, the following general procedural steps:

### NOTICE OF PREPARATION AND INITIAL STUDY

The City of Lathrop circulated an Initial Study (IS) and Notice of Preparation (NOP) of an EIR for the proposed Project on March 22, 2024 to State Clearinghouse, State Responsible Agencies, State Trustee Agencies, Other Public Agencies, and Organizations and Interested Persons. A public scoping meeting was held on April 3, 2024 to present the project description to the public and interested agencies, and to receive comments from the public and interested agencies regarding the scope of the environmental analysis to be included in the Draft EIR. Concerns raised in response to the NOP were considered during preparation of the Draft EIR. The IS and NOP comments are presented in Appendix A of the Draft EIR.

### NOTICE OF AVAILABILITY AND DRAFT EIR

The City published a public Notice of Availability (NOA) for the Draft EIR on January 9, 2025 inviting comment from the general public, agencies, organizations, and other interested parties. The NOA was filed with the State Clearinghouse (SCH # 2024030835) and the County Clerk, and was published in a local newspaper pursuant to the public noticing requirements of CEQA. The Draft EIR was available for public review and comment from January 9, 2025 through February 24, 2025.

The Draft EIR contains a description of the Project, description of the environmental setting, identification of Project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of Project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. The Draft EIR identifies issues determined to have no impact or a less-than-significant impact, and provides detailed analysis of potentially significant and significant impacts. Comments received in response to the NOP were considered in preparing the analysis in the Draft EIR.

### RESPONSE TO COMMENTS/FINAL EIR

The City received nine comment letters regarding the Draft EIR from public agencies and other parties. These comment letters on the Draft EIR are identified in Table 2.0-1, and are found in Chapter 2.0 of this Final EIR.

In accordance with CEQA Guidelines Section 15088, this Final EIR responds to the written comments received on the Draft EIR, as required by CEQA. This Final EIR also contains minor edits

to the Draft EIR, which are included in Chapter 3.0, Revisions. This document, as well as the Draft EIR as amended herein, constitute the Final EIR.

### CERTIFICATION OF THE EIR/PROJECT CONSIDERATION

The Lathrop Planning Commission and City Council will review and consider the Final EIR. If the City Council finds that the Final EIR is "adequate and complete," the Council may certify the Final EIR in accordance with CEQA and City environmental review procedures and codes. The rule of adequacy generally holds that an EIR can be certified if:

1) The EIR shows a good faith effort at full disclosure of environmental information; and

2) The EIR provides sufficient analysis to allow decisions to be made regarding the proposed project which intelligently take account of environmental consequences.

Upon review and consideration of the Final EIR, the City Council may take action to approve, revise, or reject the Project. A decision to approve the Project, for which this EIR identifies significant environmental effects, must be accompanied by written findings in accordance with State CEQA Guidelines Sections 15091 and 15093. A Mitigation Monitoring and Reporting Program, as described below, would also be adopted in accordance with Public Resources Code Section 21081.6(a) and CEQA Guidelines Section 15097 for mitigation measures that have been incorporated into or imposed upon the project to reduce or avoid significant effects on the environment. This Mitigation Monitoring and Reporting Program has been designed to ensure that these measures are carried out during Project implementation, in a manner that is consistent with the EIR.

## 1.3 ORGANIZATION OF THE FINAL EIR

This Final EIR has been prepared consistent with Section 15132 of the State CEQA Guidelines, which identifies the content requirements for Final EIRs. This Final EIR is organized in the following manner:

### CHAPTER 1.0 – INTRODUCTION

Chapter 1.0 briefly describes the purpose of the environmental evaluation, identifies the lead, agency, summarizes the process associated with preparation and certification of an EIR, and identifies the content requirements and organization of the Final EIR.

### CHAPTER 2.0 – COMMENTS ON THE DRAFT EIR AND RESPONSES

Chapter 2.0 provides a list of commenters, copies of written and electronic comments made on the Draft EIR (coded for reference), and responses to those written comments.

### CHAPTER 3.0 – REVISIONS

Chapter 3.0 consists of minor revisions to the Draft EIR in response to comments received on the Draft EIR.

## CHAPTER 4.0 – FINAL MMRP

Chapter 4.0 consists of a Mitigation Monitoring and Reporting Program (MMRP). The MMRP is presented in a tabular format that presents the impacts, mitigation measure, and responsibility, timing, and verification of monitoring.

## 2.1 INTRODUCTION

No new significant environmental impacts or issues, beyond those already covered in the Draft EIR for the Mossdale Landing West Specific Plan (Project), were raised during the comment period. Responses to comments received during the comment period do not involve any new significant impacts or add "significant new information" that would require recirculation of the Draft EIR pursuant to CEQA Guidelines Section 15088.5.

CEQA Guidelines Section 15088.5 states that: *New information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement.*

Chapters 2.0 and 3.0 of this Final EIR include information that has been added to the EIR since the close of the public review period in the form of responses to comments and revisions.

## 2.2 LIST OF COMMENTERS

Table 2.0-1 lists the comments on the Draft EIR that were submitted to the City of Lathrop (City) during the 45-day public review period for the Draft EIR (Letters A through H), as well as one late comment letter received shortly after the close of the public review period (Letter I). The assigned comment letter or number, letter date, letter author, and affiliation, if presented in the comment letter or if representing a public agency, are also listed. Letters received are coded with letters (A, B, etc.).

***TABLE 2.0-1 LIST OF COMMENTERS ON DRAFT EIR***

| *RESPONSE LETTER* | *INDIVIDUAL OR SIGNATORY* | *AFFILIATION* | *DATE* |
|---|---|---|---|
| A | Erwin Sison | California Department of Conservation | 2-4-25 |
| B | Nicholas Fung | California Department of Transportation | 2-20-25 |
| C | Victoria Brunn | Manteca Unified School District | 2-6-25 |
| D | Plan Review Team | Pacific Gas and Electric Company | 1-13-25 |
| E | Robert Guinan | Resident | 2-20-25 |
| F | Laurel Boyd | San Joaquin Council of Governments, Inc. | 1-14-25 |
| G | Sastina Thammavongsa | San Joaquin County Environmental Health Department | 1-22-25 |
| H | Tom Jordan | San Joaquin Valley Air Pollution Control District | 2-20-25 |
| I | Plan Review Team | Pacific Gas and Electric Company | 2-27-25 |

## 2.3 COMMENTS AND RESPONSES

### REQUIREMENTS FOR RESPONDING TO COMMENTS ON A DRAFT EIR

CEQA Guidelines Section 15088 requires that lead agencies evaluate and respond to all comments on the Draft EIR that regard an environmental issue. The written response must address the significant environmental issue raised and provide a detailed response, especially when specific comments or

suggestions (e.g., additional mitigation measures) are not accepted. In addition, the written response must be a good faith and reasoned analysis. However, lead agencies need only to respond to significant environmental issues associated with the project and do not need to provide all the information requested by the commenter, as long as a good faith effort at full disclosure is made in the EIR (CEQA Guidelines Section 15204).

CEQA Guidelines Section 15204 recommends that commenters provide detailed comments that focus on the sufficiency of the Draft EIR in identifying and analyzing the possible environmental impacts of the project and ways to avoid or mitigate the significant effects of the project, and that commenters provide evidence supporting their comments. Pursuant to CEQA Guidelines Section 15064, an effect shall not be considered significant in the absence of substantial evidence.

CEQA Guidelines Section 15088 also recommends that revisions to the Draft EIR be noted as a revision in the Draft EIR or as a separate section of the Final EIR. Chapter 3.0 of this Final EIR identifies all revisions to the Singh Petroleum Investments Draft EIR.

## RESPONSES TO COMMENT LETTERS

Written comments on the Draft EIR are reproduced on the following pages, along with responses to those comments. To assist in referencing comments and responses, the following coding system is used:

- Each letter is lettered or numbered (i.e., Letter A) and each comment within each letter is numbered (i.e., comment A-1, comment A-2).

California
Department of Conservation
Geologic Energy Management Division

Gavin Newsom, Governor
Gabe Tiffany, Acting Director
715 P Street, MS 1803
Sacramento, CA. 95814
T: (916) 445-5986

02/04/2025

City: Lathrop - Planning
Rick Caguiat
390 Towne Centre Drive, Lathrop, CA 95330, USA
planning@ci.lathrop.ca.us

Construction Site Well Review (CSWR) ID: 1013172

Assessor Parcel Number(s): 19119074

Property Owner(s): Elise Laws

Project Location Address: River Islands Parkway Lathrop, California 95330

Project Title: SCH Number - 2024030835 - The Mossdale Landing West Specific Plan

Public Resources Code (PRC) § 3208.1 establishes well reabandonment responsibility when a previously plugged and abandoned well will be impacted by planned property development or construction activities. Local permitting agencies, property owners, and/or developers should be aware of, and fully understand, that significant and potentially dangerous issues may be associated with development near oil, gas, and geothermal wells. A-1

The California Geologic Energy Management Division (CalGEM) has received and reviewed the above referenced project dated 1/29/2025. To assist local permitting agencies, property owners, and developers in making wise land use decisions regarding potential development near oil, gas, or geothermal wells, the Division provides the following well evaluation.

The project is located in San Joaquin County, within the boundaries of the following fields:

Any Field

A-2

SCH 2024030835

Our records indicate there are 1 known oil or gas wells located within the project boundary as identified

in the application.

- Number of wells Not Abandoned to Current Division Requirements as Prescribed by Law and Projected to Be Built Over or Have Future Access Impeded by this project: 1

- Number of wells Not Abandoned to Current Division Requirements as Prescribed by Law and Not Projected to Be Built Over or Have Future Access Impeded by this project: 0

- Number of wells Abandoned to Current Division Requirements as Prescribed by Law and Projected to Be Built Over or Have Future Access Impeded by this project: 0

- Number of wells Abandoned to Current Division Requirements as Prescribed by Law and Not Projected to Be Built Over or Have Future Access Impeded by this project: 0

The Division categorically advises against building over, or in any way impeding access to, oil, gas, or geothermal wells. Impeding access to a well could result in the need to remove any structure or obstacle that prevents or impedes access including, but not limited to, buildings, housing, fencing, landscaping, trees, pools, patios, sidewalks, roadways, and decking. Maintaining sufficient access is considered the ability for a well servicing unit and associated necessary equipment to reach a well from a public street or access way, solely over the parcel on which the well is located. A well servicing unit, and any necessary equipment, should be able to pass unimpeded along and over the route, and should be able to access the well without disturbing the integrity of surrounding infrastructure. A-2 cont

There are no guarantees a well abandoned in compliance with current Division requirements as prescribed by law will not start leaking in the future. It always remains a possibility that any well may start to leak oil, gas, and/or water after abandonment, no matter how thoroughly the well was plugged and abandoned. The Division acknowledges wells plugged and abandoned to the most current Division requirements as prescribed by law have a lower probability of leaking in the future, however there is no guarantees that such abandonments will not leak.

The Division advises that all wells identified on the development parcel prior to, or during, development activities be tested for liquid and gas leakage. Surveyed locations should be provided to the Division in Latitude and Longitude, NAD 83 decimal format. The Division expects any wells found leaking to be reported to it immediately.

Failure to plug and reabandon the well may result in enforcement action, including an order to perform reabandonment well work, pursuant to PRC § 3208.1, and 3224.

PRC § 3208.1 give the Division the authority to order or permit the re-abandonment of any well where it has reason to question the integrity of the previous abandonment, or if the well is not accessible or

visible. Responsibility for re-abandonment costs may be affected by the choices made by the local permitting agency, property owner, and/or developer in considering the general advice set forth in this letter. The PRC continues to define the person or entity responsible for reabandonment as:

1. The property owner - If the well was plugged and abandoned in conformance with Division requirements at the time of abandonment, and in its current condition does not pose an immediate danger to life, health, and property, but requires additional work solely because the owner of the property on which the well is located proposes construction on the property that would prevent or impede access to the well for purposes of remedying a currently perceived future problem, then the owner of the property on which the well is located shall obtain all rights necessary to reabandon the well and be responsible for the reabandonment.

2. The person or entity causing construction over or near the well - If the well was plugged and abandoned in conformance with Division requirements at the time of plugging and abandonment, and the property owner, developer, or local agency permitting the construction failed either to obtain an opinion from the supervisor or district deputy as to whether the previously abandoned well is required to be reabandoned, or to follow the advice of the supervisor or district deputy not to undertake the construction, then the person or entity causing the construction over or near the well shall obtain all rights necessary to reabandon the well and be responsible for the reabandonment. A-2 cont.

3. The party or parties responsible for disturbing the integrity of the abandonment - If the well was plugged and abandoned in conformance with Division requirements at the time of plugging and abandonment, and after that time someone other than the operator or an affiliate of the operator disturbed the integrity of the abandonment in the course of developing the property, then the party or parties responsible for disturbing the integrity of the abandonment shall be responsible for the reabandonment.

No well work may be performed on any oil, gas, or geothermal well without written approval from the Division. Well work requiring approval includes, but is not limited to, mitigating leaking gas or other fluids from abandoned wells, modifications to well casings, and/or any other re-abandonment work. The Division also regulates the top of a plugged and abandoned well's minimum and maximum depth below final grade. CCR §1723.5 states well casings shall be cut off at least 5 feet but no more than 10 feet below grade. If any well needs to be lowered or raised (i.e. casing cut down or casing riser added) to meet this regulation, a permit from the Division is required before work can start.

The Division makes the following additional recommendations to the local permitting agency, property owner, and developer:

1. To ensure that present and future property owners are aware of (a) the existence of all wells

located on the property, and (b) potentially significant issues associated with any improvements near oil or gas wells, the Division recommends that information regarding the above identified well(s), and any other pertinent information obtained after the issuance of this letter, be communicated to the appropriate county recorder for inclusion in the title information of the subject real property.

A-2 cont

2. The Division recommends that any soil containing hydrocarbons be disposed of in accordance with local, state, and federal laws. Please notify the appropriate authorities if soil containing significant amounts of hydrocarbons is discovered during development.

As indicated in PRC § 3106, the Division has statutory authority over the drilling, operation, maintenance, and abandonment of oil, gas, and geothermal wells, and attendant facilities, to prevent, as far as possible, damage to life, health, property, and natural resources; damage to underground oil, gas, and geothermal deposits; and damage to underground and surface waters suitable for irrigation or domestic purposes. In addition to the Division's authority to order work on wells pursuant to PRC §§ 3208.1 and 3224, it has authority to issue civil and criminal penalties under PRC §§ 3236, 3236.5, and 3359 for violations within the Division's jurisdictional authority. The Division does not regulate grading, excavations, or other land use issues.

A-3

If during development activities, any wells are encountered that were not part of this review, the property owner is expected to immediately notify the Division's construction site well review engineer in the Northern district office, and file for Division review an amended site plan with well casing diagrams. The District office will send a follow-up well evaluation letter to the property owner and local permitting agency.

Should you have any questions, please contact me at (916) 203-7734 or via email at Erwin.Sison@conservation.ca.gov.

Sincerely,

Erwin Sison
Senior Oil and Gas Engineer (Supervisor)

cc: Rick Caguiat - Plan Checker

Page 4

**Wells Not Abandoned to Current Division Requirements as Prescribed by Law & Projected to be Built Over or Have Future Access Impeded**

The wells listed below are not abandoned to current Division requirements as prescribed by law, and based upon information provided, are projected to be built over or have future access impeded. **The Division expects these wells to be reabandoned in compliance with current California law, prior to development activities.**

| API | Well Designation | Operator | Well Evaluations |
|---|---|---|---|
| 0407700329 | Silveira 1 | Occidental Petroleum Corporation | Well does not meet the requirements of § 1723.5. Surface Plugging. |

Page 5

## Response to Letter A: California Department of Conservation

**Response A-1:** This comment is noted. This comment serves as an introduction to the comment letter. No further response is necessary.

**Response A-2:** The commenter states that there is one known oil or gas well located in the Project boundary. The commenter states that they advise building over, or in any way impeding access to, oil, gas, or geothermal wells. The commenter states that they advise that all wells identified on the development parcel prior to, or during, development activities be tested for liquid and gas leakage. The commenter provides recommendations for testing for liquid or gas leakage at all wells identified on the development parcel. The commenter summarizes PRC Section 3208.1 and California Code of Regulations (CCR) Section 1723.5. The commenter concludes by providing additional recommendations to the lead agency, property owner, and developer pertaining to the existence of all wells on the property and disposal of any soil containing hydrocarbons.

Impacts associated with hazardous materials, including the possible contamination associated with wells or the release of hazardous materials, are discussed in Section 3.8, Hazards and Hazardous Materials, of the Draft EIR. As discussed in Impact 3.8-2 of Section 3.8 of the Draft EIR, due to the presence of existing on-site residential structures, there exists the possibility that the Project site contains underground well(s) and/or septic system(s). Any on-site well or septic system would be required to be properly destroyed or removed in accordance with State, County, and City standards and regulations. Pursuant to existing County regulations, the Project applicant would be required to obtain a well destruction permit from the County Environmental Health Department.

According to the California Department of Conservation Well Finder tool,[1] the on-site well referenced by the commenter is a dry hole well that is plugged and was operated by the Occidental Petroleum Corporation. The well was leased by Silveira, which is likely associated with the Silveira residential complex located in the southeastern portion of the Project site.

While any residual petroleum contamination (if any) near the on-site well will likely be minimal and not of significant concern to the Project site, Mitigation Measure 3.8-2 of Section 3.8 of the Draft EIR has been revised to require soil sampling for hydrocarbons in the vicinity of the on-site well. Additionally, while well destruction is an existing regulatory requirement for the Project, Mitigation Measure 3.8-3 has been added to Section 3.8 of the Draft EIR. This measure requires the applicant to obtain a well destruction permit from the San Joaquin County Environmental Health Department for the known well on the Project site. See Chapter 3.0, Revisions, of this Final EIR for the revisions.

[1] Available at: https://maps.conservation.ca.gov/doggr/wellfinder/

**Response A-3:** This comment serves as a conclusion to the comment letter. No further response is necessary.

CALIFORNIA STATE TRANSPORTATION AGENCY GAVIN NEWSOM, GOVERNOR

**California Department of Transportation**

OFFICE OF THE DISTRICT 10 DIRECTOR
P.O. BOX 2048 | STOCKTON, CA 95201
(209) 948-7943 | FAX (209) 948-7179 TTY 711
www.dot.ca.gov

February 24, 2025

**10-SJ-5-PM R016.195**
**Mossdale Landing West Specific Plan**

Rick Caguiat
Community Development Department, Planning Division
City of Lathrop
390 Towne Centre Drive
Lathrop, CA 95330

Dear Mr. Caguiat:

The California Department of Transportation appreciates the opportunity to review the proposed Mossdale Landing residential project. The project proposes 829 residential units though 912 units are assumed in the analysis to provide a residential buffer. The project is east of the San Joaquin River, west of McKeen Blvd, and mostly north of River Islands Parkway. The Department has the following comments: B-1

1. Please make the following revisions to the Traffic Impact Study (TIS) and send to Caltrans for review and comment prior to project approval. B-2
2. Please include a Queue Analysis in the revised TIS. B-3
3. The Executive Summary states "The City is currently assessing potential improvements to the interchange ramps at intersection 13 and intersection 14." Does the City plan to reconstruct I-5/Louise Ave Interchange or are there other assessments pertaining to this development? If so, please state when these assessments/improvements will be completed and specify whether they will be done before or after the Mossdale West development is opened. B-4
4. The Traffic Analysis Zone (TAZ) is incorrect for the project. In the three-county model, this project should be in the TAZ#1745, not TAZ #1751 as listed on the TIS document. B-5
5. Please explain why the travel demand model (TDM) was not used to determine both the trip distribution and the traffic forecast to year 2040 conditions. Caltrans recommends using the SJCOG 2018 RTP Three-County TDM for these analyses B-6

and comparing the results to the estimated values in the TIS which were calculated based on assumptions. B-6 cont'd

6. Caltrans recommends a Complete Streets approach to planning this development and the surrounding area that promotes bicycle and pedestrian connectivity between the development and neighboring destinations and other nearby destinations. This would include facilities such as bike lanes, crosswalks, and sidewalks. B-7

7. Caltrans recommends that nearby destinations include the facilities necessary to accommodate alternate modes of transportation such as pedestrian paths, bus stops, bike racks, and solar charging stations for electric vehicles. B-8

If you have any questions or would like to set up a meeting to further discuss this project, please contact me at 209-483-2582 or Nicholas Fung at (209) 986-1552. B-9

Sincerely,

Nicholas Fung
FOR

Tom Dumas
Chief, Office of Metropolitan Planning

## Response to Letter B: California Department of Transportation

**Response B-1:** This comment is noted. This comment serves as an introduction to the comment letter. No further response is necessary.

**Response B-2:** The Traffic Impact Study (TIS) was not revised. See Responses B-3 through B-7 for detailed responses to the commenter's concerns.

**Response B-3:** The results of the City's Traffic Monitoring Program (2024) are included in Appendix B of this Final EIR. The City is addressing any inadequate levels of queuing and is using collected impact fees to fund mitigation efforts. This proposed Project will contribute to multiple traffic impact fees (both regional and local) to support the improvement of current queuing conditions.

It is also noted that the following table shows the number of Project trips which would be distributed to various Caltrans facilities:

| Project Trips | | | | |
|---|---|---|---|---|
| Daily Trips | AM Trips | | PM Trips | |
| | In | Out | In | Out |
| 8,600 | 166 | 472 | 540 | 317 |

| Inter-section # | Caltrans Facility | % of Trips | AM Trips | | Total AM Trips | PM Trips | | Total PM Trips |
|---|---|---|---|---|---|---|---|---|
| | | | In | Out | | In | Out | |
| 11 | W Lathrop Rd and I-5 NB Ramps | | | | | | | |
| | to/from East via W Lathrop Rd | 5 | 8 | 24 | 32 | 27 | 16 | 43 |
| | to north via W Lathrop Rd and I-5 NB Ramps | 10 | -- | 47 | 47 | -- | 32 | 32 |
| 12 | Spartan Way/W Lathrop Rd and I-5 SB Ramps | | | | | | | |
| | to/from East via W Lathrop Rd | 5 | 8 | 24 | 32 | 27 | 16 | 43 |
| | from North via W Lathrop Rd and I-5 SB Ramps | 10 | 17 | -- | 17 | 54 | -- | 54 |
| 13 | E Louise Ave and I-5 NB Ramps | | | | | | | |
| | to/from East via E Louise Avenue | 15 | 25 | 71 | 96 | 81 | 48 | 129 |
| | to North via River Island Pkwy/E Louise Ave and I-5 NB Ramps | 25 | -- | 118 | 118 | | 79 | 79 |
| | from South via River Island Parkway/E Louise Ave and I-5 NB Ramps | 30 | 50 | -- | 50 | 162 | -- | 162 |
| 14 | River Island Pkwy /E Louise Ave and I-5 SB Ramps | | | | | | | |
| | to/from East via E Louise Ave | 15 | 25 | 71 | 96 | 81 | 48 | 129 |
| | from North via River Island Pkwy /E Louise Ave and I-5 SB Ramps | 25 | 42 | -- | 42 | 135 | -- | 135 |
| | to East via via E Louise Ave (out trip from I-5 NB On ramp at intersection 13) | 25 | -- | 118 | 118 | -- | 79 | 79 |
| | from East via E Louise Ave (in trip from I-5 NB Off ramp at intersection 13) | 30 | 50 | -- | 50 | 162 | -- | 162 |
| | to South via River Island Pkwy /E Louise Ave and I-5 SB Ramps | 30 | -- | 142 | 142 | -- | 95 | 95 |

**Response B-4:** The City of Lathrop has prepared a Traffic Monitoring Program (TMP), identifying improvements such as adding lanes and increasing storage lengths at various intersections. The City plans on reconstructing the I-5/ Louise Avenue Interchange (PS 06-

06 Project). The project status and funding are provided below.

i. Project Timeline:

1. The subject interchange is currently in the environmental phase.

2. Completion of the Project Approval and Environmental Document (PA&ED) is anticipated by May 2025.

3. Once approved, the project will transition to the design phase, including right-of-way acquisitions lasting approximately 24 months.

4. Construction is estimated to commence in summer 2027, with the interchange opening to traffic by spring 2029.

ii. Funding and Exemptions:

1. Each home within the Mossdale Landing West development will contribute to the impact fee fund established for this interchange project.

2. Consequently, the City is requesting an exemption from any CALTRANS requirement to pay additional fees to the regional transportation capital facility fee fund or to construct any ultimate or intermediate improvements for the interchange, as these fees will be collected from each building permit prior to issuance.

**Response B-5:** The Traffic Impact Analysis Report was revised to address this comment by revising the vehicle-miles-traveled (VMT) analysis to reflect the correct traffic analysis zone (TAZ) #1745. Section 3.13, Transportation and Circulation, of the Draft EIR was revised to incorporate the revised VMT analysis. The revised Traffic Impact Analysis Report is included as Appendix A of this Final EIR. See Chapter 3.0, Revisions, of this Final EIR for the revisions.

**Response B-6:** The City of Lathrop uses the TMP, which is based on the regional travel demand model (TDM). The City is satisfied with the current traffic model methodology.

**Response B-7:** All proposed public streets will comply with established City standards, which include provisions for crosswalks, sidewalks, and bike lanes; thereby, the Project would support a Complete Streets framework.

**Response B-8:** The City will condition the developer to install facilities that align with their commitment to promoting alternative modes of transportation. Additionally, local and regional transportation fees have been established to fund alternate modes of transportation (such as pedestrian paths, bus stops, bike racks, and solar charging stations for electric vehicles) if developer-installed facilities are insufficient.

**Response B-9:** The comment serves as a conclusion to the comment letter. No further response is necessary.

MANTECA UNIFIED SCHOOL DISTRICT
— MANTECA — LATHROP — FRENCH CAMP — WESTON RANCH —

2271 W. Louise Avenue
Manteca, CA 95337
(209) 825-3200
www.mantecausd.net

Chief Business and Information Officer
Victoria Brunn | vbrunn@musd.net

Board of Education
Marie Freitas
*President*
Eric Duncan Sr.
*Vice President*
Stephen J. Schluer
*Clerk*
Melanie Greene
Marisella C. Guerrero
Kathy Howe
Cathy Pope-Gotschall

Superintendent
Clark Burke, Ed.D.

Deputy Superintendent
Roger Goatcher

Superintendent's Cabinet
Victoria Brunn
*Chief Business & Information Officer*
Clara Schmiedt
*Exec. Dir. Secondary Education*
Jenni Andrews
*Exec. Dir. Elementary Education*
Dante Alvarez, Ed.D.
*Senior Director*
Jody Burriss, Ed.D.
*Senior Director Special Education*

February 6, 2025

**VIA E-MAIL (RCAGUIAT@CI.LATHROP.CA.US) & U.S. MAIL**

Rick Caguiat, Community Development Director
City of Lathrop
390 Town Centre Drive
Lathrop, CA 95330

**Re: Notice of Availability for the Mossdale Landing West Specific Plan Draft EIR**

The Mossdale Landing West project in the City of Lathrop proposes to develop 830 single-family lots on approximately 169 acres on a portion of APN 191-190-740. The project proponents for this project understand that without adequate mitigation there is a significant impact to school facilities. The developer for this project through an executed LOI (letter of intent) has committed to annexing this project into a Community Facility District (CFD) and entering into a mitigation agreement to ensure adequate mitigation to school facilities.

C-1

CFDs are one of the crucial components for generating enough funding to ensure a fiscally sound budget for school facility construction and maintenance. CFDs are the funding mechanism used historically by the District to help build new student classrooms in areas of growth. The financial support required by residential development is well beyond the state mandated developer fees.

Please let us know if there is any additional information needed from MUSD. Do not hesitate to contact me should you have any questions at vbrunn@musd.net.

Sincerely,

Victoria Brunn

Victoria Brunn
Chief Business and Information Officer
Manteca Unified School District

## Response to Letter C: Manteca Unified School District

**Response C-1:** The commenter summarizes the Project and states that the Project developer has, through an executed LOI (letter of intent), committed to annexing this project into a Community Facility District (CFD) and entering into a mitigation agreement to ensure adequate mitigation to school facilities. The commenter also states that the financial support required by residential development is well beyond the state mandated developer fees.

This comment is noted. No further response is necessary.

Pacific Gas and Electric Company

**Plan Review Team**
Land Management

PGEPlanReview@pge.com

January 13, 2025

Maria Hermosilla
City of Lathrop

Ref: Gas and Electric Transmission and Distribution

Dear Maria Hermosilla,

Thank you for submitting the Mossdale Landing West Specific plans for our review. PG&E will review the submitted plans in relationship to any existing Gas and Electric facilities within the project area. If the proposed project is adjacent/or within PG&E owned property and/or easements, we will be working with you to ensure compatible uses and activities near our facilities.

Attached you will find information and requirements as it relates to Gas facilities (Attachment 1) and Electric facilities (Attachment 2). Please review these in detail, as it is critical to ensure your safety and to protect PG&E's facilities and its existing rights.

Below is additional information for your review:

1. This plan review process does not replace the application process for PG&E gas or electric service your project may require. For these requests, please continue to work with PG&E Service Planning: https://www.pge.com/en/account/service-requests/building-and-renovation.html.

2. If the project being submitted is part of a larger project, please include the entire scope of your project, and not just a portion of it. PG&E's facilities are to be incorporated within any CEQA document. PG&E needs to verify that the CEQA document will identify any required future PG&E services.

3. An engineering deposit may be required to review plans for a project depending on the size, scope, and location of the project and as it relates to any rearrangement or new installation of PG&E facilities.

D-1

Any proposed uses within the PG&E fee strip and/or easement, may include a California Public Utility Commission (CPUC) Section 851 filing. This requires the CPUC to render approval for a conveyance of rights for specific uses on PG&E's fee strip or easement. PG&E will advise if the necessity to incorporate a CPUC Section 851filing is required.

This letter does not constitute PG&E's consent to use any portion of its easement for any purpose not previously conveyed. PG&E will provide a project specific response as required.

Sincerely,

Plan Review Team
Land Management

Pacific Gas and Electric Company

**Attachment 1 – Gas Facilities**

There could be gas transmission pipelines in this area which would be considered critical facilities for PG&E and a high priority subsurface installation under California law. Care must be taken to ensure safety and accessibility. So, please ensure that if PG&E approves work near gas transmission pipelines it is done in adherence with the below stipulations. Additionally, the following link provides additional information regarding legal requirements under California excavation laws: https://www.usanorth811.org/images/pdfs/CA-LAW-2018.pdf

1. Standby Inspection: A PG&E Gas Transmission Standby Inspector must be present during any demolition or construction activity that comes within 10 feet of the gas pipeline. This includes all grading, trenching, substructure depth verifications (potholes), asphalt or concrete demolition/removal, removal of trees, signs, light poles, etc. This inspection can be coordinated through the Underground Service Alert (USA) service at 811. A minimum notice of 48 hours is required. Ensure the USA markings and notifications are maintained throughout the duration of your work.

2. Access: At any time, PG&E may need to access, excavate, and perform work on the gas pipeline. Any construction equipment, materials, or spoils may need to be removed upon notice. Any temporary construction fencing installed within PG&E's easement would also need to be capable of being removed at any time upon notice. Any plans to cut temporary slopes exceeding a 1:4 grade within 10 feet of a gas transmission pipeline need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

3. Wheel Loads: To prevent damage to the buried gas pipeline, there are weight limits that must be enforced whenever any equipment gets within 10 feet of traversing the pipe.

Ensure a list of the axle weights of all equipment being used is available for PG&E's Standby Inspector. To confirm the depth of cover, the pipeline may need to be potholed by hand in a few areas.

Due to the complex variability of tracked equipment, vibratory compaction equipment, and cranes, PG&E must evaluate those items on a case-by-case basis prior to use over the gas pipeline (provide a list of any proposed equipment of this type noting model numbers and specific attachments).

No equipment may be set up over the gas pipeline while operating. Ensure crane outriggers are at least 10 feet from the centerline of the gas pipeline. Transport trucks must not be parked over the gas pipeline while being loaded or unloaded.

4. Grading: PG&E requires a minimum of 36 inches of cover over gas pipelines (or existing grade if less) and a maximum of 7 feet of cover at all locations. The graded surface cannot exceed a cross slope of 1:4.

5. Excavating: Any digging within 2 feet of a gas pipeline must be dug by hand. Note that while the minimum clearance is only 24 inches, any excavation work within 24 inches of the edge of a pipeline must be done with hand tools. So to avoid having to dig a trench entirely with hand tools, the edge of the trench must be over 24 inches away. (Doing the math for a 24 inch

Pacific Gas and Electric Company

wide trench being dug along a 36 inch pipeline, the centerline of the trench would need to be at least 54 inches [24/2 + 24 + 36/2 = 54] away, or be entirely dug by hand.)

Water jetting to assist vacuum excavating must be limited to 1000 psig and directed at a 40° angle to the pipe. All pile driving must be kept a minimum of 3 feet away.

Any plans to expose and support a PG&E gas transmission pipeline across an open excavation need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

6. Boring/Trenchless Installations: PG&E Pipeline Services must review and approve all plans to bore across or parallel to (within 10 feet) a gas transmission pipeline. There are stringent criteria to pothole the gas transmission facility at regular intervals for all parallel bore installations.

For bore paths that cross gas transmission pipelines perpendicularly, the pipeline must be potholed a minimum of 2 feet in the horizontal direction of the bore path and a minimum of 24 inches in the vertical direction from the bottom of the pipe with minimum clearances measured from the edge of the pipe in both directions. Standby personnel must watch the locator trace (and every ream pass) the path of the bore as it approaches the pipeline and visually monitor the pothole (with the exposed transmission pipe) as the bore traverses the pipeline to ensure adequate clearance with the pipeline. The pothole width must account for the inaccuracy of the locating equipment.

7. Substructures: All utility crossings of a gas pipeline should be made as close to perpendicular as feasible (90° +/- 15°). All utility lines crossing the gas pipeline must have a minimum of 24 inches of separation from the gas pipeline. Parallel utilities, pole bases, water line 'kicker blocks', storm drain inlets, water meters, valves, back pressure devices or other utility substructures are not allowed in the PG&E gas pipeline easement.

If previously retired PG&E facilities are in conflict with proposed substructures, PG&E must verify they are safe prior to removal. This includes verification testing of the contents of the facilities, as well as environmental testing of the coating and internal surfaces. Timelines for PG&E completion of this verification will vary depending on the type and location of facilities in conflict.

8. Structures: No structures are to be built within the PG&E gas pipeline easement. This includes buildings, retaining walls, fences, decks, patios, carports, septic tanks, storage sheds, tanks, loading ramps, or any structure that could limit PG&E's ability to access its facilities.

9. Fencing: Permanent fencing is not allowed within PG&E easements except for perpendicular crossings which must include a 16 foot wide gate for vehicular access. Gates will be secured with PG&E corporation locks.

10. Landscaping: Landscaping must be designed to allow PG&E to access the pipeline for maintenance and not interfere with pipeline coatings or other cathodic protection systems. No trees, shrubs, brush, vines, and other vegetation may be planted within the easement area. Only those plants, ground covers, grasses, flowers, and low-growing plants that grow unsupported to a maximum of four feet (4') in height at maturity may be planted within the easement area.

Pacific Gas and Electric Company

11. Cathodic Protection: PG&E pipelines are protected from corrosion with an "Impressed Current" cathodic protection system. Any proposed facilities, such as metal conduit, pipes, service lines, ground rods, anodes, wires, etc. that might affect the pipeline cathodic protection system must be reviewed and approved by PG&E Corrosion Engineering.

12. Pipeline Marker Signs: PG&E needs to maintain pipeline marker signs for gas transmission pipelines in order to ensure public awareness of the presence of the pipelines. With prior written approval from PG&E Pipeline Services, an existing PG&E pipeline marker sign that is in direct conflict with proposed developments may be temporarily relocated to accommodate construction work. The pipeline marker must be moved back once construction is complete.

13. PG&E is also the provider of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E's facilities must be reviewed and approved by PG&E to ensure that no impact occurs which may endanger the safe operation of its facilities.

Pacific Gas and Electric Company

**Attachment 2 – Electric Facilities**

It is PG&E's policy to permit certain uses on a case by case basis within its electric transmission fee strip(s) and/or easement(s) provided such uses and manner in which they are exercised, will not interfere with PG&E's rights or endanger its facilities. Some examples/restrictions are as follows:

1. Buildings and Other Structures: No buildings or other structures including the foot print and eave of any buildings, swimming pools, wells or similar structures will be permitted within fee strip(s) and/or easement(s) areas. PG&E's transmission easement shall be designated on subdivision/parcel maps as "**RESTRICTED USE AREA – NO BUILDING.**"

2. Grading: Cuts, trenches or excavations may not be made within 25 feet of our towers. Developers must submit grading plans and site development plans (including geotechnical reports if applicable), signed and dated, for PG&E's review. PG&E engineers must review grade changes in the vicinity of our towers. No fills will be allowed which would impair ground-to-conductor clearances. Towers shall not be left on mounds without adequate road access to base of tower or structure.

3. Fences: Walls, fences, and other structures must be installed at locations that do not affect the safe operation of PG&'s facilities. Heavy equipment access to our facilities must be maintained at all times. Metal fences are to be grounded to PG&E specifications. No wall, fence or other like structure is to be installed within 10 feet of tower footings and unrestricted access must be maintained from a tower structure to the nearest street. Walls, fences and other structures proposed along or within the fee strip(s) and/or easement(s) will require PG&E review; submit plans to PG&E Centralized Review Team for review and comment.

4. Landscaping: Vegetation may be allowed; subject to review of plans. On overhead electric transmission fee strip(s) and/or easement(s), plant only low-growing shrubs under the wire zone and only grasses within the area directly below the tower. Along the border of the transmission line right-of-way, plant only small trees no taller than 10 feet in height at maturity. PG&E must have access to its facilities at all times, including access by heavy equipment. No planting is to occur within the footprint of the tower legs. Greenbelts are encouraged.

5. Reservoirs, Sumps, Drainage Basins, and Ponds: Prohibited within PG&E's fee strip(s) and/or easement(s) for electric transmission lines.

6. Automobile Parking: Short term parking of movable passenger vehicles and light trucks (pickups, vans, etc.) is allowed. The lighting within these parking areas will need to be reviewed by PG&E; approval will be on a case by case basis. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications. Blocked-up vehicles are not allowed. Carports, canopies, or awnings are not allowed.

7. Storage of Flammable, Explosive or Corrosive Materials: There shall be no storage of fuel or combustibles and no fueling of vehicles within PG&E's easement. No trash bins or incinerators are allowed.

Pacific Gas and Electric Company

8. Streets and Roads: Access to facilities must be maintained at all times. Street lights may be allowed in the fee strip(s) and/or easement(s) but in all cases must be reviewed by PG&E for proper clearance. Roads and utilities should cross the transmission easement as nearly at right angles as possible. Road intersections will not be allowed within the transmission easement.

9. Pipelines: Pipelines may be allowed provided crossings are held to a minimum and to be as nearly perpendicular as possible. Pipelines within 25 feet of PG&E structures require review by PG&E. Sprinklers systems may be allowed; subject to review. Leach fields and septic tanks are not allowed. Construction plans must be submitted to PG&E for review and approval prior to the commencement of any construction.

10. Signs: Signs are not allowed except in rare cases subject to individual review by PG&E.

11. Recreation Areas: Playgrounds, parks, tennis courts, basketball courts, barbecue and light trucks (pickups, vans, etc.) may be allowed; subject to review of plans. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications.

12. Construction Activity: Since construction activity will take place near PG&E's overhead electric lines, please be advised it is the contractor's responsibility to be aware of, and observe the minimum clearances for both workers and equipment operating near high voltage electric lines set out in the High-Voltage Electrical Safety Orders of the California Division of Industrial Safety (https://www.dir.ca.gov/Title8/sb5g2.html), as well as any other safety regulations. Contractors shall comply with California Public Utilities Commission General Order 95 (http://www.cpuc.ca.gov/gos/GO95/go_95_startup_page.html) and all other safety rules. No construction may occur within 25 feet of PG&E's towers. All excavation activities may only commence after 811 protocols has been followed.

Contractor shall ensure the protection of PG&E's towers and poles from vehicular damage by (installing protective barriers) Plans for protection barriers must be approved by PG&E prior to construction.

13. PG&E is also the owner of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E's facilities must be reviewed and approved by PG&E to ensure that no impact occurs that may endanger the safe and reliable operation of its facilities.

## Response to Letter D: Pacific Gas and Electric Company

**Response D-1:** The Pacific Gas and Electric Company (PG&E) submitted a second comment letter, Letter D, which states that the proposed improvements do not appear to directly interfere with existing PG&E facilities or impact PG&E easement rights.

This comment is noted.

Robert Guinan

801 Trestle Pt

Lathrop, CA 95330

February 20, 2025

Rick Caguiat, Community Development Director

City of Lathrop, Community Development Department

390 Towne Centre Drive

Lathrop, CA 95330

Dear Rick Caguiat,

This letter is about the Mossdale Landing West Specific Plan – Draft Environmental Impact Report. Several issues are of concern to me and my neighbors, as we dwell immediately adjacent to the east side of River Islands Parkway just before the approach to the bridge. E-1

Environmental Impact: During construction of the six phases, undoubtedly both the air quality and noise level will be significantly impacted by the breaking up of the soil and construction of dwellings. In years past, the farmers tilling and harvesting the land with their agricultural machinery have caused billowing clouds of dust and excessive noise E-2

levels all hours of the day and night. What is the City of Lathrop going to do to prevent layers of dirt falling onto our properties and keep the noise level down to a minimum? E-2 cont'd

Historical Impact: There is an existing farmhouse and associated barn from the early 1900s located in parcel 191-620-59. For a city that has been around since the building of the Transcontinental Railway back in the mid-1800s, there is hardly any evidence of historical buildings except for a few dwellings along 5th Street. What is the City of Lathrop going to do to preserve its historic landmarks from being torn down all in the name of progress? E-3

Wildlife Impact: There are packs of coyotes that peaceably dwell along the east riverbank near the confluence of the San Joaquin River and Old River. Coyotes have been dwelling along the river long before Lathrop was founded. What is the City of Lathrop going to do to humanely remove these original dwellers from their natural habitat to a protected habitat? E-4

Sincerely,

Robert Guinan

## Response to Letter E: Robert Guinan, Resident

**Response E-1:** This comment is noted. This comment serves as an introduction to the comment letter. See Responses E-2 through E-4.

**Response E-2:** Impacts related to air quality are discussed in Section 3.3, Air Quality, of the Draft EIR. As discussed on pages 3.3-38 and 3.3-39, project maximum construction emissions would not exceed the San Joaquin Valley Air Pollution Control District (SJVAPCD) thresholds of significance for any criteria pollutants. Nevertheless, regardless of emission quantities, the SJVAPCD requires construction related control measures in accordance with their rules and regulations. Implementation of these control measures (provided in further detail below) would further reduce proposed Project construction related emissions to the extent possible.

The first step is to prepare a Dust Control Plan that meets all of the applicable requirements of APCD Rule 8021. All construction activities are required to implement dust control measures, as required by APCD Rules 8011-8081, to limit Visible Dust Emissions to 20% opacity or less. Dust control measures include application of water or chemical dust suppressants to unpaved roads and graded areas, covering or stabilization of transported bulk materials, prevention of carryout or trackout of soil materials to public roads, limiting the area subject to soil disturbance, construction of wind barriers, access restrictions to inactive sites as required by the applicable rules. The following dust control practices are identified in Tables 6-2 and 6-3 of the GAMAQI (2002):

a. *All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.*
b. *All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.*
c. *All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities shall control fugitive dust emissions by application of water or by presoaking.*
d. *When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least six inches of freeboard space from the top of the container shall be maintained.*
e. *All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.*
f. *Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.*
g. *Limit traffic speeds on unpaved roads to 15 mph.*

*h. Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.*

Impacts related to noise are discussed in Section 3.11, Noise, of the Draft EIR. As discussed on pages 3.11-16 through 3.11-18, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dB at a distance of 50 feet. Caltrans defines a significant increase due to noise as an increase of 12 dBA over existing ambient noise levels. As shown in Table 3.11-13, the maximum increase over ambient due to construction noise is 6 dB. Therefore, Project construction would not cause an increase of greater than 12 dB at the nearby sensitive receptors.

Although construction activities are temporary in nature and would occur during normal daytime working hours, construction-related noise could result in sleep interference at existing noise-sensitive land uses in the vicinity of the construction if construction activities were to occur outside the normal daytime hours.

Mitigation Measure 3.11-1 requires that construction activities are limited to certain hours, construction equipment is properly maintained, equipment idling is limited, and stationary equipment is located away from noise-sensitive uses. Implementation of Mitigation Measure 3.11-1 would ensure this impact is less-than-significant by ensuring construction-related noise levels do not exceed ambient noise plus 12 dBA.

**Response E-3:** Impacts related to historic resources are discussed in Section 3.5, Cultural and Tribal Resources, of the Draft EIR. As discussed on pages 3.5-6 and 3.5-7, Peak & Associates completed a field survey of a portion of the Plan Area on September 14, 2022. The Reclamation District (RD) 17 levee work was underway during the site visit. The construction yard for the levee work had been set up within the boundaries of P-39-0004602. The Plan Area was under cultivation for tomatoes.

River Island Parkway runs adjacent to the east boundary with an over-crossing at the southeast section. The location of the former historical Johnson's Ferry is at this point and comprises the southeastern tip of the survey area. Several older buildings remain, including two barns, a two-story house, and a shed (recorded as P-39-004602).

At time of the initial survey effort, a major levee improvement project for RD 17 was underway, with heavy equipment removing soil from levee, reinforcing the base, and then importing more soil to raise the elevation. The toe of the levee appeared to be widened, extending slightly into the farm complex and possibly the field area as well. Construction equipment as well as a contractor trailer and storage units were present near the two-story house. The levee work had been completed before the final field effort in 2023.

The soil of the farm building complex is light to medium brown sandy to silty loam with rounded alluvial pebbles and imported road gravel, cobbles. Around barns and likely locations of animal pens, the soil is slightly more organic and darker in color and with a higher fraction of compaction and disturbance.

The first survey effort was minimal after finding the levee work underway and a tomato crop still growing over much of the land acreage. The survey efforts were conducted after the fall crop harvest and the fields were mostly bare, tilled and fallow. Typical invasive and indigenous weeds and plants such as wild radish, datura, goats-head, brome and Russian thistle were present around the perimeter of the fiends and along edges of dirt access roads. Native valley oaks were present in several places at property boundaries and near the farm complex. Ornamental imported trees stand near the barns and house.

The ground visibility was excellent in both agricultural fields and within the farm complex due to seasonal harvest and tilling, and scraping for levee toe construction.

Due to known historical and prehistoric occupation within or nearby the Project site, complete intensive investigation was conducted using parallel transects not greater in width than three to five meters within the entire building complex segment and within 100 feet of the levee in the crop fields. For the remainder of the fields general survey method of parallel transects no greater than 10 to 15 meters in width was used.

No cultural resources were observed within the crop field sections, and within farm building complex site area, less than ten fragments of historical refuse were identified including green glass, aqua glass, window glass, baling wire and one small cut nail.

Impacts related to historical resources are discussed in Impact 3.5-1 on pages 3.5-14 and 3.5-15 of the Draft EIR. As discussed, portions of the Plan Area become the eastern half of a commercial ferry business in the early 1850s. An early house was also present in association in the Plan Area, that eventually become part of a larger home. The Cultural Resources Assessment concluded that there is potential for deposits in the Plan Area related to the later historic use of the Project site by William Johnson and successor owners.

The previously recorded building complex, P-39-004602, has been formally determined to be “not significant” by the State Office of Historic Preservation. It has been concluded by the State Office of Historic Preservation that the 1929 Silveira house and adjacent buildings themselves are not eligible for the National Register or California Register. Nevertheless, it is possible other sites are present on-site.

Although no historic resources are known to occur within the Project site, there is potential of discovery of previously unknown historic resources during ground-disturbing activities. Implementation of Mitigation Measures 3.5-1 and 3.5-2 would reduce potential impacts of the proposed Project on inadvertently discovered historical resources to a less-than-significant level by ensuring that any resources inadvertently discovered during construction would be evaluated for significance and treated appropriately, as well conducting cultural resources sensitivity training for the construction workers so they can better recognize potential cultural resources.

**Response E-4:** Impacts related to biological resources are discussed in Section 3.4, Biological Resources, of the Draft EIR. As discussed on pages 3.4-3 and 3.4-4, vegetation found in the Project

site provides habitat for both common and a few special-status wildlife populations. For example, some commonly observed wildlife species in the region include: California ground squirrel (*Spermophilus beecheyi*), California vole (*Microtus californicus*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), white-tailed kite (*Elanus leucurus*), American killdeer (*Charadrius vociferus*), gopher snake (*Pituophis melanoleucus*), garter snake (*Thamnophis species*), and western fence lizard (*Sceloporus occidentalis*), as well as many native insect species. There are also several bat species in the region. Bats often feed on insects as they fly over agricultural and natural areas.

The commonly-observed coyotes are not a special-status species. Nevertheless, impacts related to special-status mammals are discussed in Impact 3.4-4 on pages 3.4-43 through 3.4-46 of the Draft EIR. According to the California Natural Diversity Database (CNDDB), there are eight special-status mammals that are documented within the nine-quadrangle Project region, including: pallid bat (*Antrozous pallidus*), riparian (=San Joaquin Valley) woodrat (*Neotoma fuscipes riparia*), Townsend's big-eared bat (*Corynorhinus townsendii*), western mastiff bat (*Eumops perotis californicus*), San Joaquin pocket mouse (*Perognathus inornatus*), riparian brush rabbit (*Sylvilagus bachmani riparius*), American badger (*Taxidea taxus*), and San Joaquin kit fox (*Vulpes macrotis mutica*). As noted in Table 3.4-4, all but one of these mammal species (pallid bat) are covered species under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP).

S J C O G, Inc.

555 East Weber Avenue • Stockton, CA 95202 • (209) 235-0574 • Email: boyd@sjcog.org

*San Joaquin County Multi-Species Habitat Conservation & Open Space Plan (SJMSCP)*

**SJMSCP RESPONSE TO LOCAL JURISDICTION (RTLJ)**
**ADVISORY AGENCY NOTICE TO SJCOG, Inc.**

**To:** Rick Caguiat, City of Lathrop, Community Development Department

**From:** Laurel Boyd, SJCOG, Inc. Phone: (209) 235-0574 Email: boyd@sjcog.org

**Date:** January 14, 2025

**Local Jurisdiction Project Title:** Notice of Availability – Mossdale Landing West Specific Plan DEIR

**Assessor Parcel Number(s):** 191-190-74 to 78, 191-610-02, -22, 191-620-59, 191-340-03

**Local Jurisdiction Project Number:** N/A

**Total Acres to be converted from Open Space Use:** Unknown

**Habitat Types to be Disturbed:** Agricultural and Urban Habitat Land

**Species Impact Findings:** Findings to be determined by SJMSCP biologist.

Dear Mr. Caguiat:

SJCOG, Inc. has reviewed the project referral for the Notice of Availability of a Draft Environmental Impact Report for the Mossdale Landing West Specific Plan. This project consists of two distinct planning boundaries defined below:

- Mossdale Landing West Specific Plan Area (Specific Plan Area, Plan Area, or Project site) – totals 225.86 acres and includes the whole of the Project, including the 167.42-acre Development Area, and land along the San Joaquin River (which would not be developed as part of the proposed Project).
- Development Area – includes the 167.42 acres that is intended for development.

The Mossdale Landing West Specific Plan would include the construction and associated operation of up to 912 residential units with associated park, circulation, and utility improvements over five phases. The Specific Plan provides a total of 829, which creates a density of 5.43 dwelling units / acre. However, to provide a residential unit buffer, a maximum of 912 units are assumed in this analysis. As such, the analysis is conservative as the number of units constructed at buildout would likely be closer to 829, as shown on the Vesting Tentative Subdivision Map. The Mossdale Landing West Specific Plan is based upon the Mossdale Village Plan and policies presented in the West Lathrop Specific Plan, which is consistent with the City of Lathrop's General Plan. The proposed project would require a rezone and General Plan Amendment. The project site is located west of Interstate 5 and south of Lathrop Road, Lathrop (APN: 191-190-74 to 78, 191-610-02, -22, 191-620-59, 191-340-03). F-1

The City of Lathrop is a signatory to San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). Participation in the SJMSCP satisfies requirements of both the state and federal endangered species acts, and ensures that the impacts are mitigated below a level of significance in compliance with the California Environmental Quality Act (CEQA). The LOCAL JURISDICTION retains responsibility for ensuring that the appropriate Incidental Take Minimization Measure are properly implemented and monitored and that appropriate fees are paid in compliance with the SJMSCP. Although participation in the SJMSCP is voluntary, Local Jurisdiction/Lead Agencies should be aware that if project applicants choose against participating in the SJMSCP, they will be required to provide alternative mitigation in an amount and kind equal to that provided in the SJMSCP.

***This Project is subject to the SJMSCP***. This can be up to a 30 day process and it is recommended that the project applicant contact SJMSCP staff as early as possible. It is also recommended that the project applicant obtain an information package. http://www.sjcog.org F-2

Please contact SJMSCP staff regarding completing the following steps to satisfy SJMSCP requirements:

- Schedule a SJMSCP Biologist to perform a pre-construction survey ***prior to any ground disturbance***
- SJMSCP Incidental take Minimization Measures and mitigation requirement:

1. Incidental Take Minimization Measures (ITMMs) will be issued to the project and must be signed by the project applicant prior to any ground disturbance but no later than six (6) months from receipt of the ITMMs. If ITMMs are not signed within six months, the applicant must reapply for SJMSCP Coverage. Upon receipt of signed ITMMs from project applicant, SJCOG, Inc. staff will sign the ITMMs. This is the effective date of the ITMMs.
2. Under no circumstance shall ground disturbance occur without compliance and satisfaction of the ITMMs.
3. Upon issuance of fully executed ITMMs and prior to any ground disturbance, the project applicant must:
    a. Post a bond for payment of the applicable SJMSCP fee covering the entirety of the project acreage being covered (the bond should be valid for no longer than a 6 month period); or
    b. Pay the appropriate SJMSCP fee for the entirety of the project acreage being covered; or
    c. Dedicate land in-lieu of fees, either as conservation easements or fee title; or
    d. Purchase approved mitigation bank credits.
4. Within 6 months from the effective date of the ITMMs or issuance of a building permit, whichever occurs first, the project applicant must:
    a. Pay the appropriate SJMSCP for the entirety of the project acreage being covered; or
    b. Dedicate land in-lieu of fees, either as conservation easements or fee title; or
    c. Purchase approved mitigation bank credits.

Failure to satisfy the obligations of the mitigation fee shall subject the bond to be called.

F-2 cont'd

- Receive your Certificate of Payment and release the required permit

*It should be noted that if this project has any potential impacts to waters of the United States [pursuant to Section 404 Clean Water Act], it would require the project to seek voluntary coverage through the unmapped process under the SJMSCP which could take up to 90 days. It may be prudent to obtain a preliminary wetlands map from a qualified consultant. If waters of the United States are confirmed on the project site, the Corps and the Regional Water Quality Control Board (RWQCB) would have regulatory authority over those mapped areas [pursuant to Section 404 and 401 of the Clean Water Act respectively] and permits would be required from each of these resource agencies prior to grading the project site.*

If you have any questions, please call (209) 235-0574.

3 | SJCOG, Inc.

**S J C O G, Inc.**

*San Joaquin County Multi-Species Habitat Conservation & Open Space Plan*

555 East Weber Avenue • Stockton, CA 95202 • (209) 235-0574 • Email: boyd@sjcog.org

# SJMSCP HOLD

**TO:** Local Jurisdiction: Community Development Department, Planning Department, Building Department, Engineering Department, Survey Department, Transportation Department, Other: _____

**FROM:** Laurel Boyd, SJCOG, Inc.

**DO NOT AUTHORIZE SITE DISTURBANCE**
**DO NOT ISSUE A BUILDING PERMIT**
**DO NOT ISSUE _____ FOR THIS PROJECT**

The landowner/developer for this site has requested coverage pursuant to the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). In accordance with that agreement, the Applicant has agreed to:

1) SJMSCP Incidental Take Minimization Measures and mitigation requirement:

1. Incidental Take Minimization Measures (ITMMs) will be issued to the project and must be signed by the project applicant prior to any ground disturbance but no later than six (6) months from receipt of the ITMMs. If ITMMs are not signed within six months, the applicant must reapply for SJMSCP Coverage. Upon receipt of signed ITMMs from project applicant, SJCOG, Inc. staff will sign the ITMMs. This is the effective date of the ITMMs.
2. Under no circumstance shall ground disturbance occur without compliance and satisfaction of the ITMMs.
3. Upon issuance of fully executed ITMMs and prior to any ground disturbance, the project applicant must:
   a. Post a bond for payment of the applicable SJMSCP fee covering the entirety of the project acreage being covered (the bond should be valid for no longer than a 6 month period); or
   b. Pay the appropriate SJMSCP fee for the entirety of the project acreage being covered; or
   c. Dedicate land in-lieu of fees, either as conservation easements or fee title; or
   d. Purchase approved mitigation bank credits.
4. Within 6 months from the effective date of the ITMMs or issuance of a building permit, whichever occurs first, the project applicant must:
   a. Pay the appropriate SJMSCP for the entirety of the project acreage being covered; or
   b. Dedicate land in-lieu of fees, either as conservation easements or fee title; or
   c. Purchase approved mitigation bank credits.

   Failure to satisfy the obligations of the mitigation fee shall subject the bond to be called.

Project Title: Notice of Availability for the Mossdale Landing West Specific Plan DEIR

Assessor Parcel #s: 191-190-74 to 78, 191-610-02, -22, 191-620-59, 191-340-03

T _____, R_____, Section(s): _____

Local Jurisdiction Contact: Rick Caguiat

**The LOCAL JURISDICTION retains responsibility for ensuring that the appropriate Incidental Take Minimization Measures are properly implemented and monitored and that appropriate fees are paid in compliance with the SJMSCP.**

## Response to Letter F: San Joaquin Council of Governments, Inc.

**Response F-1:** This comment is noted. This comment serves as an introduction to the letter. No further response is necessary.

**Response F-2:** This comment is noted. Impacts associated with biological resources are discussed in Section 3.4, Biological Resources, of the Draft EIR. The SJMSCP coverage status for each special-status species in the nine-quadrangle region for the Project site are shown in Tables 3.4-3 and 3.4-4 of Section 3.4. Additionally, the SJMSCP is discussed in the Regulatory Setting of Section 3.4 on pages 3.4-26 through 3.4-28. Further, Mitigation Measure 3.4-2 of Section 3.4 of the Draft EIR requires that the applicant, "obtain coverage under the SJMSCP to mitigate for habitat impacts to covered special status species. Coverage involves compensation for habitat impacts on covered species through implementation of incidental take and minimization Measures (ITMMs) and payment of fees for conversion of lands that may provide habitat for covered special status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. Obtaining coverage for a Project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a), California Fish and Game Code Section 2081, and the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species."

SAN JOAQUIN COUNTY
Greatness grows here.

**Environmental Health Department**

**Jasjit Kang, REHS, Director**
**Muniappa Naidu, REHS,** *Assistant Director*

**PROGRAM COORDINATORS**
Jeff Carruesco, REHS, RDI
Willy Ng, REHS
Steven Shih, REHS
Elena Manzo, REHS
Natalia Subbotnikova. REHS

January 22, 2025

To: City of Lathrop Development Services Department
Attention: Rick Caguiat, Community Development Director

From: Sastina Thammavongsa; (209) 616-3068
Environmental Health Specialist

RE: **Notice of Availability, Draft EIR, SU0016176**
**Mossdale Landing West Specific Plan**

The San Joaquin County Environmental Health Department (EHD) has reviewed the Notice of Availability Draft Environmental Impact Report and has no comments at this time. G-1

1868 E. Hazelton Avenue | Stockton, California 95205 | **T** 209 468-3420 | **F** 209 464-0138 | www.sjcehd.com

## Response to Letter G: San Joaquin County Environmental Health Department

**Response G-1:** The commenter states that they have no comments at this time. This comment is noted. No further response is necessary.

San Joaquin Valley AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

February 20, 2025

Rick Caguiat
City of Lathrop
Community Development Department
390 Towne Centre Drive
Lathrop, CA 95330

**Project: Draft Environmental Impact Report for the Mossdale Landing West Specific Plan**

**District CEQA Reference No: 20250030**

Dear Mr. Caguiat:

The San Joaquin Valley Air Pollution Control District (District) has reviewed the Draft Environmental Impact Report (DEIR) from the City of Lathrop (City) for the Mossdale Landing West Specific Plan. Per the DEIR, the project consists of 912 residential units with associated park and utility improvements (Project). The Project is located Lathrop, CA, near Barbara Terry Boulevard to the north and River Islands Parkway to the southeast. H-1

The District offers the following comments at this time regarding the Project:

1) **Construction Emissions** H-2

The District recommends, to further reduce impacts from construction-related diesel exhaust emissions, the Project should utilize the cleanest available off-road construction equipment.

2) **Ambient Air Quality Analysis** H-3

Per the DEIR, the CalEEMod analysis in Appendix D (page 676), demonstrates the Project Operational Emissions are anticipated to exceed 100 pounds per day of emissions. As such, the District recommends an Ambient Air Quality Analysis (AAQA) be performed. An AAQA uses air dispersion modeling to determine if emission increase from a project will cause or contribute to a violation of State or National Ambien Air Quality Standards. An acceptable analysis would include emissions from both project-specific permitted and non-permitted equipment and

Samir Sheikh
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: (661) 392-5500 FAX: (661) 392-5585

www.valleyair.org www.healthyairliving.com

Printed on recycled paper.

activities. The District recommends consultation with District staff to determine the appropriate model and input data to use in the analysis.

Specific information for assessing significance, including screening tools and modeling guidance, is available online at the District's website: https://ww2.valleyair.org/permitting/ceqa/. H-3 cont'd

**3) Vegetative Barriers and Urban Greening**

There are residential units located northeast and southeast of the Project. The District suggests the City consider the feasibility of incorporating vegetative barriers and urban greening as a measure to further reduce air pollution exposure on sensitive receptors.

While various emission control techniques and programs exist to reduce air quality emissions from mobile and stationary sources, vegetative barriers have been shown to be an additional measure to potentially reduce a population's exposure to air pollution through the interception of airborne particles and the update of gaseous pollutants. Examples of vegetative barriers include, but are not limited to the following: trees, bushes, shrubs, or a mix of these. Generally, a higher and thicker vegetative barrier with full coverage will result in greater reductions in downwind pollutant concentrations. In the same manner, urban greening is also a way to help improve air quality and public health in addition to enhancing the overall beautification of a community with drought tolerant, low-maintenance greenery. H-4

**4) Clean Lawn and Garden Equipment in the Community**

Since the Project consists of residential development, gas-powered lawn and garden equipment have the potential to result in an increase of NOx and PM2.5 emissions. Utilizing electric lawn care equipment can provide residents with immediate economic, environmental, and health benefits. The District recommends the Project proponent consider the District's Clean Green Yard Machines (CGYM) program which provides incentive funding for replacement of existing gas powered lawn and garden equipment. More information on the District CGYM program and funding can be found at: https://ww2.valleyair.org/grants/clean-green-yard-machines-residential/ and https://ww2.valleyair.org/grants/zero-emission-landscaping-equipment-voucher-program/. H-5

**5) On-Site Solar Deployment**

It is the policy of the State of California that renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers by December 31, 2045. While various emission control techniques and programs exist to reduce air quality emissions from mobile and stationary sources, the production of solar energy is contributing to improving air quality and public H-6

health. The District suggests that the City consider incorporating solar power systems as an emission reduction strategy for the Project. H-6 cont'd

**6) District's Bikeway Incentive Program**

Incorporating design elements (e.g., installing bikeways) within the Project that enhance walkability and connectivity can result in an overall reduction of vehicles miles traveled (VMT) and improve air quality within the area. The Project is expected to result in an overall reduction in VMT by installing bikeways, and may be eligible for funding through the District's Bikeway Incentive Program. The Bikeway Incentive Program provides funding for eligible Class 1 (Bicycle Path Construction), Class II (Bicycle Lane Striping), or Class III (Bicycle Route) projects. These incentives are designed to support the construction of new bikeway projects to promote clean air through the development of a widespread, interconnected network of bike paths, lanes, or routes and improving the general safety conditions for commuter bicyclists. Only municipalities, government agencies, or public educational institutions are eligible to apply. More information on the grant program can be found at: https://ww2.valleyair.org/grants/bike-paths/ H-7

Guidelines and Project Eligibility for the grant program can be found at: https://ww2.valleyair.org/media/drpijuw1/bikeway-program-guidelines-62515.pdf

**7) District Rules and Regulations**

The District issues permits for many types of air pollution sources, and regulates some activities that do not require permits. A project subject to District rules and regulations would reduce its impacts on air quality through compliance with the District's regulatory framework. In general, a regulation is a collection of individual rules, each of which deals with a specific topic. As an example, Regulation II (Permits) includes District Rule 2010 (Permits Required), Rule 2201 (New and Modified Stationary Source Review), Rule 2520 (Federally Mandated Operating Permits), and several other rules pertaining to District permitting requirements and processes.

The list of rules below is neither exhaustive nor exclusive. Current District rules can be found online at: https://ww2.valleyair.org/rules-and-planning/current-district-rules-and-regulations. To identify other District rules or regulations that apply to future projects, or to obtain information about District permit requirements, the project proponents are strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (209) 557-6446. H-8

**7a) District Rules 2010 and 2201 - Air Quality Permitting for Stationary Sources**

Stationary Source emissions include any building, structure, facility, or installation which emits or may emit any affected pollutant directly or as a

fugitive emission. District Rule 2010 (Permits Required) requires operators of emission sources to obtain an Authority to Construct (ATC) and Permit to Operate (PTO) from the District. District Rule 2201 (New and Modified Stationary Source Review) requires that new and modified stationary sources of emissions mitigate their emissions using Best Available Control Technology (BACT).

This Project may be subject to District Rule 2010 (Permits Required) and Rule 2201 (New and Modified Stationary Source Review) and may require District permits. Prior to construction, the Project proponent should submit to the District an application for an ATC. For further information or assistance, the project proponent may contact the District's SBA Office at (209) 557-6446.

**7b) District Rule 9510 - Indirect Source Review (ISR)**

The Project is subject to District Rule 9510 because it will receive a project-level discretionary approval from a public agency and will equal or exceed 50 dwelling units of residential development.

H-8 cont'd

The purpose of District Rule 9510 is to reduce the growth in both NOx and PM emissions associated with development and transportation projects from mobile and area sources; specifically, the emissions associated with the construction and subsequent operation of development projects. The ISR Rule requires developers to mitigate their NOx and PM emissions by incorporating clean air design elements into their projects. Should the proposed development project clean air design elements be insufficient to meet the required emission reductions, developers must pay a fee that ultimately funds incentive projects to achieve off-site emissions reductions.

Per Section 5.0 of the ISR Rule, an Air Impact Assessment (AIA) application is required to be submitted no later than applying for project-level approval from a public agency. As of the date of this letter, the District has not received an AIA application for this Project. Please inform the project proponent to immediately submit an AIA application to the District to comply with District Rule 9510 so that proper mitigation and clean air design under ISR can be incorporated into the Project's design. One AIA application should be submitted for the entire Project.

Information about how to comply with District Rule 9510 can be found online at: https://ww2.valleyair.org/permitting/indirect-source-review-rule-overview

The AIA application form can be found online at: https://ww2.valleyair.org/permitting/indirect-source-review-rule-overview/forms-and-applications/

District staff is available to provide assistance and can be reached by phone at (559) 230-5900 or by email at ISR@valleyair.org.

**7c) District Rule 4601 (Architectural Coatings)**

The Project will be subject to District Rule 4601 since it is expected to utilize architectural coatings. Architectural coatings are paints, varnishes, sealers, or stains that are applied to structures, portable buildings, pavements or curbs. The purpose of this rule is to limit VOC emissions from architectural coatings. In addition, this rule specifies architectural coatings storage, cleanup and labeling requirements. Additional information on how to comply with District Rule 4601 requirements can be found online at: https://ww2.valleyair.org/media/tkgjeusd/rule-4601.pdf

**7d) District Regulation VIII (Fugitive PM10 Prohibitions)**

The project proponent may be required to submit a Construction Notification Form or submit and receive approval of a Dust Control Plan prior to commencing any earthmoving activities as described in Regulation VIII, specifically Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities.*

H-8 cont'd

Should the project result in at least 1-acre in size, the project proponent shall provide written notification to the District at least 48 hours prior to the project proponents intent to commence any earthmoving activities pursuant to District Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities). Also, should the project result in the disturbance of 5-acres or more, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials, the project proponent shall submit to the District a Dust Control Plan pursuant to District Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities). For additional information regarding the written notification or Dust Control Plan requirements, please contact District Compliance staff at (559) 230-5950.

The application for both the Construction Notification and Dust Control Plan can be found online at: https://ww2.valleyair.org/media/fm3jrbsq/dcp-form.docx

Information about District Regulation VIII can be found online at: https://ww2.valleyair.org/dustcontrol

**7e) District Rule 4901 - Wood Burning Fireplaces and Heaters**

The purpose of this rule is to limit emissions of carbon monoxide and particulate matter from wood burning fireplaces, wood burning heaters, and outdoor wood burning devices. This rule establishes limitations on the

installation of new wood burning fireplaces and wood burning heaters. Specifically, at elevations below 3,000 feet in areas with natural gas service, no person shall install a wood burning fireplace, low mass fireplace, masonry heater, or wood burning heater.

Information about District Rule 4901 can be found online at: https://ww2.valleyair.org/compliance/residential-wood-smoke-reduction-program/ H-8 cont'd

**7f) Other District Rules and Regulations**

The Project may also be subject to the following District rules: Rule 4102 (Nuisance) and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations).

**8) District Comment Letter**

The District recommends that a copy of the District's comments be provided to the Project proponent. H-9

If you have any questions or require further information, please contact Michael Corder by e-mail at Michael.Corder@valleyair.org or by phone at (559) 230-5818. H-10

Sincerely,

Tom Jordan
Director of Policy and Government Affairs

Mark Montelongo
Program Manager

## Response to Letter H: San Joaquin Valley Air Pollution Control District

**Response H-1:** This comment is noted. This comment serves as an introduction to the comment letter. No further response is necessary.

**Response H-2:** This comment is noted. However, as provided on pages 3.3-37 through 3.3-39 of the Draft EIR, the proposed Project would not generate a significant impact for construction emissions under Impact 3.3-2 (regarding whether the Project would or would not result in a cumulatively considerable net increase of a criteria pollutant for which the region is in nonattainment under an applicable federal or State ambient air quality standard). Therefore, no mitigation related to construction emissions is appropriate or required under CEQA. Nevertheless, the Project applicant will consider utilizing the available off-road construction equipment during Project construction. No further response to this comment is warranted.

**Response H-3:** This comment is noted. The commenter references Appendix D, page 676, and this is not a correct reference. The CalEEMod results for the proposed Project are included as Appendix B of the Draft EIR. Appendix B is only 59 pages. The CalEEMod results for operational emissions compared against the thresholds are shown on pages 10 and 11 of Appendix B. As shown in Appendix B, and as reflected in Table 3.3-8 of Section 3.3 of the Draft EIR, the operational emissions would not exceed any applicable thresholds. Further, as provided on pages 3.3-31 through 3.3-37 of the Draft EIR, the proposed Project would not generate a significant impact for operational emissions under Impact 3.3-1 (regarding whether the Project would or would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment, or conflict or obstruct implementation of the District's air quality plan). Therefore, no mitigation related to operational emissions is appropriate or required under CEQ, and an Ambient Air Quality Analysis is not warranted.

**Response H-4:** This comment is noted. The Project applicant will consider utilizing vegetative barriers and urban greening, in accordance with this recommendation. No further comment response is warranted.

**Response H-5:** This comment is noted. The Project applicant will consider utilized electric lawn care equipment, in accordance with this recommendation. No further comment response is warranted.

**Response H-6:** This comment is noted. However, such a measure, beyond what is already required under the law, may not feasible for the Project developer. Nevertheless, the Project applicant may still choose to develop the Project site in accordance with this recommendation, by considering incorporating solar power systems as an emission reduction strategy for the Project. No further comment response is warranted.

**Response H-7:** This comment is noted.

**Response H-8:** This comment is noted. A list of applicable Air District Rules and Regulations is included within the regulatory setting discussion of Section 3.3, Air Quality, of the Draft EIR. See pages 3.3-26 through 3.3-29. The proposed Project would implement the applicable Air District Rules and Regulations, including those applicable to the Project as listed within the comment, as required by law. No further response to this comment is warranted.

**Response H-9:** This comment is noted. All Draft EIR comment letters have been provided to the Project applicant, including Letter H.

**Response H-10:** This comment is noted. This comment serves as a conclusion to the comment letter. No further response is necessary.

Pacific Gas and Electric Company

**Plan Review Team**
Land Management

PGEPlanReview@pge.com

February 27, 2025

Maria Hermosilla
City of Lathrop

Re: Mossdale Landing West Specific Plan DEIR
777 Towne Centre Drive, Lathrop, CA 95330

Dear Maria Hermosilla,

Thank you for providing PG&E the opportunity to review your proposed plans for Mossdale Landing West Specific Plan DEIR dated January 9th, 2025. Our review indicates your proposed improvements do not appear to directly interfere with existing PG&E facilities or impact our easement rights.

Please note this is our preliminary review and PG&E reserves the right for additional future review as needed. This letter shall not in any way alter, modify, or terminate any provision of any existing easement rights. If there are subsequent modifications made to your design, we ask that you resubmit the plans to the email address listed below. I-1

If you require PG&E gas or electrical service in the future, please continue to work with PG&E's Service Planning department: https://www.pge.com/cco/.

As a reminder, before any digging or excavation occurs, please contact Underground Service Alert (USA) by dialing 811 a minimum of 2 working days prior to commencing any work. This free and independent service will ensure that all existing underground utilities are identified and marked on-site.

If you have any questions regarding our response, please contact the PG&E Plan Review Team at (877) 259-8314 or pgeplanreview@pge.com.

Sincerely,

PG&E Plan Review Team
Land Management

Public

## Response to Letter I: Pacific Gas and Electric Company

**Response I-1:** This comment is noted. Should any digging or excavation occur, the Underground Service Alert (USA) will be contacted a minimum of 2 working days prior to commencing any work. No further response is necessary.

This section includes minor edits and changes to the Draft EIR. These modifications resulted from responses to comments received during the public review period for the Draft EIR, as well as City staff-initiated edits to clarify the details of the project.

Revisions herein do not result in new significant environmental impacts, do not constitute significant new information, nor do they alter the conclusions of the environmental analysis that would warrant recirculation of the Draft EIR pursuant to State CEQA Guidelines Section 15088.5.

Other minor changes to various sections of the Draft EIR are also shown below. These changes are provided in revision marks with underline for new text and ~~strike out for deleted text~~.

## 3.1 REVISIONS TO THE DRAFT EIR

### 0.0 EXECUTIVE SUMMARY

No changes were made to Chapter ES of the Draft EIR.

### 1.0 INTRODUCTION

No changes were made to Chapter 1.0 of the Draft EIR.

### 2.0 PROJECT DESCRIPTION

No changes were made to Chapter 2.0 of the Draft EIR.

### 3.1 AESTHETICS AND VISUAL RESOURCES

No changes were made to Section 3.1 of the Draft EIR.

### 3.2 AGRICULTURAL RESOURCES

No changes were made to Section 3.2 of the Draft EIR.

### 3.3 AIR QUALITY

No changes were made to Section 3.3 of the Draft EIR.

### 3.4 BIOLOGICAL RESOURCES

The following changes were made to page 3.4-46 of Section 3.4 the Draft EIR:

> Mitigation Measure 3.4-2 requires the Project proponent to obtain coverage under the SJMSCP to mitigate for habitat impacts to covered special-status species, including San Joaquin pocket mouse, San Joaquin kit fox, and American badger. Coverage involves compensation for habitat impacts on covered species through implementation of ITMMs and payment of fees for conversion of lands that may provide habitat for covered special-status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity.

The following changes were made to page 3.4-51 of Section 3.4 the Draft EIR:

**Impact 3.4-11: Implementation of the proposed Project would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (Less than Significant)**

## 3.5 CULTURAL AND TRIBAL RESOURCES

No changes were made to Section 3.5 of the Draft EIR.

## 3.6 GEOLOGY AND SOILS

No changes were made to Section 3.5 of the Draft EIR.

## 3.7 GREENHOUSE GASES, CLIMATE CHANGE AND ENERGY

No changes were made to Section 3.7 of the Draft EIR.

## 3.8 HAZARDS AND HAZARDOUS MATERIALS

The following changes were made to pages 3.8-20 and 3.8-21 of Chapter 4.0 the Draft EIR:

> Due to the presence of existing on-site residential structures, there exists the possibility that the Project site contains underground well(s) and/or septic system(s). Any on-site well or septic system would be required to be properly destroyed or removed in accordance with State, County, and City standards and regulations.
>
> According to the California Department of Conservation Well Finder tool,[1] there is an existing on-site oil or gas well located on-site. The on-site well is a dry hole well that is plugged and was operated by the Occidental Petroleum Corporation. The well was leased by Silveira, which is likely associated with the Silveira residential complex located in the southeastern portion of the Project site. Any residual petroleum contamination (if any) near the on-site well will likely be minimal and not of significant concern to the Project site. Nevertheless, confirmation soil samples should be considered to validate the successful removal of the impacted soil. This is a ***potentially significant*** impact.
>
> Additionally, like most agricultural and farming operations in the Central Valley, agricultural practices in the area have used agricultural chemicals including pesticides and herbicides as a standard practice. Although no contaminated soils have been identified in the Project area or the vicinity above applicable levels, residual concentrations of pesticides may be present in soil as a result of historic agricultural application and storage. Continuous spraying of crops over many years can potentially result in a residual buildup of pesticides in farm soils. Of highest concern relative to agrichemicals are chlorinated herbicides, organophosphate pesticides, and organochlorine pesticides, such as such as MCPP, Dinoseb, chlordane, DDT, and DDE. Project construction activities would involve demolition, land clearing, mass grading, and other ground-disturbing activities that could expose contaminated soils. As such, this is a ***potentially significant*** impact.

The following changes were made to pages 3.8-21 and 3.8-22 of Chapter 4.0 the Draft EIR:

[1] Available at: https://maps.conservation.ca.gov/doggr/wellfinder/

***Mitigation Measure 3.8-2****: Prior to initiation of any ground disturbance activities, evenly distributed soil samples shall be conducted throughout the Project site for analysis of pesticides and heavy metals. Additionally, soil sampling in the vicinity of the existing on-site oil or gas well in the southeastern portion of the Project site (as shown on the California Department of Conservation Well Finder tool, available at: https://maps.conservation.ca.gov/doggr/wellfinder/) shall be conducted for analysis of hydrocarbons. The samples shall be submitted for laboratory analysis of hydrocarbons, pesticides and heavy metals per DTSC and EPA protocols. The results of the soil sampling shall be submitted to the City of Lathrop and the San Joaquin County Environmental Health Department. If elevated levels of hydrocarbons, pesticides or heavy metals are detected during the laboratory analysis of the soils, a soil cleanup and remediation plan shall be prepared and implemented prior to the commencement of grading activities.*

**Mitigation Measure 3.8-3**: Prior to initiation of any ground disturbance activities within 50 feet of a well, the applicant shall hire a licensed well contractor to obtain a well destruction permit from the San Joaquin County Environmental Health Department, and properly abandon and destruct the onsite well(s), pursuant to review and approval of the City Engineer and the San Joaquin County Environmental Health Department.

SIGNIFICANCE AFTER MITIGATION

Less than Significant.

Mitigation Measure 3.8-1 requires that, in the event that hazardous materials are discovered during Project construction activities, a Soils Management Plan (SMP) would be submitted and approved by the San Joaquin County Environmental Health Department. The SMP would establish management practices for handling hazardous during construction. Such compliance would reduce the potential for accidental release of hazardous materials during construction of the proposed Project. As a result, it would lessen the risk of exposure of construction workers and the public to accidental release of hazardous materials, as well as the demand for incident emergency response.

Mitigation Measure 3.8-2 requires evenly distributed soil samples to be conducted within the Project site for analysis of pesticides and heavy metals prior to initiation of any ground disturbance activities. Additionally, soil sampling in the vicinity of the existing on-site oil or gas well in the southeastern portion of the Project site (as shown on the California Department of Conservation Well Finder tool, available at: https://maps.conservation.ca.gov/doggr/wellfinder/) would be conducted for analysis of hydrocarbons. If elevated levels of hydrocarbons, pesticides or heavy metals are detected during the laboratory analysis of the soils, the Project applicant would be required to prepare and implement a soil cleanup and remediation plan prior to the commencement of grading activities. Implementation of Mitigation Measure 3.8-2 would ensure that development of the proposed Project on active agricultural land would not result in accidental release of or exposure to hazardous materials.

Mitigation Measure 3.8-3 requires the applicant to obtain a well destruction permit from the San Joaquin County Environmental Health Department for the known well on the Project site.

Compliance with standard construction practices and the existing regulatory requirements, and implementation of Mitigation Measures 3.8-1 through 3.8-3, would reduce potential impacts of the proposed Project to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the

environment to a less-than-significant level by ensuring that on-site soils are sampled prior to ground disturbance and that any potentially hazardous materials encountered during construction would be handled appropriately.

## 3.9 HYDROLOGY AND WATER QUALITY

No changes were made to Section 3.9 of the Draft EIR.

## 3.10 LAND USE

No changes were made to Section 3.10 of the Draft EIR.

## 3.11 NOISE

No changes were made to Section 3.11 of the Draft EIR.

## 3.12 PUBLIC SERVICES

No changes were made to Section 3.12 of the Draft EIR.

## 3.13 TRANSPORTATION AND CIRCULATION

No changes were made to Section 3.13 of the Draft EIR.

## 3.14 UTILITIES AND SERVICE SYSTEMS

No changes were made to Section 3.14 of the Draft EIR.

## 4.0 OTHER CEQA-REQUIRED TOPICS

No changes were made to Chapter 4.0 of the Draft EIR.

## 5.0 ALTERNATIVES TO THE PROPOSED PROJECT

No changes were made to Chapter 5.0 of the Draft EIR.

## 6.0 REPORT PREPARERS

No changes were made to Chapter 6.0 of the Draft EIR.

## 7.0 REFERENCES

No changes were made to Chapter 7.0 of the Draft EIR.

This document is the Final Mitigation Monitoring and Reporting Program (FMMRP) for the Mossdale Landing West Specific Plan (Project). This FMMRP has been prepared pursuant to Section 21081.6 of the California Public Resources Code, which requires public agencies to "adopt a reporting and monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment." A FMMRP is required for the proposed Specific Plan because the EIR has identified significant adverse impacts, and measures have been identified to mitigate those impacts.

The numbering of the individual mitigation measures follows the numbering sequence as found in the Draft EIR.

## 4.1 MITIGATION MONITORING AND REPORTING PROGRAM

The FMMRP, as outlined in the following table, describes mitigation timing, monitoring responsibilities, and compliance verification responsibility for all mitigation measures identified in this Final EIR.

The City of Lathrop will be the primary agency responsible for implementing the mitigation measures and will continue to monitor mitigation measures that are required to be implemented during the operation of the Specific Plan.

The FMMRP is presented in tabular form on the following pages. The components of the FMMRP are described briefly below:

- **Mitigation Measures**: The mitigation measures are taken from the Draft EIR in the same order that they appear in that document.
- **Mitigation Timing**: Identifies at which stage of the project mitigation must be completed.
- **Monitoring Responsibility**: Identifies the agency that is responsible for mitigation monitoring.
- **Compliance Verification**: This is a space that is available for the monitor to date and initial when the monitoring or mitigation implementation took place.

***TABLE 4.0-1: MITIGATION MONITORING AND REPORTING PROGRAM***

| *ENVIRONMENTAL IMPACT* | *MITIGATION MEASURE* | *MONITORING RESPONSIBILITY* | *TIMING* | *VERIFICATION (DATE/INITIALS)* |
|---|---|---|---|---|
| AGRICULTURAL RESOURCES | | | | |
| Impact 3.2-1: The proposed Specific Plan would result in the conversion of Farmlands, including Prime Farmland, Unique Farmland, and Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural uses. | ***Mitigation Measure 3.2-1:*** *Prior to the conversion of important farmland in the Development Area, the Project proponents shall participate in the City of Lathrop agricultural mitigation program and the SJMSCP by paying the established fees on a per-acre basis for the loss of important farmland. Fees paid toward the City of Lathrop's program shall include half of the mitigation fee to be paid to the Central Valley Farm Trust (CVFT). The CVFT shall use these funds to purchase conservation easements on agricultural lands to fulfill the compensatory mitigation. The other half of the mitigation fee will be collected by the City of Lathrop and may be passed to the CVFT or other trust, or may be retained by the City of Lathrop to be applied to local easements or other agricultural mitigation. Fees paid toward the SJMSCP shall be in accordance with the fees established at the time they are paid. The SJCOG shall use these funds to purchase conservation easements on agricultural habitat lands to fulfill the compensatory mitigation. Written proof of payment to SJCOG and CVFT shall be provided to the City.* | City of Lathrop Planning Division<br><br>San Joaquin Council of Governments | Prior to the conversion of important farmland in the Development Area | |
| BIOLOGICAL RESOURCES | | | | |
| Impact 3.4-1: Implementation of the proposed Project, with mitigation, would not have substantial direct or indirect effects on special-status invertebrate species, including through substantial reduction of habitat, substantial reduction of the number or restriction in the range of a listed species, elimination of an animal community, or a drop in population levels below self-sustaining levels. | ***Mitigation Measure 3.4-1:*** *The Project applicant shall implement the following measure to avoid or minimize impacts on special-status bumble bees:*<br><br>• *A qualified biologist(s) shall conduct a preconstruction survey with 7 days of the commencement of work. If special-status bees of any species are observed, they shall be photographed for identification. If construction begins between March 1 and November 1, the ground shall also be searched during the survey for active bumble bee colonies. If bee colonies are identified, these colonies shall be demarcated with a flagged avoidance buffer, as determined by a qualified biologist, and shall be avoided during the active season from March 1 through November 1, or until the qualified biologist has determined that the colony is no longer active or until the colony is relocated.*<br><br>***Mitigation Measure 3.4-2:*** *Prior to commencement of any grading activities, the Project proponent shall obtain coverage under the SJMSCP to mitigate for habitat impacts to covered special-status species. Coverage involves compensation for habitat impacts on covered species through* | City of Lathrop Planning Division<br><br>Qualified biologist<br><br>City of Lathrop Planning Division | Within 7 days of the commence-ment of work<br><br>Prior to commence-ment of any grading | |

| *ENVIRONMENTAL IMPACT* | *MITIGATION MEASURE* | *MONITORING RESPONSIBILITY* | *TIMING* | *VERIFICATION (DATE/INITIALS)* |
|---|---|---|---|---|
| | *implementation of incidental take and minimization measures (ITMMs) and payment of fees for conversion of lands that may provide habitat for covered special-status species. These fees are used to preserve and/or create habitat in preserves to be managed in perpetuity. Obtaining coverage for a Project includes incidental take authorization (permits) under the Endangered Species Act Section 10(a), California Fish and Game Code Section 2081, and the MBTA. Coverage under the SJMSCP would fully mitigate all habitat impacts on covered special-status species.* | San Joaquin Council of Governments | activities | |
| Impact 3.4-2: Implementation of the proposed Project, with mitigation, would not have substantial direct or indirect effects on special-status reptile and amphibian species, including through substantial reduction of habitat, substantial reduction of the number or restriction in the range of a listed species, elimination of a reptile or amphibian community, or a drop in population levels below self-sustaining levels. | *Implement* ***Mitigation Measure 3.4-2.***<br><br>***Mitigation Measure 3.4-3:*** *The Project applicant shall implement the following measure to avoid or minimize impacts on California glossy snake:*<br><br>*Prior to the commencement of construction activities, but not more than two (2) days before ground clearance, a qualified biologist shall conduct pre-construction surveys of the Project site for California glossy snake (Arizona elegans occidentalis). If individuals of this species are discovered, a qualified biologist shall capture and translocate individuals to similar habitat in the general vicinity of the Project site. The translocation process shall be conducted until it is determined that all California glossy snake have been removed from the disturbance boundary. The candidate sites for relocation shall be identified before construction and shall be selected based on the size and type of habitat present, the potential for negative interactions with resident species, and the species' range. A final report identifying the number of animals moved and any mortality identified during the relocation event shall be completed at the end of construction. The disturbance zone shall be cleared of vegetation as soon after clearance of these species as possible to ensure the species do not re-enter the disturbance area. As part of the worker environmental training awareness program, Project personnel shall be trained to identify this species, its natural history, its habitat, and protective measures.* | See Mitigation Measure 3.4-2<br><br>City of Lathrop Planning Division<br><br>Qualified biologist | See Mitigation Measure 3.4-2<br><br>Prior to the commence-ment of construction activities, but not more than two (2) days before ground clearance | |
| Impact 3.4-3: Implementation of the proposed Project, with mitigation, would not have substantial direct or indirect effects on special-status bird species, including through substantial reduction of habitat, substantial reduction of the number or restriction in the | *Implement* ***Mitigation Measure 3.4-2.*** | See Mitigation Measure 3.4-2 | See Mitigation Measure 3.4-2 | |

| *ENVIRONMENTAL IMPACT* | *MITIGATION MEASURE* | *MONITORING RESPONSIBILITY* | *TIMING* | *VERIFICATION (DATE/INITIALS)* |
|---|---|---|---|---|
| range of a listed species, elimination of a bird community, or a drop in population levels below self-sustaining levels. | | | | |
| Impact 3.4-4: Implementation of the proposed Project, with mitigation, would not have substantial direct or indirect effects on special-status mammal species, including through substantial reduction of habitat, substantial reduction of the number or restriction of the range of a listed species, elimination of a mammal community, or a drop in population levels below self-sustaining levels. | *Implement **Mitigation Measure 3.4-2.*** <br><br> ***Mitigation Measure 3.4-4:*** *The Project applicant shall implement the following measure to avoid or minimize impacts on special-status bat species:* <br><br> • *Prior to grading of each phase, the Project applicant shall conduct a survey of the area to be graded for bat roosts, and if present, the Project applicant shall implement the following measures to avoid or minimize impacts on special-status bats:* <br> o *If removal of suitable roosting areas (i.e., buildings, trees, shrubs, bridges, etc.) must occur during the bat pupping season (April 1 through July 31), surveys for active maternity roosts shall be conducted by a qualified biologist. The surveys shall be conducted from dusk until dark.* <br> o *If a special-status bat maternity roost is located, appropriate buffers around the roost sites shall be determined by a qualified biologist and implemented to avoid destruction or abandonment of the roost resulting from habitat removal or other project activities. The size of the buffer shall depend on the species, roost location, and specific construction activities to be performed in the vicinity. No project activity shall commence within the buffer areas until the end of the pupping season (August 1) or until a qualified biologist confirms the maternity roost is no longer active.* <br><br> *If a non-maternal roost is located, eviction and exclusion techniques shall be conducted as recommended by the qualified biologist. Methods may include opening the roosting area to change the air flow and lighting, installing one-way doors, or other appropriate methods that allow the bats to exit and find a new roost. After eviction is believed to be completed, acoustic monitoring, and an evening emergence survey shall be performed by the qualified biologist to ensure eviction is complete. For tree removal, a two-step tree removal process involving removal of all branches that do not provide roosting habitat on the first day, and then the next day cutting down the remaining portion of the tree.* | See Mitigation Measure 3.4-2 <br><br> City of Lathrop Planning Division <br><br> Qualified biologist | See Mitigation Measure 3.4-2 <br><br> Prior to grading of each phase | |

| *ENVIRONMENTAL IMPACT* | *MITIGATION MEASURE* | *MONITORING RESPONSIBILITY* | *TIMING* | *VERIFICATION (DATE/INITIALS)* |
|---|---|---|---|---|
| Impact 3.4-10: Implementation of the proposed Project, with mitigation, would not conflict with an adopted Habitat Conservation Plan. | *Implement* ***Mitigation Measure 3.4-2.*** | See Mitigation Measure 3.4-2 | See Mitigation Measure 3.4-2 | |
| CULTURAL AND TRIBAL RESOURCES | | | | |
| Impact 3.5-1: Implementation of the proposed Project, with mitigation, would not cause a substantial adverse change to a significant historical resource, as defined in CEQA Guidelines §15064.5. | ***Mitigation Measure 3.5-1:*** *Prior to any ground-disturbing activities in the area of the Project site which may contain a prehistoric site (as shown in the confidential appendix included as part of the confidential version of the Cultural Resources Assessment for the Mossdale Landing West Project, Peak & Associates, Inc., March 18, 2024; refer to as Appendix C.1, Cultural Resources Assessment), the Project proponent shall develop and implement an Archaeological Monitoring Program, whereby the Project proponents shall retain the services of an experienced archaeologist who will be present on-site to observe ground-disturbing activities requiring grubbing, grading, trenching, or excavation in the area of the Project site which may contain a prehistoric site. The Archaeological Monitor will be given access to inspect all ground surface and subsurface modifications, excavations, installations, equipment parking, and any other construction-related activities on the area of the Project site which may contain a prehistoric site.*<br><br>*The archaeological monitoring will consist of on-the-ground and close observation by an experienced archaeologist for any kind of archaeological or cultural remains that might be exposed during ground-disturbing construction activities. Construction activities in the area of the Project site which may contain a prehistoric site will be monitored by following the construction equipment as it removes or modifies soils and vegetation, and may involve walking cuts or excavations after the machinery has passed, or standing to the side and observing the soil removal activity. The archaeologist on-site will be given "stop work authority" so that in the event that they observe a change in soil conditions and/or artifacts or structural remains, they shall bring all construction activities within a 200-foot radius of the area to a stop so that they may further assess the find. Further ground disturbances in the vicinity of the find will remain stopped while an assessment is underway and until the archaeologist on-site can provide recommendations for treatment of the discovery. If a potentially significant find cannot be avoided by the Project, the retained archaeologist, who meets the Secretary of the Interior's Professional Qualifications Standards, will develop an evaluation plan in consultation with the City that contains a research design to guide assessments of the resource's significance and* | City of Lathrop Planning Division<br><br>Qualified archaeologist | Prior to any ground-disturbing activities in the area of the Project site which may contain a prehistoric site (as shown in the confidential appendix included as part of the confidential version of the Cultural Resources Assessment for the Mossdale Landing West Project, Peak & Associates, Inc., March 18, 2024; refer to as Appendix C.1, Cultural Resources Assessment) | |

| *ENVIRONMENTAL IMPACT* | *MITIGATION MEASURE* | *MONITORING RESPONSIBILITY* | *TIMING* | *VERIFICATION (DATE/INITIALS)* |
|---|---|---|---|---|
| | *scientific potential.*<br><br>***Mitigation Measure 3.5-2:*** *Prior to any ground-disturbing activities on any portion of the Project site, a qualified archaeologist and native American monitor shall conduct pre-construction worker cultural resources sensitivity training. The training session shall focus on the recognition of the types of historical and cultural, including Native American, resources that could be encountered, procedures to be followed if resources are found, and pertinent laws protecting these resources. Those in attendance shall be recorded, with records maintained on-site. Any new workers that were not part of the initial training shall be required to undergo a new training session.* | City of Lathrop Planning Division<br><br>Qualified archaeologist<br><br>Native American monitor | Prior to any ground-disturbing activities on any portion of the Project site | |
| Impact 3.5-2: Implementation of the proposed Project, with mitigation, would not cause a substantial adverse change to a significant cultural resource, as defined in CEQA Guidelines §15064.5. | *Implement* ***Mitigation Measures 3.5-1 and 3.5-2.*** | See Mitigation Measures 3.5-1 and 3.5-2 | See Mitigation Measures 3.5-1 and 3.5-2 | |
| Impact 3.5-4: Implementation of the proposed Project, with mitigation, would not cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074. | *Implement* ***Mitigation Measures 3.5-1 and 3.5-2.***<br><br>***Mitigation Measure 3.5-3:*** *Prior to any ground-disturbing activities in the area of the Project site which may contain a prehistoric site (as shown in the confidential appendix included as part of the confidential version of the Cultural Resources Assessment for the Mossdale Landing West Project, Peak & Associates, Inc., March 18, 2024; refer to as Appendix C.1, Cultural Resources Assessment), the Project proponent shall retain a Native American Monitor. The monitor shall be retained prior to the commencement of any "ground-disturbing activity" in the area of the Project site which may contain a prehistoric site. "Ground-disturbing activity" shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching. Upon discovery of any tribal cultural resources (TCRs), all construction activities in the immediate vicinity of the discovery shall cease (i.e., not less than the surrounding 50 feet) and shall not resume until the discovered TCR has been fully assessed by the Native American Monitor. The monitor shall recover and retain all discovered TCRs in the form and/or manner the Tribe deems appropriate, in the Tribe's sole discretion, and for any purpose the Tribe deems appropriate, including for educational, cultural and/or historic* | See Mitigation Measures 3.5-1 and 3.5-2<br><br>City of Lathrop Planning Division<br><br>Native American monitor | See Mitigation Measures 3.5-1 and 3.5-2<br><br>Prior to any ground-disturbing activities in the area of the Project site which may contain a prehistoric site (as shown in the confidential appendix included as part of the confidential version of the Cultural Resources | |

| *ENVIRONMENTAL IMPACT* | *MITIGATION MEASURE* | *MONITORING RESPONSIBILITY* | *TIMING* | *VERIFICATION (DATE/INITIALS)* |
|---|---|---|---|---|
| | *purposes.* | | Assessment for the Mossdale Landing West Project, Peak & Associates, Inc., March 18, 2024; refer to as Appendix C.1, Cultural Resources Assessment) | |
| HAZARDS AND HAZARDOUS MATERIALS | | | | |
| Impact 3.8-2: Implementation of the proposed Project, with mitigation, would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. | ***Mitigation Measure 3.8-1:*** *In the event that hazardous materials are encountered during construction, a Soils Management Plan (SMP) shall be submitted and approved by the San Joaquin County Department of Environmental Health. The SMP shall establish management practices for handling hazardous materials, including fuels, paints, cleaners, solvents, etc., during construction. The approved SMP shall be posted and maintained onsite during construction activities and all construction personnel shall acknowledge that they have reviewed and understand the plan.* | City of Lathrop Planning Division<br><br>San Joaquin County Department of Environmental Health | In the event that hazardous materials are encountered during construction | |
| | ***Mitigation Measure 3.8-2:*** *Prior to initiation of any ground disturbance activities, evenly distributed soil samples shall be conducted throughout the Project site for analysis of pesticides and heavy metals. Additionally, soil sampling in the vicinity of the existing on-site oil or gas well in the southeastern portion of the Project site (as shown on the California Department of Conservation Well Finder tool, available at: https://maps.conservation.ca.gov/doggr/wellfinder/) shall be conducted for analysis of hydrocarbons. The samples shall be submitted for laboratory analysis of hydrocarbons, pesticides and heavy metals per DTSC and EPA protocols. The results of the soil sampling shall be submitted to the City of Lathrop and the San Joaquin County Environmental Health Department. If elevated levels of hydrocarbons, pesticides or heavy metals are detected during the laboratory analysis of the soils, a soil cleanup and remediation plan shall be prepared and implemented prior to the commencement of grading activities.* | City of Lathrop Planning Division<br><br>San Joaquin County Department of Environmental Health | Prior to initiation of any ground disturbance activities | |
| | ***Mitigation Measure 3.8-3****: Prior to initiation of any ground disturbance activities within 50 feet of a well, the applicant shall hire a licensed well* | City of Lathrop Planning | Prior to initiation of any | |

| *ENVIRONMENTAL IMPACT* | *MITIGATION MEASURE* | *MONITORING RESPONSIBILITY* | *TIMING* | *VERIFICATION (DATE/INITIALS)* |
|---|---|---|---|---|
| | *contractor to obtain a well destruction permit from the San Joaquin County Environmental Health Department, and properly abandon and destruct the onsite well(s), pursuant to review and approval of the City Engineer and the San Joaquin County Environmental Health Department.* | Division<br><br>San Joaquin County Department of Environmental Health | ground disturbance activities within 50 feet of a well | |
| NOISE | | | | |
| Impact 3.11-1: The Project, with mitigation, would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. | ***Mitigation Measure 3.11-1:*** *The following measures shall be implemented during construction of the Project:*<br><br>• *Construction activities (excluding activities that would result in a safety concern to the public or construction workers) shall be limited to between the hours of 7:00 a.m. and 10:00 p.m. Sunday through Thursday and between 9:00 a.m. and 11:00 p.m. on Friday, Saturday, and legal holidays.*<br>• *Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.*<br>• *When not in use, motorized construction equipment shall not be left idling for more than 5 minutes.*<br>• *Stationary equipment (power generators, compressors, etc.) shall be located at the farthest practical distance from nearby noise-sensitive land uses or sufficiently shielded to reduce noise-related impacts.*<br><br>*These requirements shall be noted in the improvements plans prior to approval by the City's Public Works Department.* | City of Lathrop Planning Division | Prior to approval of improvement plans | |

# APPENDIX A

**Traffic Impact Analysis Report (Updated March 10, 2025)**

Traffic Impact Analysis Report

# Mossdale West

Lathrop, California

November 17, 2023

(Updated March 10, 2025)

TJKM

# Contents

**Executive Summary** ..... **1**

**1.0 Introduction** ..... **9**

1.1 Project Description ..... 9

1.2 Project Purpose ..... 9

1.3 Study Area ..... 9

1.4 Analysis Scenarios ..... 10

**2.0 Study Methodology** ..... **13**

2.1 Vehicle Miles Traveled ..... 13

2.2 Level of Service ..... 13

**3.0 2022 Existing Conditions** ..... **17**

3.1 Existing Roadway System ..... 17

3.2 Existing Pedestrian Facilities ..... 18

3.3 Existing Bicycle Facilities ..... 18

3.4 Existing Transit Facilities ..... 19

3.5 Existing Peak Hour Traffic Volumes And Lane Configurations ..... 19

3.6 Intersection Level of Service Analysis – Existing Conditions ..... 23

**4.0 2022 Existing Conditions plus Project** ..... **24**

4.1 Vehicle Miles Traveled ..... 24

4.2 Project Trip Generation ..... 25

4.2 Project Trip Distribution and Assignment ..... 26

4.3 Intersection Level of Service Analysis – Existing Conditions plus Project ..... 29

**5.0 2026 Baseline Conditions** ..... **33**

5.1 Intersection Level of Service Analysis – Baseline Conditions ..... 33

**6.0 2026 Baseline Conditions plus Project** ..... **37**

6.1 Intersection Level of Service Analysis – Baseline Conditions plus Project ..... 37

**7.0 2040 Cumulative Conditions** ..... **43**

7.1 Intersection Level of Service Analysis – Cumulative Conditions ..... 43

**8.0 2040 Cumulative Conditions plus Project** ..... **47**

8.1 Intersection Level of Service Analysis – Cumulative Conditions plus Project ..... 47

8.2 Fair Share Analysis ..... 53

**9.0 Additional Analyses ..... 54**

9.1 Site Access & On-Site Circulation ..... 54

9.2 Parking ..... 54

9.3 Pedestrian, Bicycle, and Transit Impacts ..... 54

**Tables**

Table 1: Level of Service Definitions for Signalized Intersections ..... 15

Table 2: Level of Service Definitions for Stop Controlled Intersections ..... 15

Table 3: Existing San Joaquin RTD Transit Service ..... 19

Table 4: 2022 Existing Conditions – Intersection Level of Service Analysis ..... 23

Table 5: Land Use Changes for Base Year plus Project ..... 25

Table 6: Home-based VMT per Resident Comparison (Citywide Regional Average) ..... 25

Table 7: Site Trip Generation (ITE 11th Ed.; Peak Hour of the Adjacent Street) ..... 26

Table 8: Intersection Level of Service Analysis – 2022 Existing Conditions plus Project ..... 30

Table 9: Intersection Level of Service – 2026 Baseline Conditions ..... 34

Table 10: Intersection Level of Service – 2026 Baseline plus Project Conditions ..... 40

Table 11: Intersection Level of Service – 2040 Cumulative Conditions ..... 44

Table 12: Intersection Level of Service – 2040 Cumulative Conditions plus Project ..... 50

Table 13: Fair Share Analysis ..... 53

**Figures**

Figure 1: Vicinity Map ..... 11

Figure 2: Site Plan ..... 12

Figure 3: 2022 Existing Conditions – Pedestrian, Bicycle, and Transit Facilities ..... 20

Figure 4: 2022 Existing Conditions – Lane Configuration and Traffic Control ..... 21

Figure 5: 2022 Existing Conditions – Intersection Peak Hour Traffic Volumes ..... 22

Figure 6: Project Trip Distribution ..... 27

Figure 7: Project Trip Assignment ..... 28

Figure 8: 2022 Existing Conditions plus Project – Intersection Peak Hour Traffic Volumes ..... 32

Figure 9: 2026 Baseline Conditions – Intersection Peak Hour Traffic Volumes ..... 36

Figure 10: 2026 Baseline Conditions plus Project – Intersection Peak Hour Traffic Volumes ..... 42

Figure 11: Inherent Regional Growth Volumes (2026 to 2040) ..... 45

Figure 12: 2040 Cumulative Conditions – Intersection Peak Hour Traffic Volumes ..... 46

Figure 13: 2040 Cumulative Conditions plus Project – Intersection Peak Hour Traffic Volumes ..... 52

**Appendices**

Appendix A – Level of Service Methodology

Appendix B – Traffic Monitoring Program Intersection Turning Movement Projections

Appendix C – Intersection Turning Movement Counts

Appendix D – 2022 Existing Conditions Level of Service Sheets

Appendix E – 2022 Existing Conditions plus Project Level of Service Sheets

Appendix F – 2026 Baseline Conditions Level of Service Sheets

Appendix G – 2026 Baseline Conditions plus Project Level of Service Sheets

Appendix H – 2040 Cumulative Conditions Level of Service Sheets

Appendix I – 2040 Cumulative Conditions plus Project Level of Service Sheets

# EXECUTIVE SUMMARY

This report summarizes the results of the Traffic Impact Analysis (TIA) conducted for the proposed Mossdale West development in the City of Lathrop (City), California. The site is located south and east of the San Joaquin River, north of River Island Parkway, south of Barbary Terry Boulevard, and west of McKee Boulevard.

The project, which is comprised of vacant land, is expected to ultimately consist of approximately 829 to 912 single-family residential dwelling (SFDU) units. This study assumed the highest intensity development program of 912 units to be conservative in assessing potential impacts to the roadway network.

The purpose of this TIA is to evaluate the impacts on the transportation infrastructure due to the addition of traffic from the proposed project. The report includes evaluations and recommendations concerning project site access and on-site circulation for vehicles, bicycles, and pedestrians, and vehicle miles traveled (VMT).

To evaluate the impacts on the transportation infrastructure due to the addition of traffic from the proposed project, 14 study intersections (12 existing, two proposed) were evaluated during the weekday morning (a.m.) peak hour and weekday afternoon (p.m.) peak hour under three study scenarios. The study intersections were evaluated under:

- 2022 Existing Conditions, without and with the Mossdale West development;
- 2026 Baseline Conditions, without and with the Mossdale West development; and
- 2040 Cumulative Conditions, without and with the Mossdale West development.

For the purpose of this analysis, potential traffic operational effects from the proposed project are identified based on established operational thresholds for the City of Lathrop and guidance published by the California Office of Planning and Research (OPR).

***Project Trip Generation***

Using the methodology presented in the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th edition, (TGM) publication, the proposed development is expected to generate approximately 8,600 external vehicular trips during a typical weekday, of which 638 (166 inbound; 472 outbound) external vehicular trips are expected to occur during the a.m. peak hour and 857 (540 inbound; 317 outbound) external vehicular trips are expected to occur during the p.m. peak hour.

***VMT Impacts***

The project's anticipated 19.50 daily VMT per capita is lower than the Citywide VMT threshold of 28.38 daily VMT per capita. Therefore, VMT impacts for the Mossdale West project are **less-than *significant*** and mitigation would not be required.

***Existing Conditions – Intersection Level of Service***

Under this scenario, all of the existing study intersections operate within jurisdictional standards (Level of Service (LOS) D or better) during the a.m. and p.m. peak hours.

***Existing Conditions plus Project – Intersection Level of Service***

Under this scenario, 12 of the 14 study intersections are expected to continue to operate within jurisdictional standards (LOS D or better) during the a.m. and p.m. peak hours.

The following intersection would degrade from acceptable to unacceptable level of service with the addition of project traffic:

- River Islands Parkway and McKee Boulevard (Intersection 5) operates at LOS F in a.m. peak hour, and LOS E in the p.m. peak hour under signalized control.
    - It is recommended that the signal timings of the intersection be changed slightly[1] and that the westbound right-turn signals operate with a permissive overlap phase to accommodate right turns. The southbound approach should be restriped from one left turn pocket lane, and one right shared with through lane to two left turn pocket lanes and one right turn lane shared with the through lane. With these improvements, the intersection is projected to operate at LOS D in the a.m. peak hour and LOS C in the p.m. peak hour.
- Barbara Terry Boulevard and McKee Boulevard (Intersection 6) degrades from LOS B to LOS E during the a.m. peak hour under all way stop control.
    - It is recommended that the eastbound approach should have an extra right turn lane and provide a lane drop on southbound receiving lane to accommodate two right turning traffic. With these improvements, the intersection is projected to operate overall at LOS C during a.m. peak hours.

With the proposed improvements in place, the proposed development would have a negligible impact on the surrounding road network under Existing Conditions.

***Baseline Conditions – Intersection Level of Service***

Under this scenario, six of the 12 existing study intersections are expected to continue to operate at acceptable service levels (LOS D or better) during the a.m. and p.m. peak hours.

The following intersections are projected to operate at unacceptable levels of service:

- Golden Valley Parkway and Spartan Way (Intersection 1) operates at LOS F during the p.m. peak hour.

[1] Signal timings adjustments are referred to throughout this document as a form of mitigation and pertain to the reallocation of green time from one signal phase to another signal phase (e.x., two seconds of green time reallocated from the northbound left movement to the southbound through movement). Signal timings adjustments do not include changes in intersection offsets (if applicable) nor changes in the cycle length.

- Golden Valley Parkway and River Islands Parkway (Intersection 3) operates at LOS F during both peak hours.
- Spartan Way/Lathrop Road and the I-5 ramps (Intersections 11 & 12) operate at LOS F during both peak hours.
- River Island Parkway/Louise Avenue and the I-5 ramps (Intersections 13 & 14) operate at LOS F during both peak hours.

***Baseline Conditions plus Project – Intersection Level of Service***

Under this scenario, eight of the 14 study intersections are expected to operate at an acceptable service levels (LOS D or better) during the a.m. and p.m. peak hours (similar to without project conditions). Golden Valley Parkway and River Islands (Intersection 3) would continue to operate at LOS F during both peak hours and would experience decrease in delay of 2.6 seconds per vehicle and 4.8 seconds per vehicle during the a.m. and p.m. peak hours, respectively. However, the intersection operates at unacceptable LOS, but delay is within 5.0 seconds as compared to baseline conditions. There is no impact at this intersection due to the project.

The following seven intersections would require mitigations in order to account for additional demand due to the proposed development:

- Golden Valley Parkway and Spartan Way (Intersection 1) would operate at LOS E during the a.m. peak hour with an increase in delay of 5.9 seconds per vehicle and would operate at LOS F with an increase in delay by 14.9 seconds per vehicle during the p.m. peak hour.
    - It is recommended that the signal timings of the intersection be changed slightly[1]. With these changes, the intersection is anticipated to operate with less delay during both peak hours as compared to Baseline Conditions.
- River Islands Parkway and McKee Boulevard (Intersection 5) degrades from LOS D to LOS F during both peak hours.
    - It is recommended that the signal timings of the intersection be changed slightly[1] and that the westbound right-turn signals operate with a permissive overlap phase to accommodate right turns. The southbound approach should be restriped from one left turn pocket lane, one through lane, and one right turn pocket lane to two left turn pocket lanes and one right turn lane shared with the through lane. Provide an additional westbound left turn pocket lane to better accommodate left turns. The northbound approach should be restriped from one left turn pocket lane, one through lane, and one right turn lane to one left turn lane, one right turn lane shared with the through lane, and one right turn lane. With these changes, the intersection is anticipated to operate at an acceptable level of service during both the peak hours..
- Barbara Terry Boulevard and McKee Boulevard (Intersection 6) degrades from LOS B to LOS F during the a.m. peak hour under all way stop control.

  - It is recommended that the eastbound approach should have an extra right turn lane and provide a lane drop on southbound receiving lane to accommodate two right turning traffic. With these improvements, the intersection is projected to operate overall at LOS D during AM peak hours.

- Spartan Way / Lathrop Road at I-5 NB Ramps (Intersection 11) continues to operate at LOS F during both peak hours and would experience an increase in delay of 16.8 seconds per vehicle and 11.4 seconds per vehicle during the a.m. peak hour and p.m. peak hour, respectively.
  - It is recommended to provide an additional right turn NB off ramp lane. With these changes, the intersection is anticipated to operate with less vehicular delay than under Baseline Conditions. However, it should be noted that the intersection would operate at LOS E.
- Spartan Way / Lathrop Road at I-5 SB Ramps (Intersection 12) continue to operate at LOS F during the both peak hours, respectively. The intersection would experience an increase in delay of 21.5 seconds per vehicle during the a.m. peak hour and 26.8 seconds per vehicle during the p.m. peak hour.
  - It is recommended to provide an additional left turn SB off ramp lane. With these changes, the intersection is projected to operate with slightly increase in delay in the a.m. but within the range of acceptable standards, and less vehicular delay than under baseline conditions. However, it should be noted that the intersection would still operate with extreme delay (>100 seconds) during both the peak hours.
- River Islands Parkway / Louise Avenue at I-5 NB Ramps (Intersection 13) continues to operate at LOS F during the both peak hours and would experience an increase in delay of 45.5 seconds per vehicle during the a.m. peak hour and 50.6 seconds per vehicle during the p.m. peak hour.
  - It is recommended to provide an additional NB left turn off ramp lane. With these changes, the intersection is anticipated to operate with less delay during the a.m. and p.m. peak hours as compared to Baseline Conditions.
  - However, it should be noted that the intersection would still operate with extreme delay (>80 seconds) during both the peak hours.
  - In order to improve operations, physical modifications to the interchange ramp would be necessary. The City is currently assessing potential improvements to the interchange ramps. It is expected that with geometric improvements, delays at the intersection would substantially decrease.
- River Islands Parkway / Louise Avenue at I-5 SB Ramps (Intersection 14) continues to operate at LOS F during the both peak hours and would experience an increase in delay of 88.7 seconds per vehicle during the a.m. peak hour and 73.6 seconds per vehicle during the p.m. peak hour.

- It is recommended that the signal timings of the intersection be changed slightly[1]. In the southbound direction, provide an additional left turn SB off ramp lane and have westbound right turn phase to operate as free. With these changes, the intersection is projected to operate with less delay during the a.m. and p.m. peak hours as compared to Baseline Conditions. However, it should be noted that the intersection would still operate with extreme delay (>100 seconds) during p.m. peak hour.
- In order to improve operations, physical modifications to the interchange ramp would be necessary. The City is currently assessing potential improvements to the interchange ramps. It is expected that with geometric improvements, delays at the intersection would substantially decrease.

***Cumulative Conditions – Intersection Level of Service***

Under this scenario, five of the 12 study intersections are expected to continue to operate at an acceptable service levels (LOS D or better) during the a.m. and p.m. peak hours.

The following intersections are projected to operate at unacceptable level of service:

- Golden Valley Parkway and Spartan Way (Intersection 1) operates at LOS E during the a.m. peak hour and LOS F during the p.m. peak hour.
- Golden Valley Parkway and River Islands Parkway (Intersection 3) operates at LOS F during both peak hours.
- Golden Valley Parkway and McKee Boulevard (Intersection 5) operates at LOS E during the p.m. peak hour.
- Spartan Way / Lathrop Road and the I-5 ramps (Intersections 11 & 12) operate at LOS F during both peak hours.
- River Island Parkway / Louise Avenue and the I-5 ramps (Intersections 13 & 14) operate at LOS F during both peak hours.

***Cumulative Conditions plus Project – Intersection Level of Service***

Under this scenario, seven of the 14 study intersections are expected to continue to operate at an acceptable service levels (LOS D or better) during the a.m. and p.m. peak hours. Golden Valley Parkway and River Islands (Intersection 3) continues to operate at LOS F during both peak hours and would experience decrease in delay of 2.7 seconds per vehicle and 4.1 seconds per vehicle during the a.m. and p.m. peak hours, respectively. However, the intersection operates at unacceptable LOS, but delay is within 5.0 seconds as compared to Cumulative Conditions

The following six intersections would require mitigations in order to account for additional demand due to the proposed development:

- Golden Valley Parkway and Spartan Way (Intersection 1) would continue to operate at LOS E during the a.m. peak hour and at LOS F during the p.m. peak hour. Delays would increase by 1.3 seconds per vehicle during the a.m. peak hour and by 7.3 seconds per vehicle during the p.m. peak hour.
    - It is recommended that the signal timings of the intersection be changed slightly[1]. With these changes, the signal is anticipated to operate with substantially less delay during both peak hours as compared to Cumulative Conditions.
- River Islands Parkway and McKee Boulevard (Intersection 5) degrades from LOS D to LOS F during the a.m. peak hour and degrades from LOS E to LOS F during the p.m. peak hour, and would experience an increase in delay of 69.5 seconds per vehicle during a.m. peak hour and 93.3 seconds per vehicle during the p.m. peak hours.
    - It is recommended that the signal timings of the intersection be changed slightly[1] and that the westbound right-turning movements operate with a permissive overlap phase to better accommodate right turns. The southbound approach should be restriped from one left turn pocket lane, one through lane, and one right turn pocket lane to two left turn pocket lanes and one right turn lane shared with the through lane. Provide an additional westbound left turn pocket lane to better accommodate left turns. The northbound approach should be restriped from one left turn pocket lane, one through lane, and one right turn lane to one left turn lane, one right turn lane shared with the through lane, and one right turn lane. With these changes, the intersection would operate better than Cumulative Conditions.
- Spartan Way / Lathrop Road at I-5 NB Ramps (Intersection 11) continues to operate at LOS F during both peak hours and would experience an increase in delay of 12.3 seconds per vehicle during a.m. peak hour and 8.9 seconds per vehicle during the p.m. peak hours.
    - It is recommended to provide an additional northbound right turning off ramp lane. With these changes, the intersection would operate with less vehicular delay than under Cumulative Conditions.
- Spartan Way / Lathrop Road at I-5 SB Ramps (Intersection 12) continues to operate at LOS F during the a.m. and p.m. peak hours. The intersection would experience an increase in delay of 21.0 seconds per vehicle during the a.m. peak hour and 16.5 seconds per vehicle during the p.m. peak hour.
    - It is recommended to provide an additional southbound left turn off ramp lane. With these changes, the intersection would operate with less vehicular delay than under Cumulative Conditions.
- River Islands Parkway / Louise Avenue at I-5 NB Ramps (Intersection 13) continues to operate at LOS F during the both peak hours and would experience an increase in delay of 44.6 seconds per vehicle during the a.m. peak hour and 53.5 seconds per vehicle during the p.m. peak hour.

  - It is recommended to provide an additional northbound left turn off ramp lane. With these changes, the intersection would operate with less delay during the a.m. and p.m. peak hours as compared to Cumulative Conditions.
  - However, it should be noted that the intersection would still operate with extreme delay (>100 seconds) during both the peak hours.
  - In order to improve operations, physical modifications to the interchange ramp would be necessary. The City is currently assessing potential improvements to the interchange ramps. It is expected that with geometric improvements, delays at the intersection would substantially decrease.
- River Island Parkway / Louise Avenue at I-5 SB Ramps (Intersection 14) continues to operate at LOS F during both peak hours and would experience an increase in delay of 85.7 seconds per vehicle during the a.m. peak hour and 68.7 seconds per vehicle during the p.m. peak hour.
  - It is recommended that the signal timings of the intersection be changed slightly[1]. In the southbound direction, provide an additional left turn off ramp lane and have westbound right turn phase to operate as free. With these changes, the intersection would operate with less delay during the a.m. and p.m. peak hours as compared to Cumulative Conditions.
  - However, it should be noted that the intersection would still operate with extreme delay (>80 seconds) during the peak hours.
  - To improve operations, physical modifications to the interchange ramp would be necessary. The City is currently assessing potential improvements to the interchange ramps. It is expected that with geometric improvements, delays at the intersection would substantially decrease.

***Site Access & On-Site Circulation***

The project would be accessed by one intersection on River Island Parkway and two intersections on Barbara Terry Boulevard. All driveways will be full access. Any proposed landscaping should be maintained to provide adequate sight distance. The proposed driveway locations, designs, and sight distances are expected to be all ***adequate***.

***Parking***

Based on City of Lathrop parking requirements, one-family dwelling units shall have garages that can accommodate two spaces. Additionally, at least one on-street parking shall be provided for each single-family resident within any residential zoning district. The site is anticipated to conform to City standards. Thus, site parking is expected to be ***adequate***.

***Pedestrian Impacts***

Pedestrian access to the project site is facilitated by sidewalks and crosswalks along River Island Parkway and Barbara Terry Boulevard. The proposed development project does not conflict with existing and

planned pedestrian facilities; therefore, the impact to pedestrian facilities is expected to be ***less-than-significant***.

***Bicycle Impacts***

There is an existing Type II bicycle facility on River Island Parkway near the project vicinity. The project does not conflict with existing and planned bicycle facilities; therefore, the impact to bicycle facilities is expected to be ***less-than-significant***.

***Transit Impacts***

The project site is within a 1.5 mile of two San Joaquin RTD bus stops, located on the northwest corner of East Louis Avenue/Harlan Road Intersection. Impacts to transit service are expected to be ***less-than-significant.***

# 1.0 INTRODUCTION

This report summarizes the results of the Traffic Impact Analysis (TIA) for the proposed Mossdale West development (project) in the City of Lathrop (City), California. The project site is located east of the fork between the Old River and the San Joaquin River, north of River Island Parkway, south of Barbara Terry Boulevard, and west of McKee Boulevard.

## 1.1 Project Description

The project proposes to develop approximately 912 single-family residential dwelling units. The project will include various driveways to serve as entry points for passenger vehicles.

The following section discusses the TIA purpose, study intersections, and analysis scenarios.

## 1.2 Project Purpose

The purpose of the TIA is to evaluate the impacts on the transportation infrastructure due to the addition of traffic from the proposed project. The report includes evaluations and recommendations concerning project site access, on-site circulation for vehicles, bicycles, and pedestrians, and parking supply.

## 1.3 Study Area

The study area is located within the city limits of Lathrop. The impacts of the proposed project were evaluated for the study intersections discussed below.

### 1.3.1 Study Intersections

TJKM evaluated traffic conditions at 14 study intersections during the a.m. and p.m. peak hours for a typical weekday. The study intersections were selected in consultation with the City of Lathrop staff. The peak periods in the City of Lathrop are between 6–9 a.m. and 3–6 p.m. The study intersections and their existing associated traffic control types and configurations are as follows:

1. Golden Valley Parkway and Spartan Way (3-legged, signalized)
2. Golden Valley Parkway and Stanford Crossing Drive (4-legged, signalized)
3. Golden Valley Parkway and River Islands Parkway (4-legged, signalized)
4. Golden Valley Parkway and Town Center Drive (4-legged, signalized)
5. River Island Parkway and McKee Boulevard (4-legged, signalized)
6. Barbara Terry Boulevard and McKee Boulevard (4-legged, all-way stop control)
7. Barbara Terry Boulevard and Marsh Road (3-legged, one-way stop control)
8. Barbara Terry Boulevard and Sierra Mar Road (3-legged, one-way stop control)
9. Barbara Terry Boulevard and Towne Centre (future intersection)
10. River Islands Parkway and Street C (future intersection)
11. Spartan Way/Lathrop Road and I-5 NB ramps (4-legged, signalized)
12. Spartan Way/Lathrop Road and I-5 SB ramps (4-legged, signalized)

13. River Islands Parkway/Louise Avenue and I-5 NB ramps (4-legged, signalized)
14. River Islands Parkway/Louise Avenue and I-5 SB ramps (4-legged, signalized)

Note that the area surrounding the project site is undergoing development at a rapid pace at the time of this TIA's writing. As a result, the above control types and configurations might have changed since the analysis was conducted.

**Figure 1** illustrates the study intersections and the vicinity map of the proposed project. **Figure 2** shows the proposed project site plan. Please note that the site plan shows a particular configuration of the proposed project with 829 single-family dwelling units. The proposed project is planned to implement 829 to 912 single-family dwelling units. For the purposes of this traffic study, the configuration of the proposed project with 912 single-family dwelling units was analyzed to be conservative.

## 1.4 Analysis Scenarios

This study analyzes the following traffic scenarios:

- 2022 Existing Conditions;
- 2022 Existing Conditions plus Project;
    - Includes the Mossdale West development.
- 2026 Baseline Conditions;
    - Includes approved developments that are expected to be completed and in operation in the near future.
- 2026 Baseline Conditions plus Project;
    - Includes approved developments that are expected to be completed and in operation in the near future, and the Mossdale West development.
- 2040 Cumulative Conditions;
    - Includes approved developments that are expected to be completed and in operation in the near future and accounts for additional growth within the region.
- 2040 Cumulative Conditions plus Project;
    - Includes approved developments that are expected to be completed and in operation in the near future, accounts for additional growth within the region, and the Mossdale West development.

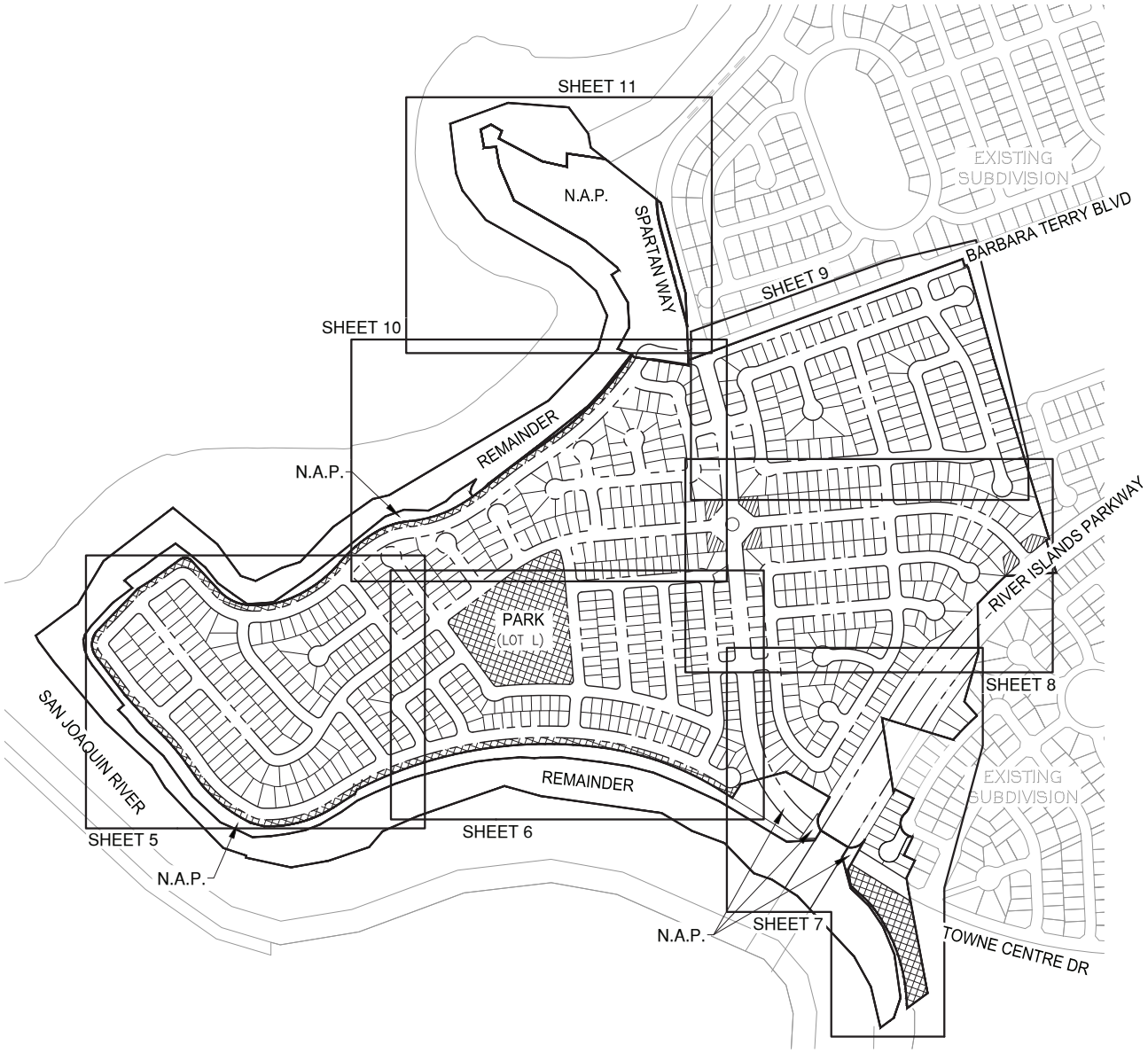
**Figure 1: Vicinity Map**




LEGEND

- Project Site
- Study Intersection

**Figure 2: Site Plan**



# 2.0 STUDY METHODOLOGY

Traffic impacts related to the proposed project were evaluated for both compliance with applicable regulatory documents and environmental significance as defined in the California Environmental Quality Act (CEQA). In accordance with the Technical Advisory published by the Governor's Office of Planning and Research (OPR), a Vehicle Miles Traveled (VMT) analysis forms the basis of the CEQA analysis for the proposed project. Effective as of July 1, 2020, intersection level of service (LOS) can no longer be used to determine significant impacts for CEQA purposes.

The City of Lathrop adopted VMT thresholds and screening criteria on September 14, 2020.

## 2.1 Vehicle Miles Traveled

This study includes a quantitative analysis of VMT generated by the proposed project. California Senate Bill (SB) No. 743 is intended to reduce greenhouse gas emissions and particulates, encourage infill development and a diversity of uses instead of sprawl, and promote multi-modal transportation networks.

The San Joaquin COG 2018 RTP Model was used to evaluate changes in VMT due to land use developments. For the purposes of this study, the screening guidelines and significance thresholds that are contained in the City's VMT guidelines are utilized. If a project does not meet any screening criteria, the draft guidelines specify use of the San Joaquin COG RTP Travel Demand Model to identify the appropriate project VMT.

**City of Lathrop Screening Criteria**

The adopted guidelines include the following screening criteria for identifying projects that can be presumed to have a less-than-significant impact:

- Small projects,
- Projects located in low VMT areas,
- Projects in proximity to a major transit stop,
- Affordable housing,
- Local serving retail, and
- Transportation projects.

**Significance Standards**

The state of California provides lead agencies latitude in adopting standards of significance for evaluating VMT impacts associated with land use projects. For this project, the City of Lathrop SB 743 guidelines were used to analyze the proposed project.

Based on the City's guidelines, for a project to be VMT insignificant, the project has to generate 15 percent below the area-wide average for the total home-based VMT statistic. If the project generates a higher VMT, then the project would be considered to have a "significant" impact.

## 2.2 Level of Service

Level of service (LOS) standards are no longer used for identifying impacts under CEQA, however level of service analysis is still used for determining consistency with adopted agency plans and standards. Where

standards refer to significant environmental impacts, this analysis instead identifies these as significant inconsistencies with adopted plans.

Level of service (LOS) is a qualitative measure that describes operational conditions as they relate to the traffic stream and perceptions by motorists and passengers. The LOS generally describes these conditions in terms of such factors as speed and travel time, delays, freedom to maneuver, traffic interruptions, comfort, convenience and safety. The operational LOS are given letter designations from "A" to "F", with "A" representing the free-flow operating conditions and "F" representing the severely congested flow with high delays. Typically, LOS "C" is considered as an ideal condition as it represents stable flow and efficient use of the transportation facility. Intersections generally are the capacity-controlling locations with respect to traffic operations on arterial and collector streets. The following sections provide detailed study methodology based on the type of intersections.

Each of the study intersections was analyzed using *Synchro* Version 11 software using methodology presented in the Transportation Research Board's (TRB) Highway Capacity Manual (HCM) 6th Edition. The LOS assessment under all scenarios is based on current traffic controls unless otherwise noted.

**Signalized Intersections Methodology**

The study intersections under traffic signal control were analyzed using the HCM 6th Edition methodology for signalized intersections described in Chapter 19. This methodology determines LOS based on average control delay per vehicle for the overall intersection during peak hour intersection operating conditions.

Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. **Table 1** summarizes the relationship between the control delay and LOS for signalized intersections. The LOS assessment under all scenarios is based on current traffic controls and optimized signal timing unless otherwise noted.

The LOS methodology for signalized intersections is described in detail in **Appendix A**.

**Table 1: Level of Service Definitions for Signalized Intersections**

| *LOS* | *Definition* | *Control Delay Range (sec/veh)* | *v/c Range* |
|---|---|---|---|
| A | Very low control delay. This level is typically assigned when the v/c ratio is low and either progression is exceptionally favorable or the cycle length is short. Most vehicles arrive during the green phase. Many vehicles do not stop at all. | ≤ 10 | ≤ 1.0 |
| B | The v/c ratio is low. There is good progression, short cycle lengths, or both. More vehicles stop, causing higher levels of delay. | ≤ 20 | ≤ 1.0 |
| C | Higher delays occur in favorable progression or a due to a moderate cycle length, or both. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during a given cycle) may begin to appear. The number of vehicles stopping is still considered low-to-moderate, though many vehicles still pass through the intersection without stopping. | ≤ 35 | ≤ 1.0 |
| D | The influence of congestion becomes more apparent. Longer delays may result from some combination of a high v/c ratio, ineffective progression, long cycle length, or high volumes. Many vehicles stop, the proportion of vehicles not stopping declines. Individual cycle failures are noticeable. | ≤ 55 | ≤ 1.0 |
| E | Typically considered the limit of acceptable delay. High delays usually indicate a very high v/c ratio, poor progression, long cycle lengths, and high volumes. Most cycles fail to clear the queue. | ≤ 80 | ≤ 1.0 |
| F | Delays are unacceptable to most drivers. Conditions are considered oversaturated. Arrival flow rates exceed the capacity of the intersection (v/c in excess of 1.0). Many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to higher delay. | > 80 | > 1.0 |

Source: Transportation Research Board's (TRB) Highway Capacity Manual (HCM), 6th Edition

**Stop-Controlled Intersections Methodology**

The study intersections under one/two-way stop control and all-way stop control were analyzed using the HCM 6th Edition methodology described in Chapter 20 and 21, respectively. LOS ratings for stop-sign controlled intersections are based on the average control delay expressed in seconds per vehicle.

At one- or two-way stop controlled intersections, the control delay is calculated for each movement, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. The weighted average delay for the entire intersections is presented for all-way stop controlled intersections.

**Table 2** summarizes the relationship between delay and LOS for stop-controlled intersections. The delay ranges for unsignalized intersections are lower than for signalized intersections, as drivers expect less delay at stop-controlled intersections.

The LOS methodology for stop-controlled intersections is described in detail in **Appendix A**.

**Table 2: Level of Service Definitions for Stop Controlled Intersections**

| *LOS* | *Definition* | *Control Delay Range (sec/veh)* | *v/c Range* |
|---|---|---|---|
| A | Usually no conflicting traffic. Drivers can easily find gaps in traffic to maneuver. v/c is low. | ≤ 10 | ≤ 1.0 |
| B | Occasionally some delay due to conflicting traffic. Drivers can find gaps in traffic. v/c is low. | ≤ 15 | ≤ 1.0 |
| C | There is some noticeable delay due to conflicting traffic. Drivers are still able to find gaps in traffic. | ≤ 25 | ≤ 1.0 |
| D | Drivers experience delay due to less gaps in traffic to maneuver. Lane group v/c creeps closer to 1.0. | ≤ 35 | ≤ 1.0 |

| *LOS* | *Definition* | *Control Delay Range (sec/veh)* | *v/c Range* |
|---|---|---|---|
| E | Delay approaches driver tolerance levels. Drivers will occasionally find gaps in traffic to maneuver. Lane group v/c approaches 1.0. | ≤ 50 | ≤ 1.0 |
| F | Delay exceed driver tolerance levels or v/c exceeds 1.0 or both. | > 50 | > 1.0 |

Source: Transportation Research Board's (TRB) Highway Capacity Manual (HCM), 6th Edition

**Significance Standards for Signalized and Stop Controlled Intersections**

As per the City's General Plan (2022), the City of Lathrop LOS standard (CIR-1.3) is to strive for LOS D for intersections, except when maintaining such levels of service is infeasible:

- Where maintaining the standard would be a disincentive to walking, bicycling, or transit.
- Where maintaining the standard would be incompatible with adjacent land uses.
- Where constructing facilities would prevent the City from achieving goals of VMT or other priorities.
- Where constructing facilities with sufficient capacity would be unreasonably expensive.

Thus, for the purposes of this report, intersections that are expected to operate below LOS D will be considered as impacted and should be considered for mitigation.

While the City of Lathrop does not have specific impact criteria for intersections already operating below LOS D, for the purposes of this study, a project impact would be considered substantial if:

- For intersections that already operate at unacceptable levels of service (E or F), project impacts can be considered substantial if the project trips result in an increase in delay by 5.0 seconds or more.

# 3.0 2022 EXISTING CONDITIONS

This section describes existing conditions in the immediate project site vicinity, including roadway facilities, bicycle and pedestrian facilities, and available transit service. In addition, existing traffic volumes and operations are presented for the study intersections, including the results of LOS calculations.

## 3.1 EXISTING ROADWAY SYSTEM

Access to the proposed project will be provided via River Islands Parkway and Barbara Terry Boulevard.

A description of the existing road systems is provided below:

***Golden Valley Parkway*** is primarily a six-lane divided arterial from Spartan Way to its southern terminus at Brookhurst Boulevard. Golden Valley Parkway will serve as the primary north-south arterial for residents in Mossdale Village and Central Lathrop. Much of the land surrounding Golden Valley Parkway is currently being developed, Golden Valley Parkway will provide access to single-family homes and Lathrop Marketplace. In the project vicinity, the posted speed limit is 50 miles per hour (mph) north of River Island Parkway and 45 mph south of River Island Parkway.

***Spartan Way / Lathrop Road*** is primarily a four- to six-lane divided arterial from its western terminus at Barbara Terry Boulevard and its eastern terminus at Austin Road in Manteca. In the project vicinity, the majority of land uses will be primarily single-family homes and educational facilities. The posted speed limit on Lathrop Road / Spartan Way is 35 mph.

***Stanford Crossing Drive*** is primarily a two-lane undivided road that spans from Spartan Way to Golden Valley Parkway.

***River Islands Parkway / Louise Avenue*** is primarily a four- to six-lane divided arterial that runs east-west through the City of Lathrop. To the west, the roadway terminates near the Old River. From there, the roadway extends several miles eastward and terminates at Ripon Road, near French Camp Road. The roadway currently tapers to two-lanes crossing the San Joaquin River. It is intended that the river crossing will ultimately be widened to four-lanes. In the project vicinity, River Islands Parkway primarily serves for residents in Mossdale Village and Central Lathrop and has a posted speed limit of 45 mph.

***Town Centre Drive*** is primarily a two-lane undivided road from Village Avenue to Manthey Road. The roadway has a posted speed limit of 25 mph. In the vicinity of the site, Town Center Drive primarily serves single-family homes.

***Barbara Terry Boulevard*** is primarily a two-lane undivided road from Locomotive Street to Lathrop Road and has a posted speed limit of 35 mph.

***McKee Boulevard*** is a two-lane undivided road in the project vicinity. The posted speed limit on Mckee Boulevard is 35 mph.

## 3.2 Existing Pedestrian Facilities

Walkability is defined as the ability to travel easily and safely between various origins and destinations without having to rely on automobiles or other motorized travel. The ideal "walkable" community includes wide sidewalks, a mix of land uses (such as residential, employment, and shopping opportunities), a limited number of conflict points with vehicle traffic, easy access to transit facilities and services and a network of pedestrian facilities.

Pedestrian facilities are comprised of crosswalks, sidewalks, pedestrian signals, and off-street paths, which provide safe and convenient routes for pedestrians to access the destinations such as institutions, businesses, public transportation, and recreation facilities.

Near the proposed project site, the approximate width of the sidewalk on both sides of the River Island Parkway is eight feet. There is currently an approximately six-foot wide sidewalk along Barbara Terry Boulevard on one side of the street.

The signalized intersections near the proposed development provide marked crosswalks and pedestrian push buttons and signal heads.

The existing pedestrian facilities in the study area are shown in **Figure 3**.

## 3.3 Existing Bicycle Facilities

The 1995 City of Lathrop Bicycle Transportation Plan outlines policies and objectives to improve the current active bicycle facilities. The various bicycle facilities are described below:

- **Class I Bikeways (Bike Paths or Shared-Use Path)**: Class I Bikeways provide a completely separated right of way for bicycles and pedestrians with minimal crossflow by motorized vehicles. Bike paths provide a recreational opportunity or can serve as commute routes. In the project area, there are no Class I facilities.
- **Class II Bike Lanes**: Class II bike lanes are striped bike lanes immediately adjacent to a traffic lane. Bike lanes provide a pavement area separate from vehicular traffic and improve conditions for bicycles on roadways. In the project vicinity, Class II Bike Lanes are provided on River Island Parkway.
- **Class III Bike Routes**: Class III Bike Routes provide shared use of the roadway, designated by signs or pavement markings and shared with other vehicular traffic. There are no Class III Bike Routes in the project vicinity.
- **Class IV Separated Bikeways or Cycle Tracks**: Cycle tracks are separated bikeways for the exclusive use of bicycles. Cycle tracks are usually located along the roadway, but require separation from the vehicular travel lane in the form of grade separation, planters, flexible posts, or on-street parking. There are no Class IV bikeways in the project vicinity.

Existing bicycle facilities are illustrated in **Figure 3**.

## 3.4 Existing Transit Facilities

San Joaquin Regional Transit District (RTD) provides transit service throughout San Joaquin County. **Table 3** summarizes the existing San Joaquin RTD services in the project vicinity. Existing transit services near the project are shown in **Figure 3**.

**Table 3: Existing San Joaquin RTD Transit Service**

| ***Route*** | ***From*** | ***To*** | ***Weekdays*** | | ***Weekends*** | |
|---|---|---|---|---|---|---|
| | | | ***Operating Hours*** | ***Headway (hours)*** | ***Operating Hours*** | ***Headway (minutes)*** |
| 90 | Tracy Transit Station | San Joaquin Delta College (Pacific & Yokuts, Stockton, CA) | 5:37 a.m. – 9:11 p.m. | Varies (~1 hour) | N/A | N/A |
| 97 | Tracy Transit Station | Manteca Transit Center | 6:00 a.m. – 9:00 p.m. | Varies (~1.3 hours) | N/A | N/A |

Source: San Joaquin RTD Transit Website

## 3.5 Existing Peak Hour Traffic Volumes And Lane Configurations

The existing operations of the study intersections were evaluated for the highest one-hour volumes during weekday morning (a.m.) and evening (p.m.) peak periods. The City of Lathrop approved the use of the projected 2022 intersection turning movement counts (TMC) from the 2022 Traffic Monitoring Program for the City of Lathrop (TMP) for the existing conditions scenario. Excerpts from the TMP are provided in **Appendix B**.

It should be noted that three of the existing study intersections along Barbara Terry Boulevard did not have data available from the TMP. To assess operations at these intersection, TMCs were collected on Tuesday, September 27, 2022. The raw TMC data is provided in **Appendix C**.

**Figure 4** illustrates the existing lane geometry and traffic control type at the study intersections. **Figure 5** shows existing peak hour volumes at the study intersections on a typical weekday.

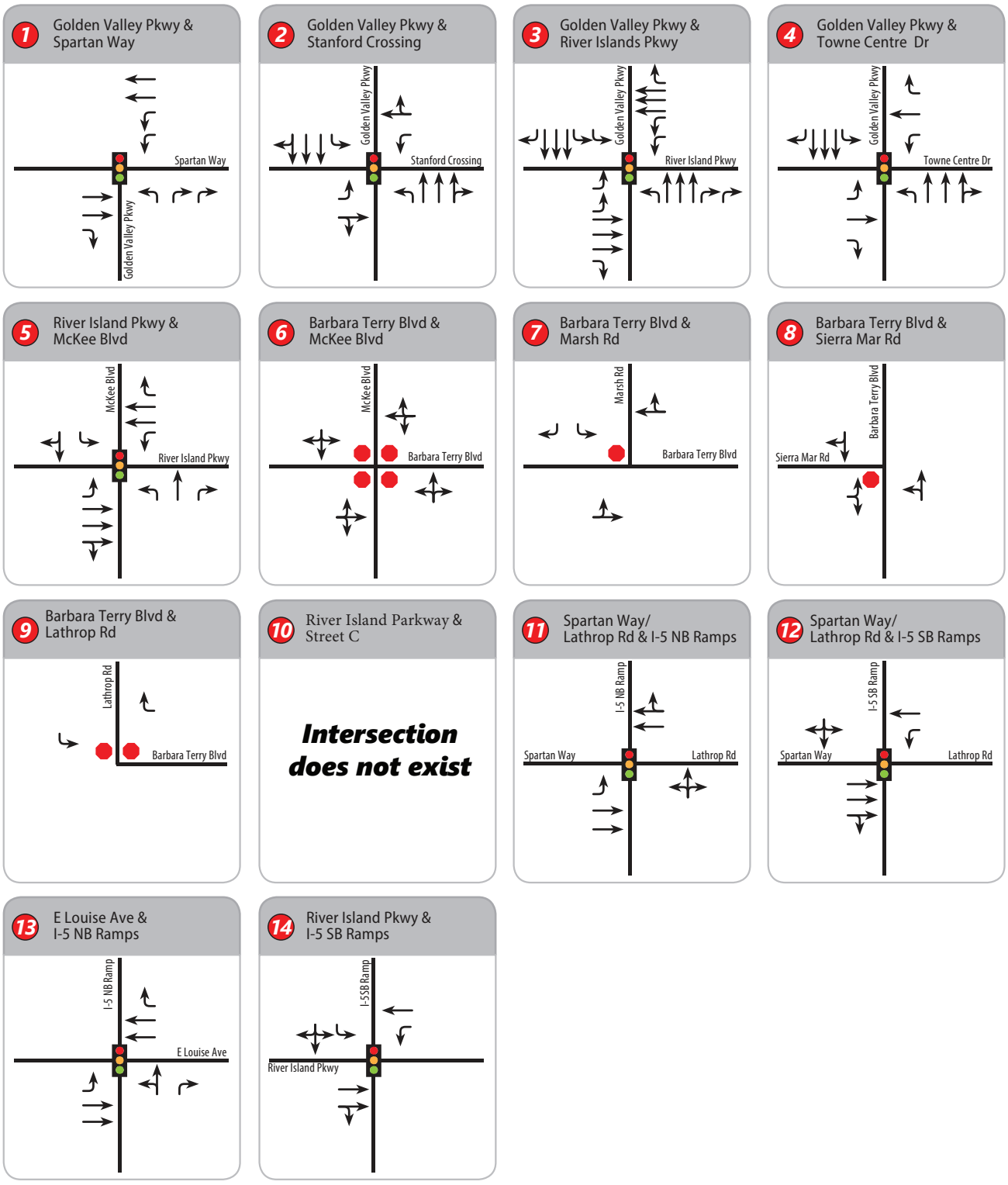
**Figure 3: 2022 Existing Conditions - Pedestrian, Bicycle, and Transit Facilities**




LEGEND

- Project Site
- Study Intersection
- Class II Bike Lane
- Bike Trail
- Marked Crosswalk
- Bus Stop
- Route 97
- Route 90

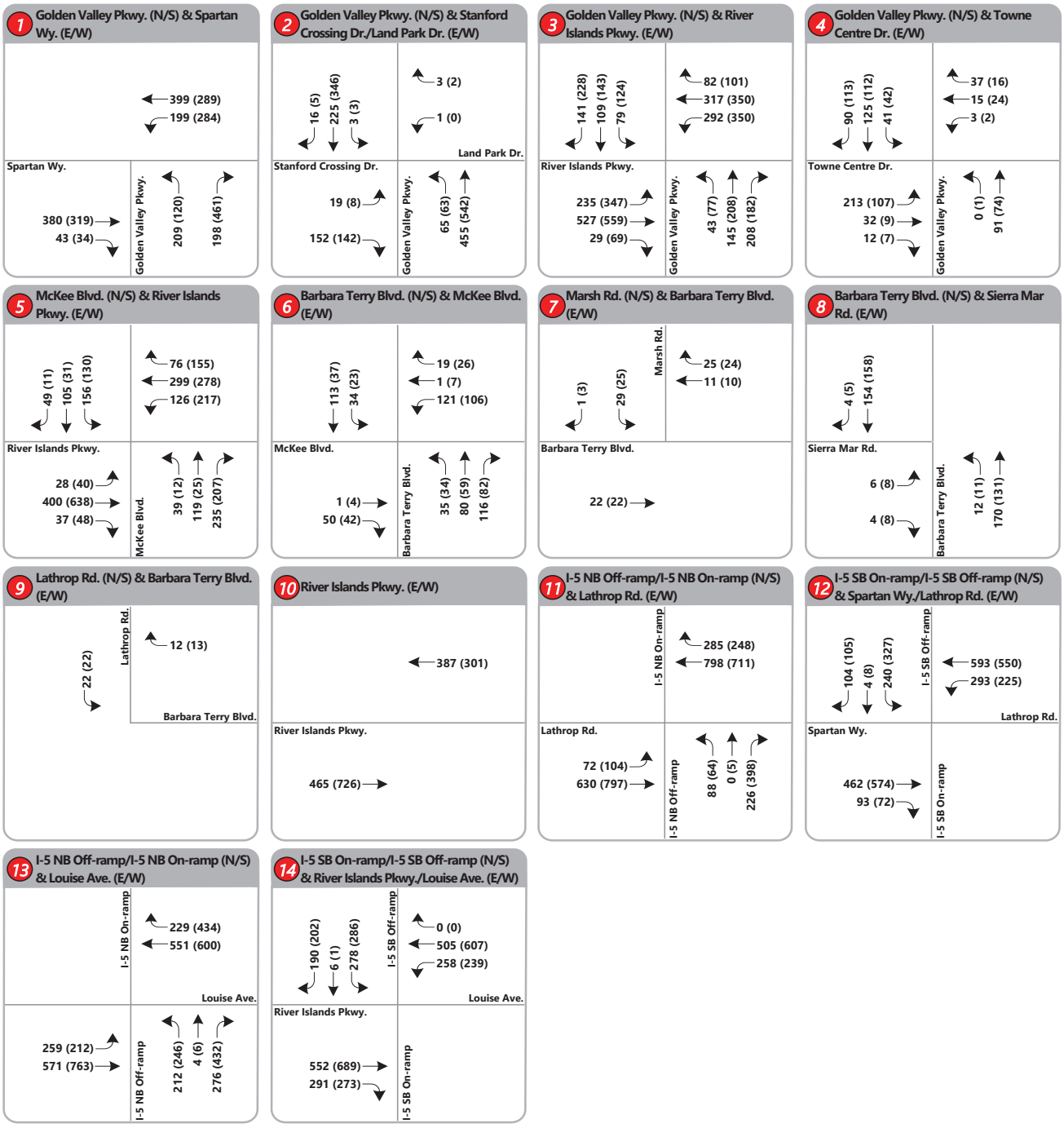
**Figure 4: 2022 Existing Conditions - Lane Geometry and Traffic Control**




LEGEND

- Stop Sign
- Traffic Signal

## Figure 5: 2022 Existing Conditions - Intersection Peak Hour Traffic Volumes




LEGEND

XX AM Peak Hour Volumes

(XX) PM Peak Hour Volumes

## 3.6 Intersection Level of Service Analysis – Existing Conditions

Existing intersection lane configurations and turning movement volumes are used to calculate the LOS for the study intersections during each peak hour. Signal timing sheets for existing signalized study intersections were obtained from the City. The results of the LOS analysis using the *Synchro*, Version 11, software program for Existing Conditions are summarized in **Table 4**. Intersections that operated at LOS E or F are shown in red. Detailed calculation sheets for the Existing Conditions scenario are contained in **Appendix D**.

Under this scenario, all of the study intersections operate within jurisdictional standards (LOS D or better) during the a.m. and p.m. peak hour.

**Table 4: 2022 Existing Conditions – Intersection Level of Service Analysis**

| *No.* | *Intersection* | *Intersection Control[1]* | *Peak Period[2]* | *Average Delay[3]* | *LOS[4]* |
|---|---|---|---|---|---|
| 1 | Golden Valley Parkway (N/S) & Spartan Way (E/W) | Signal | a.m. | 12.7 | B |
| | | | p.m. | 15 | B |
| 2 | Golden Valley Parkway (N/S) & Stanford Crossing Drive (E/W) | Signal | a.m. | 15.2 | B |
| | | | p.m. | 11.9 | B |
| 3 | Golden Valley Parkway (N/S) & River Islands Parkway (E/W) | Signal | a.m. | 22.8 | C |
| | | | p.m. | 31.7 | C |
| 4 | Golden Valley Parkway (N/S) & Towne Center Drive (E/W) | Signal | a.m. | 15.3 | B |
| | | | p.m. | 15.4 | B |
| 5 | River Islands Parkway (N/S) & McKee Boulevard (E/W) | Signal | a.m. | 29.4 | C |
| | | | p.m. | 28.7 | C |
| 6 | Barbara Terry Boulevard (E/W) & McKee Boulevard (N/S) | AWSC | a.m. | 12.5 | B |
| | | | p.m. | 9.6 | A |
| 7 | Barbara Terry Boulevard (E/W) & Marsh Road (N/S) | OWSC | a.m. | 9.2 | A |
| | | | p.m. | 9 | A |
| 8 | Barbara Terry Boulevard (N/S) & Sierra Mar Road (E/W) | OWSC | a.m. | 11.6 | B |
| | | | p.m. | 11.2 | B |
| 9 | Barbara Terry Boulevard (E/W) & Towne Centre Drive (N/S) | Future Intersection | a.m. | - | - |
| | | | p.m. | - | - |
| 10 | River Islands Parkway (E/W) & Street C (N/S) | Future Intersection | a.m. | - | - |
| | | | p.m. | - | - |
| 11 | Spartan Way / Lathrop Road (E/W) & I-5 NB Ramps (N/S) | Signal | a.m. | 17.9 | B |
| | | | p.m. | 28.7 | C |
| 12 | Spartan Way / Lathrop Road (E/W) & I-5 SB Ramps (N/S) | Signal | a.m. | 20.6 | C |
| | | | p.m. | 22.9 | C |
| 13 | River Islands Parkway / Louise Avenue (E/W) & I-5 NB Ramps (N/S) | Signal | a.m. | 16.1 | B |
| | | | p.m. | 18.2 | B |
| 14 | River Islands Parkway / Louise Avenue (E/W) & I-5 SB Ramps (N/S) | Signal | a.m. | 17.4 | B |
| | | | p.m. | 17.9 | B |

Notes:

1. Signal = Signalized; OWSC = One-Way Stop Control; TWSC = Two-Way Stop Control; AWSC = All-Way Stop Control
2. a.m. = a.m. peak hour; p.m. = p.m. peak hour
3. Delay measured in seconds per vehicle. For signalized and all-way stop controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.
4. LOS = Level of Service; "-"= no data; not included in scenario

# 4.0 2022 EXISTING CONDITIONS PLUS PROJECT

This section describes the operational impacts of the proposed project on the transportation system in the immediate project site vicinity. The Existing Conditions plus Project scenario consists of existing traffic volumes and roadway facilities plus new traffic generated by the proposed project. Following the initial review, the River Islands Parkway and Street C (Intersection 10) is analyzed as right in and right out in all the plus project scenarios.

This section consists of two analysis components:

- A vehicle miles traveled (VMT) assessment of the proposed project (Section 4.1), and
- A level of service (LOS) assessment of study intersections (Sections 4.2 to 4.7).

The amount of traffic added to the roadway system by the proposed development is estimated using a three-step process:

- Trip Generation – Estimates the amount of traffic added to the roadway network (Section 4.2),
- Trip Distribution – Estimates the general direction of travel for site traffic to and from the project site (Section 4.3), and
- Trip Assignment – The new trips are assigned to specific street segments and intersection turning movements (Section 4.3).

## 4.1 Vehicle Miles Traveled

Beginning on July 1, 2020, Senate Bill (SB) 743 replaced LOS with VMT for purposes of assessing traffic impacts under the California Environmental Quality Act (CEQA), described in new Section 15064.3 of the CEQA Guidelines. Lead agencies have discretion to choose the most appropriate methodology to evaluate a project's VMT, including whether to express the change in absolute terms, per capita, per household or any other measure. VMT refers to the amount and distance of automobile travel "attributable to a project." The City of Lathrop adopted SB 743 Guidelines in September 2020.

***Project Screening***

The City guidelines provide standards for identifying which types of projects should be expected to not result in a significant VMT impact, and a detailed CEQA analysis would not be required to evaluate the project VMT. Since this project is not screened out, a full VMT analysis was conducted for the Mossdale West project.

***VMT Forecasting***

For VMT forecasting, the City of Lathrop SB 743 guidelines states that for a project to be VMT insignificant, the project has to generate 15 percent below the Citywide average for the total home-based residential VMT per capita statistic. As the City of Lathrop did not maintain its own travel demand model at the time of writing this report (November 2023), the San Joaquin Council of Governments (SJCOG) 2018 Regional Transportation Plan (RTP) regional travel demand model was used to generate VMT statistics for the Mossdale West project. Per the city's guidelines, the latest approved SJCOG RTP model was used for

analyzing VMT impacts for this project. Since the 2022 SJCOG RTP model have not been officially certified by the California Air Resources Board, the 2018 RTP model was used instead. In addition, the VMT analysis for this project assumes full buildout of the project in the base year condition, which are more conservative than a phased buildout through the forecast year of 2045.

The Mossdale West project is located in traffic analysis zone (TAZ) #1745 of the SJCOG Model. Currently, TAZ #1745 contains 546 households and 1,442 people. The full project buildout will add 912 households and 3,666 people (the people to household ratio of 4.02 was determined using Census data for the City of Lathrop) for a total of 1,458 households and 5,108 people. **Table 5** shows the land use changes for the base year plus project SJCOG model run.

**Table 5: Land Use Changes for Base Year plus Project**

| *TAZ* | *Households* | *Population* |
|---|---|---|
| #1745 | +912 | +3,666 |

A base year model run and a base year plus project model run were conducted with the land use changes added. The VMT results are summarized in **Table 6**.

**Table 6: Home-based VMT per Resident Comparison (Citywide Regional Average)**

| *TAZ* | *Base Year Average Daily Home-Based VMT per Capita (per SJCOG Model)* | *Citywide Average (per SJCOG Model)* | *15% Below Citywide Average (per SJCOG Model)* | *Base Year Plus Project Average Daily Home-Based VMT per Capita (per SJCOG Model)* |
|---|---|---|---|---|
| #1745 | 24.78 | 33.39 | 28.38 | 19.50 |

The proposed project's VMT contribution was assessed using the City of Lathrop's citywide average as its metric threshold. The existing base year home-based VMT per capita for TAZ #1745 is 24.78. Adding in the Mossdale West project lowers the home-based VMT per capita for the TAZ to **19.50**. Adding the project increases the Home-based VMT, but the increase in population is slightly higher (~1.79x increase in VMT, 2.54x increase in population) – hence, the VMT per capita number reduces slightly. As the citywide average for Lathrop for home-based VMT per Capita is 33.39, the significance criteria (15 percent under the citywide average) would be **28.38**.

Since the project's VMT per capita value of 19.50 is lower than the citywide threshold of 28.38, the project has a less than significant impact on VMT and would not need mitigations.

## 4.2 Project Trip Generation

The project is expected to ultimately consist of approximately 912 single-family residential dwelling (SFDU) units.

In order to determine the number of trips generated by the proposed development during the weekday morning (a.m.) and weekday afternoon (p.m.) peak hours, as well as during a typical weekday, the Institute of Transportation Engineers' (ITE) Trip Generation, 11th Edition, was utilized. The project's anticipated trip generation is illustrated in **Table 7**.

ITE Land Use Code (LUC) 210 (Single-Family Detached Homes) was used for the trip generation calculations. No internal trip capture or pass-by reductions were assumed.

**Table 7: Site Trip Generation (ITE 11th Ed.; Peak Hour of the Adjacent Street)**

| | Size | | Daily | | AM Peak Hour | | | | | PM Peak Hour | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Rate | Total | Rate | In:Out | In | Out | Total | Rate | In:Out | In | Out | Total |
| Proposed Use | | | | | | | | | | | | | | |
| Single-Family Detached Housing | 912 | DU[1] | 9.43 | 8,600 | 0.7 | 26:74 | 166 | 472 | 638 | 0.94 | 63:37 | 540 | 317 | 857 |
| **Net Total** | | | | **8,600** | | | **166** | **472** | **638** | | | **540** | **317** | **857** |

Notes:

1. DU = dwelling unit

The proposed Mossdale West development is projected to generate approximately 8,600 daily trips, of which 638 trips (166 in, 472 out) occur during the a.m. peak hour and 857 trips (540 in, 317 out) occur during the p.m. peak hour.

## 4.2 Project Trip Distribution and Assignment

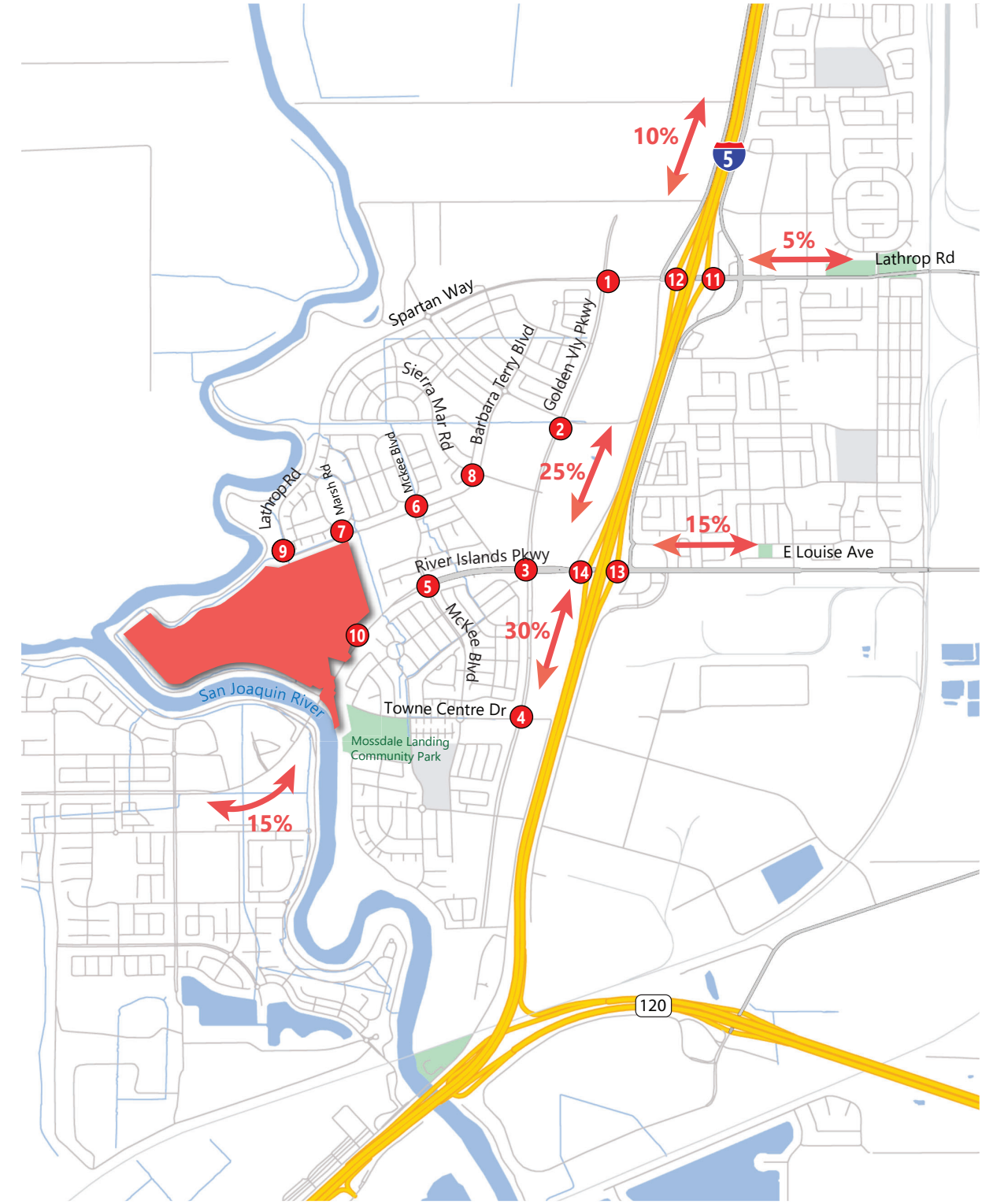
Trip distribution is a process of developing study assumptions that estimate the directions vehicular trips will arrive to and depart from the study site. Trip assignment designates specific streets and turning movements at study intersections for project-related or site traffic. Trip distribution assumptions for the proposed project are developed based on existing travel patterns, knowledge of the study area, engineering judgment, and input received from City staff.

The following trip distribution was applied for both a.m. and p.m. peak hour project-related vehicular trips:

- 10 percent to/from North via Spartan Way and I-5,
- 5 percent to/from Northeast via Spartan Way/W Lathrop,
- 25 percent to/from North via River Island Parkway and I-5,
- 15 percent to/from East via River Island Parkway,
- 30 percent to/from South via River Island Parkway and I-5, and
- 15 percent to/from West via River Island.

**Figure 6** and **Figure 7** illustrate the trip distribution and trip assignment for project-related vehicular trips, respectively.

**Figure 6: Trip Distribution**



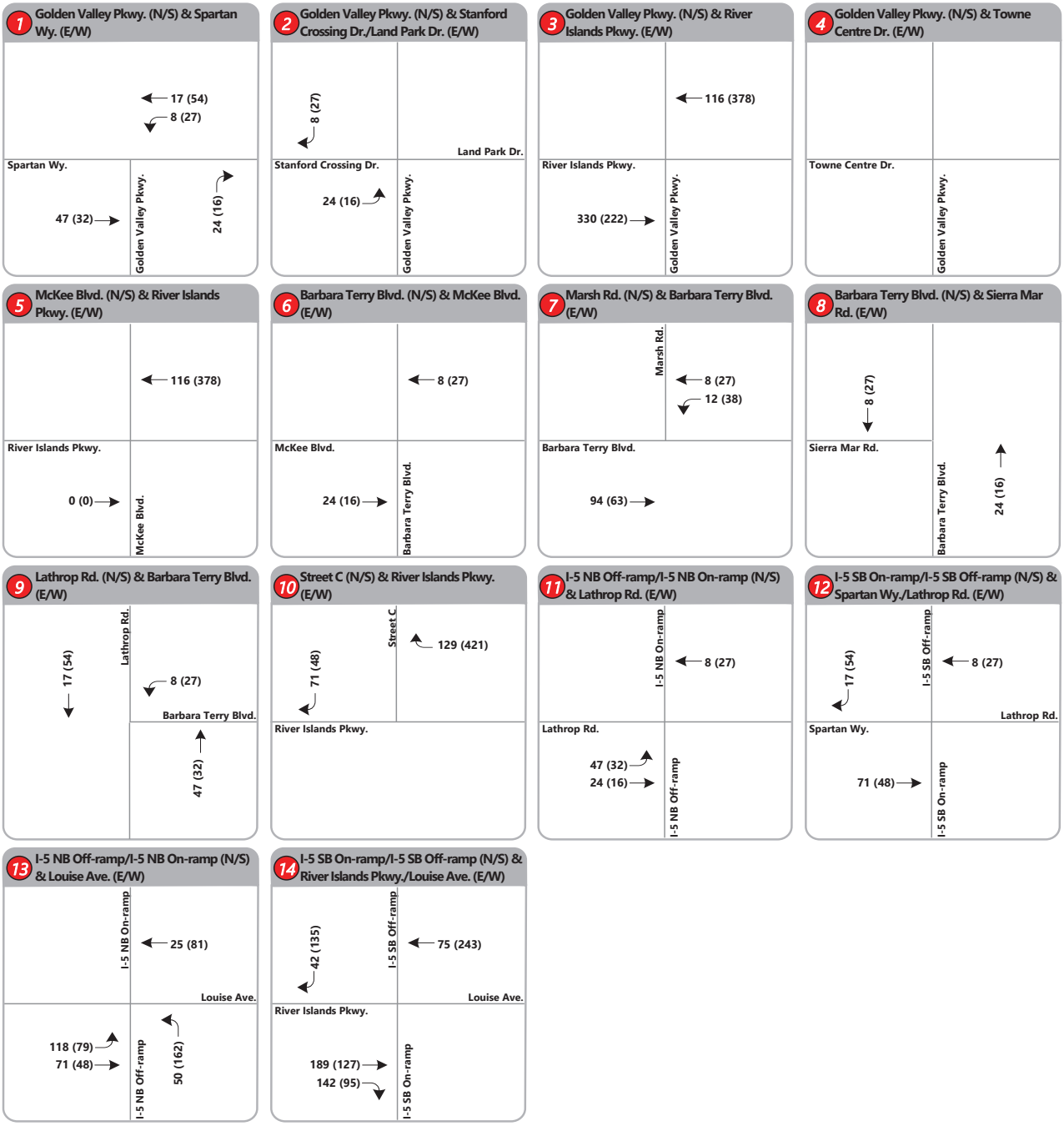

LEGEND

Project Site

XX% Trip Distribution

X Study Intersection

## Figure 7: Trip Assignment




LEGEND

XX AM Peak Hour Trips

(XX) PM Peak Hour Trips

## 4.3 Intersection Level of Service Analysis – Existing Conditions plus Project

The intersection level of service analysis results for the Existing Conditions plus Project scenario are summarized in **Table 8**. Intersections that operated at LOS E or F are shown in red. The results for the Existing Conditions scenario are included for comparison purposes. Detailed calculation sheets for the Existing Conditions plus Project scenario are contained in **Appendix E**.

**Figure 8** displays projected peak hour turning movement volumes, lane geometry, and traffic controls at all of the study intersections for the Existing Conditions plus Project scenario.

Under this scenario, 12 of the 14 study intersections are expected to continue to operate within jurisdictional standards (LOS D or better) during the a.m. and p.m. peak hours.

The following intersection would degrade from acceptable to unacceptable level of service with the addition of project traffic:

- River Islands Parkway and McKee Boulevard (Intersection 5) operates at LOS F in a.m. peak hour and LOS E in the p.m. peak hour under signalized control.
    - It is recommended that the signal timings of the intersection be changed slightly[1] and that the westbound right-turn signals operate with a permissive overlap phase to accommodate right turns. The southbound approach should be restriped from one left turn pocket lane, and one right shared with through lane to two left turn pocket lanes and one right turn lane shared with the through lane. With these improvements, the intersection is projected to operate at LOS D in the a.m. peak hour and LOS C in the p.m. peak hour.
- Barbara Terry Boulevard and McKee Boulevard (Intersection 6) degrades from LOS B to LOS E during the a.m. peak hour under all way stop control.
    - It is recommended that the eastbound approach should have an extra right turn lane and provide a lane drop on southbound receiving lane to accommodate two right turning traffic. With these improvements, the intersection is projected to operate overall at LOS C during a.m. peak hours.

With the proposed improvements in place, the proposed development would have a negligible impact on the surrounding road network under Existing Conditions.

**Table 8: Intersection Level of Service Analysis – 2022 Existing Conditions plus Project**

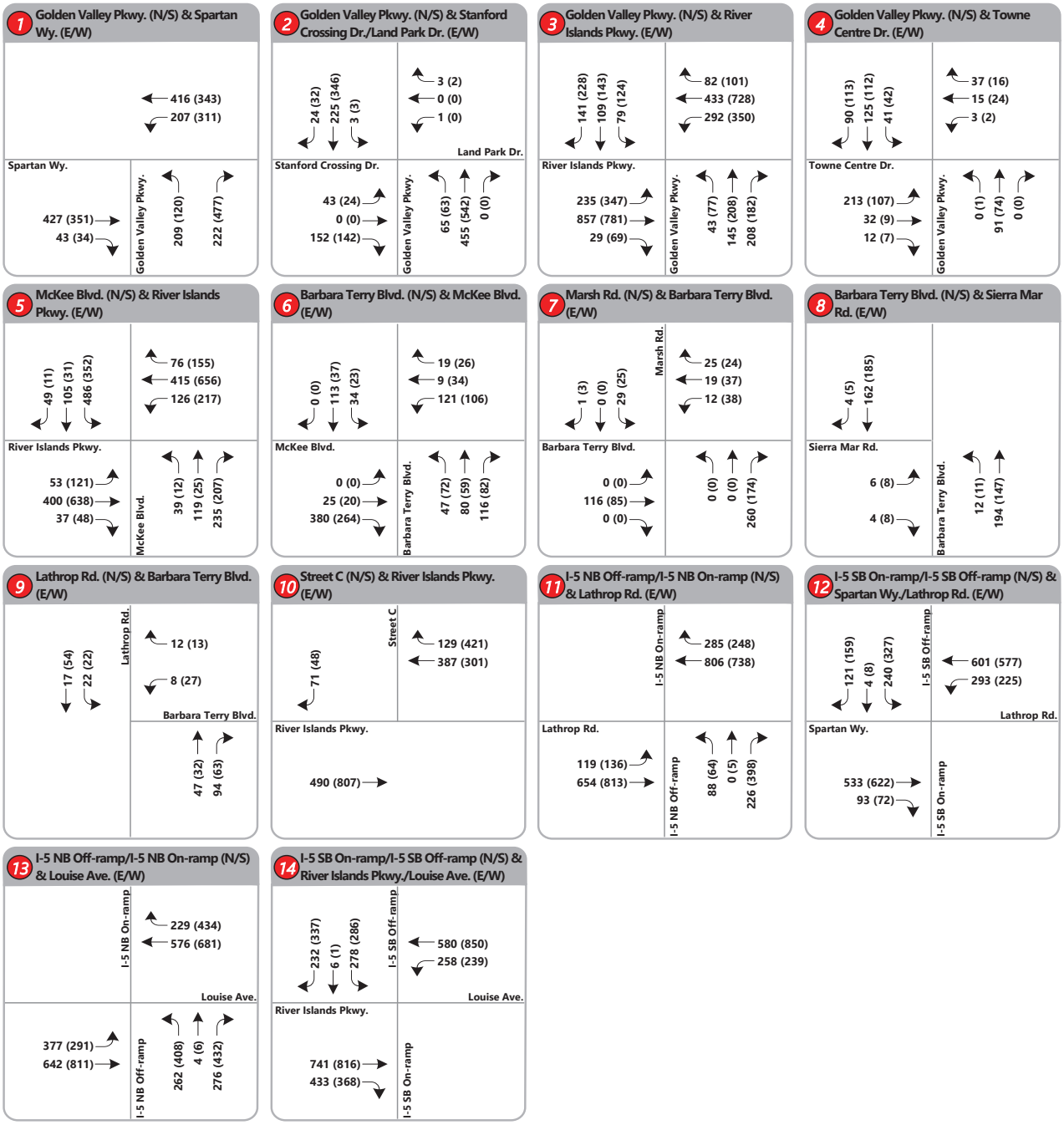
| No. | Intersection | Intersection Control[1] | Peak Period[2] | Existing | | Existing + Project | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Average Delay[3] | LOS[4] | Average Delay[3] | LOS[4] | Change in Delay[5] |
| 1 | Golden Valley Parkway (N/S) & Spartan Way (E/W) | Signal | a.m. | 12.7 | B | 13.2 | B | +0.5 |
| | | | p.m. | 15 | B | 15.9 | B | +0.9 |
| 2 | Golden Valley Parkway (N/S) & Stanford Crossing Drive (E/W) | Signal | a.m. | 15.2 | B | 15.4 | B | +0.2 |
| | | | p.m. | 11.9 | B | 12.1 | B | +0.2 |
| 3 | Golden Valley Parkway (N/S) & River Islands Parkway (E/W) | Signal | a.m. | 22.8 | C | 24.6 | C | +1.8 |
| | | | p.m. | 31.7 | C | 39.4 | D | +7.7 |
| 4 | Golden Valley Parkway (N/S) & Towne Center Drive (E/W) | Signal | a.m. | 15.3 | B | 15.3 | B | 0.0 |
| | | | p.m. | 15.4 | B | 15.4 | B | 0.0 |
| 5 | River Islands Parkway (N/S) & McKee Boulevard (E/W) (Mitigation:Adjust the timings; Restripe SB to 2 left turn lanes and 1 right shared with through lanes) | Signal | a.m. | 29.4 | C | **180.8** | **F** | +151.4 |
| | | | p.m. | 28.7 | C | **60** | **E** | +31.3 |
| | | | *a.m.* | | | *37.3* | *D* | +7.9 |
| | | | *p.m.* | | | *33.1* | *C* | +4.4 |
| 6 | Barbara Terry Boulevard (E/W) & McKee Boulevard (N/S) (Mitigation: Provide an extra EBR turn lane signal and lane drop at the north receiving leg.) | AWSC | a.m. | 12.5 | B | **48.3** | **E** | +35.8 |
| | | | p.m. | 9.6 | A | 15.2 | C | +5.6 |
| | | | *a.m.* | | | *21.3* | *C* | +8.8 |
| | | | *p.m.* | | | *12.6* | *B* | +3.0 |
| 7 | Barbara Terry Boulevard (E/W) & Marsh Road (N/S) | OWSC (Existing) / TWSC (Future) | a.m. | 9.2 | A | 18.3 | C | +9.1 |
| | | | p.m. | 9 | A | 13.8 | B | +4.8 |
| 8 | Barbara Terry Boulevard (N/S) & Sierra Mar Road (E/W) | OWSC | a.m. | 11.6 | B | 11.9 | B | +0.3 |
| | | | p.m. | 11.2 | B | 11.8 | B | +0.6 |
| 9 | Barbara Terry Boulevard (E/W) & Towne Centre Drive (N/S) | OWSC (Future) | a.m. | - | - | 9.1 | A | - |
| | | | p.m. | - | - | 9.3 | A | - |
| 10 | River Islands Parkway (E/W) & Street C (N/S) | OWSC (Future) | a.m. | - | - | 11.7 | B | - |
| | - | | p.m. | - | - | 12 | B | - |
| 11 | Spartan Way / Lathrop Road (E/W) & I-5 NB Ramps (N/S) | Signal | a.m. | 17.9 | B | 21 | C | +3.1 |
| | | | p.m. | 28.7 | C | 32.6 | C | +3.9 |
| 12 | Spartan Way / Lathrop Road (E/W) & I-5 SB Ramps (N/S) | Signal | a.m. | 20.6 | C | 22.6 | C | +2.0 |
| | | | p.m. | 22.9 | C | 27.8 | C | +4.9 |
| 13 | River Islands Parkway / Louise Avenue (E/W) & I-5 NB Ramps (N/S) | Signal | a.m. | 16.1 | B | 20.9 | C | +4.8 |
| | | | p.m. | 18.2 | B | 23.8 | C | +5.6 |
| 14 | River Islands Parkway / Louise Avenue (E/W) & I-5 SB Ramps (N/S) | Signal | a.m. | 17.4 | B | 23.4 | C | +6.0 |
| | | | p.m. | 17.9 | B | 30.2 | C | +12.3 |

Notes:

1. Signal = Signalized; OWSC = One-Way Stop Control; TWSC = Two-Way Stop Control; AWSC = All-Way Stop Control
2. a.m. = a.m. peak hour; p.m. = p.m. peak hour

3. Delay measured in seconds per vehicle. For signalized and all-way stop controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.
4. LOS = Level of Service; "-"= no data; not included in scenario

## Figure 8: 2022 Existing Conditions plus Project - Intersection Peak Hour Traffic Volumes




LEGEND

XX AM Peak Hour Volumes

(XX) PM Peak Hour Volumes

# 5.0 2026 BASELINE CONDITIONS

This section presents the results of the level of service calculations under Baseline Conditions without the project. Level of service analyses at the study intersections were conducted for Baseline Conditions to evaluate the impacts due to the addition of traffic from the proposed project.

## 5.1 Intersection Level of Service Analysis – Baseline Conditions

Based on discussions with the City, the 2026 Baseline volumes for the study intersections were established using 2026 projected volumes in the 2022 Traffic Monitoring Program for the City of Lathrop (TMP). Excerpts from the TMP are provided in **Appendix B**.

The expected growth in the City of Lathrop for the year 2026 includes:

- 1,300 new single family residences,
- 4,000,000 additional square feet of warehouse/distribution facilities,
- 212 hotel rooms,
- 125,200 additional square feet of commercial uses, and
- New high school and K-8 facilities for 350 students.

The following improvements were also considered based on the TMP:

- The widening of River Island Parkway from 2-lanes to 4-lanes across the San Joaquin River,
- The addition of a fourth leg to the intersection of Golden Valley Parkway and Spartan Way (Intersection 1), and
- The addition of a second eastbound left turn lane at the intersection of Golden Valley Parkway and River Island Parkway (Intersection 3).

Following the initial review, it was determined that the southbound approach at the intersection of River Islands Parkway and McKee Boulevard (Intersection 5) has been reconfigured to include one left turn lane, one through lane, and one right turn lane. Consequently, the analysis presented here will reflect the updated lane configuration.

**Figure 9** displays projected peak hour turning movement volumes at all of the study intersections for the Baseline scenario.

The intersection LOS analysis results for Baseline Conditions are summarized in **Table 9**. Intersections that operate at LOS E or F are shown in red. Detailed calculation sheets for Baseline Conditions are contained in **Appendix F**.

Under this scenario, six of the 12 existing study intersections are expected to continue to operate at acceptable service levels (LOS D or better) during the a.m. and p.m. peak hours.

The following intersections are projected to operate at unacceptable levels of service:

- Golden Valley Parkway and Spartan Way (Intersection 1) operates at LOS F during the p.m. peak hour.

- Golden Valley Parkway and River Islands Parkway (Intersection 3) operates at LOS F during both peak hours.
- Spartan Way/Lathrop Road and the I-5 ramps (Intersections 11 & 12) operate at LOS F during both peak hours.
- River Island Parkway/Louise Avenue and the I-5 ramps (Intersections 13 & 14) operate at LOS F during both peak hours.

**Table 9: Intersection Level of Service – 2026 Baseline Conditions**

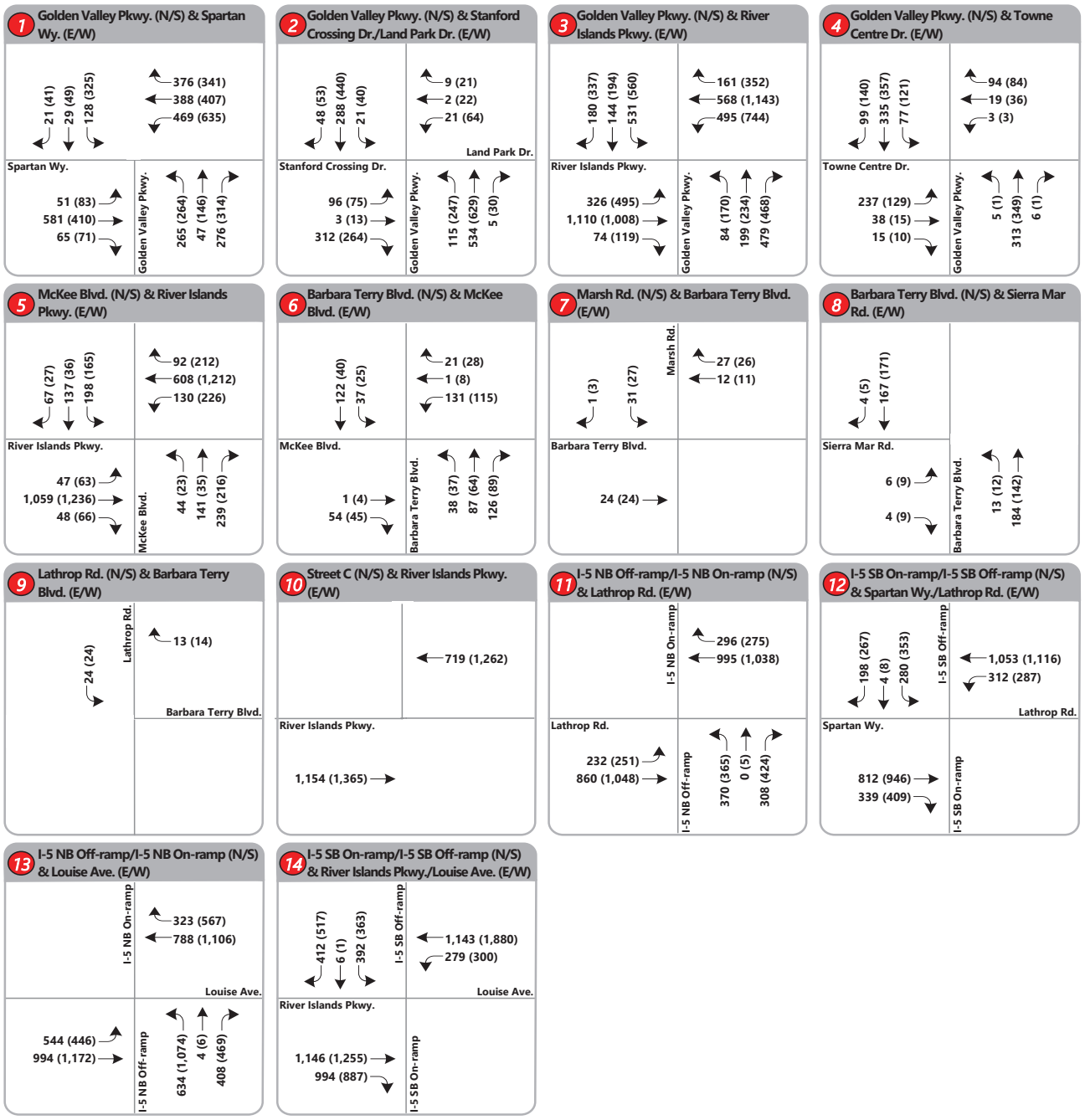
| *No.* | *Intersection* | *Intersection Control[1]* | *Peak Period[2]* | *Average Delay[3]* | *LOS[4]* |
|---|---|---|---|---|---|
| 1 | Golden Valley Parkway (N/S) & Spartan Way (E/W) | Signal | a.m. | 52.7 | D |
| | | | p.m. | **121.1** | **F** |
| 2 | Golden Valley Parkway (N/S) & Stanford Crossing Drive (E/W) | Signal | a.m. | 29.8 | C |
| | | | p.m. | 42.4 | D |
| 3 | Golden Valley Parkway (N/S) & River Islands Parkway (E/W) | Signal | a.m. | **100.9** | **F** |
| | | | p.m. | **126.6** | **F** |
| 4 | Golden Valley Parkway (N/S) & Towne Center Drive (E/W) | Signal | a.m. | 19.7 | B |
| | | | p.m. | 18.7 | B |
| 5 | River Islands Parkway (N/S) & McKee Boulevard (E/W) | Signal | a.m. | 49.1 | D |
| | | | p.m. | 48.8 | D |
| 6 | Barbara Terry Boulevard (E/W) & McKee Boulevard (N/S) | AWSC | a.m. | 13.8 | B |
| | | | p.m. | 10.0 | A |
| 7 | Barbara Terry Boulevard (E/W) & Marsh Road (N/S) | OWSC | a.m. | 9.2 | A |
| | | | p.m. | 9.0 | A |
| 8 | Barbara Terry Boulevard (N/S) & Sierra Mar Road (E/W) | OWSC | a.m. | 11.9 | B |
| | | | p.m. | 11.6 | B |
| 9 | Barbara Terry Boulevard (E/W) & Towne Centre Drive (N/S) | Future Intersection | a.m. | - | - |
| | | | p.m. | - | - |
| 10 | River Islands Parkway (E/W) & Street C (N/S) | Future Intersection | a.m. | - | - |
| | | | p.m. | - | - |
| 11 | Spartan Way / Lathrop Road (E/W) & I-5 NB Ramps (N/S) | Signal | a.m. | **114.8** | **F** |
| | | | p.m. | **120.6** | **F** |
| 12 | Spartan Way / Lathrop Road (E/W) & I-5 SB Ramps (N/S) | Signal | a.m. | **120.4** | **F** |
| | | | p.m. | **172.1** | **F** |
| 13 | River Islands Parkway / Louise Avenue (E/W) & I-5 NB Ramps (N/S) | Signal | a.m. | **119.9** | **F** |
| | | | p.m. | **143.1** | **F** |
| 14 | River Islands Parkway / Louise Avenue (E/W) & I-5 SB Ramps (N/S) | Signal | a.m. | **161.4** | **F** |
| | | | p.m. | **212.0** | **F** |

Notes:

1. Signal = Signalized; OWSC = One-Way Stop Control; TWSC = Two-Way Stop Control; AWSC = All-Way Stop Control
2. a.m. = a.m. peak hour; p.m. = p.m. peak hour

3. Delay measured in seconds per vehicle. For signalized and all-way stop controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.
4. LOS = Level of Service; "-"= no data; not included in scenario

## Figure 9: 2026 Baseline Conditions - Intersection Peak Hour Traffic Volumes




LEGEND

XX AM Peak Hour Volumes

(XX) PM Peak Hour Volumes

# 6.0 2026 BASELINE CONDITIONS PLUS PROJECT

This section describes the operational impacts of the proposed project on the transportation system in the immediate project site vicinity. Baseline plus Project Conditions consists of baseline traffic volumes and roadway facilities plus new traffic generated by the proposed project.

## 6.1 Intersection Level of Service Analysis – Baseline Conditions plus Project

The intersection level of service analysis results for the Baseline Conditions plus Project scenario are summarized in **Table 10**. Intersections that operated at LOS E or F are shown in red. The results for Baseline Conditions are included for comparison purposes. Detailed calculation sheets for Baseline Conditions plus Project are contained in **Appendix G**.

**Figure 10** displays projected peak hour turning movement volumes at all of the study intersections for Baseline Conditions plus Project scenario.

Under this scenario, eight of the 14 study intersections are expected to operate at an acceptable service levels (LOS D or better) during the a.m. and p.m. peak hours (similar to without project conditions). Golden Valley Parkway and River Islands (Intersection 3) would continue to operate at LOS F during both peak hours and would experience decrease in delay of 2.6 seconds per vehicle and 4.8 seconds per vehicle during the a.m. and p.m. peak hours, respectively. However, the intersection operates at unacceptable LOS, but delay is within 5.0 seconds as compared to baseline conditions. There is no impact at this intersection due to the project.

The following seven intersections would require mitigations in order to account for additional demand due to the proposed development:

- Golden Valley Parkway and Spartan Way (Intersection 1) would operate at LOS E during the a.m. peak hour with an increase in delay of 5.9 seconds per vehicle and would operate at LOS F with an increase in delay by 14.9 seconds per vehicle during the p.m. peak hour.
    - It is recommended that the signal timings of the intersection be changed slightly[1]. With these changes, the intersection is anticipated to operate with less delay during both peak hours as compared to Baseline Conditions.
- River Islands Parkway and McKee Boulevard (Intersection 5) degrades from LOS D to LOS F during both peak hours.
    - It is recommended that the signal timings of the intersection be changed slightly[1] and that the westbound right-turn signals operate with a permissive overlap phase to accommodate right turns. The southbound approach should be restriped from one left turn pocket lane, one through lane, and one right turn pocket lane to two left turn pocket lanes and one right turn lane shared with the through lane. Provide an additional westbound left turn pocket lane to better accommodate left turns. The northbound approach should be restriped from one left turn pocket lane, one through lane, and one right turn lane to one

left turn lane, one right turn lane shared with the through lane, and one right turn lane. With these changes, the intersection is anticipated to operate at an acceptable level of service during both the peak hours.

- Barbara Terry Boulevard and McKee Boulevard (Intersection 6) degrades from LOS B to LOS F during the a.m. peak hour under all way stop control.
    - It is recommended that the eastbound approach should have an extra right turn lane and provide a lane drop on southbound receiving lane to accommodate two right turning traffic. With these improvements, the intersection is projected to operate overall at LOS D during AM peak hours.
- Spartan Way / Lathrop Road at I-5 NB Ramps (Intersection 11) continues to operate at LOS F during both peak hours and would experience an increase in delay of 16.8 seconds per vehicle and 11.4 seconds per vehicle during the a.m. peak hour and p.m. peak hour, respectively.
    - It is recommended to provide an additional right turn NB off ramp lane. With these changes, the intersection is anticipated to operate with less vehicular delay than under Baseline Conditions. However, it should be noted that the intersection would operate at LOS E.
- Spartan Way / Lathrop Road at I-5 SB Ramps (Intersection 12) continue to operate at LOS F during the both peak hours, respectively. The intersection would experience an increase in delay of 21.5 seconds per vehicle during the a.m. peak hour and 26.8 seconds per vehicle during the p.m. peak hour.
    - It is recommended to provide an additional left turn SB off ramp lane. With these changes, the intersection is projected to operate with slightly increase in delay in the a.m. but within the range of acceptable standards, and less vehicular delay than under baseline conditions. However, it should be noted that the intersection would still operate with extreme delay (>100 seconds) during both the peak hours.
- River Islands Parkway / Louise Avenue at I-5 NB Ramps (Intersection 13) continues to operate at LOS F during the both peak hours and would experience an increase in delay of 45.5 seconds per vehicle during the a.m. peak hour and 50.6 seconds per vehicle during the p.m. peak hour.
    - It is recommended to provide an additional NB left turn off ramp lane. With these changes, the intersection is anticipated to operate with less delay during the a.m. and p.m. peak hours as compared to Baseline Conditions.
    - However, it should be noted that the intersection would still operate with extreme delay (>80 seconds) during both the peak hours.
    - In order to improve operations, physical modifications to the interchange ramp would be necessary. The City is currently assessing potential improvements to the interchange ramps.

It is expected that with geometric improvements, delays at the intersection would substantially decrease.

- River Islands Parkway / Louise Avenue at I-5 SB Ramps (Intersection 14) continues to operate at LOS F during the both peak hours and would experience an increase in delay of 88.7 seconds per vehicle during the a.m. peak hour and 73.6 seconds per vehicle during the p.m. peak hour.
    - It is recommended that the signal timings of the intersection be changed slightly[1]. In the southbound direction, provide an additional left turn SB off ramp lane and have westbound right turn phase to operate as free. With these changes, the intersection is projected to operate with less delay during the a.m. and p.m. peak hours as compared to Baseline Conditions. However, it should be noted that the intersection would still operate with extreme delay (>100 seconds) during p.m. peak hour.
    - In order to improve operations, physical modifications to the interchange ramp would be necessary. The City is currently assessing potential improvements to the interchange ramps. It is expected that with geometric improvements, delays at the intersection would substantially decrease.

**Table 10: Intersection Level of Service – 2026 Baseline plus Project Conditions**

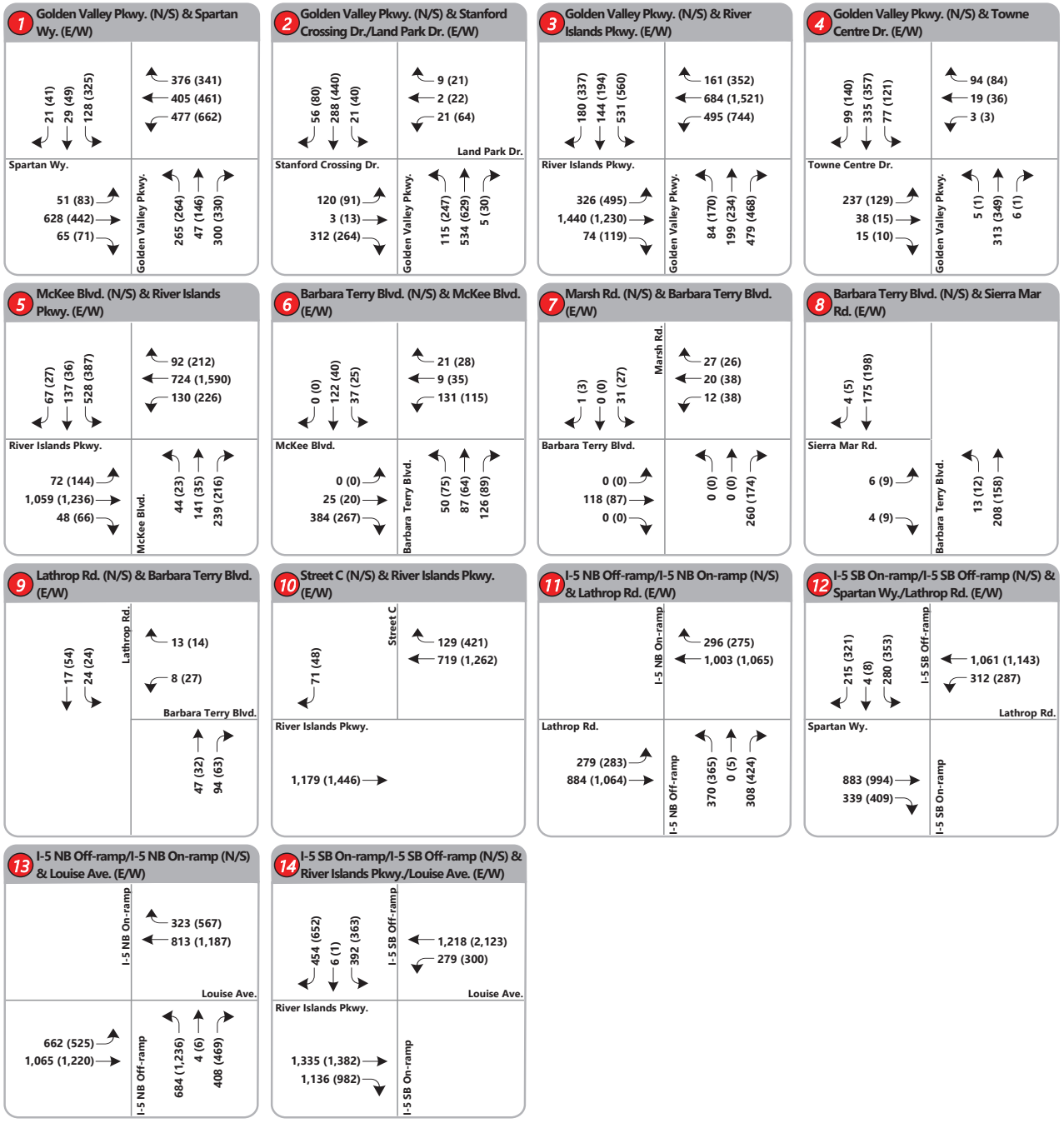
| No. | Intersection | Intersection Control[1] | Peak Hour[2] | Baseline | | Baseline + Project | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Average Delay[3] | LOS[4] | Average Delay[3] | LOS[4] | Change in Delay[5] |
| 1 | Golden Valley Parkway (N/S) & Spartan Way (E/W) (Mitigation: Adjust signal timings.) | Signal | a.m. | 52.7 | D | **58.6** | **E** | *+5.9* |
| | | | p.m. | **121.1** | **F** | **136.0** | **F** | *+14.9* |
| | | | *a.m.* | | | *40.4* | *D* | *-12.3* |
| | | | *p.m.* | | | ***62.5*** | ***E*** | *-58.6* |
| 2 | Golden Valley Parkway (N/S) & Stanford Crossing Drive (E/W) | Signal | a.m. | 29.8 | C | 30.7 | C | *+0.9* |
| | | | p.m. | 42.4 | D | 44.5 | D | *+2.1* |
| 3 | Golden Valley Parkway (N/S) & River Islands Parkway (E/W) | Signal | a.m. | **100.9** | **F** | **98.3** | **F** | *-2.6* |
| | | | p.m. | **126.6** | **F** | **121.8** | **F** | *-4.8* |
| 4 | Golden Valley Parkway (N/S) & Towne Center Drive (E/W) | Signal | a.m. | 19.7 | B | 19.7 | B | *0.0* |
| | | | p.m. | 18.7 | B | 18.7 | B | *0.0* |
| 5 | River Islands Parkway (N/S) & McKee Boulevard (E/W) *(Mitigation: Adjust signal timings; have the WBR operate under permitted + overlap phasing; Restripe SB from left, through, and right to 2 left turn and 1 right shared with through lane; provide a extra WB left turn lane: restripe NB from exclusive left, exclusive through and exclusive right to exclusive left, right shared with through, and exclusive right turn lane.)* | Signal | a.m. | 49.1 | D | **245.4** | **F** | *+196.3* |
| | | | p.m. | 48.8 | D | **132.6** | **F** | *+83.8* |
| | | | *a.m.* | | | *52.5* | *D* | *+3.4* |
| | | | *p.m.* | | | *53.4* | *D* | *+4.6* |
| 6 | Barbara Terry Boulevard (E/W) & McKee Boulevard (N/S) (Mitigation: Provide an extra EBR turn lane signal and lane drop at the north receiving leg.) | AWSC | a.m. | 13.8 | B | **62.6** | **F** | *+48.8* |
| | | | p.m. | 10.0 | A | 17.0 | C | *+7.0* |
| | | | *a.m.* | | | *17.3* | *D* | *+3.5* |
| | | | *p.m.* | | | *13.6* | *B* | *+3.6* |
| 7 | Barbara Terry Boulevard (E/W) & Marsh Road (N/S) | OWSC (Existing) / TWSC (Future) | a.m. | 9.2 | A | 16.2 | C | *+7.0* |
| | | | p.m. | 9.0 | A | 14.0 | B | *+5.0* |
| 8 | Barbara Terry Boulevard (N/S) & Sierra Mar Road (E/W) | OWSC | a.m. | 11.9 | B | 12.3 | B | *+0.4* |
| | | | p.m. | 11.6 | B | 12.2 | B | *+0.6* |
| 9 | Barbara Terry Boulevard (E/W) & Towne Centre Drive (N/S) | OWSC (Future) | a.m. | - | - | 9.1 | A | - |
| | | | p.m. | - | - | 9.4 | A | - |
| 10 | | OWSC (Future) | a.m. | - | - | 12.1 | B | - |

| No. | Intersection | Intersection Control[1] | Peak Hour[2] | Baseline | | Baseline + Project | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Average Delay[3] | LOS[4] | Average Delay[3] | LOS[4] | Change in Delay[5] |
| | River Islands Parkway (E/W) & Street C (N/S) | | p.m. | - | - | 18.8 | C | - |
| 11 | Spartan Way / Lathrop Road (E/W) & I-5 NB Ramps (N/S) (Mitigation: Provide an extra NB right turn off ramp lane.) | Signal | a.m. | **114.8** | **F** | **131.6** | **F** | *+16.8* |
| | | | p.m. | **120.6** | **F** | **132.0** | **F** | *+11.4* |
| | | | *a.m.* | | | ***74.1*** | ***E*** | *-40.7* |
| | | | *p.m.* | | | ***68.9*** | ***E*** | *-51.7* |
| 12 | Spartan Way / Lathrop Road (E/W) & I-5 SB Ramps (N/S) (Mitigation: Provide an extra SB left turn off ramp lane) | Signal | a.m. | **120.4** | **F** | **141.9** | **F** | *+21.5* |
| | | | p.m. | **172.1** | **F** | **198.9** | **F** | *+26.8* |
| | | | *a.m.* | | | ***120.8*** | ***F*** | *+0.4* |
| | | | *p.m.* | | | ***140.1*** | ***F*** | *-32.0* |
| 13 | River Islands Parkway / Louise Avenue (E/W) & I-5 NB Ramps (N/S) (Mitigation: Provide an extra NB left turn off ramp lane) | Signal | a.m. | **119.9** | **F** | **165.4** | **F** | *+45.5* |
| | | | p.m. | **143.1** | **F** | **193.7** | **F** | *+50.6* |
| | | | *a.m.* | | | ***96.8*** | ***F*** | *-23.1* |
| | | | *p.m.* | | | ***97.6*** | ***F*** | *-45.5* |
| 14 | River Islands Parkway / Louise Avenue (E/W) & I-5 SB Ramps (N/S) (Mitigation: Adjust signal timings; Provide SB exclusive left turn lane; make EBR as free) | Signal | a.m. | **161.4** | **F** | **250.1** | **F** | *+88.7* |
| | | | p.m. | **212.0** | **F** | **285.6** | **F** | *+73.6* |
| | | | *a.m.* | | | ***73.2*** | ***E*** | *-88.2* |
| | | | *p.m.* | | | ***202.4*** | ***F*** | *-9.6* |

Notes:

1. Signal = Signalized; OWSC = One-Way Stop Control; TWSC = Two-Way Stop Control; AWSC = All-Way Stop Control
2. a.m. = a.m. peak hour; p.m. = p.m. peak hour
3. Delay measured in seconds per vehicle. For signalized and all-way stop controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.
4. LOS = Level of Service; "-"= no data; not included in scenario

## Figure 10: 2026 Baseline Conditions plus Project - Intersection Peak Hour Traffic Volumes




LEGEND

XX AM Peak Hour Volumes

(XX) PM Peak Hour Volumes

# 7.0 2040 CUMULATIVE CONDITIONS

This section presents the results of the level of service calculations under Cumulative Conditions without the project. Level of service analyses at the study intersections were conducted for Cumulative Conditions to evaluate the impacts due to the addition of traffic from the proposed projects and additional regional growth.

## 7.1 Intersection Level of Service Analysis – Cumulative Conditions

The 2040 Cumulative volumes for the study intersections are based on the 2026 traffic volumes from the 2022 Traffic Monitoring Program for The City of Lathrop (TMP) and were grown to 2040 conditions by assuming a 2.0 percent per year growth rate to account for increases in traffic demand. The peak hour factor was assumed to be 1.0 for the cumulative conditions. The growth in intersection peak hour traffic volumes due to regional growth around the proposed project is shown in **Figure 11**.

**Figure 12** displays projected peak hour turning movement volumes at all of the study intersections for the Cumulative Conditions scenario. Excerpts from the TMP are provided in **Appendix B**.

The intersection LOS analysis results for Cumulative Conditions are summarized in **Table 11**. Intersections that operated at LOS E or F are shown in red. Detailed calculation sheets for Cumulative Conditions are contained in **Appendix H**.

Under this scenario, five of the 12 study intersections are expected to continue to operate at an acceptable service levels (LOS D or better) during the a.m. and p.m. peak hours.

The following intersections are projected to operate at unacceptable level of service:

- Golden Valley Parkway and Spartan Way (Intersection 1) operates at LOS E during the a.m. peak hour and LOS F during the p.m. peak hour.
- Golden Valley Parkway and River Islands Parkway (Intersection 3) operates at LOS F during both peak hours.
- Golden Valley Parkway and McKee Boulevard (Intersection 5) operates at LOS E during the p.m. peak hour.
- Spartan Way / Lathrop Road and the I-5 ramps (Intersections 11 & 12) operate at LOS F during both peak hours.
- River Island Parkway / Louise Avenue and the I-5 ramps (Intersections 13 & 14) operate at LOS F during both peak hours.

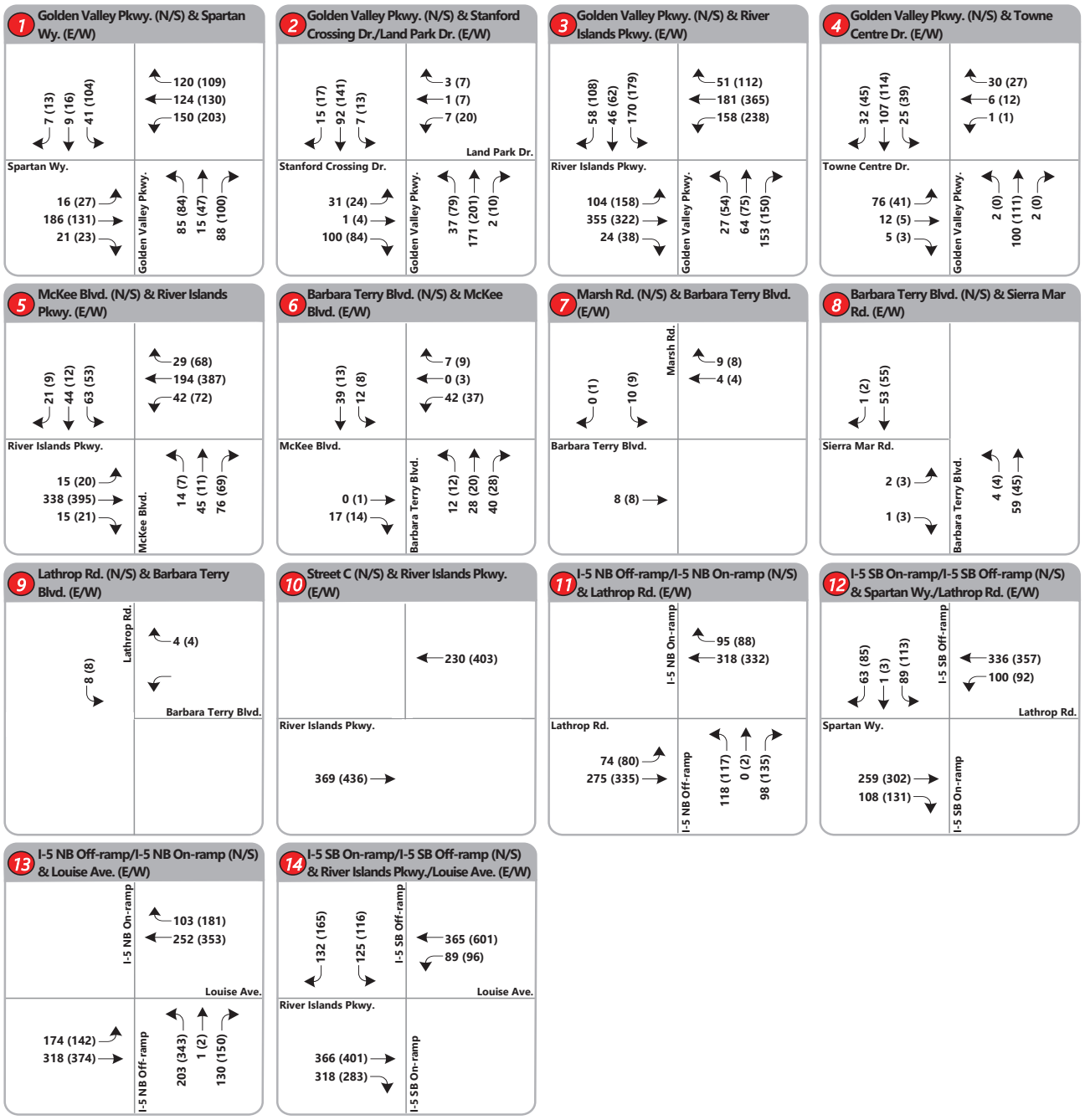
**Table 11: Intersection Level of Service – 2040 Cumulative Conditions**

| *No.* | *Intersection* | *Intersection Control[1]* | *Peak Hour[2]* | *Average Delay[3]* | *LOS[4]* |
|---|---|---|---|---|---|
| 1 | Golden Valley Parkway (N/S) & Spartan Way (E/W) | Signal | a.m. | **70.8** | **E** |
| | | | p.m. | **176.8** | **F** |
| 2 | Golden Valley Parkway (N/S) & Stanford Crossing Drive (E/W) | Signal | a.m. | 23.2 | C |
| | | | p.m. | 31 | C |
| 3 | Golden Valley Parkway (N/S) & River Islands Parkway (E/W) | Signal | a.m. | **116.7** | **F** |
| | | | p.m. | **153.2** | **F** |
| 4 | Golden Valley Parkway (N/S) & Towne Center Drive (E/W) | Signal | a.m. | 20.2 | C |
| | | | p.m. | 17.5 | B |
| 5 | River Islands Parkway (N/S) & McKee Boulevard (E/W) | Signal | a.m. | 47.5 | D |
| | | | p.m. | **68.2** | **E** |
| 6 | Barbara Terry Boulevard (E/W) & McKee Boulevard (N/S) | AWSC | a.m. | 10.8 | B |
| | | | p.m. | 9.2 | A |
| 7 | Barbara Terry Boulevard (E/W) & Marsh Road (N/S) | OWSC | a.m. | 9 | A |
| | | | p.m. | 9 | A |
| 8 | Barbara Terry Boulevard (N/S) & Sierra Mar Road (E/W) | OWSC | a.m. | 11.1 | B |
| | | | p.m. | 10.6 | B |
| 9 | Barbara Terry Boulevard (E/W) & Towne Centre Drive (N/S) | Future Intersection | a.m. | - | - |
| | | | p.m. | - | - |
| 10 | River Islands Parkway (E/W) & Street C (N/S) | Future Intersection | a.m. | - | - |
| | | | p.m. | - | - |
| 11 | Spartan Way / Lathrop Road (E/W) & I-5 NB Ramps (N/S) | Signal | a.m. | **143.7** | **F** |
| | | | p.m. | **165.5** | **F** |
| 12 | Spartan Way / Lathrop Road (E/W) & I-5 SB Ramps (N/S) | Signal | a.m. | **128.9** | **F** |
| | | | p.m. | **213.1** | **F** |
| 13 | River Islands Parkway / Louise Avenue (E/W) & I-5 NB Ramps (N/S) | Signal | a.m. | **162.4** | **F** |
| | | | p.m. | **224.3** | **F** |
| 14 | River Islands Parkway / Louise Avenue (E/W) & I-5 SB Ramps (N/S) | Signal | a.m. | **305.7** | **F** |
| | | | p.m. | **319.1** | **F** |

Notes:

1. Signal = Signalized; OWSC = One-Way Stop Control; TWSC = Two-Way Stop Control; AWSC = All-Way Stop Control
2. a.m. = a.m. peak hour; p.m. = p.m. peak hour
3. Delay measured in seconds per vehicle. For signalized and all-way stop controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.
4. LOS = Level of Service; "-"= no data; not included in scenario

## Figure 11: Inherent Regional Growth Volumes (2026 to 2040)

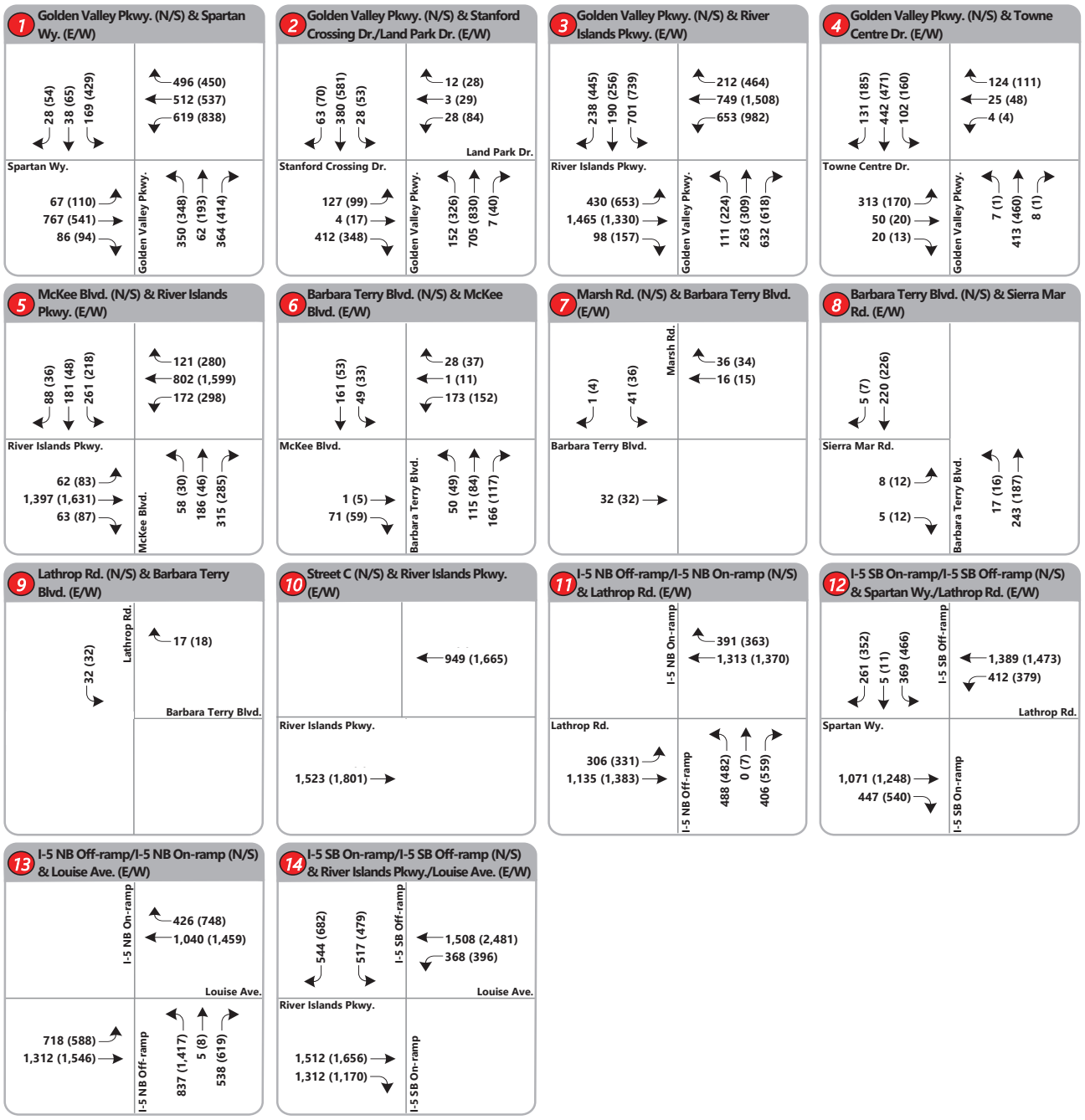



LEGEND

XX AM Peak Hour Volumes

(XX) PM Peak Hour Volumes

## Figure 12: 2040 Cumulative Conditions - Intersection Peak Hour Traffic Volumes




LEGEND

XX AM Peak Hour Volumes

(XX) PM Peak Hour Volumes

# 8.0 2040 CUMULATIVE CONDITIONS PLUS PROJECT

This section describes the operational impacts of the proposed project on the transportation system in the immediate project site vicinity. Cumulative Conditions plus Project consist of cumulative traffic volumes and roadway facilities plus new traffic generated by the proposed project.

## 8.1 Intersection Level of Service Analysis – Cumulative Conditions plus Project

The intersection level of service analysis results for the Cumulative Conditions plus Project scenario are summarized in **Table 12**. The peak hour factor was assumed to be 1.0 for the cumulative conditions. The results for Cumulative Conditions are included for comparison purposes. Detailed calculation sheets for Cumulative Conditions plus Project scenario are contained in **Appendix I**.

**Figure 13** displays projected peak hour turning movement volumes at all of the study intersections for Cumulative Conditions plus Project scenario.

Under this scenario, seven of the 14 study intersections are expected to continue to operate at an acceptable service levels (LOS D or better) during the a.m. and p.m. peak hours. Golden Valley Parkway and River Islands (Intersection 3) continues to operate at LOS F during both peak hours and would experience decrease in delay of 2.7 seconds per vehicle and 4.1 seconds per vehicle during the a.m. and p.m. peak hours, respectively. However, the intersection operates at unacceptable LOS, but delay is within 5.0 seconds as compared to Cumulative Conditions

The following six intersections would require mitigations in order to account for additional demand due to the proposed development:

- Golden Valley Parkway and Spartan Way (Intersection 1) would continue to operate at LOS E during the a.m. peak hour and at LOS F during the p.m. peak hour. Delays would increase by 1.3 seconds per vehicle during the a.m. peak hour and by 7.3 seconds per vehicle during the p.m. peak hour.
    - It is recommended that the signal timings of the intersection be changed slightly[1]. With these changes, the signal is anticipated to operate with substantially less delay during both peak hours as compared to Cumulative Conditions.
- River Islands Parkway and McKee Boulevard (Intersection 5) degrades from LOS D to LOS F during the a.m. peak hour and degrades from LOS E to LOS F during the p.m. peak hour, and would experience an increase in delay of 69.5 seconds per vehicle during a.m. peak hour and 93.3 seconds per vehicle during the p.m. peak hours.
    - It is recommended that the signal timings of the intersection be changed slightly[1] and that the westbound right-turning movements operate with a permissive overlap phase to better accommodate right turns. The southbound approach should be restriped from one left turn pocket lane, one through lane, and one right turn pocket lane to two left turn pocket lanes and one right turn lane shared with the through lane. Provide an additional westbound left turn pocket lane to better accommodate left turns. The northbound approach should be

restriped from one left turn pocket lane, one through lane, and one right turn lane to one left turn lane, one right turn lane shared with the through lane, and one right turn lane. With these changes, the intersection would operate better than Cumulative Conditions.

- Spartan Way / Lathrop Road at I-5 NB Ramps (Intersection 11) continues to operate at LOS F during both peak hours and would experience an increase in delay of 12.3 seconds per vehicle during a.m. peak hour and 8.9 seconds per vehicle during the p.m. peak hours.
    - It is recommended to provide an additional northbound right turning off ramp lane. With these changes, the intersection would operate with less vehicular delay than under Cumulative Conditions.
- Spartan Way / Lathrop Road at I-5 SB Ramps (Intersection 12) continues to operate at LOS F during the a.m. and p.m. peak hours. The intersection would experience an increase in delay of 21.0 seconds per vehicle during the a.m. peak hour and 16.5 seconds per vehicle during the p.m. peak hour.
    - It is recommended to provide an additional southbound left turn off ramp lane. With these changes, the intersection would operate with less vehicular delay than under Cumulative Conditions.
- River Islands Parkway / Louise Avenue at I-5 NB Ramps (Intersection 13) continues to operate at LOS F during the both peak hours and would experience an increase in delay of 44.6 seconds per vehicle during the a.m. peak hour and 53.5 seconds per vehicle during the p.m. peak hour.
    - It is recommended to provide an additional northbound left turn off ramp lane. With these changes, the intersection would operate with less delay during the a.m. and p.m. peak hours as compared to Cumulative Conditions.
    - However, it should be noted that the intersection would still operate with extreme delay (>100 seconds) during both the peak hours.
    - In order to improve operations, physical modifications to the interchange ramp would be necessary. The City is currently assessing potential improvements to the interchange ramps. It is expected that with geometric improvements, delays at the intersection would substantially decrease.
- River Island Parkway / Louise Avenue at I-5 SB Ramps (Intersection 14) continues to operate at LOS F during both peak hours and would experience an increase in delay of 85.7 seconds per vehicle during the a.m. peak hour and 68.7 seconds per vehicle during the p.m. peak hour.
    - It is recommended that the signal timings of the intersection be changed slightly[1]. In the southbound direction, provide an additional left turn off ramp lane and have westbound right turn phase to operate as free. With these changes, the intersection would operate with less delay during the a.m. and p.m. peak hours as compared to Cumulative Conditions.

- However, it should be noted that the intersection would still operate with extreme delay (>80 seconds) during the peak hours.
- To improve operations, physical modifications to the interchange ramp would be necessary. The City is currently assessing potential improvements to the interchange ramps. It is expected that with geometric improvements, delays at the intersection would substantially decrease.

**Table 12: Intersection Level of Service – 2040 Cumulative Conditions plus Project**

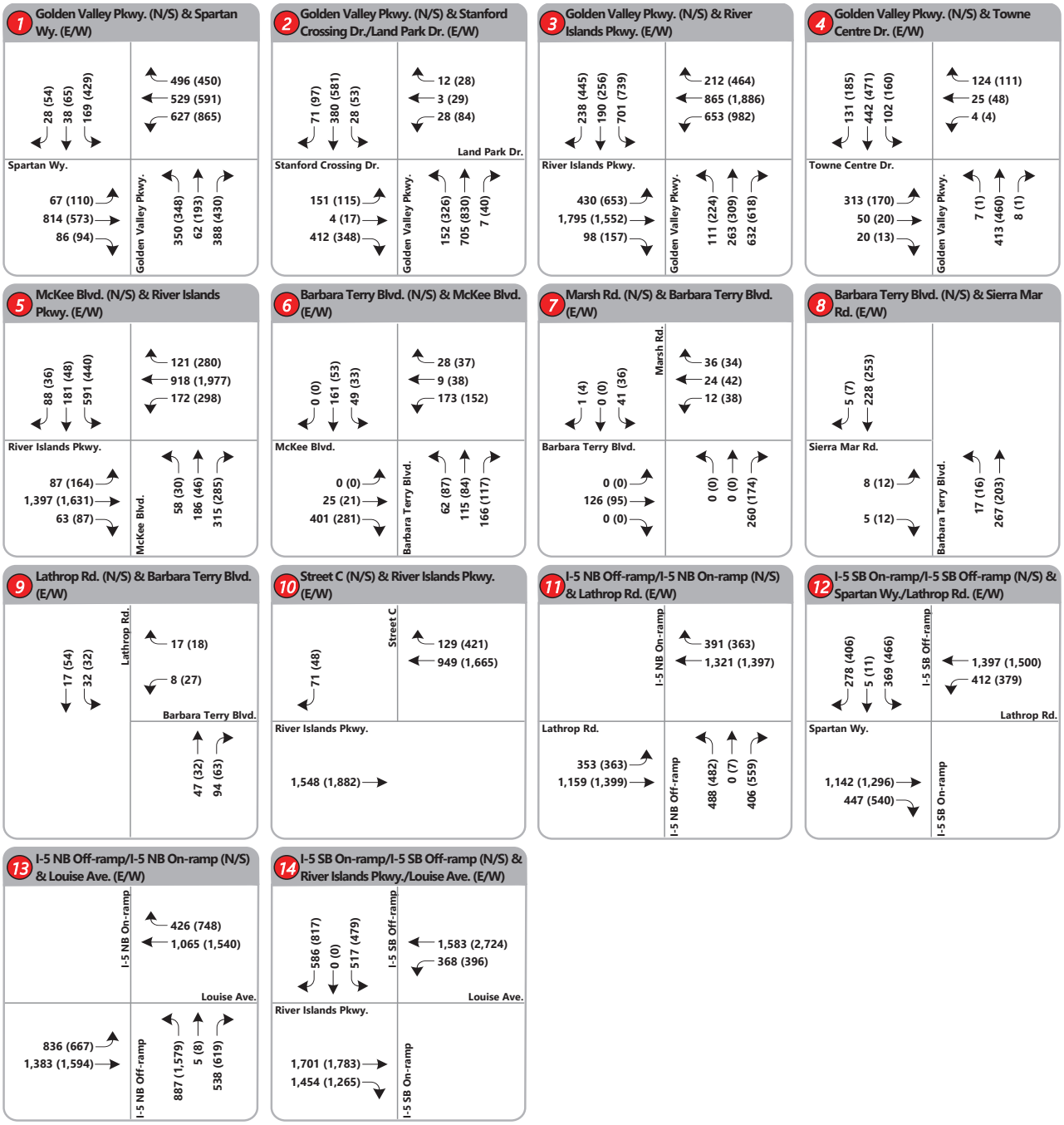
| No. | Intersection | Intersection Control[1] | Peak Hour[2] | Cumulative | | Cumulative + Project | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Average Delay[3] | LOS[4] | Average Delay[3] | LOS[4] | Change in Delay[5] |
| 1 | Golden Valley Parkway (N/S) & Spartan Way (E/W) *(Mitigation: Adjust signal timings.)* | Signal | a.m. | 70.8 | E | 72.1 | E | +1.3 |
| | | | p.m. | 176.8 | F | 184.1 | F | +7.3 |
| | | | *a.m.* | | | *39.4* | *D* | *-31.4* |
| | | | *p.m.* | | | ***96.8*** | ***F*** | *-80.0* |
| 2 | Golden Valley Parkway (N/S) & Stanford Crossing Drive (E/W) | Signal | a.m. | 23.2 | C | 23.5 | C | *+0.3* |
| | | | p.m. | 31.0 | C | 31.6 | C | *+0.6* |
| 3 | Golden Valley Parkway (N/S) & River Islands Parkway (E/W) | Signal | a.m. | 116.7 | F | 114.0 | F | *-2.7* |
| | | | p.m. | 153.2 | F | 149.1 | F | *-4.1* |
| 4 | Golden Valley Parkway (N/S) & Towne Center Drive (E/W) | Signal | a.m. | 20.2 | C | 20.2 | C | *0.0* |
| | | | p.m. | 17.5 | B | 17.5 | B | *0.0* |
| 5 | River Islands Parkway (N/S) & McKee Boulevard (E/W) *(Mitigation: Adjust signal timings; have the WBR operate under permitted + overlap phasing; Restripe SB from left, through, and right to 2 left turn and 1 right shared with through lane; provide a extra WB left turn lane: restripe NB from exclusive left, exclusive through and exclusive right to exclusive left, right shared with through, and exclusive right turn lane.)* | Signal | a.m. | 47.5 | D | 117.0 | F | *+69.5* |
| | | | p.m. | 68.2 | E | 161.5 | F | *+93.3* |
| | | | *a.m.* | | | *41.1* | *D* | *-6.4* |
| | | | *p.m.* | | | ***62.4*** | ***E*** | *-5.8* |
| 6 | Barbara Terry Boulevard (E/W) & McKee Boulevard (N/S) | AWSC | a.m. | 10.8 | B | 16.8 | C | *+6.0* |
| | | | p.m. | 9.2 | A | 11.3 | B | *+2.1* |
| 7 | Barbara Terry Boulevard (E/W) & Marsh Road (N/S) | OWSC (Existing) / TWSC (Future) | a.m. | 9.0 | A | 13.7 | B | *+4.7* |
| | | | p.m. | 9.0 | A | 12.3 | B | *+3.3* |
| 8 | Barbara Terry Boulevard (N/S) & Sierra Mar Road (E/W) | OWSC | a.m. | 11.1 | B | 11.3 | B | *+0.2* |
| | | | p.m. | 10.6 | B | 10.9 | B | *+0.3* |
| 9 | Barbara Terry Boulevard (E/W) & Towne Centre Drive (N/S) | OWSC (Future) | a.m. | - | - | 9.1 | A | - |
| | | | p.m. | - | - | 9.4 | A | - |

| No. | Intersection | Intersection Control[1] | Peak Hour[2] | Cumulative | | Cumulative + Project | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Average Delay[3] | LOS[4] | Average Delay[3] | LOS[4] | Change in Delay[5] |
| 10 | River Islands Parkway (E/W) & Street C (N/S) | OWSC (Future) | a.m. | - | - | 13.7 | B | - |
| | | | p.m. | - | - | 25.2 | D | - |
| 11 | Spartan Way / Lathrop Road (E/W) & I-5 NB Ramps (N/S) (Mitigation: Provide an extra NB right turn off ramp lane.) | Signal | a.m. | 143.7 | F | 156.0 | F | +12.3 |
| | | | p.m. | 165.5 | F | 174.4 | F | +8.9 |
| | | | a.m. | | | 72.9 | E | -70.8 |
| | | | p.m. | | | 85.2 | F | -80.3 |
| 12 | Spartan Way / Lathrop Road (E/W) & I-5 SB Ramps (N/S) (Mitigation: Provide an extra SB left turn off ramp lane) | Signal | a.m. | 128.9 | F | 149.9 | F | +21.0 |
| | | | p.m. | 213.1 | F | 229.6 | F | +16.5 |
| | | | a.m. | | | 52.1 | D | -76.8 |
| | | | p.m. | | | 102.1 | F | -111.0 |
| 13 | River Islands Parkway / Louise Avenue (E/W) & I-5 NB Ramps (N/S) (Mitigation: Provide an extra NB left turn off ramp lane) | Signal | a.m. | 162.4 | F | 207.0 | F | +44.6 |
| | | | p.m. | 224.3 | F | 277.8 | F | +53.5 |
| | | | a.m. | | | 155.5 | F | -6.9 |
| | | | p.m. | | | 156.2 | F | -68.1 |
| 14 | River Islands Parkway / Louise Avenue (E/W) & I-5 SB Ramps (N/S) (Mitigation: Adjust signal timings; Provide SB exclusive left turn lane; make EBR as free) | Signal | a.m. | 305.7 | F | 391.4 | F | +85.7 |
| | | | p.m. | 319.1 | F | 387.8 | F | +68.7 |
| | | | a.m. | | | 85.0 | F | -220.7 |
| | | | p.m. | | | 315.6 | F | -3.5 |

Notes:

1. Signal = Signalized; OWSC = One-Way Stop Control; TWSC = Two-Way Stop Control; AWSC = All-Way Stop Control
2. a.m. = a.m. peak hour; p.m. = p.m. peak hour
3. Delay measured in seconds per vehicle. For signalized and all-way stop controlled intersections, the delay represents the average control delay for all turning movements. For one- and two-way stop controlled intersections, the delay represents the worse average control delay for a given approach.
4. LOS = Level of Service; "-"= no data; not included in scenario

## Figure 13: 2040 Cumulative Conditions plus Project - Intersection Peak Hour Traffic Volumes




LEGEND

XX AM Peak Hour Volumes

(XX) PM Peak Hour Volumes

## 8.2 Fair Share Analysis

A fair share analysis was conducted for the interchange. "Fair Share" is defined as the percent contribution of project traffic to the growth from Existing Conditions to Cumulative plus Project Conditions. **Table 13** shows the fair share for a.m. and p.m. peak hour volumes at the two study intersections. The average fair share for the commuter peak hours is approximately 8.06 percent.

The City of Lathrop is in the process of planning improvements to the River Islands Parkway/I-5 interchange (Intersections 13 & 14).

TJKM suggests that the Mossdale West project be expected to fund its fair share of the project costs by payment of local and regional development fees, consistent with the City of Lathrop's General Plan policies and the City's efforts to achieve an acceptable level of service.

**Table 13: Fair Share Analysis**

| No. | Intersection | Peak Hour | Existing Volume | Project Trips | Cumulative + Project Trips | Cumulative Growth | Fair Share Percent |
|---|---|---|---|---|---|---|---|
| | | | A | B | C | D = C-A | E = B/D |
| 5 | River Islands Parkway (N/S) & McKee Boulevard (E/W) | AM | 1,669 | 116 | 4,177 | 2,508 | 4.63% |
| | | PM | 1,792 | 378 | 5,322 | 3,530 | 10.71% |
| | | **Total** | **3,461** | **494** | **9,499** | **6,038** | **8.18%** |
| 11 | Spartan Way / Lathrop Road (E/W) & I-5 NB Ramps (N/S) | AM | 2,099 | 79 | 4,118 | 2,019 | 3.91% |
| | | PM | 2,327 | 75 | 4,570 | 2,243 | 3.34% |
| | | **Total** | **4,426** | **154** | **8,688** | **4,262** | **3.61%** |
| 12 | Spartan Way / Lathrop Road (E/W) & I-5 SB Ramps (N/S) | AM | 1,789 | 96 | 4,050 | 2,261 | 4.25% |
| | | PM | 1,861 | 129 | 4,598 | 2,737 | 4.71% |
| | | **Total** | **3,650** | **225** | **8,648** | **4,998** | **4.50%** |
| 13 | River Island Pkwy (E/W) at I-5 NB Ramps (N/S) | AM | 2,102 | 264 | 5,140 | 3,038 | 8.69% |
| | | PM | 2,693 | 370 | 6,755 | 4,062 | 9.11% |
| | | **Total** | **4,795** | **634** | **11,895** | **7,100** | **8.93%** |
| 14 | River Island Pkwy (E/W) at I-5 SB Ramps (N/S) | AM | 2,080 | 448 | 6,209 | 4,129 | 10.85% |
| | | PM | 2,297 | 600 | 7,464 | 5,167 | 11.61% |
| | | **Total** | **4,377** | **1,048** | **13,673** | **9,296** | **11.27%** |
| | | **Total** | **20,709** | **2,555** | **52,403** | **31,694** | **8.06%** |

# 9.0 ADDITIONAL ANALYSES

The following sections provide additional analyses of other transportation issues associated with the project site, including:

- Site Access & Onsite Circulation
- Parking
- Pedestrian, Bicycle, and Transit Impacts

## 9.1 Site Access & On-Site Circulation

The project would be accessed by one intersection on River Island Parkway and two intersections on Barbara Terry Boulevard. All driveways will be full access. Any proposed landscaping should be maintained to provide adequate sight distance. The proposed driveway locations, designs, and sight distances are expected to all be ***adequate***. The site plan shows all proposed pedestrian facilities on the project frontage and connectivity from River Island Parkway.

## 9.2 Parking

Based on City of Lathrop parking requirements (Section 17 of the City's Municipal Code), one-family dwelling units shall have garages that can accommodate two spaces (Section 17.76.020.C.1.a). Additionally, at least one on-street parking shall be provided for each single-family resident within any residential zoning district (Section 17.76.030.I). The site is anticipated to conform to City standards. Thus, site parking is expected to be ***adequate***.

## 9.3 Pedestrian, Bicycle, and Transit Impacts

***Pedestrian Impacts***

Pedestrian access to the project site is facilitated by concrete sidewalks and marked crosswalks along River Island Parkway and Barbara Terry Boulevard. Based on current plans all street internal to the site will contain five-foot sidewalks or 15-foot trail (Street A). The proposed development project does not conflict with existing and planned pedestrian facilities; therefore, the impact to pedestrian facilities is ***less-than-significant***.

***Bicycle Impacts***

There is an existing Type II bicycle facility on River Island Parkway near the project vicinity. The project does not conflict with existing and planned bicycle facilities; therefore, the impact to bicycle facilities is ***less-than-significant***.

***Transit Impacts***

The project site is within a 1.5 mile of two San Joaquin RTD bus stops, located on the northwest corner of E Louis Avenue/Harlan Road Intersection. Impacts to transit service are expected to be ***less-than-significant.***

# Appendix A – Level of Service Methodology

# APPENDIX A
# LEVEL OF SERVICE

The description and procedures for calculating capacity and level of service (LOS) are found in Transportation Research Board, *Highway Capacity Manual 2000*. *Highway Capacity Manual 2000* represents the latest research on capacity and quality of service for transportation facilities.

Quality of service requires quantitative measures to characterize operational conditions within a traffic stream. LOS is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.

Six levels of service are defined for each type of facility that has analysis procedures available. Letters designate each level, from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each LOS represents a range of operating conditions and the driver's perception of these conditions. Safety is not included in the measures that establish service levels.

A general description of service levels for various types of facilities is shown in Table A-I

**Table A-I: Level of Service Description**

| Facility Type | ***Uninterrupted Flow*** | ***Interrupted Flow*** |
|---|---|---|
| | Freeways<br>Multi-lane Highways<br>Two-lane Highways<br>Urban Streets | Signalized Intersections<br>Unsignalized Intersections<br>Two-way Stop Control<br>All-way Stop Control |
| **LOS** | | |
| A | Free-flow | Very low delay. |
| B | Stable flow. Presence of other users noticeable. | Low delay. |
| C | Stable flow. Comfort and convenience starts to decline. | Acceptable delay. |
| D | High-density stable flow. | Tolerable delay. |
| E | Unstable flow. | Limit of acceptable delay. |
| F | Forced or breakdown flow. | Unacceptable delay |

**Source:** *Highway Capacity Manual 2000*

### Urban Streets

The term "urban streets" refers to urban arterials and collectors, including those in downtown areas.

Arterial streets are roads that primarily serve longer through trips. However, providing access to abutting commercial and residential land uses is also an important function of arterials.
Collector streets provide both land access and traffic circulation within residential, commercial and industrial areas. Their access function is more important than that of arterials, and unlike arterials their operation is not always dominated by traffic signals.

Downtown streets are signalized facilities that often resemble arterials. They not only move through traffic but also provide access to local businesses for passenger cars, transit buses, and trucks.

Pedestrian conflicts and lane obstructions created by stopping or standing buses, trucks and parking vehicles that cause turbulence in the traffic flow are typical of downtown streets.

The speed of vehicles on urban streets is influenced by three main factors, street environment, interaction among vehicles and traffic control. As a result, these factors also affect quality of service.

The street environment includes the geometric characteristics of the facility, the character of roadside activity and adjacent land uses. Thus, the environment reflects the number and width of lanes, type of median, driveway density, spacing between signalized intersections, existence of parking, level of pedestrian activity and speed limit.

The interaction among vehicles is determined by traffic density, the proportion of trucks and buses, and turning movements. This interaction affects the operation of vehicles at intersections and, to a lesser extent, between signals.

Traffic control (including signals and signs) forces a portion of all vehicles to slow or stop. The delays and speed changes caused by traffic control devices reduce vehicle speeds, however, such controls are needed to establish right-of-way.

The average travel speed for through vehicles along an urban street is the determinant of the operating LOS. The travel speed along a segment, section or entire length of an urban street is dependent on the running speed between signalized intersections and the amount of control delay incurred at signalized intersections.

LOS A describes primarily free-flow operations. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at signalized intersections is minimal.

LOS B describes reasonably unimpeded operations. The ability to maneuver within the traffic stream is only slightly restricted, and control delays at signalized intersections are not significant.

LOS C describes stable operations, however, ability to maneuver and change lanes in midblock location may be more restricted than at LOS B. Longer queues, adverse signal coordination, or both may contribute to lower travel speeds.

LOS D borders on a range in which in which small increases in flow may cause substantial increases in delay and decreases in travel speed. LOS D may be due to adverse signal progression, inappropriate signal timing, high volumes, or a combination of these factors.

LOS E is characterized by significant delays and lower travel speeds. Such operations are caused by a combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.

LOS F is characterized by urban street flow at extremely low speeds. Intersection congestion is likely at critical signalized locations, with high delays, high volumes, and extensive queuing.

The methodology to determine LOS stratifies urban streets into four classifications. The classifications are complex, and are related to functional and design categories. Table A-II describes the functional and design categories, while Table A-III relates these to the urban street classification.

Once classified, the urban street is divided into segments for analysis. An urban street segment is a one-way section of street encompassing a series of blocks or links terminating at a signalized intersection. Adjacent segments of urban streets may be combined to form larger street sections, provided that the segments have similar demand flows and characteristics.

Levels of service are related to the average travel speed of vehicles along the urban street segment or section.

Travel times for existing conditions are obtained by field measurements. The maximum-car technique is used. The vehicle is driven at the posted speed limit unless impeded by actual traffic conditions. In the maximum-car technique, a safe level of vehicular operation is maintained by observing proper following distances and by changing speeds at reasonable rates of acceleration and deceleration. The maximum-car technique provides the best base for measuring traffic performance.

An observer records the travel time and locations and duration of delay. The beginning and ending points are the centers of intersections. Delays include times waiting in queues at signalized intersections. The travel speed is determined by dividing the length of the segment by the travel time. Once the travel speed on the arterial is determined, the LOS is found by comparing the speed to the criteria in Table A-IV. LOS criteria vary for the different classifications of urban street, reflecting differences in driver expectations.

**Table A-II: Functional and Design Categories for Urban Streets**

| ***Criterion*** | ***Functional Category*** | | | |
|---|---|---|---|---|
| | ***Principal Arterial*** | | ***Minor Arterial*** | |
| Mobility function | Very important | | Important | |
| Access function | Very minor | | Substantial | |
| Points connected | Freeways, important activity centers, major traffic generators | | Principal arterials | |
| Predominant trips served | Relatively long trips between major points and through trips entering, leaving, and passing through city | | Trips of moderate length within relatively small geographical areas | |
| ***Criterion*** | ***Design Category*** | | | |
| | ***High-Speed*** | ***Suburban*** | ***Intermediate*** | ***Urban*** |
| Driveway access density | Very low density | Low density | Moderate density | High density |
| Arterial type | Multilane divided; undivided or two-lane with shoulders | Multilane divided: undivided or two-lane with shoulders | Multilane divided or undivided; one way, two lane | Undivided one way; two way, two or more lanes |
| Parking | No | No | Some | Usually |
| Separate left-turn lanes | Yes | Yes | Usually | Some |
| Signals per mile | 0.5 to 2 | 1 to 5 | 4 to 10 | 6 to 12 |
| Speed limits | 45 to 55 mph | 40 to 45 mph | 30 to 40 mph | 25 to 35 mph |
| Pedestrian activity | Very little | Little | Some | Usually |
| Roadside development | Low density | Low to medium density | Medium to moderate density | High density |

**Source:** *Highway Capacity Manual 2000*

**Table A-III: Urban Street Class based on Function and Design Categories**

| *Design Category* | *Functional Category* | |
|---|---|---|
| | ***Principal Arterial*** | ***Minor Arterial*** |
| High-Speed | I | Not applicable |
| Suburban | II | II |
| Intermediate | II | III or IV |
| Urban | III or IV | IV |

**Source**: *Highway Capacity Manual 2000*

**Table A-IV: Urban Street Levels of Service by Class**

| ***Urban Street Class*** | ***I*** | ***II*** | ***III*** | ***IV*** |
|---|---|---|---|---|
| Range of Free Flow Speeds (mph) | 45 to 55 | 35 to 45 | 30 to 35 | 25 to 35 |
| Typical Free Flow Speed (mph) | 50 | 40 | 33 | 30 |
| ***LOS*** | ***Average Travel Speed (mph)*** | | | |
| A | >42 | >35 | >30 | >25 |
| B | >34 | >28 | >24 | >19 |
| C | >27 | >22 | >18 | >13 |
| D | >21 | >17 | >14 | >9 |
| E | >16 | >13 | >10 | >7 |
| F | ≤16 | ≤13 | ≤10 | ≤7 |

**Source**: *Highway Capacity Manual 2000*

### Interrupted Flow

One of the more important elements limiting, and often interrupting the flow of traffic on a highway is the intersection. Flow on an interrupted facility is usually dominated by points of fixed operation such as traffic signals, stop and yield signs. These all operate quite differently and have differing impacts on overall flow.

### Signalized Intersections

The capacity of a highway is related primarily to the geometric characteristics of the facility, as well as to the composition of the traffic stream on the facility. Geometrics are a fixed, or non-varying, characteristic of a facility.

At the signalized intersection, an additional element is introduced into the concept of capacity: time allocation. A traffic signal essentially allocates time among conflicting traffic movements seeking use of the same physical space. The way in which time is allocated has a significant impact on the operation of the intersection and on the capacity of the intersection and its approaches.

LOS for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, 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, *i. e.,* in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Specifically, LOS criteria for traffic signals are stated in terms of average control delay per vehicle, typically for a 15-minute analysis period. Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the ratio of green time to cycle length and the volume to capacity ratio for the lane group.

For each intersection analyzed the average control delay per vehicle per approach is determined for the peak hour. A weighted average of control delay per vehicle is then determined for the intersection. A LOS designation is given to the control delay to better describe the level of operation. A description of levels of service for signalized intersections can be found in Table A-V

**Table A-V: Description of Level of Service for Signalized Intersections**

| *LOS* | *Description* |
|---|---|
| A | Very low control delay, up to 10 seconds per vehicle. Progression is extremely favorable, and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values. |
| B | Control delay greater than 10 and up to 20 seconds per vehicle. There is good progression or short cycle lengths or both. More vehicles stop causing higher levels of delay. |
| C | Control delay greater than 20 and up to 35 seconds per vehicle. Higher delays are caused by fair progression or longer cycle lengths or both. Individual cycle failures may begin to appear. Cycle failure occurs when a given green phase doe not serve queued vehicles, and overflow occurs. The number of vehicles stopping is significant, though many still pass through the intersection without stopping. |
| D | Control delay greater than 35 and up to 55 seconds per vehicle. The influence of congestions becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volumes. Many vehicles stop, the proportion of vehicles not stopping declines. Individual cycle failures are noticeable. |
| E | Control delay greater than 55 and up to 80 seconds per vehicle. The limit of acceptable delay. High delays usually indicate poor progression, long cycle lengths, and high volumes. Individual cycle failures are frequent. |
| F | Control delay in excess of 80 seconds per vehicle. Unacceptable to most drivers. Oversaturation, arrival flow rates exceed the capacity of the intersection. Many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to higher delay. |

**Source**: *Highway Capacity Manual 2000*

The use of control delay, which may also be referred to as signal delay, was introduced in the 1997 update to the *Highway Capacity Manual*, and represents a departure from previous updates. In the third edition, published in 1985 and the 1994 update to the third edition, delay only included stopped delay. Thus, the LOS criteria listed in Table A-V differs from earlier criteria.

### Unsignalized Intersections

The current procedures on unsignalized intersections were first introduced in the 1997 update to the *Highway Capacity Manual* and represent a revision of the methodology published in the 1994 update to the 1985 *Highway Capacity Manual*. The revised procedures use control delay as a measure of effectiveness to determine LOS. Delay is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, 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, *i. e.,* in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Control delay is the increased time of travel for a vehicle approaching and passing through an unsignalized intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection.

**Two-Way Stop Controlled Intersections**

Two-way stop controlled intersections in which stop signs are used to assign the right-of-way, are the most prevalent type of intersection in the United States. At two-way stop-controlled intersections the stop-controlled approaches are referred as the minor street approaches and can be either public streets or private driveways. The approaches that are not controlled by stop signs are referred to as the major street approaches.

The capacity of movements subject to delay are determined using the "critical gap" method of capacity analysis. Expected average control delay based on movement volume and movement capacity is calculated. A LOS designation is given to the expected control delay for each minor movement. LOS is not defined for the intersection as a whole. Control delay is the increased time of travel for a vehicle approaching and passing through a stop-controlled intersection, compared with a free-flow vehicle if it were not required to slow or stop at the intersection. A description of levels of service for two-way stop-controlled intersections is found in Table A-VI.

**Table A-VI: Description of Level of Service for Two-Way Stop Controlled Intersections**

| ***LOS*** | ***Description*** |
|---|---|
| A | Very low control delay less than 10 seconds per vehicle for each movement subject to delay. |
| B | Low control delay greater than 10 and up to 15 seconds per vehicle for each movement subject to delay. |
| C | Acceptable control delay greater than 15 and up to 25 seconds per vehicle for each movement subject to delay. |
| D | Tolerable control delay greater than 25 and up to 35 seconds per vehicle for each movement subject to delay. |
| E | Limit of tolerable control delay greater than 35 and up to 50 seconds per vehicle for each movement subject to delay. |
| F | Unacceptable control delay in excess of 50 seconds per vehicle for each movement subject to delay. |

**Source:** *Highway Capacity Manual 2000*

# Appendix B – Traffic Monitoring Program Intersection Turning Movement Projections

# *CRANE TRANSPORTATION GROUP*

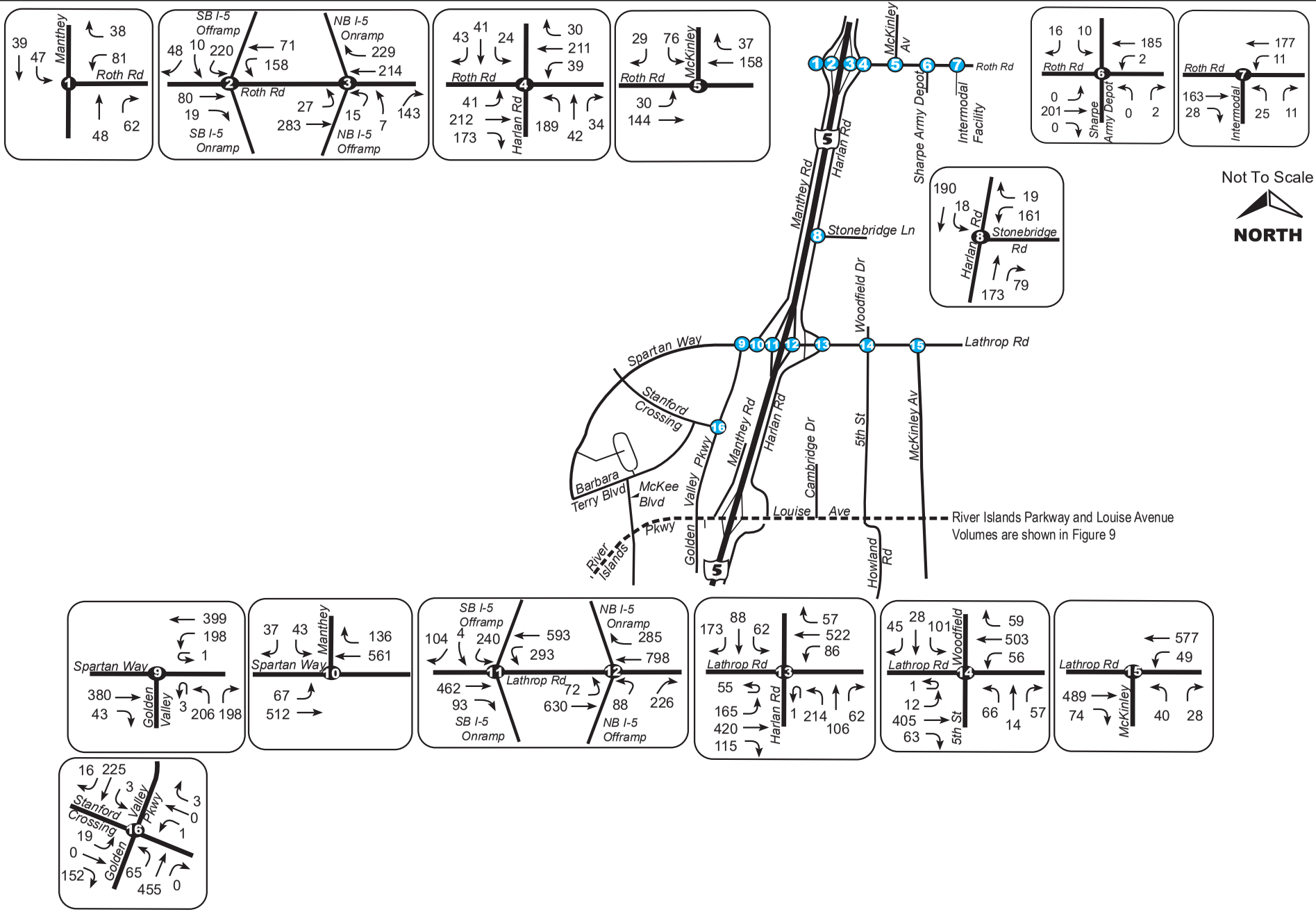
# 2022 TRAFFIC MONITORING PROGRAM FOR THE CITY OF LATHROP



**August 24, 2022**


**Prepared for:** **CITY OF LATHROP**
**PUBLIC WORKS DEPARTMENT**
**Attn: Brad Taylor, P.E., City Engineer**
**390 Towne Centre Drive**
**Lathrop, CA 95330**
**(209) 941-7438**
**Brad Taylor <btaylor@ci.lathrop.ca.us>**

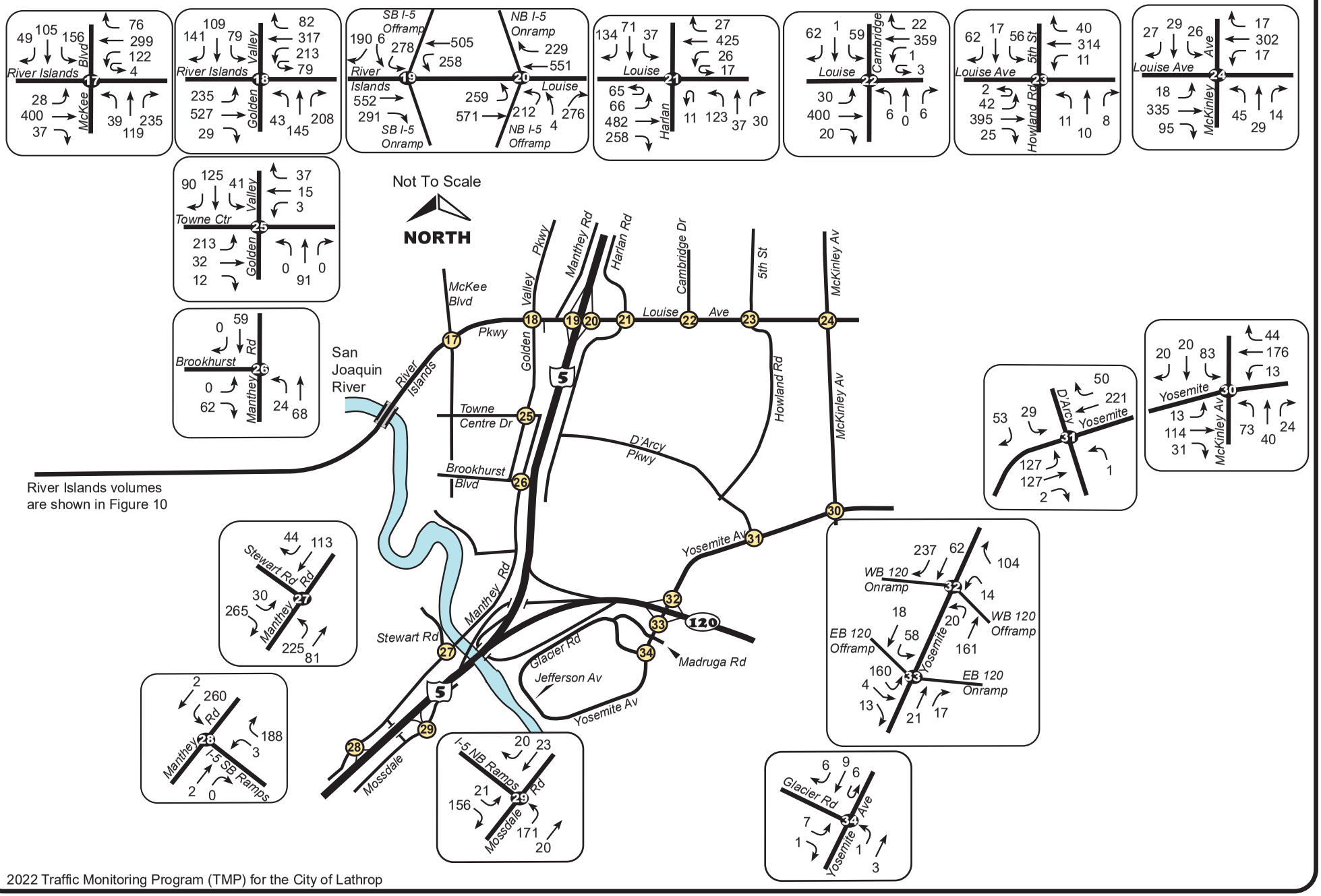
**Prepared by:** **CRANE TRANSPORTATION GROUP**
**Mark D. Crane, P.E., President**
**California Registered Traffic Engineer (#1381)**
**2621 East Windrim Court**
**Elk Grove, CA 95758**
**(916) 647-3406**
**Mark Crane <cranetransgroup@gmail.com>**




2022 Traffic Monitoring Program (TMP) for the City of Lathrop

CRANE TRANSPORTATION GROUP

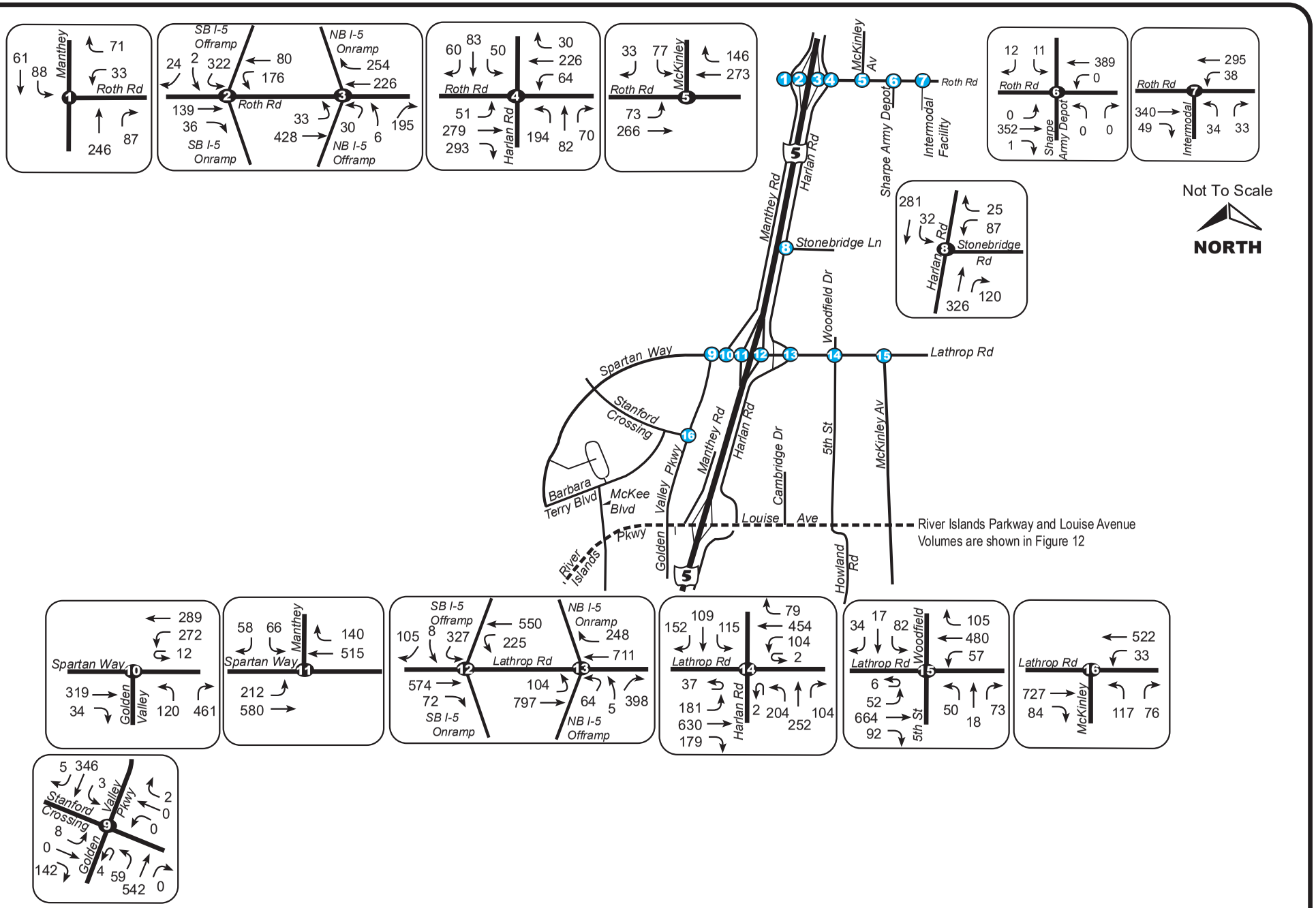
**Figure 8**
**Existing (Year 2022) AM Peak Hour Volumes**
**Northern Lathrop**




2022 Traffic Monitoring Program (TMP) for the City of Lathrop

CRANE TRANSPORTATION GROUP

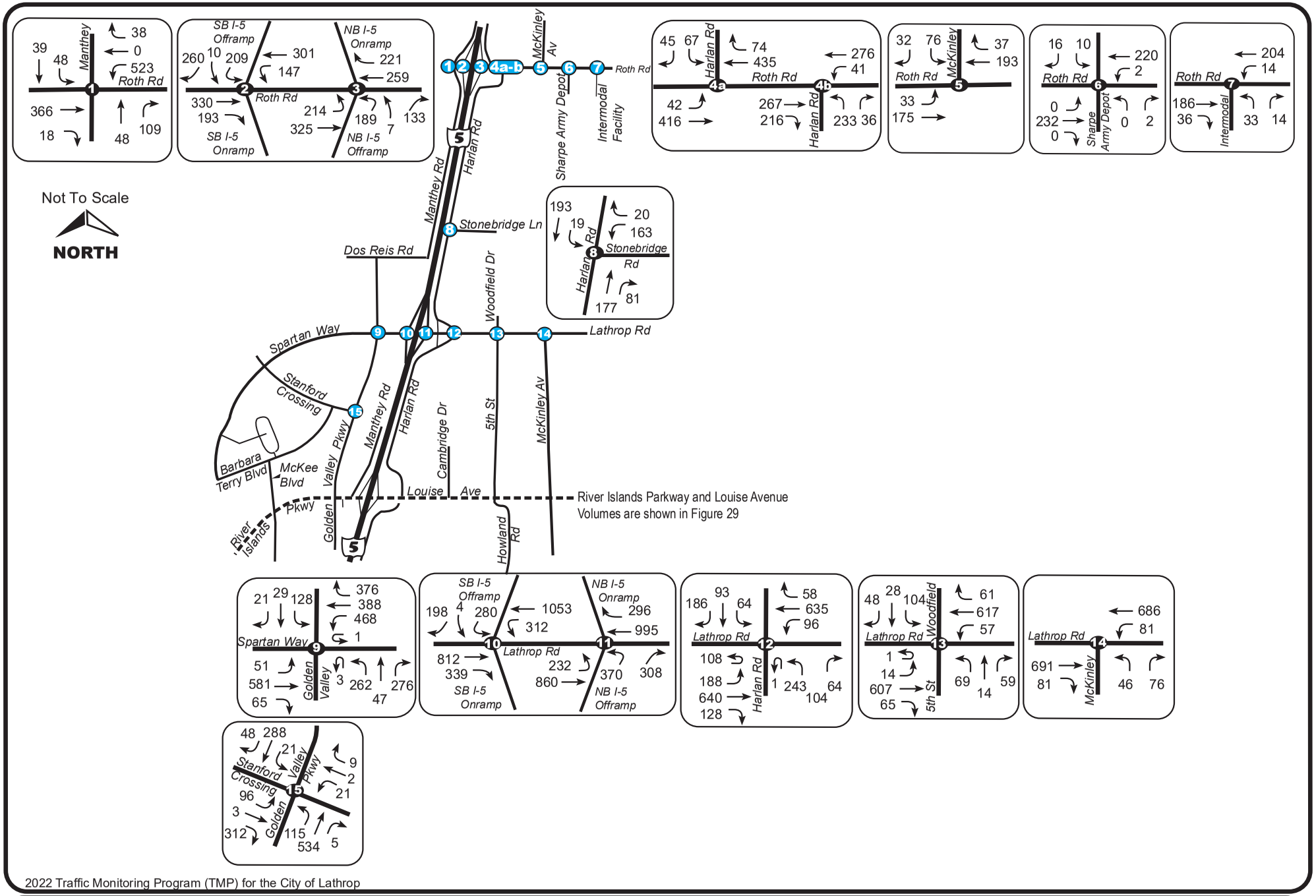
**Figure 9**
**Existing (Year 2022) AM Peak Hour Volumes**
**Southern Lathrop**




2022 Traffic Monitoring Program (TMP) for the City of Lathrop

CRANE TRANSPORTATION GROUP

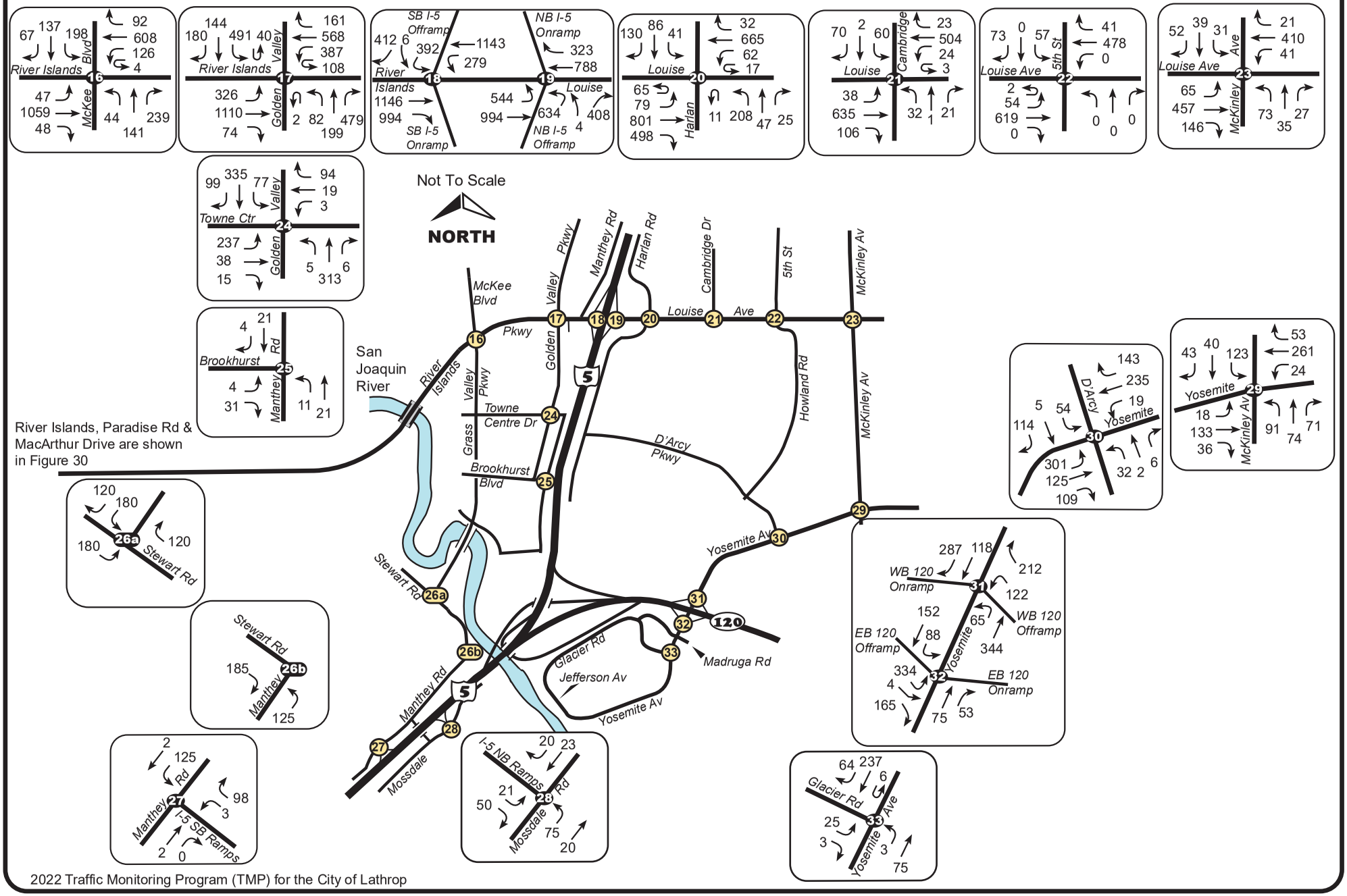
**Figure 11**
**Existing (Year 2022) PM Peak Hour Volumes**
**Northern Lathrop**




2022 Traffic Monitoring Program (TMP) for the City of Lathrop

CRANE TRANSPORTATION GROUP

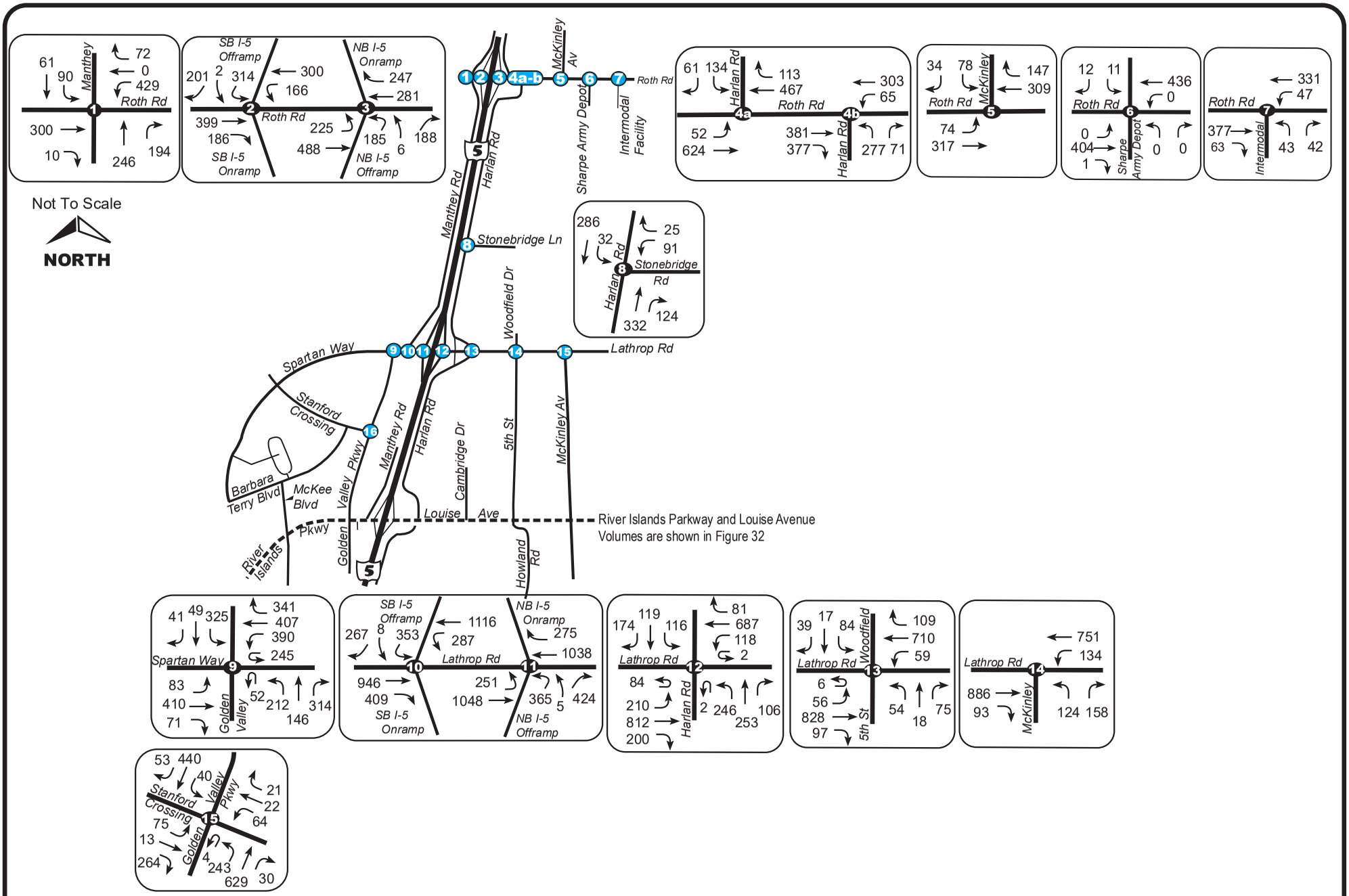
**Figure 28**
**Year 2026 AM Peak Hour Volumes**
**Northern Lathrop**




2022 Traffic Monitoring Program (TMP) for the City of Lathrop

CRANE TRANSPORTATION GROUP

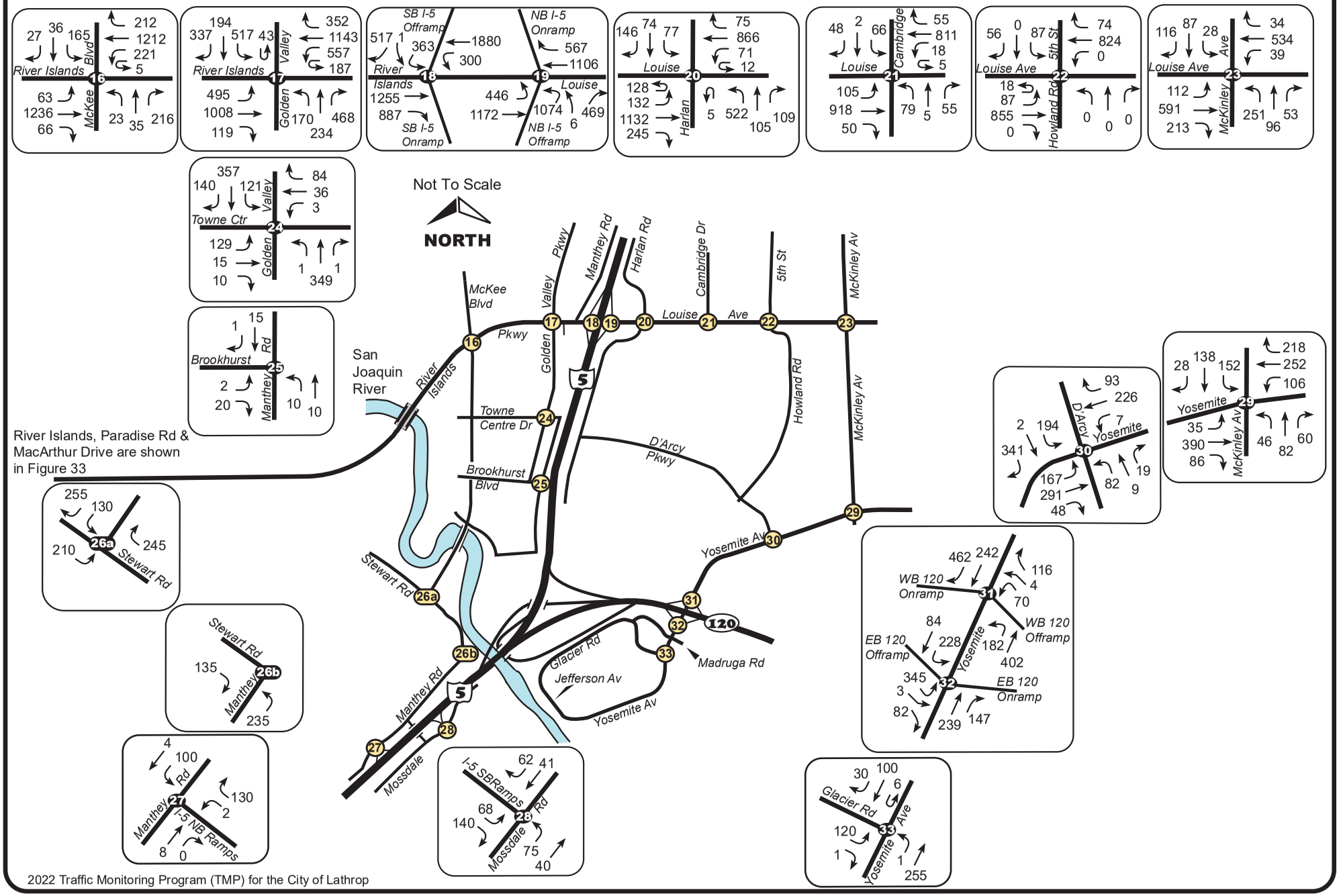
**Figure 29**
**Year 2026 AM Peak Hour Volumes**
**Southern Lathrop**




2022 Traffic Monitoring Program (TMP) for the City of Lathrop

CRANE TRANSPORTATION GROUP

**Figure 31**
**Year 2026 PM Peak Hour Volumes**
**Northern Lathrop**



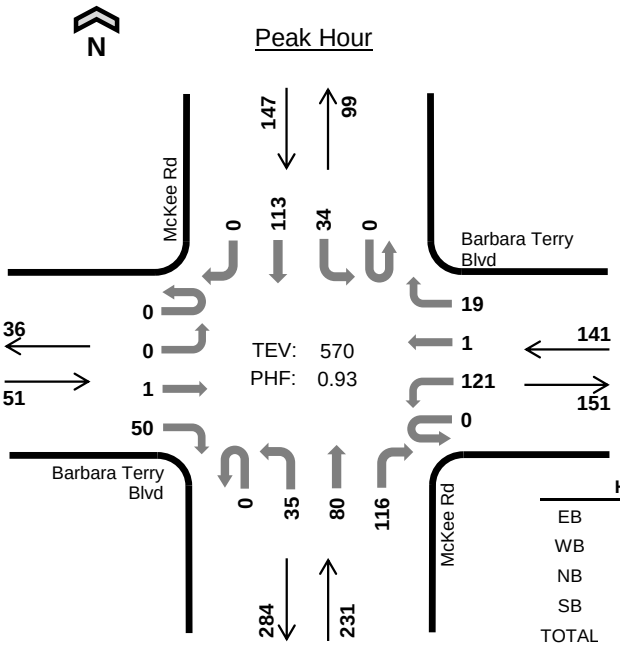

CRANE TRANSPORTATION GROUP

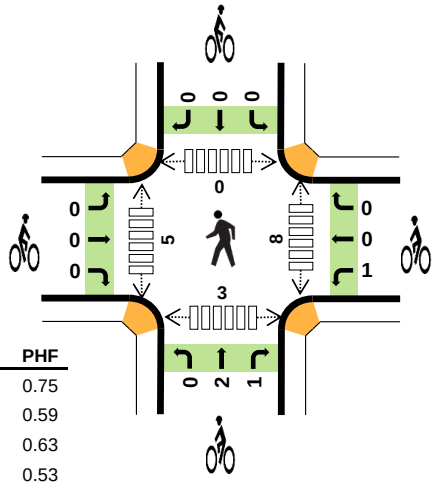
**Figure 32**
**Year 2026 PM Peak Hour Volumes**
**Southern Lathrop**

# Appendix C – Intersection Turning Movement Counts

# McKee Rd
# Barbara Terry Blvd

**Date:** 09/27/2022
**Count Period:** 7:00 AM to 9:00 AM
**Peak Hour:** 7:45 AM to 8:45 AM




| | HV %: | PHF |
|---|---|---|
| EB | 2.0% | 0.75 |
| WB | 1.4% | 0.59 |
| NB | 1.7% | 0.63 |
| SB | 2.0% | 0.53 |
| TOTAL | 1.8% | 0.93 |

## Two-Hour Count Summaries

| Interval Start | Barbara Terry Blvd Eastbound | | | | Barbara Terry Blvd Westbound | | | | McKee Rd Northbound | | | | McKee Rd Southbound | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 7:00 AM | 0 | 0 | 1 | 2 | 0 | 4 | 0 | 2 | 0 | 2 | 5 | 3 | 0 | 7 | 13 | 0 | 39 | 0 |
| 7:15 AM | 0 | 0 | 1 | 3 | 0 | 7 | 0 | 0 | 0 | 0 | 6 | 8 | 0 | 9 | 8 | 2 | 44 | 0 |
| 7:30 AM | 0 | 0 | 0 | 8 | 0 | 10 | 1 | 4 | 0 | 5 | 4 | 8 | 0 | 8 | 24 | 0 | 72 | 0 |
| **7:45 AM** | **0** | **0** | **1** | **13** | **0** | **11** | **0** | **2** | **0** | **8** | **17** | **10** | **0** | **10** | **60** | **0** | **132** | 287 |
| **8:00 AM** | **0** | **0** | **0** | **12** | **0** | **23** | **1** | **5** | **0** | **8** | **35** | **24** | **0** | **8** | **33** | **0** | **149** | 397 |
| **8:15 AM** | **0** | **0** | **0** | **8** | **0** | **36** | **0** | **3** | **0** | **16** | **19** | **56** | **0** | **9** | **7** | **0** | **154** | 507 |
| **8:30 AM** | **0** | **0** | **0** | **17** | **0** | **51** | **0** | **9** | **0** | **3** | **9** | **26** | **0** | **7** | **13** | **0** | **135** | **570** |
| 8:45 AM | 0 | 0 | 0 | 7 | 0 | 4 | 0 | 1 | 0 | 3 | 12 | 3 | 0 | 3 | 7 | 0 | 40 | 478 |
| Count Total | 0 | 0 | 3 | 70 | 0 | 146 | 2 | 26 | 0 | 45 | 107 | 138 | 0 | 61 | 165 | 2 | 765 | 0 |
| **Peak Hour All** | **0** | **0** | **1** | **50** | **0** | **121** | **1** | **19** | **0** | **35** | **80** | **116** | **0** | **34** | **113** | **0** | **570** | **0** |
| **Peak Hour HV** | **0** | **0** | **1** | **0** | **0** | **1** | **0** | **1** | **0** | **3** | **0** | **1** | **0** | **1** | **2** | **0** | **10** | **0** |
| **Peak Hour HV%** | **-** | **-** | **100%** | **0%** | **-** | **1%** | **0%** | **5%** | **-** | **9%** | **0%** | **1%** | **-** | **3%** | **2%** | **-** | **2%** | **0** |

*Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.*

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 7:00 AM | 0 | 3 | 0 | 2 | *5* | 0 | 0 | 0 | 0 | *0* | 2 | 0 | 3 | 0 | *5* |
| 7:15 AM | 0 | 1 | 1 | 2 | *4* | 0 | 0 | 0 | 0 | *0* | 3 | 0 | 2 | 0 | *5* |
| 7:30 AM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 1 | *1* | 0 | 5 | 1 | 0 | *6* |
| **7:45 AM** | **1** | **0** | **1** | **0** | ***2*** | **0** | **0** | **0** | **0** | ***0*** | **3** | **3** | **0** | **0** | *6* |
| **8:00 AM** | **0** | **2** | **1** | **3** | ***6*** | **0** | **1** | **0** | **0** | ***1*** | **2** | **1** | **0** | **2** | *5* |
| **8:15 AM** | **0** | **0** | **2** | **0** | ***2*** | **0** | **0** | **2** | **0** | ***2*** | **1** | **1** | **0** | **0** | *2* |
| **8:30 AM** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **1** | **0** | ***1*** | **2** | **0** | **0** | **1** | ***3*** |
| 8:45 AM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 2 | 0 | 2 | 0 | *4* |
| Count Total | 1 | 6 | 5 | 7 | *19* | 0 | 1 | 3 | 1 | *5* | 15 | 10 | 8 | 3 | *36* |
| **Peak Hour** | **1** | **2** | **4** | **3** | ***10*** | **0** | **1** | **3** | **0** | ***4*** | **8** | **5** | **0** | **3** | ***16*** |

## Two-Hour Count Summaries - Heavy Vehicles

| Interval Start | Barbara Terry Blvd Eastbound | | | | Barbara Terry Blvd Westbound | | | | McKee Rd Northbound | | | | McKee Rd Southbound | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 5 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 4 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **7:45 AM** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | 11 |
| **8:00 AM** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **1** | **0** | **1** | **0** | **0** | **0** | **1** | **2** | **0** | **6** | 12 |
| **8:15 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **1** | **0** | **0** | **0** | **0** | **2** | 10 |
| **8:30 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **10** |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Count Total | 0 | 0 | 1 | 0 | 0 | 4 | 0 | 2 | 0 | 3 | 1 | 1 | 0 | 1 | 6 | 0 | 19 | 0 |
| **Peak Hour** | **0** | **0** | **1** | **0** | **0** | **1** | **0** | **1** | **0** | **3** | **0** | **1** | **0** | **1** | **2** | **0** | **10** | **0** |

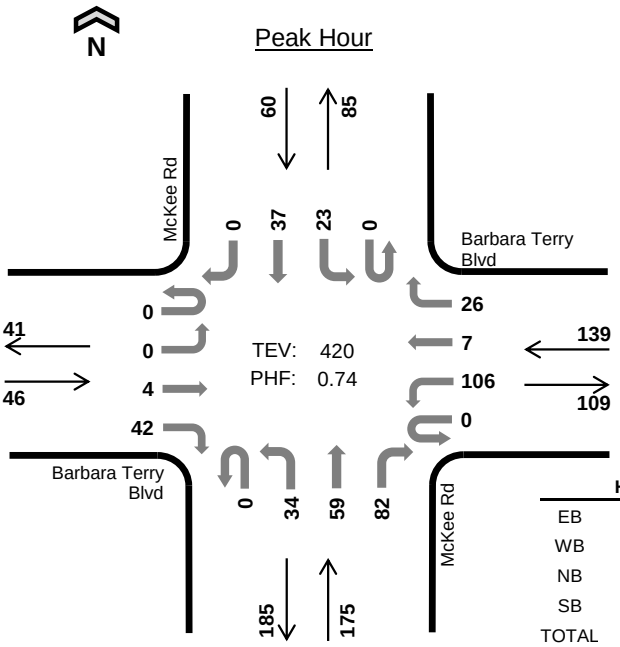
## Two-Hour Count Summaries - Bikes

| Interval Start | Barbara Terry Blvd Eastbound | | | Barbara Terry Blvd Westbound | | | McKee Rd Northbound | | | McKee Rd Southbound | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| **7:45 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 1 |
| **8:00 AM** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | 2 |
| **8:15 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **1** | **0** | **0** | **0** | **2** | 4 |
| **8:30 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **1** | **4** |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Count Total | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 1 | 0 | 5 | 0 |
| **Peak Hour** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **2** | **1** | **0** | **0** | **0** | **4** | **0** |

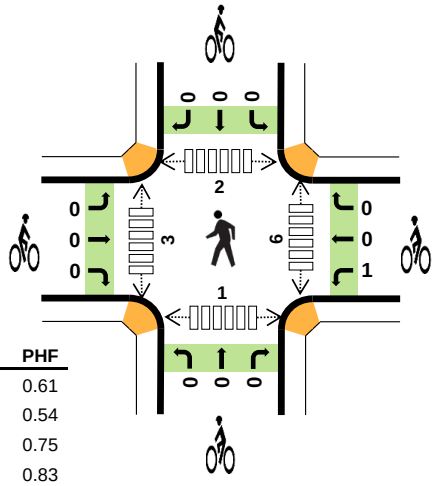
*Note: U-Turn volumes for bikes are included in Left-Turn, if any.*

# McKee Rd
# Barbara Terry Blvd

**Date:** 09/27/2022
**Count Period:** 3:00 PM to 6:00 PM
**Peak Hour:** 3:15 PM to 4:15 PM




| | HV %: | PHF |
|---|---|---|
| EB | 6.5% | 0.61 |
| WB | 0.7% | 0.54 |
| NB | 0.6% | 0.75 |
| SB | 1.7% | 0.83 |
| TOTAL | 1.4% | 0.74 |




## Three-Hour Count Summaries

| Interval Start | | Barbara Terry Blvd Eastbound | | | | Barbara Terry Blvd Westbound | | | | McKee Rd Northbound | | | | McKee Rd Southbound | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 3:15 PM | | 0 | 0 | 0 | 3 | 0 | 8 | 1 | 3 | 0 | 10 | 18 | 27 | 0 | 5 | 13 | 0 | 88 | 0 |
| 3:30 PM | | 0 | 0 | 1 | 6 | 0 | 51 | 2 | 11 | 0 | 10 | 14 | 34 | 0 | 8 | 5 | 0 | 142 | 0 |
| 3:45 PM | | 0 | 0 | 2 | 15 | 0 | 43 | 2 | 11 | 0 | 6 | 9 | 18 | 0 | 5 | 7 | 0 | 118 | 0 |
| 4:00 PM | | 0 | 0 | 1 | 18 | 0 | 4 | 2 | 1 | 0 | 8 | 18 | 3 | 0 | 5 | 12 | 0 | 72 | 420 |
| Peak Hour | All | 0 | 0 | 4 | 42 | 0 | 106 | 7 | 26 | 0 | 34 | 59 | 82 | 0 | 23 | 37 | 0 | 420 | 0 |
| | HV | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 0 |
| | HV% | - | - | 0% | 7% | - | 1% | 0% | 0% | - | 3% | 0% | 0% | - | 4% | 0% | - | 1% | 0 |

*Note: For all three-hour count summary, see next page.*

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 3:15 PM | 1 | 1 | 0 | 0 | *2* | 0 | 0 | 0 | 0 | *0* | 3 | 1 | 0 | 0 | *4* |
| 3:30 PM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 1 | 0 | *3* |
| 3:45 PM | 1 | 0 | 0 | 0 | *1* | 0 | 1 | 0 | 0 | *1* | 2 | 0 | 0 | 1 | *3* |
| 4:00 PM | 1 | 0 | 1 | 1 | *3* | 0 | 0 | 0 | 0 | *0* | 1 | 0 | 1 | 0 | *2* |
| Peak Hour | 3 | 1 | 1 | 1 | *6* | 0 | 1 | 0 | 0 | *1* | 6 | 3 | 2 | 1 | *12* |

## Three-Hour Count Summaries

| Interval Start | Barbara Terry Blvd Eastbound | | | | Barbara Terry Blvd Westbound | | | | McKee Rd Northbound | | | | McKee Rd Southbound | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 3:00 PM | 0 | 0 | 0 | 6 | 0 | 3 | 1 | 5 | 0 | 6 | 18 | 18 | 0 | 3 | 6 | 0 | 66 | 0 |
| **3:15 PM** | **0** | **0** | **0** | **3** | **0** | **8** | **1** | **3** | **0** | **10** | **18** | **27** | **0** | **5** | **13** | **0** | **88** | 0 |
| **3:30 PM** | **0** | **0** | **1** | **6** | **0** | **51** | **2** | **11** | **0** | **10** | **14** | **34** | **0** | **8** | **5** | **0** | **142** | 0 |
| **3:45 PM** | **0** | **0** | **2** | **15** | **0** | **43** | **2** | **11** | **0** | **6** | **9** | **18** | **0** | **5** | **7** | **0** | **118** | 414 |
| **4:00 PM** | **0** | **0** | **1** | **18** | **0** | **4** | **2** | **1** | **0** | **8** | **18** | **3** | **0** | **5** | **12** | **0** | **72** | **420** |
| 4:15 PM | 0 | 0 | 0 | 5 | 0 | 3 | 0 | 6 | 0 | 4 | 14 | 13 | 0 | 4 | 15 | 0 | 64 | 396 |
| 4:30 PM | 0 | 0 | 1 | 6 | 0 | 5 | 0 | 2 | 0 | 6 | 12 | 6 | 0 | 0 | 19 | 0 | 57 | 311 |
| 4:45 PM | 0 | 0 | 0 | 7 | 0 | 6 | 0 | 6 | 0 | 10 | 17 | 7 | 0 | 3 | 4 | 0 | 60 | 253 |
| 5:00 PM | 0 | 0 | 0 | 4 | 0 | 6 | 1 | 6 | 0 | 5 | 22 | 12 | 0 | 8 | 12 | 0 | 76 | 257 |
| 5:15 PM | 0 | 0 | 1 | 8 | 0 | 9 | 1 | 3 | 0 | 4 | 22 | 4 | 0 | 4 | 6 | 0 | 62 | 255 |
| 5:30 PM | 0 | 0 | 3 | 3 | 0 | 2 | 0 | 10 | 0 | 3 | 21 | 11 | 0 | 7 | 15 | 0 | 75 | 273 |
| 5:45 PM | 0 | 0 | 0 | 6 | 0 | 10 | 1 | 7 | 0 | 9 | 16 | 6 | 0 | 2 | 10 | 0 | 67 | 280 |
| Count Total | 0 | 0 | 9 | 87 | 0 | 150 | 11 | 71 | 0 | 81 | 201 | 159 | 0 | 54 | 124 | 0 | 947 | 0 |
| **Peak Hour All** | **0** | **0** | **4** | **42** | **0** | **106** | **7** | **26** | **0** | **34** | **59** | **82** | **0** | **23** | **37** | **0** | **420** | **0** |
| **Peak Hour HV** | **0** | **0** | **0** | **3** | **0** | **1** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **1** | **0** | **0** | **6** | **0** |
| **Peak Hour HV%** | **-** | **-** | **0%** | **7%** | **-** | **1%** | **0%** | **0%** | **-** | **3%** | **0%** | **0%** | **-** | **4%** | **0%** | **-** | **1%** | **0** |

*Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.*

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 3:00 PM | 0 | 0 | 1 | 0 | *1* | 0 | 0 | 1 | 0 | *1* | 0 | 1 | 1 | 0 | *2* |
| **3:15 PM** | **1** | **1** | **0** | **0** | ***2*** | **0** | **0** | **0** | **0** | ***0*** | **3** | **1** | **0** | **0** | *4* |
| **3:30 PM** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **2** | **1** | **0** | *3* |
| **3:45 PM** | **1** | **0** | **0** | **0** | ***1*** | **0** | **1** | **0** | **0** | ***1*** | **2** | **0** | **0** | **1** | *3* |
| **4:00 PM** | **1** | **0** | **1** | **1** | ***3*** | **0** | **0** | **0** | **0** | ***0*** | **1** | **0** | **1** | **0** | ***2*** |
| 4:15 PM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 4:30 PM | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 0 | 0 | *1* | 0 | 0 | 0 | 0 | *0* |
| 4:45 PM | 0 | 0 | 2 | 0 | *2* | 0 | 0 | 0 | 0 | *0* | 0 | 6 | 1 | 2 | *9* |
| 5:00 PM | 0 | 0 | 2 | 0 | *2* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 5:15 PM | 0 | 1 | 0 | 0 | *1* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 5:30 PM | 0 | 0 | 1 | 0 | *1* | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 1 | 0 | *2* |
| 5:45 PM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 2 | 0 | 0 | 0 | *2* |
| Count Total | 3 | 2 | 7 | 1 | *13* | 0 | 2 | 1 | 0 | *3* | 8 | 11 | 5 | 3 | *27* |
| **Peak Hour** | **3** | **1** | **1** | **1** | ***6*** | **0** | **1** | **0** | **0** | ***1*** | **6** | **3** | **2** | **1** | ***12*** |

## Three-Hour Count Summaries - Heavy Vehicles

| Interval Start | Barbara Terry Blvd Eastbound | | | | Barbara Terry Blvd Westbound | | | | McKee Rd Northbound | | | | McKee Rd Southbound | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 3:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| **3:15 PM** | **0** | **0** | **0** | **1** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | 0 |
| **3:30 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 |
| **3:45 PM** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | 4 |
| **4:00 PM** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **1** | **0** | **0** | **3** | **6** |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 5 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 | 4 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 6 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Count Total | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 2 | 3 | 2 | 0 | 1 | 0 | 0 | 13 | 0 |
| **Peak Hour** | **0** | **0** | **0** | **3** | **0** | **1** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **1** | **0** | **0** | **6** | **0** |

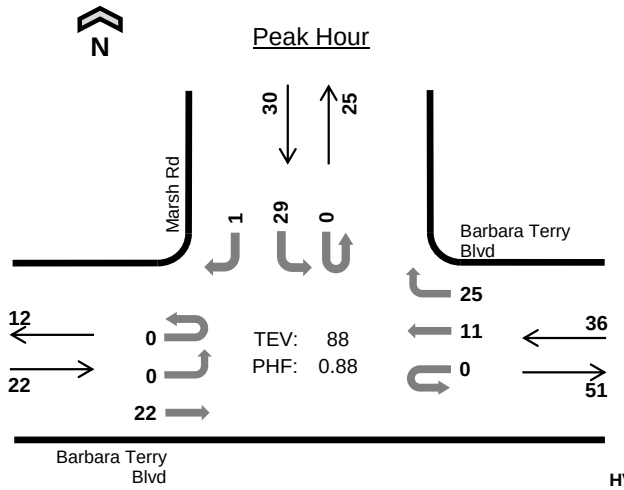
## Three-Hour Count Summaries - Bikes

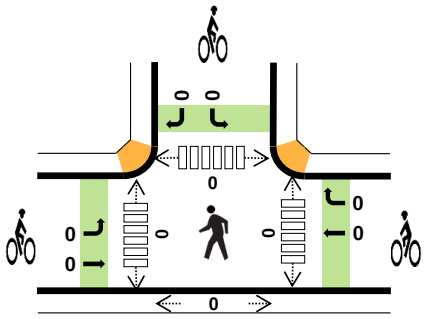
| Interval Start | Barbara Terry Blvd Eastbound | | | Barbara Terry Blvd Westbound | | | McKee Rd Northbound | | | McKee Rd Southbound | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | |
| 3:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 |
| **3:15 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 |
| **3:30 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 |
| **3:45 PM** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | 2 |
| **4:00 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4:30 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Count Total | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 0 |
| **Peak Hour** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** |

*Note: U-Turn volumes for bikes are included in Left-Turn, if any.*

# Marsh Rd
# Barbara Terry Blvd

**Date: 09/27/2022**
**Count Period: 7:00 AM to 9:00 AM**
**Peak Hour: 7:45 AM to 8:45 AM**




| | HV %: | PHF |
|---|---|---|
| EB | 4.5% | 0.42 |
| WB | 8.3% | 0.56 |
| NB | - | - |
| SB | 0.0% | 0.63 |
| TOTAL | 4.5% | 0.88 |

## Two-Hour Count Summaries

| Interval Start | | Barbara Terry Blvd Eastbound | | | | Barbara Terry Blvd Westbound | | | | n/a Northbound | | | | Marsh Rd Southbound | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 7:00 AM | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 5 | 0 |
| 7:15 AM | | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 6 | 0 |
| 7:30 AM | | 0 | 1 | 2 | 0 | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 16 | 0 |
| **7:45 AM** | | **0** | **0** | **1** | **0** | **0** | **0** | **2** | **6** | **0** | **0** | **0** | **0** | **0** | **12** | **0** | **0** | **21** | 48 |
| **8:00 AM** | | **0** | **0** | **2** | **0** | **0** | **0** | **2** | **6** | **0** | **0** | **0** | **0** | **0** | **10** | **0** | **1** | **21** | 64 |
| **8:15 AM** | | **0** | **0** | **6** | **0** | **0** | **0** | **5** | **11** | **0** | **0** | **0** | **0** | **0** | **3** | **0** | **0** | **25** | 83 |
| **8:30 AM** | | **0** | **0** | **13** | **0** | **0** | **0** | **2** | **2** | **0** | **0** | **0** | **0** | **0** | **4** | **0** | **0** | **21** | **88** |
| 8:45 AM | | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 10 | 77 |
| Count Total | | 0 | 1 | 26 | 0 | 0 | 0 | 19 | 30 | 0 | 0 | 0 | 0 | 0 | 48 | 0 | 1 | 125 | 0 |
| **Peak Hour** | **All** | **0** | **0** | **22** | **0** | **0** | **0** | **11** | **25** | **0** | **0** | **0** | **0** | **0** | **29** | **0** | **1** | **88** | **0** |
| | **HV** | **0** | **0** | **1** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **4** | **0** |
| | **HV%** | **-** | **-** | **5%** | **-** | **-** | **-** | **27%** | **0%** | **-** | **-** | **-** | **-** | **-** | **0%** | **-** | **0%** | **5%** | **0** |

*Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.*

| Interval Start | Heavy Vehicle Totals EB | WB | NB | SB | Total | Bicycles EB | WB | NB | SB | Total | Pedestrians (Crossing Leg) East | West | North | South | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 1 | 0 | *1* |
| 7:15 AM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 2 | 0 | *2* |
| 7:30 AM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 1 | 0 | *2* |
| **7:45 AM** | **1** | **1** | **0** | **0** | ***2*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | *0* |
| **8:00 AM** | **0** | **1** | **0** | **0** | ***1*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | *0* |
| **8:15 AM** | **0** | **1** | **0** | **0** | ***1*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | *0* |
| **8:30 AM** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | ***0*** |
| 8:45 AM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| Count Total | 1 | 3 | 0 | 0 | *4* | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 4 | 0 | *5* |
| **Peak Hr** | **1** | **3** | **0** | **0** | ***4*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | ***0*** |

## Two-Hour Count Summaries - Heavy Vehicles

| Interval Start | Barbara Terry Blvd | | | | Barbara Terry Blvd | | | | n/a | | | | Marsh Rd | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **7:45 AM** | **0** | **0** | **1** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | 2 |
| **8:00 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | 3 |
| **8:15 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | 4 |
| **8:30 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **4** |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Count Total | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| **Peak Hour** | **0** | **0** | **1** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **4** | **0** |

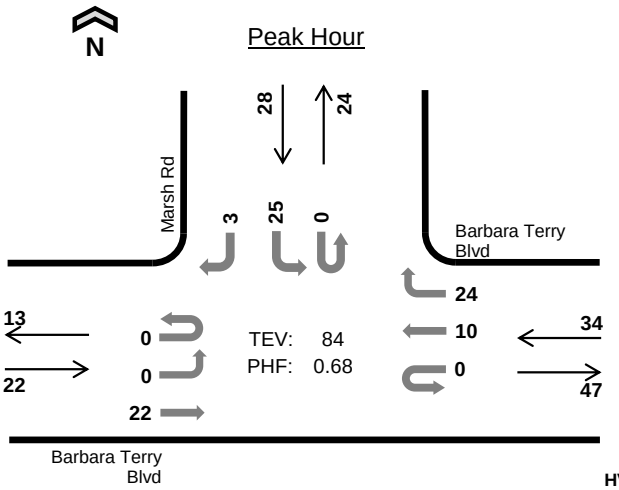
## Two-Hour Count Summaries - Bikes

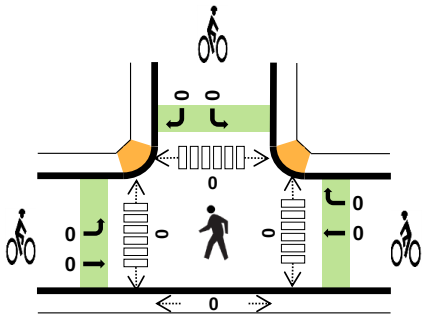
| Interval Start | Barbara Terry Blvd | | | Barbara Terry Blvd | | | n/a | | | Marsh Rd | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **7:45 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 |
| **8:00 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 |
| **8:15 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 |
| **8:30 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Count Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Peak Hour** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

*Note: U-Turn volumes for bikes are included in Left-Turn, if any.*

# Marsh Rd
# Barbara Terry Blvd

**Date:** 09/27/2022
**Count Period:** 3:00 PM to 6:00 PM
**Peak Hour:** 3:15 PM to 4:15 PM




| | HV %: | PHF |
|---|---|---|
| EB | 4.5% | 0.50 |
| WB | 2.9% | 0.71 |
| NB | - | - |
| SB | 3.6% | 0.88 |
| TOTAL | 3.6% | 0.68 |

## Three-Hour Count Summaries

| Interval Start | | Barbara Terry Blvd Eastbound | | | | Barbara Terry Blvd Westbound | | | | n/a Northbound | | | | Marsh Rd Southbound | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 3:15 PM | | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 7 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 2 | 18 | 0 |
| 3:30 PM | | 0 | 0 | 6 | 0 | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 16 | 0 |
| 3:45 PM | | 0 | 0 | 11 | 0 | 0 | 0 | 3 | 9 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 31 | 0 |
| 4:00 PM | | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 19 | 84 |
| Peak Hour | All | 0 | 0 | 22 | 0 | 0 | 0 | 10 | 24 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 3 | 84 | 0 |
| | HV | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 |
| | HV% | - | - | 5% | - | - | - | 10% | 0% | - | - | - | - | - | 0% | - | 33% | 4% | 0 |

*Note: For all three-hour count summary, see next page.*

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 3:15 PM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 3:30 PM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 3:45 PM | 1 | 1 | 0 | 0 | *2* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 4:00 PM | 0 | 0 | 0 | 1 | *1* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| Peak Hour | 1 | 1 | 0 | 1 | *3* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |

## Three-Hour Count Summaries

| Interval Start | Barbara Terry Blvd Eastbound | | | | Barbara Terry Blvd Westbound | | | | n/a Northbound | | | | Marsh Rd Southbound | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 3:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 8 | 0 |
| **3:15 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **3** | **7** | **0** | **0** | **0** | **0** | **0** | **6** | **0** | **2** | **18** | 0 |
| **3:30 PM** | **0** | **0** | **6** | **0** | **0** | **0** | **4** | **2** | **0** | **0** | **0** | **0** | **0** | **4** | **0** | **0** | **16** | 0 |
| **3:45 PM** | **0** | **0** | **11** | **0** | **0** | **0** | **3** | **9** | **0** | **0** | **0** | **0** | **0** | **8** | **0** | **0** | **31** | 73 |
| **4:00 PM** | **0** | **0** | **5** | **0** | **0** | **0** | **0** | **6** | **0** | **0** | **0** | **0** | **0** | **7** | **0** | **1** | **19** | **84** |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 14 | 80 |
| 4:30 PM | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 12 | 76 |
| 4:45 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 16 | 61 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 14 | 56 |
| 5:15 PM | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 11 | 53 |
| 5:30 PM | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 14 | 55 |
| 5:45 PM | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 8 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 16 | 55 |
| Count Total | 0 | 0 | 33 | 0 | 0 | 0 | 16 | 81 | 0 | 0 | 0 | 0 | 0 | 56 | 0 | 3 | 189 | 0 |
| **Peak Hour All** | **0** | **0** | **22** | **0** | **0** | **0** | **10** | **24** | **0** | **0** | **0** | **0** | **0** | **25** | **0** | **3** | **84** | **0** |
| **Peak Hour HV** | **0** | **0** | **1** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **3** | **0** |
| **Peak Hour HV%** | **-** | **-** | **5%** | **-** | **-** | **-** | **10%** | **0%** | **-** | **-** | **-** | **-** | **-** | **0%** | **-** | **33%** | **4%** | **0** |

*Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.*

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 3:00 PM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| **3:15 PM** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | *0* |
| **3:30 PM** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | *0* |
| **3:45 PM** | **1** | **1** | **0** | **0** | ***2*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | *0* |
| **4:00 PM** | **0** | **0** | **0** | **1** | ***1*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | ***0*** |
| 4:15 PM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 4:30 PM | 1 | 1 | 0 | 0 | *2* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 4:45 PM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 5:00 PM | 0 | 0 | 0 | 0 | *0* | 2 | 0 | 0 | 0 | *2* | 0 | 0 | 0 | 0 | *0* |
| 5:15 PM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 5:30 PM | 0 | 0 | 0 | 0 | *0* | 0 | 2 | 0 | 0 | *2* | 0 | 0 | 0 | 0 | *0* |
| 5:45 PM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| Count Total | 2 | 2 | 0 | 1 | *5* | 2 | 2 | 0 | 0 | *4* | 0 | 0 | 0 | 0 | *0* |
| **Peak Hr** | **1** | **1** | **0** | **1** | ***3*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | ***0*** |

## Three-Hour Count Summaries - Heavy Vehicles

| Interval Start | Barbara Terry Blvd | | | | Barbara Terry Blvd | | | | n/a | | | | Marsh Rd | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 3:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **3:15 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 |
| **3:30 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 |
| **3:45 PM** | **0** | **0** | **1** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | 2 |
| **4:00 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **1** | **3** |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:30 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Count Total | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 0 |
| **Peak Hour** | **0** | **0** | **1** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **3** | **0** |

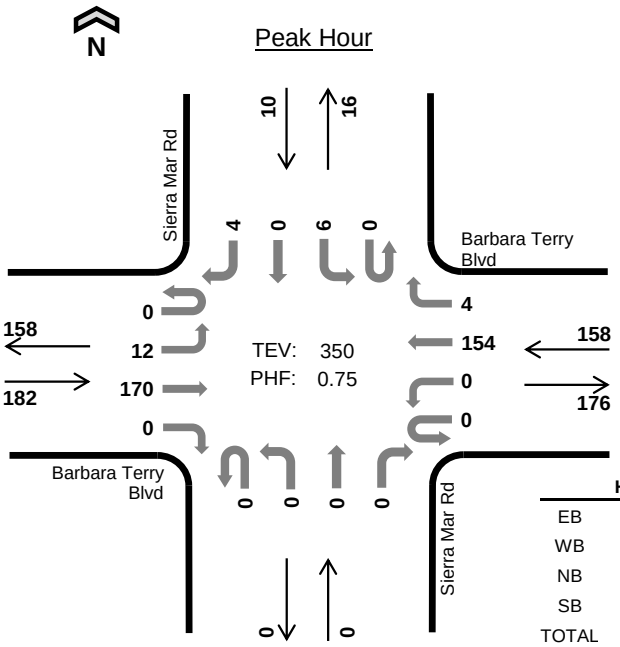
## Three-Hour Count Summaries - Bikes

| Interval Start | Barbara Terry Blvd | | | Barbara Terry Blvd | | | n/a | | | Marsh Rd | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | |
| 3:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **3:15 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 |
| **3:30 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 |
| **3:45 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 |
| **4:00 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:30 PM | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Count Total | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| **Peak Hour** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

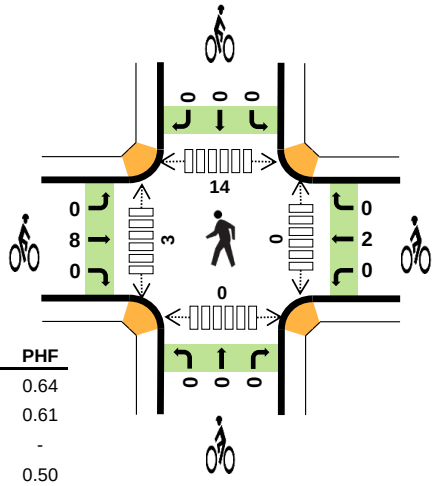
*Note: U-Turn volumes for bikes are included in Left-Turn, if any.*

# Sierra Mar Rd
# Barbara Terry Blvd

**Date:** 09/27/2022
**Count Period:** 7:00 AM to 9:00 AM
**Peak Hour:** 7:45 AM to 8:45 AM




| | HV %: | PHF |
|---|---|---|
| EB | 2.7% | 0.64 |
| WB | 0.6% | 0.61 |
| NB | - | - |
| SB | 0.0% | 0.50 |
| TOTAL | 1.7% | 0.75 |




## Two-Hour Count Summaries

| Interval Start | Barbara Terry Blvd Eastbound | | | | Barbara Terry Blvd Westbound | | | | Sierra Mar Rd Northbound | | | | Sierra Mar Rd Southbound | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 7:00 AM | 0 | 1 | 16 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 |
| 7:15 AM | 0 | 3 | 21 | 0 | 0 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 35 | 0 |
| 7:30 AM | 0 | 1 | 19 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 36 | 0 |
| **7:45 AM** | **0** | **4** | **19** | **0** | **0** | **0** | **15** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **1** | **41** | 136 |
| **8:00 AM** | **0** | **0** | **43** | **0** | **0** | **0** | **29** | **3** | **0** | **0** | **0** | **0** | **0** | **3** | **0** | **2** | **80** | 192 |
| **8:15 AM** | **0** | **4** | **67** | **0** | **0** | **0** | **45** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **117** | 274 |
| **8:30 AM** | **0** | **4** | **41** | **0** | **0** | **0** | **65** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **1** | **112** | **350** |
| 8:45 AM | 0 | 1 | 5 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 12 | 321 |
| Count Total | 0 | 18 | 231 | 0 | 0 | 0 | 185 | 6 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 7 | 457 | 0 |
| **Peak Hour All** | **0** | **12** | **170** | **0** | **0** | **0** | **154** | **4** | **0** | **0** | **0** | **0** | **0** | **6** | **0** | **4** | **350** | **0** |
| **Peak Hour HV** | **0** | **1** | **4** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **6** | **0** |
| **Peak Hour HV%** | **-** | **8%** | **2%** | **-** | **-** | **-** | **1%** | **0%** | **-** | **-** | **-** | **-** | **-** | **0%** | **-** | **0%** | **2%** | **0** |

*Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.*

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 7:00 AM | 0 | 3 | 0 | 0 | *3* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 5 | 0 | *5* |
| 7:15 AM | 1 | 2 | 0 | 0 | *3* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 7:30 AM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| **7:45 AM** | **1** | **0** | **0** | **0** | ***1*** | **1** | **0** | **0** | **0** | ***1*** | **0** | **0** | **3** | **0** | *3* |
| **8:00 AM** | **3** | **1** | **0** | **0** | ***4*** | **2** | **1** | **0** | **0** | ***3*** | **0** | **2** | **6** | **0** | *8* |
| **8:15 AM** | **1** | **0** | **0** | **0** | ***1*** | **5** | **1** | **0** | **0** | ***6*** | **0** | **0** | **3** | **0** | *3* |
| **8:30 AM** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **1** | **2** | **0** | ***3*** |
| 8:45 AM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| Count Total | 6 | 6 | 0 | 0 | *12* | 8 | 2 | 0 | 0 | *10* | 0 | 3 | 19 | 0 | *22* |
| **Peak Hour** | **5** | **1** | **0** | **0** | ***6*** | **8** | **2** | **0** | **0** | ***10*** | **0** | **3** | **14** | **0** | ***17*** |

## Two-Hour Count Summaries - Heavy Vehicles

| Interval Start | Barbara Terry Blvd | | | | Barbara Terry Blvd | | | | Sierra Mar Rd | | | | Sierra Mar Rd | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | |
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 7:15 AM | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **7:45 AM** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | 7 |
| **8:00 AM** | **0** | **0** | **3** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **4** | 8 |
| **8:15 AM** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | 6 |
| **8:30 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **6** |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Count Total | 0 | 1 | 5 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 |
| **Peak Hour** | **0** | **1** | **4** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **6** | **0** |

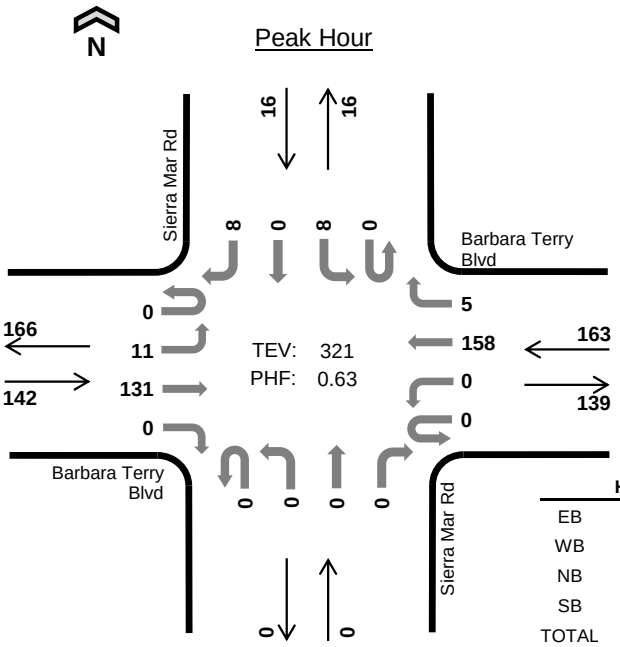
## Two-Hour Count Summaries - Bikes

| Interval Start | Barbara Terry Blvd | | | Barbara Terry Blvd | | | Sierra Mar Rd | | | Sierra Mar Rd | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | | |
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **7:45 AM** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | 1 |
| **8:00 AM** | **0** | **2** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **3** | 4 |
| **8:15 AM** | **0** | **5** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **6** | 10 |
| **8:30 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **10** |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Count Total | 0 | 8 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 |
| **Peak Hour** | **0** | **8** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **10** | **0** |

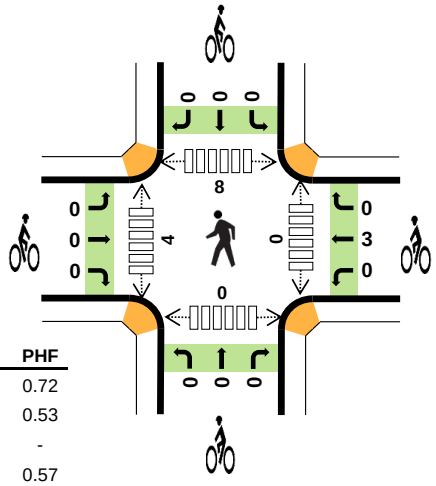
*Note: U-Turn volumes for bikes are included in Left-Turn, if any.*

# Sierra Mar Rd
# Barbara Terry Blvd

**Date:** 09/27/2022
**Count Period:** 3:00 PM to 6:00 PM
**Peak Hour:** 3:00 PM to 4:00 PM




| | HV %: | PHF |
|---|---|---|
| EB | 0.0% | 0.72 |
| WB | 1.2% | 0.53 |
| NB | - | - |
| SB | 6.3% | 0.57 |
| TOTAL | 0.9% | 0.63 |




## Three-Hour Count Summaries

| Interval Start | | Barbara Terry Blvd Eastbound | | | | Barbara Terry Blvd Westbound | | | | Sierra Mar Rd Northbound | | | | Sierra Mar Rd Southbound | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 3:00 PM | | 0 | 4 | 17 | 0 | 0 | 0 | 12 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 41 | 0 |
| 3:15 PM | | 0 | 3 | 36 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 55 | 0 |
| 3:30 PM | | 0 | 1 | 48 | 0 | 0 | 0 | 76 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 128 | 0 |
| 3:45 PM | | 0 | 3 | 30 | 0 | 0 | 0 | 61 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 97 | 321 |
| Peak Hour | All | 0 | 11 | 131 | 0 | 0 | 0 | 158 | 5 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 8 | 321 | 0 |
| | HV | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 |
| | HV% | - | 0% | 0% | - | - | - | 1% | 0% | - | - | - | - | - | 0% | - | 13% | 1% | 0 |

*Note: For all three-hour count summary, see next page.*

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| 3:00 PM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 3:15 PM | 0 | 1 | 0 | 0 | *1* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 3:30 PM | 0 | 0 | 0 | 0 | *0* | 0 | 3 | 0 | 0 | *3* | 0 | 0 | 1 | 0 | *1* |
| 3:45 PM | 0 | 1 | 0 | 1 | *2* | 0 | 0 | 0 | 0 | *0* | 0 | 4 | 7 | 0 | *11* |
| Peak Hour | 0 | 2 | 0 | 1 | *3* | 0 | 3 | 0 | 0 | *3* | 0 | 4 | 8 | 0 | *12* |

## Three-Hour Count Summaries

| Interval Start | Barbara Terry Blvd Eastbound | | | | Barbara Terry Blvd Westbound | | | | Sierra Mar Rd Northbound | | | | Sierra Mar Rd Southbound | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| **3:00 PM** | **0** | **4** | **17** | **0** | **0** | **0** | **12** | **3** | **0** | **0** | **0** | **0** | **0** | **3** | **0** | **2** | **41** | 0 |
| **3:15 PM** | **0** | **3** | **36** | **0** | **0** | **0** | **9** | **0** | **0** | **0** | **0** | **0** | **0** | **3** | **0** | **4** | **55** | 0 |
| **3:30 PM** | **0** | **1** | **48** | **0** | **0** | **0** | **76** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **1** | **128** | 0 |
| **3:45 PM** | **0** | **3** | **30** | **0** | **0** | **0** | **61** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **1** | **97** | **321** |
| 4:00 PM | 0 | 0 | 12 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 26 | 306 |
| 4:15 PM | 0 | 2 | 16 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 31 | 282 |
| 4:30 PM | 0 | 0 | 10 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 28 | 182 |
| 4:45 PM | 0 | 0 | 12 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 112 |
| 5:00 PM | 0 | 1 | 23 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 41 | 127 |
| 5:15 PM | 0 | 0 | 12 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 124 |
| 5:30 PM | 0 | 1 | 22 | 0 | 0 | 0 | 20 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | 140 |
| 5:45 PM | 0 | 1 | 10 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 32 | 145 |
| Count Total | 0 | 16 | 248 | 0 | 0 | 0 | 280 | 6 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 13 | 578 | 0 |
| **Peak Hour All** | **0** | **11** | **131** | **0** | **0** | **0** | **158** | **5** | **0** | **0** | **0** | **0** | **0** | **8** | **0** | **8** | **321** | **0** |
| **Peak Hour HV** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **3** | **0** |
| **Peak Hour HV%** | **-** | **0%** | **0%** | **-** | **-** | **-** | **1%** | **0%** | **-** | **-** | **-** | **-** | **-** | **0%** | **-** | **13%** | **1%** | **0** |

*Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.*

| Interval Start | Heavy Vehicle Totals | | | | | Bicycles | | | | | Pedestrians (Crossing Leg) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EB | WB | NB | SB | Total | EB | WB | NB | SB | Total | East | West | North | South | Total |
| **3:00 PM** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | *0* |
| **3:15 PM** | **0** | **1** | **0** | **0** | ***1*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **0** | **0** | **0** | *0* |
| **3:30 PM** | **0** | **0** | **0** | **0** | ***0*** | **0** | **3** | **0** | **0** | ***3*** | **0** | **0** | **1** | **0** | *1* |
| **3:45 PM** | **0** | **1** | **0** | **1** | ***2*** | **0** | **0** | **0** | **0** | ***0*** | **0** | **4** | **7** | **0** | ***11*** |
| 4:00 PM | 0 | 1 | 0 | 0 | *1* | 0 | 1 | 0 | 0 | *1* | 0 | 0 | 0 | 0 | *0* |
| 4:15 PM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* |
| 4:30 PM | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 0 | 0 | *1* | 0 | 0 | 0 | 0 | *0* |
| 4:45 PM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 1 | 0 | *1* |
| 5:00 PM | 1 | 0 | 0 | 0 | *1* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 1 | 0 | *1* |
| 5:15 PM | 0 | 1 | 0 | 0 | *1* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 2 | 0 | *2* |
| 5:30 PM | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 0 | 0 | *0* | 0 | 0 | 3 | 0 | *3* |
| 5:45 PM | 1 | 0 | 0 | 0 | *1* | 1 | 0 | 0 | 0 | *1* | 0 | 0 | 1 | 0 | *1* |
| Count Total | 2 | 4 | 0 | 1 | *7* | 1 | 5 | 0 | 0 | *6* | 0 | 4 | 16 | 0 | *20* |
| **Peak Hour** | **0** | **2** | **0** | **1** | ***3*** | **0** | **3** | **0** | **0** | ***3*** | **0** | **4** | **8** | **0** | ***12*** |

## Three-Hour Count Summaries - Heavy Vehicles

| Interval Start | Barbara Terry Blvd Eastbound | | | | Barbara Terry Blvd Westbound | | | | Sierra Mar Rd Northbound | | | | Sierra Mar Rd Southbound | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| **3:00 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 |
| **3:15 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | 0 |
| **3:30 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 |
| **3:45 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **2** | **3** |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:00 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:45 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 |
| Count Total | 0 | 0 | 2 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 0 |
| **Peak Hour** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **3** | **0** |

## Three-Hour Count Summaries - Bikes

| Interval Start | Barbara Terry Blvd Eastbound | | | Barbara Terry Blvd Westbound | | | Sierra Mar Rd Northbound | | | Sierra Mar Rd Southbound | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | |
| **3:00 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 |
| **3:15 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 |
| **3:30 PM** | **0** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **3** | 0 |
| **3:45 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **3** |
| 4:00 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| 4:30 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Count Total | 0 | 1 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| **Peak Hour** | **0** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **3** | **0** |

*Note: U-Turn volumes for bikes are included in Left-Turn, if any.*

# Appendix D – 2022 Existing Conditions Level of Service Sheets



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 380 | 43 | 199 | 399 | 209 | 198 |
| Future Volume (veh/h) | 380 | 43 | 199 | 399 | 209 | 198 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 594 | 67 | 221 | 443 | 279 | 264 |
| Peak Hour Factor | 0.64 | 0.64 | 0.90 | 0.90 | 0.75 | 0.75 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 1044 | 466 | 515 | 1947 | 410 | 643 |
| Arrive On Green | 0.29 | 0.29 | 0.15 | 0.55 | 0.23 | 0.23 |
| Sat Flow, veh/h | 3647 | 1585 | 3456 | 3647 | 1781 | 2790 |
| Grp Volume(v), veh/h | 594 | 67 | 221 | 443 | 279 | 264 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1585 | 1728 | 1777 | 1781 | 1395 |
| Q Serve(g_s), s | 6.2 | 1.4 | 2.5 | 2.8 | 6.3 | 3.5 |
| Cycle Q Clear(g_c), s | 6.2 | 1.4 | 2.5 | 2.8 | 6.3 | 3.5 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 1044 | 466 | 515 | 1947 | 410 | 643 |
| V/C Ratio(X) | 0.57 | 0.14 | 0.43 | 0.23 | 0.68 | 0.41 |
| Avail Cap(c_a), veh/h | 4061 | 1811 | 1580 | 6059 | 2085 | 3265 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 13.1 | 11.4 | 16.9 | 5.1 | 15.4 | 14.3 |
| Incr Delay (d2), s/veh | 0.5 | 0.1 | 0.6 | 0.1 | 2.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.0 | 0.4 | 0.9 | 0.6 | 2.1 | 0.8 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 13.6 | 11.5 | 17.5 | 5.2 | 17.4 | 14.7 |
| LnGrp LOS | B | B | B | A | B | B |
| Approach Vol, veh/h | 661 | | | 664 | 543 | |
| Approach Delay, s/veh | 13.4 | | | 9.3 | 16.1 | |
| Approach LOS | B | | | A | B | |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 11.1 | 18.0 | | | | 29.1 | 14.7 |
| Change Period (Y+Rc), s | 4.6 | 5.1 | | | | 5.1 | 4.6 |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | | | | 74.6 | 51.2 |
| Max Q Clear Time (g_c+I1), s | 4.5 | 8.2 | | | | 4.8 | 8.3 |
| Green Ext Time (p_c), s | 0.6 | 4.7 | | | | 3.2 | 1.8 |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 6th Ctrl Delay | | 12.7 | |
| HCM 6th LOS | | B | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 19 | 0 | 152 | 1 | 0 | 3 | 65 | 455 | 0 | 3 | 225 | 16 |
| Future Volume (veh/h) | 19 | 0 | 152 | 1 | 0 | 3 | 65 | 455 | 0 | 3 | 225 | 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 32 | 0 | 258 | 2 | 0 | 6 | 87 | 607 | 0 | 4 | 331 | 24 |
| Peak Hour Factor | 0.59 | 0.59 | 0.59 | 0.50 | 0.50 | 0.50 | 0.75 | 0.75 | 0.75 | 0.68 | 0.68 | 0.68 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 91 | 0 | 378 | 7 | 0 | 303 | 183 | 1612 | 0 | 14 | 1073 | 77 |
| Arrive On Green | 0.05 | 0.00 | 0.24 | 0.00 | 0.00 | 0.19 | 0.10 | 0.32 | 0.00 | 0.01 | 0.22 | 0.22 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 5274 | 0 | 1781 | 4864 | 348 |
| Grp Volume(v), veh/h | 32 | 0 | 258 | 2 | 0 | 6 | 87 | 607 | 0 | 4 | 230 | 125 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 1702 | 0 | 1781 | 1702 | 1808 |
| Q Serve(g_s), s | 0.8 | 0.0 | 6.7 | 0.1 | 0.0 | 0.1 | 2.1 | 4.2 | 0.0 | 0.1 | 2.6 | 2.6 |
| Cycle Q Clear(g_c), s | 0.8 | 0.0 | 6.7 | 0.1 | 0.0 | 0.1 | 2.1 | 4.2 | 0.0 | 0.1 | 2.6 | 2.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.19 |
| Lane Grp Cap(c), veh/h | 91 | 0 | 378 | 7 | 0 | 303 | 183 | 1612 | 0 | 14 | 751 | 399 |
| V/C Ratio(X) | 0.35 | 0.00 | 0.68 | 0.29 | 0.00 | 0.02 | 0.48 | 0.38 | 0.00 | 0.30 | 0.31 | 0.31 |
| Avail Cap(c_a), veh/h | 393 | 0 | 1224 | 393 | 0 | 1224 | 786 | 3942 | 0 | 393 | 1877 | 997 |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 20.8 | 0.0 | 15.7 | 22.5 | 0.0 | 14.9 | 19.2 | 12.0 | 0.0 | 22.4 | 14.8 | 14.8 |
| Incr Delay (d2), s/veh | 2.3 | 0.0 | 3.1 | 22.0 | 0.0 | 0.0 | 1.9 | 0.2 | 0.0 | 11.7 | 0.3 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.4 | 0.0 | 2.5 | 0.1 | 0.0 | 0.0 | 0.8 | 1.1 | 0.0 | 0.1 | 0.8 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 23.1 | 0.0 | 18.8 | 44.5 | 0.0 | 14.9 | 21.1 | 12.3 | 0.0 | 34.0 | 15.1 | 15.4 |
| LnGrp LOS | C | A | B | D | A | B | C | B | A | C | B | B |
| Approach Vol, veh/h | | 290 | | | 8 | | | 694 | | | 359 | |
| Approach Delay, s/veh | | 19.3 | | | 22.3 | | | 13.4 | | | 15.4 | |
| Approach LOS | | B | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 4.8 | 15.5 | 9.3 | 15.8 | 6.9 | 13.4 | 4.9 | 20.1 |
| Change Period (Y+Rc), s | 4.6 | * 4.7 | 4.6 | 5.8 | 4.6 | * 4.7 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | * 35 | 20.0 | 25.0 | 10.0 | * 35 | 10.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 8.7 | 4.1 | 4.6 | 2.8 | 2.1 | 2.1 | 6.2 |
| Green Ext Time (p_c), s | 0.0 | 2.5 | 0.1 | 2.6 | 0.0 | 0.0 | 0.0 | 5.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 15.2 |
| HCM 6th LOS | B |

Notes

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 235 | 527 | 29 | 292 | 317 | 82 | 43 | 145 | 208 | 79 | 109 | 141 |
| Future Volume (veh/h) | 235 | 527 | 29 | 292 | 317 | 82 | 43 | 145 | 208 | 79 | 109 | 141 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 276 | 620 | 34 | 348 | 377 | 98 | 52 | 175 | 251 | 120 | 165 | 214 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.66 | 0.66 | 0.66 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 340 | 1151 | 357 | 583 | 1037 | 322 | 87 | 864 | 472 | 252 | 987 | 306 |
| Arrive On Green | 0.19 | 0.23 | 0.23 | 0.17 | 0.20 | 0.20 | 0.05 | 0.17 | 0.17 | 0.07 | 0.19 | 0.19 |
| Sat Flow, veh/h | 1781 | 5106 | 1585 | 3456 | 5106 | 1585 | 1781 | 5106 | 2790 | 3456 | 5106 | 1585 |
| Grp Volume(v), veh/h | 276 | 620 | 34 | 348 | 377 | 98 | 52 | 175 | 251 | 120 | 165 | 214 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1585 | 1728 | 1702 | 1585 | 1781 | 1702 | 1395 | 1728 | 1702 | 1585 |
| Q Serve(g_s), s | 8.8 | 6.3 | 1.0 | 5.5 | 3.8 | 3.1 | 1.7 | 1.7 | 4.9 | 2.0 | 1.6 | 7.4 |
| Cycle Q Clear(g_c), s | 8.8 | 6.3 | 1.0 | 5.5 | 3.8 | 3.1 | 1.7 | 1.7 | 4.9 | 2.0 | 1.6 | 7.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 340 | 1151 | 357 | 583 | 1037 | 322 | 87 | 864 | 472 | 252 | 987 | 306 |
| V/C Ratio(X) | 0.81 | 0.54 | 0.10 | 0.60 | 0.36 | 0.30 | 0.60 | 0.20 | 0.53 | 0.48 | 0.17 | 0.70 |
| Avail Cap(c_a), veh/h | 754 | 3457 | 1073 | 1462 | 3457 | 1073 | 754 | 3025 | 1653 | 1462 | 3025 | 939 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.9 | 20.2 | 18.1 | 22.7 | 20.3 | 20.0 | 27.5 | 21.1 | 22.4 | 26.3 | 19.9 | 22.2 |
| Incr Delay (d2), s/veh | 4.6 | 0.4 | 0.1 | 1.0 | 0.2 | 0.5 | 6.5 | 0.1 | 0.9 | 1.4 | 0.1 | 2.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.6 | 2.2 | 0.3 | 2.0 | 1.3 | 1.0 | 0.8 | 0.6 | 1.4 | 0.8 | 0.5 | 2.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 27.5 | 20.6 | 18.2 | 23.7 | 20.5 | 20.5 | 34.1 | 21.2 | 23.3 | 27.7 | 19.9 | 25.1 |
| LnGrp LOS | C | C | B | C | C | C | C | C | C | C | B | C |
| Approach Vol, veh/h | | 930 | | | 823 | | | 478 | | | 499 | |
| Approach Delay, s/veh | | 22.5 | | | 21.8 | | | 23.7 | | | 24.0 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.0 | 19.3 | 7.4 | 17.4 | 16.3 | 18.0 | 8.8 | 16.0 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 4.5 | 6.0 | 5.0 | 6.0 | 4.5 | 6.0 |
| Max Green Setting (Gmax), s | 25.0 | 40.0 | 25.0 | 35.0 | 25.0 | 40.0 | 25.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 7.5 | 8.3 | 3.7 | 9.4 | 10.8 | 5.8 | 4.0 | 6.9 |
| Green Ext Time (p_c), s | 1.1 | 4.3 | 0.1 | 1.6 | 0.6 | 2.7 | 0.3 | 2.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 22.8 |
| HCM 6th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 213 | 32 | 12 | 3 | 15 | 37 | 0 | 91 | 0 | 41 | 125 | 90 |
| Future Volume (veh/h) | 213 | 32 | 12 | 3 | 15 | 37 | 0 | 91 | 0 | 41 | 125 | 90 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 277 | 42 | 16 | 4 | 19 | 46 | 0 | 108 | 0 | 55 | 169 | 122 |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.81 | 0.81 | 0.81 | 0.84 | 0.84 | 0.84 | 0.74 | 0.74 | 0.74 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 362 | 514 | 436 | 8 | 142 | 120 | 4 | 886 | 0 | 82 | 1695 | 526 |
| Arrive On Green | 0.20 | 0.27 | 0.27 | 0.00 | 0.08 | 0.08 | 0.00 | 0.17 | 0.00 | 0.05 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 5274 | 0 | 1781 | 5106 | 1585 |
| Grp Volume(v), veh/h | 277 | 42 | 16 | 4 | 19 | 46 | 0 | 108 | 0 | 55 | 169 | 122 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1702 | 0 | 1781 | 1702 | 1585 |
| Q Serve(g_s), s | 5.8 | 0.7 | 0.3 | 0.1 | 0.4 | 1.1 | 0.0 | 0.7 | 0.0 | 1.2 | 0.9 | 2.2 |
| Cycle Q Clear(g_c), s | 5.8 | 0.7 | 0.3 | 0.1 | 0.4 | 1.1 | 0.0 | 0.7 | 0.0 | 1.2 | 0.9 | 2.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 362 | 514 | 436 | 8 | 142 | 120 | 4 | 886 | 0 | 82 | 1695 | 526 |
| V/C Ratio(X) | 0.76 | 0.08 | 0.04 | 0.52 | 0.13 | 0.38 | 0.00 | 0.12 | 0.00 | 0.67 | 0.10 | 0.23 |
| Avail Cap(c_a), veh/h | 893 | 1173 | 994 | 893 | 1173 | 994 | 893 | 3842 | 0 | 893 | 3842 | 1193 |
| 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 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.0 | 10.7 | 10.6 | 19.8 | 17.2 | 17.5 | 0.0 | 13.9 | 0.0 | 18.7 | 9.2 | 9.6 |
| Incr Delay (d2), s/veh | 3.4 | 0.1 | 0.0 | 44.5 | 0.4 | 2.0 | 0.0 | 0.2 | 0.0 | 9.3 | 0.1 | 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 | 2.4 | 0.2 | 0.1 | 0.1 | 0.2 | 0.4 | 0.0 | 0.2 | 0.0 | 0.6 | 0.2 | 0.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 18.3 | 10.8 | 10.6 | 64.3 | 17.6 | 19.5 | 0.0 | 14.1 | 0.0 | 28.0 | 9.3 | 10.4 |
| LnGrp LOS | B | B | B | E | B | B | A | B | A | C | A | B |
| Approach Vol, veh/h | | 335 | | | 69 | | | 108 | | | 346 | |
| Approach Delay, s/veh | | 17.0 | | | 21.6 | | | 14.1 | | | 12.7 | |
| Approach LOS | | B | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 4.7 | 16.0 | 0.0 | 19.2 | 12.6 | 8.0 | 6.3 | 12.9 |
| Change Period (Y+Rc), s | 4.5 | 5.0 | 4.5 | 6.0 | 4.5 | 5.0 | 4.5 | 6.0 |
| Max Green Setting (Gmax), s | 20.0 | 25.0 | 20.0 | 30.0 | 20.0 | 25.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 2.7 | 0.0 | 4.2 | 7.8 | 3.1 | 3.2 | 2.7 |
| Green Ext Time (p_c), s | 0.0 | 0.2 | 0.0 | 3.6 | 0.7 | 0.2 | 0.1 | 1.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 15.3 |
| HCM 6th LOS | B |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 28 | 400 | 37 | 126 | 299 | 76 | 39 | 119 | 235 | 156 | 105 | 49 |
| Future Volume (veh/h) | 28 | 400 | 37 | 126 | 299 | 76 | 39 | 119 | 235 | 156 | 105 | 49 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 32 | 455 | 42 | 152 | 360 | 92 | 50 | 153 | 301 | 284 | 191 | 89 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.83 | 0.83 | 0.83 | 0.78 | 0.78 | 0.78 | 0.55 | 0.55 | 0.55 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 58 | 767 | 70 | 194 | 843 | 376 | 77 | 429 | 364 | 333 | 450 | 210 |
| Arrive On Green | 0.03 | 0.16 | 0.16 | 0.11 | 0.24 | 0.24 | 0.04 | 0.23 | 0.23 | 0.19 | 0.37 | 0.37 |
| Sat Flow, veh/h | 1781 | 4762 | 434 | 1781 | 3554 | 1585 | 1781 | 1870 | 1585 | 1781 | 1207 | 562 |
| Grp Volume(v), veh/h | 32 | 324 | 173 | 152 | 360 | 92 | 50 | 153 | 301 | 284 | 0 | 280 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1792 | 1781 | 1777 | 1585 | 1781 | 1870 | 1585 | 1781 | 0 | 1769 |
| Q Serve(g_s), s | 1.3 | 6.6 | 6.7 | 6.2 | 6.4 | 3.5 | 2.1 | 5.1 | 13.5 | 11.5 | 0.0 | 8.8 |
| Cycle Q Clear(g_c), s | 1.3 | 6.6 | 6.7 | 6.2 | 6.4 | 3.5 | 2.1 | 5.1 | 13.5 | 11.5 | 0.0 | 8.8 |
| Prop In Lane | 1.00 | | 0.24 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.32 |
| Lane Grp Cap(c), veh/h | 58 | 548 | 289 | 194 | 843 | 376 | 77 | 429 | 364 | 333 | 0 | 660 |
| V/C Ratio(X) | 0.55 | 0.59 | 0.60 | 0.78 | 0.43 | 0.24 | 0.65 | 0.36 | 0.83 | 0.85 | 0.00 | 0.42 |
| Avail Cap(c_a), veh/h | 478 | 2285 | 1203 | 478 | 2385 | 1064 | 478 | 753 | 638 | 478 | 0 | 712 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 35.5 | 29.0 | 29.0 | 32.3 | 24.1 | 23.0 | 35.1 | 24.1 | 27.3 | 29.3 | 0.0 | 17.4 |
| Incr Delay (d2), s/veh | 8.0 | 0.4 | 0.8 | 6.8 | 0.5 | 0.5 | 8.8 | 0.5 | 4.8 | 10.0 | 0.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.7 | 2.6 | 2.8 | 2.8 | 2.5 | 1.3 | 1.0 | 2.2 | 5.3 | 5.6 | 0.0 | 3.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 43.5 | 29.3 | 29.8 | 39.2 | 24.6 | 23.5 | 43.9 | 24.6 | 32.2 | 39.3 | 0.0 | 17.8 |
| LnGrp LOS | D | C | C | D | C | C | D | C | C | D | A | B |
| Approach Vol, veh/h | | 529 | | | 604 | | | 504 | | | 564 | |
| Approach Delay, s/veh | | 30.3 | | | 28.1 | | | 31.0 | | | 28.6 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.4 | 18.0 | 8.8 | 34.3 | 7.7 | 23.7 | 19.5 | 23.6 |
| Change Period (Y+Rc), s | 5.3 | 6.0 | 5.6 | 6.5 | 5.3 | 6.0 | 5.6 | 6.5 |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | 20.0 | 30.0 | 20.0 | 50.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 8.2 | 8.7 | 4.1 | 10.8 | 3.3 | 8.4 | 13.5 | 15.5 |
| Green Ext Time (p_c), s | 0.3 | 2.1 | 0.1 | 1.5 | 0.0 | 3.9 | 0.5 | 1.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 29.4 |
| HCM 6th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 12.5 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 1 | 50 | 121 | 1 | 19 | 35 | 80 | 116 | 34 | 113 | 0 |
| Future Vol, veh/h | 0 | 1 | 50 | 121 | 1 | 19 | 35 | 80 | 116 | 34 | 113 | 0 |
| Peak Hour Factor | 0.75 | 0.75 | 0.75 | 0.59 | 0.59 | 0.59 | 0.63 | 0.63 | 0.63 | 0.53 | 0.53 | 0.53 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 1 | 67 | 205 | 2 | 32 | 56 | 127 | 184 | 64 | 213 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 9.2 | 12.5 | 13.2 | 12.3 |
| HCM LOS | A | B | B | B |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 15% | 0% | 86% | 23% |
| Vol Thru, % | 35% | 2% | 1% | 77% |
| Vol Right, % | 50% | 98% | 13% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 231 | 51 | 141 | 147 |
| LT Vol | 35 | 0 | 121 | 34 |
| Through Vol | 80 | 1 | 1 | 113 |
| RT Vol | 116 | 50 | 19 | 0 |
| Lane Flow Rate | 367 | 68 | 239 | 277 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.509 | 0.104 | 0.385 | 0.417 |
| Departure Headway (Hd) | 5.001 | 5.496 | 5.799 | 5.418 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 719 | 649 | 619 | 663 |
| Service Time | 3.043 | 3.557 | 3.845 | 3.464 |
| HCM Lane V/C Ratio | 0.51 | 0.105 | 0.386 | 0.418 |
| HCM Control Delay | 13.2 | 9.2 | 12.5 | 12.3 |
| HCM Lane LOS | B | A | B | B |
| HCM 95th-tile Q | 2.9 | 0.3 | 1.8 | 2.1 |

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

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 22 | 11 | 25 | 29 | 1 |
| Future Vol, veh/h | 0 | 22 | 11 | 25 | 29 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 42 | 42 | 56 | 56 | 63 | 63 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 52 | 20 | 45 | 46 | 2 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 65 | 0 | - | 0 | 95 | 43 |
| Stage 1 | - | - | - | - | 43 | - |
| Stage 2 | - | - | - | - | 52 | - |
| 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 | 1537 | - | - | - | 905 | 1027 |
| Stage 1 | - | - | - | - | 979 | - |
| Stage 2 | - | - | - | - | 970 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1537 | - | - | - | 905 | 1027 |
| Mov Cap-2 Maneuver | - | - | - | - | 905 | - |
| Stage 1 | - | - | - | - | 979 | - |
| Stage 2 | - | - | - | - | 970 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 9.2 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1537 | - | - | - | 909 |
| HCM Lane V/C Ratio | - | - | - | - | 0.052 |
| HCM Control Delay (s) | 0 | - | - | - | 9.2 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.2 |

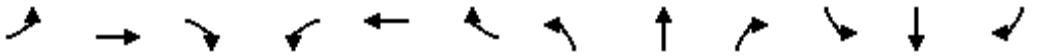
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.7 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 6 | 4 | 12 | 170 | 154 | 4 |
| Future Vol, veh/h | 6 | 4 | 12 | 170 | 154 | 4 |
| 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 | 50 | 50 | 64 | 64 | 61 | 61 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 12 | 8 | 19 | 266 | 252 | 7 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 560 | 256 | 259 | 0 | - | 0 |
| Stage 1 | 256 | - | - | - | - | - |
| Stage 2 | 304 | - | - | - | - | - |
| 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 | 489 | 783 | 1306 | - | - | - |
| Stage 1 | 787 | - | - | - | - | - |
| Stage 2 | 748 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 481 | 783 | 1306 | - | - | - |
| Mov Cap-2 Maneuver | 481 | - | - | - | - | - |
| Stage 1 | 774 | - | - | - | - | - |
| Stage 2 | 748 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.6 | 0.5 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1306 | - | 569 | - | - |
| HCM Lane V/C Ratio | 0.014 | - | 0.035 | - | - |
| HCM Control Delay (s) | 7.8 | 0 | 11.6 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 72 | 630 | 0 | 0 | 798 | 285 | 88 | 0 | 226 | 0 | 0 | 0 |
| Future Volume (veh/h) | 72 | 630 | 0 | 0 | 798 | 285 | 88 | 0 | 226 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 91 | 797 | 0 | 0 | 907 | 324 | 105 | 0 | 269 | | | |
| Peak Hour Factor | 0.79 | 0.79 | 0.79 | 0.88 | 0.88 | 0.88 | 0.84 | 0.84 | 0.84 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 120 | 2084 | 0 | 0 | 1184 | 421 | 128 | 0 | 328 | | | |
| Arrive On Green | 0.07 | 0.59 | 0.00 | 0.00 | 0.46 | 0.46 | 0.28 | 0.00 | 0.28 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 2662 | 914 | 459 | 0 | 1176 | | | |
| Grp Volume(v), veh/h | 91 | 797 | 0 | 0 | 626 | 605 | 374 | 0 | 0 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1706 | 1636 | 0 | 0 | | | |
| Q Serve(g_s), s | 3.4 | 8.2 | 0.0 | 0.0 | 20.1 | 20.3 | 14.6 | 0.0 | 0.0 | | | |
| Cycle Q Clear(g_c), s | 3.4 | 8.2 | 0.0 | 0.0 | 20.1 | 20.3 | 14.6 | 0.0 | 0.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.54 | 0.28 | | 0.72 | | | |
| Lane Grp Cap(c), veh/h | 120 | 2084 | 0 | 0 | 819 | 786 | 457 | 0 | 0 | | | |
| V/C Ratio(X) | 0.76 | 0.38 | 0.00 | 0.00 | 0.76 | 0.77 | 0.82 | 0.00 | 0.00 | | | |
| Avail Cap(c_a), veh/h | 520 | 3062 | 0 | 0 | 908 | 872 | 836 | 0 | 0 | | | |
| HCM Platoon Ratio | 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 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | | | |
| Uniform Delay (d), s/veh | 31.4 | 7.5 | 0.0 | 0.0 | 15.4 | 15.4 | 23.1 | 0.0 | 0.0 | | | |
| Incr Delay (d2), s/veh | 9.4 | 0.2 | 0.0 | 0.0 | 4.4 | 4.7 | 4.4 | 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 | | | |
| %ile BackOfQ(50%),veh/ln | 1.7 | 2.5 | 0.0 | 0.0 | 7.9 | 7.7 | 5.5 | 0.0 | 0.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 40.8 | 7.8 | 0.0 | 0.0 | 19.8 | 20.1 | 27.5 | 0.0 | 0.0 | | | |
| LnGrp LOS | D | A | A | A | B | C | C | A | A | | | |
| Approach Vol, veh/h | | 888 | | | 1231 | | | 374 | | | | |
| Approach Delay, s/veh | | 11.2 | | | 19.9 | | | 27.5 | | | | |
| Approach LOS | | B | | | B | | | C | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 44.8 | | | 8.6 | 36.2 | | 23.7 | | | | |
| Change Period (Y+Rc), s | | 4.6 | | | 4.0 | 4.6 | | 4.6 | | | | |
| Max Green Setting (Gmax), s | | 59.0 | | | 20.0 | 35.0 | | 35.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 10.2 | | | 5.4 | 22.3 | | 16.6 | | | | |
| Green Ext Time (p_c), s | | 12.5 | | | 0.2 | 9.3 | | 2.5 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 17.9 | | | | | | | | | |
| HCM 6th LOS | | | B | | | | | | | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 462 | 93 | 293 | 593 | 0 | 0 | 0 | 0 | 240 | 4 | 104 |
| Future Volume (veh/h) | 0 | 462 | 93 | 293 | 593 | 0 | 0 | 0 | 0 | 240 | 4 | 104 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 679 | 137 | 337 | 682 | 0 | | | | 267 | 4 | 116 |
| Peak Hour Factor | 0.68 | 0.68 | 0.68 | 0.87 | 0.87 | 0.87 | | | | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 1303 | 260 | 391 | 1094 | 0 | | | | 329 | 5 | 143 |
| Arrive On Green | 0.00 | 0.31 | 0.31 | 0.22 | 0.58 | 0.00 | | | | 0.28 | 0.28 | 0.28 |
| Sat Flow, veh/h | 0 | 4439 | 851 | 1781 | 1870 | 0 | | | | 1186 | 18 | 515 |
| Grp Volume(v), veh/h | 0 | 539 | 277 | 337 | 682 | 0 | | | | 387 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1717 | 1781 | 1870 | 0 | | | | 1718 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 8.7 | 8.9 | 12.2 | 15.9 | 0.0 | | | | 14.0 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 8.7 | 8.9 | 12.2 | 15.9 | 0.0 | | | | 14.0 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 0.50 | 1.00 | | 0.00 | | | | 0.69 | | 0.30 |
| Lane Grp Cap(c), veh/h | 0 | 1039 | 524 | 391 | 1094 | 0 | | | | 477 | 0 | 0 |
| V/C Ratio(X) | 0.00 | 0.52 | 0.53 | 0.86 | 0.62 | 0.00 | | | | 0.81 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 1783 | 899 | 533 | 1651 | 0 | | | | 900 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | | | | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 19.2 | 19.2 | 25.1 | 9.1 | 0.0 | | | | 22.5 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.8 | 1.6 | 10.4 | 1.1 | 0.0 | | | | 4.0 | 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 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 3.3 | 3.5 | 5.9 | 5.3 | 0.0 | | | | 5.4 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 20.0 | 20.8 | 35.5 | 10.2 | 0.0 | | | | 26.5 | 0.0 | 0.0 |
| LnGrp LOS | A | B | C | D | B | A | | | | C | A | A |
| Approach Vol, veh/h | | 816 | | | 1019 | | | | | | 387 | |
| Approach Delay, s/veh | | 20.3 | | | 18.6 | | | | | | 26.5 | |
| Approach LOS | | C | | | B | | | | | | C | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 18.7 | 25.0 | | 23.2 | | 43.7 |
| Change Period (Y+Rc), s | 4.0 | 4.6 | | 4.6 | | 4.6 |
| Max Green Setting (Gmax), s | 20.0 | 35.0 | | 35.0 | | 59.0 |
| Max Q Clear Time (g_c+I1), s | 14.2 | 10.9 | | 16.0 | | 17.9 |
| Green Ext Time (p_c), s | 0.5 | 9.5 | | 2.5 | | 10.5 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 20.6 |
| HCM 6th LOS | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 259 | 571 | 0 | 0 | 551 | 229 | 212 | 4 | 276 | 0 | 0 | 0 |
| Future Volume (veh/h) | 259 | 571 | 0 | 0 | 551 | 229 | 212 | 4 | 276 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 276 | 607 | 0 | 0 | 586 | 0 | 252 | 5 | 329 | | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.84 | 0.84 | 0.84 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 347 | 1934 | 0 | 0 | 964 | | 476 | 9 | 431 | | | |
| Arrive On Green | 0.19 | 0.54 | 0.00 | 0.00 | 0.27 | 0.00 | 0.27 | 0.27 | 0.27 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 3647 | 1585 | 1748 | 35 | 1585 | | | |
| Grp Volume(v), veh/h | 276 | 607 | 0 | 0 | 586 | 0 | 257 | 0 | 329 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1585 | 1783 | 0 | 1585 | | | |
| Q Serve(g_s), s | 8.0 | 5.1 | 0.0 | 0.0 | 7.7 | 0.0 | 6.6 | 0.0 | 10.3 | | | |
| Cycle Q Clear(g_c), s | 8.0 | 5.1 | 0.0 | 0.0 | 7.7 | 0.0 | 6.6 | 0.0 | 10.3 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.98 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 347 | 1934 | 0 | 0 | 964 | | 485 | 0 | 431 | | | |
| V/C Ratio(X) | 0.80 | 0.31 | 0.00 | 0.00 | 0.61 | | 0.53 | 0.00 | 0.76 | | | |
| Avail Cap(c_a), veh/h | 661 | 3576 | 0 | 0 | 1979 | | 1026 | 0 | 912 | | | |
| HCM Platoon Ratio | 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 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 20.7 | 6.7 | 0.0 | 0.0 | 17.1 | 0.0 | 16.7 | 0.0 | 18.0 | | | |
| Incr Delay (d2), s/veh | 5.0 | 0.1 | 0.0 | 0.0 | 0.9 | 0.0 | 0.9 | 0.0 | 2.8 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 8.2 | 1.2 | 0.0 | 0.0 | 2.7 | 0.0 | 2.3 | 0.0 | 3.4 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 25.6 | 6.9 | 0.0 | 0.0 | 18.0 | 0.0 | 17.6 | 0.0 | 20.8 | | | |
| LnGrp LOS | C | A | A | A | B | | B | A | C | | | |
| Approach Vol, veh/h | | 883 | | | 586 | | | 586 | | | | |
| Approach Delay, s/veh | | 12.7 | | | 18.0 | | | 19.4 | | | | |
| Approach LOS | | B | | | B | | | B | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 34.6 | | | 14.7 | 19.9 | | 19.3 | | | | |
| Change Period (Y+Rc), s | | 5.3 | | | * 4.2 | 5.3 | | 4.6 | | | | |
| Max Green Setting (Gmax), s | | 54.2 | | | * 20 | 30.0 | | 31.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 7.1 | | | 10.0 | 9.7 | | 12.3 | | | | |
| Green Ext Time (p_c), s | | 6.2 | | | 0.7 | 4.9 | | 2.4 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 16.1 |
| HCM 6th LOS | B |

**Notes**

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

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 552 | 291 | 258 | 505 | 0 | 0 | 0 | 0 | 278 | 6 | 190 |
| Future Volume (veh/h) | 0 | 552 | 291 | 258 | 505 | 0 | 0 | 0 | 0 | 278 | 6 | 190 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 594 | 313 | 284 | 555 | 0 | | | | 282 | 76 | 226 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.91 | 0.91 | 0.91 | | | | 0.84 | 0.84 | 0.84 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 1404 | 436 | 348 | 1028 | 0 | | | | 470 | 110 | 326 |
| Arrive On Green | 0.00 | 0.28 | 0.28 | 0.20 | 0.55 | 0.00 | | | | 0.26 | 0.26 | 0.26 |
| Sat Flow, veh/h | 0 | 5274 | 1585 | 1781 | 1870 | 0 | | | | 1781 | 415 | 1234 |
| Grp Volume(v), veh/h | 0 | 594 | 313 | 284 | 555 | 0 | | | | 282 | 0 | 302 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1585 | 1781 | 1870 | 0 | | | | 1781 | 0 | 1648 |
| Q Serve(g_s), s | 0.0 | 5.1 | 9.5 | 8.1 | 10.1 | 0.0 | | | | 7.3 | 0.0 | 8.8 |
| Cycle Q Clear(g_c), s | 0.0 | 5.1 | 9.5 | 8.1 | 10.1 | 0.0 | | | | 7.3 | 0.0 | 8.8 |
| Prop In Lane | 0.00 | | 1.00 | 1.00 | | 0.00 | | | | 1.00 | | 0.75 |
| Lane Grp Cap(c), veh/h | 0 | 1404 | 436 | 348 | 1028 | 0 | | | | 470 | 0 | 435 |
| V/C Ratio(X) | 0.00 | 0.42 | 0.72 | 0.82 | 0.54 | 0.00 | | | | 0.60 | 0.00 | 0.69 |
| Avail Cap(c_a), veh/h | 0 | 1924 | 597 | 436 | 1311 | 0 | | | | 1175 | 0 | 1087 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | | | | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 15.8 | 17.4 | 20.4 | 7.7 | 0.0 | | | | 17.1 | 0.0 | 17.6 |
| Incr Delay (d2), s/veh | 0.0 | 0.2 | 2.6 | 11.3 | 0.4 | 0.0 | | | | 1.5 | 0.0 | 2.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 1.6 | 3.1 | 3.9 | 2.6 | 0.0 | | | | 2.6 | 0.0 | 3.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 16.0 | 20.0 | 31.8 | 8.1 | 0.0 | | | | 18.6 | 0.0 | 20.0 |
| LnGrp LOS | A | B | B | C | A | A | | | | B | A | C |
| Approach Vol, veh/h | | 907 | | | 839 | | | | | | 584 | |
| Approach Delay, s/veh | | 17.4 | | | 16.1 | | | | | | 19.3 | |
| Approach LOS | | B | | | B | | | | | | B | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.6 | 19.9 | | 18.6 | | 34.5 |
| Change Period (Y+Rc), s | 4.2 | 5.3 | | 4.6 | | 5.3 |
| Max Green Setting (Gmax), s | 13.0 | 20.0 | | 35.0 | | 37.2 |
| Max Q Clear Time (g_c+I1), s | 10.1 | 11.5 | | 10.8 | | 12.1 |
| Green Ext Time (p_c), s | 0.4 | 3.1 | | 3.3 | | 3.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 17.4 |
| HCM 6th LOS | B |

Notes

User approved volume balancing among the lanes for turning movement.

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



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 319 | 34 | 284 | 289 | 120 | 461 |
| Future Volume (veh/h) | 319 | 34 | 284 | 289 | 120 | 461 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 560 | 60 | 355 | 361 | 143 | 549 |
| Peak Hour Factor | 0.57 | 0.57 | 0.80 | 0.80 | 0.84 | 0.84 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 954 | 426 | 547 | 1857 | 490 | 768 |
| Arrive On Green | 0.27 | 0.27 | 0.16 | 0.52 | 0.28 | 0.28 |
| Sat Flow, veh/h | 3647 | 1585 | 3456 | 3647 | 1781 | 2790 |
| Grp Volume(v), veh/h | 560 | 60 | 355 | 361 | 143 | 549 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1585 | 1728 | 1777 | 1781 | 1395 |
| Q Serve(g_s), s | 6.6 | 1.4 | 4.6 | 2.6 | 3.0 | 8.5 |
| Cycle Q Clear(g_c), s | 6.6 | 1.4 | 4.6 | 2.6 | 3.0 | 8.5 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 954 | 426 | 547 | 1857 | 490 | 768 |
| V/C Ratio(X) | 0.59 | 0.14 | 0.65 | 0.19 | 0.29 | 0.72 |
| Avail Cap(c_a), veh/h | 3704 | 1652 | 1441 | 5526 | 1901 | 2977 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.2 | 13.3 | 18.9 | 6.1 | 13.7 | 15.7 |
| Incr Delay (d2), s/veh | 0.6 | 0.1 | 1.3 | 0.1 | 0.3 | 1.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.3 | 0.4 | 1.7 | 0.7 | 1.0 | 2.1 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 15.8 | 13.5 | 20.3 | 6.1 | 14.0 | 16.9 |
| LnGrp LOS | B | B | C | A | B | B |
| Approach Vol, veh/h | 620 | | | 716 | 692 | |
| Approach Delay, s/veh | 15.6 | | | 13.1 | 16.3 | |
| Approach LOS | B | | | B | B | |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 12.2 | 18.0 | | | | 30.2 | 17.8 |
| Change Period (Y+Rc), s | 4.6 | 5.1 | | | | 5.1 | 4.6 |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | | | | 74.6 | 51.2 |
| Max Q Clear Time (g_c+I1), s | 6.6 | 8.6 | | | | 4.6 | 10.5 |
| Green Ext Time (p_c), s | 1.0 | 4.3 | | | | 2.5 | 2.7 |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 6th Ctrl Delay | | 15.0 | |
| HCM 6th LOS | | B | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 8 | 0 | 142 | 0 | 0 | 2 | 63 | 542 | 0 | 3 | 346 | 5 |
| Future Volume (veh/h) | 8 | 0 | 142 | 0 | 0 | 2 | 63 | 542 | 0 | 3 | 346 | 5 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 14 | 0 | 245 | 0 | 0 | 4 | 74 | 638 | 0 | 5 | 532 | 8 |
| Peak Hour Factor | 0.58 | 0.58 | 0.58 | 0.50 | 0.50 | 0.50 | 0.85 | 0.85 | 0.85 | 0.65 | 0.65 | 0.65 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 45 | 0 | 384 | 5 | 0 | 153 | 178 | 1799 | 0 | 17 | 1358 | 20 |
| Arrive On Green | 0.03 | 0.00 | 0.24 | 0.00 | 0.00 | 0.10 | 0.10 | 0.35 | 0.00 | 0.01 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 5274 | 0 | 1781 | 5183 | 78 |
| Grp Volume(v), veh/h | 14 | 0 | 245 | 0 | 0 | 4 | 74 | 638 | 0 | 5 | 349 | 191 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 1702 | 0 | 1781 | 1702 | 1856 |
| Q Serve(g_s), s | 0.3 | 0.0 | 5.3 | 0.0 | 0.0 | 0.1 | 1.5 | 3.5 | 0.0 | 0.1 | 3.2 | 3.2 |
| Cycle Q Clear(g_c), s | 0.3 | 0.0 | 5.3 | 0.0 | 0.0 | 0.1 | 1.5 | 3.5 | 0.0 | 0.1 | 3.2 | 3.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.04 |
| Lane Grp Cap(c), veh/h | 45 | 0 | 384 | 5 | 0 | 153 | 178 | 1799 | 0 | 17 | 892 | 486 |
| V/C Ratio(X) | 0.31 | 0.00 | 0.64 | 0.00 | 0.00 | 0.03 | 0.42 | 0.35 | 0.00 | 0.30 | 0.39 | 0.39 |
| Avail Cap(c_a), veh/h | 467 | 0 | 1454 | 467 | 0 | 1454 | 934 | 4683 | 0 | 467 | 2230 | 1216 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 18.3 | 0.0 | 12.9 | 0.0 | 0.0 | 15.6 | 16.1 | 9.1 | 0.0 | 18.8 | 11.6 | 11.6 |
| Incr Delay (d2), s/veh | 3.8 | 0.0 | 2.5 | 0.0 | 0.0 | 0.1 | 1.6 | 0.2 | 0.0 | 9.4 | 0.4 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.2 | 0.0 | 1.8 | 0.0 | 0.0 | 0.0 | 0.5 | 0.8 | 0.0 | 0.1 | 0.8 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 22.1 | 0.0 | 15.4 | 0.0 | 0.0 | 15.7 | 17.7 | 9.3 | 0.0 | 28.2 | 12.0 | 12.3 |
| LnGrp LOS | C | A | B | A | A | B | B | A | A | C | B | B |
| Approach Vol, veh/h | | 259 | | | 4 | | | 712 | | | 545 | |
| Approach Delay, s/veh | | 15.8 | | | 15.7 | | | 10.2 | | | 12.2 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.0 | 14.0 | 8.4 | 15.8 | 5.6 | 8.4 | 5.0 | 19.2 |
| Change Period (Y+Rc), s | 4.6 | * 4.7 | 4.6 | 5.8 | 4.6 | * 4.7 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | * 35 | 20.0 | 25.0 | 10.0 | * 35 | 10.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 10.0 | 7.3 | 3.5 | 5.2 | 2.3 | 2.1 | 2.1 | 5.5 |
| Green Ext Time (p_c), s | 0.0 | 2.4 | 0.1 | 4.0 | 0.0 | 0.0 | 0.0 | 5.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.9 |
| HCM 6th LOS | B |

**Notes**

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 347 | 559 | 69 | 350 | 350 | 101 | 77 | 208 | 182 | 124 | 143 | 228 |
| Future Volume (veh/h) | 347 | 559 | 69 | 350 | 350 | 101 | 77 | 208 | 182 | 124 | 143 | 228 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 413 | 665 | 82 | 407 | 407 | 117 | 87 | 234 | 204 | 188 | 217 | 345 |
| Peak Hour Factor | 0.84 | 0.84 | 0.84 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.66 | 0.66 | 0.66 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 458 | 1299 | 403 | 529 | 768 | 238 | 114 | 1226 | 670 | 287 | 1322 | 410 |
| Arrive On Green | 0.26 | 0.25 | 0.25 | 0.15 | 0.15 | 0.15 | 0.06 | 0.24 | 0.24 | 0.08 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1781 | 5106 | 1585 | 3456 | 5106 | 1585 | 1781 | 5106 | 2790 | 3456 | 5106 | 1585 |
| Grp Volume(v), veh/h | 413 | 665 | 82 | 407 | 407 | 117 | 87 | 234 | 204 | 188 | 217 | 345 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1585 | 1728 | 1702 | 1585 | 1781 | 1702 | 1395 | 1728 | 1702 | 1585 |
| Q Serve(g_s), s | 17.9 | 8.9 | 3.2 | 9.0 | 5.9 | 5.4 | 3.8 | 2.9 | 4.8 | 4.2 | 2.6 | 16.5 |
| Cycle Q Clear(g_c), s | 17.9 | 8.9 | 3.2 | 9.0 | 5.9 | 5.4 | 3.8 | 2.9 | 4.8 | 4.2 | 2.6 | 16.5 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 458 | 1299 | 403 | 529 | 768 | 238 | 114 | 1226 | 670 | 287 | 1322 | 410 |
| V/C Ratio(X) | 0.90 | 0.51 | 0.20 | 0.77 | 0.53 | 0.49 | 0.76 | 0.19 | 0.30 | 0.66 | 0.16 | 0.84 |
| Avail Cap(c_a), veh/h | 558 | 2560 | 795 | 1083 | 2560 | 795 | 558 | 2240 | 1224 | 1083 | 2240 | 695 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 28.7 | 25.5 | 23.4 | 32.4 | 31.3 | 31.1 | 36.7 | 24.1 | 24.9 | 35.5 | 22.9 | 28.0 |
| Incr Delay (d2), s/veh | 15.8 | 0.3 | 0.2 | 2.4 | 0.6 | 1.6 | 9.9 | 0.1 | 0.3 | 2.5 | 0.1 | 4.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 8.9 | 3.3 | 1.1 | 3.7 | 2.3 | 2.0 | 1.9 | 1.1 | 1.5 | 1.7 | 1.0 | 6.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 44.4 | 25.8 | 23.6 | 34.8 | 31.9 | 32.7 | 46.6 | 24.2 | 25.1 | 38.0 | 22.9 | 32.7 |
| LnGrp LOS | D | C | C | C | C | C | D | C | C | D | C | C |
| Approach Vol, veh/h | | 1160 | | | 931 | | | 525 | | | 750 | |
| Approach Delay, s/veh | | 32.3 | | | 33.3 | | | 28.3 | | | 31.2 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 17.2 | 26.3 | 9.6 | 26.7 | 25.5 | 18.0 | 11.1 | 25.2 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 4.5 | 6.0 | 5.0 | 6.0 | 4.5 | 6.0 |
| Max Green Setting (Gmax), s | 25.0 | 40.0 | 25.0 | 35.0 | 25.0 | 40.0 | 25.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 11.0 | 10.9 | 5.8 | 18.5 | 19.9 | 7.9 | 6.2 | 6.8 |
| Green Ext Time (p_c), s | 1.2 | 4.7 | 0.2 | 2.2 | 0.6 | 3.0 | 0.5 | 2.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 31.7 |
| HCM 6th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 107 | 9 | 7 | 2 | 24 | 16 | 1 | 74 | 0 | 42 | 112 | 113 |
| Future Volume (veh/h) | 107 | 9 | 7 | 2 | 24 | 16 | 1 | 74 | 0 | 42 | 112 | 113 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 126 | 11 | 8 | 4 | 48 | 32 | 1 | 95 | 0 | 58 | 153 | 155 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.50 | 0.50 | 0.50 | 0.78 | 0.78 | 0.78 | 0.73 | 0.73 | 0.73 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 168 | 305 | 258 | 8 | 136 | 116 | 5 | 1020 | 0 | 88 | 1267 | 393 |
| Arrive On Green | 0.09 | 0.16 | 0.16 | 0.00 | 0.07 | 0.07 | 0.00 | 0.20 | 0.00 | 0.05 | 0.25 | 0.25 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 5274 | 0 | 1781 | 5106 | 1585 |
| Grp Volume(v), veh/h | 126 | 11 | 8 | 4 | 48 | 32 | 1 | 95 | 0 | 58 | 153 | 155 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1702 | 0 | 1781 | 1702 | 1585 |
| Q Serve(g_s), s | 2.4 | 0.2 | 0.1 | 0.1 | 0.8 | 0.7 | 0.0 | 0.5 | 0.0 | 1.1 | 0.8 | 2.8 |
| Cycle Q Clear(g_c), s | 2.4 | 0.2 | 0.1 | 0.1 | 0.8 | 0.7 | 0.0 | 0.5 | 0.0 | 1.1 | 0.8 | 2.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 168 | 305 | 258 | 8 | 136 | 116 | 5 | 1020 | 0 | 88 | 1267 | 393 |
| V/C Ratio(X) | 0.75 | 0.04 | 0.03 | 0.51 | 0.35 | 0.28 | 0.19 | 0.09 | 0.00 | 0.66 | 0.12 | 0.39 |
| Avail Cap(c_a), veh/h | 1039 | 1364 | 1156 | 1039 | 1364 | 1156 | 1039 | 4468 | 0 | 1039 | 4468 | 1387 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.1 | 12.1 | 12.1 | 17.0 | 15.1 | 15.0 | 17.1 | 11.2 | 0.0 | 16.0 | 10.0 | 10.7 |
| Incr Delay (d2), s/veh | 6.5 | 0.0 | 0.0 | 44.2 | 1.5 | 1.3 | 17.0 | 0.1 | 0.0 | 8.0 | 0.2 | 2.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 0.1 | 0.0 | 0.1 | 0.4 | 0.2 | 0.0 | 0.1 | 0.0 | 0.5 | 0.2 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 21.7 | 12.1 | 12.1 | 61.2 | 16.7 | 16.3 | 34.1 | 11.3 | 0.0 | 24.1 | 10.1 | 13.1 |
| LnGrp LOS | C | B | B | E | B | B | C | B | A | C | B | B |
| Approach Vol, veh/h | | 145 | | | 84 | | | 96 | | | 366 | |
| Approach Delay, s/veh | | 20.4 | | | 18.7 | | | 11.6 | | | 13.6 | |
| Approach LOS | | C | | | B | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.6 | 10.6 | 4.5 | 14.5 | 7.7 | 7.5 | 6.2 | 12.9 |
| Change Period (Y+Rc), s | 4.5 | 5.0 | 4.5 | 6.0 | 4.5 | 5.0 | 4.5 | 6.0 |
| Max Green Setting (Gmax), s | 20.0 | 25.0 | 20.0 | 30.0 | 20.0 | 25.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 12.1 | 2.2 | 2.0 | 4.8 | 4.4 | 2.8 | 3.1 | 2.5 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 3.7 | 0.3 | 0.3 | 0.1 | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 15.4 |
| HCM 6th LOS | B |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 40 | 638 | 48 | 217 | 278 | 155 | 12 | 25 | 207 | 130 | 31 | 11 |
| Future Volume (veh/h) | 40 | 638 | 48 | 217 | 278 | 155 | 12 | 25 | 207 | 130 | 31 | 11 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 55 | 874 | 66 | 231 | 296 | 165 | 13 | 27 | 223 | 171 | 41 | 14 |
| Peak Hour Factor | 0.73 | 0.73 | 0.73 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 | 0.93 | 0.76 | 0.76 | 0.76 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 80 | 1204 | 91 | 277 | 1277 | 570 | 28 | 321 | 272 | 214 | 368 | 126 |
| Arrive On Green | 0.04 | 0.25 | 0.25 | 0.16 | 0.36 | 0.36 | 0.02 | 0.17 | 0.17 | 0.12 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1781 | 4844 | 365 | 1781 | 3554 | 1585 | 1781 | 1870 | 1585 | 1781 | 1333 | 455 |
| Grp Volume(v), veh/h | 55 | 613 | 327 | 231 | 296 | 165 | 13 | 27 | 223 | 171 | 0 | 55 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1805 | 1781 | 1777 | 1585 | 1781 | 1870 | 1585 | 1781 | 0 | 1788 |
| Q Serve(g_s), s | 2.3 | 12.7 | 12.8 | 9.7 | 4.5 | 5.7 | 0.6 | 0.9 | 10.4 | 7.2 | 0.0 | 1.8 |
| Cycle Q Clear(g_c), s | 2.3 | 12.7 | 12.8 | 9.7 | 4.5 | 5.7 | 0.6 | 0.9 | 10.4 | 7.2 | 0.0 | 1.8 |
| Prop In Lane | 1.00 | | 0.20 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.25 |
| Lane Grp Cap(c), veh/h | 80 | 846 | 449 | 277 | 1277 | 570 | 28 | 321 | 272 | 214 | 0 | 494 |
| V/C Ratio(X) | 0.69 | 0.72 | 0.73 | 0.83 | 0.23 | 0.29 | 0.46 | 0.08 | 0.82 | 0.80 | 0.00 | 0.11 |
| Avail Cap(c_a), veh/h | 463 | 2211 | 1172 | 463 | 2308 | 1029 | 463 | 729 | 618 | 463 | 0 | 697 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.2 | 26.5 | 26.5 | 31.5 | 17.2 | 17.6 | 37.6 | 26.8 | 30.8 | 33.0 | 0.0 | 20.8 |
| Incr Delay (d2), s/veh | 10.0 | 0.4 | 0.9 | 6.4 | 0.1 | 0.4 | 11.4 | 0.1 | 6.1 | 6.7 | 0.0 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.2 | 4.9 | 5.3 | 4.3 | 1.7 | 2.0 | 0.3 | 0.4 | 4.3 | 3.4 | 0.0 | 0.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 46.2 | 27.0 | 27.4 | 38.0 | 17.4 | 18.0 | 49.0 | 26.9 | 36.8 | 39.6 | 0.0 | 20.9 |
| LnGrp LOS | D | C | C | D | B | B | D | C | D | D | A | C |
| Approach Vol, veh/h | | 995 | | | 692 | | | 263 | | | 226 | |
| Approach Delay, s/veh | | 28.2 | | | 24.4 | | | 36.4 | | | 35.1 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 17.3 | 25.1 | 6.8 | 27.8 | 8.8 | 33.7 | 14.9 | 19.7 |
| Change Period (Y+Rc), s | 5.3 | 6.0 | 5.6 | 6.5 | 5.3 | 6.0 | 5.6 | 6.5 |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | 20.0 | 30.0 | 20.0 | 50.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 11.7 | 14.8 | 2.6 | 3.8 | 4.3 | 7.7 | 9.2 | 12.4 |
| Green Ext Time (p_c), s | 0.4 | 4.4 | 0.0 | 0.2 | 0.1 | 3.7 | 0.3 | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 28.7 |
| HCM 6th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9.6 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 4 | 42 | 106 | 7 | 26 | 34 | 59 | 82 | 23 | 37 | 0 |
| Future Vol, veh/h | 0 | 4 | 42 | 106 | 7 | 26 | 34 | 59 | 82 | 23 | 37 | 0 |
| Peak Hour Factor | 0.61 | 0.61 | 0.61 | 0.54 | 0.54 | 0.54 | 0.75 | 0.75 | 0.75 | 0.83 | 0.83 | 0.83 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 7 | 69 | 196 | 13 | 48 | 45 | 79 | 109 | 28 | 45 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 8 | 10.3 | 9.6 | 8.7 |
| HCM LOS | A | B | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 19% | 0% | 76% | 38% |
| Vol Thru, % | 34% | 9% | 5% | 62% |
| Vol Right, % | 47% | 91% | 19% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 175 | 46 | 139 | 60 |
| LT Vol | 34 | 0 | 106 | 23 |
| Through Vol | 59 | 4 | 7 | 37 |
| RT Vol | 82 | 42 | 26 | 0 |
| Lane Flow Rate | 233 | 75 | 257 | 72 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.297 | 0.093 | 0.342 | 0.102 |
| Departure Headway (Hd) | 4.578 | 4.433 | 4.781 | 5.091 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 782 | 802 | 749 | 700 |
| Service Time | 2.628 | 2.496 | 2.832 | 3.155 |
| HCM Lane V/C Ratio | 0.298 | 0.094 | 0.343 | 0.103 |
| HCM Control Delay | 9.6 | 8 | 10.3 | 8.7 |
| HCM Lane LOS | A | A | B | A |
| HCM 95th-tile Q | 1.2 | 0.3 | 1.5 | 0.3 |

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

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 22 | 10 | 24 | 25 | 3 |
| Future Vol, veh/h | 0 | 22 | 10 | 24 | 25 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 50 | 50 | 71 | 71 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 44 | 14 | 34 | 28 | 3 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 48 | 0 | - | 0 | 75 | 31 |
| Stage 1 | - | - | - | - | 31 | - |
| Stage 2 | - | - | - | - | 44 | - |
| 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 | 1559 | - | - | - | 928 | 1043 |
| Stage 1 | - | - | - | - | 992 | - |
| Stage 2 | - | - | - | - | 978 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1559 | - | - | - | 928 | 1043 |
| Mov Cap-2 Maneuver | - | - | - | - | 928 | - |
| Stage 1 | - | - | - | - | 992 | - |
| Stage 2 | - | - | - | - | 978 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 9 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1559 | - | - | - | 939 |
| HCM Lane V/C Ratio | - | - | - | - | 0.034 |
| HCM Control Delay (s) | 0 | - | - | - | 9 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.1 |

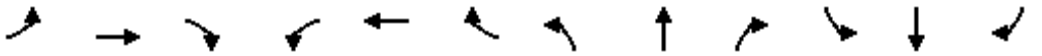
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 8 | 8 | 11 | 131 | 158 | 5 |
| Future Vol, veh/h | 8 | 8 | 11 | 131 | 158 | 5 |
| 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 | 57 | 57 | 75 | 75 | 53 | 53 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 14 | 14 | 15 | 175 | 298 | 9 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 508 | 303 | 307 | 0 | - | 0 |
| Stage 1 | 303 | - | - | - | - | - |
| Stage 2 | 205 | - | - | - | - | - |
| 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 | 525 | 737 | 1254 | - | - | - |
| Stage 1 | 749 | - | - | - | - | - |
| Stage 2 | 829 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 518 | 737 | 1254 | - | - | - |
| Mov Cap-2 Maneuver | 518 | - | - | - | - | - |
| Stage 1 | 739 | - | - | - | - | - |
| Stage 2 | 829 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.2 | 0.6 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1254 | - | 608 | - | - |
| HCM Lane V/C Ratio | 0.012 | - | 0.046 | - | - |
| HCM Control Delay (s) | 7.9 | 0 | 11.2 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 104 | 797 | 0 | 0 | 711 | 248 | 64 | 5 | 398 | 0 | 0 | 0 |
| Future Volume (veh/h) | 104 | 797 | 0 | 0 | 711 | 248 | 64 | 5 | 398 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 135 | 1035 | 0 | 0 | 799 | 279 | 76 | 6 | 474 | | | |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.89 | 0.89 | 0.89 | 0.84 | 0.84 | 0.84 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 171 | 1846 | 0 | 0 | 973 | 339 | 82 | 6 | 513 | | | |
| Arrive On Green | 0.10 | 0.52 | 0.00 | 0.00 | 0.38 | 0.38 | 0.37 | 0.37 | 0.37 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 2677 | 901 | 220 | 17 | 1374 | | | |
| Grp Volume(v), veh/h | 135 | 1035 | 0 | 0 | 549 | 529 | 556 | 0 | 0 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1708 | 1612 | 0 | 0 | | | |
| Q Serve(g_s), s | 6.4 | 16.9 | 0.0 | 0.0 | 23.9 | 24.0 | 28.3 | 0.0 | 0.0 | | | |
| Cycle Q Clear(g_c), s | 6.4 | 16.9 | 0.0 | 0.0 | 23.9 | 24.0 | 28.3 | 0.0 | 0.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.53 | 0.14 | | 0.85 | | | |
| Lane Grp Cap(c), veh/h | 171 | 1846 | 0 | 0 | 669 | 643 | 602 | 0 | 0 | | | |
| V/C Ratio(X) | 0.79 | 0.56 | 0.00 | 0.00 | 0.82 | 0.82 | 0.92 | 0.00 | 0.00 | | | |
| Avail Cap(c_a), veh/h | 416 | 2446 | 0 | 0 | 725 | 697 | 658 | 0 | 0 | | | |
| HCM Platoon Ratio | 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 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | | | |
| Uniform Delay (d), s/veh | 37.9 | 14.0 | 0.0 | 0.0 | 24.1 | 24.1 | 25.7 | 0.0 | 0.0 | | | |
| Incr Delay (d2), s/veh | 7.8 | 0.5 | 0.0 | 0.0 | 8.1 | 8.4 | 18.3 | 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 | | | |
| %ile BackOfQ(50%),veh/ln | 3.1 | 6.2 | 0.0 | 0.0 | 10.8 | 10.5 | 12.7 | 0.0 | 0.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 45.7 | 14.5 | 0.0 | 0.0 | 32.2 | 32.6 | 44.0 | 0.0 | 0.0 | | | |
| LnGrp LOS | D | B | A | A | C | C | D | A | A | | | |
| Approach Vol, veh/h | | 1170 | | | 1078 | | | 556 | | | | |
| Approach Delay, s/veh | | 18.1 | | | 32.4 | | | 44.0 | | | | |
| Approach LOS | | B | | | C | | | D | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 49.1 | | | 12.2 | 36.9 | | 36.6 | | | | |
| Change Period (Y+Rc), s | | 4.6 | | | 4.0 | 4.6 | | 4.6 | | | | |
| Max Green Setting (Gmax), s | | 59.0 | | | 20.0 | 35.0 | | 35.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 18.9 | | | 8.4 | 26.0 | | 30.3 | | | | |
| Green Ext Time (p_c), s | | 16.7 | | | 0.2 | 6.3 | | 1.7 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 28.7 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 574 | 72 | 225 | 550 | 0 | 0 | 0 | 0 | 327 | 8 | 105 |
| Future Volume (veh/h) | 0 | 574 | 72 | 225 | 550 | 0 | 0 | 0 | 0 | 327 | 8 | 105 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 786 | 99 | 253 | 618 | 0 | | | | 376 | 9 | 121 |
| Peak Hour Factor | 0.73 | 0.73 | 0.73 | 0.89 | 0.89 | 0.89 | | | | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 1415 | 177 | 303 | 997 | 0 | | | | 438 | 10 | 141 |
| Arrive On Green | 0.00 | 0.31 | 0.31 | 0.17 | 0.53 | 0.00 | | | | 0.34 | 0.34 | 0.34 |
| Sat Flow, veh/h | 0 | 4764 | 575 | 1781 | 1870 | 0 | | | | 1287 | 31 | 414 |
| Grp Volume(v), veh/h | 0 | 581 | 304 | 253 | 618 | 0 | | | | 506 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1767 | 1781 | 1870 | 0 | | | | 1731 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 10.4 | 10.5 | 10.0 | 16.8 | 0.0 | | | | 19.8 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 10.4 | 10.5 | 10.0 | 16.8 | 0.0 | | | | 19.8 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 0.33 | 1.00 | | 0.00 | | | | 0.74 | | 0.24 |
| Lane Grp Cap(c), veh/h | 0 | 1048 | 544 | 303 | 997 | 0 | | | | 590 | 0 | 0 |
| V/C Ratio(X) | 0.00 | 0.55 | 0.56 | 0.84 | 0.62 | 0.00 | | | | 0.86 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 1636 | 849 | 489 | 1516 | 0 | | | | 832 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | | | | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 21.0 | 21.1 | 29.2 | 11.9 | 0.0 | | | | 22.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.9 | 1.8 | 6.7 | 1.2 | 0.0 | | | | 7.0 | 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 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 3.9 | 4.3 | 4.6 | 6.2 | 0.0 | | | | 8.1 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 21.9 | 22.8 | 36.0 | 13.1 | 0.0 | | | | 29.3 | 0.0 | 0.0 |
| LnGrp LOS | A | C | C | D | B | A | | | | C | A | A |
| Approach Vol, veh/h | | 885 | | | 871 | | | | | | 506 | |
| Approach Delay, s/veh | | 22.2 | | | 19.7 | | | | | | 29.3 | |
| Approach LOS | | C | | | B | | | | | | C | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 16.4 | 27.0 | | 29.4 | | 43.4 |
| Change Period (Y+Rc), s | 4.0 | 4.6 | | 4.6 | | 4.6 |
| Max Green Setting (Gmax), s | 20.0 | 35.0 | | 35.0 | | 59.0 |
| Max Q Clear Time (g_c+I1), s | 12.0 | 12.5 | | 21.8 | | 18.8 |
| Green Ext Time (p_c), s | 0.4 | 9.9 | | 3.0 | | 9.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 22.9 |
| HCM 6th LOS | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 212 | 763 | 0 | 0 | 600 | 434 | 246 | 6 | 432 | 0 | 0 | 0 |
| Future Volume (veh/h) | 212 | 763 | 0 | 0 | 600 | 434 | 246 | 6 | 432 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 228 | 820 | 0 | 0 | 625 | 0 | 256 | 6 | 450 | | | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 288 | 1780 | 0 | 0 | 961 | | 588 | 14 | 535 | | | |
| Arrive On Green | 0.16 | 0.50 | 0.00 | 0.00 | 0.27 | 0.00 | 0.34 | 0.34 | 0.34 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 3647 | 1585 | 1742 | 41 | 1585 | | | |
| Grp Volume(v), veh/h | 228 | 820 | 0 | 0 | 625 | 0 | 262 | 0 | 450 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1585 | 1783 | 0 | 1585 | | | |
| Q Serve(g_s), s | 7.5 | 9.2 | 0.0 | 0.0 | 9.5 | 0.0 | 7.0 | 0.0 | 16.1 | | | |
| Cycle Q Clear(g_c), s | 7.5 | 9.2 | 0.0 | 0.0 | 9.5 | 0.0 | 7.0 | 0.0 | 16.1 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.98 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 288 | 1780 | 0 | 0 | 961 | | 602 | 0 | 535 | | | |
| V/C Ratio(X) | 0.79 | 0.46 | 0.00 | 0.00 | 0.65 | | 0.44 | 0.00 | 0.84 | | | |
| Avail Cap(c_a), veh/h | 582 | 3148 | 0 | 0 | 1742 | | 904 | 0 | 803 | | | |
| HCM Platoon Ratio | 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 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 24.7 | 9.9 | 0.0 | 0.0 | 19.8 | 0.0 | 15.7 | 0.0 | 18.8 | | | |
| Incr Delay (d2), s/veh | 5.8 | 0.3 | 0.0 | 0.0 | 1.1 | 0.0 | 0.5 | 0.0 | 5.2 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 3.3 | 2.7 | 0.0 | 0.0 | 3.5 | 0.0 | 2.4 | 0.0 | 5.6 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 30.5 | 10.2 | 0.0 | 0.0 | 20.8 | 0.0 | 16.2 | 0.0 | 23.9 | | | |
| LnGrp LOS | C | B | A | A | C | | B | A | C | | | |
| Approach Vol, veh/h | | 1048 | | | 625 | | | 712 | | | | |
| Approach Delay, s/veh | | 14.6 | | | 20.8 | | | 21.1 | | | | |
| Approach LOS | | B | | | C | | | C | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 35.9 | | | 14.1 | 21.9 | | 25.2 | | | | |
| Change Period (Y+Rc), s | | 5.3 | | | * 4.2 | 5.3 | | 4.6 | | | | |
| Max Green Setting (Gmax), s | | 54.2 | | | * 20 | 30.0 | | 31.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 11.2 | | | 9.5 | 11.5 | | 18.1 | | | | |
| Green Ext Time (p_c), s | | 9.1 | | | 0.6 | 5.0 | | 2.6 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 18.2 |
| HCM 6th LOS | B |

**Notes**

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

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 689 | 273 | 239 | 607 | 0 | 0 | 0 | 0 | 286 | 1 | 202 |
| Future Volume (veh/h) | 0 | 689 | 273 | 239 | 607 | 0 | 0 | 0 | 0 | 286 | 1 | 202 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 749 | 297 | 252 | 639 | 0 | | | | 330 | 79 | 273 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.95 | 0.95 | 0.95 | | | | 0.74 | 0.74 | 0.74 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 1387 | 431 | 313 | 979 | 0 | | | | 530 | 110 | 379 |
| Arrive On Green | 0.00 | 0.27 | 0.27 | 0.18 | 0.52 | 0.00 | | | | 0.30 | 0.30 | 0.30 |
| Sat Flow, veh/h | 0 | 5274 | 1585 | 1781 | 1870 | 0 | | | | 1781 | 368 | 1273 |
| Grp Volume(v), veh/h | 0 | 749 | 297 | 252 | 639 | 0 | | | | 330 | 0 | 352 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1585 | 1781 | 1870 | 0 | | | | 1781 | 0 | 1641 |
| Q Serve(g_s), s | 0.0 | 6.9 | 9.3 | 7.5 | 13.7 | 0.0 | | | | 8.8 | 0.0 | 10.6 |
| Cycle Q Clear(g_c), s | 0.0 | 6.9 | 9.3 | 7.5 | 13.7 | 0.0 | | | | 8.8 | 0.0 | 10.6 |
| Prop In Lane | 0.00 | | 1.00 | 1.00 | | 0.00 | | | | 1.00 | | 0.78 |
| Lane Grp Cap(c), veh/h | 0 | 1387 | 431 | 313 | 979 | 0 | | | | 530 | 0 | 488 |
| V/C Ratio(X) | 0.00 | 0.54 | 0.69 | 0.80 | 0.65 | 0.00 | | | | 0.62 | 0.00 | 0.72 |
| Avail Cap(c_a), veh/h | 0 | 1846 | 573 | 419 | 1258 | 0 | | | | 1127 | 0 | 1038 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | | | | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 17.2 | 18.1 | 21.9 | 9.5 | 0.0 | | | | 16.8 | 0.0 | 17.4 |
| Incr Delay (d2), s/veh | 0.0 | 0.3 | 2.2 | 10.5 | 0.8 | 0.0 | | | | 1.5 | 0.0 | 2.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 2.3 | 3.0 | 3.6 | 3.9 | 0.0 | | | | 3.1 | 0.0 | 3.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 17.5 | 20.3 | 32.4 | 10.3 | 0.0 | | | | 18.2 | 0.0 | 19.8 |
| LnGrp LOS | A | B | C | C | B | A | | | | B | A | B |
| Approach Vol, veh/h | | 1046 | | | 891 | | | | | | 682 | |
| Approach Delay, s/veh | | 18.3 | | | 16.6 | | | | | | 19.0 | |
| Approach LOS | | B | | | B | | | | | | B | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.9 | 20.3 | | 21.1 | | 34.3 |
| Change Period (Y+Rc), s | 4.2 | 5.3 | | 4.6 | | 5.3 |
| Max Green Setting (Gmax), s | 13.3 | 20.0 | | 35.0 | | 37.2 |
| Max Q Clear Time (g_c+I1), s | 9.5 | 11.3 | | 12.6 | | 15.7 |
| Green Ext Time (p_c), s | 0.4 | 3.7 | | 3.8 | | 3.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 17.9 |
| HCM 6th LOS | B |

**Notes**

User approved volume balancing among the lanes for turning movement.

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

# Appendix E – 2022 Existing Conditions plus Project Level of Service Sheets



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 427 | 43 | 207 | 416 | 209 | 222 |
| Future Volume (veh/h) | 427 | 43 | 207 | 416 | 209 | 222 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 667 | 67 | 230 | 462 | 279 | 296 |
| Peak Hour Factor | 0.64 | 0.64 | 0.90 | 0.90 | 0.75 | 0.75 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 1125 | 502 | 497 | 1991 | 408 | 639 |
| Arrive On Green | 0.32 | 0.32 | 0.14 | 0.56 | 0.23 | 0.23 |
| Sat Flow, veh/h | 3647 | 1585 | 3456 | 3647 | 1781 | 2790 |
| Grp Volume(v), veh/h | 667 | 67 | 230 | 462 | 279 | 296 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1585 | 1728 | 1777 | 1781 | 1395 |
| Q Serve(g_s), s | 7.3 | 1.4 | 2.8 | 3.0 | 6.6 | 4.2 |
| Cycle Q Clear(g_c), s | 7.3 | 1.4 | 2.8 | 3.0 | 6.6 | 4.2 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 1125 | 502 | 497 | 1991 | 408 | 639 |
| V/C Ratio(X) | 0.59 | 0.13 | 0.46 | 0.23 | 0.68 | 0.46 |
| Avail Cap(c_a), veh/h | 3855 | 1719 | 1500 | 5752 | 1979 | 3099 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 13.2 | 11.2 | 18.1 | 5.1 | 16.2 | 15.3 |
| Incr Delay (d2), s/veh | 0.5 | 0.1 | 0.7 | 0.1 | 2.0 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.4 | 0.4 | 1.0 | 0.7 | 2.2 | 1.1 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 13.7 | 11.4 | 18.8 | 5.2 | 18.3 | 15.8 |
| LnGrp LOS | B | B | B | A | B | B |
| Approach Vol, veh/h | 734 | | | 692 | 575 | |
| Approach Delay, s/veh | 13.5 | | | 9.7 | 17.0 | |
| Approach LOS | B | | | A | B | |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 11.2 | 19.7 | | | | 30.9 | 15.2 |
| Change Period (Y+Rc), s | 4.6 | 5.1 | | | | 5.1 | 4.6 |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | | | | 74.6 | 51.2 |
| Max Q Clear Time (g_c+I1), s | 4.8 | 9.3 | | | | 5.0 | 8.6 |
| Green Ext Time (p_c), s | 0.6 | 5.3 | | | | 3.4 | 2.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 13.2 |
| HCM 6th LOS | B |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 43 | 0 | 152 | 1 | 0 | 3 | 65 | 455 | 0 | 3 | 225 | 24 |
| Future Volume (veh/h) | 43 | 0 | 152 | 1 | 0 | 3 | 65 | 455 | 0 | 3 | 225 | 24 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 73 | 0 | 258 | 2 | 0 | 6 | 87 | 607 | 0 | 4 | 331 | 35 |
| Peak Hour Factor | 0.59 | 0.59 | 0.59 | 0.50 | 0.50 | 0.50 | 0.75 | 0.75 | 0.75 | 0.68 | 0.68 | 0.68 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 165 | 0 | 378 | 7 | 0 | 237 | 183 | 1612 | 0 | 14 | 1037 | 108 |
| Arrive On Green | 0.09 | 0.00 | 0.24 | 0.00 | 0.00 | 0.15 | 0.10 | 0.32 | 0.00 | 0.01 | 0.22 | 0.22 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 5274 | 0 | 1781 | 4699 | 487 |
| Grp Volume(v), veh/h | 73 | 0 | 258 | 2 | 0 | 6 | 87 | 607 | 0 | 4 | 238 | 128 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 1702 | 0 | 1781 | 1702 | 1783 |
| Q Serve(g_s), s | 1.8 | 0.0 | 6.7 | 0.1 | 0.0 | 0.1 | 2.1 | 4.2 | 0.0 | 0.1 | 2.7 | 2.7 |
| Cycle Q Clear(g_c), s | 1.8 | 0.0 | 6.7 | 0.1 | 0.0 | 0.1 | 2.1 | 4.2 | 0.0 | 0.1 | 2.7 | 2.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.27 |
| Lane Grp Cap(c), veh/h | 165 | 0 | 378 | 7 | 0 | 237 | 183 | 1612 | 0 | 14 | 751 | 393 |
| V/C Ratio(X) | 0.44 | 0.00 | 0.68 | 0.29 | 0.00 | 0.03 | 0.48 | 0.38 | 0.00 | 0.30 | 0.32 | 0.33 |
| Avail Cap(c_a), veh/h | 393 | 0 | 1224 | 393 | 0 | 1224 | 786 | 3942 | 0 | 393 | 1877 | 983 |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.5 | 0.0 | 15.7 | 22.5 | 0.0 | 16.5 | 19.2 | 12.0 | 0.0 | 22.4 | 14.8 | 14.8 |
| Incr Delay (d2), s/veh | 1.8 | 0.0 | 3.1 | 22.0 | 0.0 | 0.1 | 1.9 | 0.2 | 0.0 | 11.7 | 0.3 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.8 | 0.0 | 2.5 | 0.1 | 0.0 | 0.1 | 0.8 | 1.1 | 0.0 | 0.1 | 0.8 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 21.3 | 0.0 | 18.8 | 44.5 | 0.0 | 16.5 | 21.1 | 12.3 | 0.0 | 34.0 | 15.1 | 15.5 |
| LnGrp LOS | C | A | B | D | A | B | C | B | A | C | B | B |
| Approach Vol, veh/h | | 331 | | | 8 | | | 694 | | | 370 | |
| Approach Delay, s/veh | | 19.4 | | | 23.5 | | | 13.4 | | | 15.5 | |
| Approach LOS | | B | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 4.8 | 15.5 | 9.3 | 15.8 | 8.8 | 11.5 | 4.9 | 20.1 |
| Change Period (Y+Rc), s | 4.6 | * 4.7 | 4.6 | 5.8 | 4.6 | * 4.7 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | * 35 | 20.0 | 25.0 | 10.0 | * 35 | 10.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 8.7 | 4.1 | 4.7 | 3.8 | 2.1 | 2.1 | 6.2 |
| Green Ext Time (p_c), s | 0.0 | 2.5 | 0.1 | 2.7 | 0.1 | 0.0 | 0.0 | 5.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 15.4 |
| HCM 6th LOS | B |

Notes

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 235 | 857 | 29 | 292 | 433 | 82 | 43 | 145 | 208 | 79 | 109 | 141 |
| Future Volume (veh/h) | 235 | 857 | 29 | 292 | 433 | 82 | 43 | 145 | 208 | 79 | 109 | 141 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 276 | 1008 | 34 | 348 | 515 | 98 | 52 | 175 | 251 | 120 | 165 | 214 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.66 | 0.66 | 0.66 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 333 | 1570 | 488 | 510 | 1370 | 425 | 82 | 821 | 448 | 229 | 923 | 287 |
| Arrive On Green | 0.19 | 0.31 | 0.31 | 0.15 | 0.27 | 0.27 | 0.05 | 0.16 | 0.16 | 0.07 | 0.18 | 0.18 |
| Sat Flow, veh/h | 1781 | 5106 | 1585 | 3456 | 5106 | 1585 | 1781 | 5106 | 2790 | 3456 | 5106 | 1585 |
| Grp Volume(v), veh/h | 276 | 1008 | 34 | 348 | 515 | 98 | 52 | 175 | 251 | 120 | 165 | 214 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1585 | 1728 | 1702 | 1585 | 1781 | 1702 | 1395 | 1728 | 1702 | 1585 |
| Q Serve(g_s), s | 10.1 | 11.5 | 1.0 | 6.5 | 5.6 | 3.3 | 1.9 | 2.0 | 5.6 | 2.3 | 1.9 | 8.6 |
| Cycle Q Clear(g_c), s | 10.1 | 11.5 | 1.0 | 6.5 | 5.6 | 3.3 | 1.9 | 2.0 | 5.6 | 2.3 | 1.9 | 8.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 333 | 1570 | 488 | 510 | 1370 | 425 | 82 | 821 | 448 | 229 | 923 | 287 |
| V/C Ratio(X) | 0.83 | 0.64 | 0.07 | 0.68 | 0.38 | 0.23 | 0.63 | 0.21 | 0.56 | 0.52 | 0.18 | 0.75 |
| Avail Cap(c_a), veh/h | 658 | 3020 | 937 | 1277 | 3020 | 937 | 658 | 2642 | 1444 | 1277 | 2642 | 820 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 26.5 | 20.2 | 16.6 | 27.3 | 20.1 | 19.3 | 31.7 | 24.7 | 26.2 | 30.6 | 23.5 | 26.2 |
| Incr Delay (d2), s/veh | 5.3 | 0.4 | 0.1 | 1.6 | 0.2 | 0.3 | 7.8 | 0.1 | 1.1 | 1.9 | 0.1 | 3.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.3 | 4.0 | 0.3 | 2.5 | 2.0 | 1.1 | 0.9 | 0.7 | 1.7 | 0.9 | 0.7 | 3.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 31.8 | 20.6 | 16.6 | 28.9 | 20.3 | 19.6 | 39.5 | 24.8 | 27.3 | 32.4 | 23.5 | 30.1 |
| LnGrp LOS | C | C | B | C | C | B | D | C | C | C | C | C |
| Approach Vol, veh/h | | 1318 | | | 961 | | | 478 | | | 499 | |
| Approach Delay, s/veh | | 22.9 | | | 23.4 | | | 27.7 | | | 28.5 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.0 | 26.8 | 7.6 | 18.2 | 17.6 | 24.2 | 9.0 | 16.9 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 4.5 | 6.0 | 5.0 | 6.0 | 4.5 | 6.0 |
| Max Green Setting (Gmax), s | 25.0 | 40.0 | 25.0 | 35.0 | 25.0 | 40.0 | 25.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 8.5 | 13.5 | 3.9 | 10.6 | 12.1 | 7.6 | 4.3 | 7.6 |
| Green Ext Time (p_c), s | 1.1 | 7.3 | 0.1 | 1.6 | 0.6 | 3.7 | 0.3 | 2.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 24.6 |
| HCM 6th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 213 | 32 | 12 | 3 | 15 | 37 | 0 | 91 | 0 | 41 | 125 | 90 |
| Future Volume (veh/h) | 213 | 32 | 12 | 3 | 15 | 37 | 0 | 91 | 0 | 41 | 125 | 90 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 277 | 42 | 16 | 4 | 19 | 46 | 0 | 108 | 0 | 55 | 169 | 122 |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.81 | 0.81 | 0.81 | 0.84 | 0.84 | 0.84 | 0.74 | 0.74 | 0.74 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 362 | 514 | 436 | 8 | 142 | 120 | 4 | 886 | 0 | 82 | 1695 | 526 |
| Arrive On Green | 0.20 | 0.27 | 0.27 | 0.00 | 0.08 | 0.08 | 0.00 | 0.17 | 0.00 | 0.05 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 5274 | 0 | 1781 | 5106 | 1585 |
| Grp Volume(v), veh/h | 277 | 42 | 16 | 4 | 19 | 46 | 0 | 108 | 0 | 55 | 169 | 122 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1702 | 0 | 1781 | 1702 | 1585 |
| Q Serve(g_s), s | 5.8 | 0.7 | 0.3 | 0.1 | 0.4 | 1.1 | 0.0 | 0.7 | 0.0 | 1.2 | 0.9 | 2.2 |
| Cycle Q Clear(g_c), s | 5.8 | 0.7 | 0.3 | 0.1 | 0.4 | 1.1 | 0.0 | 0.7 | 0.0 | 1.2 | 0.9 | 2.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 362 | 514 | 436 | 8 | 142 | 120 | 4 | 886 | 0 | 82 | 1695 | 526 |
| V/C Ratio(X) | 0.76 | 0.08 | 0.04 | 0.52 | 0.13 | 0.38 | 0.00 | 0.12 | 0.00 | 0.67 | 0.10 | 0.23 |
| Avail Cap(c_a), veh/h | 893 | 1173 | 994 | 893 | 1173 | 994 | 893 | 3842 | 0 | 893 | 3842 | 1193 |
| 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 | 0.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.0 | 10.7 | 10.6 | 19.8 | 17.2 | 17.5 | 0.0 | 13.9 | 0.0 | 18.7 | 9.2 | 9.6 |
| Incr Delay (d2), s/veh | 3.4 | 0.1 | 0.0 | 44.5 | 0.4 | 2.0 | 0.0 | 0.2 | 0.0 | 9.3 | 0.1 | 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 | 2.4 | 0.2 | 0.1 | 0.1 | 0.2 | 0.4 | 0.0 | 0.2 | 0.0 | 0.6 | 0.2 | 0.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 18.3 | 10.8 | 10.6 | 64.3 | 17.6 | 19.5 | 0.0 | 14.1 | 0.0 | 28.0 | 9.3 | 10.4 |
| LnGrp LOS | B | B | B | E | B | B | A | B | A | C | A | B |
| Approach Vol, veh/h | | 335 | | | 69 | | | 108 | | | 346 | |
| Approach Delay, s/veh | | 17.0 | | | 21.6 | | | 14.1 | | | 12.7 | |
| Approach LOS | | B | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 4.7 | 16.0 | 0.0 | 19.2 | 12.6 | 8.0 | 6.3 | 12.9 |
| Change Period (Y+Rc), s | 4.5 | 5.0 | 4.5 | 6.0 | 4.5 | 5.0 | 4.5 | 6.0 |
| Max Green Setting (Gmax), s | 20.0 | 25.0 | 20.0 | 30.0 | 20.0 | 25.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 2.7 | 0.0 | 4.2 | 7.8 | 3.1 | 3.2 | 2.7 |
| Green Ext Time (p_c), s | 0.0 | 0.2 | 0.0 | 3.6 | 0.7 | 0.2 | 0.1 | 1.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 15.3 |
| HCM 6th LOS | B |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 53 | 400 | 37 | 126 | 415 | 76 | 39 | 119 | 235 | 486 | 105 | 49 |
| Future Volume (veh/h) | 53 | 400 | 37 | 126 | 415 | 76 | 39 | 119 | 235 | 486 | 105 | 49 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 60 | 455 | 42 | 152 | 500 | 92 | 50 | 153 | 301 | 884 | 191 | 89 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.83 | 0.83 | 0.83 | 0.78 | 0.78 | 0.78 | 0.55 | 0.55 | 0.55 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 80 | 731 | 67 | 191 | 766 | 342 | 73 | 419 | 355 | 423 | 508 | 237 |
| Arrive On Green | 0.04 | 0.15 | 0.15 | 0.11 | 0.22 | 0.22 | 0.04 | 0.22 | 0.22 | 0.24 | 0.42 | 0.42 |
| Sat Flow, veh/h | 1781 | 4762 | 434 | 1781 | 3554 | 1585 | 1781 | 1870 | 1585 | 1781 | 1207 | 562 |
| Grp Volume(v), veh/h | 60 | 324 | 173 | 152 | 500 | 92 | 50 | 153 | 301 | 884 | 0 | 280 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1792 | 1781 | 1777 | 1585 | 1781 | 1870 | 1585 | 1781 | 0 | 1769 |
| Q Serve(g_s), s | 2.8 | 7.5 | 7.6 | 7.0 | 10.8 | 4.1 | 2.3 | 5.8 | 15.3 | 20.0 | 0.0 | 9.2 |
| Cycle Q Clear(g_c), s | 2.8 | 7.5 | 7.6 | 7.0 | 10.8 | 4.1 | 2.3 | 5.8 | 15.3 | 20.0 | 0.0 | 9.2 |
| Prop In Lane | 1.00 | | 0.24 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.32 |
| Lane Grp Cap(c), veh/h | 80 | 522 | 275 | 191 | 766 | 342 | 73 | 419 | 355 | 423 | 0 | 744 |
| V/C Ratio(X) | 0.75 | 0.62 | 0.63 | 0.80 | 0.65 | 0.27 | 0.69 | 0.37 | 0.85 | 2.09 | 0.00 | 0.38 |
| Avail Cap(c_a), veh/h | 423 | 2022 | 1065 | 423 | 2111 | 942 | 423 | 667 | 565 | 423 | 0 | 744 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 39.7 | 33.3 | 33.4 | 36.7 | 30.1 | 27.5 | 39.8 | 27.6 | 31.3 | 32.1 | 0.0 | 16.8 |
| Incr Delay (d2), s/veh | 13.2 | 0.4 | 0.9 | 7.4 | 1.3 | 0.6 | 10.8 | 0.5 | 6.9 | 497.9 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.5 | 3.0 | 3.3 | 3.3 | 4.4 | 1.5 | 1.2 | 2.6 | 6.3 | 66.7 | 0.0 | 3.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 53.0 | 33.8 | 34.3 | 44.1 | 31.5 | 28.1 | 50.6 | 28.1 | 38.2 | 530.0 | 0.0 | 17.1 |
| LnGrp LOS | D | C | C | D | C | C | D | C | D | F | A | B |
| Approach Vol, veh/h | | 557 | | | 744 | | | 504 | | | 1164 | |
| Approach Delay, s/veh | | 36.0 | | | 33.6 | | | 36.4 | | | 406.6 | |
| Approach LOS | | D | | | C | | | D | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.3 | 18.9 | 9.0 | 41.9 | 9.1 | 24.2 | 25.6 | 25.4 |
| Change Period (Y+Rc), s | 5.3 | 6.0 | 5.6 | 6.5 | 5.3 | 6.0 | 5.6 | 6.5 |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | 20.0 | 30.0 | 20.0 | 50.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 9.0 | 9.6 | 4.3 | 11.2 | 4.8 | 12.8 | 22.0 | 17.3 |
| Green Ext Time (p_c), s | 0.3 | 2.1 | 0.1 | 1.5 | 0.1 | 5.3 | 0.0 | 1.5 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 180.8 |
| HCM 6th LOS | F |

**Notes**

User approved pedestrian interval to be less than phase max green.

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 48.3 |
| Intersection LOS | E |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 25 | 380 | 121 | 9 | 19 | 47 | 80 | 116 | 34 | 113 | 0 |
| Future Vol, veh/h | 0 | 25 | 380 | 121 | 9 | 19 | 47 | 80 | 116 | 34 | 113 | 0 |
| Peak Hour Factor | 0.75 | 0.75 | 0.75 | 0.59 | 0.59 | 0.59 | 0.63 | 0.63 | 0.63 | 0.53 | 0.53 | 0.53 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 33 | 507 | 205 | 15 | 32 | 75 | 127 | 184 | 64 | 213 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 79.8 | 23 | 37.3 | 25.3 |
| HCM LOS | F | C | E | D |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 19% | 0% | 81% | 23% |
| Vol Thru, % | 33% | 6% | 6% | 77% |
| Vol Right, % | 48% | 94% | 13% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 243 | 405 | 149 | 147 |
| LT Vol | 47 | 0 | 121 | 34 |
| Through Vol | 80 | 25 | 9 | 113 |
| RT Vol | 116 | 380 | 19 | 0 |
| Lane Flow Rate | 386 | 540 | 253 | 277 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.817 | 1.05 | 0.586 | 0.638 |
| Departure Headway (Hd) | 7.823 | 6.998 | 8.581 | 8.51 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 467 | 524 | 424 | 427 |
| Service Time | 5.823 | 4.998 | 6.581 | 6.51 |
| HCM Lane V/C Ratio | 0.827 | 1.031 | 0.597 | 0.649 |
| HCM Control Delay | 37.3 | 79.8 | 23 | 25.3 |
| HCM Lane LOS | E | F | C | D |
| HCM 95th-tile Q | 7.7 | 15.9 | 3.6 | 4.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 6.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 0 | 116 | 0 | 12 | 19 | 25 | 0 | 0 | 260 | 29 | 0 | 1 |
| Future Vol, veh/h | 0 | 116 | 0 | 12 | 19 | 25 | 0 | 0 | 260 | 29 | 0 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 42 | 42 | 42 | 56 | 56 | 56 | 100 | 100 | 100 | 63 | 63 | 63 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 276 | 0 | 21 | 34 | 45 | 0 | 0 | 260 | 46 | 0 | 2 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 79 | 0 | 0 | 276 | 0 | 0 | 376 | 397 | 276 | 505 | 375 | 57 |
| Stage 1 | - | - | - | - | - | - | 276 | 276 | - | 99 | 99 | - |
| Stage 2 | - | - | - | - | - | - | 100 | 121 | - | 406 | 276 | - |
| 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 | 1519 | - | - | 1287 | - | - | 581 | 540 | 763 | 478 | 556 | 1009 |
| Stage 1 | - | - | - | - | - | - | 730 | 682 | - | 907 | 813 | - |
| Stage 2 | - | - | - | - | - | - | 906 | 796 | - | 622 | 682 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1519 | - | - | 1287 | - | - | 572 | 531 | 763 | 311 | 547 | 1009 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 572 | 531 | - | 311 | 547 | - |
| Stage 1 | - | - | - | - | - | - | 730 | 682 | - | 907 | 799 | - |
| Stage 2 | - | - | - | - | - | - | 889 | 782 | - | 410 | 682 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 1.7 | 12.1 | 18.3 |
| HCM LOS | | | B | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 763 | 1519 | - | - | 1287 | - | - | 318 |
| HCM Lane V/C Ratio | 0.341 | - | - | - | 0.017 | - | - | 0.15 |
| HCM Control Delay (s) | 12.1 | 0 | - | - | 7.8 | 0 | - | 18.3 |
| HCM Lane LOS | B | A | - | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 1.5 | 0 | - | - | 0.1 | - | - | 0.5 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 6 | 4 | 12 | 194 | 162 | 4 |
| Future Vol, veh/h | 6 | 4 | 12 | 194 | 162 | 4 |
| 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 | 50 | 50 | 64 | 64 | 61 | 61 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 12 | 8 | 19 | 303 | 266 | 7 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 611 | 270 | 273 | 0 | - | 0 |
| Stage 1 | 270 | - | - | - | - | - |
| Stage 2 | 341 | - | - | - | - | - |
| 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 | 457 | 769 | 1290 | - | - | - |
| Stage 1 | 775 | - | - | - | - | - |
| Stage 2 | 720 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 449 | 769 | 1290 | - | - | - |
| Mov Cap-2 Maneuver | 449 | - | - | - | - | - |
| Stage 1 | 761 | - | - | - | - | - |
| Stage 2 | 720 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.9 | 0.5 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1290 | - | 539 | - | - |
| HCM Lane V/C Ratio | 0.015 | - | 0.037 | - | - |
| HCM Control Delay (s) | 7.8 | 0 | 11.9 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |

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

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 8 | 12 | 47 | 94 | 22 | 17 |
| Future Vol, veh/h | 8 | 12 | 47 | 94 | 22 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 8 | 12 | 47 | 94 | 22 | 17 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 155 | 94 | 0 | 0 | 141 | 0 |
| Stage 1 | 94 | - | - | - | - | - |
| Stage 2 | 61 | - | - | - | - | - |
| 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 | 836 | 963 | - | - | 1442 | - |
| Stage 1 | 930 | - | - | - | - | - |
| Stage 2 | 962 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 823 | 963 | - | - | 1442 | - |
| Mov Cap-2 Maneuver | 823 | - | - | - | - | - |
| Stage 1 | 930 | - | - | - | - | - |
| Stage 2 | 948 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.1 | 0 | 4.3 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 902 | 1442 | - |
| HCM Lane V/C Ratio | - | - | 0.022 | 0.015 | - |
| HCM Control Delay (s) | - | - | 9.1 | 7.5 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0 | - |

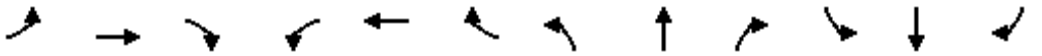
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑ | ↱ | | | ↗ |
| Traffic Vol, veh/h | 0 | 490 | 387 | 129 | 0 | 71 |
| Future Vol, veh/h | 0 | 490 | 387 | 129 | 0 | 71 |
| 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 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 490 | 387 | 129 | 0 | 71 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 452 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 608 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 608 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 11.7 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 608 |
| HCM Lane V/C Ratio | - | - | - | 0.117 |
| HCM Control Delay (s) | - | - | - | 11.7 |
| HCM Lane LOS | - | - | - | B |
| HCM 95th %tile Q(veh) | - | - | - | 0.4 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 119 | 654 | 0 | 0 | 806 | 285 | 88 | 0 | 226 | 0 | 0 | 0 |
| Future Volume (veh/h) | 119 | 654 | 0 | 0 | 806 | 285 | 88 | 0 | 226 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 151 | 828 | 0 | 0 | 916 | 324 | 105 | 0 | 269 | | | |
| Peak Hour Factor | 0.79 | 0.79 | 0.79 | 0.88 | 0.88 | 0.88 | 0.84 | 0.84 | 0.84 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 193 | 2138 | 0 | 0 | 1133 | 399 | 126 | 0 | 323 | | | |
| Arrive On Green | 0.11 | 0.60 | 0.00 | 0.00 | 0.44 | 0.44 | 0.27 | 0.00 | 0.27 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 2670 | 907 | 459 | 0 | 1176 | | | |
| Grp Volume(v), veh/h | 151 | 828 | 0 | 0 | 630 | 610 | 374 | 0 | 0 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1707 | 1636 | 0 | 0 | | | |
| Q Serve(g_s), s | 6.1 | 9.0 | 0.0 | 0.0 | 22.9 | 23.1 | 16.0 | 0.0 | 0.0 | | | |
| Cycle Q Clear(g_c), s | 6.1 | 9.0 | 0.0 | 0.0 | 22.9 | 23.1 | 16.0 | 0.0 | 0.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.53 | 0.28 | | 0.72 | | | |
| Lane Grp Cap(c), veh/h | 193 | 2138 | 0 | 0 | 781 | 750 | 449 | 0 | 0 | | | |
| V/C Ratio(X) | 0.78 | 0.39 | 0.00 | 0.00 | 0.81 | 0.81 | 0.83 | 0.00 | 0.00 | | | |
| Avail Cap(c_a), veh/h | 480 | 2823 | 0 | 0 | 837 | 804 | 771 | 0 | 0 | | | |
| HCM Platoon Ratio | 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 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | | | |
| Uniform Delay (d), s/veh | 32.3 | 7.7 | 0.0 | 0.0 | 18.1 | 18.1 | 25.4 | 0.0 | 0.0 | | | |
| Incr Delay (d2), s/veh | 6.8 | 0.2 | 0.0 | 0.0 | 6.4 | 6.9 | 4.9 | 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 | | | |
| %ile BackOfQ(50%),veh/ln | 2.9 | 2.8 | 0.0 | 0.0 | 9.7 | 9.5 | 6.1 | 0.0 | 0.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 39.1 | 7.9 | 0.0 | 0.0 | 24.5 | 25.1 | 30.3 | 0.0 | 0.0 | | | |
| LnGrp LOS | D | A | A | A | C | C | C | A | A | | | |
| Approach Vol, veh/h | | 979 | | | 1240 | | | 374 | | | | |
| Approach Delay, s/veh | | 12.7 | | | 24.8 | | | 30.3 | | | | |
| Approach LOS | | B | | | C | | | C | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 49.3 | | | 12.0 | 37.3 | | 25.0 | | | | |
| Change Period (Y+Rc), s | | 4.6 | | | 4.0 | 4.6 | | 4.6 | | | | |
| Max Green Setting (Gmax), s | | 59.0 | | | 20.0 | 35.0 | | 35.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 11.0 | | | 8.1 | 25.1 | | 18.0 | | | | |
| Green Ext Time (p_c), s | | 13.1 | | | 0.3 | 7.5 | | 2.4 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 21.0 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 533 | 93 | 293 | 601 | 0 | 0 | 0 | 0 | 240 | 4 | 121 |
| Future Volume (veh/h) | 0 | 533 | 93 | 293 | 601 | 0 | 0 | 0 | 0 | 240 | 4 | 121 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 784 | 137 | 337 | 691 | 0 | | | | 267 | 4 | 134 |
| Peak Hour Factor | 0.68 | 0.68 | 0.68 | 0.87 | 0.87 | 0.87 | | | | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 1394 | 242 | 385 | 1103 | 0 | | | | 321 | 5 | 161 |
| Arrive On Green | 0.00 | 0.32 | 0.32 | 0.22 | 0.59 | 0.00 | | | | 0.28 | 0.28 | 0.28 |
| Sat Flow, veh/h | 0 | 4547 | 759 | 1781 | 1870 | 0 | | | | 1129 | 17 | 566 |
| Grp Volume(v), veh/h | 0 | 608 | 313 | 337 | 691 | 0 | | | | 405 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1734 | 1781 | 1870 | 0 | | | | 1712 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 10.8 | 10.9 | 13.3 | 17.5 | 0.0 | | | | 16.2 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 10.8 | 10.9 | 13.3 | 17.5 | 0.0 | | | | 16.2 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 0.44 | 1.00 | | 0.00 | | | | 0.66 | | 0.33 |
| Lane Grp Cap(c), veh/h | 0 | 1084 | 552 | 385 | 1103 | 0 | | | | 487 | 0 | 0 |
| V/C Ratio(X) | 0.00 | 0.56 | 0.57 | 0.87 | 0.63 | 0.00 | | | | 0.83 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 1633 | 832 | 488 | 1513 | 0 | | | | 821 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | | | | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 20.6 | 20.7 | 27.6 | 9.7 | 0.0 | | | | 24.5 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 0.9 | 1.8 | 13.5 | 1.1 | 0.0 | | | | 4.5 | 0.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 4.1 | 4.4 | 6.8 | 6.1 | 0.0 | | | | 6.4 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 21.5 | 22.5 | 41.1 | 10.9 | 0.0 | | | | 29.0 | 0.0 | 0.0 |
| LnGrp LOS | A | C | C | D | B | A | | | | C | A | A |
| Approach Vol, veh/h | | 921 | | | 1028 | | | | | | 405 | |
| Approach Delay, s/veh | | 21.8 | | | 20.8 | | | | | | 29.0 | |
| Approach LOS | | C | | | C | | | | | | C | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.8 | 27.8 | | 25.3 | | 47.6 |
| Change Period (Y+Rc), s | 4.0 | 4.6 | | 4.6 | | 4.6 |
| Max Green Setting (Gmax), s | 20.0 | 35.0 | | 35.0 | | 59.0 |
| Max Q Clear Time (g_c+I1), s | 15.3 | 12.9 | | 18.2 | | 19.5 |
| Green Ext Time (p_c), s | 0.5 | 10.3 | | 2.6 | | 10.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 22.6 |
| HCM 6th LOS | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 377 | 642 | 0 | 0 | 576 | 229 | 262 | 4 | 276 | 0 | 0 | 0 |
| Future Volume (veh/h) | 377 | 642 | 0 | 0 | 576 | 229 | 262 | 4 | 276 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 401 | 683 | 0 | 0 | 613 | 0 | 312 | 5 | 329 | | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.84 | 0.84 | 0.84 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 457 | 2068 | 0 | 0 | 926 | | 464 | 7 | 419 | | | |
| Arrive On Green | 0.26 | 0.58 | 0.00 | 0.00 | 0.26 | 0.00 | 0.26 | 0.26 | 0.26 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 3647 | 1585 | 1755 | 28 | 1585 | | | |
| Grp Volume(v), veh/h | 401 | 683 | 0 | 0 | 613 | 0 | 317 | 0 | 329 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1585 | 1783 | 0 | 1585 | | | |
| Q Serve(g_s), s | 13.9 | 6.4 | 0.0 | 0.0 | 10.0 | 0.0 | 10.3 | 0.0 | 12.4 | | | |
| Cycle Q Clear(g_c), s | 13.9 | 6.4 | 0.0 | 0.0 | 10.0 | 0.0 | 10.3 | 0.0 | 12.4 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.98 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 457 | 2068 | 0 | 0 | 926 | | 472 | 0 | 419 | | | |
| V/C Ratio(X) | 0.88 | 0.33 | 0.00 | 0.00 | 0.66 | | 0.67 | 0.00 | 0.78 | | | |
| Avail Cap(c_a), veh/h | 552 | 2983 | 0 | 0 | 1651 | | 856 | 0 | 761 | | | |
| HCM Platoon Ratio | 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 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 23.0 | 7.0 | 0.0 | 0.0 | 21.3 | 0.0 | 21.2 | 0.0 | 22.0 | | | |
| Incr Delay (d2), s/veh | 13.5 | 0.1 | 0.0 | 0.0 | 1.2 | 0.0 | 1.7 | 0.0 | 3.3 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 6.8 | 1.7 | 0.0 | 0.0 | 3.7 | 0.0 | 3.9 | 0.0 | 4.4 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 36.5 | 7.1 | 0.0 | 0.0 | 22.5 | 0.0 | 22.9 | 0.0 | 25.3 | | | |
| LnGrp LOS | D | A | A | A | C | | C | A | C | | | |
| Approach Vol, veh/h | | 1084 | | | 613 | | | 646 | | | | |
| Approach Delay, s/veh | | 18.0 | | | 22.5 | | | 24.1 | | | | |
| Approach LOS | | B | | | C | | | C | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 42.9 | | | 20.8 | 22.1 | | 21.7 | | | | |
| Change Period (Y+Rc), s | | 5.3 | | | * 4.2 | 5.3 | | 4.6 | | | | |
| Max Green Setting (Gmax), s | | 54.2 | | | * 20 | 30.0 | | 31.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 8.4 | | | 15.9 | 12.0 | | 14.4 | | | | |
| Green Ext Time (p_c), s | | 7.2 | | | 0.6 | 4.9 | | 2.7 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 20.9 |
| HCM 6th LOS | C |

**Notes**

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

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 741 | 433 | 258 | 580 | 0 | 0 | 0 | 0 | 278 | 6 | 232 |
| Future Volume (veh/h) | 0 | 741 | 433 | 258 | 580 | 0 | 0 | 0 | 0 | 278 | 6 | 232 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 797 | 466 | 284 | 637 | 0 | | | | 307 | 41 | 276 |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.91 | 0.91 | 0.91 | | | | 0.84 | 0.84 | 0.84 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 1630 | 506 | 335 | 1075 | 0 | | | | 474 | 56 | 375 |
| Arrive On Green | 0.00 | 0.32 | 0.32 | 0.19 | 0.57 | 0.00 | | | | 0.27 | 0.27 | 0.27 |
| Sat Flow, veh/h | 0 | 5274 | 1585 | 1781 | 1870 | 0 | | | | 1781 | 209 | 1408 |
| Grp Volume(v), veh/h | 0 | 797 | 466 | 284 | 637 | 0 | | | | 307 | 0 | 317 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1585 | 1781 | 1870 | 0 | | | | 1781 | 0 | 1617 |
| Q Serve(g_s), s | 0.0 | 7.8 | 17.7 | 9.6 | 13.7 | 0.0 | | | | 9.5 | 0.0 | 11.2 |
| Cycle Q Clear(g_c), s | 0.0 | 7.8 | 17.7 | 9.6 | 13.7 | 0.0 | | | | 9.5 | 0.0 | 11.2 |
| Prop In Lane | 0.00 | | 1.00 | 1.00 | | 0.00 | | | | 1.00 | | 0.87 |
| Lane Grp Cap(c), veh/h | 0 | 1630 | 506 | 335 | 1075 | 0 | | | | 474 | 0 | 430 |
| V/C Ratio(X) | 0.00 | 0.49 | 0.92 | 0.85 | 0.59 | 0.00 | | | | 0.65 | 0.00 | 0.74 |
| Avail Cap(c_a), veh/h | 0 | 1639 | 509 | 372 | 1116 | 0 | | | | 1000 | 0 | 908 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | | | | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 17.1 | 20.5 | 24.4 | 8.5 | 0.0 | | | | 20.3 | 0.0 | 20.9 |
| Incr Delay (d2), s/veh | 0.0 | 0.2 | 22.2 | 16.8 | 0.8 | 0.0 | | | | 1.8 | 0.0 | 3.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 2.6 | 8.5 | 5.1 | 3.9 | 0.0 | | | | 3.6 | 0.0 | 4.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 17.3 | 42.6 | 41.2 | 9.3 | 0.0 | | | | 22.1 | 0.0 | 23.8 |
| LnGrp LOS | A | B | D | D | A | A | | | | C | A | C |
| Approach Vol, veh/h | | 1263 | | | 921 | | | | | | 624 | |
| Approach Delay, s/veh | | 26.7 | | | 19.2 | | | | | | 23.0 | |
| Approach LOS | | C | | | B | | | | | | C | |

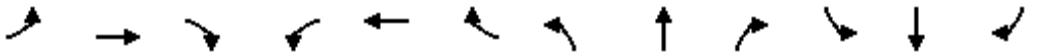
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 | | | |
|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.9 | 25.2 | | 21.2 | | 41.1 | | | |
| Change Period (Y+Rc), s | 4.2 | 5.3 | | 4.6 | | 5.3 | | | |
| Max Green Setting (Gmax), s | 11.3 | 20.0 | | 35.0 | | 37.2 | | | |
| Max Q Clear Time (g_c+I1), s | 11.6 | 19.7 | | 13.2 | | 15.7 | | | |
| Green Ext Time (p_c), s | 0.2 | 0.2 | | 3.4 | | 3.9 | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 23.4 |
| HCM 6th LOS | C |

**Notes**

User approved volume balancing among the lanes for turning movement.

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 53 | 400 | 37 | 126 | 415 | 76 | 39 | 119 | 235 | 486 | 105 | 49 |
| Future Volume (veh/h) | 53 | 400 | 37 | 126 | 415 | 76 | 39 | 119 | 235 | 486 | 105 | 49 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 60 | 455 | 42 | 152 | 500 | 92 | 50 | 153 | 301 | 884 | 191 | 89 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.83 | 0.83 | 0.83 | 0.78 | 0.78 | 0.78 | 0.55 | 0.55 | 0.55 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 77 | 652 | 59 | 184 | 700 | 769 | 70 | 405 | 343 | 996 | 562 | 262 |
| Arrive On Green | 0.04 | 0.14 | 0.14 | 0.10 | 0.20 | 0.20 | 0.04 | 0.22 | 0.22 | 0.29 | 0.47 | 0.47 |
| Sat Flow, veh/h | 1781 | 4762 | 434 | 1781 | 3554 | 1585 | 1781 | 1870 | 1585 | 3456 | 1207 | 562 |
| Grp Volume(v), veh/h | 60 | 324 | 173 | 152 | 500 | 92 | 50 | 153 | 301 | 884 | 0 | 280 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1792 | 1781 | 1777 | 1585 | 1781 | 1870 | 1585 | 1728 | 0 | 1769 |
| Q Serve(g_s), s | 3.1 | 8.3 | 8.5 | 7.7 | 12.1 | 2.9 | 2.5 | 6.4 | 16.9 | 22.4 | 0.0 | 9.2 |
| Cycle Q Clear(g_c), s | 3.1 | 8.3 | 8.5 | 7.7 | 12.1 | 2.9 | 2.5 | 6.4 | 16.9 | 22.4 | 0.0 | 9.2 |
| Prop In Lane | 1.00 | | 0.24 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.32 |
| Lane Grp Cap(c), veh/h | 77 | 466 | 245 | 184 | 700 | 769 | 70 | 405 | 343 | 996 | 0 | 823 |
| V/C Ratio(X) | 0.78 | 0.69 | 0.71 | 0.82 | 0.71 | 0.12 | 0.71 | 0.38 | 0.88 | 0.89 | 0.00 | 0.34 |
| Avail Cap(c_a), veh/h | 179 | 1595 | 840 | 202 | 1712 | 1221 | 188 | 764 | 648 | 1156 | 0 | 1128 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 43.4 | 37.8 | 37.8 | 40.3 | 34.4 | 12.9 | 43.6 | 30.7 | 34.8 | 31.2 | 0.0 | 15.6 |
| Incr Delay (d2), s/veh | 15.1 | 0.7 | 1.4 | 21.9 | 1.4 | 0.1 | 12.7 | 0.2 | 2.9 | 7.8 | 0.0 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.6 | 3.4 | 3.7 | 4.3 | 5.0 | 0.9 | 1.3 | 2.8 | 6.4 | 10.0 | 0.0 | 3.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 58.5 | 38.5 | 39.3 | 62.3 | 35.8 | 13.0 | 56.3 | 30.9 | 37.7 | 39.0 | 0.0 | 15.7 |
| LnGrp LOS | E | D | D | E | D | B | E | C | D | D | A | B |
| Approach Vol, veh/h | | 557 | | | 744 | | | 504 | | | 1164 | |
| Approach Delay, s/veh | | 40.9 | | | 38.4 | | | 37.5 | | | 33.4 | |
| Approach LOS | | D | | | D | | | D | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 31.8 | 25.8 | 15.1 | 19.1 | 8.9 | 48.7 | 9.6 | 24.6 |
| Change Period (Y+Rc), s | 5.3 | 6.0 | 5.6 | 6.5 | 5.3 | 6.0 | 5.6 | 6.5 |
| Max Green Setting (Gmax), s | 30.7 | 37.5 | 10.4 | 43.0 | 9.7 | 58.5 | 9.2 | 44.2 |
| Max Q Clear Time (g_c+I1), s | 24.4 | 18.9 | 9.7 | 10.5 | 4.5 | 11.2 | 5.1 | 14.1 |
| Green Ext Time (p_c), s | 2.0 | 1.0 | 0.0 | 2.1 | 0.0 | 1.1 | 0.0 | 3.5 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 36.7 |
| HCM 6th LOS | D |

**Notes**

User approved pedestrian interval to be less than phase max green.

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 21.3 |
| Intersection LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 25 | 380 | 121 | 9 | 19 | 47 | 80 | 116 | 34 | 113 | 0 |
| Future Vol, veh/h | 0 | 25 | 380 | 121 | 9 | 19 | 47 | 80 | 116 | 34 | 113 | 0 |
| Peak Hour Factor | 0.75 | 0.75 | 0.75 | 0.59 | 0.59 | 0.59 | 0.63 | 0.63 | 0.63 | 0.53 | 0.53 | 0.53 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 33 | 507 | 205 | 15 | 32 | 75 | 127 | 184 | 64 | 213 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 2 |
| HCM Control Delay | 17.3 | 20 | 28.1 | 20.8 |
| HCM LOS | C | C | D | C |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 19% | 0% | 0% | 81% | 23% |
| Vol Thru, % | 33% | 12% | 0% | 6% | 77% |
| Vol Right, % | 48% | 88% | 100% | 13% | 0% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 243 | 204 | 201 | 149 | 147 |
| LT Vol | 47 | 0 | 0 | 121 | 34 |
| Through Vol | 80 | 25 | 0 | 9 | 113 |
| RT Vol | 116 | 179 | 201 | 19 | 0 |
| Lane Flow Rate | 386 | 271 | 269 | 253 | 277 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.748 | 0.531 | 0.518 | 0.548 | 0.584 |
| Departure Headway (Hd) | 6.978 | 7.037 | 6.949 | 7.808 | 7.575 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 517 | 510 | 518 | 462 | 474 |
| Service Time | 5.035 | 4.796 | 4.708 | 5.875 | 5.639 |
| HCM Lane V/C Ratio | 0.747 | 0.531 | 0.519 | 0.548 | 0.584 |
| HCM Control Delay | 28.1 | 17.5 | 17 | 20 | 20.8 |
| HCM Lane LOS | D | C | C | C | C |
| HCM 95th-tile Q | 6.4 | 3.1 | 2.9 | 3.2 | 3.7 |



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 351 | 34 | 311 | 343 | 120 | 477 |
| Future Volume (veh/h) | 351 | 34 | 311 | 343 | 120 | 477 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 616 | 60 | 389 | 429 | 143 | 568 |
| Peak Hour Factor | 0.57 | 0.57 | 0.80 | 0.80 | 0.84 | 0.84 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 1002 | 447 | 572 | 1905 | 493 | 773 |
| Arrive On Green | 0.28 | 0.28 | 0.17 | 0.54 | 0.28 | 0.28 |
| Sat Flow, veh/h | 3647 | 1585 | 3456 | 3647 | 1781 | 2790 |
| Grp Volume(v), veh/h | 616 | 60 | 389 | 429 | 143 | 568 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1585 | 1728 | 1777 | 1781 | 1395 |
| Q Serve(g_s), s | 7.8 | 1.5 | 5.5 | 3.3 | 3.3 | 9.6 |
| Cycle Q Clear(g_c), s | 7.8 | 1.5 | 5.5 | 3.3 | 3.3 | 9.6 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 1002 | 447 | 572 | 1905 | 493 | 773 |
| V/C Ratio(X) | 0.61 | 0.13 | 0.68 | 0.23 | 0.29 | 0.74 |
| Avail Cap(c_a), veh/h | 3426 | 1528 | 1333 | 5112 | 1759 | 2754 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 16.2 | 13.9 | 20.4 | 6.3 | 14.7 | 17.0 |
| Incr Delay (d2), s/veh | 0.6 | 0.1 | 1.4 | 0.1 | 0.3 | 1.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.8 | 0.4 | 2.1 | 0.9 | 1.1 | 2.5 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 16.8 | 14.0 | 21.8 | 6.4 | 15.1 | 18.4 |
| LnGrp LOS | B | B | C | A | B | B |
| Approach Vol, veh/h | 676 | | | 818 | 711 | |
| Approach Delay, s/veh | 16.5 | | | 13.7 | 17.7 | |
| Approach LOS | B | | | B | B | |

| Timer - Assigned Phs | 1 | 2 | | | | 6 | 8 |
|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.2 | 19.7 | | | | 32.9 | 19.0 |
| Change Period (Y+Rc), s | 4.6 | 5.1 | | | | 5.1 | 4.6 |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | | | | 74.6 | 51.2 |
| Max Q Clear Time (g_c+I1), s | 7.5 | 9.8 | | | | 5.3 | 11.6 |
| Green Ext Time (p_c), s | 1.1 | 4.8 | | | | 3.1 | 2.8 |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 6th Ctrl Delay | | 15.9 | |
| HCM 6th LOS | | B | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 24 | 0 | 142 | 0 | 0 | 2 | 63 | 542 | 0 | 3 | 346 | 32 |
| Future Volume (veh/h) | 24 | 0 | 142 | 0 | 0 | 2 | 63 | 542 | 0 | 3 | 346 | 32 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 41 | 0 | 245 | 0 | 0 | 4 | 74 | 638 | 0 | 5 | 532 | 49 |
| Peak Hour Factor | 0.58 | 0.58 | 0.58 | 0.50 | 0.50 | 0.50 | 0.85 | 0.85 | 0.85 | 0.65 | 0.65 | 0.65 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 115 | 0 | 384 | 5 | 0 | 91 | 178 | 1799 | 0 | 17 | 1248 | 114 |
| Arrive On Green | 0.06 | 0.00 | 0.24 | 0.00 | 0.00 | 0.06 | 0.10 | 0.35 | 0.00 | 0.01 | 0.26 | 0.26 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 5274 | 0 | 1781 | 4762 | 434 |
| Grp Volume(v), veh/h | 41 | 0 | 245 | 0 | 0 | 4 | 74 | 638 | 0 | 5 | 379 | 202 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 1702 | 0 | 1781 | 1702 | 1792 |
| Q Serve(g_s), s | 0.8 | 0.0 | 5.3 | 0.0 | 0.0 | 0.1 | 1.5 | 3.5 | 0.0 | 0.1 | 3.5 | 3.6 |
| Cycle Q Clear(g_c), s | 0.8 | 0.0 | 5.3 | 0.0 | 0.0 | 0.1 | 1.5 | 3.5 | 0.0 | 0.1 | 3.5 | 3.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 0.24 |
| Lane Grp Cap(c), veh/h | 115 | 0 | 384 | 5 | 0 | 91 | 178 | 1799 | 0 | 17 | 892 | 470 |
| V/C Ratio(X) | 0.36 | 0.00 | 0.64 | 0.00 | 0.00 | 0.04 | 0.42 | 0.35 | 0.00 | 0.30 | 0.42 | 0.43 |
| Avail Cap(c_a), veh/h | 467 | 0 | 1454 | 467 | 0 | 1454 | 934 | 4683 | 0 | 467 | 2230 | 1174 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 17.1 | 0.0 | 12.9 | 0.0 | 0.0 | 17.0 | 16.1 | 9.1 | 0.0 | 18.8 | 11.7 | 11.7 |
| Incr Delay (d2), s/veh | 1.9 | 0.0 | 2.5 | 0.0 | 0.0 | 0.3 | 1.6 | 0.2 | 0.0 | 9.4 | 0.5 | 0.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.4 | 0.0 | 1.8 | 0.0 | 0.0 | 0.0 | 0.5 | 0.8 | 0.0 | 0.1 | 0.9 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 18.9 | 0.0 | 15.4 | 0.0 | 0.0 | 17.3 | 17.7 | 9.3 | 0.0 | 28.2 | 12.1 | 12.6 |
| LnGrp LOS | B | A | B | A | A | B | B | A | A | C | B | B |
| Approach Vol, veh/h | | 286 | | | 4 | | | 712 | | | 586 | |
| Approach Delay, s/veh | | 15.9 | | | 17.3 | | | 10.2 | | | 12.4 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.0 | 14.0 | 8.4 | 15.8 | 7.1 | 6.9 | 5.0 | 19.2 |
| Change Period (Y+Rc), s | 4.6 | * 4.7 | 4.6 | 5.8 | 4.6 | * 4.7 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | * 35 | 20.0 | 25.0 | 10.0 | * 35 | 10.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 10.0 | 7.3 | 3.5 | 5.6 | 2.8 | 2.1 | 2.1 | 5.5 |
| Green Ext Time (p_c), s | 0.0 | 2.4 | 0.1 | 4.4 | 0.0 | 0.0 | 0.0 | 5.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 12.1 |
| HCM 6th LOS | B |

**Notes**

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 347 | 781 | 69 | 350 | 728 | 101 | 77 | 208 | 182 | 124 | 143 | 228 |
| Future Volume (veh/h) | 347 | 781 | 69 | 350 | 728 | 101 | 77 | 208 | 182 | 124 | 143 | 228 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 413 | 930 | 82 | 407 | 847 | 117 | 87 | 234 | 204 | 188 | 217 | 345 |
| Peak Hour Factor | 0.84 | 0.84 | 0.84 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.66 | 0.66 | 0.66 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 438 | 1698 | 527 | 500 | 1180 | 366 | 113 | 1194 | 653 | 267 | 1266 | 393 |
| Arrive On Green | 0.25 | 0.33 | 0.33 | 0.14 | 0.23 | 0.23 | 0.06 | 0.23 | 0.23 | 0.08 | 0.25 | 0.25 |
| Sat Flow, veh/h | 1781 | 5106 | 1585 | 3456 | 5106 | 1585 | 1781 | 5106 | 2790 | 3456 | 5106 | 1585 |
| Grp Volume(v), veh/h | 413 | 930 | 82 | 407 | 847 | 117 | 87 | 234 | 204 | 188 | 217 | 345 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1585 | 1728 | 1702 | 1585 | 1781 | 1702 | 1395 | 1728 | 1702 | 1585 |
| Q Serve(g_s), s | 23.1 | 15.1 | 3.7 | 11.6 | 15.5 | 6.2 | 4.9 | 3.7 | 6.1 | 5.4 | 3.4 | 21.3 |
| Cycle Q Clear(g_c), s | 23.1 | 15.1 | 3.7 | 11.6 | 15.5 | 6.2 | 4.9 | 3.7 | 6.1 | 5.4 | 3.4 | 21.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 438 | 1698 | 527 | 500 | 1180 | 366 | 113 | 1194 | 653 | 267 | 1266 | 393 |
| V/C Ratio(X) | 0.94 | 0.55 | 0.16 | 0.81 | 0.72 | 0.32 | 0.77 | 0.20 | 0.31 | 0.70 | 0.17 | 0.88 |
| Avail Cap(c_a), veh/h | 438 | 2010 | 624 | 850 | 2010 | 624 | 438 | 1758 | 961 | 850 | 1758 | 546 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.6 | 27.7 | 23.9 | 42.1 | 36.0 | 32.4 | 46.9 | 31.3 | 32.2 | 45.7 | 30.0 | 36.7 |
| Incr Delay (d2), s/veh | 28.9 | 0.3 | 0.1 | 3.3 | 0.8 | 0.5 | 10.5 | 0.1 | 0.3 | 3.4 | 0.1 | 11.5 |
| 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 | 13.0 | 5.8 | 1.3 | 5.0 | 6.2 | 2.3 | 2.4 | 1.5 | 2.0 | 2.3 | 1.3 | 9.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 66.5 | 28.0 | 24.0 | 45.4 | 36.8 | 32.9 | 57.3 | 31.3 | 32.4 | 49.1 | 30.1 | 48.3 |
| LnGrp LOS | E | C | C | D | D | C | E | C | C | D | C | D |
| Approach Vol, veh/h | | 1425 | | | 1371 | | | 525 | | | 750 | |
| Approach Delay, s/veh | | 38.9 | | | 39.1 | | | 36.1 | | | 43.2 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 19.7 | 39.8 | 10.9 | 31.2 | 30.0 | 29.5 | 12.4 | 29.8 |
| Change Period (Y+Rc), s | 5.0 | 6.0 | 4.5 | 6.0 | 5.0 | 6.0 | 4.5 | 6.0 |
| Max Green Setting (Gmax), s | 25.0 | 40.0 | 25.0 | 35.0 | 25.0 | 40.0 | 25.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 13.6 | 17.1 | 6.9 | 23.3 | 25.1 | 17.5 | 7.4 | 8.1 |
| Green Ext Time (p_c), s | 1.1 | 6.5 | 0.2 | 1.9 | 0.0 | 6.0 | 0.5 | 2.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 39.4 |
| HCM 6th LOS | D |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 107 | 9 | 7 | 2 | 24 | 16 | 1 | 74 | 0 | 42 | 112 | 113 |
| Future Volume (veh/h) | 107 | 9 | 7 | 2 | 24 | 16 | 1 | 74 | 0 | 42 | 112 | 113 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 126 | 11 | 8 | 4 | 48 | 32 | 1 | 95 | 0 | 58 | 153 | 155 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.50 | 0.50 | 0.50 | 0.78 | 0.78 | 0.78 | 0.73 | 0.73 | 0.73 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 168 | 305 | 258 | 8 | 136 | 116 | 5 | 1020 | 0 | 88 | 1267 | 393 |
| Arrive On Green | 0.09 | 0.16 | 0.16 | 0.00 | 0.07 | 0.07 | 0.00 | 0.20 | 0.00 | 0.05 | 0.25 | 0.25 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 5274 | 0 | 1781 | 5106 | 1585 |
| Grp Volume(v), veh/h | 126 | 11 | 8 | 4 | 48 | 32 | 1 | 95 | 0 | 58 | 153 | 155 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1702 | 0 | 1781 | 1702 | 1585 |
| Q Serve(g_s), s | 2.4 | 0.2 | 0.1 | 0.1 | 0.8 | 0.7 | 0.0 | 0.5 | 0.0 | 1.1 | 0.8 | 2.8 |
| Cycle Q Clear(g_c), s | 2.4 | 0.2 | 0.1 | 0.1 | 0.8 | 0.7 | 0.0 | 0.5 | 0.0 | 1.1 | 0.8 | 2.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 168 | 305 | 258 | 8 | 136 | 116 | 5 | 1020 | 0 | 88 | 1267 | 393 |
| V/C Ratio(X) | 0.75 | 0.04 | 0.03 | 0.51 | 0.35 | 0.28 | 0.19 | 0.09 | 0.00 | 0.66 | 0.12 | 0.39 |
| Avail Cap(c_a), veh/h | 1039 | 1364 | 1156 | 1039 | 1364 | 1156 | 1039 | 4468 | 0 | 1039 | 4468 | 1387 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.1 | 12.1 | 12.1 | 17.0 | 15.1 | 15.0 | 17.1 | 11.2 | 0.0 | 16.0 | 10.0 | 10.7 |
| Incr Delay (d2), s/veh | 6.5 | 0.0 | 0.0 | 44.2 | 1.5 | 1.3 | 17.0 | 0.1 | 0.0 | 8.0 | 0.2 | 2.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 0.1 | 0.0 | 0.1 | 0.4 | 0.2 | 0.0 | 0.1 | 0.0 | 0.5 | 0.2 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 21.7 | 12.1 | 12.1 | 61.2 | 16.7 | 16.3 | 34.1 | 11.3 | 0.0 | 24.1 | 10.1 | 13.1 |
| LnGrp LOS | C | B | B | E | B | B | C | B | A | C | B | B |
| Approach Vol, veh/h | | 145 | | | 84 | | | 96 | | | 366 | |
| Approach Delay, s/veh | | 20.4 | | | 18.7 | | | 11.6 | | | 13.6 | |
| Approach LOS | | C | | | B | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.6 | 10.6 | 4.5 | 14.5 | 7.7 | 7.5 | 6.2 | 12.9 |
| Change Period (Y+Rc), s | 4.5 | 5.0 | 4.5 | 6.0 | 4.5 | 5.0 | 4.5 | 6.0 |
| Max Green Setting (Gmax), s | 20.0 | 25.0 | 20.0 | 30.0 | 20.0 | 25.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 12.1 | 2.2 | 2.0 | 4.8 | 4.4 | 2.8 | 3.1 | 2.5 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 3.7 | 0.3 | 0.3 | 0.1 | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 15.4 |
| HCM 6th LOS | B |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 121 | 638 | 48 | 217 | 656 | 155 | 12 | 25 | 207 | 352 | 31 | 11 |
| Future Volume (veh/h) | 121 | 638 | 48 | 217 | 656 | 155 | 12 | 25 | 207 | 352 | 31 | 11 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 166 | 874 | 66 | 231 | 698 | 165 | 13 | 27 | 223 | 463 | 41 | 14 |
| Peak Hour Factor | 0.73 | 0.73 | 0.73 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 | 0.93 | 0.76 | 0.76 | 0.76 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 202 | 1169 | 88 | 267 | 989 | 441 | 27 | 308 | 261 | 365 | 472 | 161 |
| Arrive On Green | 0.11 | 0.24 | 0.24 | 0.15 | 0.28 | 0.28 | 0.02 | 0.16 | 0.16 | 0.20 | 0.35 | 0.35 |
| Sat Flow, veh/h | 1781 | 4844 | 365 | 1781 | 3554 | 1585 | 1781 | 1870 | 1585 | 1781 | 1333 | 455 |
| Grp Volume(v), veh/h | 166 | 613 | 327 | 231 | 698 | 165 | 13 | 27 | 223 | 463 | 0 | 55 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1805 | 1781 | 1777 | 1585 | 1781 | 1870 | 1585 | 1781 | 0 | 1788 |
| Q Serve(g_s), s | 8.9 | 16.3 | 16.4 | 12.4 | 17.2 | 8.2 | 0.7 | 1.2 | 13.4 | 20.0 | 0.0 | 2.0 |
| Cycle Q Clear(g_c), s | 8.9 | 16.3 | 16.4 | 12.4 | 17.2 | 8.2 | 0.7 | 1.2 | 13.4 | 20.0 | 0.0 | 2.0 |
| Prop In Lane | 1.00 | | 0.20 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.25 |
| Lane Grp Cap(c), veh/h | 202 | 822 | 436 | 267 | 989 | 441 | 27 | 308 | 261 | 365 | 0 | 633 |
| V/C Ratio(X) | 0.82 | 0.75 | 0.75 | 0.87 | 0.71 | 0.37 | 0.48 | 0.09 | 0.85 | 1.27 | 0.00 | 0.09 |
| Avail Cap(c_a), veh/h | 365 | 1742 | 923 | 365 | 1818 | 811 | 365 | 574 | 487 | 365 | 0 | 633 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 42.4 | 34.3 | 34.3 | 40.6 | 31.7 | 28.4 | 47.7 | 34.6 | 39.7 | 38.9 | 0.0 | 21.0 |
| Incr Delay (d2), s/veh | 8.2 | 0.5 | 1.0 | 14.8 | 1.3 | 0.7 | 12.6 | 0.1 | 7.8 | 141.5 | 0.0 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.3 | 6.6 | 7.1 | 6.3 | 7.1 | 3.1 | 0.4 | 0.5 | 5.6 | 22.8 | 0.0 | 0.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 50.6 | 34.8 | 35.3 | 55.4 | 33.0 | 29.2 | 60.3 | 34.7 | 47.5 | 180.4 | 0.0 | 21.1 |
| LnGrp LOS | D | C | D | E | C | C | E | C | D | F | A | C |
| Approach Vol, veh/h | | 1106 | | | 1094 | | | 263 | | | 518 | |
| Approach Delay, s/veh | | 37.3 | | | 37.2 | | | 46.8 | | | 163.4 | |
| Approach LOS | | D | | | D | | | D | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 30.0 | 29.6 | 7.1 | 41.1 | 16.4 | 33.2 | 25.6 | 22.6 |
| Change Period (Y+Rc), s | 5.3 | 6.0 | 5.6 | 6.5 | 5.3 | 6.0 | 5.6 | 6.5 |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | 20.0 | 30.0 | 20.0 | 50.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 14.4 | 18.4 | 2.7 | 4.0 | 10.9 | 19.2 | 22.0 | 15.4 |
| Green Ext Time (p_c), s | 0.3 | 4.3 | 0.0 | 0.2 | 0.3 | 7.9 | 0.0 | 0.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 60.0 |
| HCM 6th LOS | E |

**Notes**

User approved pedestrian interval to be less than phase max green.

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 15.2 |
| Intersection LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 20 | 264 | 106 | 34 | 26 | 72 | 59 | 82 | 23 | 37 | 0 |
| Future Vol, veh/h | 0 | 20 | 264 | 106 | 34 | 26 | 72 | 59 | 82 | 23 | 37 | 0 |
| Peak Hour Factor | 0.61 | 0.61 | 0.61 | 0.54 | 0.54 | 0.54 | 0.75 | 0.75 | 0.75 | 0.83 | 0.83 | 0.83 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 33 | 433 | 196 | 63 | 48 | 96 | 79 | 109 | 28 | 45 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 16.9 | 14.4 | 14.2 | 10.9 |
| HCM LOS | C | B | B | B |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 34% | 0% | 64% | 38% |
| Vol Thru, % | 28% | 7% | 20% | 62% |
| Vol Right, % | 38% | 93% | 16% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 213 | 284 | 166 | 60 |
| LT Vol | 72 | 0 | 106 | 23 |
| Through Vol | 59 | 20 | 34 | 37 |
| RT Vol | 82 | 264 | 26 | 0 |
| Lane Flow Rate | 284 | 466 | 307 | 72 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.467 | 0.647 | 0.493 | 0.136 |
| Departure Headway (Hd) | 5.918 | 5 | 5.77 | 6.792 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 605 | 717 | 621 | 531 |
| Service Time | 4.005 | 3.076 | 3.855 | 4.792 |
| HCM Lane V/C Ratio | 0.469 | 0.65 | 0.494 | 0.136 |
| HCM Control Delay | 14.2 | 16.9 | 14.4 | 10.9 |
| HCM Lane LOS | B | C | B | B |
| HCM 95th-tile Q | 2.5 | 4.8 | 2.7 | 0.5 |

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 0 | 85 | 0 | 38 | 37 | 24 | 0 | 0 | 174 | 25 | 0 | 3 |
| Future Vol, veh/h | 0 | 85 | 0 | 38 | 37 | 24 | 0 | 0 | 174 | 25 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 50 | 50 | 50 | 71 | 71 | 71 | 100 | 100 | 100 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 170 | 0 | 54 | 52 | 34 | 0 | 0 | 174 | 28 | 0 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 86 | 0 | 0 | 170 | 0 | 0 | 349 | 364 | 170 | 434 | 347 | 69 |
| Stage 1 | - | - | - | - | - | - | 170 | 170 | - | 177 | 177 | - |
| Stage 2 | - | - | - | - | - | - | 179 | 194 | - | 257 | 170 | - |
| 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 | 1510 | - | - | 1407 | - | - | 606 | 564 | 874 | 532 | 576 | 994 |
| Stage 1 | - | - | - | - | - | - | 832 | 758 | - | 825 | 753 | - |
| Stage 2 | - | - | - | - | - | - | 823 | 740 | - | 748 | 758 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1510 | - | - | 1407 | - | - | 585 | 541 | 874 | 413 | 553 | 994 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 585 | 541 | - | 413 | 553 | - |
| Stage 1 | - | - | - | - | - | - | 832 | 758 | - | 825 | 723 | - |
| Stage 2 | - | - | - | - | - | - | 787 | 710 | - | 599 | 758 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 2.9 | 10.1 | 13.8 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 874 | 1510 | - | - | 1407 | - | - | 441 |
| HCM Lane V/C Ratio | 0.199 | - | - | - | 0.038 | - | - | 0.072 |
| HCM Control Delay (s) | 10.1 | 0 | - | - | 7.7 | 0 | - | 13.8 |
| HCM Lane LOS | B | A | - | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.7 | 0 | - | - | 0.1 | - | - | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 8 | 8 | 11 | 147 | 185 | 5 |
| Future Vol, veh/h | 8 | 8 | 11 | 147 | 185 | 5 |
| 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 | 57 | 57 | 75 | 75 | 53 | 53 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 14 | 14 | 15 | 196 | 349 | 9 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 580 | 354 | 358 | 0 | - | 0 |
| Stage 1 | 354 | - | - | - | - | - |
| Stage 2 | 226 | - | - | - | - | - |
| 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 | 477 | 690 | 1201 | - | - | - |
| Stage 1 | 710 | - | - | - | - | - |
| Stage 2 | 812 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 470 | 690 | 1201 | - | - | - |
| Mov Cap-2 Maneuver | 470 | - | - | - | - | - |
| Stage 1 | 700 | - | - | - | - | - |
| Stage 2 | 812 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.8 | 0.6 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1201 | - | 559 | - | - |
| HCM Lane V/C Ratio | 0.012 | - | 0.05 | - | - |
| HCM Control Delay (s) | 8 | 0 | 11.8 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 27 | 13 | 32 | 63 | 22 | 54 |
| Future Vol, veh/h | 27 | 13 | 32 | 63 | 22 | 54 |
| 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 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 13 | 32 | 63 | 22 | 54 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 162 | 64 | 0 | 0 | 95 | 0 |
| Stage 1 | 64 | - | - | - | - | - |
| Stage 2 | 98 | - | - | - | - | - |
| 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 | 829 | 1000 | - | - | 1499 | - |
| Stage 1 | 959 | - | - | - | - | - |
| Stage 2 | 926 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 817 | 1000 | - | - | 1499 | - |
| Mov Cap-2 Maneuver | 817 | - | - | - | - | - |
| Stage 1 | 959 | - | - | - | - | - |
| Stage 2 | 912 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.3 | 0 | 2.2 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 869 | 1499 | - |
| HCM Lane V/C Ratio | - | - | 0.046 | 0.015 | - |
| HCM Control Delay (s) | - | - | 9.3 | 7.4 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0 | - |

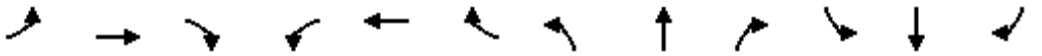
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑ | ↱ | | | ↗ |
| Traffic Vol, veh/h | 0 | 807 | 301 | 421 | 0 | 48 |
| Future Vol, veh/h | 0 | 807 | 301 | 421 | 0 | 48 |
| 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 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 807 | 301 | 421 | 0 | 48 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 512 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.318 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 562 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 562 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

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

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 562 |
| HCM Lane V/C Ratio | - | - | - | 0.085 |
| HCM Control Delay (s) | - | - | - | 12 |
| HCM Lane LOS | - | - | - | B |
| HCM 95th %tile Q(veh) | - | - | - | 0.3 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 136 | 813 | 0 | 0 | 738 | 248 | 64 | 5 | 398 | 0 | 0 | 0 |
| Future Volume (veh/h) | 136 | 813 | 0 | 0 | 738 | 248 | 64 | 5 | 398 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 177 | 1056 | 0 | 0 | 829 | 279 | 76 | 6 | 474 | | | |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.89 | 0.89 | 0.89 | 0.84 | 0.84 | 0.84 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 215 | 1891 | 0 | 0 | 959 | 323 | 81 | 6 | 504 | | | |
| Arrive On Green | 0.12 | 0.53 | 0.00 | 0.00 | 0.37 | 0.37 | 0.37 | 0.37 | 0.37 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 2705 | 878 | 220 | 17 | 1374 | | | |
| Grp Volume(v), veh/h | 177 | 1056 | 0 | 0 | 564 | 544 | 556 | 0 | 0 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1712 | 1612 | 0 | 0 | | | |
| Q Serve(g_s), s | 8.8 | 18.0 | 0.0 | 0.0 | 26.8 | 26.8 | 30.4 | 0.0 | 0.0 | | | |
| Cycle Q Clear(g_c), s | 8.8 | 18.0 | 0.0 | 0.0 | 26.8 | 26.8 | 30.4 | 0.0 | 0.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.51 | 0.14 | | 0.85 | | | |
| Lane Grp Cap(c), veh/h | 215 | 1891 | 0 | 0 | 653 | 629 | 591 | 0 | 0 | | | |
| V/C Ratio(X) | 0.82 | 0.56 | 0.00 | 0.00 | 0.86 | 0.87 | 0.94 | 0.00 | 0.00 | | | |
| Avail Cap(c_a), veh/h | 391 | 2302 | 0 | 0 | 683 | 658 | 620 | 0 | 0 | | | |
| HCM Platoon Ratio | 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 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | | | |
| Uniform Delay (d), s/veh | 39.1 | 14.2 | 0.0 | 0.0 | 26.7 | 26.7 | 27.9 | 0.0 | 0.0 | | | |
| Incr Delay (d2), s/veh | 7.6 | 0.5 | 0.0 | 0.0 | 11.7 | 12.2 | 22.3 | 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 | | | |
| %ile BackOfQ(50%),veh/ln | 4.2 | 6.7 | 0.0 | 0.0 | 12.8 | 12.4 | 14.2 | 0.0 | 0.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 46.7 | 14.7 | 0.0 | 0.0 | 38.4 | 38.9 | 50.1 | 0.0 | 0.0 | | | |
| LnGrp LOS | D | B | A | A | D | D | D | A | A | | | |
| Approach Vol, veh/h | | 1233 | | | 1108 | | | 556 | | | | |
| Approach Delay, s/veh | | 19.3 | | | 38.7 | | | 50.1 | | | | |
| Approach LOS | | B | | | D | | | D | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 53.1 | | | 15.0 | 38.1 | | 38.0 | | | | |
| Change Period (Y+Rc), s | | 4.6 | | | 4.0 | 4.6 | | 4.6 | | | | |
| Max Green Setting (Gmax), s | | 59.0 | | | 20.0 | 35.0 | | 35.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 20.0 | | | 10.8 | 28.8 | | 32.4 | | | | |
| Green Ext Time (p_c), s | | 16.9 | | | 0.3 | 4.6 | | 1.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 32.6 | | | | | | | | | |
| HCM 6th LOS | | | C | | | | | | | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 622 | 72 | 225 | 577 | 0 | 0 | 0 | 0 | 327 | 8 | 159 |
| Future Volume (veh/h) | 0 | 622 | 72 | 225 | 577 | 0 | 0 | 0 | 0 | 327 | 8 | 159 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 852 | 99 | 253 | 648 | 0 | | | | 376 | 9 | 183 |
| Peak Hour Factor | 0.73 | 0.73 | 0.73 | 0.89 | 0.89 | 0.89 | | | | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 1413 | 163 | 297 | 973 | 0 | | | | 417 | 10 | 203 |
| Arrive On Green | 0.00 | 0.30 | 0.30 | 0.17 | 0.52 | 0.00 | | | | 0.37 | 0.37 | 0.37 |
| Sat Flow, veh/h | 0 | 4809 | 537 | 1781 | 1870 | 0 | | | | 1135 | 27 | 552 |
| Grp Volume(v), veh/h | 0 | 624 | 327 | 253 | 648 | 0 | | | | 568 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1774 | 1781 | 1870 | 0 | | | | 1714 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 12.8 | 12.9 | 11.3 | 20.8 | 0.0 | | | | 25.6 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 12.8 | 12.9 | 11.3 | 20.8 | 0.0 | | | | 25.6 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 0.30 | 1.00 | | 0.00 | | | | 0.66 | | 0.32 |
| Lane Grp Cap(c), veh/h | 0 | 1037 | 540 | 297 | 973 | 0 | | | | 630 | 0 | 0 |
| V/C Ratio(X) | 0.00 | 0.60 | 0.61 | 0.85 | 0.67 | 0.00 | | | | 0.90 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 1457 | 759 | 436 | 1349 | 0 | | | | 734 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | | | | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 24.2 | 24.2 | 33.1 | 14.4 | 0.0 | | | | 24.5 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 1.1 | 2.1 | 10.3 | 1.5 | 0.0 | | | | 13.4 | 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 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 5.0 | 5.4 | 5.5 | 8.1 | 0.0 | | | | 11.5 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 25.3 | 26.4 | 43.4 | 15.9 | 0.0 | | | | 37.9 | 0.0 | 0.0 |
| LnGrp LOS | A | C | C | D | B | A | | | | D | A | A |
| Approach Vol, veh/h | | 951 | | | 901 | | | | | | 568 | |
| Approach Delay, s/veh | | 25.7 | | | 23.7 | | | | | | 37.9 | |
| Approach LOS | | C | | | C | | | | | | D | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 17.6 | 29.5 | | 34.6 | | 47.1 |
| Change Period (Y+Rc), s | 4.0 | 4.6 | | 4.6 | | 4.6 |
| Max Green Setting (Gmax), s | 20.0 | 35.0 | | 35.0 | | 59.0 |
| Max Q Clear Time (g_c+I1), s | 13.3 | 14.9 | | 27.6 | | 22.8 |
| Green Ext Time (p_c), s | 0.4 | 10.0 | | 2.4 | | 9.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 27.8 |
| HCM 6th LOS | C |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 291 | 811 | 0 | 0 | 681 | 434 | 408 | 6 | 432 | 0 | 0 | 0 |
| Future Volume (veh/h) | 291 | 811 | 0 | 0 | 681 | 434 | 408 | 6 | 432 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 313 | 872 | 0 | 0 | 709 | 0 | 425 | 6 | 450 | | | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 363 | 1905 | 0 | 0 | 980 | | 582 | 8 | 525 | | | |
| Arrive On Green | 0.20 | 0.54 | 0.00 | 0.00 | 0.28 | 0.00 | 0.33 | 0.33 | 0.33 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 3647 | 1585 | 1758 | 25 | 1585 | | | |
| Grp Volume(v), veh/h | 313 | 872 | 0 | 0 | 709 | 0 | 431 | 0 | 450 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1585 | 1782 | 0 | 1585 | | | |
| Q Serve(g_s), s | 12.7 | 11.2 | 0.0 | 0.0 | 13.5 | 0.0 | 15.9 | 0.0 | 19.8 | | | |
| Cycle Q Clear(g_c), s | 12.7 | 11.2 | 0.0 | 0.0 | 13.5 | 0.0 | 15.9 | 0.0 | 19.8 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 1.00 | 0.99 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 363 | 1905 | 0 | 0 | 980 | | 590 | 0 | 525 | | | |
| V/C Ratio(X) | 0.86 | 0.46 | 0.00 | 0.00 | 0.72 | | 0.73 | 0.00 | 0.86 | | | |
| Avail Cap(c_a), veh/h | 478 | 2584 | 0 | 0 | 1430 | | 741 | 0 | 659 | | | |
| HCM Platoon Ratio | 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 | 0.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 28.7 | 10.6 | 0.0 | 0.0 | 24.4 | 0.0 | 22.0 | 0.0 | 23.3 | | | |
| Incr Delay (d2), s/veh | 12.6 | 0.2 | 0.0 | 0.0 | 1.5 | 0.0 | 2.8 | 0.0 | 9.1 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 6.2 | 3.5 | 0.0 | 0.0 | 5.3 | 0.0 | 6.3 | 0.0 | 7.8 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 41.3 | 10.9 | 0.0 | 0.0 | 25.9 | 0.0 | 24.8 | 0.0 | 32.3 | | | |
| LnGrp LOS | D | B | A | A | C | | C | A | C | | | |
| Approach Vol, veh/h | | 1185 | | | 709 | | | 881 | | | | |
| Approach Delay, s/veh | | 18.9 | | | 25.9 | | | 28.6 | | | | |
| Approach LOS | | B | | | C | | | C | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 45.3 | | | 19.4 | 25.9 | | 29.3 | | | | |
| Change Period (Y+Rc), s | | 5.3 | | | * 4.2 | 5.3 | | 4.6 | | | | |
| Max Green Setting (Gmax), s | | 54.2 | | | * 20 | 30.0 | | 31.0 | | | | |
| Max Q Clear Time (g_c+I1), s | | 13.2 | | | 14.7 | 15.5 | | 21.8 | | | | |
| Green Ext Time (p_c), s | | 9.7 | | | 0.6 | 5.1 | | 2.9 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 23.8 |
| HCM 6th LOS | C |

**Notes**

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

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 816 | 368 | 239 | 850 | 0 | 0 | 0 | 0 | 286 | 1 | 337 |
| Future Volume (veh/h) | 0 | 816 | 368 | 239 | 850 | 0 | 0 | 0 | 0 | 286 | 1 | 337 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 887 | 400 | 252 | 895 | 0 | | | | 386 | 1 | 455 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.95 | 0.95 | 0.95 | | | | 0.74 | 0.74 | 0.74 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 1431 | 444 | 298 | 948 | 0 | | | | 627 | 1 | 557 |
| Arrive On Green | 0.00 | 0.28 | 0.28 | 0.17 | 0.51 | 0.00 | | | | 0.35 | 0.35 | 0.35 |
| Sat Flow, veh/h | 0 | 5274 | 1585 | 1781 | 1870 | 0 | | | | 1781 | 3 | 1582 |
| Grp Volume(v), veh/h | 0 | 887 | 400 | 252 | 895 | 0 | | | | 386 | 0 | 456 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1585 | 1781 | 1870 | 0 | | | | 1781 | 0 | 1586 |
| Q Serve(g_s), s | 0.0 | 10.6 | 17.1 | 9.7 | 31.8 | 0.0 | | | | 12.6 | 0.0 | 18.4 |
| Cycle Q Clear(g_c), s | 0.0 | 10.6 | 17.1 | 9.7 | 31.8 | 0.0 | | | | 12.6 | 0.0 | 18.4 |
| Prop In Lane | 0.00 | | 1.00 | 1.00 | | 0.00 | | | | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 0 | 1431 | 444 | 298 | 948 | 0 | | | | 627 | 0 | 558 |
| V/C Ratio(X) | 0.00 | 0.62 | 0.90 | 0.85 | 0.94 | 0.00 | | | | 0.62 | 0.00 | 0.82 |
| Avail Cap(c_a), veh/h | 0 | 1452 | 451 | 329 | 989 | 0 | | | | 886 | 0 | 789 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | | | | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 22.0 | 24.4 | 28.4 | 16.4 | 0.0 | | | | 18.8 | 0.0 | 20.7 |
| Incr Delay (d2), s/veh | 0.0 | 0.8 | 20.6 | 18.6 | 16.4 | 0.0 | | | | 1.2 | 0.0 | 5.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 3.9 | 8.2 | 5.3 | 14.7 | 0.0 | | | | 4.7 | 0.0 | 6.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 22.8 | 45.0 | 47.0 | 32.8 | 0.0 | | | | 20.0 | 0.0 | 25.8 |
| LnGrp LOS | A | C | D | D | C | A | | | | C | A | C |
| Approach Vol, veh/h | | 1287 | | | 1147 | | | | | | 842 | |
| Approach Delay, s/veh | | 29.7 | | | 35.9 | | | | | | 23.2 | |
| Approach LOS | | C | | | D | | | | | | C | |

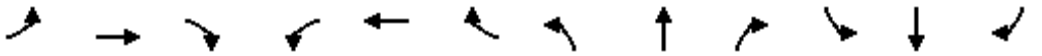
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 15.9 | 25.0 | | 29.4 | | 41.0 |
| Change Period (Y+Rc), s | 4.2 | 5.3 | | 4.6 | | 5.3 |
| Max Green Setting (Gmax), s | 13.3 | 20.0 | | 35.0 | | 37.2 |
| Max Q Clear Time (g_c+I1), s | 11.7 | 19.1 | | 20.4 | | 33.8 |
| Green Ext Time (p_c), s | 0.2 | 0.6 | | 4.4 | | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 30.2 |
| HCM 6th LOS | C |

**Notes**

User approved volume balancing among the lanes for turning movement.

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 121 | 638 | 48 | 217 | 656 | 155 | 12 | 25 | 207 | 352 | 31 | 11 |
| Future Volume (veh/h) | 121 | 638 | 48 | 217 | 656 | 155 | 12 | 25 | 207 | 352 | 31 | 11 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 166 | 874 | 66 | 231 | 698 | 165 | 13 | 27 | 223 | 463 | 41 | 14 |
| Peak Hour Factor | 0.73 | 0.73 | 0.73 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 | 0.93 | 0.76 | 0.76 | 0.76 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 206 | 1139 | 86 | 274 | 970 | 695 | 28 | 310 | 263 | 572 | 421 | 144 |
| Arrive On Green | 0.12 | 0.24 | 0.24 | 0.15 | 0.27 | 0.27 | 0.02 | 0.17 | 0.17 | 0.17 | 0.32 | 0.32 |
| Sat Flow, veh/h | 1781 | 4844 | 365 | 1781 | 3554 | 1585 | 1781 | 1870 | 1585 | 3456 | 1333 | 455 |
| Grp Volume(v), veh/h | 166 | 613 | 327 | 231 | 698 | 165 | 13 | 27 | 223 | 463 | 0 | 55 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1805 | 1781 | 1777 | 1585 | 1781 | 1870 | 1585 | 1728 | 0 | 1788 |
| Q Serve(g_s), s | 7.6 | 14.1 | 14.1 | 10.5 | 14.9 | 5.5 | 0.6 | 1.0 | 11.4 | 10.8 | 0.0 | 1.8 |
| Cycle Q Clear(g_c), s | 7.6 | 14.1 | 14.1 | 10.5 | 14.9 | 5.5 | 0.6 | 1.0 | 11.4 | 10.8 | 0.0 | 1.8 |
| Prop In Lane | 1.00 | | 0.20 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.25 |
| Lane Grp Cap(c), veh/h | 206 | 801 | 424 | 274 | 970 | 695 | 28 | 310 | 263 | 572 | 0 | 565 |
| V/C Ratio(X) | 0.80 | 0.77 | 0.77 | 0.84 | 0.72 | 0.24 | 0.47 | 0.09 | 0.85 | 0.81 | 0.00 | 0.10 |
| Avail Cap(c_a), veh/h | 426 | 1221 | 647 | 426 | 1275 | 831 | 426 | 1118 | 948 | 826 | 0 | 1069 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.0 | 29.8 | 29.9 | 34.4 | 27.5 | 14.7 | 40.8 | 29.5 | 33.9 | 33.6 | 0.0 | 20.2 |
| Incr Delay (d2), s/veh | 7.2 | 0.6 | 1.2 | 8.9 | 1.4 | 0.2 | 11.8 | 0.0 | 2.9 | 4.0 | 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 | 3.6 | 5.6 | 6.0 | 4.9 | 6.0 | 1.8 | 0.3 | 0.4 | 4.3 | 4.7 | 0.0 | 0.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 43.2 | 30.5 | 31.1 | 43.3 | 28.9 | 14.9 | 52.6 | 29.6 | 36.8 | 37.6 | 0.0 | 20.2 |
| LnGrp LOS | D | C | C | D | C | B | D | C | D | D | A | C |
| Approach Vol, veh/h | | 1106 | | | 1094 | | | 263 | | | 518 | |
| Approach Delay, s/veh | | 32.6 | | | 29.8 | | | 36.8 | | | 35.8 | |
| Approach LOS | | C | | | C | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 19.1 | 19.9 | 18.5 | 26.2 | 6.6 | 32.4 | 15.3 | 29.3 |
| Change Period (Y+Rc), s | 5.3 | 6.0 | 5.6 | 6.5 | 5.3 | 6.0 | 5.6 | 6.5 |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | 20.0 | 30.0 | 20.0 | 50.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 12.8 | 13.4 | 12.5 | 16.1 | 2.6 | 3.8 | 9.6 | 16.9 |
| Green Ext Time (p_c), s | 1.0 | 0.5 | 0.4 | 3.5 | 0.0 | 0.2 | 0.3 | 4.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 32.5 |
| HCM 6th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

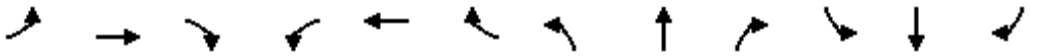
| Intersection | |
|---|---|
| Intersection Delay, s/veh | 12.6 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | ↱ | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 0 | 20 | 264 | 106 | 34 | 26 | 72 | 59 | 82 | 23 | 37 | 0 |
| Future Vol, veh/h | 0 | 20 | 264 | 106 | 34 | 26 | 72 | 59 | 82 | 23 | 37 | 0 |
| Peak Hour Factor | 0.61 | 0.61 | 0.61 | 0.54 | 0.54 | 0.54 | 0.75 | 0.75 | 0.75 | 0.83 | 0.83 | 0.83 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 33 | 433 | 196 | 63 | 48 | 96 | 79 | 109 | 28 | 45 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 2 |
| HCM Control Delay | 11.1 | 14.4 | 13.7 | 10.6 |
| HCM LOS | B | B | B | B |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 34% | 0% | 0% | 64% | 38% |
| Vol Thru, % | 28% | 14% | 0% | 20% | 62% |
| Vol Right, % | 38% | 86% | 100% | 16% | 0% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 213 | 144 | 140 | 166 | 60 |
| LT Vol | 72 | 0 | 0 | 106 | 23 |
| Through Vol | 59 | 20 | 0 | 34 | 37 |
| RT Vol | 82 | 124 | 140 | 26 | 0 |
| Lane Flow Rate | 284 | 236 | 229 | 307 | 72 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.458 | 0.359 | 0.342 | 0.494 | 0.131 |
| Departure Headway (Hd) | 5.806 | 5.467 | 5.369 | 5.791 | 6.546 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 619 | 654 | 667 | 621 | 544 |
| Service Time | 3.868 | 3.227 | 3.128 | 3.852 | 4.632 |
| HCM Lane V/C Ratio | 0.459 | 0.361 | 0.343 | 0.494 | 0.132 |
| HCM Control Delay | 13.7 | 11.3 | 10.9 | 14.4 | 10.6 |
| HCM Lane LOS | B | B | B | B | B |
| HCM 95th-tile Q | 2.4 | 1.6 | 1.5 | 2.7 | 0.4 |

# Appendix F – 2026 Baseline Conditions Level of Service Sheets



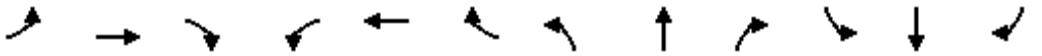
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 51 | 581 | 65 | 469 | 388 | 376 | 265 | 47 | 276 | 128 | 29 | 21 |
| Future Volume (veh/h) | 51 | 581 | 65 | 469 | 388 | 376 | 265 | 47 | 276 | 128 | 29 | 21 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 55 | 908 | 102 | 521 | 431 | 409 | 353 | 51 | 368 | 139 | 32 | 23 |
| Peak Hour Factor | 0.92 | 0.64 | 0.64 | 0.90 | 0.90 | 0.92 | 0.75 | 0.92 | 0.75 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 107 | 1205 | 538 | 409 | 1412 | 630 | 390 | 389 | 580 | 172 | 305 | 136 |
| Arrive On Green | 0.06 | 0.34 | 0.34 | 0.12 | 0.40 | 0.40 | 0.22 | 0.21 | 0.21 | 0.10 | 0.09 | 0.09 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 3456 | 3554 | 1585 | 1781 | 1870 | 2790 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 55 | 908 | 102 | 521 | 431 | 409 | 353 | 51 | 368 | 139 | 32 | 23 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1728 | 1777 | 1585 | 1781 | 1870 | 1395 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 2.5 | 19.2 | 3.8 | 10.0 | 7.0 | 17.7 | 16.3 | 1.9 | 10.2 | 6.5 | 0.7 | 1.1 |
| Cycle Q Clear(g_c), s | 2.5 | 19.2 | 3.8 | 10.0 | 7.0 | 17.7 | 16.3 | 1.9 | 10.2 | 6.5 | 0.7 | 1.1 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 107 | 1205 | 538 | 409 | 1412 | 630 | 390 | 389 | 580 | 172 | 305 | 136 |
| V/C Ratio(X) | 0.51 | 0.75 | 0.19 | 1.27 | 0.31 | 0.65 | 0.90 | 0.13 | 0.63 | 0.81 | 0.10 | 0.17 |
| Avail Cap(c_a), veh/h | 211 | 2102 | 938 | 409 | 2102 | 938 | 421 | 1106 | 1650 | 211 | 1682 | 750 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 38.5 | 24.8 | 19.7 | 37.3 | 17.5 | 20.7 | 32.1 | 27.3 | 30.5 | 37.4 | 35.6 | 35.8 |
| Incr Delay (d2), s/veh | 3.8 | 1.0 | 0.2 | 141.3 | 0.1 | 1.1 | 21.7 | 0.2 | 1.2 | 16.9 | 0.1 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.2 | 7.7 | 1.3 | 12.1 | 2.7 | 5.9 | 8.8 | 0.8 | 3.2 | 3.6 | 0.3 | 0.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 42.3 | 25.8 | 19.9 | 178.6 | 17.6 | 21.8 | 53.9 | 27.4 | 31.7 | 54.3 | 35.8 | 36.4 |
| LnGrp LOS | D | C | B | F | B | C | D | C | C | D | D | D |
| Approach Vol, veh/h | | 1065 | | | 1361 | | | 772 | | | 194 | |
| Approach Delay, s/veh | | 26.1 | | | 80.5 | | | 41.5 | | | 49.1 | |
| Approach LOS | | C | | | F | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.6 | 33.8 | 23.1 | 13.1 | 9.7 | 38.7 | 12.8 | 23.4 |
| Change Period (Y+Rc), s | 4.6 | 5.1 | 4.6 | * 5.8 | 4.6 | 5.1 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | 50.0 | 20.0 | * 40 | 10.0 | 50.0 | 10.0 | 50.0 |
| Max Q Clear Time (g_c+I1), s | 12.0 | 21.2 | 18.3 | 3.1 | 4.5 | 19.7 | 8.5 | 12.2 |
| Green Ext Time (p_c), s | 0.0 | 7.5 | 0.2 | 0.2 | 0.0 | 4.6 | 0.0 | 1.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 52.7 |
| HCM 6th LOS | D |

Notes

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



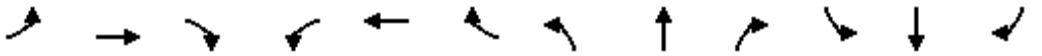
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 96 | 3 | 312 | 21 | 2 | 9 | 115 | 534 | 5 | 21 | 288 | 48 |
| Future Volume (veh/h) | 96 | 3 | 312 | 21 | 2 | 9 | 115 | 534 | 5 | 21 | 288 | 48 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 163 | 5 | 529 | 42 | 4 | 18 | 153 | 712 | 7 | 31 | 424 | 71 |
| Peak Hour Factor | 0.59 | 0.59 | 0.59 | 0.50 | 0.50 | 0.50 | 0.75 | 0.75 | 0.75 | 0.68 | 0.68 | 0.68 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 202 | 6 | 615 | 99 | 99 | 444 | 196 | 1216 | 12 | 80 | 744 | 122 |
| Arrive On Green | 0.11 | 0.39 | 0.39 | 0.06 | 0.33 | 0.33 | 0.11 | 0.23 | 0.23 | 0.05 | 0.17 | 0.17 |
| Sat Flow, veh/h | 1781 | 15 | 1572 | 1781 | 296 | 1334 | 1781 | 5214 | 51 | 1781 | 4421 | 723 |
| Grp Volume(v), veh/h | 163 | 0 | 534 | 42 | 0 | 22 | 153 | 465 | 254 | 31 | 324 | 171 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1587 | 1781 | 0 | 1630 | 1781 | 1702 | 1861 | 1781 | 1702 | 1740 |
| Q Serve(g_s), s | 6.4 | 0.0 | 22.1 | 1.6 | 0.0 | 0.7 | 6.0 | 8.7 | 8.7 | 1.2 | 6.3 | 6.5 |
| Cycle Q Clear(g_c), s | 6.4 | 0.0 | 22.1 | 1.6 | 0.0 | 0.7 | 6.0 | 8.7 | 8.7 | 1.2 | 6.3 | 6.5 |
| Prop In Lane | 1.00 | | 0.99 | 1.00 | | 0.82 | 1.00 | | 0.03 | 1.00 | | 0.42 |
| Lane Grp Cap(c), veh/h | 202 | 0 | 620 | 99 | 0 | 542 | 196 | 794 | 434 | 80 | 573 | 293 |
| V/C Ratio(X) | 0.81 | 0.00 | 0.86 | 0.43 | 0.00 | 0.04 | 0.78 | 0.59 | 0.59 | 0.39 | 0.57 | 0.58 |
| Avail Cap(c_a), veh/h | 249 | 0 | 777 | 249 | 0 | 798 | 498 | 1666 | 911 | 249 | 1190 | 608 |
| 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 | 1.00 |
| Uniform Delay (d), s/veh | 30.9 | 0.0 | 20.0 | 32.7 | 0.0 | 16.1 | 31.0 | 24.3 | 24.3 | 33.2 | 27.3 | 27.4 |
| Incr Delay (d2), s/veh | 14.5 | 0.0 | 8.9 | 2.9 | 0.0 | 0.0 | 6.7 | 1.0 | 1.8 | 3.0 | 1.3 | 2.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.5 | 0.0 | 9.1 | 0.8 | 0.0 | 0.2 | 2.7 | 3.2 | 3.6 | 0.5 | 2.4 | 2.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 45.4 | 0.0 | 28.9 | 35.6 | 0.0 | 16.2 | 37.6 | 25.3 | 26.1 | 36.2 | 28.6 | 30.0 |
| LnGrp LOS | D | A | C | D | A | B | D | C | C | D | C | C |
| Approach Vol, veh/h | | 697 | | | 64 | | | 872 | | | 526 | |
| Approach Delay, s/veh | | 32.8 | | | 28.9 | | | 27.7 | | | 29.5 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.6 | 32.6 | 12.5 | 17.8 | 12.7 | 28.5 | 7.8 | 22.5 |
| Change Period (Y+Rc), s | 4.6 | * 4.7 | 4.6 | 5.8 | 4.6 | * 4.7 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | * 35 | 20.0 | 25.0 | 10.0 | * 35 | 10.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 3.6 | 24.1 | 8.0 | 8.5 | 8.4 | 2.7 | 3.2 | 10.7 |
| Green Ext Time (p_c), s | 0.0 | 3.9 | 0.3 | 3.4 | 0.1 | 0.1 | 0.0 | 6.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 29.8 |
| HCM 6th LOS | C |

Notes

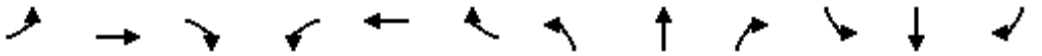
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 326 | 1110 | 74 | 495 | 568 | 161 | 84 | 199 | 479 | 531 | 144 | 180 |
| Future Volume (vph) | 326 | 1110 | 74 | 495 | 568 | 161 | 84 | 199 | 479 | 531 | 144 | 180 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.8 | 5.8 | 4.6 | 5.8 | 5.8 | 5.3 | 5.8 | 5.8 | 5.7 | 5.8 | 5.8 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.88 | 0.97 | 0.91 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 5085 | 2787 | 3433 | 5085 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 5085 | 2787 | 3433 | 5085 | 1583 |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.85 | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.66 | 0.66 | 0.66 |
| Adj. Flow (vph) | 384 | 1306 | 87 | 589 | 676 | 192 | 101 | 240 | 577 | 805 | 218 | 273 |
| RTOR Reduction (vph) | 0 | 0 | 53 | 0 | 0 | 117 | 0 | 0 | 290 | 0 | 0 | 188 |
| Lane Group Flow (vph) | 384 | 1306 | 34 | 589 | 676 | 75 | 101 | 240 | 287 | 805 | 218 | 85 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Actuated Green, G (s) | 14.7 | 60.2 | 60.2 | 15.4 | 60.2 | 60.2 | 8.7 | 21.6 | 21.6 | 34.9 | 48.2 | 48.2 |
| Effective Green, g (s) | 14.7 | 60.2 | 60.2 | 15.4 | 60.2 | 60.2 | 8.7 | 21.6 | 21.6 | 34.9 | 48.2 | 48.2 |
| Actuated g/C Ratio | 0.10 | 0.39 | 0.39 | 0.10 | 0.39 | 0.39 | 0.06 | 0.14 | 0.14 | 0.23 | 0.31 | 0.31 |
| Clearance Time (s) | 5.3 | 5.8 | 5.8 | 4.6 | 5.8 | 5.8 | 5.3 | 5.8 | 5.8 | 5.7 | 5.8 | 5.8 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 327 | 1987 | 618 | 343 | 1987 | 618 | 99 | 713 | 390 | 777 | 1591 | 495 |
| v/s Ratio Prot | 0.11 | c0.26 | | c0.17 | 0.13 | | c0.06 | 0.05 | | c0.23 | 0.04 | |
| v/s Ratio Perm | | | 0.02 | | | 0.05 | | | c0.10 | | | 0.05 |
| v/c Ratio | 1.17 | 0.66 | 0.06 | 1.72 | 0.34 | 0.12 | 1.02 | 0.34 | 0.74 | 1.04 | 0.14 | 0.17 |
| Uniform Delay, d1 | 69.7 | 38.4 | 29.2 | 69.3 | 32.9 | 30.0 | 72.7 | 59.7 | 63.5 | 59.5 | 38.0 | 38.4 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.01 | 0.85 | 0.69 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 105.9 | 1.7 | 0.2 | 323.9 | 0.0 | 0.0 | 96.0 | 0.3 | 7.1 | 42.0 | 0.0 | 0.2 |
| Delay (s) | 175.6 | 40.2 | 29.4 | 393.6 | 28.2 | 20.7 | 168.7 | 60.0 | 70.6 | 101.5 | 38.0 | 38.6 |
| Level of Service | F | D | C | F | C | C | F | E | E | F | D | D |
| Approach Delay (s) | | 68.9 | | | 174.9 | | | 78.6 | | | 77.6 | |
| Approach LOS | | E | | | F | | | E | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 100.9 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 0.93 | | |
| Actuated Cycle Length (s) | 154.0 | Sum of lost time (s) | 26.2 |
| Intersection Capacity Utilization | 77.3% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



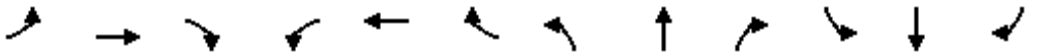
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 237 | 38 | 15 | 3 | 19 | 94 | 5 | 313 | 6 | 77 | 335 | 99 |
| Future Volume (veh/h) | 237 | 38 | 15 | 3 | 19 | 94 | 5 | 313 | 6 | 77 | 335 | 99 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 308 | 49 | 19 | 4 | 23 | 116 | 6 | 373 | 7 | 104 | 453 | 134 |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.81 | 0.81 | 0.81 | 0.84 | 0.84 | 0.84 | 0.74 | 0.74 | 0.74 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 381 | 602 | 510 | 8 | 209 | 177 | 11 | 1049 | 20 | 137 | 1399 | 434 |
| Arrive On Green | 0.21 | 0.32 | 0.32 | 0.00 | 0.11 | 0.11 | 0.01 | 0.20 | 0.20 | 0.08 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 5161 | 97 | 1781 | 5106 | 1585 |
| Grp Volume(v), veh/h | 308 | 49 | 19 | 4 | 23 | 116 | 6 | 246 | 134 | 104 | 453 | 134 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1702 | 1853 | 1781 | 1702 | 1585 |
| Q Serve(g_s), s | 8.3 | 0.9 | 0.4 | 0.1 | 0.6 | 3.6 | 0.2 | 3.1 | 3.2 | 2.9 | 3.6 | 3.4 |
| Cycle Q Clear(g_c), s | 8.3 | 0.9 | 0.4 | 0.1 | 0.6 | 3.6 | 0.2 | 3.1 | 3.2 | 2.9 | 3.6 | 3.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.05 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 381 | 602 | 510 | 8 | 209 | 177 | 11 | 692 | 377 | 137 | 1399 | 434 |
| V/C Ratio(X) | 0.81 | 0.08 | 0.04 | 0.52 | 0.11 | 0.65 | 0.53 | 0.36 | 0.36 | 0.76 | 0.32 | 0.31 |
| Avail Cap(c_a), veh/h | 701 | 920 | 780 | 701 | 920 | 780 | 701 | 2010 | 1094 | 701 | 3015 | 936 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.0 | 12.0 | 11.8 | 25.2 | 20.3 | 21.6 | 25.2 | 17.4 | 17.4 | 23.0 | 14.7 | 14.6 |
| Incr Delay (d2), s/veh | 4.1 | 0.1 | 0.0 | 45.2 | 0.2 | 4.0 | 32.9 | 1.1 | 2.1 | 8.2 | 0.5 | 1.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.6 | 0.4 | 0.1 | 0.1 | 0.2 | 1.3 | 0.2 | 1.1 | 1.3 | 1.4 | 1.2 | 1.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 23.1 | 12.1 | 11.9 | 70.4 | 20.5 | 25.7 | 58.1 | 18.5 | 19.5 | 31.2 | 15.2 | 16.1 |
| LnGrp LOS | C | B | B | E | C | C | E | B | B | C | B | B |
| Approach Vol, veh/h | | 376 | | | 143 | | | 386 | | | 691 | |
| Approach Delay, s/veh | | 21.1 | | | 26.1 | | | 19.5 | | | 17.8 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 4.7 | 21.3 | 4.8 | 19.9 | 15.4 | 10.7 | 8.4 | 16.3 |
| Change Period (Y+Rc), s | 4.5 | 5.0 | 4.5 | 6.0 | 4.5 | 5.0 | 4.5 | 6.0 |
| Max Green Setting (Gmax), s | 20.0 | 25.0 | 20.0 | 30.0 | 20.0 | 25.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 2.9 | 2.2 | 5.6 | 10.3 | 5.6 | 4.9 | 5.2 |
| Green Ext Time (p_c), s | 0.0 | 0.2 | 0.0 | 7.9 | 0.7 | 0.4 | 0.2 | 5.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 19.7 |
| HCM 6th LOS | B |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 47 | 1059 | 48 | 130 | 608 | 92 | 44 | 141 | 239 | 198 | 137 | 67 |
| Future Volume (veh/h) | 47 | 1059 | 48 | 130 | 608 | 92 | 44 | 141 | 239 | 198 | 137 | 67 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 53 | 1203 | 55 | 157 | 733 | 111 | 56 | 181 | 306 | 360 | 249 | 122 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.83 | 0.83 | 0.83 | 0.78 | 0.78 | 0.78 | 0.55 | 0.55 | 0.55 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 69 | 1469 | 67 | 188 | 1280 | 571 | 73 | 404 | 342 | 316 | 659 | 559 |
| Arrive On Green | 0.04 | 0.29 | 0.29 | 0.11 | 0.36 | 0.36 | 0.04 | 0.22 | 0.22 | 0.18 | 0.35 | 0.35 |
| Sat Flow, veh/h | 1781 | 5005 | 229 | 1781 | 3554 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 53 | 818 | 440 | 157 | 733 | 111 | 56 | 181 | 306 | 360 | 249 | 122 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1829 | 1781 | 1777 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 3.3 | 25.2 | 25.2 | 9.7 | 18.7 | 5.4 | 3.5 | 9.5 | 21.1 | 20.0 | 11.2 | 6.1 |
| Cycle Q Clear(g_c), s | 3.3 | 25.2 | 25.2 | 9.7 | 18.7 | 5.4 | 3.5 | 9.5 | 21.1 | 20.0 | 11.2 | 6.1 |
| Prop In Lane | 1.00 | | 0.13 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 69 | 999 | 537 | 188 | 1280 | 571 | 73 | 404 | 342 | 316 | 659 | 559 |
| V/C Ratio(X) | 0.77 | 0.82 | 0.82 | 0.84 | 0.57 | 0.19 | 0.77 | 0.45 | 0.89 | 1.14 | 0.38 | 0.22 |
| Avail Cap(c_a), veh/h | 316 | 1510 | 811 | 316 | 1576 | 703 | 316 | 498 | 422 | 316 | 659 | 559 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 53.7 | 37.0 | 37.0 | 49.5 | 29.1 | 24.8 | 53.5 | 38.4 | 42.9 | 46.4 | 27.3 | 25.6 |
| Incr Delay (d2), s/veh | 16.1 | 1.3 | 2.3 | 9.4 | 0.6 | 0.2 | 15.3 | 0.8 | 18.2 | 93.8 | 0.4 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.8 | 10.4 | 11.4 | 4.7 | 7.7 | 2.1 | 1.9 | 4.4 | 9.9 | 16.9 | 5.0 | 2.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 69.8 | 38.3 | 39.4 | 58.8 | 29.6 | 25.0 | 68.8 | 39.1 | 61.1 | 140.2 | 27.6 | 25.8 |
| LnGrp LOS | E | D | D | E | C | C | E | D | E | F | C | C |
| Approach Vol, veh/h | | 1311 | | | 1001 | | | 543 | | | 731 | |
| Approach Delay, s/veh | | 39.9 | | | 33.7 | | | 54.6 | | | 82.8 | |
| Approach LOS | | D | | | C | | | D | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 17.2 | 39.1 | 10.2 | 46.2 | 9.7 | 46.6 | 25.6 | 30.9 |
| Change Period (Y+Rc), s | 5.3 | 6.0 | 5.6 | 6.5 | 5.3 | 6.0 | 5.6 | 6.5 |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | 20.0 | 30.0 | 20.0 | 50.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 11.7 | 27.2 | 5.5 | 13.2 | 5.3 | 20.7 | 22.0 | 23.1 |
| Green Ext Time (p_c), s | 0.2 | 5.9 | 0.1 | 1.6 | 0.1 | 7.9 | 0.0 | 1.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 49.1 |
| HCM 6th LOS | D |

**Notes**

User approved pedestrian interval to be less than phase max green.

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 13.8 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 1 | 54 | 131 | 1 | 21 | 38 | 87 | 126 | 37 | 122 | 0 |
| Future Vol, veh/h | 0 | 1 | 54 | 131 | 1 | 21 | 38 | 87 | 126 | 37 | 122 | 0 |
| Peak Hour Factor | 0.75 | 0.75 | 0.75 | 0.59 | 0.59 | 0.59 | 0.63 | 0.63 | 0.63 | 0.53 | 0.53 | 0.53 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 1 | 72 | 222 | 2 | 36 | 60 | 138 | 200 | 70 | 230 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 9.6 | 13.6 | 15 | 13.5 |
| HCM LOS | A | B | B | B |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 15% | 0% | 86% | 23% |
| Vol Thru, % | 35% | 2% | 1% | 77% |
| Vol Right, % | 50% | 98% | 14% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 251 | 55 | 153 | 159 |
| LT Vol | 38 | 0 | 131 | 37 |
| Through Vol | 87 | 1 | 1 | 122 |
| RT Vol | 126 | 54 | 21 | 0 |
| Lane Flow Rate | 398 | 73 | 259 | 300 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.572 | 0.117 | 0.432 | 0.467 |
| Departure Headway (Hd) | 5.167 | 5.763 | 5.993 | 5.603 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 693 | 617 | 599 | 639 |
| Service Time | 3.224 | 3.85 | 4.058 | 3.664 |
| HCM Lane V/C Ratio | 0.574 | 0.118 | 0.432 | 0.469 |
| HCM Control Delay | 15 | 9.6 | 13.6 | 13.5 |
| HCM Lane LOS | B | A | B | B |
| HCM 95th-tile Q | 3.6 | 0.4 | 2.2 | 2.5 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.6 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 24 | 12 | 27 | 31 | 1 |
| Future Vol, veh/h | 0 | 24 | 12 | 27 | 31 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 42 | 42 | 56 | 56 | 63 | 63 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 57 | 21 | 48 | 49 | 2 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 69 | 0 | - | 0 | 102 | 45 |
| Stage 1 | - | - | - | - | 45 | - |
| Stage 2 | - | - | - | - | 57 | - |
| 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 | 1532 | - | - | - | 896 | 1025 |
| Stage 1 | - | - | - | - | 977 | - |
| Stage 2 | - | - | - | - | 966 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1532 | - | - | - | 896 | 1025 |
| Mov Cap-2 Maneuver | - | - | - | - | 896 | - |
| Stage 1 | - | - | - | - | 977 | - |
| Stage 2 | - | - | - | - | 966 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 9.2 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1532 | - | - | - | 900 |
| HCM Lane V/C Ratio | - | - | - | - | 0.056 |
| HCM Control Delay (s) | 0 | - | - | - | 9.2 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.2 |

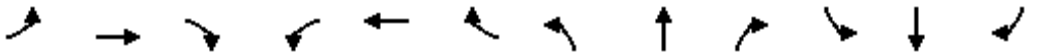
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.7 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 6 | 4 | 13 | 184 | 167 | 4 |
| Future Vol, veh/h | 6 | 4 | 13 | 184 | 167 | 4 |
| 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 | 50 | 50 | 61 | 61 | 64 | 64 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 12 | 8 | 21 | 302 | 261 | 6 |

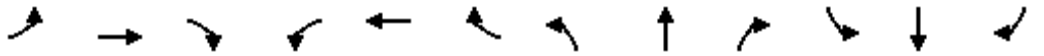
| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 608 | 264 | 267 | 0 | - | 0 |
| Stage 1 | 264 | - | - | - | - | - |
| Stage 2 | 344 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 459 | 775 | 1297 | - | - | - |
| Stage 1 | 780 | - | - | - | - | - |
| Stage 2 | 718 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 450 | 775 | 1297 | - | - | - |
| Mov Cap-2 Maneuver | 450 | - | - | - | - | - |
| Stage 1 | 765 | - | - | - | - | - |
| Stage 2 | 718 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.9 | 0.5 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1297 | - | 541 | - | - |
| HCM Lane V/C Ratio | 0.016 | - | 0.037 | - | - |
| HCM Control Delay (s) | 7.8 | 0 | 11.9 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 232 | 860 | 0 | 0 | 995 | 296 | 370 | 0 | 308 | 0 | 0 | 0 |
| Future Volume (veh/h) | 232 | 860 | 0 | 0 | 995 | 296 | 370 | 0 | 308 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 294 | 1089 | 0 | 0 | 1131 | 336 | 440 | 0 | 367 | | | |
| Peak Hour Factor | 0.79 | 0.79 | 0.79 | 0.88 | 0.88 | 0.88 | 0.84 | 0.84 | 0.84 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 178 | 2184 | 0 | 0 | 1311 | 384 | 277 | 0 | 231 | | | |
| Arrive On Green | 0.20 | 1.00 | 0.00 | 0.00 | 0.48 | 0.48 | 0.30 | 0.00 | 0.30 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 2803 | 795 | 919 | 0 | 767 | | | |
| Grp Volume(v), veh/h | 294 | 1089 | 0 | 0 | 737 | 730 | 807 | 0 | 0 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1727 | 1686 | 0 | 0 | | | |
| Q Serve(g_s), s | 13.0 | 0.0 | 0.0 | 0.0 | 47.5 | 49.2 | 39.2 | 0.0 | 0.0 | | | |
| Cycle Q Clear(g_c), s | 13.0 | 0.0 | 0.0 | 0.0 | 47.5 | 49.2 | 39.2 | 0.0 | 0.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.46 | 0.55 | | 0.45 | | | |
| Lane Grp Cap(c), veh/h | 178 | 2184 | 0 | 0 | 860 | 836 | 508 | 0 | 0 | | | |
| V/C Ratio(X) | 1.65 | 0.50 | 0.00 | 0.00 | 0.86 | 0.87 | 1.59 | 0.00 | 0.00 | | | |
| Avail Cap(c_a), veh/h | 178 | 2184 | 0 | 0 | 860 | 836 | 508 | 0 | 0 | | | |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.09 | 0.09 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | | | |
| Uniform Delay (d), s/veh | 52.0 | 0.0 | 0.0 | 0.0 | 29.6 | 30.0 | 45.4 | 0.0 | 0.0 | | | |
| Incr Delay (d2), s/veh | 295.0 | 0.1 | 0.0 | 0.0 | 10.7 | 12.3 | 273.4 | 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 | | | |
| %ile BackOfQ(50%),veh/ln | 19.7 | 0.0 | 0.0 | 0.0 | 22.1 | 22.5 | 54.4 | 0.0 | 0.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 347.0 | 0.1 | 0.0 | 0.0 | 40.3 | 42.3 | 318.8 | 0.0 | 0.0 | | | |
| LnGrp LOS | F | A | A | A | D | D | F | A | A | | | |
| Approach Vol, veh/h | | 1383 | | | 1467 | | | 807 | | | | |
| Approach Delay, s/veh | | 73.8 | | | 41.3 | | | 318.8 | | | | |
| Approach LOS | | E | | | D | | | F | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 85.0 | | | 17.0 | 68.0 | | 45.0 | | | | |
| Change Period (Y+Rc), s | | 5.1 | | | 4.0 | 5.1 | | 5.8 | | | | |
| Max Green Setting (Gmax), s | | 79.9 | | | 13.0 | 62.9 | | 39.2 | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.0 | | | 15.0 | 51.2 | | 41.2 | | | | |
| Green Ext Time (p_c), s | | 9.4 | | | 0.0 | 7.1 | | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 114.8 | | | | | | | | | |
| HCM 6th LOS | | | F | | | | | | | | | |



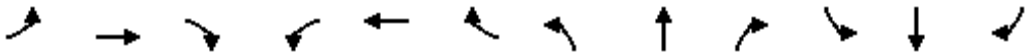
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 812 | 339 | 312 | 1053 | 0 | 0 | 0 | 0 | 280 | 4 | 198 |
| Future Volume (veh/h) | 0 | 812 | 339 | 312 | 1053 | 0 | 0 | 0 | 0 | 280 | 4 | 198 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 1194 | 499 | 359 | 1210 | 0 | | | | 311 | 4 | 220 |
| Peak Hour Factor | 0.68 | 0.68 | 0.68 | 0.87 | 0.87 | 0.87 | | | | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 895 | 373 | 538 | 1111 | 0 | | | | 323 | 4 | 228 |
| Arrive On Green | 0.00 | 0.25 | 0.25 | 0.60 | 1.00 | 0.00 | | | | 0.33 | 0.33 | 0.33 |
| Sat Flow, veh/h | 0 | 3705 | 1473 | 1781 | 1870 | 0 | | | | 986 | 13 | 697 |
| Grp Volume(v), veh/h | 0 | 1149 | 544 | 359 | 1210 | 0 | | | | 535 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1605 | 1781 | 1870 | 0 | | | | 1696 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 32.9 | 32.9 | 17.4 | 0.0 | 0.0 | | | | 40.3 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 32.9 | 32.9 | 17.4 | 0.0 | 0.0 | | | | 40.3 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 0.92 | 1.00 | | 0.00 | | | | 0.58 | | 0.41 |
| Lane Grp Cap(c), veh/h | 0 | 861 | 406 | 538 | 1111 | 0 | | | | 555 | 0 | 0 |
| V/C Ratio(X) | 0.00 | 1.33 | 1.34 | 0.67 | 1.09 | 0.00 | | | | 0.96 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 861 | 406 | 538 | 1111 | 0 | | | | 573 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 0.36 | 0.36 | 0.00 | | | | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 48.5 | 48.6 | 21.4 | 0.0 | 0.0 | | | | 43.0 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 158.2 | 168.3 | 0.9 | 46.2 | 0.0 | | | | 27.9 | 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 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 32.7 | 32.0 | 5.2 | 14.3 | 0.0 | | | | 20.5 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 206.7 | 216.8 | 22.4 | 46.2 | 0.0 | | | | 70.9 | 0.0 | 0.0 |
| LnGrp LOS | A | F | F | C | F | A | | | | E | A | A |
| Approach Vol, veh/h | | 1693 | | | 1569 | | | | | | 535 | |
| Approach Delay, s/veh | | 210.0 | | | 40.7 | | | | | | 70.9 | |
| Approach LOS | | F | | | D | | | | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 44.3 | 38.0 | | 47.7 | | 82.3 |
| Change Period (Y+Rc), s | 5.1 | * 5.1 | | 5.1 | | 5.1 |
| Max Green Setting (Gmax), s | 39.0 | * 33 | | 43.9 | | 75.9 |
| Max Q Clear Time (g_c+I1), s | 19.4 | 34.9 | | 42.3 | | 2.0 |
| Green Ext Time (p_c), s | 0.1 | 0.0 | | 0.3 | | 16.2 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 120.4 |
| HCM 6th LOS | | F |

Notes

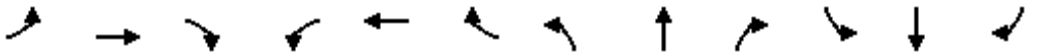
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 544 | 994 | 0 | 0 | 788 | 323 | 634 | 4 | 408 | 0 | 0 | 0 |
| Future Volume (vph) | 544 | 994 | 0 | 0 | 788 | 323 | 634 | 4 | 408 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.2 | 5.8 | | | 5.8 | 4.0 | | 6.8 | 6.8 | | | |
| Lane Util. Factor | 1.00 | 0.95 | | | 0.95 | 1.00 | | 1.00 | 1.00 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 0.85 | | 1.00 | 0.85 | | | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (prot) | 1770 | 3539 | | | 3539 | 1583 | | 1775 | 1583 | | | |
| Flt Permitted | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (perm) | 1770 | 3539 | | | 3539 | 1583 | | 1775 | 1583 | | | |
| Peak-hour factor, PHF | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.84 | 0.84 | 0.84 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph) | 579 | 1057 | 0 | 0 | 838 | 344 | 755 | 5 | 486 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 103 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 579 | 1057 | 0 | 0 | 838 | 344 | 0 | 760 | 383 | 0 | 0 | 0 |
| Turn Type | Prot | NA | | | NA | Free | Split | NA | Prot | | | |
| Protected Phases | 5 | 2 | | | 6 | | 8 | 8 | 8 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | 27.8 | 90.2 | | | 58.2 | 154.0 | | 51.2 | 51.2 | | | |
| Effective Green, g (s) | 27.8 | 90.2 | | | 58.2 | 154.0 | | 51.2 | 51.2 | | | |
| Actuated g/C Ratio | 0.18 | 0.59 | | | 0.38 | 1.00 | | 0.33 | 0.33 | | | |
| Clearance Time (s) | 4.2 | 5.8 | | | 5.8 | | | 6.8 | 6.8 | | | |
| Vehicle Extension (s) | 1.5 | 4.0 | | | 4.0 | | | 1.0 | 1.0 | | | |
| Lane Grp Cap (vph) | 319 | 2072 | | | 1337 | 1583 | | 590 | 526 | | | |
| v/s Ratio Prot | c0.33 | 0.30 | | | c0.24 | | | c0.43 | 0.24 | | | |
| v/s Ratio Perm | | | | | | 0.22 | | | | | | |
| v/c Ratio | 1.82 | 0.51 | | | 0.63 | 0.22 | | 1.29 | 0.73 | | | |
| Uniform Delay, d1 | 63.1 | 18.8 | | | 39.0 | 0.0 | | 51.4 | 45.3 | | | |
| Progression Factor | 1.51 | 0.67 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 367.9 | 0.1 | | | 2.2 | 0.3 | | 142.1 | 4.2 | | | |
| Delay (s) | 463.1 | 12.6 | | | 41.3 | 0.3 | | 193.5 | 49.5 | | | |
| Level of Service | F | B | | | D | A | | F | D | | | |
| Approach Delay (s) | | 172.1 | | | 29.4 | | | 137.3 | | | 0.0 | |
| Approach LOS | | F | | | C | | | F | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 119.9 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.13 | | |
| Actuated Cycle Length (s) | 154.0 | Sum of lost time (s) | 18.8 |
| Intersection Capacity Utilization | 150.3% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

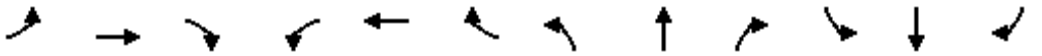
c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1146 | 994 | 279 | 1143 | 0 | 0 | 0 | 0 | 392 | 6 | 412 |
| Future Volume (vph) | 0 | 1146 | 994 | 279 | 1143 | 0 | 0 | 0 | 0 | 392 | 6 | 412 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | |
| Lane Util. Factor | | 0.91 | 1.00 | 1.00 | 1.00 | | | | | 0.95 | 0.95 | |
| Frt | | 1.00 | 0.85 | 1.00 | 1.00 | | | | | 1.00 | 0.86 | |
| Flt Protected | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1524 | |
| Flt Permitted | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1524 | |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.91 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 0.84 | 0.84 | 0.84 |
| Adj. Flow (vph) | 0 | 1232 | 1069 | 307 | 1256 | 0 | 0 | 0 | 0 | 467 | 7 | 490 |
| RTOR Reduction (vph) | 0 | 0 | 569 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 |
| Lane Group Flow (vph) | 0 | 1232 | 500 | 307 | 1256 | 0 | 0 | 0 | 0 | 420 | 506 | 0 |
| Turn Type | | NA | Perm | Prot | NA | | | | | Split | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | | | 4 | 4 | |
| Permitted Phases | | | 2 | | | | | | | | | |
| Actuated Green, G (s) | | 32.2 | 32.2 | 32.9 | 89.5 | | | | | 52.9 | 52.9 | |
| Effective Green, g (s) | | 32.2 | 32.2 | 32.9 | 89.5 | | | | | 52.9 | 52.9 | |
| Actuated g/C Ratio | | 0.21 | 0.21 | 0.21 | 0.58 | | | | | 0.34 | 0.34 | |
| Clearance Time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | |
| Vehicle Extension (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | 2.5 | 2.5 | |
| Lane Grp Cap (vph) | | 1063 | 330 | 378 | 1082 | | | | | 577 | 523 | |
| v/s Ratio Prot | | 0.24 | | 0.17 | c0.67 | | | | | 0.25 | c0.33 | |
| v/s Ratio Perm | | | c0.32 | | | | | | | | | |
| v/c Ratio | | 1.16 | 1.52 | 0.81 | 1.16 | | | | | 0.73 | 0.97 | |
| Uniform Delay, d1 | | 60.9 | 60.9 | 57.6 | 32.2 | | | | | 44.2 | 49.7 | |
| Progression Factor | | 1.11 | 1.83 | 1.00 | 1.04 | | | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 78.6 | 241.9 | 4.9 | 76.3 | | | | | 4.3 | 30.8 | |
| Delay (s) | | 146.2 | 353.4 | 62.2 | 110.0 | | | | | 48.5 | 80.5 | |
| Level of Service | | F | F | E | F | | | | | D | F | |
| Approach Delay (s) | | 242.5 | | | 100.6 | | | 0.0 | | | 66.6 | |
| Approach LOS | | F | | | F | | | A | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 161.4 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.21 | | |
| Actuated Cycle Length (s) | 154.0 | Sum of lost time (s) | 19.6 |
| Intersection Capacity Utilization | 150.3% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



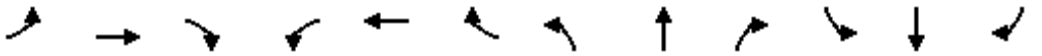
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 83 | 410 | 71 | 635 | 407 | 341 | 264 | 146 | 314 | 325 | 49 | 41 |
| Future Volume (veh/h) | 83 | 410 | 71 | 635 | 407 | 341 | 264 | 146 | 314 | 325 | 49 | 41 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 90 | 719 | 125 | 794 | 509 | 371 | 314 | 159 | 374 | 353 | 53 | 45 |
| Peak Hour Factor | 0.92 | 0.57 | 0.57 | 0.80 | 0.80 | 0.92 | 0.84 | 0.92 | 0.84 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 140 | 1016 | 453 | 456 | 1205 | 538 | 360 | 347 | 518 | 235 | 409 | 182 |
| Arrive On Green | 0.08 | 0.29 | 0.29 | 0.13 | 0.34 | 0.34 | 0.20 | 0.19 | 0.19 | 0.13 | 0.12 | 0.12 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 3456 | 3554 | 1585 | 1781 | 1870 | 2790 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 90 | 719 | 125 | 794 | 509 | 371 | 314 | 159 | 374 | 353 | 53 | 45 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1728 | 1777 | 1585 | 1781 | 1870 | 1395 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 3.7 | 13.7 | 4.6 | 10.0 | 8.4 | 15.3 | 12.9 | 5.7 | 9.6 | 10.0 | 1.0 | 2.0 |
| Cycle Q Clear(g_c), s | 3.7 | 13.7 | 4.6 | 10.0 | 8.4 | 15.3 | 12.9 | 5.7 | 9.6 | 10.0 | 1.0 | 2.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 140 | 1016 | 453 | 456 | 1205 | 538 | 360 | 347 | 518 | 235 | 409 | 182 |
| V/C Ratio(X) | 0.64 | 0.71 | 0.28 | 1.74 | 0.42 | 0.69 | 0.87 | 0.46 | 0.72 | 1.50 | 0.13 | 0.25 |
| Avail Cap(c_a), veh/h | 235 | 2342 | 1045 | 456 | 2342 | 1045 | 470 | 1233 | 1839 | 235 | 1874 | 836 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 33.9 | 24.3 | 21.0 | 32.9 | 19.3 | 21.6 | 29.3 | 27.5 | 29.1 | 32.9 | 30.2 | 30.6 |
| Incr Delay (d2), s/veh | 4.9 | 0.9 | 0.3 | 343.4 | 0.2 | 1.6 | 13.2 | 0.9 | 1.9 | 247.5 | 0.1 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.7 | 5.5 | 1.6 | 25.7 | 3.3 | 5.1 | 6.3 | 2.4 | 3.0 | 20.1 | 0.4 | 0.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 38.8 | 25.2 | 21.3 | 376.3 | 19.6 | 23.2 | 42.5 | 28.4 | 31.0 | 280.4 | 30.3 | 31.3 |
| LnGrp LOS | D | C | C | F | B | C | D | C | C | F | C | C |
| Approach Vol, veh/h | | 934 | | | 1674 | | | 847 | | | 451 | |
| Approach Delay, s/veh | | 26.0 | | | 189.6 | | | 34.8 | | | 226.1 | |
| Approach LOS | | C | | | F | | | C | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.6 | 26.8 | 19.9 | 14.5 | 10.5 | 30.8 | 14.6 | 19.9 |
| Change Period (Y+Rc), s | 4.6 | 5.1 | 4.6 | * 5.8 | 4.6 | 5.1 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | 50.0 | 20.0 | * 40 | 10.0 | 50.0 | 10.0 | 50.0 |
| Max Q Clear Time (g_c+I1), s | 12.0 | 15.7 | 14.9 | 4.0 | 5.7 | 17.3 | 12.0 | 11.6 |
| Green Ext Time (p_c), s | 0.0 | 5.9 | 0.4 | 0.4 | 0.1 | 5.1 | 0.0 | 2.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 121.1 |
| HCM 6th LOS | F |

Notes

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



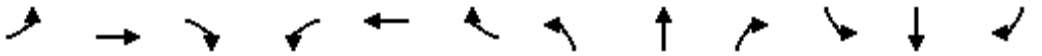
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 75 | 13 | 264 | 64 | 22 | 21 | 247 | 629 | 30 | 40 | 440 | 53 |
| Future Volume (veh/h) | 75 | 13 | 264 | 64 | 22 | 21 | 247 | 629 | 30 | 40 | 440 | 53 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 129 | 22 | 455 | 128 | 44 | 42 | 291 | 740 | 35 | 62 | 677 | 82 |
| Peak Hour Factor | 0.58 | 0.58 | 0.58 | 0.50 | 0.50 | 0.50 | 0.85 | 0.85 | 0.85 | 0.65 | 0.65 | 0.65 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 159 | 24 | 498 | 158 | 287 | 274 | 325 | 1617 | 76 | 104 | 923 | 111 |
| Arrive On Green | 0.09 | 0.33 | 0.33 | 0.09 | 0.33 | 0.33 | 0.18 | 0.32 | 0.32 | 0.06 | 0.20 | 0.20 |
| Sat Flow, veh/h | 1781 | 74 | 1523 | 1781 | 880 | 840 | 1781 | 4997 | 236 | 1781 | 4620 | 555 |
| Grp Volume(v), veh/h | 129 | 0 | 477 | 128 | 0 | 86 | 291 | 503 | 272 | 62 | 497 | 262 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1596 | 1781 | 0 | 1719 | 1781 | 1702 | 1828 | 1781 | 1702 | 1771 |
| Q Serve(g_s), s | 6.9 | 0.0 | 27.9 | 6.9 | 0.0 | 3.5 | 15.5 | 11.4 | 11.5 | 3.3 | 13.3 | 13.5 |
| Cycle Q Clear(g_c), s | 6.9 | 0.0 | 27.9 | 6.9 | 0.0 | 3.5 | 15.5 | 11.4 | 11.5 | 3.3 | 13.3 | 13.5 |
| Prop In Lane | 1.00 | | 0.95 | 1.00 | | 0.49 | 1.00 | | 0.13 | 1.00 | | 0.31 |
| Lane Grp Cap(c), veh/h | 159 | 0 | 522 | 158 | 0 | 561 | 325 | 1102 | 592 | 104 | 680 | 354 |
| V/C Ratio(X) | 0.81 | 0.00 | 0.91 | 0.81 | 0.00 | 0.15 | 0.90 | 0.46 | 0.46 | 0.60 | 0.73 | 0.74 |
| Avail Cap(c_a), veh/h | 183 | 0 | 574 | 183 | 0 | 618 | 366 | 1224 | 657 | 183 | 874 | 455 |
| 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 | 1.00 |
| Uniform Delay (d), s/veh | 43.5 | 0.0 | 31.4 | 43.6 | 0.0 | 23.3 | 38.9 | 26.1 | 26.1 | 44.7 | 36.5 | 36.6 |
| Incr Delay (d2), s/veh | 21.1 | 0.0 | 18.9 | 20.8 | 0.0 | 0.2 | 22.0 | 0.4 | 0.8 | 5.3 | 2.8 | 5.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.0 | 0.0 | 13.3 | 3.9 | 0.0 | 1.4 | 8.3 | 4.3 | 4.8 | 1.5 | 5.5 | 6.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 64.6 | 0.0 | 50.3 | 64.4 | 0.0 | 23.4 | 60.9 | 26.5 | 26.9 | 50.0 | 39.3 | 42.3 |
| LnGrp LOS | E | A | D | E | A | C | E | C | C | D | D | D |
| Approach Vol, veh/h | | 606 | | | 214 | | | 1066 | | | 821 | |
| Approach Delay, s/veh | | 53.4 | | | 47.9 | | | 36.0 | | | 41.1 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.2 | 36.5 | 22.3 | 25.2 | 13.3 | 36.5 | 10.3 | 37.3 |
| Change Period (Y+Rc), s | 4.6 | * 4.7 | 4.6 | 5.8 | 4.6 | * 4.7 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | * 35 | 20.0 | 25.0 | 10.0 | * 35 | 10.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 8.9 | 29.9 | 17.5 | 15.5 | 8.9 | 5.5 | 5.3 | 13.5 |
| Green Ext Time (p_c), s | 0.0 | 1.9 | 0.2 | 3.9 | 0.0 | 0.7 | 0.0 | 6.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 42.4 |
| HCM 6th LOS | D |

Notes

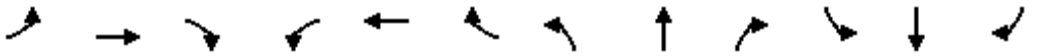
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 495 | 1008 | 119 | 744 | 1143 | 352 | 170 | 234 | 468 | 560 | 194 | 337 |
| Future Volume (vph) | 495 | 1008 | 119 | 744 | 1143 | 352 | 170 | 234 | 468 | 560 | 194 | 337 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.8 | 5.8 | 4.6 | 5.8 | 5.8 | 5.3 | 5.8 | 5.8 | 5.7 | 5.8 | 5.8 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.88 | 0.97 | 0.91 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 5085 | 2787 | 3433 | 5085 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 5085 | 2787 | 3433 | 5085 | 1583 |
| Peak-hour factor, PHF | 0.84 | 0.84 | 0.84 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.66 | 0.66 | 0.66 |
| Adj. Flow (vph) | 589 | 1200 | 142 | 865 | 1329 | 409 | 191 | 263 | 526 | 848 | 294 | 511 |
| RTOR Reduction (vph) | 0 | 0 | 90 | 0 | 0 | 247 | 0 | 0 | 410 | 0 | 0 | 195 |
| Lane Group Flow (vph) | 589 | 1200 | 52 | 865 | 1329 | 162 | 191 | 263 | 116 | 848 | 294 | 316 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Actuated Green, G (s) | 20.7 | 61.2 | 61.2 | 21.4 | 61.2 | 61.2 | 14.7 | 15.9 | 15.9 | 45.6 | 47.2 | 47.2 |
| Effective Green, g (s) | 20.7 | 61.2 | 61.2 | 21.4 | 61.2 | 61.2 | 14.7 | 15.9 | 15.9 | 45.6 | 47.2 | 47.2 |
| Actuated g/C Ratio | 0.12 | 0.37 | 0.37 | 0.13 | 0.37 | 0.37 | 0.09 | 0.10 | 0.10 | 0.27 | 0.28 | 0.28 |
| Clearance Time (s) | 5.3 | 5.8 | 5.8 | 4.6 | 5.8 | 5.8 | 5.3 | 5.8 | 5.8 | 5.7 | 5.8 | 5.8 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 428 | 1874 | 583 | 442 | 1874 | 583 | 156 | 487 | 266 | 943 | 1445 | 450 |
| v/s Ratio Prot | 0.17 | 0.24 | | c0.25 | c0.26 | | c0.11 | 0.05 | | c0.25 | 0.06 | |
| v/s Ratio Perm | | | 0.03 | | | 0.10 | | | 0.04 | | | 0.20 |
| v/c Ratio | 1.38 | 0.64 | 0.09 | 1.96 | 0.71 | 0.28 | 1.22 | 0.54 | 0.44 | 0.90 | 0.20 | 0.70 |
| Uniform Delay, d1 | 72.7 | 43.3 | 34.2 | 72.3 | 44.8 | 36.8 | 75.7 | 71.6 | 70.8 | 58.0 | 45.1 | 53.1 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.04 | 0.83 | 0.63 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 183.5 | 1.7 | 0.3 | 431.4 | 0.2 | 0.1 | 144.9 | 1.2 | 1.2 | 11.2 | 0.1 | 4.9 |
| Delay (s) | 256.1 | 45.0 | 34.5 | 506.4 | 37.2 | 23.2 | 220.5 | 72.8 | 72.0 | 69.2 | 45.2 | 58.1 |
| Level of Service | F | D | C | F | D | C | F | E | E | E | D | E |
| Approach Delay (s) | | 108.6 | | | 190.9 | | | 101.1 | | | 61.5 | |
| Approach LOS | | F | | | F | | | F | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 126.6 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.03 | | |
| Actuated Cycle Length (s) | 166.0 | Sum of lost time (s) | 26.2 |
| Intersection Capacity Utilization | 83.3% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



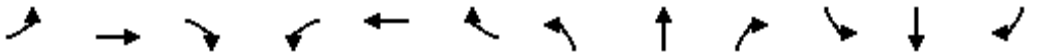
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 129 | 15 | 10 | 3 | 36 | 84 | 1 | 349 | 1 | 121 | 357 | 140 |
| Future Volume (veh/h) | 129 | 15 | 10 | 3 | 36 | 84 | 1 | 349 | 1 | 121 | 357 | 140 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 152 | 18 | 12 | 6 | 72 | 168 | 1 | 447 | 1 | 166 | 489 | 192 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.50 | 0.50 | 0.50 | 0.78 | 0.78 | 0.78 | 0.73 | 0.73 | 0.73 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 202 | 485 | 411 | 11 | 285 | 242 | 3 | 1197 | 3 | 218 | 1782 | 553 |
| Arrive On Green | 0.11 | 0.26 | 0.26 | 0.01 | 0.15 | 0.15 | 0.00 | 0.23 | 0.23 | 0.12 | 0.35 | 0.35 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 5261 | 12 | 1781 | 5106 | 1585 |
| Grp Volume(v), veh/h | 152 | 18 | 12 | 6 | 72 | 168 | 1 | 289 | 159 | 166 | 489 | 192 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1702 | 1868 | 1781 | 1702 | 1585 |
| Q Serve(g_s), s | 4.3 | 0.4 | 0.3 | 0.2 | 1.8 | 5.2 | 0.0 | 3.7 | 3.7 | 4.7 | 3.6 | 4.7 |
| Cycle Q Clear(g_c), s | 4.3 | 0.4 | 0.3 | 0.2 | 1.8 | 5.2 | 0.0 | 3.7 | 3.7 | 4.7 | 3.6 | 4.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.01 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 202 | 485 | 411 | 11 | 285 | 242 | 3 | 774 | 425 | 218 | 1782 | 553 |
| V/C Ratio(X) | 0.75 | 0.04 | 0.03 | 0.53 | 0.25 | 0.69 | 0.29 | 0.37 | 0.37 | 0.76 | 0.27 | 0.35 |
| Avail Cap(c_a), veh/h | 684 | 898 | 761 | 684 | 898 | 761 | 684 | 1961 | 1076 | 684 | 2942 | 913 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.4 | 14.4 | 14.4 | 25.8 | 19.4 | 20.9 | 26.0 | 17.0 | 17.0 | 22.1 | 12.2 | 12.6 |
| Incr Delay (d2), s/veh | 5.6 | 0.0 | 0.0 | 33.0 | 0.5 | 3.6 | 41.5 | 1.1 | 2.0 | 5.4 | 0.3 | 1.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.0 | 0.2 | 0.1 | 0.2 | 0.8 | 1.9 | 0.1 | 1.3 | 1.6 | 2.0 | 1.1 | 1.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 28.0 | 14.4 | 14.4 | 58.8 | 19.9 | 24.5 | 67.5 | 18.1 | 19.0 | 27.5 | 12.5 | 13.9 |
| LnGrp LOS | C | B | B | E | B | C | E | B | B | C | B | B |
| Approach Vol, veh/h | | 182 | | | 246 | | | 449 | | | 847 | |
| Approach Delay, s/veh | | 25.8 | | | 24.0 | | | 18.5 | | | 15.8 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 4.8 | 18.5 | 4.6 | 24.2 | 10.4 | 12.9 | 10.9 | 17.8 |
| Change Period (Y+Rc), s | 4.5 | 5.0 | 4.5 | 6.0 | 4.5 | 5.0 | 4.5 | 6.0 |
| Max Green Setting (Gmax), s | 20.0 | 25.0 | 20.0 | 30.0 | 20.0 | 25.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 2.4 | 2.0 | 6.7 | 6.3 | 7.2 | 6.7 | 5.7 |
| Green Ext Time (p_c), s | 0.0 | 0.1 | 0.0 | 8.9 | 0.3 | 0.9 | 0.3 | 6.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 18.7 |
| HCM 6th LOS | B |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 63 | 1236 | 66 | 226 | 1212 | 212 | 23 | 35 | 216 | 165 | 36 | 27 |
| Future Volume (veh/h) | 63 | 1236 | 66 | 226 | 1212 | 212 | 23 | 35 | 216 | 165 | 36 | 27 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 86 | 1693 | 90 | 240 | 1289 | 226 | 25 | 38 | 232 | 217 | 47 | 36 |
| Peak Hour Factor | 0.73 | 0.73 | 0.73 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 | 0.93 | 0.76 | 0.76 | 0.76 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 109 | 1842 | 98 | 264 | 1629 | 727 | 41 | 306 | 260 | 243 | 518 | 439 |
| Arrive On Green | 0.06 | 0.37 | 0.37 | 0.15 | 0.46 | 0.46 | 0.02 | 0.16 | 0.16 | 0.14 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1781 | 4963 | 264 | 1781 | 3554 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 86 | 1161 | 622 | 240 | 1289 | 226 | 25 | 38 | 232 | 217 | 47 | 36 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1823 | 1781 | 1777 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 6.2 | 42.2 | 42.3 | 17.2 | 40.0 | 11.7 | 1.8 | 2.2 | 18.6 | 15.5 | 2.4 | 2.2 |
| Cycle Q Clear(g_c), s | 6.2 | 42.2 | 42.3 | 17.2 | 40.0 | 11.7 | 1.8 | 2.2 | 18.6 | 15.5 | 2.4 | 2.2 |
| Prop In Lane | 1.00 | | 0.14 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 109 | 1263 | 676 | 264 | 1629 | 727 | 41 | 306 | 260 | 243 | 518 | 439 |
| V/C Ratio(X) | 0.79 | 0.92 | 0.92 | 0.91 | 0.79 | 0.31 | 0.61 | 0.12 | 0.89 | 0.89 | 0.09 | 0.08 |
| Avail Cap(c_a), veh/h | 275 | 1312 | 703 | 275 | 1629 | 727 | 275 | 433 | 367 | 275 | 518 | 439 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 60.1 | 38.9 | 38.9 | 54.4 | 29.9 | 22.2 | 62.8 | 46.3 | 53.1 | 55.1 | 34.8 | 34.7 |
| Incr Delay (d2), s/veh | 11.9 | 10.0 | 16.6 | 30.8 | 2.9 | 0.3 | 14.0 | 0.2 | 18.0 | 26.8 | 0.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.1 | 19.0 | 21.6 | 9.8 | 16.8 | 4.4 | 1.0 | 1.1 | 8.6 | 8.7 | 1.1 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 72.0 | 48.9 | 55.5 | 85.2 | 32.7 | 22.5 | 76.8 | 46.5 | 71.1 | 81.9 | 34.8 | 34.7 |
| LnGrp LOS | E | D | E | F | C | C | E | D | E | F | C | C |
| Approach Vol, veh/h | | 1869 | | | 1755 | | | 295 | | | 300 | |
| Approach Delay, s/veh | | 52.2 | | | 38.6 | | | 68.4 | | | 68.9 | |
| Approach LOS | | D | | | D | | | E | | | E | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 24.6 | 54.1 | 8.6 | 42.5 | 13.2 | 65.5 | 23.3 | 27.7 |
| Change Period (Y+Rc), s | 5.3 | 6.0 | 5.6 | 6.5 | 5.3 | 6.0 | 5.6 | 6.5 |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | 20.0 | 30.0 | 20.0 | 50.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 19.2 | 44.3 | 3.8 | 4.4 | 8.2 | 42.0 | 17.5 | 20.6 |
| Green Ext Time (p_c), s | 0.1 | 3.8 | 0.0 | 0.3 | 0.1 | 6.2 | 0.1 | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 48.8 |
| HCM 6th LOS | D |

**Notes**

User approved pedestrian interval to be less than phase max green.

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 10 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 4 | 45 | 115 | 8 | 28 | 37 | 64 | 89 | 25 | 40 | 0 |
| Future Vol, veh/h | 0 | 4 | 45 | 115 | 8 | 28 | 37 | 64 | 89 | 25 | 40 | 0 |
| Peak Hour Factor | 0.61 | 0.61 | 0.61 | 0.54 | 0.54 | 0.54 | 0.75 | 0.75 | 0.75 | 0.83 | 0.83 | 0.83 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 7 | 74 | 213 | 15 | 52 | 49 | 85 | 119 | 30 | 48 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 8.1 | 10.9 | 10 | 8.9 |
| HCM LOS | A | B | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 19% | 0% | 76% | 38% |
| Vol Thru, % | 34% | 8% | 5% | 62% |
| Vol Right, % | 47% | 92% | 19% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 190 | 49 | 151 | 65 |
| LT Vol | 37 | 0 | 115 | 25 |
| Through Vol | 64 | 4 | 8 | 40 |
| RT Vol | 89 | 45 | 28 | 0 |
| Lane Flow Rate | 253 | 80 | 280 | 78 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.328 | 0.101 | 0.378 | 0.113 |
| Departure Headway (Hd) | 4.662 | 4.538 | 4.86 | 5.2 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 765 | 781 | 735 | 683 |
| Service Time | 2.724 | 2.617 | 2.922 | 3.278 |
| HCM Lane V/C Ratio | 0.331 | 0.102 | 0.381 | 0.114 |
| HCM Control Delay | 10 | 8.1 | 10.9 | 8.9 |
| HCM Lane LOS | A | A | B | A |
| HCM 95th-tile Q | 1.4 | 0.3 | 1.8 | 0.4 |

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

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 24 | 11 | 26 | 27 | 3 |
| Future Vol, veh/h | 0 | 24 | 11 | 26 | 27 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 50 | 50 | 71 | 71 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 48 | 15 | 37 | 31 | 3 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 52 | 0 | - | 0 | 82 | 34 |
| Stage 1 | - | - | - | - | 34 | - |
| Stage 2 | - | - | - | - | 48 | - |
| 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 | 1554 | - | - | - | 920 | 1039 |
| Stage 1 | - | - | - | - | 988 | - |
| Stage 2 | - | - | - | - | 974 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1554 | - | - | - | 920 | 1039 |
| Mov Cap-2 Maneuver | - | - | - | - | 920 | - |
| Stage 1 | - | - | - | - | 988 | - |
| Stage 2 | - | - | - | - | 974 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 9 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1554 | - | - | - | 931 |
| HCM Lane V/C Ratio | - | - | - | - | 0.037 |
| HCM Control Delay (s) | 0 | - | - | - | 9 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.1 |

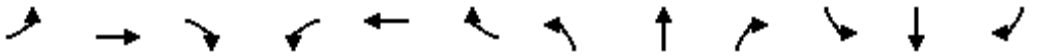
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 9 | 9 | 12 | 142 | 171 | 5 |
| Future Vol, veh/h | 9 | 9 | 12 | 142 | 171 | 5 |
| 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 | 57 | 57 | 75 | 75 | 53 | 53 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 16 | 16 | 189 | 323 | 9 |

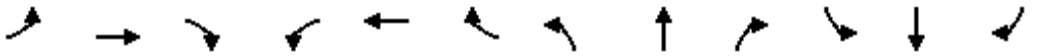
| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 549 | 328 | 332 | 0 | - | 0 |
| Stage 1 | 328 | - | - | - | - | - |
| Stage 2 | 221 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 497 | 713 | 1227 | - | - | - |
| Stage 1 | 730 | - | - | - | - | - |
| Stage 2 | 816 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 490 | 713 | 1227 | - | - | - |
| Mov Cap-2 Maneuver | 490 | - | - | - | - | - |
| Stage 1 | 719 | - | - | - | - | - |
| Stage 2 | 816 | - | - | - | - | - |

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

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1227 | - | 581 | - | - |
| HCM Lane V/C Ratio | 0.013 | - | 0.054 | - | - |
| HCM Control Delay (s) | 8 | 0 | 11.6 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 251 | 1048 | 0 | 0 | 1038 | 275 | 365 | 5 | 424 | 0 | 0 | 0 |
| Future Volume (veh/h) | 251 | 1048 | 0 | 0 | 1038 | 275 | 365 | 5 | 424 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 326 | 1361 | 0 | 0 | 1166 | 309 | 435 | 6 | 505 | | | |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.89 | 0.89 | 0.89 | 0.84 | 0.84 | 0.84 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 207 | 1945 | 0 | 0 | 1124 | 294 | 291 | 4 | 337 | | | |
| Arrive On Green | 0.23 | 1.00 | 0.00 | 0.00 | 0.40 | 0.40 | 0.38 | 0.38 | 0.38 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 2880 | 730 | 769 | 11 | 892 | | | |
| Grp Volume(v), veh/h | 326 | 1361 | 0 | 0 | 738 | 737 | 946 | 0 | 0 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1739 | 1671 | 0 | 0 | | | |
| Q Serve(g_s), s | 17.0 | 0.0 | 0.0 | 0.0 | 58.9 | 58.9 | 55.2 | 0.0 | 0.0 | | | |
| Cycle Q Clear(g_c), s | 17.0 | 0.0 | 0.0 | 0.0 | 58.9 | 58.9 | 55.2 | 0.0 | 0.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.42 | 0.46 | | 0.53 | | | |
| Lane Grp Cap(c), veh/h | 207 | 1945 | 0 | 0 | 717 | 702 | 632 | 0 | 0 | | | |
| V/C Ratio(X) | 1.57 | 0.70 | 0.00 | 0.00 | 1.03 | 1.05 | 1.50 | 0.00 | 0.00 | | | |
| Avail Cap(c_a), veh/h | 207 | 1945 | 0 | 0 | 717 | 702 | 632 | 0 | 0 | | | |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.09 | 0.09 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | | | |
| Uniform Delay (d), s/veh | 56.0 | 0.0 | 0.0 | 0.0 | 43.6 | 43.6 | 45.4 | 0.0 | 0.0 | | | |
| Incr Delay (d2), s/veh | 259.4 | 0.2 | 0.0 | 0.0 | 41.6 | 47.8 | 232.0 | 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 | | | |
| %ile BackOfQ(50%),veh/ln | 21.7 | 0.1 | 0.0 | 0.0 | 33.6 | 34.1 | 62.7 | 0.0 | 0.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 315.4 | 0.2 | 0.0 | 0.0 | 85.1 | 91.3 | 277.4 | 0.0 | 0.0 | | | |
| LnGrp LOS | F | A | A | A | F | F | F | A | A | | | |
| Approach Vol, veh/h | | 1687 | | | 1475 | | | 946 | | | | |
| Approach Delay, s/veh | | 61.1 | | | 88.2 | | | 277.4 | | | | |
| Approach LOS | | E | | | F | | | F | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 85.0 | | | 21.0 | 64.0 | | 61.0 | | | | |
| Change Period (Y+Rc), s | | 5.1 | | | 4.0 | 5.1 | | 5.8 | | | | |
| Max Green Setting (Gmax), s | | 79.9 | | | 17.0 | 58.9 | | 55.2 | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.0 | | | 19.0 | 60.9 | | 57.2 | | | | |
| Green Ext Time (p_c), s | | 13.8 | | | 0.0 | 0.0 | | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 120.6 | | | | | | | | | |
| HCM 6th LOS | | | F | | | | | | | | | |



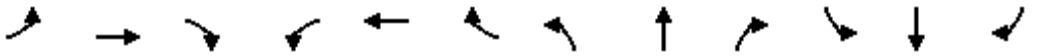
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 946 | 409 | 287 | 1116 | 0 | 0 | 0 | 0 | 353 | 8 | 267 |
| Future Volume (veh/h) | 0 | 946 | 409 | 287 | 1116 | 0 | 0 | 0 | 0 | 353 | 8 | 267 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 1296 | 560 | 322 | 1254 | 0 | | | | 406 | 9 | 307 |
| Peak Hour Factor | 0.73 | 0.73 | 0.73 | 0.89 | 0.89 | 0.89 | | | | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 910 | 389 | 401 | 972 | 0 | | | | 391 | 9 | 295 |
| Arrive On Green | 0.00 | 0.26 | 0.26 | 0.45 | 1.00 | 0.00 | | | | 0.41 | 0.41 | 0.41 |
| Sat Flow, veh/h | 0 | 3674 | 1499 | 1781 | 1870 | 0 | | | | 952 | 21 | 720 |
| Grp Volume(v), veh/h | 0 | 1258 | 598 | 322 | 1254 | 0 | | | | 722 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1601 | 1781 | 1870 | 0 | | | | 1693 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 37.9 | 37.9 | 22.7 | 0.0 | 0.0 | | | | 59.9 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 37.9 | 37.9 | 22.7 | 0.0 | 0.0 | | | | 59.9 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 0.94 | 1.00 | | 0.00 | | | | 0.56 | | 0.43 |
| Lane Grp Cap(c), veh/h | 0 | 884 | 415 | 401 | 972 | 0 | | | | 695 | 0 | 0 |
| V/C Ratio(X) | 0.00 | 1.42 | 1.44 | 0.80 | 1.29 | 0.00 | | | | 1.04 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 884 | 415 | 415 | 972 | 0 | | | | 695 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 0.09 | 0.09 | 0.00 | | | | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 54.0 | 54.1 | 37.3 | 0.0 | 0.0 | | | | 43.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 197.3 | 210.9 | 1.0 | 131.1 | 0.0 | | | | 44.8 | 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 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 40.3 | 39.4 | 8.2 | 35.4 | 0.0 | | | | 32.6 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 251.3 | 264.9 | 38.3 | 131.1 | 0.0 | | | | 87.8 | 0.0 | 0.0 |
| LnGrp LOS | A | F | F | D | F | A | | | | F | A | A |
| Approach Vol, veh/h | | 1856 | | | 1576 | | | | | | 722 | |
| Approach Delay, s/veh | | 255.7 | | | 112.1 | | | | | | 87.8 | |
| Approach LOS | | F | | | F | | | | | | F | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 38.0 | 43.0 | | 65.0 | | 81.0 |
| Change Period (Y+Rc), s | 5.1 | * 5.1 | | 5.1 | | 5.1 |
| Max Green Setting (Gmax), s | 34.0 | * 38 | | 59.9 | | 75.9 |
| Max Q Clear Time (g_c+I1), s | 24.7 | 39.9 | | 61.9 | | 2.0 |
| Green Ext Time (p_c), s | 0.1 | 0.0 | | 0.0 | | 18.1 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 172.1 |
| HCM 6th LOS | | F |

Notes

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 446 | 1172 | 0 | 0 | 1106 | 567 | 1074 | 6 | 469 | 0 | 0 | 0 |
| Future Volume (vph) | 446 | 1172 | 0 | 0 | 1106 | 567 | 1074 | 6 | 469 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.2 | 5.8 | | | 5.8 | 4.0 | | 6.8 | 6.8 | | | |
| Lane Util. Factor | 1.00 | 0.95 | | | 0.95 | 1.00 | | 1.00 | 1.00 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 0.85 | | 1.00 | 0.85 | | | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (prot) | 1770 | 3539 | | | 3539 | 1583 | | 1774 | 1583 | | | |
| Flt Permitted | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (perm) | 1770 | 3539 | | | 3539 | 1583 | | 1774 | 1583 | | | |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph) | 480 | 1260 | 0 | 0 | 1152 | 591 | 1119 | 6 | 489 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 480 | 1260 | 0 | 0 | 1152 | 591 | 0 | 1125 | 416 | 0 | 0 | 0 |
| Turn Type | Prot | NA | | | NA | Free | Split | NA | Prot | | | |
| Protected Phases | 5 | 2 | | | 6 | | 8 | 8 | 8 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | 29.8 | 93.2 | | | 59.2 | 166.0 | | 60.2 | 60.2 | | | |
| Effective Green, g (s) | 29.8 | 93.2 | | | 59.2 | 166.0 | | 60.2 | 60.2 | | | |
| Actuated g/C Ratio | 0.18 | 0.56 | | | 0.36 | 1.00 | | 0.36 | 0.36 | | | |
| Clearance Time (s) | 4.2 | 5.8 | | | 5.8 | | | 6.8 | 6.8 | | | |
| Vehicle Extension (s) | 1.5 | 4.0 | | | 4.0 | | | 1.0 | 1.0 | | | |
| Lane Grp Cap (vph) | 317 | 1986 | | | 1262 | 1583 | | 643 | 574 | | | |
| v/s Ratio Prot | c0.27 | 0.36 | | | c0.33 | | | c0.63 | 0.26 | | | |
| v/s Ratio Perm | | | | | | 0.37 | | | | | | |
| v/c Ratio | 1.51 | 0.63 | | | 0.91 | 0.37 | | 1.75 | 0.72 | | | |
| Uniform Delay, d1 | 68.1 | 24.8 | | | 50.9 | 0.0 | | 52.9 | 45.7 | | | |
| Progression Factor | 1.34 | 0.83 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 241.4 | 1.0 | | | 11.5 | 0.7 | | 343.7 | 3.8 | | | |
| Delay (s) | 332.4 | 21.5 | | | 62.5 | 0.7 | | 396.6 | 49.6 | | | |
| Level of Service | F | C | | | E | A | | F | D | | | |
| Approach Delay (s) | | 107.3 | | | 41.5 | | | 291.5 | | | 0.0 | |
| Approach LOS | | F | | | D | | | F | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 143.1 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.39 | | |
| Actuated Cycle Length (s) | 166.0 | Sum of lost time (s) | 18.8 |
| Intersection Capacity Utilization | 179.3% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

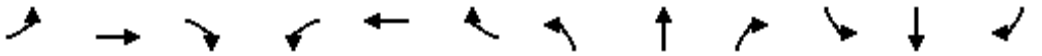
c Critical Lane Group

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1255 | 887 | 300 | 1880 | 0 | 0 | 0 | 0 | 363 | 1 | 517 |
| Future Volume (vph) | 0 | 1255 | 887 | 300 | 1880 | 0 | 0 | 0 | 0 | 363 | 1 | 517 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | |
| Lane Util. Factor | | 0.91 | 1.00 | 1.00 | 1.00 | | | | | 0.95 | 0.95 | |
| Frt | | 1.00 | 0.85 | 1.00 | 1.00 | | | | | 1.00 | 0.86 | |
| Flt Protected | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1517 | |
| Flt Permitted | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1517 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 0.74 | 0.74 | 0.74 |
| Adj. Flow (vph) | 0 | 1364 | 964 | 316 | 1979 | 0 | 0 | 0 | 0 | 491 | 1 | 699 |
| RTOR Reduction (vph) | 0 | 0 | 439 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 0 | 1364 | 525 | 316 | 1979 | 0 | 0 | 0 | 0 | 442 | 743 | 0 |
| Turn Type | | NA | Perm | Prot | NA | | | | | Split | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | | | 4 | 4 | |
| Permitted Phases | | | 2 | | | | | | | | | |
| Actuated Green, G (s) | | 59.2 | 59.2 | 29.0 | 94.2 | | | | | 60.2 | 60.2 | |
| Effective Green, g (s) | | 59.2 | 59.2 | 29.0 | 94.2 | | | | | 60.2 | 60.2 | |
| Actuated g/C Ratio | | 0.36 | 0.36 | 0.17 | 0.57 | | | | | 0.36 | 0.36 | |
| Clearance Time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | |
| Vehicle Extension (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | 2.5 | 2.5 | |
| Lane Grp Cap (vph) | | 1813 | 564 | 309 | 1057 | | | | | 609 | 550 | |
| v/s Ratio Prot | | 0.27 | | 0.18 | c1.06 | | | | | 0.26 | c0.49 | |
| v/s Ratio Perm | | | 0.33 | | | | | | | | | |
| v/c Ratio | | 0.75 | 0.93 | 1.02 | 1.87 | | | | | 0.73 | 1.35 | |
| Uniform Delay, d1 | | 47.0 | 51.4 | 68.5 | 35.9 | | | | | 45.8 | 52.9 | |
| Progression Factor | | 1.02 | 1.63 | 1.23 | 0.93 | | | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 2.1 | 18.9 | 21.4 | 392.9 | | | | | 4.0 | 169.8 | |
| Delay (s) | | 50.0 | 102.8 | 105.7 | 426.1 | | | | | 49.8 | 222.7 | |
| Level of Service | | D | F | F | F | | | | | D | F | |
| Approach Delay (s) | | 71.9 | | | 382.0 | | | 0.0 | | | 158.6 | |
| Approach LOS | | E | | | F | | | A | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 212.0 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.76 | | |
| Actuated Cycle Length (s) | 166.0 | Sum of lost time (s) | 19.6 |
| Intersection Capacity Utilization | 179.3% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

# Appendix G – 2026 Baseline Conditions plus Project Level of Service Sheets



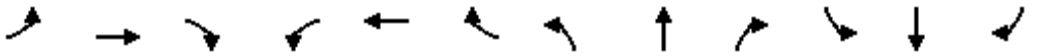
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 51 | 628 | 65 | 477 | 405 | 376 | 265 | 47 | 300 | 128 | 29 | 21 |
| Future Volume (veh/h) | 51 | 628 | 65 | 477 | 405 | 376 | 265 | 47 | 300 | 128 | 29 | 21 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 55 | 981 | 102 | 530 | 450 | 409 | 353 | 51 | 400 | 139 | 32 | 23 |
| Peak Hour Factor | 0.92 | 0.64 | 0.64 | 0.90 | 0.90 | 0.92 | 0.75 | 0.92 | 0.75 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 105 | 1273 | 568 | 391 | 1467 | 654 | 387 | 383 | 571 | 172 | 298 | 133 |
| Arrive On Green | 0.06 | 0.36 | 0.36 | 0.11 | 0.41 | 0.41 | 0.22 | 0.20 | 0.20 | 0.10 | 0.08 | 0.08 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 3456 | 3554 | 1585 | 1781 | 1870 | 2790 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 55 | 981 | 102 | 530 | 450 | 409 | 353 | 51 | 400 | 139 | 32 | 23 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1728 | 1777 | 1585 | 1781 | 1870 | 1395 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 2.7 | 21.6 | 3.9 | 10.0 | 7.5 | 18.0 | 17.1 | 2.0 | 11.8 | 6.8 | 0.7 | 1.2 |
| Cycle Q Clear(g_c), s | 2.7 | 21.6 | 3.9 | 10.0 | 7.5 | 18.0 | 17.1 | 2.0 | 11.8 | 6.8 | 0.7 | 1.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 105 | 1273 | 568 | 391 | 1467 | 654 | 387 | 383 | 571 | 172 | 298 | 133 |
| V/C Ratio(X) | 0.53 | 0.77 | 0.18 | 1.36 | 0.31 | 0.63 | 0.91 | 0.13 | 0.70 | 0.81 | 0.11 | 0.17 |
| Avail Cap(c_a), veh/h | 202 | 2011 | 897 | 391 | 2011 | 897 | 403 | 1058 | 1579 | 202 | 1609 | 718 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 40.4 | 25.1 | 19.4 | 39.2 | 17.4 | 20.5 | 33.8 | 28.7 | 32.6 | 39.1 | 37.4 | 37.6 |
| Incr Delay (d2), s/veh | 4.1 | 1.0 | 0.1 | 175.8 | 0.1 | 1.0 | 24.1 | 0.2 | 1.6 | 18.9 | 0.2 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.3 | 8.7 | 1.3 | 13.7 | 2.9 | 6.0 | 9.4 | 0.8 | 3.8 | 3.8 | 0.3 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 44.4 | 26.2 | 19.6 | 215.0 | 17.6 | 21.5 | 57.8 | 28.9 | 34.2 | 58.0 | 37.6 | 38.2 |
| LnGrp LOS | D | C | B | F | B | C | E | C | C | E | D | D |
| Approach Vol, veh/h | | 1138 | | | 1389 | | | 804 | | | 194 | |
| Approach Delay, s/veh | | 26.5 | | | 94.1 | | | 44.2 | | | 52.3 | |
| Approach LOS | | C | | | F | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.6 | 36.8 | 23.8 | 13.2 | 9.8 | 41.6 | 13.1 | 23.9 |
| Change Period (Y+Rc), s | 4.6 | 5.1 | 4.6 | * 5.8 | 4.6 | 5.1 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | 50.0 | 20.0 | * 40 | 10.0 | 50.0 | 10.0 | 50.0 |
| Max Q Clear Time (g_c+I1), s | 12.0 | 23.6 | 19.1 | 3.2 | 4.7 | 20.0 | 8.8 | 13.8 |
| Green Ext Time (p_c), s | 0.0 | 8.0 | 0.1 | 0.2 | 0.0 | 4.7 | 0.0 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 58.6 |
| HCM 6th LOS | E |

Notes

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



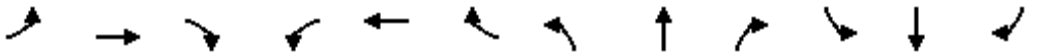
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 120 | 3 | 312 | 21 | 2 | 9 | 115 | 534 | 5 | 21 | 288 | 56 |
| Future Volume (veh/h) | 120 | 3 | 312 | 21 | 2 | 9 | 115 | 534 | 5 | 21 | 288 | 56 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 203 | 5 | 529 | 42 | 4 | 18 | 153 | 712 | 7 | 31 | 424 | 82 |
| Peak Hour Factor | 0.59 | 0.59 | 0.59 | 0.50 | 0.50 | 0.50 | 0.75 | 0.75 | 0.75 | 0.68 | 0.68 | 0.68 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 243 | 6 | 614 | 99 | 92 | 412 | 196 | 1225 | 12 | 80 | 734 | 138 |
| Arrive On Green | 0.14 | 0.39 | 0.39 | 0.06 | 0.31 | 0.31 | 0.11 | 0.23 | 0.23 | 0.04 | 0.17 | 0.17 |
| Sat Flow, veh/h | 1781 | 15 | 1572 | 1781 | 296 | 1334 | 1781 | 5214 | 51 | 1781 | 4316 | 813 |
| Grp Volume(v), veh/h | 203 | 0 | 534 | 42 | 0 | 22 | 153 | 465 | 254 | 31 | 332 | 174 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1587 | 1781 | 0 | 1630 | 1781 | 1702 | 1861 | 1781 | 1702 | 1724 |
| Q Serve(g_s), s | 8.0 | 0.0 | 22.2 | 1.6 | 0.0 | 0.7 | 6.0 | 8.7 | 8.7 | 1.2 | 6.4 | 6.7 |
| Cycle Q Clear(g_c), s | 8.0 | 0.0 | 22.2 | 1.6 | 0.0 | 0.7 | 6.0 | 8.7 | 8.7 | 1.2 | 6.4 | 6.7 |
| Prop In Lane | 1.00 | | 0.99 | 1.00 | | 0.82 | 1.00 | | 0.03 | 1.00 | | 0.47 |
| Lane Grp Cap(c), veh/h | 243 | 0 | 620 | 99 | 0 | 504 | 196 | 800 | 437 | 80 | 579 | 293 |
| V/C Ratio(X) | 0.83 | 0.00 | 0.86 | 0.43 | 0.00 | 0.04 | 0.78 | 0.58 | 0.58 | 0.39 | 0.57 | 0.59 |
| Avail Cap(c_a), veh/h | 248 | 0 | 774 | 248 | 0 | 795 | 496 | 1660 | 907 | 248 | 1186 | 600 |
| 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 | 1.00 |
| Uniform Delay (d), s/veh | 30.2 | 0.0 | 20.1 | 32.8 | 0.0 | 17.4 | 31.1 | 24.3 | 24.3 | 33.3 | 27.4 | 27.5 |
| Incr Delay (d2), s/veh | 20.9 | 0.0 | 9.0 | 2.9 | 0.0 | 0.1 | 6.7 | 1.0 | 1.7 | 3.0 | 1.3 | 2.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.7 | 0.0 | 9.2 | 0.8 | 0.0 | 0.3 | 2.7 | 3.2 | 3.6 | 0.5 | 2.4 | 2.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 51.1 | 0.0 | 29.1 | 35.7 | 0.0 | 17.4 | 37.8 | 25.3 | 26.1 | 36.4 | 28.7 | 30.2 |
| LnGrp LOS | D | A | C | D | A | B | D | C | C | D | C | C |
| Approach Vol, veh/h | | 737 | | | 64 | | | 872 | | | 537 | |
| Approach Delay, s/veh | | 35.2 | | | 29.4 | | | 27.7 | | | 29.6 | |
| Approach LOS | | D | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.6 | 32.7 | 12.5 | 18.0 | 14.4 | 26.9 | 7.8 | 22.7 |
| Change Period (Y+Rc), s | 4.6 | * 4.7 | 4.6 | 5.8 | 4.6 | * 4.7 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | * 35 | 20.0 | 25.0 | 10.0 | * 35 | 10.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 3.6 | 24.2 | 8.0 | 8.7 | 10.0 | 2.7 | 3.2 | 10.7 |
| Green Ext Time (p_c), s | 0.0 | 3.8 | 0.3 | 3.5 | 0.0 | 0.1 | 0.0 | 6.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 30.7 |
| HCM 6th LOS | C |

Notes

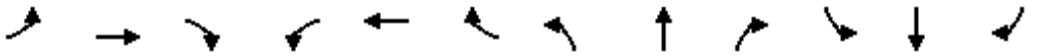
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 326 | 1440 | 74 | 495 | 684 | 161 | 84 | 199 | 479 | 531 | 144 | 180 |
| Future Volume (vph) | 326 | 1440 | 74 | 495 | 684 | 161 | 84 | 199 | 479 | 531 | 144 | 180 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.8 | 5.8 | 4.6 | 5.8 | 5.8 | 5.3 | 5.8 | 5.8 | 5.7 | 5.8 | 5.8 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.88 | 0.97 | 0.91 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 5085 | 2787 | 3433 | 5085 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 5085 | 2787 | 3433 | 5085 | 1583 |
| Peak-hour factor, PHF | 0.85 | 0.85 | 0.85 | 0.84 | 0.84 | 0.84 | 0.83 | 0.83 | 0.83 | 0.66 | 0.66 | 0.66 |
| Adj. Flow (vph) | 384 | 1694 | 87 | 589 | 814 | 192 | 101 | 240 | 577 | 805 | 218 | 273 |
| RTOR Reduction (vph) | 0 | 0 | 53 | 0 | 0 | 117 | 0 | 0 | 282 | 0 | 0 | 186 |
| Lane Group Flow (vph) | 384 | 1694 | 34 | 589 | 814 | 75 | 101 | 240 | 295 | 805 | 218 | 87 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Actuated Green, G (s) | 14.7 | 60.2 | 60.2 | 15.4 | 60.2 | 60.2 | 8.7 | 22.1 | 22.1 | 34.4 | 48.2 | 48.2 |
| Effective Green, g (s) | 14.7 | 60.2 | 60.2 | 15.4 | 60.2 | 60.2 | 8.7 | 22.1 | 22.1 | 34.4 | 48.2 | 48.2 |
| Actuated g/C Ratio | 0.10 | 0.39 | 0.39 | 0.10 | 0.39 | 0.39 | 0.06 | 0.14 | 0.14 | 0.22 | 0.31 | 0.31 |
| Clearance Time (s) | 5.3 | 5.8 | 5.8 | 4.6 | 5.8 | 5.8 | 5.3 | 5.8 | 5.8 | 5.7 | 5.8 | 5.8 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 327 | 1987 | 618 | 343 | 1987 | 618 | 99 | 729 | 399 | 766 | 1591 | 495 |
| v/s Ratio Prot | 0.11 | c0.33 | | c0.17 | 0.16 | | c0.06 | 0.05 | | c0.23 | 0.04 | |
| v/s Ratio Perm | | | 0.02 | | | 0.05 | | | c0.11 | | | 0.05 |
| v/c Ratio | 1.17 | 0.85 | 0.06 | 1.72 | 0.41 | 0.12 | 1.02 | 0.33 | 0.74 | 1.05 | 0.14 | 0.18 |
| Uniform Delay, d1 | 69.7 | 42.8 | 29.2 | 69.3 | 34.0 | 30.0 | 72.7 | 59.3 | 63.2 | 59.8 | 38.0 | 38.5 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.02 | 0.86 | 0.67 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 105.9 | 4.9 | 0.2 | 323.9 | 0.1 | 0.0 | 96.0 | 0.3 | 7.0 | 46.7 | 0.0 | 0.2 |
| Delay (s) | 175.6 | 47.7 | 29.4 | 394.6 | 29.4 | 20.2 | 168.7 | 59.6 | 70.2 | 106.5 | 38.0 | 38.6 |
| Level of Service | F | D | C | F | C | C | F | E | E | F | D | D |
| Approach Delay (s) | | 69.7 | | | 163.1 | | | 78.3 | | | 80.7 | |
| Approach LOS | | E | | | F | | | E | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 98.3 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.02 | | |
| Actuated Cycle Length (s) | 154.0 | Sum of lost time (s) | 26.2 |
| Intersection Capacity Utilization | 83.7% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



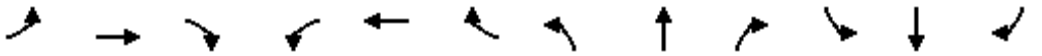
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 237 | 38 | 15 | 3 | 19 | 94 | 5 | 313 | 6 | 77 | 335 | 99 |
| Future Volume (veh/h) | 237 | 38 | 15 | 3 | 19 | 94 | 5 | 313 | 6 | 77 | 335 | 99 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 308 | 49 | 19 | 4 | 23 | 116 | 6 | 373 | 7 | 104 | 453 | 134 |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.81 | 0.81 | 0.81 | 0.84 | 0.84 | 0.84 | 0.74 | 0.74 | 0.74 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 381 | 602 | 510 | 8 | 209 | 177 | 11 | 1049 | 20 | 137 | 1399 | 434 |
| Arrive On Green | 0.21 | 0.32 | 0.32 | 0.00 | 0.11 | 0.11 | 0.01 | 0.20 | 0.20 | 0.08 | 0.27 | 0.27 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 5161 | 97 | 1781 | 5106 | 1585 |
| Grp Volume(v), veh/h | 308 | 49 | 19 | 4 | 23 | 116 | 6 | 246 | 134 | 104 | 453 | 134 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1702 | 1853 | 1781 | 1702 | 1585 |
| Q Serve(g_s), s | 8.3 | 0.9 | 0.4 | 0.1 | 0.6 | 3.6 | 0.2 | 3.1 | 3.2 | 2.9 | 3.6 | 3.4 |
| Cycle Q Clear(g_c), s | 8.3 | 0.9 | 0.4 | 0.1 | 0.6 | 3.6 | 0.2 | 3.1 | 3.2 | 2.9 | 3.6 | 3.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.05 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 381 | 602 | 510 | 8 | 209 | 177 | 11 | 692 | 377 | 137 | 1399 | 434 |
| V/C Ratio(X) | 0.81 | 0.08 | 0.04 | 0.52 | 0.11 | 0.65 | 0.53 | 0.36 | 0.36 | 0.76 | 0.32 | 0.31 |
| Avail Cap(c_a), veh/h | 701 | 920 | 780 | 701 | 920 | 780 | 701 | 2010 | 1094 | 701 | 3015 | 936 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.0 | 12.0 | 11.8 | 25.2 | 20.3 | 21.6 | 25.2 | 17.4 | 17.4 | 23.0 | 14.7 | 14.6 |
| Incr Delay (d2), s/veh | 4.1 | 0.1 | 0.0 | 45.2 | 0.2 | 4.0 | 32.9 | 1.1 | 2.1 | 8.2 | 0.5 | 1.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.6 | 0.4 | 0.1 | 0.1 | 0.2 | 1.3 | 0.2 | 1.1 | 1.3 | 1.4 | 1.2 | 1.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 23.1 | 12.1 | 11.9 | 70.4 | 20.5 | 25.7 | 58.1 | 18.5 | 19.5 | 31.2 | 15.2 | 16.1 |
| LnGrp LOS | C | B | B | E | C | C | E | B | B | C | B | B |
| Approach Vol, veh/h | | 376 | | | 143 | | | 386 | | | 691 | |
| Approach Delay, s/veh | | 21.1 | | | 26.1 | | | 19.5 | | | 17.8 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 4.7 | 21.3 | 4.8 | 19.9 | 15.4 | 10.7 | 8.4 | 16.3 |
| Change Period (Y+Rc), s | 4.5 | 5.0 | 4.5 | 6.0 | 4.5 | 5.0 | 4.5 | 6.0 |
| Max Green Setting (Gmax), s | 20.0 | 25.0 | 20.0 | 30.0 | 20.0 | 25.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 2.9 | 2.2 | 5.6 | 10.3 | 5.6 | 4.9 | 5.2 |
| Green Ext Time (p_c), s | 0.0 | 0.2 | 0.0 | 7.9 | 0.7 | 0.4 | 0.2 | 5.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 19.7 |
| HCM 6th LOS | B |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 72 | 1059 | 48 | 130 | 724 | 92 | 44 | 141 | 239 | 528 | 137 | 67 |
| Future Volume (veh/h) | 72 | 1059 | 48 | 130 | 724 | 92 | 44 | 141 | 239 | 528 | 137 | 67 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 82 | 1203 | 55 | 157 | 872 | 111 | 56 | 181 | 306 | 960 | 249 | 122 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.83 | 0.83 | 0.83 | 0.78 | 0.78 | 0.78 | 0.55 | 0.55 | 0.55 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 106 | 1469 | 67 | 188 | 1207 | 538 | 73 | 404 | 342 | 316 | 659 | 559 |
| Arrive On Green | 0.06 | 0.29 | 0.29 | 0.11 | 0.34 | 0.34 | 0.04 | 0.22 | 0.22 | 0.18 | 0.35 | 0.35 |
| Sat Flow, veh/h | 1781 | 5005 | 229 | 1781 | 3554 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 82 | 818 | 440 | 157 | 872 | 111 | 56 | 181 | 306 | 960 | 249 | 122 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1829 | 1781 | 1777 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 5.1 | 25.2 | 25.2 | 9.7 | 24.2 | 5.6 | 3.5 | 9.5 | 21.1 | 20.0 | 11.2 | 6.1 |
| Cycle Q Clear(g_c), s | 5.1 | 25.2 | 25.2 | 9.7 | 24.2 | 5.6 | 3.5 | 9.5 | 21.1 | 20.0 | 11.2 | 6.1 |
| Prop In Lane | 1.00 | | 0.13 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 106 | 999 | 537 | 188 | 1207 | 538 | 73 | 404 | 342 | 316 | 659 | 559 |
| V/C Ratio(X) | 0.78 | 0.82 | 0.82 | 0.84 | 0.72 | 0.21 | 0.77 | 0.45 | 0.89 | 3.04 | 0.38 | 0.22 |
| Avail Cap(c_a), veh/h | 316 | 1510 | 811 | 316 | 1576 | 703 | 316 | 498 | 422 | 316 | 659 | 559 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 52.3 | 37.0 | 37.0 | 49.5 | 32.6 | 26.4 | 53.5 | 38.4 | 42.9 | 46.4 | 27.3 | 25.6 |
| Incr Delay (d2), s/veh | 11.4 | 1.3 | 2.3 | 9.4 | 1.5 | 0.3 | 15.3 | 0.8 | 18.2 | 925.6 | 0.4 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.6 | 10.4 | 11.4 | 4.7 | 10.1 | 2.1 | 1.9 | 4.4 | 9.9 | 89.9 | 5.0 | 2.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 63.7 | 38.3 | 39.4 | 58.8 | 34.0 | 26.7 | 68.8 | 39.1 | 61.1 | 972.0 | 27.6 | 25.8 |
| LnGrp LOS | E | D | D | E | C | C | E | D | E | F | C | C |
| Approach Vol, veh/h | | 1340 | | | 1140 | | | 543 | | | 1331 | |
| Approach Delay, s/veh | | 40.2 | | | 36.7 | | | 54.6 | | | 708.6 | |
| Approach LOS | | D | | | D | | | D | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 17.2 | 39.1 | 10.2 | 46.2 | 12.0 | 44.3 | 25.6 | 30.9 |
| Change Period (Y+Rc), s | 5.3 | 6.0 | 5.6 | 6.5 | 5.3 | 6.0 | 5.6 | 6.5 |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | 20.0 | 30.0 | 20.0 | 50.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 11.7 | 27.2 | 5.5 | 13.2 | 7.1 | 26.2 | 22.0 | 23.1 |
| Green Ext Time (p_c), s | 0.2 | 5.9 | 0.1 | 1.6 | 0.1 | 8.9 | 0.0 | 1.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 245.4 |
| HCM 6th LOS | F |

**Notes**

User approved pedestrian interval to be less than phase max green.

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 62.6 |
| Intersection LOS | F |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 25 | 384 | 131 | 9 | 21 | 50 | 87 | 126 | 37 | 122 | 0 |
| Future Vol, veh/h | 0 | 25 | 384 | 131 | 9 | 21 | 50 | 87 | 126 | 37 | 122 | 0 |
| Peak Hour Factor | 0.75 | 0.75 | 0.75 | 0.59 | 0.59 | 0.59 | 0.63 | 0.63 | 0.63 | 0.53 | 0.53 | 0.53 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 33 | 512 | 222 | 15 | 36 | 79 | 138 | 200 | 70 | 230 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 105 | 28.1 | 52.2 | 31.4 |
| HCM LOS | F | D | F | D |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 19% | 0% | 81% | 23% |
| Vol Thru, % | 33% | 6% | 6% | 77% |
| Vol Right, % | 48% | 94% | 13% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 263 | 409 | 161 | 159 |
| LT Vol | 50 | 0 | 131 | 37 |
| Through Vol | 87 | 25 | 9 | 122 |
| RT Vol | 126 | 384 | 21 | 0 |
| Lane Flow Rate | 417 | 545 | 273 | 300 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.907 | 1.121 | 0.657 | 0.71 |
| Departure Headway (Hd) | 8.295 | 7.399 | 9.163 | 9.059 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 438 | 491 | 396 | 402 |
| Service Time | 6.295 | 5.492 | 7.163 | 7.059 |
| HCM Lane V/C Ratio | 0.952 | 1.11 | 0.689 | 0.746 |
| HCM Control Delay | 52.2 | 105 | 28.1 | 31.4 |
| HCM Lane LOS | F | F | D | D |
| HCM 95th-tile Q | 9.9 | 18.3 | 4.5 | 5.4 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 6.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ⇕ | | | ⇕ | | | ⇕ | | | ⇕ | |
| Traffic Vol, veh/h | 0 | 118 | 0 | 12 | 20 | 27 | 0 | 0 | 260 | 31 | 0 | 1 |
| Future Vol, veh/h | 0 | 118 | 0 | 12 | 20 | 27 | 0 | 0 | 260 | 31 | 0 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 50 | 50 | 50 | 71 | 71 | 71 | 100 | 100 | 100 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 236 | 0 | 17 | 28 | 38 | 0 | 0 | 260 | 35 | 0 | 1 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 66 | 0 | 0 | 236 | 0 | 0 | 318 | 336 | 236 | 447 | 317 | 47 |
| Stage 1 | - | - | - | - | - | - | 236 | 236 | - | 81 | 81 | - |
| Stage 2 | - | - | - | - | - | - | 82 | 100 | - | 366 | 236 | - |
| 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 | 1536 | - | - | 1331 | - | - | 635 | 585 | 803 | 522 | 599 | 1022 |
| Stage 1 | - | - | - | - | - | - | 767 | 710 | - | 927 | 828 | - |
| Stage 2 | - | - | - | - | - | - | 926 | 812 | - | 653 | 710 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1536 | - | - | 1331 | - | - | 628 | 577 | 803 | 350 | 591 | 1022 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 628 | 577 | - | 350 | 591 | - |
| Stage 1 | - | - | - | - | - | - | 767 | 710 | - | 927 | 817 | - |
| Stage 2 | - | - | - | - | - | - | 913 | 801 | - | 442 | 710 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 1.6 | 11.6 | 16.2 |
| HCM LOS | | | B | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 803 | 1536 | - | - | 1331 | - | - | 357 |
| HCM Lane V/C Ratio | 0.324 | - | - | - | 0.013 | - | - | 0.102 |
| HCM Control Delay (s) | 11.6 | 0 | - | - | 7.7 | 0 | - | 16.2 |
| HCM Lane LOS | B | A | - | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 1.4 | 0 | - | - | 0 | - | - | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 6 | 4 | 13 | 208 | 175 | 4 |
| Future Vol, veh/h | 6 | 4 | 13 | 208 | 175 | 4 |
| 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 | 50 | 50 | 61 | 61 | 64 | 64 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 12 | 8 | 21 | 341 | 273 | 6 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 659 | 276 | 279 | 0 | - | 0 |
| Stage 1 | 276 | - | - | - | - | - |
| Stage 2 | 383 | - | - | - | - | - |
| 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 | 429 | 763 | 1284 | - | - | - |
| Stage 1 | 771 | - | - | - | - | - |
| Stage 2 | 689 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 420 | 763 | 1284 | - | - | - |
| Mov Cap-2 Maneuver | 420 | - | - | - | - | - |
| Stage 1 | 756 | - | - | - | - | - |
| Stage 2 | 689 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 12.3 | 0.5 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1284 | - | 512 | - | - |
| HCM Lane V/C Ratio | 0.017 | - | 0.039 | - | - |
| HCM Control Delay (s) | 7.9 | 0 | 12.3 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 8 | 13 | 47 | 94 | 24 | 17 |
| Future Vol, veh/h | 8 | 13 | 47 | 94 | 24 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 8 | 13 | 47 | 94 | 24 | 17 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 159 | 94 | 0 | 0 | 141 | 0 |
| Stage 1 | 94 | - | - | - | - | - |
| Stage 2 | 65 | - | - | - | - | - |
| 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 | 832 | 963 | - | - | 1442 | - |
| Stage 1 | 930 | - | - | - | - | - |
| Stage 2 | 958 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 818 | 963 | - | - | 1442 | - |
| Mov Cap-2 Maneuver | 818 | - | - | - | - | - |
| Stage 1 | 930 | - | - | - | - | - |
| Stage 2 | 942 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.1 | 0 | 4.4 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 902 | 1442 | - |
| HCM Lane V/C Ratio | - | - | 0.023 | 0.017 | - |
| HCM Control Delay (s) | - | - | 9.1 | 7.5 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0.1 | - |

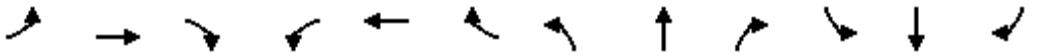
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑↑ | ↑↑ | | | ↱ |
| Traffic Vol, veh/h | 0 | 1179 | 719 | 129 | 0 | 71 |
| Future Vol, veh/h | 0 | 1179 | 719 | 129 | 0 | 71 |
| 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 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 1179 | 719 | 129 | 0 | 71 |

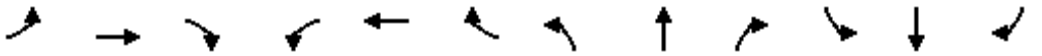
| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 424 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.32 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 579 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 579 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 12.1 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 579 |
| HCM Lane V/C Ratio | - | - | - | 0.123 |
| HCM Control Delay (s) | - | - | - | 12.1 |
| HCM Lane LOS | - | - | - | B |
| HCM 95th %tile Q(veh) | - | - | - | 0.4 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 279 | 884 | 0 | 0 | 1003 | 296 | 370 | 0 | 308 | 0 | 0 | 0 |
| Future Volume (veh/h) | 279 | 884 | 0 | 0 | 1003 | 296 | 370 | 0 | 308 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 353 | 1119 | 0 | 0 | 1140 | 336 | 440 | 0 | 367 | | | |
| Peak Hour Factor | 0.79 | 0.79 | 0.79 | 0.88 | 0.88 | 0.88 | 0.84 | 0.84 | 0.84 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 178 | 2184 | 0 | 0 | 1314 | 382 | 277 | 0 | 231 | | | |
| Arrive On Green | 0.20 | 1.00 | 0.00 | 0.00 | 0.48 | 0.48 | 0.30 | 0.00 | 0.30 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 2809 | 790 | 919 | 0 | 767 | | | |
| Grp Volume(v), veh/h | 353 | 1119 | 0 | 0 | 741 | 735 | 807 | 0 | 0 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1728 | 1686 | 0 | 0 | | | |
| Q Serve(g_s), s | 13.0 | 0.0 | 0.0 | 0.0 | 48.0 | 49.7 | 39.2 | 0.0 | 0.0 | | | |
| Cycle Q Clear(g_c), s | 13.0 | 0.0 | 0.0 | 0.0 | 48.0 | 49.7 | 39.2 | 0.0 | 0.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.46 | 0.55 | | 0.45 | | | |
| Lane Grp Cap(c), veh/h | 178 | 2184 | 0 | 0 | 860 | 836 | 508 | 0 | 0 | | | |
| V/C Ratio(X) | 1.98 | 0.51 | 0.00 | 0.00 | 0.86 | 0.88 | 1.59 | 0.00 | 0.00 | | | |
| Avail Cap(c_a), veh/h | 178 | 2184 | 0 | 0 | 860 | 836 | 508 | 0 | 0 | | | |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.09 | 0.09 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | | | |
| Uniform Delay (d), s/veh | 52.0 | 0.0 | 0.0 | 0.0 | 29.7 | 30.1 | 45.4 | 0.0 | 0.0 | | | |
| Incr Delay (d2), s/veh | 443.6 | 0.1 | 0.0 | 0.0 | 11.1 | 12.7 | 273.4 | 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 | | | |
| %ile BackOfQ(50%),veh/ln | 27.1 | 0.0 | 0.0 | 0.0 | 22.4 | 22.8 | 54.4 | 0.0 | 0.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 495.6 | 0.1 | 0.0 | 0.0 | 40.8 | 42.9 | 318.8 | 0.0 | 0.0 | | | |
| LnGrp LOS | F | A | A | A | D | D | F | A | A | | | |
| Approach Vol, veh/h | | 1472 | | | 1476 | | | 807 | | | | |
| Approach Delay, s/veh | | 118.9 | | | 41.8 | | | 318.8 | | | | |
| Approach LOS | | F | | | D | | | F | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 85.0 | | | 17.0 | 68.0 | | 45.0 | | | | |
| Change Period (Y+Rc), s | | 5.1 | | | 4.0 | 5.1 | | 5.8 | | | | |
| Max Green Setting (Gmax), s | | 79.9 | | | 13.0 | 62.9 | | 39.2 | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.0 | | | 15.0 | 51.7 | | 41.2 | | | | |
| Green Ext Time (p_c), s | | 9.8 | | | 0.0 | 6.9 | | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 131.6 | | | | | | | | | |
| HCM 6th LOS | | | F | | | | | | | | | |



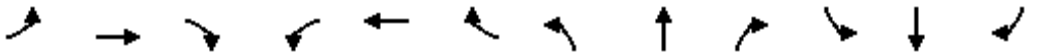
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 883 | 339 | 312 | 1061 | 0 | 0 | 0 | 0 | 280 | 4 | 215 |
| Future Volume (veh/h) | 0 | 883 | 339 | 312 | 1061 | 0 | 0 | 0 | 0 | 280 | 4 | 215 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 1299 | 499 | 359 | 1220 | 0 | | | | 311 | 4 | 239 |
| Peak Hour Factor | 0.68 | 0.68 | 0.68 | 0.87 | 0.87 | 0.87 | | | | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 920 | 351 | 519 | 1092 | 0 | | | | 321 | 4 | 246 |
| Arrive On Green | 0.00 | 0.25 | 0.25 | 0.58 | 1.00 | 0.00 | | | | 0.34 | 0.34 | 0.34 |
| Sat Flow, veh/h | 0 | 3805 | 1388 | 1781 | 1870 | 0 | | | | 950 | 12 | 730 |
| Grp Volume(v), veh/h | 0 | 1215 | 583 | 359 | 1220 | 0 | | | | 554 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1621 | 1781 | 1870 | 0 | | | | 1692 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 32.9 | 32.9 | 18.3 | 0.0 | 0.0 | | | | 41.9 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 32.9 | 32.9 | 18.3 | 0.0 | 0.0 | | | | 41.9 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 0.86 | 1.00 | | 0.00 | | | | 0.56 | | 0.43 |
| Lane Grp Cap(c), veh/h | 0 | 861 | 410 | 519 | 1092 | 0 | | | | 571 | 0 | 0 |
| V/C Ratio(X) | 0.00 | 1.41 | 1.42 | 0.69 | 1.12 | 0.00 | | | | 0.97 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 861 | 410 | 534 | 1092 | 0 | | | | 571 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 0.35 | 0.35 | 0.00 | | | | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 48.5 | 48.6 | 23.0 | 0.0 | 0.0 | | | | 42.4 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 191.7 | 203.2 | 1.1 | 57.8 | 0.0 | | | | 29.9 | 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 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 36.7 | 36.3 | 5.5 | 17.5 | 0.0 | | | | 21.5 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 240.3 | 251.7 | 24.1 | 57.8 | 0.0 | | | | 72.3 | 0.0 | 0.0 |
| LnGrp LOS | A | F | F | C | F | A | | | | E | A | A |
| Approach Vol, veh/h | | 1798 | | | 1579 | | | | | | 554 | |
| Approach Delay, s/veh | | 244.0 | | | 50.1 | | | | | | 72.3 | |
| Approach LOS | | F | | | D | | | | | | E | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 43.0 | 38.0 | | 49.0 | | 81.0 |
| Change Period (Y+Rc), s | 5.1 | * 5.1 | | 5.1 | | 5.1 |
| Max Green Setting (Gmax), s | 39.0 | * 33 | | 43.9 | | 75.9 |
| Max Q Clear Time (g_c+I1), s | 20.3 | 34.9 | | 43.9 | | 2.0 |
| Green Ext Time (p_c), s | 0.1 | 0.0 | | 0.0 | | 16.7 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 141.9 |
| HCM 6th LOS | | F |

Notes

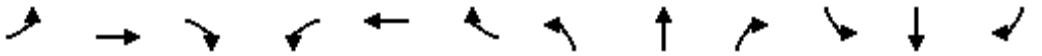
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 662 | 1065 | 0 | 0 | 813 | 323 | 684 | 4 | 408 | 0 | 0 | 0 |
| Future Volume (vph) | 662 | 1065 | 0 | 0 | 813 | 323 | 684 | 4 | 408 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.2 | 5.8 | | | 5.8 | 4.0 | | 6.8 | 6.8 | | | |
| Lane Util. Factor | 1.00 | 0.95 | | | 0.95 | 1.00 | | 1.00 | 1.00 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 0.85 | | 1.00 | 0.85 | | | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (prot) | 1770 | 3539 | | | 3539 | 1583 | | 1775 | 1583 | | | |
| Flt Permitted | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (perm) | 1770 | 3539 | | | 3539 | 1583 | | 1775 | 1583 | | | |
| Peak-hour factor, PHF | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.84 | 0.84 | 0.84 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph) | 704 | 1133 | 0 | 0 | 865 | 344 | 814 | 5 | 486 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 94 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 704 | 1133 | 0 | 0 | 865 | 344 | 0 | 819 | 392 | 0 | 0 | 0 |
| Turn Type | Prot | NA | | | NA | Free | Split | NA | Prot | | | |
| Protected Phases | 5 | 2 | | | 6 | | 8 | 8 | 8 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | 27.8 | 90.2 | | | 58.2 | 154.0 | | 51.2 | 51.2 | | | |
| Effective Green, g (s) | 27.8 | 90.2 | | | 58.2 | 154.0 | | 51.2 | 51.2 | | | |
| Actuated g/C Ratio | 0.18 | 0.59 | | | 0.38 | 1.00 | | 0.33 | 0.33 | | | |
| Clearance Time (s) | 4.2 | 5.8 | | | 5.8 | | | 6.8 | 6.8 | | | |
| Vehicle Extension (s) | 1.5 | 4.0 | | | 4.0 | | | 1.0 | 1.0 | | | |
| Lane Grp Cap (vph) | 319 | 2072 | | | 1337 | 1583 | | 590 | 526 | | | |
| v/s Ratio Prot | c0.40 | 0.32 | | | c0.24 | | | c0.46 | 0.25 | | | |
| v/s Ratio Perm | | | | | | 0.22 | | | | | | |
| v/c Ratio | 2.21 | 0.55 | | | 0.65 | 0.22 | | 1.39 | 0.75 | | | |
| Uniform Delay, d1 | 63.1 | 19.4 | | | 39.4 | 0.0 | | 51.4 | 45.6 | | | |
| Progression Factor | 1.53 | 0.65 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 544.0 | 0.1 | | | 2.4 | 0.3 | | 185.0 | 5.0 | | | |
| Delay (s) | 640.4 | 12.7 | | | 41.9 | 0.3 | | 236.4 | 50.6 | | | |
| Level of Service | F | B | | | D | A | | F | D | | | |
| Approach Delay (s) | | 253.2 | | | 30.0 | | | 167.2 | | | 0.0 | |
| Approach LOS | | F | | | C | | | F | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 165.4 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.26 | | |
| Actuated Cycle Length (s) | 154.0 | Sum of lost time (s) | 18.8 |
| Intersection Capacity Utilization | 163.9% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

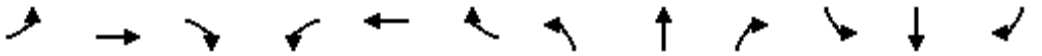
c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1335 | 1136 | 279 | 1218 | 0 | 0 | 0 | 0 | 392 | 6 | 454 |
| Future Volume (vph) | 0 | 1335 | 1136 | 279 | 1218 | 0 | 0 | 0 | 0 | 392 | 6 | 454 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | |
| Lane Util. Factor | | 0.91 | 1.00 | 1.00 | 1.00 | | | | | 0.95 | 0.95 | |
| Frt | | 1.00 | 0.85 | 1.00 | 1.00 | | | | | 1.00 | 0.86 | |
| Flt Protected | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1522 | |
| Flt Permitted | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1522 | |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.91 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 0.84 | 0.84 | 0.84 |
| Adj. Flow (vph) | 0 | 1435 | 1222 | 307 | 1338 | 0 | 0 | 0 | 0 | 467 | 7 | 540 |
| RTOR Reduction (vph) | 0 | 0 | 569 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 |
| Lane Group Flow (vph) | 0 | 1435 | 653 | 307 | 1338 | 0 | 0 | 0 | 0 | 420 | 564 | 0 |
| Turn Type | | NA | Perm | Prot | NA | | | | | Split | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | | | 4 | 4 | |
| Permitted Phases | | | 2 | | | | | | | | | |
| Actuated Green, G (s) | | 32.2 | 32.2 | 32.9 | 88.2 | | | | | 54.2 | 54.2 | |
| Effective Green, g (s) | | 32.2 | 32.2 | 32.9 | 88.2 | | | | | 54.2 | 54.2 | |
| Actuated g/C Ratio | | 0.21 | 0.21 | 0.21 | 0.57 | | | | | 0.35 | 0.35 | |
| Clearance Time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | |
| Vehicle Extension (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | 2.5 | 2.5 | |
| Lane Grp Cap (vph) | | 1063 | 330 | 378 | 1066 | | | | | 591 | 535 | |
| v/s Ratio Prot | | 0.28 | | 0.17 | c0.72 | | | | | 0.25 | c0.37 | |
| v/s Ratio Perm | | | c0.41 | | | | | | | | | |
| v/c Ratio | | 1.35 | 1.98 | 0.81 | 1.26 | | | | | 0.71 | 1.05 | |
| Uniform Delay, d1 | | 60.9 | 60.9 | 57.6 | 32.9 | | | | | 43.1 | 49.9 | |
| Progression Factor | | 1.19 | 2.04 | 0.99 | 1.01 | | | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 160.6 | 446.1 | 1.3 | 115.6 | | | | | 3.8 | 53.7 | |
| Delay (s) | | 233.2 | 570.4 | 58.2 | 148.7 | | | | | 46.9 | 103.6 | |
| Level of Service | | F | F | E | F | | | | | D | F | |
| Approach Delay (s) | | 388.3 | | | 131.8 | | | 0.0 | | | 80.1 | |
| Approach LOS | | F | | | F | | | A | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 250.1 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.39 | | |
| Actuated Cycle Length (s) | 154.0 | Sum of lost time (s) | 19.6 |
| Intersection Capacity Utilization | 163.9% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



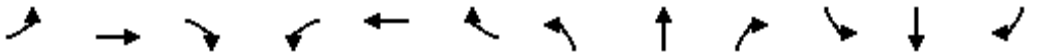
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 51 | 628 | 65 | 477 | 405 | 376 | 265 | 47 | 300 | 128 | 29 | 21 |
| Future Volume (veh/h) | 51 | 628 | 65 | 477 | 405 | 376 | 265 | 47 | 300 | 128 | 29 | 21 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 55 | 981 | 102 | 530 | 450 | 409 | 353 | 51 | 400 | 139 | 32 | 23 |
| Peak Hour Factor | 0.92 | 0.64 | 0.64 | 0.90 | 0.90 | 0.92 | 0.75 | 0.92 | 0.75 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 98 | 1222 | 545 | 623 | 1667 | 744 | 331 | 329 | 491 | 173 | 309 | 138 |
| Arrive On Green | 0.06 | 0.34 | 0.34 | 0.18 | 0.47 | 0.47 | 0.19 | 0.18 | 0.18 | 0.10 | 0.09 | 0.09 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 3456 | 3554 | 1585 | 1781 | 1870 | 2790 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 55 | 981 | 102 | 530 | 450 | 409 | 353 | 51 | 400 | 139 | 32 | 23 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1728 | 1777 | 1585 | 1781 | 1870 | 1395 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 3.0 | 24.8 | 4.5 | 14.7 | 7.6 | 18.3 | 18.4 | 2.3 | 13.7 | 7.6 | 0.8 | 1.3 |
| Cycle Q Clear(g_c), s | 3.0 | 24.8 | 4.5 | 14.7 | 7.6 | 18.3 | 18.4 | 2.3 | 13.7 | 7.6 | 0.8 | 1.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 98 | 1222 | 545 | 623 | 1667 | 744 | 331 | 329 | 491 | 173 | 309 | 138 |
| V/C Ratio(X) | 0.56 | 0.80 | 0.19 | 0.85 | 0.27 | 0.55 | 1.07 | 0.16 | 0.82 | 0.81 | 0.10 | 0.17 |
| Avail Cap(c_a), veh/h | 273 | 1690 | 754 | 816 | 1984 | 885 | 331 | 736 | 1098 | 367 | 1514 | 675 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 45.6 | 29.5 | 22.8 | 39.3 | 16.0 | 18.8 | 40.3 | 34.6 | 39.3 | 43.8 | 41.7 | 41.9 |
| Incr Delay (d2), s/veh | 4.9 | 2.0 | 0.2 | 6.7 | 0.1 | 0.6 | 68.3 | 0.2 | 3.4 | 8.5 | 0.1 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.4 | 10.5 | 1.6 | 6.7 | 3.0 | 6.1 | 13.8 | 1.0 | 4.6 | 3.7 | 0.4 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 50.5 | 31.5 | 23.0 | 46.0 | 16.1 | 19.4 | 108.6 | 34.8 | 42.6 | 52.3 | 41.8 | 42.4 |
| LnGrp LOS | D | C | C | D | B | B | F | C | D | D | D | D |
| Approach Vol, veh/h | | 1138 | | | 1389 | | | 804 | | | 194 | |
| Approach Delay, s/veh | | 31.6 | | | 28.5 | | | 71.1 | | | 49.4 | |
| Approach LOS | | C | | | C | | | E | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 22.5 | 39.2 | 23.0 | 14.4 | 10.1 | 51.6 | 14.2 | 23.2 |
| Change Period (Y+Rc), s | 4.6 | 5.1 | 4.6 | * 5.8 | 4.6 | 5.1 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 23.4 | 47.1 | 18.4 | * 42 | 15.2 | 55.3 | 20.4 | 39.0 |
| Max Q Clear Time (g_c+I1), s | 16.7 | 26.8 | 20.4 | 3.3 | 5.0 | 20.3 | 9.6 | 15.7 |
| Green Ext Time (p_c), s | 1.2 | 7.3 | 0.0 | 0.2 | 0.1 | 4.8 | 0.2 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 40.4 |
| HCM 6th LOS | D |

Notes

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 72 | 1059 | 48 | 130 | 724 | 92 | 44 | 141 | 239 | 528 | 137 | 67 |
| Future Volume (veh/h) | 72 | 1059 | 48 | 130 | 724 | 92 | 44 | 141 | 239 | 528 | 137 | 67 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 82 | 1203 | 55 | 157 | 872 | 111 | 56 | 275 | 244 | 960 | 249 | 122 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.83 | 0.83 | 0.83 | 0.78 | 0.78 | 0.78 | 0.55 | 0.55 | 0.55 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 103 | 1401 | 64 | 189 | 984 | 898 | 72 | 345 | 292 | 1001 | 513 | 252 |
| Arrive On Green | 0.06 | 0.28 | 0.28 | 0.05 | 0.28 | 0.28 | 0.04 | 0.18 | 0.18 | 0.29 | 0.43 | 0.43 |
| Sat Flow, veh/h | 1781 | 5005 | 229 | 3456 | 3554 | 1585 | 1781 | 1870 | 1585 | 3456 | 1185 | 581 |
| Grp Volume(v), veh/h | 82 | 818 | 440 | 157 | 872 | 111 | 56 | 275 | 244 | 960 | 0 | 371 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1829 | 1728 | 1777 | 1585 | 1781 | 1870 | 1585 | 1728 | 0 | 1766 |
| Q Serve(g_s), s | 5.6 | 27.9 | 27.9 | 5.5 | 28.8 | 4.0 | 3.8 | 17.2 | 18.1 | 33.4 | 0.0 | 18.4 |
| Cycle Q Clear(g_c), s | 5.6 | 27.9 | 27.9 | 5.5 | 28.8 | 4.0 | 3.8 | 17.2 | 18.1 | 33.4 | 0.0 | 18.4 |
| Prop In Lane | 1.00 | | 0.13 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.33 |
| Lane Grp Cap(c), veh/h | 103 | 953 | 512 | 189 | 984 | 898 | 72 | 345 | 292 | 1001 | 0 | 765 |
| V/C Ratio(X) | 0.79 | 0.86 | 0.86 | 0.83 | 0.89 | 0.12 | 0.77 | 0.80 | 0.84 | 0.96 | 0.00 | 0.48 |
| Avail Cap(c_a), veh/h | 108 | 1016 | 546 | 189 | 1041 | 923 | 149 | 658 | 558 | 1001 | 0 | 985 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 56.9 | 41.7 | 41.7 | 57.2 | 42.4 | 12.4 | 58.1 | 47.7 | 48.1 | 42.7 | 0.0 | 24.9 |
| Incr Delay (d2), s/veh | 31.3 | 6.7 | 11.6 | 25.4 | 9.4 | 0.1 | 15.9 | 4.3 | 6.2 | 19.3 | 0.0 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.4 | 12.4 | 14.0 | 3.0 | 13.4 | 1.4 | 2.0 | 8.3 | 7.6 | 16.7 | 0.0 | 7.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 88.2 | 48.4 | 53.3 | 82.6 | 51.7 | 12.4 | 74.0 | 51.9 | 54.3 | 62.0 | 0.0 | 25.3 |
| LnGrp LOS | F | D | D | F | D | B | E | D | D | E | A | C |
| Approach Vol, veh/h | | 1340 | | | 1140 | | | 575 | | | 1331 | |
| Approach Delay, s/veh | | 52.4 | | | 52.2 | | | 55.1 | | | 51.8 | |
| Approach LOS | | D | | | D | | | E | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 12.0 | 40.2 | 10.6 | 59.5 | 12.4 | 39.8 | 41.0 | 29.0 |
| Change Period (Y+Rc), s | 5.3 | 6.0 | 5.6 | 6.5 | 5.3 | 6.0 | 5.6 | 6.5 |
| Max Green Setting (Gmax), s | 6.7 | 36.5 | 10.2 | 68.2 | 7.4 | 35.8 | 35.4 | 43.0 |
| Max Q Clear Time (g_c+I1), s | 7.5 | 29.9 | 5.8 | 20.4 | 7.6 | 30.8 | 35.4 | 20.1 |
| Green Ext Time (p_c), s | 0.0 | 3.2 | 0.0 | 2.5 | 0.0 | 3.1 | 0.0 | 2.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 52.5 |
| HCM 6th LOS | D |

**Notes**

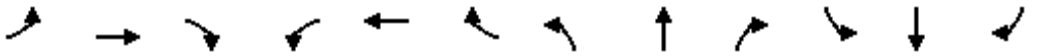
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 28.4 |
| Intersection LOS | D |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 25 | 384 | 131 | 9 | 21 | 50 | 87 | 126 | 37 | 122 | 0 |
| Future Vol, veh/h | 0 | 25 | 384 | 131 | 9 | 21 | 50 | 87 | 126 | 37 | 122 | 0 |
| Peak Hour Factor | 0.75 | 0.75 | 0.75 | 0.59 | 0.59 | 0.59 | 0.63 | 0.63 | 0.63 | 0.53 | 0.53 | 0.53 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 33 | 512 | 222 | 15 | 36 | 79 | 138 | 200 | 70 | 230 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 2 |
| HCM Control Delay | 20.2 | 25.2 | 42.6 | 26.7 |
| HCM LOS | C | D | E | D |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 19% | 0% | 0% | 81% | 23% |
| Vol Thru, % | 33% | 12% | 0% | 6% | 77% |
| Vol Right, % | 48% | 88% | 100% | 13% | 0% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 263 | 205 | 204 | 161 | 159 |
| LT Vol | 50 | 0 | 0 | 131 | 37 |
| Through Vol | 87 | 25 | 0 | 9 | 122 |
| RT Vol | 126 | 180 | 204 | 21 | 0 |
| Lane Flow Rate | 417 | 274 | 271 | 273 | 300 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.868 | 0.581 | 0.569 | 0.637 | 0.677 |
| Departure Headway (Hd) | 7.486 | 7.636 | 7.548 | 8.401 | 8.123 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 484 | 474 | 480 | 428 | 444 |
| Service Time | 5.503 | 5.364 | 5.276 | 6.47 | 6.189 |
| HCM Lane V/C Ratio | 0.862 | 0.578 | 0.565 | 0.638 | 0.676 |
| HCM Control Delay | 42.6 | 20.5 | 19.8 | 25.2 | 26.7 |
| HCM Lane LOS | E | C | C | D | D |
| HCM 95th-tile Q | 9.2 | 3.6 | 3.5 | 4.3 | 4.9 |

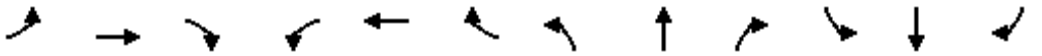


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 279 | 884 | 0 | 0 | 1003 | 296 | 370 | 0 | 308 | 0 | 0 | 0 |
| Future Volume (veh/h) | 279 | 884 | 0 | 0 | 1003 | 296 | 370 | 0 | 308 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 353 | 1119 | 0 | 0 | 1140 | 336 | 440 | 0 | 367 | | | |
| Peak Hour Factor | 0.79 | 0.79 | 0.79 | 0.88 | 0.88 | 0.88 | 0.84 | 0.84 | 0.84 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 178 | 2323 | 0 | 0 | 1420 | 413 | 468 | 0 | 416 | | | |
| Arrive On Green | 0.20 | 1.00 | 0.00 | 0.00 | 0.52 | 0.52 | 0.26 | 0.00 | 0.26 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 2809 | 790 | 1781 | 0 | 1585 | | | |
| Grp Volume(v), veh/h | 353 | 1119 | 0 | 0 | 741 | 735 | 440 | 0 | 367 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1728 | 1781 | 0 | 1585 | | | |
| Q Serve(g_s), s | 13.0 | 0.0 | 0.0 | 0.0 | 44.3 | 45.9 | 31.5 | 0.0 | 28.9 | | | |
| Cycle Q Clear(g_c), s | 13.0 | 0.0 | 0.0 | 0.0 | 44.3 | 45.9 | 31.5 | 0.0 | 28.9 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.46 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 178 | 2323 | 0 | 0 | 929 | 904 | 468 | 0 | 416 | | | |
| V/C Ratio(X) | 1.98 | 0.48 | 0.00 | 0.00 | 0.80 | 0.81 | 0.94 | 0.00 | 0.88 | | | |
| Avail Cap(c_a), veh/h | 178 | 2323 | 0 | 0 | 929 | 904 | 537 | 0 | 478 | | | |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.30 | 0.30 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 52.0 | 0.0 | 0.0 | 0.0 | 25.4 | 25.8 | 47.0 | 0.0 | 46.0 | | | |
| Incr Delay (d2), s/veh | 447.8 | 0.2 | 0.0 | 0.0 | 7.1 | 7.9 | 22.3 | 0.0 | 14.5 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 27.3 | 0.1 | 0.0 | 0.0 | 19.8 | 20.1 | 16.4 | 0.0 | 12.7 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 499.8 | 0.2 | 0.0 | 0.0 | 32.4 | 33.7 | 69.2 | 0.0 | 60.6 | | | |
| LnGrp LOS | F | A | A | A | C | C | E | A | E | | | |
| Approach Vol, veh/h | | 1472 | | | 1476 | | | 807 | | | | |
| Approach Delay, s/veh | | 120.0 | | | 33.1 | | | 65.3 | | | | |
| Approach LOS | | F | | | C | | | E | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 90.1 | | | 17.0 | 73.1 | | 39.9 | | | | |
| Change Period (Y+Rc), s | | 5.1 | | | 4.0 | 5.1 | | 5.8 | | | | |
| Max Green Setting (Gmax), s | | 79.9 | | | 13.0 | 62.9 | | 39.2 | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.0 | | | 15.0 | 47.9 | | 33.5 | | | | |
| Green Ext Time (p_c), s | | 9.8 | | | 0.0 | 8.4 | | 0.7 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 74.1 |
| HCM 6th LOS | E |

**Notes**

User approved volume balancing among the lanes for turning movement.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 883 | 339 | 312 | 1061 | 0 | 0 | 0 | 0 | 280 | 4 | 215 |
| Future Volume (veh/h) | 0 | 883 | 339 | 312 | 1061 | 0 | 0 | 0 | 0 | 280 | 4 | 215 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 1299 | 499 | 359 | 1220 | 0 | | | | 277 | 52 | 239 |
| Peak Hour Factor | 0.68 | 0.68 | 0.68 | 0.87 | 0.87 | 0.87 | | | | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 920 | 351 | 774 | 1359 | 0 | | | | 347 | 57 | 261 |
| Arrive On Green | 0.00 | 0.25 | 0.25 | 0.87 | 1.00 | 0.00 | | | | 0.19 | 0.19 | 0.19 |
| Sat Flow, veh/h | 0 | 3805 | 1388 | 1781 | 1870 | 0 | | | | 1781 | 291 | 1338 |
| Grp Volume(v), veh/h | 0 | 1215 | 583 | 359 | 1220 | 0 | | | | 277 | 0 | 291 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1621 | 1781 | 1870 | 0 | | | | 1781 | 0 | 1629 |
| Q Serve(g_s), s | 0.0 | 32.9 | 32.9 | 5.8 | 0.0 | 0.0 | | | | 19.3 | 0.0 | 22.8 |
| Cycle Q Clear(g_c), s | 0.0 | 32.9 | 32.9 | 5.8 | 0.0 | 0.0 | | | | 19.3 | 0.0 | 22.8 |
| Prop In Lane | 0.00 | | 0.86 | 1.00 | | 0.00 | | | | 1.00 | | 0.82 |
| Lane Grp Cap(c), veh/h | 0 | 861 | 410 | 774 | 1359 | 0 | | | | 347 | 0 | 317 |
| V/C Ratio(X) | 0.00 | 1.41 | 1.42 | 0.46 | 0.90 | 0.00 | | | | 0.80 | 0.00 | 0.92 |
| Avail Cap(c_a), veh/h | 0 | 861 | 410 | 774 | 1359 | 0 | | | | 602 | 0 | 550 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 0.35 | 0.35 | 0.00 | | | | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 48.5 | 48.6 | 5.2 | 0.0 | 0.0 | | | | 49.9 | 0.0 | 51.3 |
| Incr Delay (d2), s/veh | 0.0 | 191.7 | 203.2 | 0.1 | 3.8 | 0.0 | | | | 1.6 | 0.0 | 7.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 36.7 | 36.3 | 1.5 | 1.4 | 0.0 | | | | 8.5 | 0.0 | 9.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 240.3 | 251.7 | 5.3 | 3.8 | 0.0 | | | | 51.5 | 0.0 | 58.3 |
| LnGrp LOS | A | F | F | A | A | A | | | | D | A | E |
| Approach Vol, veh/h | | 1798 | | | 1579 | | | | | | 568 | |
| Approach Delay, s/veh | | 244.0 | | | 4.1 | | | | | | 55.0 | |
| Approach LOS | | F | | | A | | | | | | D | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 61.6 | 38.0 | | 30.4 | | 99.6 |
| Change Period (Y+Rc), s | 5.1 | * 5.1 | | 5.1 | | 5.1 |
| Max Green Setting (Gmax), s | 39.0 | * 33 | | 43.9 | | 75.9 |
| Max Q Clear Time (g_c+I1), s | 7.8 | 34.9 | | 24.8 | | 2.0 |
| Green Ext Time (p_c), s | 0.1 | 0.0 | | 0.6 | | 16.7 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 120.8 |
| HCM 6th LOS | | F |

**Notes**

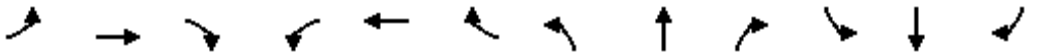
User approved volume balancing among the lanes for turning movement.

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 662 | 1065 | 0 | 0 | 813 | 323 | 684 | 4 | 408 | 0 | 0 | 0 |
| Future Volume (vph) | 662 | 1065 | 0 | 0 | 813 | 323 | 684 | 4 | 408 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.2 | 5.8 | | | 5.8 | 4.0 | 6.8 | 6.8 | 6.8 | | | |
| Lane Util. Factor | 1.00 | 0.95 | | | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | | | |
| Satd. Flow (prot) | 1770 | 3539 | | | 3539 | 1583 | 1681 | 1686 | 1583 | | | |
| Flt Permitted | 0.95 | 1.00 | | | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | | | |
| Satd. Flow (perm) | 1770 | 3539 | | | 3539 | 1583 | 1681 | 1686 | 1583 | | | |
| Peak-hour factor, PHF | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.84 | 0.84 | 0.84 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph) | 704 | 1133 | 0 | 0 | 865 | 344 | 814 | 5 | 486 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 102 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 704 | 1133 | 0 | 0 | 865 | 344 | 407 | 412 | 384 | 0 | 0 | 0 |
| Turn Type | Prot | NA | | | NA | Free | Split | NA | Prot | | | |
| Protected Phases | 5 | 2 | | | 6 | | 8 | 8 | 8 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | 36.7 | 99.1 | | | 58.2 | 154.0 | 42.3 | 42.3 | 42.3 | | | |
| Effective Green, g (s) | 36.7 | 99.1 | | | 58.2 | 154.0 | 42.3 | 42.3 | 42.3 | | | |
| Actuated g/C Ratio | 0.24 | 0.64 | | | 0.38 | 1.00 | 0.27 | 0.27 | 0.27 | | | |
| Clearance Time (s) | 4.2 | 5.8 | | | 5.8 | | 6.8 | 6.8 | 6.8 | | | |
| Vehicle Extension (s) | 1.5 | 4.0 | | | 4.0 | | 1.0 | 1.0 | 1.0 | | | |
| Lane Grp Cap (vph) | 421 | 2277 | | | 1337 | 1583 | 461 | 463 | 434 | | | |
| v/s Ratio Prot | c0.40 | 0.32 | | | c0.24 | | 0.24 | c0.24 | 0.24 | | | |
| v/s Ratio Perm | | | | | | 0.22 | | | | | | |
| v/c Ratio | 1.67 | 0.50 | | | 0.65 | 0.22 | 0.88 | 0.89 | 0.88 | | | |
| Uniform Delay, d1 | 58.6 | 14.4 | | | 39.4 | 0.0 | 53.5 | 53.6 | 53.5 | | | |
| Progression Factor | 1.63 | 0.64 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 303.4 | 0.1 | | | 2.4 | 0.3 | 17.4 | 18.0 | 18.4 | | | |
| Delay (s) | 399.1 | 9.2 | | | 41.9 | 0.3 | 70.8 | 71.7 | 71.9 | | | |
| Level of Service | F | A | | | D | A | E | E | E | | | |
| Approach Delay (s) | | 158.6 | | | 30.0 | | | 71.5 | | | 0.0 | |
| Approach LOS | | F | | | C | | | E | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 96.8 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.01 | | |
| Actuated Cycle Length (s) | 154.0 | Sum of lost time (s) | 18.8 |
| Intersection Capacity Utilization | 100.3% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

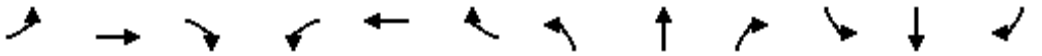
c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1335 | 1136 | 279 | 1218 | 0 | 0 | 0 | 0 | 392 | 6 | 454 |
| Future Volume (vph) | 0 | 1335 | 1136 | 279 | 1218 | 0 | 0 | 0 | 0 | 392 | 6 | 454 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.8 | 4.0 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | 5.8 |
| Lane Util. Factor | | 0.91 | 1.00 | 1.00 | 1.00 | | | | | 0.95 | 0.91 | 0.95 |
| Frt | | 1.00 | 0.85 | 1.00 | 1.00 | | | | | 1.00 | 0.90 | 0.85 |
| Flt Protected | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 0.98 | 1.00 |
| Satd. Flow (prot) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1508 | 1504 |
| Flt Permitted | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 0.98 | 1.00 |
| Satd. Flow (perm) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1508 | 1504 |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.91 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 0.84 | 0.84 | 0.84 |
| Adj. Flow (vph) | 0 | 1435 | 1222 | 307 | 1338 | 0 | 0 | 0 | 0 | 467 | 7 | 540 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 58 |
| Lane Group Flow (vph) | 0 | 1435 | 1222 | 307 | 1338 | 0 | 0 | 0 | 0 | 350 | 298 | 266 |
| Turn Type | | NA | Free | Prot | NA | | | | | Split | NA | Perm |
| Protected Phases | | 2 | | 1 | 6 | | | | | 4 | 4 | |
| Permitted Phases | | | Free | | | | | | | | | 4 |
| Actuated Green, G (s) | | 37.2 | 154.0 | 32.9 | 103.6 | | | | | 38.8 | 38.8 | 38.8 |
| Effective Green, g (s) | | 37.2 | 154.0 | 32.9 | 103.6 | | | | | 38.8 | 38.8 | 38.8 |
| Actuated g/C Ratio | | 0.24 | 1.00 | 0.21 | 0.67 | | | | | 0.25 | 0.25 | 0.25 |
| Clearance Time (s) | | 6.8 | | 5.0 | 5.8 | | | | | 5.8 | 5.8 | 5.8 |
| Vehicle Extension (s) | | 4.0 | | 4.0 | 4.0 | | | | | 2.5 | 2.5 | 2.5 |
| Lane Grp Cap (vph) | | 1228 | 1583 | 378 | 1253 | | | | | 423 | 379 | 378 |
| v/s Ratio Prot | | c0.28 | | 0.17 | c0.72 | | | | | 0.21 | 0.20 | |
| v/s Ratio Perm | | | c0.77 | | | | | | | | | 0.18 |
| v/c Ratio | | 1.17 | 0.77 | 0.81 | 1.07 | | | | | 0.83 | 0.79 | 0.70 |
| Uniform Delay, d1 | | 58.4 | 0.0 | 57.6 | 25.2 | | | | | 54.4 | 53.7 | 52.4 |
| Progression Factor | | 1.12 | 1.00 | 0.80 | 1.42 | | | | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | | 76.8 | 0.3 | 9.3 | 41.8 | | | | | 12.3 | 10.0 | 5.5 |
| Delay (s) | | 142.1 | 0.3 | 55.3 | 77.6 | | | | | 66.7 | 63.7 | 57.8 |
| Level of Service | | F | A | E | E | | | | | E | E | E |
| Approach Delay (s) | | 76.9 | | | 73.4 | | | 0.0 | | | 62.9 | |
| Approach LOS | | E | | | E | | | A | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 73.2 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 1.08 | | |
| Actuated Cycle Length (s) | 154.0 | Sum of lost time (s) | 19.6 |
| Intersection Capacity Utilization | 100.3% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



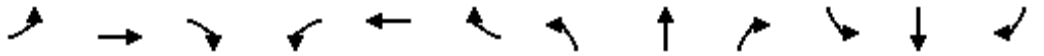
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 83 | 442 | 71 | 662 | 461 | 341 | 264 | 146 | 330 | 325 | 49 | 41 |
| Future Volume (veh/h) | 83 | 442 | 71 | 662 | 461 | 341 | 264 | 146 | 330 | 325 | 49 | 41 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 90 | 775 | 125 | 828 | 576 | 371 | 314 | 159 | 393 | 353 | 53 | 45 |
| Peak Hour Factor | 0.92 | 0.57 | 0.57 | 0.80 | 0.80 | 0.92 | 0.84 | 0.92 | 0.84 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 136 | 1073 | 478 | 439 | 1252 | 559 | 358 | 353 | 527 | 226 | 408 | 182 |
| Arrive On Green | 0.08 | 0.30 | 0.30 | 0.13 | 0.35 | 0.35 | 0.20 | 0.19 | 0.19 | 0.13 | 0.11 | 0.11 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 3456 | 3554 | 1585 | 1781 | 1870 | 2790 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 90 | 775 | 125 | 828 | 576 | 371 | 314 | 159 | 393 | 353 | 53 | 45 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1728 | 1777 | 1585 | 1781 | 1870 | 1395 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 3.9 | 15.3 | 4.7 | 10.0 | 9.9 | 15.6 | 13.5 | 5.9 | 10.5 | 10.0 | 1.1 | 2.0 |
| Cycle Q Clear(g_c), s | 3.9 | 15.3 | 4.7 | 10.0 | 9.9 | 15.6 | 13.5 | 5.9 | 10.5 | 10.0 | 1.1 | 2.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 136 | 1073 | 478 | 439 | 1252 | 559 | 358 | 353 | 527 | 226 | 408 | 182 |
| V/C Ratio(X) | 0.66 | 0.72 | 0.26 | 1.89 | 0.46 | 0.66 | 0.88 | 0.45 | 0.75 | 1.56 | 0.13 | 0.25 |
| Avail Cap(c_a), veh/h | 226 | 2256 | 1006 | 439 | 2256 | 1006 | 452 | 1187 | 1771 | 226 | 1805 | 805 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 35.4 | 24.5 | 20.8 | 34.4 | 19.7 | 21.6 | 30.5 | 28.3 | 30.2 | 34.4 | 31.3 | 31.8 |
| Incr Delay (d2), s/veh | 5.4 | 0.9 | 0.3 | 407.7 | 0.3 | 1.4 | 14.7 | 0.9 | 2.1 | 272.8 | 0.1 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.8 | 6.2 | 1.6 | 28.9 | 3.9 | 5.2 | 6.7 | 2.5 | 3.3 | 21.2 | 0.4 | 0.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 40.7 | 25.5 | 21.1 | 442.1 | 20.0 | 22.9 | 45.2 | 29.2 | 32.3 | 307.2 | 31.5 | 32.5 |
| LnGrp LOS | D | C | C | F | B | C | D | C | C | F | C | C |
| Approach Vol, veh/h | | 990 | | | 1775 | | | 866 | | | 451 | |
| Approach Delay, s/veh | | 26.3 | | | 217.5 | | | 36.4 | | | 247.4 | |
| Approach LOS | | C | | | F | | | D | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.6 | 28.9 | 20.4 | 14.8 | 10.6 | 32.9 | 14.6 | 20.7 |
| Change Period (Y+Rc), s | 4.6 | 5.1 | 4.6 | * 5.8 | 4.6 | 5.1 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | 50.0 | 20.0 | * 40 | 10.0 | 50.0 | 10.0 | 50.0 |
| Max Q Clear Time (g_c+I1), s | 12.0 | 17.3 | 15.5 | 4.0 | 5.9 | 17.6 | 12.0 | 12.5 |
| Green Ext Time (p_c), s | 0.0 | 6.4 | 0.4 | 0.4 | 0.1 | 5.7 | 0.0 | 2.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 136.0 |
| HCM 6th LOS | F |

Notes

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



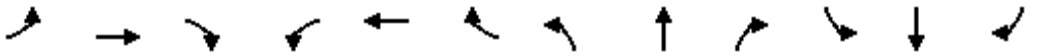
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 91 | 13 | 264 | 64 | 22 | 21 | 247 | 629 | 30 | 40 | 440 | 80 |
| Future Volume (veh/h) | 91 | 13 | 264 | 64 | 22 | 21 | 247 | 629 | 30 | 40 | 440 | 80 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 157 | 22 | 455 | 128 | 44 | 42 | 291 | 740 | 35 | 62 | 677 | 123 |
| Peak Hour Factor | 0.58 | 0.58 | 0.58 | 0.50 | 0.50 | 0.50 | 0.85 | 0.85 | 0.85 | 0.65 | 0.65 | 0.65 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 179 | 24 | 495 | 157 | 275 | 262 | 324 | 1651 | 78 | 103 | 899 | 161 |
| Arrive On Green | 0.10 | 0.32 | 0.32 | 0.09 | 0.31 | 0.31 | 0.18 | 0.33 | 0.33 | 0.06 | 0.21 | 0.21 |
| Sat Flow, veh/h | 1781 | 74 | 1523 | 1781 | 880 | 840 | 1781 | 4997 | 236 | 1781 | 4352 | 781 |
| Grp Volume(v), veh/h | 157 | 0 | 477 | 128 | 0 | 86 | 291 | 503 | 272 | 62 | 528 | 272 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1596 | 1781 | 0 | 1719 | 1781 | 1702 | 1828 | 1781 | 1702 | 1730 |
| Q Serve(g_s), s | 8.6 | 0.0 | 28.6 | 7.0 | 0.0 | 3.6 | 15.9 | 11.5 | 11.6 | 3.4 | 14.4 | 14.7 |
| Cycle Q Clear(g_c), s | 8.6 | 0.0 | 28.6 | 7.0 | 0.0 | 3.6 | 15.9 | 11.5 | 11.6 | 3.4 | 14.4 | 14.7 |
| Prop In Lane | 1.00 | | 0.95 | 1.00 | | 0.49 | 1.00 | | 0.13 | 1.00 | | 0.45 |
| Lane Grp Cap(c), veh/h | 179 | 0 | 519 | 157 | 0 | 537 | 324 | 1125 | 604 | 103 | 703 | 357 |
| V/C Ratio(X) | 0.87 | 0.00 | 0.92 | 0.81 | 0.00 | 0.16 | 0.90 | 0.45 | 0.45 | 0.60 | 0.75 | 0.76 |
| Avail Cap(c_a), veh/h | 179 | 0 | 563 | 179 | 0 | 606 | 359 | 1201 | 645 | 179 | 858 | 436 |
| 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 | 1.00 |
| Uniform Delay (d), s/veh | 44.0 | 0.0 | 32.2 | 44.4 | 0.0 | 24.7 | 39.7 | 26.1 | 26.1 | 45.6 | 37.0 | 37.1 |
| Incr Delay (d2), s/veh | 34.8 | 0.0 | 20.1 | 21.8 | 0.0 | 0.2 | 23.0 | 0.4 | 0.7 | 5.6 | 3.5 | 7.3 |
| 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 | 5.5 | 0.0 | 13.7 | 4.0 | 0.0 | 1.5 | 8.6 | 4.4 | 4.8 | 1.6 | 6.0 | 6.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 78.8 | 0.0 | 52.4 | 66.2 | 0.0 | 24.9 | 62.8 | 26.5 | 26.9 | 51.2 | 40.5 | 44.4 |
| LnGrp LOS | E | A | D | E | A | C | E | C | C | D | D | D |
| Approach Vol, veh/h | | 634 | | | 214 | | | 1066 | | | 862 | |
| Approach Delay, s/veh | | 58.9 | | | 49.6 | | | 36.5 | | | 42.5 | |
| Approach LOS | | E | | | D | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.4 | 36.9 | 22.6 | 26.3 | 14.6 | 35.7 | 10.3 | 38.6 |
| Change Period (Y+Rc), s | 4.6 | * 4.7 | 4.6 | 5.8 | 4.6 | * 4.7 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | * 35 | 20.0 | 25.0 | 10.0 | * 35 | 10.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 9.0 | 30.6 | 17.9 | 16.7 | 10.6 | 5.6 | 5.4 | 13.6 |
| Green Ext Time (p_c), s | 0.0 | 1.7 | 0.2 | 3.8 | 0.0 | 0.7 | 0.0 | 6.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 44.5 |
| HCM 6th LOS | D |

Notes

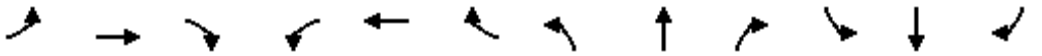
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 495 | 1230 | 119 | 744 | 1521 | 352 | 170 | 234 | 468 | 560 | 194 | 337 |
| Future Volume (vph) | 495 | 1230 | 119 | 744 | 1521 | 352 | 170 | 234 | 468 | 560 | 194 | 337 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.8 | 5.8 | 4.6 | 5.8 | 5.8 | 5.3 | 5.8 | 5.8 | 5.7 | 5.8 | 5.8 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.88 | 0.97 | 0.91 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 5085 | 2787 | 3433 | 5085 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 5085 | 2787 | 3433 | 5085 | 1583 |
| Peak-hour factor, PHF | 0.84 | 0.84 | 0.84 | 0.86 | 0.86 | 0.86 | 0.89 | 0.89 | 0.89 | 0.66 | 0.66 | 0.66 |
| Adj. Flow (vph) | 589 | 1464 | 142 | 865 | 1769 | 409 | 191 | 263 | 526 | 848 | 294 | 511 |
| RTOR Reduction (vph) | 0 | 0 | 90 | 0 | 0 | 247 | 0 | 0 | 403 | 0 | 0 | 193 |
| Lane Group Flow (vph) | 589 | 1464 | 52 | 865 | 1769 | 162 | 191 | 263 | 123 | 848 | 294 | 318 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Actuated Green, G (s) | 20.7 | 61.2 | 61.2 | 21.4 | 61.2 | 61.2 | 14.7 | 16.0 | 16.0 | 45.5 | 47.2 | 47.2 |
| Effective Green, g (s) | 20.7 | 61.2 | 61.2 | 21.4 | 61.2 | 61.2 | 14.7 | 16.0 | 16.0 | 45.5 | 47.2 | 47.2 |
| Actuated g/C Ratio | 0.12 | 0.37 | 0.37 | 0.13 | 0.37 | 0.37 | 0.09 | 0.10 | 0.10 | 0.27 | 0.28 | 0.28 |
| Clearance Time (s) | 5.3 | 5.8 | 5.8 | 4.6 | 5.8 | 5.8 | 5.3 | 5.8 | 5.8 | 5.7 | 5.8 | 5.8 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 428 | 1874 | 583 | 442 | 1874 | 583 | 156 | 490 | 268 | 940 | 1445 | 450 |
| v/s Ratio Prot | 0.17 | 0.29 | | c0.25 | c0.35 | | c0.11 | 0.05 | | c0.25 | 0.06 | |
| v/s Ratio Perm | | | 0.03 | | | 0.10 | | | 0.04 | | | 0.20 |
| v/c Ratio | 1.38 | 0.78 | 0.09 | 1.96 | 0.94 | 0.28 | 1.22 | 0.54 | 0.46 | 0.90 | 0.20 | 0.71 |
| Uniform Delay, d1 | 72.7 | 46.5 | 34.2 | 72.3 | 50.7 | 36.8 | 75.7 | 71.5 | 70.9 | 58.1 | 45.1 | 53.2 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.03 | 0.88 | 0.58 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 183.5 | 3.3 | 0.3 | 431.4 | 1.4 | 0.1 | 144.9 | 1.1 | 1.2 | 11.7 | 0.1 | 5.0 |
| Delay (s) | 256.1 | 49.8 | 34.5 | 506.0 | 46.3 | 21.5 | 220.5 | 72.6 | 72.2 | 69.8 | 45.2 | 58.3 |
| Level of Service | F | D | C | F | D | C | F | E | E | E | D | E |
| Approach Delay (s) | | 104.2 | | | 173.6 | | | 101.2 | | | 61.9 | |
| Approach LOS | | F | | | F | | | F | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 121.8 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.13 | | |
| Actuated Cycle Length (s) | 166.0 | Sum of lost time (s) | 26.2 |
| Intersection Capacity Utilization | 87.5% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



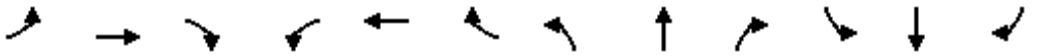
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 129 | 15 | 10 | 3 | 36 | 84 | 1 | 349 | 1 | 121 | 357 | 140 |
| Future Volume (veh/h) | 129 | 15 | 10 | 3 | 36 | 84 | 1 | 349 | 1 | 121 | 357 | 140 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 152 | 18 | 12 | 6 | 72 | 168 | 1 | 447 | 1 | 166 | 489 | 192 |
| Peak Hour Factor | 0.85 | 0.85 | 0.85 | 0.50 | 0.50 | 0.50 | 0.78 | 0.78 | 0.78 | 0.73 | 0.73 | 0.73 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 202 | 485 | 411 | 11 | 285 | 242 | 3 | 1197 | 3 | 218 | 1782 | 553 |
| Arrive On Green | 0.11 | 0.26 | 0.26 | 0.01 | 0.15 | 0.15 | 0.00 | 0.23 | 0.23 | 0.12 | 0.35 | 0.35 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 5261 | 12 | 1781 | 5106 | 1585 |
| Grp Volume(v), veh/h | 152 | 18 | 12 | 6 | 72 | 168 | 1 | 289 | 159 | 166 | 489 | 192 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1702 | 1868 | 1781 | 1702 | 1585 |
| Q Serve(g_s), s | 4.3 | 0.4 | 0.3 | 0.2 | 1.8 | 5.2 | 0.0 | 3.7 | 3.7 | 4.7 | 3.6 | 4.7 |
| Cycle Q Clear(g_c), s | 4.3 | 0.4 | 0.3 | 0.2 | 1.8 | 5.2 | 0.0 | 3.7 | 3.7 | 4.7 | 3.6 | 4.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.01 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 202 | 485 | 411 | 11 | 285 | 242 | 3 | 774 | 425 | 218 | 1782 | 553 |
| V/C Ratio(X) | 0.75 | 0.04 | 0.03 | 0.53 | 0.25 | 0.69 | 0.29 | 0.37 | 0.37 | 0.76 | 0.27 | 0.35 |
| Avail Cap(c_a), veh/h | 684 | 898 | 761 | 684 | 898 | 761 | 684 | 1961 | 1076 | 684 | 2942 | 913 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.4 | 14.4 | 14.4 | 25.8 | 19.4 | 20.9 | 26.0 | 17.0 | 17.0 | 22.1 | 12.2 | 12.6 |
| Incr Delay (d2), s/veh | 5.6 | 0.0 | 0.0 | 33.0 | 0.5 | 3.6 | 41.5 | 1.1 | 2.0 | 5.4 | 0.3 | 1.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.0 | 0.2 | 0.1 | 0.2 | 0.8 | 1.9 | 0.1 | 1.3 | 1.6 | 2.0 | 1.1 | 1.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 28.0 | 14.4 | 14.4 | 58.8 | 19.9 | 24.5 | 67.5 | 18.1 | 19.0 | 27.5 | 12.5 | 13.9 |
| LnGrp LOS | C | B | B | E | B | C | E | B | B | C | B | B |
| Approach Vol, veh/h | | 182 | | | 246 | | | 449 | | | 847 | |
| Approach Delay, s/veh | | 25.8 | | | 24.0 | | | 18.5 | | | 15.8 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 4.8 | 18.5 | 4.6 | 24.2 | 10.4 | 12.9 | 10.9 | 17.8 |
| Change Period (Y+Rc), s | 4.5 | 5.0 | 4.5 | 6.0 | 4.5 | 5.0 | 4.5 | 6.0 |
| Max Green Setting (Gmax), s | 20.0 | 25.0 | 20.0 | 30.0 | 20.0 | 25.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 2.4 | 2.0 | 6.7 | 6.3 | 7.2 | 6.7 | 5.7 |
| Green Ext Time (p_c), s | 0.0 | 0.1 | 0.0 | 8.9 | 0.3 | 0.9 | 0.3 | 6.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 18.7 |
| HCM 6th LOS | B |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 144 | 1236 | 66 | 226 | 1590 | 212 | 23 | 35 | 216 | 387 | 36 | 27 |
| Future Volume (veh/h) | 144 | 1236 | 66 | 226 | 1590 | 212 | 23 | 35 | 216 | 387 | 36 | 27 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 197 | 1693 | 90 | 240 | 1691 | 226 | 25 | 38 | 232 | 509 | 47 | 36 |
| Peak Hour Factor | 0.73 | 0.73 | 0.73 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 | 0.93 | 0.76 | 0.76 | 0.76 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 223 | 1812 | 96 | 263 | 1378 | 615 | 40 | 305 | 258 | 266 | 542 | 459 |
| Arrive On Green | 0.12 | 0.37 | 0.37 | 0.15 | 0.39 | 0.39 | 0.02 | 0.16 | 0.16 | 0.15 | 0.29 | 0.29 |
| Sat Flow, veh/h | 1781 | 4963 | 264 | 1781 | 3554 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 197 | 1161 | 622 | 240 | 1691 | 226 | 25 | 38 | 232 | 509 | 47 | 36 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1823 | 1781 | 1777 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 14.6 | 44.0 | 44.1 | 17.8 | 51.9 | 13.6 | 1.9 | 2.3 | 19.2 | 20.0 | 2.5 | 2.2 |
| Cycle Q Clear(g_c), s | 14.6 | 44.0 | 44.1 | 17.8 | 51.9 | 13.6 | 1.9 | 2.3 | 19.2 | 20.0 | 2.5 | 2.2 |
| Prop In Lane | 1.00 | | 0.14 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 223 | 1243 | 665 | 263 | 1378 | 615 | 40 | 305 | 258 | 266 | 542 | 459 |
| V/C Ratio(X) | 0.89 | 0.93 | 0.94 | 0.91 | 1.23 | 0.37 | 0.62 | 0.12 | 0.90 | 1.91 | 0.09 | 0.08 |
| Avail Cap(c_a), veh/h | 266 | 1271 | 681 | 266 | 1378 | 615 | 266 | 419 | 355 | 266 | 542 | 459 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 57.6 | 41.0 | 41.0 | 56.2 | 41.0 | 29.3 | 64.9 | 47.9 | 54.9 | 56.9 | 34.6 | 34.5 |
| Incr Delay (d2), s/veh | 25.0 | 12.2 | 19.7 | 32.8 | 108.7 | 0.5 | 14.6 | 0.2 | 19.6 | 424.5 | 0.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 8.1 | 20.2 | 23.0 | 10.2 | 42.4 | 5.3 | 1.0 | 1.1 | 9.0 | 40.3 | 1.1 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 82.6 | 53.2 | 60.6 | 89.0 | 149.7 | 29.8 | 79.4 | 48.0 | 74.5 | 481.4 | 34.7 | 34.6 |
| LnGrp LOS | F | D | E | F | F | C | E | D | E | F | C | C |
| Approach Vol, veh/h | | 1980 | | | 2157 | | | 295 | | | 592 | |
| Approach Delay, s/veh | | 58.4 | | | 130.4 | | | 71.5 | | | 418.8 | |
| Approach LOS | | E | | | F | | | E | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 25.1 | 54.9 | 8.6 | 45.3 | 22.0 | 57.9 | 25.6 | 28.3 |
| Change Period (Y+Rc), s | 5.3 | 6.0 | 5.6 | 6.5 | 5.3 | 6.0 | 5.6 | 6.5 |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | 20.0 | 30.0 | 20.0 | 50.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 19.8 | 46.1 | 3.9 | 4.5 | 16.6 | 53.9 | 22.0 | 21.2 |
| Green Ext Time (p_c), s | 0.0 | 2.8 | 0.0 | 0.3 | 0.2 | 0.0 | 0.0 | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 132.6 |
| HCM 6th LOS | F |

**Notes**

User approved pedestrian interval to be less than phase max green.

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 17 |
| Intersection LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 20 | 267 | 115 | 35 | 28 | 75 | 64 | 89 | 25 | 40 | 0 |
| Future Vol, veh/h | 0 | 20 | 267 | 115 | 35 | 28 | 75 | 64 | 89 | 25 | 40 | 0 |
| Peak Hour Factor | 0.61 | 0.61 | 0.61 | 0.54 | 0.54 | 0.54 | 0.75 | 0.75 | 0.75 | 0.83 | 0.83 | 0.83 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 33 | 438 | 213 | 65 | 52 | 100 | 85 | 119 | 30 | 48 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 19.3 | 16.3 | 15.7 | 11.4 |
| HCM LOS | C | C | C | B |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 33% | 0% | 65% | 38% |
| Vol Thru, % | 28% | 7% | 20% | 62% |
| Vol Right, % | 39% | 93% | 16% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 228 | 287 | 178 | 65 |
| LT Vol | 75 | 0 | 115 | 25 |
| Through Vol | 64 | 20 | 35 | 40 |
| RT Vol | 89 | 267 | 28 | 0 |
| Lane Flow Rate | 304 | 470 | 330 | 78 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.52 | 0.692 | 0.551 | 0.153 |
| Departure Headway (Hd) | 6.153 | 5.293 | 6.019 | 7.023 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 584 | 687 | 600 | 509 |
| Service Time | 4.202 | 3.293 | 4.067 | 5.092 |
| HCM Lane V/C Ratio | 0.521 | 0.684 | 0.55 | 0.153 |
| HCM Control Delay | 15.7 | 19.3 | 16.3 | 11.4 |
| HCM Lane LOS | C | C | C | B |
| HCM 95th-tile Q | 3 | 5.6 | 3.3 | 0.5 |

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ⇕ | | | ⇕ | | | ⇕ | | | ⇕ | |
| Traffic Vol, veh/h | 0 | 87 | 0 | 38 | 38 | 26 | 0 | 0 | 174 | 27 | 0 | 3 |
| Future Vol, veh/h | 0 | 87 | 0 | 38 | 38 | 26 | 0 | 0 | 174 | 27 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 50 | 50 | 50 | 71 | 71 | 71 | 100 | 100 | 100 | 88 | 88 | 88 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 174 | 0 | 54 | 54 | 37 | 0 | 0 | 174 | 31 | 0 | 3 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 91 | 0 | 0 | 174 | 0 | 0 | 356 | 373 | 174 | 442 | 355 | 73 |
| Stage 1 | - | - | - | - | - | - | 174 | 174 | - | 181 | 181 | - |
| Stage 2 | - | - | - | - | - | - | 182 | 199 | - | 261 | 174 | - |
| 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 | 1504 | - | - | 1403 | - | - | 599 | 557 | 869 | 526 | 571 | 989 |
| Stage 1 | - | - | - | - | - | - | 828 | 755 | - | 821 | 750 | - |
| Stage 2 | - | - | - | - | - | - | 820 | 736 | - | 744 | 755 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1504 | - | - | 1403 | - | - | 578 | 534 | 869 | 408 | 548 | 989 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 578 | 534 | - | 408 | 548 | - |
| Stage 1 | - | - | - | - | - | - | 828 | 755 | - | 821 | 719 | - |
| Stage 2 | - | - | - | - | - | - | 784 | 706 | - | 595 | 755 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 2.9 | 10.2 | 14 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 869 | 1504 | - | - | 1403 | - | - | 433 |
| HCM Lane V/C Ratio | 0.2 | - | - | - | 0.038 | - | - | 0.079 |
| HCM Control Delay (s) | 10.2 | 0 | - | - | 7.7 | 0 | - | 14 |
| HCM Lane LOS | B | A | - | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.7 | 0 | - | - | 0.1 | - | - | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 9 | 9 | 12 | 158 | 198 | 5 |
| Future Vol, veh/h | 9 | 9 | 12 | 158 | 198 | 5 |
| 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 | 57 | 57 | 75 | 75 | 53 | 53 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 16 | 16 | 211 | 374 | 9 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 622 | 379 | 383 | 0 | - | 0 |
| Stage 1 | 379 | - | - | - | - | - |
| Stage 2 | 243 | - | - | - | - | - |
| 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 | 450 | 668 | 1175 | - | - | - |
| Stage 1 | 692 | - | - | - | - | - |
| Stage 2 | 797 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 443 | 668 | 1175 | - | - | - |
| Mov Cap-2 Maneuver | 443 | - | - | - | - | - |
| Stage 1 | 682 | - | - | - | - | - |
| Stage 2 | 797 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 12.2 | 0.6 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1175 | - | 533 | - | - |
| HCM Lane V/C Ratio | 0.014 | - | 0.059 | - | - |
| HCM Control Delay (s) | 8.1 | 0 | 12.2 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.2 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 27 | 14 | 32 | 63 | 24 | 54 |
| Future Vol, veh/h | 27 | 14 | 32 | 63 | 24 | 54 |
| 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 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 14 | 32 | 63 | 24 | 54 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 166 | 64 | 0 | 0 | 95 | 0 |
| Stage 1 | 64 | - | - | - | - | - |
| Stage 2 | 102 | - | - | - | - | - |
| 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 | 824 | 1000 | - | - | 1499 | - |
| Stage 1 | 959 | - | - | - | - | - |
| Stage 2 | 922 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 810 | 1000 | - | - | 1499 | - |
| Mov Cap-2 Maneuver | 810 | - | - | - | - | - |
| Stage 1 | 959 | - | - | - | - | - |
| Stage 2 | 906 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.4 | 0 | 2.3 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 866 | 1499 | - |
| HCM Lane V/C Ratio | - | - | 0.047 | 0.016 | - |
| HCM Control Delay (s) | - | - | 9.4 | 7.4 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0 | - |

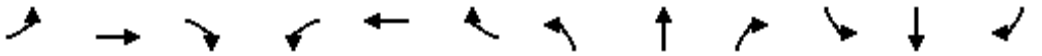
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 1446 | 1262 | 421 | 0 | 48 |
| Future Vol, veh/h | 0 | 1446 | 1262 | 421 | 0 | 48 |
| 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 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 1446 | 1262 | 421 | 0 | 48 |

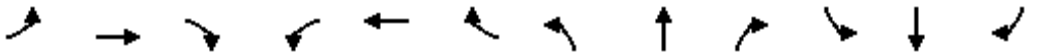
| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 842 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.32 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 308 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 308 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 18.8 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 308 |
| HCM Lane V/C Ratio | - | - | - | 0.156 |
| HCM Control Delay (s) | - | - | - | 18.8 |
| HCM Lane LOS | - | - | - | C |
| HCM 95th %tile Q(veh) | - | - | - | 0.5 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 283 | 1064 | 0 | 0 | 1065 | 275 | 365 | 5 | 424 | 0 | 0 | 0 |
| Future Volume (veh/h) | 283 | 1064 | 0 | 0 | 1065 | 275 | 365 | 5 | 424 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 368 | 1382 | 0 | 0 | 1197 | 309 | 435 | 6 | 505 | | | |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.89 | 0.89 | 0.89 | 0.84 | 0.84 | 0.84 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 207 | 1945 | 0 | 0 | 1131 | 288 | 291 | 4 | 337 | | | |
| Arrive On Green | 0.23 | 1.00 | 0.00 | 0.00 | 0.40 | 0.40 | 0.38 | 0.38 | 0.38 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 2898 | 714 | 769 | 11 | 892 | | | |
| Grp Volume(v), veh/h | 368 | 1382 | 0 | 0 | 753 | 753 | 946 | 0 | 0 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1742 | 1671 | 0 | 0 | | | |
| Q Serve(g_s), s | 17.0 | 0.0 | 0.0 | 0.0 | 58.9 | 58.9 | 55.2 | 0.0 | 0.0 | | | |
| Cycle Q Clear(g_c), s | 17.0 | 0.0 | 0.0 | 0.0 | 58.9 | 58.9 | 55.2 | 0.0 | 0.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.41 | 0.46 | | 0.53 | | | |
| Lane Grp Cap(c), veh/h | 207 | 1945 | 0 | 0 | 717 | 703 | 632 | 0 | 0 | | | |
| V/C Ratio(X) | 1.77 | 0.71 | 0.00 | 0.00 | 1.05 | 1.07 | 1.50 | 0.00 | 0.00 | | | |
| Avail Cap(c_a), veh/h | 207 | 1945 | 0 | 0 | 717 | 703 | 632 | 0 | 0 | | | |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.09 | 0.09 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | | | |
| Uniform Delay (d), s/veh | 56.0 | 0.0 | 0.0 | 0.0 | 43.6 | 43.6 | 45.4 | 0.0 | 0.0 | | | |
| Incr Delay (d2), s/veh | 350.2 | 0.2 | 0.0 | 0.0 | 47.5 | 54.9 | 232.0 | 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 | | | |
| %ile BackOfQ(50%),veh/ln | 26.9 | 0.1 | 0.0 | 0.0 | 34.8 | 35.6 | 62.7 | 0.0 | 0.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 406.2 | 0.2 | 0.0 | 0.0 | 91.0 | 98.5 | 277.4 | 0.0 | 0.0 | | | |
| LnGrp LOS | F | A | A | A | F | F | F | A | A | | | |
| Approach Vol, veh/h | | 1750 | | | 1506 | | | 946 | | | | |
| Approach Delay, s/veh | | 85.6 | | | 94.8 | | | 277.4 | | | | |
| Approach LOS | | F | | | F | | | F | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 85.0 | | | 21.0 | 64.0 | | 61.0 | | | | |
| Change Period (Y+Rc), s | | 5.1 | | | 4.0 | 5.1 | | 5.8 | | | | |
| Max Green Setting (Gmax), s | | 79.9 | | | 17.0 | 58.9 | | 55.2 | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.0 | | | 19.0 | 60.9 | | 57.2 | | | | |
| Green Ext Time (p_c), s | | 14.2 | | | 0.0 | 0.0 | | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 132.0 | | | | | | | | | |
| HCM 6th LOS | | | F | | | | | | | | | |



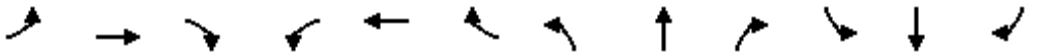
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 994 | 409 | 287 | 1143 | 0 | 0 | 0 | 0 | 353 | 8 | 321 |
| Future Volume (veh/h) | 0 | 994 | 409 | 287 | 1143 | 0 | 0 | 0 | 0 | 353 | 8 | 321 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 1362 | 560 | 322 | 1284 | 0 | | | | 406 | 9 | 369 |
| Peak Hour Factor | 0.73 | 0.73 | 0.73 | 0.89 | 0.89 | 0.89 | | | | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 926 | 376 | 401 | 972 | 0 | | | | 358 | 8 | 325 |
| Arrive On Green | 0.00 | 0.26 | 0.26 | 0.30 | 0.69 | 0.00 | | | | 0.41 | 0.41 | 0.41 |
| Sat Flow, veh/h | 0 | 3735 | 1447 | 1781 | 1870 | 0 | | | | 872 | 19 | 793 |
| Grp Volume(v), veh/h | 0 | 1299 | 623 | 322 | 1284 | 0 | | | | 784 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1610 | 1781 | 1870 | 0 | | | | 1684 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 37.9 | 37.9 | 24.3 | 75.9 | 0.0 | | | | 59.9 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 37.9 | 37.9 | 24.3 | 75.9 | 0.0 | | | | 59.9 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 0.90 | 1.00 | | 0.00 | | | | 0.52 | | 0.47 |
| Lane Grp Cap(c), veh/h | 0 | 884 | 418 | 401 | 972 | 0 | | | | 691 | 0 | 0 |
| V/C Ratio(X) | 0.00 | 1.47 | 1.49 | 0.80 | 1.32 | 0.00 | | | | 1.13 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 884 | 418 | 415 | 972 | 0 | | | | 691 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.33 | 1.33 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 0.09 | 0.09 | 0.00 | | | | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 54.0 | 54.1 | 48.1 | 22.5 | 0.0 | | | | 43.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 217.7 | 233.3 | 1.0 | 144.9 | 0.0 | | | | 77.7 | 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 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 42.8 | 42.3 | 10.4 | 65.5 | 0.0 | | | | 38.7 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 271.7 | 287.3 | 49.1 | 167.5 | 0.0 | | | | 120.8 | 0.0 | 0.0 |
| LnGrp LOS | A | F | F | D | F | A | | | | F | A | A |
| Approach Vol, veh/h | | 1922 | | | 1606 | | | | | | 784 | |
| Approach Delay, s/veh | | 276.8 | | | 143.7 | | | | | | 120.8 | |
| Approach LOS | | F | | | F | | | | | | F | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 38.0 | 43.0 | | 65.0 | | 81.0 |
| Change Period (Y+Rc), s | 5.1 | * 5.1 | | 5.1 | | 5.1 |
| Max Green Setting (Gmax), s | 34.0 | * 38 | | 59.9 | | 75.9 |
| Max Q Clear Time (g_c+I1), s | 26.3 | 39.9 | | 61.9 | | 77.9 |
| Green Ext Time (p_c), s | 0.1 | 0.0 | | 0.0 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 198.9 |
| HCM 6th LOS | | F |

Notes

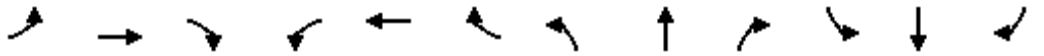
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 525 | 1220 | 0 | 0 | 1187 | 567 | 1236 | 6 | 469 | 0 | 0 | 0 |
| Future Volume (vph) | 525 | 1220 | 0 | 0 | 1187 | 567 | 1236 | 6 | 469 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.2 | 5.8 | | | 5.8 | 4.0 | | 6.8 | 6.8 | | | |
| Lane Util. Factor | 1.00 | 0.95 | | | 0.95 | 1.00 | | 1.00 | 1.00 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 0.85 | | 1.00 | 0.85 | | | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (prot) | 1770 | 3539 | | | 3539 | 1583 | | 1774 | 1583 | | | |
| Flt Permitted | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (perm) | 1770 | 3539 | | | 3539 | 1583 | | 1774 | 1583 | | | |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph) | 565 | 1312 | 0 | 0 | 1236 | 591 | 1288 | 6 | 489 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 69 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 565 | 1312 | 0 | 0 | 1236 | 591 | 0 | 1294 | 420 | 0 | 0 | 0 |
| Turn Type | Prot | NA | | | NA | Free | Split | NA | Prot | | | |
| Protected Phases | 5 | 2 | | | 6 | | 8 | 8 | 8 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | 29.8 | 93.2 | | | 59.2 | 166.0 | | 60.2 | 60.2 | | | |
| Effective Green, g (s) | 29.8 | 93.2 | | | 59.2 | 166.0 | | 60.2 | 60.2 | | | |
| Actuated g/C Ratio | 0.18 | 0.56 | | | 0.36 | 1.00 | | 0.36 | 0.36 | | | |
| Clearance Time (s) | 4.2 | 5.8 | | | 5.8 | | | 6.8 | 6.8 | | | |
| Vehicle Extension (s) | 1.5 | 4.0 | | | 4.0 | | | 1.0 | 1.0 | | | |
| Lane Grp Cap (vph) | 317 | 1986 | | | 1262 | 1583 | | 643 | 574 | | | |
| v/s Ratio Prot | c0.32 | 0.37 | | | c0.35 | | | c0.73 | 0.26 | | | |
| v/s Ratio Perm | | | | | | 0.37 | | | | | | |
| v/c Ratio | 1.78 | 0.66 | | | 0.98 | 0.37 | | 2.01 | 0.73 | | | |
| Uniform Delay, d1 | 68.1 | 25.4 | | | 52.8 | 0.0 | | 52.9 | 45.9 | | | |
| Progression Factor | 1.34 | 0.78 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 358.8 | 0.9 | | | 20.9 | 0.7 | | 461.1 | 4.1 | | | |
| Delay (s) | 450.2 | 20.9 | | | 73.7 | 0.7 | | 514.0 | 50.0 | | | |
| Level of Service | F | C | | | E | A | | F | D | | | |
| Approach Delay (s) | | 150.1 | | | 50.1 | | | 386.7 | | | 0.0 | |
| Approach LOS | | F | | | D | | | F | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 193.7 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.58 | | |
| Actuated Cycle Length (s) | 166.0 | Sum of lost time (s) | 18.8 |
| Intersection Capacity Utilization | 200.5% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

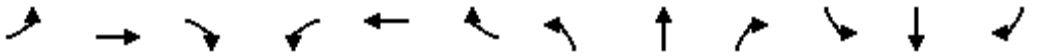
c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1382 | 982 | 300 | 2123 | 0 | 0 | 0 | 0 | 363 | 1 | 652 |
| Future Volume (vph) | 0 | 1382 | 982 | 300 | 2123 | 0 | 0 | 0 | 0 | 363 | 1 | 652 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | |
| Lane Util. Factor | | 0.91 | 1.00 | 1.00 | 1.00 | | | | | 0.95 | 0.95 | |
| Frt | | 1.00 | 0.85 | 1.00 | 1.00 | | | | | 1.00 | 0.86 | |
| Flt Protected | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1514 | |
| Flt Permitted | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1514 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 0.74 | 0.74 | 0.74 |
| Adj. Flow (vph) | 0 | 1502 | 1067 | 316 | 2235 | 0 | 0 | 0 | 0 | 491 | 1 | 881 |
| RTOR Reduction (vph) | 0 | 0 | 442 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 1502 | 625 | 316 | 2235 | 0 | 0 | 0 | 0 | 442 | 928 | 0 |
| Turn Type | | NA | Perm | Prot | NA | | | | | Split | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | | | 4 | 4 | |
| Permitted Phases | | | 2 | | | | | | | | | |
| Actuated Green, G (s) | | 59.2 | 59.2 | 29.0 | 94.2 | | | | | 60.2 | 60.2 | |
| Effective Green, g (s) | | 59.2 | 59.2 | 29.0 | 94.2 | | | | | 60.2 | 60.2 | |
| Actuated g/C Ratio | | 0.36 | 0.36 | 0.17 | 0.57 | | | | | 0.36 | 0.36 | |
| Clearance Time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | |
| Vehicle Extension (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | 2.5 | 2.5 | |
| Lane Grp Cap (vph) | | 1813 | 564 | 309 | 1057 | | | | | 609 | 549 | |
| v/s Ratio Prot | | 0.30 | | 0.18 | c1.20 | | | | | 0.26 | c0.61 | |
| v/s Ratio Perm | | | 0.39 | | | | | | | | | |
| v/c Ratio | | 0.83 | 1.11 | 1.02 | 2.11 | | | | | 0.73 | 1.69 | |
| Uniform Delay, d1 | | 48.8 | 53.4 | 68.5 | 35.9 | | | | | 45.8 | 52.9 | |
| Progression Factor | | 1.12 | 1.76 | 1.20 | 0.96 | | | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 2.9 | 64.2 | 21.4 | 501.8 | | | | | 4.0 | 318.3 | |
| Delay (s) | | 57.7 | 158.3 | 104.0 | 536.3 | | | | | 49.8 | 371.2 | |
| Level of Service | | E | F | F | F | | | | | D | F | |
| Approach Delay (s) | | 99.5 | | | 482.7 | | | 0.0 | | | 267.8 | |
| Approach LOS | | F | | | F | | | A | | | F | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| HCM 2000 Control Delay | 285.6 | HCM 2000 Level of Service | F | |
| HCM 2000 Volume to Capacity ratio | 2.06 | | | |
| Actuated Cycle Length (s) | 166.0 | Sum of lost time (s) | 19.6 | |
| Intersection Capacity Utilization | 200.5% | ICU Level of Service | H | |
| Analysis Period (min) | 15 | | | |

c Critical Lane Group



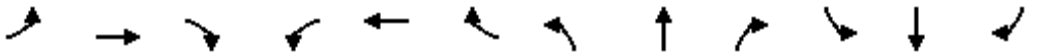
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 83 | 442 | 71 | 662 | 461 | 341 | 264 | 146 | 330 | 325 | 49 | 41 |
| Future Volume (veh/h) | 83 | 442 | 71 | 662 | 461 | 341 | 264 | 146 | 330 | 325 | 49 | 41 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 90 | 775 | 125 | 828 | 576 | 371 | 314 | 159 | 393 | 353 | 53 | 45 |
| Peak Hour Factor | 0.92 | 0.57 | 0.57 | 0.80 | 0.80 | 0.92 | 0.84 | 0.92 | 0.84 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 111 | 908 | 405 | 844 | 1554 | 693 | 337 | 309 | 461 | 349 | 611 | 273 |
| Arrive On Green | 0.06 | 0.26 | 0.26 | 0.24 | 0.44 | 0.44 | 0.19 | 0.17 | 0.17 | 0.20 | 0.17 | 0.17 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 3456 | 3554 | 1585 | 1781 | 1870 | 2790 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 90 | 775 | 125 | 828 | 576 | 371 | 314 | 159 | 393 | 353 | 53 | 45 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1728 | 1777 | 1585 | 1781 | 1870 | 1395 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 7.2 | 30.1 | 9.2 | 34.5 | 15.8 | 24.9 | 25.1 | 11.2 | 19.8 | 28.4 | 1.8 | 3.5 |
| Cycle Q Clear(g_c), s | 7.2 | 30.1 | 9.2 | 34.5 | 15.8 | 24.9 | 25.1 | 11.2 | 19.8 | 28.4 | 1.8 | 3.5 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 111 | 908 | 405 | 844 | 1554 | 693 | 337 | 309 | 461 | 349 | 611 | 273 |
| V/C Ratio(X) | 0.81 | 0.85 | 0.31 | 0.98 | 0.37 | 0.54 | 0.93 | 0.51 | 0.85 | 1.01 | 0.09 | 0.16 |
| Avail Cap(c_a), veh/h | 189 | 1150 | 513 | 844 | 1641 | 732 | 374 | 506 | 755 | 349 | 942 | 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 67.1 | 51.3 | 43.6 | 54.4 | 27.4 | 29.9 | 57.8 | 55.2 | 58.7 | 58.2 | 50.4 | 51.1 |
| Incr Delay (d2), s/veh | 12.8 | 5.2 | 0.4 | 26.2 | 0.1 | 0.7 | 28.3 | 1.3 | 5.2 | 51.0 | 0.1 | 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 | 3.7 | 14.0 | 3.6 | 17.9 | 6.8 | 9.3 | 13.6 | 5.3 | 7.2 | 17.4 | 0.8 | 1.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 79.8 | 56.6 | 44.0 | 80.6 | 27.5 | 30.6 | 86.1 | 56.5 | 63.9 | 109.2 | 50.5 | 51.4 |
| LnGrp LOS | E | E | D | F | C | C | F | E | E | F | D | D |
| Approach Vol, veh/h | | 990 | | | 1775 | | | 866 | | | 451 | |
| Approach Delay, s/veh | | 57.1 | | | 52.9 | | | 70.6 | | | 96.6 | |
| Approach LOS | | E | | | D | | | E | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 40.0 | 42.1 | 32.0 | 30.7 | 13.7 | 68.5 | 33.0 | 29.8 |
| Change Period (Y+Rc), s | 4.6 | 5.1 | 4.6 | * 5.8 | 4.6 | 5.1 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 35.4 | 46.9 | 30.4 | * 38 | 15.4 | 66.9 | 28.4 | 39.2 |
| Max Q Clear Time (g_c+I1), s | 36.5 | 32.1 | 27.1 | 5.5 | 9.2 | 26.9 | 30.4 | 21.8 |
| Green Ext Time (p_c), s | 0.0 | 4.9 | 0.3 | 0.4 | 0.1 | 5.8 | 0.0 | 2.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 62.5 |
| HCM 6th LOS | E |

Notes

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 144 | 1236 | 66 | 226 | 1590 | 212 | 23 | 35 | 216 | 387 | 36 | 27 |
| Future Volume (veh/h) | 144 | 1236 | 66 | 226 | 1590 | 212 | 23 | 35 | 216 | 387 | 36 | 27 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 197 | 1693 | 90 | 240 | 1691 | 226 | 25 | 0 | 257 | 509 | 47 | 36 |
| Peak Hour Factor | 0.73 | 0.73 | 0.73 | 0.94 | 0.94 | 0.94 | 0.93 | 0.93 | 0.93 | 0.76 | 0.76 | 0.76 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 184 | 2400 | 127 | 299 | 1660 | 984 | 40 | 0 | 316 | 531 | 227 | 174 |
| Arrive On Green | 0.10 | 0.48 | 0.48 | 0.09 | 0.47 | 0.47 | 0.02 | 0.00 | 0.10 | 0.15 | 0.23 | 0.23 |
| Sat Flow, veh/h | 1781 | 4963 | 264 | 3456 | 3554 | 1585 | 1781 | 0 | 3170 | 3456 | 982 | 752 |
| Grp Volume(v), veh/h | 197 | 1161 | 622 | 240 | 1691 | 226 | 25 | 0 | 257 | 509 | 0 | 83 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1823 | 1728 | 1777 | 1585 | 1781 | 0 | 1585 | 1728 | 0 | 1735 |
| Q Serve(g_s), s | 13.7 | 35.5 | 35.5 | 9.0 | 62.0 | 8.4 | 1.8 | 0.0 | 10.5 | 19.4 | 0.0 | 5.1 |
| Cycle Q Clear(g_c), s | 13.7 | 35.5 | 35.5 | 9.0 | 62.0 | 8.4 | 1.8 | 0.0 | 10.5 | 19.4 | 0.0 | 5.1 |
| Prop In Lane | 1.00 | | 0.14 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.43 |
| Lane Grp Cap(c), veh/h | 184 | 1646 | 882 | 299 | 1660 | 984 | 40 | 0 | 316 | 531 | 0 | 400 |
| V/C Ratio(X) | 1.07 | 0.71 | 0.71 | 0.80 | 1.02 | 0.23 | 0.62 | 0.00 | 0.81 | 0.96 | 0.00 | 0.21 |
| Avail Cap(c_a), veh/h | 184 | 1646 | 882 | 487 | 1660 | 984 | 153 | 0 | 561 | 531 | 0 | 425 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 59.5 | 26.9 | 26.9 | 59.5 | 35.4 | 11.1 | 64.3 | 0.0 | 58.5 | 55.8 | 0.0 | 41.2 |
| Incr Delay (d2), s/veh | 86.7 | 1.2 | 2.2 | 5.0 | 26.9 | 0.2 | 14.4 | 0.0 | 5.0 | 28.8 | 0.0 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 10.6 | 14.3 | 15.6 | 4.1 | 31.3 | 2.9 | 1.0 | 0.0 | 4.4 | 10.5 | 0.0 | 2.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 146.2 | 28.0 | 29.1 | 64.5 | 62.3 | 11.3 | 78.7 | 0.0 | 63.5 | 84.6 | 0.0 | 41.5 |
| LnGrp LOS | F | C | C | E | F | B | E | A | E | F | A | D |
| Approach Vol, veh/h | | 1980 | | | 2157 | | | 282 | | | 592 | |
| Approach Delay, s/veh | | 40.1 | | | 57.2 | | | 64.9 | | | 78.5 | |
| Approach LOS | | D | | | E | | | E | | | E | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 16.8 | 70.2 | 8.6 | 37.1 | 19.0 | 68.0 | 26.0 | 19.8 |
| Change Period (Y+Rc), s | 5.3 | 6.0 | 5.6 | 6.5 | 5.3 | 6.0 | 5.6 | 6.5 |
| Max Green Setting (Gmax), s | 18.7 | 57.0 | 11.4 | 32.5 | 13.7 | 62.0 | 20.4 | 23.5 |
| Max Q Clear Time (g_c+I1), s | 11.0 | 37.5 | 3.8 | 7.1 | 15.7 | 64.0 | 21.4 | 12.5 |
| Green Ext Time (p_c), s | 0.5 | 8.8 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 53.4 |
| HCM 6th LOS | D |

**Notes**

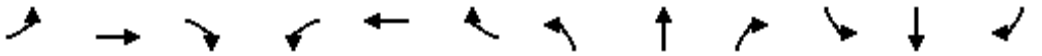
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 13.6 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 20 | 267 | 115 | 35 | 28 | 75 | 64 | 89 | 25 | 40 | 0 |
| Future Vol, veh/h | 0 | 20 | 267 | 115 | 35 | 28 | 75 | 64 | 89 | 25 | 40 | 0 |
| Peak Hour Factor | 0.61 | 0.61 | 0.61 | 0.54 | 0.54 | 0.54 | 0.75 | 0.75 | 0.75 | 0.83 | 0.83 | 0.83 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 33 | 438 | 213 | 65 | 52 | 100 | 85 | 119 | 30 | 48 | 0 |
| Number of Lanes | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 2 |
| HCM Control Delay | 11.6 | 15.9 | 14.9 | 11 |
| HCM LOS | B | C | B | B |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | SBLn1 |
|---|---|---|---|---|---|
| Vol Left, % | 33% | 0% | 0% | 65% | 38% |
| Vol Thru, % | 28% | 14% | 0% | 20% | 62% |
| Vol Right, % | 39% | 86% | 100% | 16% | 0% |
| Sign Control | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 228 | 145 | 142 | 178 | 65 |
| LT Vol | 75 | 0 | 0 | 115 | 25 |
| Through Vol | 64 | 20 | 0 | 35 | 40 |
| RT Vol | 89 | 125 | 142 | 28 | 0 |
| Lane Flow Rate | 304 | 239 | 232 | 330 | 78 |
| Geometry Grp | 2 | 7 | 7 | 5 | 2 |
| Degree of Util (X) | 0.5 | 0.373 | 0.356 | 0.543 | 0.149 |
| Departure Headway (Hd) | 5.924 | 5.626 | 5.528 | 5.926 | 6.838 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes |
| Cap | 605 | 634 | 645 | 603 | 528 |
| Service Time | 4.006 | 3.406 | 3.308 | 4.007 | 4.838 |
| HCM Lane V/C Ratio | 0.502 | 0.377 | 0.36 | 0.547 | 0.148 |
| HCM Control Delay | 14.9 | 11.8 | 11.4 | 15.9 | 11 |
| HCM Lane LOS | B | B | B | C | B |
| HCM 95th-tile Q | 2.8 | 1.7 | 1.6 | 3.3 | 0.5 |

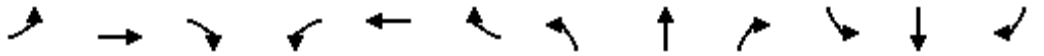


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 283 | 1064 | 0 | 0 | 1065 | 275 | 365 | 5 | 424 | 0 | 0 | 0 |
| Future Volume (veh/h) | 283 | 1064 | 0 | 0 | 1065 | 275 | 365 | 5 | 424 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 368 | 1382 | 0 | 0 | 1197 | 309 | 435 | 54 | 473 | | | |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.89 | 0.89 | 0.89 | 0.84 | 0.84 | 0.84 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 207 | 2177 | 0 | 0 | 1314 | 335 | 498 | 62 | 496 | | | |
| Arrive On Green | 0.23 | 1.00 | 0.00 | 0.00 | 0.47 | 0.47 | 0.31 | 0.31 | 0.31 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 2898 | 714 | 1593 | 198 | 1585 | | | |
| Grp Volume(v), veh/h | 368 | 1382 | 0 | 0 | 753 | 753 | 489 | 0 | 473 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1742 | 1791 | 0 | 1585 | | | |
| Q Serve(g_s), s | 17.0 | 0.0 | 0.0 | 0.0 | 57.0 | 59.1 | 37.7 | 0.0 | 42.7 | | | |
| Cycle Q Clear(g_c), s | 17.0 | 0.0 | 0.0 | 0.0 | 57.0 | 59.1 | 37.7 | 0.0 | 42.7 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.41 | 0.89 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 207 | 2177 | 0 | 0 | 833 | 816 | 560 | 0 | 496 | | | |
| V/C Ratio(X) | 1.77 | 0.63 | 0.00 | 0.00 | 0.90 | 0.92 | 0.87 | 0.00 | 0.95 | | | |
| Avail Cap(c_a), veh/h | 207 | 2177 | 0 | 0 | 833 | 816 | 677 | 0 | 599 | | | |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.15 | 0.15 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 56.0 | 0.0 | 0.0 | 0.0 | 35.7 | 36.3 | 47.4 | 0.0 | 49.1 | | | |
| Incr Delay (d2), s/veh | 351.4 | 0.2 | 0.0 | 0.0 | 15.1 | 17.5 | 9.3 | 0.0 | 22.2 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 27.0 | 0.1 | 0.0 | 0.0 | 27.5 | 28.5 | 17.8 | 0.0 | 19.5 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 407.4 | 0.2 | 0.0 | 0.0 | 50.8 | 53.8 | 56.7 | 0.0 | 71.4 | | | |
| LnGrp LOS | F | A | A | A | D | D | E | A | E | | | |
| Approach Vol, veh/h | | 1750 | | | 1506 | | | 962 | | | | |
| Approach Delay, s/veh | | 85.8 | | | 52.3 | | | 63.9 | | | | |
| Approach LOS | | F | | | D | | | E | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 94.5 | | | 21.0 | 73.5 | | 51.5 | | | | |
| Change Period (Y+Rc), s | | 5.1 | | | 4.0 | 5.1 | | 5.8 | | | | |
| Max Green Setting (Gmax), s | | 79.9 | | | 17.0 | 58.9 | | 55.2 | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.0 | | | 19.0 | 61.1 | | 44.7 | | | | |
| Green Ext Time (p_c), s | | 14.2 | | | 0.0 | 0.0 | | 1.0 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 68.9 |
| HCM 6th LOS | E |

**Notes**

User approved volume balancing among the lanes for turning movement.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 994 | 409 | 287 | 1143 | 0 | 0 | 0 | 0 | 353 | 8 | 321 |
| Future Volume (veh/h) | 0 | 994 | 409 | 287 | 1143 | 0 | 0 | 0 | 0 | 353 | 8 | 321 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 1362 | 560 | 322 | 1284 | 0 | | | | 392 | 29 | 369 |
| Peak Hour Factor | 0.73 | 0.73 | 0.73 | 0.89 | 0.89 | 0.89 | | | | 0.87 | 0.87 | 0.87 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 926 | 376 | 664 | 1248 | 0 | | | | 468 | 31 | 391 |
| Arrive On Green | 0.00 | 0.26 | 0.26 | 0.75 | 1.00 | 0.00 | | | | 0.26 | 0.26 | 0.26 |
| Sat Flow, veh/h | 0 | 3735 | 1447 | 1781 | 1870 | 0 | | | | 1781 | 117 | 1486 |
| Grp Volume(v), veh/h | 0 | 1299 | 623 | 322 | 1284 | 0 | | | | 392 | 0 | 398 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1610 | 1781 | 1870 | 0 | | | | 1781 | 0 | 1603 |
| Q Serve(g_s), s | 0.0 | 37.9 | 37.9 | 10.5 | 0.0 | 0.0 | | | | 30.4 | 0.0 | 35.5 |
| Cycle Q Clear(g_c), s | 0.0 | 37.9 | 37.9 | 10.5 | 0.0 | 0.0 | | | | 30.4 | 0.0 | 35.5 |
| Prop In Lane | 0.00 | | 0.90 | 1.00 | | 0.00 | | | | 1.00 | | 0.93 |
| Lane Grp Cap(c), veh/h | 0 | 884 | 418 | 664 | 1248 | 0 | | | | 468 | 0 | 421 |
| V/C Ratio(X) | 0.00 | 1.47 | 1.49 | 0.49 | 1.03 | 0.00 | | | | 0.84 | 0.00 | 0.94 |
| Avail Cap(c_a), veh/h | 0 | 884 | 418 | 664 | 1248 | 0 | | | | 731 | 0 | 658 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 0.09 | 0.09 | 0.00 | | | | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 54.0 | 54.1 | 13.0 | 0.0 | 0.0 | | | | 50.8 | 0.0 | 52.8 |
| Incr Delay (d2), s/veh | 0.0 | 217.7 | 233.3 | 0.0 | 16.6 | 0.0 | | | | 2.8 | 0.0 | 13.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 42.8 | 42.3 | 3.2 | 5.8 | 0.0 | | | | 13.6 | 0.0 | 15.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 271.7 | 287.3 | 13.0 | 16.6 | 0.0 | | | | 53.6 | 0.0 | 65.8 |
| LnGrp LOS | A | F | F | B | F | A | | | | D | A | E |
| Approach Vol, veh/h | | 1922 | | | 1606 | | | | | | 790 | |
| Approach Delay, s/veh | | 276.8 | | | 15.9 | | | | | | 59.8 | |
| Approach LOS | | F | | | B | | | | | | E | |

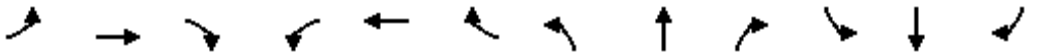
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 59.5 | 43.0 | | 43.5 | | 102.5 |
| Change Period (Y+Rc), s | 5.1 | * 5.1 | | 5.1 | | 5.1 |
| Max Green Setting (Gmax), s | 34.0 | * 38 | | 59.9 | | 75.9 |
| Max Q Clear Time (g_c+I1), s | 12.5 | 39.9 | | 37.5 | | 2.0 |
| Green Ext Time (p_c), s | 0.1 | 0.0 | | 0.8 | | 19.5 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 140.1 |
| HCM 6th LOS | | F |

**Notes**

User approved volume balancing among the lanes for turning movement.

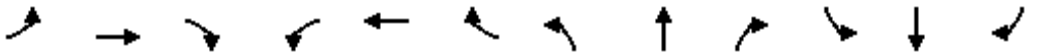
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 525 | 1220 | 0 | 0 | 1187 | 567 | 1236 | 6 | 469 | 0 | 0 | 0 |
| Future Volume (vph) | 525 | 1220 | 0 | 0 | 1187 | 567 | 1236 | 6 | 469 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.2 | 5.8 | | | 5.8 | 4.0 | 6.8 | 6.8 | 6.8 | | | |
| Lane Util. Factor | 1.00 | 0.95 | | | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | | | |
| Satd. Flow (prot) | 1770 | 3539 | | | 3539 | 1583 | 1681 | 1686 | 1583 | | | |
| Flt Permitted | 0.95 | 1.00 | | | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | | | |
| Satd. Flow (perm) | 1770 | 3539 | | | 3539 | 1583 | 1681 | 1686 | 1583 | | | |
| Peak-hour factor, PHF | 0.93 | 0.93 | 0.93 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph) | 565 | 1312 | 0 | 0 | 1236 | 591 | 1288 | 6 | 489 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 69 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 565 | 1312 | 0 | 0 | 1236 | 591 | 644 | 650 | 420 | 0 | 0 | 0 |
| Turn Type | Prot | NA | | | NA | Free | Split | NA | Prot | | | |
| Protected Phases | 5 | 2 | | | 6 | | 8 | 8 | 8 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | 29.8 | 93.2 | | | 59.2 | 166.0 | 60.2 | 60.2 | 60.2 | | | |
| Effective Green, g (s) | 29.8 | 93.2 | | | 59.2 | 166.0 | 60.2 | 60.2 | 60.2 | | | |
| Actuated g/C Ratio | 0.18 | 0.56 | | | 0.36 | 1.00 | 0.36 | 0.36 | 0.36 | | | |
| Clearance Time (s) | 4.2 | 5.8 | | | 5.8 | | 6.8 | 6.8 | 6.8 | | | |
| Vehicle Extension (s) | 1.5 | 4.0 | | | 4.0 | | 1.0 | 1.0 | 1.0 | | | |
| Lane Grp Cap (vph) | 317 | 1986 | | | 1262 | 1583 | 609 | 611 | 574 | | | |
| v/s Ratio Prot | c0.32 | 0.37 | | | c0.35 | | 0.38 | c0.39 | 0.26 | | | |
| v/s Ratio Perm | | | | | | 0.37 | | | | | | |
| v/c Ratio | 1.78 | 0.66 | | | 0.98 | 0.37 | 1.06 | 1.06 | 0.73 | | | |
| Uniform Delay, d1 | 68.1 | 25.4 | | | 52.8 | 0.0 | 52.9 | 52.9 | 45.9 | | | |
| Progression Factor | 1.35 | 0.77 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 359.4 | 1.0 | | | 20.9 | 0.7 | 52.6 | 54.6 | 4.1 | | | |
| Delay (s) | 451.6 | 20.6 | | | 73.7 | 0.7 | 105.5 | 107.5 | 50.0 | | | |
| Level of Service | F | C | | | E | A | F | F | D | | | |
| Approach Delay (s) | | 150.3 | | | 50.1 | | | 91.0 | | | 0.0 | |
| Approach LOS | | F | | | D | | | F | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 97.6 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.19 | | |
| Actuated Cycle Length (s) | 166.0 | Sum of lost time (s) | 18.8 |
| Intersection Capacity Utilization | 128.8% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

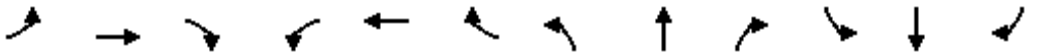


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↑↑↑ | ↱ | ↰ | ↑ | | | | | ↰ | ✣ | ↱ |
| Traffic Volume (vph) | 0 | 1382 | 982 | 300 | 2123 | 0 | 0 | 0 | 0 | 363 | 1 | 652 |
| Future Volume (vph) | 0 | 1382 | 982 | 300 | 2123 | 0 | 0 | 0 | 0 | 363 | 1 | 652 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.8 | 4.0 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | 5.8 |
| Lane Util. Factor | | 0.91 | 1.00 | 1.00 | 1.00 | | | | | 0.95 | 0.91 | 0.95 |
| Frt | | 1.00 | 0.85 | 1.00 | 1.00 | | | | | 1.00 | 0.87 | 0.85 |
| Flt Protected | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 0.99 | 1.00 |
| Satd. Flow (prot) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1461 | 1504 |
| Flt Permitted | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 0.99 | 1.00 |
| Satd. Flow (perm) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1461 | 1504 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 0.74 | 0.74 | 0.74 |
| Adj. Flow (vph) | 0 | 1502 | 1067 | 316 | 2235 | 0 | 0 | 0 | 0 | 491 | 1 | 881 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 47 |
| Lane Group Flow (vph) | 0 | 1502 | 1067 | 316 | 2235 | 0 | 0 | 0 | 0 | 442 | 461 | 420 |
| Turn Type | | NA | Free | Prot | NA | | | | | Split | NA | Perm |
| Protected Phases | | 2 | | 1 | 6 | | | | | 4 | 4 | |
| Permitted Phases | | | Free | | | | | | | | | 4 |
| Actuated Green, G (s) | | 60.1 | 166.0 | 31.7 | 97.8 | | | | | 56.6 | 56.6 | 56.6 |
| Effective Green, g (s) | | 60.1 | 166.0 | 31.7 | 97.8 | | | | | 56.6 | 56.6 | 56.6 |
| Actuated g/C Ratio | | 0.36 | 1.00 | 0.19 | 0.59 | | | | | 0.34 | 0.34 | 0.34 |
| Clearance Time (s) | | 6.8 | | 5.0 | 5.8 | | | | | 5.8 | 5.8 | 5.8 |
| Vehicle Extension (s) | | 4.0 | | 4.0 | 4.0 | | | | | 2.5 | 2.5 | 2.5 |
| Lane Grp Cap (vph) | | 1841 | 1583 | 338 | 1097 | | | | | 573 | 498 | 512 |
| v/s Ratio Prot | | 0.30 | | 0.18 | c1.20 | | | | | 0.26 | c0.32 | |
| v/s Ratio Perm | | | 0.67 | | | | | | | | | 0.28 |
| v/c Ratio | | 0.82 | 0.67 | 0.93 | 2.04 | | | | | 0.77 | 0.93 | 0.82 |
| Uniform Delay, d1 | | 47.9 | 0.0 | 66.1 | 34.1 | | | | | 48.9 | 52.7 | 50.1 |
| Progression Factor | | 1.07 | 1.00 | 1.21 | 0.98 | | | | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | | 2.5 | 1.4 | 5.3 | 467.1 | | | | | 6.1 | 23.1 | 10.0 |
| Delay (s) | | 53.6 | 1.4 | 85.0 | 500.5 | | | | | 55.0 | 75.8 | 60.0 |
| Level of Service | | D | A | F | F | | | | | E | E | E |
| Approach Delay (s) | | 31.9 | | | 449.1 | | | 0.0 | | | 63.7 | |
| Approach LOS | | C | | | F | | | A | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 202.5 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.72 | | |
| Actuated Cycle Length (s) | 166.0 | Sum of lost time (s) | 19.6 |
| Intersection Capacity Utilization | 128.8% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

# Appendix H – 2040 Cumulative Conditions Level of Service Sheets



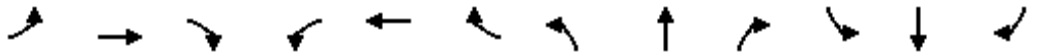
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 67 | 767 | 86 | 619 | 512 | 496 | 350 | 62 | 364 | 169 | 38 | 28 |
| Future Volume (veh/h) | 67 | 767 | 86 | 619 | 512 | 496 | 350 | 62 | 364 | 169 | 38 | 28 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 67 | 767 | 86 | 619 | 512 | 496 | 350 | 62 | 364 | 169 | 38 | 28 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 119 | 1141 | 509 | 420 | 1336 | 596 | 389 | 371 | 553 | 205 | 336 | 150 |
| Arrive On Green | 0.07 | 0.32 | 0.32 | 0.12 | 0.38 | 0.38 | 0.22 | 0.20 | 0.20 | 0.11 | 0.09 | 0.09 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 3456 | 3554 | 1585 | 1781 | 1870 | 2790 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 67 | 767 | 86 | 619 | 512 | 496 | 350 | 62 | 364 | 169 | 38 | 28 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1728 | 1777 | 1585 | 1781 | 1870 | 1395 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 3.0 | 15.4 | 3.2 | 10.0 | 8.6 | 23.4 | 15.7 | 2.3 | 9.9 | 7.6 | 0.8 | 1.3 |
| Cycle Q Clear(g_c), s | 3.0 | 15.4 | 3.2 | 10.0 | 8.6 | 23.4 | 15.7 | 2.3 | 9.9 | 7.6 | 0.8 | 1.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 119 | 1141 | 509 | 420 | 1336 | 596 | 389 | 371 | 553 | 205 | 336 | 150 |
| V/C Ratio(X) | 0.56 | 0.67 | 0.17 | 1.47 | 0.38 | 0.83 | 0.90 | 0.17 | 0.66 | 0.83 | 0.11 | 0.19 |
| Avail Cap(c_a), veh/h | 217 | 2160 | 963 | 420 | 2160 | 963 | 433 | 1137 | 1696 | 217 | 1728 | 771 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.2 | 24.2 | 20.1 | 36.1 | 18.7 | 23.3 | 31.3 | 27.3 | 30.4 | 35.6 | 34.1 | 34.3 |
| Incr Delay (d2), s/veh | 4.1 | 0.7 | 0.2 | 225.7 | 0.2 | 3.4 | 20.0 | 0.2 | 1.3 | 21.5 | 0.1 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.4 | 6.2 | 1.1 | 17.2 | 3.4 | 8.1 | 8.3 | 1.0 | 3.1 | 4.5 | 0.3 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 41.4 | 24.9 | 20.2 | 261.8 | 18.9 | 26.8 | 51.3 | 27.6 | 31.7 | 57.1 | 34.2 | 34.9 |
| LnGrp LOS | D | C | C | F | B | C | D | C | C | E | C | C |
| Approach Vol, veh/h | | 920 | | | 1627 | | | 776 | | | 235 | |
| Approach Delay, s/veh | | 25.6 | | | 113.7 | | | 40.2 | | | 50.8 | |
| Approach LOS | | C | | | F | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.6 | 31.5 | 22.6 | 13.6 | 10.1 | 36.0 | 14.0 | 22.1 |
| Change Period (Y+Rc), s | 4.6 | 5.1 | 4.6 | * 5.8 | 4.6 | 5.1 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | 50.0 | 20.0 | * 40 | 10.0 | 50.0 | 10.0 | 50.0 |
| Max Q Clear Time (g_c+I1), s | 12.0 | 17.4 | 17.7 | 3.3 | 5.0 | 25.4 | 9.6 | 11.9 |
| Green Ext Time (p_c), s | 0.0 | 6.2 | 0.3 | 0.3 | 0.0 | 5.5 | 0.0 | 1.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 70.8 |
| HCM 6th LOS | E |

Notes

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



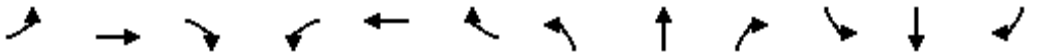
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 127 | 4 | 412 | 28 | 3 | 12 | 152 | 705 | 7 | 28 | 380 | 63 |
| Future Volume (veh/h) | 127 | 4 | 412 | 28 | 3 | 12 | 152 | 705 | 7 | 28 | 380 | 63 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 127 | 4 | 412 | 28 | 3 | 12 | 152 | 705 | 7 | 28 | 380 | 63 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 182 | 5 | 526 | 77 | 90 | 360 | 198 | 1309 | 13 | 77 | 812 | 131 |
| Arrive On Green | 0.10 | 0.33 | 0.33 | 0.04 | 0.28 | 0.28 | 0.11 | 0.25 | 0.25 | 0.04 | 0.18 | 0.18 |
| Sat Flow, veh/h | 1781 | 15 | 1572 | 1781 | 327 | 1308 | 1781 | 5213 | 52 | 1781 | 4430 | 716 |
| Grp Volume(v), veh/h | 127 | 0 | 416 | 28 | 0 | 15 | 152 | 460 | 252 | 28 | 290 | 153 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1587 | 1781 | 0 | 1635 | 1781 | 1702 | 1861 | 1781 | 1702 | 1742 |
| Q Serve(g_s), s | 4.1 | 0.0 | 14.2 | 0.9 | 0.0 | 0.4 | 5.0 | 7.0 | 7.1 | 0.9 | 4.6 | 4.7 |
| Cycle Q Clear(g_c), s | 4.1 | 0.0 | 14.2 | 0.9 | 0.0 | 0.4 | 5.0 | 7.0 | 7.1 | 0.9 | 4.6 | 4.7 |
| Prop In Lane | 1.00 | | 0.99 | 1.00 | | 0.80 | 1.00 | | 0.03 | 1.00 | | 0.41 |
| Lane Grp Cap(c), veh/h | 182 | 0 | 531 | 77 | 0 | 450 | 198 | 855 | 467 | 77 | 624 | 319 |
| V/C Ratio(X) | 0.70 | 0.00 | 0.78 | 0.36 | 0.00 | 0.03 | 0.77 | 0.54 | 0.54 | 0.36 | 0.46 | 0.48 |
| Avail Cap(c_a), veh/h | 296 | 0 | 924 | 296 | 0 | 951 | 592 | 1981 | 1083 | 296 | 1415 | 724 |
| 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 | 1.00 |
| Uniform Delay (d), s/veh | 26.1 | 0.0 | 18.1 | 28.0 | 0.0 | 15.9 | 26.0 | 19.5 | 19.5 | 28.0 | 21.9 | 22.0 |
| Incr Delay (d2), s/veh | 4.7 | 0.0 | 3.6 | 2.8 | 0.0 | 0.0 | 6.1 | 0.8 | 1.4 | 2.8 | 0.8 | 1.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.9 | 0.0 | 5.3 | 0.4 | 0.0 | 0.1 | 2.2 | 2.4 | 2.7 | 0.4 | 1.6 | 1.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 30.8 | 0.0 | 21.7 | 30.8 | 0.0 | 16.0 | 32.1 | 20.3 | 20.9 | 30.8 | 22.7 | 23.6 |
| LnGrp LOS | C | A | C | C | A | B | C | C | C | C | C | C |
| Approach Vol, veh/h | | 543 | | | 43 | | | 864 | | | 471 | |
| Approach Delay, s/veh | | 23.8 | | | 25.6 | | | 22.5 | | | 23.5 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.2 | 24.8 | 11.3 | 16.8 | 10.8 | 21.3 | 7.2 | 20.9 |
| Change Period (Y+Rc), s | 4.6 | * 4.7 | 4.6 | 5.8 | 4.6 | * 4.7 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | * 35 | 20.0 | 25.0 | 10.0 | * 35 | 10.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 2.9 | 16.2 | 7.0 | 6.7 | 6.1 | 2.4 | 2.9 | 9.1 |
| Green Ext Time (p_c), s | 0.0 | 3.9 | 0.3 | 3.2 | 0.1 | 0.1 | 0.0 | 6.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 23.2 |
| HCM 6th LOS | C |

Notes

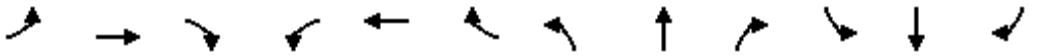
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 430 | 1465 | 98 | 653 | 749 | 212 | 111 | 263 | 632 | 701 | 190 | 238 |
| Future Volume (vph) | 430 | 1465 | 98 | 653 | 749 | 212 | 111 | 263 | 632 | 701 | 190 | 238 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.8 | 5.8 | 4.6 | 5.8 | 5.8 | 5.3 | 5.8 | 5.8 | 5.7 | 5.8 | 5.8 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.88 | 0.97 | 0.91 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 5085 | 2787 | 3433 | 5085 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 5085 | 2787 | 3433 | 5085 | 1583 |
| Peak-hour factor, PHF | 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. Flow (vph) | 430 | 1465 | 98 | 653 | 749 | 212 | 111 | 263 | 632 | 701 | 190 | 238 |
| RTOR Reduction (vph) | 0 | 0 | 60 | 0 | 0 | 129 | 0 | 0 | 277 | 0 | 0 | 164 |
| Lane Group Flow (vph) | 430 | 1465 | 38 | 653 | 749 | 83 | 111 | 263 | 355 | 701 | 190 | 74 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Actuated Green, G (s) | 14.7 | 60.2 | 60.2 | 15.4 | 60.2 | 60.2 | 8.7 | 25.6 | 25.6 | 30.9 | 48.2 | 48.2 |
| Effective Green, g (s) | 14.7 | 60.2 | 60.2 | 15.4 | 60.2 | 60.2 | 8.7 | 25.6 | 25.6 | 30.9 | 48.2 | 48.2 |
| Actuated g/C Ratio | 0.10 | 0.39 | 0.39 | 0.10 | 0.39 | 0.39 | 0.06 | 0.17 | 0.17 | 0.20 | 0.31 | 0.31 |
| Clearance Time (s) | 5.3 | 5.8 | 5.8 | 4.6 | 5.8 | 5.8 | 5.3 | 5.8 | 5.8 | 5.7 | 5.8 | 5.8 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 327 | 1987 | 618 | 343 | 1987 | 618 | 99 | 845 | 463 | 688 | 1591 | 495 |
| v/s Ratio Prot | 0.13 | c0.29 | | c0.19 | 0.15 | | c0.06 | 0.05 | | c0.20 | 0.04 | |
| v/s Ratio Perm | | | 0.02 | | | 0.05 | | | c0.13 | | | 0.05 |
| v/c Ratio | 1.31 | 0.74 | 0.06 | 1.90 | 0.38 | 0.13 | 1.12 | 0.31 | 0.77 | 1.02 | 0.12 | 0.15 |
| Uniform Delay, d1 | 69.7 | 40.1 | 29.3 | 69.3 | 33.5 | 30.1 | 72.7 | 56.4 | 61.4 | 61.5 | 37.8 | 38.1 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.02 | 0.81 | 0.75 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 161.9 | 2.5 | 0.2 | 407.7 | 0.0 | 0.0 | 126.9 | 0.2 | 7.5 | 39.1 | 0.0 | 0.1 |
| Delay (s) | 231.5 | 42.6 | 29.5 | 478.6 | 27.3 | 22.6 | 199.5 | 56.7 | 68.8 | 100.7 | 37.8 | 38.3 |
| Level of Service | F | D | C | F | C | C | F | E | E | F | D | D |
| Approach Delay (s) | | 82.7 | | | 209.3 | | | 80.1 | | | 77.0 | |
| Approach LOS | | F | | | F | | | F | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 116.7 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 0.98 | | |
| Actuated Cycle Length (s) | 154.0 | Sum of lost time (s) | 26.2 |
| Intersection Capacity Utilization | 93.5% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



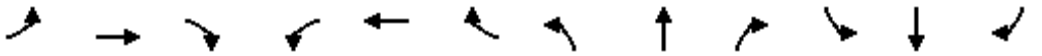
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 313 | 50 | 20 | 4 | 25 | 124 | 7 | 413 | 8 | 102 | 442 | 131 |
| Future Volume (veh/h) | 313 | 50 | 20 | 4 | 25 | 124 | 7 | 413 | 8 | 102 | 442 | 131 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 313 | 50 | 20 | 4 | 25 | 124 | 7 | 413 | 8 | 102 | 442 | 131 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 384 | 613 | 520 | 8 | 219 | 185 | 13 | 1106 | 21 | 135 | 1444 | 448 |
| Arrive On Green | 0.22 | 0.33 | 0.33 | 0.00 | 0.12 | 0.12 | 0.01 | 0.21 | 0.21 | 0.08 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 5157 | 100 | 1781 | 5106 | 1585 |
| Grp Volume(v), veh/h | 313 | 50 | 20 | 4 | 25 | 124 | 7 | 272 | 149 | 102 | 442 | 131 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1702 | 1852 | 1781 | 1702 | 1585 |
| Q Serve(g_s), s | 8.9 | 1.0 | 0.5 | 0.1 | 0.6 | 4.0 | 0.2 | 3.6 | 3.6 | 3.0 | 3.6 | 3.4 |
| Cycle Q Clear(g_c), s | 8.9 | 1.0 | 0.5 | 0.1 | 0.6 | 4.0 | 0.2 | 3.6 | 3.6 | 3.0 | 3.6 | 3.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.05 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 384 | 613 | 520 | 8 | 219 | 185 | 13 | 730 | 397 | 135 | 1444 | 448 |
| V/C Ratio(X) | 0.82 | 0.08 | 0.04 | 0.52 | 0.11 | 0.67 | 0.53 | 0.37 | 0.37 | 0.76 | 0.31 | 0.29 |
| Avail Cap(c_a), veh/h | 673 | 883 | 748 | 673 | 883 | 748 | 673 | 1928 | 1049 | 673 | 2892 | 898 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.8 | 12.3 | 12.1 | 26.3 | 20.9 | 22.4 | 26.2 | 17.8 | 17.8 | 24.0 | 14.9 | 14.9 |
| Incr Delay (d2), s/veh | 4.3 | 0.1 | 0.0 | 45.3 | 0.2 | 4.1 | 29.4 | 1.1 | 2.1 | 8.4 | 0.4 | 1.3 |
| 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 | 3.8 | 0.4 | 0.1 | 0.1 | 0.3 | 1.5 | 0.2 | 1.3 | 1.5 | 1.4 | 1.2 | 1.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 24.0 | 12.3 | 12.1 | 71.7 | 21.2 | 26.6 | 55.6 | 18.9 | 19.9 | 32.4 | 15.3 | 16.2 |
| LnGrp LOS | C | B | B | E | C | C | E | B | B | C | B | B |
| Approach Vol, veh/h | | 383 | | | 153 | | | 428 | | | 675 | |
| Approach Delay, s/veh | | 21.9 | | | 26.9 | | | 19.9 | | | 18.1 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 4.7 | 22.4 | 4.9 | 21.0 | 15.9 | 11.2 | 8.5 | 17.4 |
| Change Period (Y+Rc), s | 4.5 | 5.0 | 4.5 | 6.0 | 4.5 | 5.0 | 4.5 | 6.0 |
| Max Green Setting (Gmax), s | 20.0 | 25.0 | 20.0 | 30.0 | 20.0 | 25.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 3.0 | 2.2 | 5.6 | 10.9 | 6.0 | 5.0 | 5.6 |
| Green Ext Time (p_c), s | 0.0 | 0.3 | 0.0 | 7.7 | 0.7 | 0.5 | 0.2 | 5.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 20.2 |
| HCM 6th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 62 | 1397 | 63 | 172 | 802 | 121 | 58 | 186 | 315 | 261 | 181 | 88 |
| Future Volume (veh/h) | 62 | 1397 | 63 | 172 | 802 | 121 | 58 | 186 | 315 | 261 | 181 | 88 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 62 | 1397 | 63 | 172 | 802 | 121 | 58 | 186 | 315 | 261 | 181 | 88 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 80 | 1630 | 74 | 200 | 1395 | 622 | 75 | 405 | 343 | 284 | 624 | 529 |
| Arrive On Green | 0.05 | 0.33 | 0.33 | 0.11 | 0.39 | 0.39 | 0.04 | 0.22 | 0.22 | 0.16 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1781 | 5008 | 226 | 1781 | 3554 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 62 | 950 | 510 | 172 | 802 | 121 | 58 | 186 | 315 | 261 | 181 | 88 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1830 | 1781 | 1777 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 4.3 | 32.8 | 32.8 | 11.9 | 22.2 | 6.3 | 4.0 | 10.9 | 24.4 | 18.1 | 9.0 | 4.9 |
| Cycle Q Clear(g_c), s | 4.3 | 32.8 | 32.8 | 11.9 | 22.2 | 6.3 | 4.0 | 10.9 | 24.4 | 18.1 | 9.0 | 4.9 |
| Prop In Lane | 1.00 | | 0.12 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 80 | 1108 | 596 | 200 | 1395 | 622 | 75 | 405 | 343 | 284 | 624 | 529 |
| V/C Ratio(X) | 0.77 | 0.86 | 0.86 | 0.86 | 0.57 | 0.19 | 0.77 | 0.46 | 0.92 | 0.92 | 0.29 | 0.17 |
| Avail Cap(c_a), veh/h | 284 | 1356 | 729 | 284 | 1416 | 631 | 284 | 447 | 379 | 284 | 624 | 529 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 59.3 | 39.6 | 39.6 | 54.7 | 29.9 | 25.1 | 59.5 | 42.8 | 48.1 | 52.0 | 30.9 | 29.5 |
| Incr Delay (d2), s/veh | 14.2 | 4.1 | 7.3 | 16.8 | 0.7 | 0.2 | 15.0 | 0.8 | 25.5 | 33.1 | 0.3 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.3 | 14.1 | 15.7 | 6.1 | 9.3 | 2.4 | 2.1 | 5.1 | 11.9 | 10.6 | 4.1 | 1.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 73.5 | 43.7 | 46.9 | 71.5 | 30.6 | 25.3 | 74.5 | 43.6 | 73.6 | 85.1 | 31.1 | 29.7 |
| LnGrp LOS | E | D | D | E | C | C | E | D | E | F | C | C |
| Approach Vol, veh/h | | 1522 | | | 1095 | | | 559 | | | 530 | |
| Approach Delay, s/veh | | 46.0 | | | 36.4 | | | 63.7 | | | 57.4 | |
| Approach LOS | | D | | | D | | | E | | | E | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 19.4 | 46.9 | 10.9 | 48.4 | 11.0 | 55.3 | 25.6 | 33.7 |
| Change Period (Y+Rc), s | 5.3 | 6.0 | 5.6 | 6.5 | 5.3 | 6.0 | 5.6 | 6.5 |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | 20.0 | 30.0 | 20.0 | 50.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 13.9 | 34.8 | 6.0 | 11.0 | 6.3 | 24.2 | 20.1 | 26.4 |
| Green Ext Time (p_c), s | 0.2 | 6.1 | 0.1 | 1.1 | 0.1 | 8.4 | 0.0 | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 47.5 |
| HCM 6th LOS | D |

**Notes**

User approved pedestrian interval to be less than phase max green.

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 10.8 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 1 | 71 | 173 | 1 | 28 | 50 | 115 | 166 | 49 | 161 | 0 |
| Future Vol, veh/h | 0 | 1 | 71 | 173 | 1 | 28 | 50 | 115 | 166 | 49 | 161 | 0 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 1 | 71 | 173 | 1 | 28 | 50 | 115 | 166 | 49 | 161 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 8.7 | 10.9 | 11.4 | 10.5 |
| HCM LOS | A | B | B | B |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 15% | 0% | 86% | 23% |
| Vol Thru, % | 35% | 1% | 0% | 77% |
| Vol Right, % | 50% | 99% | 14% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 331 | 72 | 202 | 210 |
| LT Vol | 50 | 0 | 173 | 49 |
| Through Vol | 115 | 1 | 1 | 161 |
| RT Vol | 166 | 71 | 28 | 0 |
| Lane Flow Rate | 331 | 72 | 202 | 210 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.437 | 0.101 | 0.307 | 0.304 |
| Departure Headway (Hd) | 4.748 | 5.048 | 5.48 | 5.204 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 761 | 708 | 656 | 693 |
| Service Time | 2.755 | 3.088 | 3.514 | 3.215 |
| HCM Lane V/C Ratio | 0.435 | 0.102 | 0.308 | 0.303 |
| HCM Control Delay | 11.4 | 8.7 | 10.9 | 10.5 |
| HCM Lane LOS | B | A | B | B |
| HCM 95th-tile Q | 2.2 | 0.3 | 1.3 | 1.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 32 | 16 | 36 | 41 | 1 |
| Future Vol, veh/h | 0 | 32 | 16 | 36 | 41 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 32 | 16 | 36 | 41 | 1 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 52 | 0 | - | 0 | 66 | 34 |
| Stage 1 | - | - | - | - | 34 | - |
| Stage 2 | - | - | - | - | 32 | - |
| 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 | 1554 | - | - | - | 939 | 1039 |
| Stage 1 | - | - | - | - | 988 | - |
| Stage 2 | - | - | - | - | 991 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1554 | - | - | - | 939 | 1039 |
| Mov Cap-2 Maneuver | - | - | - | - | 939 | - |
| Stage 1 | - | - | - | - | 988 | - |
| Stage 2 | - | - | - | - | 991 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 9 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1554 | - | - | - | 941 |
| HCM Lane V/C Ratio | - | - | - | - | 0.045 |
| HCM Control Delay (s) | 0 | - | - | - | 9 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.1 |

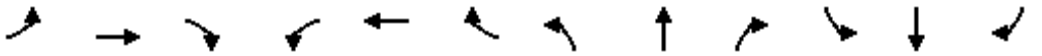
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 8 | 5 | 17 | 243 | 220 | 5 |
| Future Vol, veh/h | 8 | 5 | 17 | 243 | 220 | 5 |
| 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 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 8 | 5 | 17 | 243 | 220 | 5 |

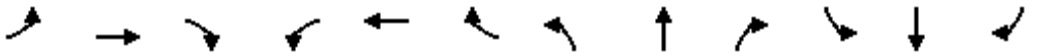
| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 500 | 223 | 225 | 0 | - | 0 |
| Stage 1 | 223 | - | - | - | - | - |
| Stage 2 | 277 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 530 | 817 | 1344 | - | - | - |
| Stage 1 | 814 | - | - | - | - | - |
| Stage 2 | 770 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 522 | 817 | 1344 | - | - | - |
| Mov Cap-2 Maneuver | 522 | - | - | - | - | - |
| Stage 1 | 802 | - | - | - | - | - |
| Stage 2 | 770 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.1 | 0.5 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1344 | - | 606 | - | - |
| HCM Lane V/C Ratio | 0.013 | - | 0.021 | - | - |
| HCM Control Delay (s) | 7.7 | 0 | 11.1 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 306 | 1135 | 0 | 0 | 1313 | 391 | 488 | 0 | 406 | 0 | 0 | 0 |
| Future Volume (veh/h) | 306 | 1135 | 0 | 0 | 1313 | 391 | 488 | 0 | 406 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 306 | 1135 | 0 | 0 | 1313 | 391 | 488 | 0 | 406 | | | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 178 | 2184 | 0 | 0 | 1315 | 381 | 278 | 0 | 231 | | | |
| Arrive On Green | 0.20 | 1.00 | 0.00 | 0.00 | 0.48 | 0.48 | 0.30 | 0.00 | 0.30 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 2812 | 787 | 921 | 0 | 766 | | | |
| Grp Volume(v), veh/h | 306 | 1135 | 0 | 0 | 845 | 859 | 894 | 0 | 0 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1729 | 1686 | 0 | 0 | | | |
| Q Serve(g_s), s | 13.0 | 0.0 | 0.0 | 0.0 | 60.9 | 62.9 | 39.2 | 0.0 | 0.0 | | | |
| Cycle Q Clear(g_c), s | 13.0 | 0.0 | 0.0 | 0.0 | 60.9 | 62.9 | 39.2 | 0.0 | 0.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.46 | 0.55 | | 0.45 | | | |
| Lane Grp Cap(c), veh/h | 178 | 2184 | 0 | 0 | 860 | 836 | 509 | 0 | 0 | | | |
| V/C Ratio(X) | 1.72 | 0.52 | 0.00 | 0.00 | 0.98 | 1.03 | 1.76 | 0.00 | 0.00 | | | |
| Avail Cap(c_a), veh/h | 178 | 2184 | 0 | 0 | 860 | 836 | 509 | 0 | 0 | | | |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.09 | 0.09 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | | | |
| Uniform Delay (d), s/veh | 52.0 | 0.0 | 0.0 | 0.0 | 33.0 | 33.6 | 45.4 | 0.0 | 0.0 | | | |
| Incr Delay (d2), s/veh | 325.2 | 0.1 | 0.0 | 0.0 | 26.8 | 38.2 | 349.1 | 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 | | | |
| %ile BackOfQ(50%),veh/ln | 21.2 | 0.0 | 0.0 | 0.0 | 31.4 | 34.0 | 65.1 | 0.0 | 0.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 377.2 | 0.1 | 0.0 | 0.0 | 59.9 | 71.7 | 394.5 | 0.0 | 0.0 | | | |
| LnGrp LOS | F | A | A | A | E | F | F | A | A | | | |
| Approach Vol, veh/h | | 1441 | | | 1704 | | | 894 | | | | |
| Approach Delay, s/veh | | 80.2 | | | 65.8 | | | 394.5 | | | | |
| Approach LOS | | F | | | E | | | F | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 85.0 | | | 17.0 | 68.0 | | 45.0 | | | | |
| Change Period (Y+Rc), s | | 5.1 | | | 4.0 | 5.1 | | 5.8 | | | | |
| Max Green Setting (Gmax), s | | 79.9 | | | 13.0 | 62.9 | | 39.2 | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.0 | | | 15.0 | 64.9 | | 41.2 | | | | |
| Green Ext Time (p_c), s | | 10.1 | | | 0.0 | 0.0 | | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 143.7 | | | | | | | | | |
| HCM 6th LOS | | | F | | | | | | | | | |



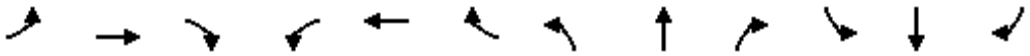
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 1071 | 447 | 412 | 1389 | 0 | 0 | 0 | 0 | 369 | 5 | 261 |
| Future Volume (veh/h) | 0 | 1071 | 447 | 412 | 1389 | 0 | 0 | 0 | 0 | 369 | 5 | 261 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 1071 | 447 | 412 | 1389 | 0 | | | | 369 | 5 | 261 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 894 | 373 | 519 | 1092 | 0 | | | | 333 | 5 | 235 |
| Arrive On Green | 0.00 | 0.25 | 0.25 | 0.39 | 0.78 | 0.00 | | | | 0.34 | 0.34 | 0.34 |
| Sat Flow, veh/h | 0 | 3703 | 1475 | 1781 | 1870 | 0 | | | | 985 | 13 | 697 |
| Grp Volume(v), veh/h | 0 | 1032 | 486 | 412 | 1389 | 0 | | | | 635 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1605 | 1781 | 1870 | 0 | | | | 1696 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 32.9 | 32.9 | 26.6 | 75.9 | 0.0 | | | | 43.9 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 32.9 | 32.9 | 26.6 | 75.9 | 0.0 | | | | 43.9 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 0.92 | 1.00 | | 0.00 | | | | 0.58 | | 0.41 |
| Lane Grp Cap(c), veh/h | 0 | 861 | 406 | 519 | 1092 | 0 | | | | 573 | 0 | 0 |
| V/C Ratio(X) | 0.00 | 1.20 | 1.20 | 0.79 | 1.27 | 0.00 | | | | 1.11 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 861 | 406 | 534 | 1092 | 0 | | | | 573 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.33 | 1.33 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 0.09 | 0.09 | 0.00 | | | | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 48.5 | 48.6 | 36.3 | 14.5 | 0.0 | | | | 43.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 100.1 | 110.6 | 0.7 | 123.1 | 0.0 | | | | 71.1 | 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 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 25.7 | 25.4 | 10.8 | 56.5 | 0.0 | | | | 28.9 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 148.6 | 159.1 | 37.0 | 137.6 | 0.0 | | | | 114.1 | 0.0 | 0.0 |
| LnGrp LOS | A | F | F | D | F | A | | | | F | A | A |
| Approach Vol, veh/h | | 1518 | | | 1801 | | | | | | 635 | |
| Approach Delay, s/veh | | 152.0 | | | 114.6 | | | | | | 114.1 | |
| Approach LOS | | F | | | F | | | | | | F | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 43.0 | 38.0 | | 49.0 | | 81.0 |
| Change Period (Y+Rc), s | 5.1 | * 5.1 | | 5.1 | | 5.1 |
| Max Green Setting (Gmax), s | 39.0 | * 33 | | 43.9 | | 75.9 |
| Max Q Clear Time (g_c+I1), s | 28.6 | 34.9 | | 45.9 | | 77.9 |
| Green Ext Time (p_c), s | 0.1 | 0.0 | | 0.0 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 128.9 |
| HCM 6th LOS | | F |

Notes

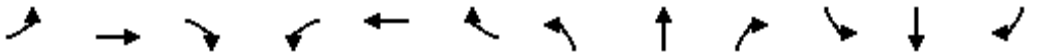
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 718 | 1312 | 0 | 0 | 1040 | 426 | 837 | 5 | 538 | 0 | 0 | 0 |
| Future Volume (vph) | 718 | 1312 | 0 | 0 | 1040 | 426 | 837 | 5 | 538 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.2 | 5.8 | | | 5.8 | 4.0 | | 6.8 | 6.8 | | | |
| Lane Util. Factor | 1.00 | 0.95 | | | 0.95 | 1.00 | | 1.00 | 1.00 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 0.85 | | 1.00 | 0.85 | | | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (prot) | 1770 | 3539 | | | 3539 | 1583 | | 1775 | 1583 | | | |
| Flt Permitted | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (perm) | 1770 | 3539 | | | 3539 | 1583 | | 1775 | 1583 | | | |
| Peak-hour factor, PHF | 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. Flow (vph) | 718 | 1312 | 0 | 0 | 1040 | 426 | 837 | 5 | 538 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 78 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 718 | 1312 | 0 | 0 | 1040 | 426 | 0 | 842 | 460 | 0 | 0 | 0 |
| Turn Type | Prot | NA | | | NA | Free | Split | NA | Prot | | | |
| Protected Phases | 5 | 2 | | | 6 | | 8 | 8 | 8 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | 27.8 | 90.2 | | | 58.2 | 154.0 | | 51.2 | 51.2 | | | |
| Effective Green, g (s) | 27.8 | 90.2 | | | 58.2 | 154.0 | | 51.2 | 51.2 | | | |
| Actuated g/C Ratio | 0.18 | 0.59 | | | 0.38 | 1.00 | | 0.33 | 0.33 | | | |
| Clearance Time (s) | 4.2 | 5.8 | | | 5.8 | | | 6.8 | 6.8 | | | |
| Vehicle Extension (s) | 1.5 | 4.0 | | | 4.0 | | | 1.0 | 1.0 | | | |
| Lane Grp Cap (vph) | 319 | 2072 | | | 1337 | 1583 | | 590 | 526 | | | |
| v/s Ratio Prot | c0.41 | 0.37 | | | c0.29 | | | c0.47 | 0.29 | | | |
| v/s Ratio Perm | | | | | | 0.27 | | | | | | |
| v/c Ratio | 2.25 | 0.63 | | | 0.78 | 0.27 | | 1.43 | 0.87 | | | |
| Uniform Delay, d1 | 63.1 | 21.0 | | | 42.2 | 0.0 | | 51.4 | 48.4 | | | |
| Progression Factor | 1.52 | 0.82 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 563.8 | 0.1 | | | 4.5 | 0.4 | | 201.9 | 14.5 | | | |
| Delay (s) | 659.4 | 17.3 | | | 46.7 | 0.4 | | 253.3 | 62.9 | | | |
| Level of Service | F | B | | | D | A | | F | E | | | |
| Approach Delay (s) | | 244.4 | | | 33.3 | | | 179.1 | | | 0.0 | |
| Approach LOS | | F | | | C | | | F | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 162.4 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.34 | | |
| Actuated Cycle Length (s) | 154.0 | Sum of lost time (s) | 18.8 |
| Intersection Capacity Utilization | 195.6% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

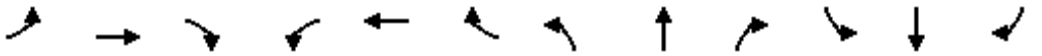
c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1512 | 1312 | 368 | 1508 | 0 | 0 | 0 | 0 | 517 | 0 | 544 |
| Future Volume (vph) | 0 | 1512 | 1312 | 368 | 1508 | 0 | 0 | 0 | 0 | 517 | 0 | 544 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | |
| Lane Util. Factor | | 0.91 | 1.00 | 1.00 | 1.00 | | | | | 0.95 | 0.95 | |
| Frt | | 1.00 | 0.85 | 1.00 | 1.00 | | | | | 1.00 | 0.86 | |
| Flt Protected | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1521 | |
| Flt Permitted | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1521 | |
| Peak-hour factor, PHF | 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. Flow (vph) | 0 | 1512 | 1312 | 368 | 1508 | 0 | 0 | 0 | 0 | 517 | 0 | 544 |
| RTOR Reduction (vph) | 0 | 0 | 556 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 |
| Lane Group Flow (vph) | 0 | 1512 | 756 | 368 | 1508 | 0 | 0 | 0 | 0 | 465 | 546 | 0 |
| Turn Type | | NA | Perm | Prot | NA | | | | | Split | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | | | 4 | 4 | |
| Permitted Phases | | | 2 | | | | | | | | | |
| Actuated Green, G (s) | | 32.2 | 32.2 | 37.5 | 88.2 | | | | | 54.2 | 54.2 | |
| Effective Green, g (s) | | 32.2 | 32.2 | 37.5 | 88.2 | | | | | 54.2 | 54.2 | |
| Actuated g/C Ratio | | 0.21 | 0.21 | 0.24 | 0.57 | | | | | 0.35 | 0.35 | |
| Clearance Time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | |
| Vehicle Extension (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | 2.5 | 2.5 | |
| Lane Grp Cap (vph) | | 1063 | 330 | 431 | 1066 | | | | | 591 | 535 | |
| v/s Ratio Prot | | 0.30 | | 0.21 | c0.81 | | | | | 0.28 | c0.36 | |
| v/s Ratio Perm | | | c0.48 | | | | | | | | | |
| v/c Ratio | | 1.42 | 2.29 | 0.85 | 1.41 | | | | | 0.79 | 1.02 | |
| Uniform Delay, d1 | | 60.9 | 60.9 | 55.6 | 32.9 | | | | | 44.7 | 49.9 | |
| Progression Factor | | 1.16 | 1.93 | 1.08 | 1.07 | | | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 193.4 | 586.6 | 1.7 | 187.1 | | | | | 6.6 | 44.3 | |
| Delay (s) | | 264.0 | 704.1 | 62.0 | 222.3 | | | | | 51.3 | 94.2 | |
| Level of Service | | F | F | E | F | | | | | D | F | |
| Approach Delay (s) | | 468.5 | | | 190.9 | | | 0.0 | | | 75.4 | |
| Approach LOS | | F | | | F | | | A | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 305.7 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.51 | | |
| Actuated Cycle Length (s) | 154.0 | Sum of lost time (s) | 19.6 |
| Intersection Capacity Utilization | 195.6% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



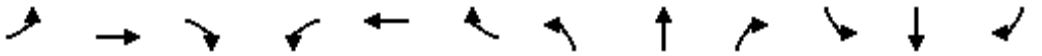
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 110 | 541 | 94 | 838 | 537 | 450 | 348 | 193 | 414 | 429 | 65 | 54 |
| Future Volume (veh/h) | 110 | 541 | 94 | 838 | 537 | 450 | 348 | 193 | 414 | 429 | 65 | 54 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 110 | 541 | 94 | 838 | 537 | 450 | 348 | 193 | 414 | 429 | 65 | 54 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 140 | 1093 | 488 | 416 | 1241 | 554 | 387 | 392 | 584 | 215 | 401 | 179 |
| Arrive On Green | 0.08 | 0.31 | 0.31 | 0.12 | 0.35 | 0.35 | 0.22 | 0.21 | 0.21 | 0.12 | 0.11 | 0.11 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 3456 | 3554 | 1585 | 1781 | 1870 | 2790 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 110 | 541 | 94 | 838 | 537 | 450 | 348 | 193 | 414 | 429 | 65 | 54 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1728 | 1777 | 1585 | 1781 | 1870 | 1395 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 5.0 | 10.3 | 3.6 | 10.0 | 9.6 | 21.4 | 15.8 | 7.6 | 11.4 | 10.0 | 1.4 | 2.6 |
| Cycle Q Clear(g_c), s | 5.0 | 10.3 | 3.6 | 10.0 | 9.6 | 21.4 | 15.8 | 7.6 | 11.4 | 10.0 | 1.4 | 2.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 140 | 1093 | 488 | 416 | 1241 | 554 | 387 | 392 | 584 | 215 | 401 | 179 |
| V/C Ratio(X) | 0.78 | 0.49 | 0.19 | 2.01 | 0.43 | 0.81 | 0.90 | 0.49 | 0.71 | 2.00 | 0.16 | 0.30 |
| Avail Cap(c_a), veh/h | 215 | 2140 | 955 | 416 | 2140 | 955 | 429 | 1126 | 1680 | 215 | 1712 | 764 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.6 | 23.5 | 21.2 | 36.5 | 20.7 | 24.5 | 31.6 | 28.9 | 30.5 | 36.5 | 33.3 | 33.8 |
| Incr Delay (d2), s/veh | 10.0 | 0.3 | 0.2 | 464.4 | 0.2 | 2.9 | 20.3 | 1.0 | 1.6 | 465.9 | 0.2 | 0.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.5 | 4.2 | 1.2 | 30.9 | 3.8 | 7.5 | 8.3 | 3.2 | 3.6 | 31.8 | 0.6 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 47.6 | 23.8 | 21.3 | 500.9 | 20.9 | 27.5 | 51.9 | 29.9 | 32.1 | 502.4 | 33.5 | 34.8 |
| LnGrp LOS | D | C | C | F | C | C | D | C | C | F | C | C |
| Approach Vol, veh/h | | 745 | | | 1825 | | | 955 | | | 548 | |
| Approach Delay, s/veh | | 27.0 | | | 242.9 | | | 38.9 | | | 400.7 | |
| Approach LOS | | C | | | F | | | D | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.6 | 30.6 | 22.6 | 15.2 | 11.1 | 34.1 | 14.6 | 23.2 |
| Change Period (Y+Rc), s | 4.6 | 5.1 | 4.6 | * 5.8 | 4.6 | 5.1 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | 50.0 | 20.0 | * 40 | 10.0 | 50.0 | 10.0 | 50.0 |
| Max Q Clear Time (g_c+I1), s | 12.0 | 12.3 | 17.8 | 4.6 | 7.0 | 23.4 | 12.0 | 13.4 |
| Green Ext Time (p_c), s | 0.0 | 4.2 | 0.2 | 0.5 | 0.1 | 5.6 | 0.0 | 2.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 176.8 |
| HCM 6th LOS | F |

Notes

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



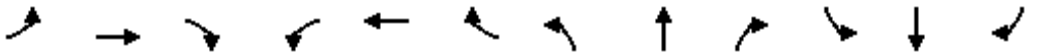
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 99 | 17 | 348 | 84 | 29 | 28 | 326 | 830 | 40 | 53 | 581 | 70 |
| Future Volume (veh/h) | 99 | 17 | 348 | 84 | 29 | 28 | 326 | 830 | 40 | 53 | 581 | 70 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 99 | 17 | 348 | 84 | 29 | 28 | 326 | 830 | 40 | 53 | 581 | 70 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 139 | 21 | 422 | 132 | 239 | 231 | 369 | 1703 | 82 | 108 | 901 | 107 |
| Arrive On Green | 0.08 | 0.28 | 0.28 | 0.07 | 0.27 | 0.27 | 0.21 | 0.34 | 0.34 | 0.06 | 0.19 | 0.19 |
| Sat Flow, veh/h | 1781 | 74 | 1522 | 1781 | 874 | 844 | 1781 | 4991 | 240 | 1781 | 4625 | 551 |
| Grp Volume(v), veh/h | 99 | 0 | 365 | 84 | 0 | 57 | 326 | 565 | 305 | 53 | 426 | 225 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1596 | 1781 | 0 | 1718 | 1781 | 1702 | 1827 | 1781 | 1702 | 1771 |
| Q Serve(g_s), s | 4.3 | 0.0 | 17.1 | 3.7 | 0.0 | 2.0 | 14.2 | 10.5 | 10.5 | 2.3 | 9.2 | 9.4 |
| Cycle Q Clear(g_c), s | 4.3 | 0.0 | 17.1 | 3.7 | 0.0 | 2.0 | 14.2 | 10.5 | 10.5 | 2.3 | 9.2 | 9.4 |
| Prop In Lane | 1.00 | | 0.95 | 1.00 | | 0.49 | 1.00 | | 0.13 | 1.00 | | 0.31 |
| Lane Grp Cap(c), veh/h | 139 | 0 | 443 | 132 | 0 | 470 | 369 | 1162 | 624 | 108 | 663 | 345 |
| V/C Ratio(X) | 0.71 | 0.00 | 0.82 | 0.64 | 0.00 | 0.12 | 0.88 | 0.49 | 0.49 | 0.49 | 0.64 | 0.65 |
| Avail Cap(c_a), veh/h | 223 | 0 | 699 | 223 | 0 | 753 | 446 | 1491 | 800 | 223 | 1065 | 554 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.0 | 0.0 | 27.0 | 35.9 | 0.0 | 21.8 | 30.8 | 20.8 | 20.8 | 36.3 | 29.6 | 29.7 |
| Incr Delay (d2), s/veh | 6.6 | 0.0 | 6.0 | 5.0 | 0.0 | 0.2 | 16.4 | 0.5 | 0.8 | 3.4 | 1.5 | 3.0 |
| 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 | 2.1 | 0.0 | 7.1 | 1.8 | 0.0 | 0.8 | 7.2 | 3.7 | 4.1 | 1.0 | 3.6 | 3.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 42.6 | 0.0 | 33.0 | 41.0 | 0.0 | 22.0 | 47.2 | 21.2 | 21.6 | 39.8 | 31.1 | 32.6 |
| LnGrp LOS | D | A | C | D | A | C | D | C | C | D | C | C |
| Approach Vol, veh/h | | 464 | | | 141 | | | 1196 | | | 704 | |
| Approach Delay, s/veh | | 35.1 | | | 33.3 | | | 28.4 | | | 32.2 | |
| Approach LOS | | D | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.5 | 26.9 | 21.1 | 21.4 | 10.8 | 26.6 | 9.4 | 33.1 |
| Change Period (Y+Rc), s | 4.6 | * 4.7 | 4.6 | 5.8 | 4.6 | * 4.7 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | * 35 | 20.0 | 25.0 | 10.0 | * 35 | 10.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 5.7 | 19.1 | 16.2 | 11.4 | 6.3 | 4.0 | 4.3 | 12.5 |
| Green Ext Time (p_c), s | 0.1 | 3.1 | 0.4 | 4.2 | 0.1 | 0.4 | 0.0 | 7.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 31.0 |
| HCM 6th LOS | C |

Notes

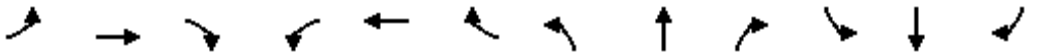
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 653 | 1330 | 157 | 982 | 1508 | 464 | 224 | 309 | 618 | 739 | 256 | 445 |
| Future Volume (vph) | 653 | 1330 | 157 | 982 | 1508 | 464 | 224 | 309 | 618 | 739 | 256 | 445 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.8 | 5.8 | 4.6 | 5.8 | 5.8 | 5.3 | 5.8 | 5.8 | 5.7 | 5.8 | 5.8 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.88 | 0.97 | 0.91 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 5085 | 2787 | 3433 | 5085 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 5085 | 2787 | 3433 | 5085 | 1583 |
| Peak-hour factor, PHF | 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. Flow (vph) | 653 | 1330 | 157 | 982 | 1508 | 464 | 224 | 309 | 618 | 739 | 256 | 445 |
| RTOR Reduction (vph) | 0 | 0 | 96 | 0 | 0 | 226 | 0 | 0 | 394 | 0 | 0 | 190 |
| Lane Group Flow (vph) | 653 | 1330 | 61 | 982 | 1508 | 238 | 224 | 309 | 224 | 739 | 256 | 255 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Actuated Green, G (s) | 20.7 | 61.2 | 61.2 | 21.4 | 61.2 | 61.2 | 14.7 | 20.5 | 20.5 | 41.0 | 47.2 | 47.2 |
| Effective Green, g (s) | 20.7 | 61.2 | 61.2 | 21.4 | 61.2 | 61.2 | 14.7 | 20.5 | 20.5 | 41.0 | 47.2 | 47.2 |
| Actuated g/C Ratio | 0.12 | 0.37 | 0.37 | 0.13 | 0.37 | 0.37 | 0.09 | 0.12 | 0.12 | 0.25 | 0.28 | 0.28 |
| Clearance Time (s) | 5.3 | 5.8 | 5.8 | 4.6 | 5.8 | 5.8 | 5.3 | 5.8 | 5.8 | 5.7 | 5.8 | 5.8 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 428 | 1874 | 583 | 442 | 1874 | 583 | 156 | 627 | 344 | 847 | 1445 | 450 |
| v/s Ratio Prot | 0.19 | 0.26 | | c0.29 | c0.30 | | c0.13 | 0.06 | | c0.22 | 0.05 | |
| v/s Ratio Perm | | | 0.04 | | | 0.15 | | | 0.08 | | | c0.16 |
| v/c Ratio | 1.53 | 0.71 | 0.10 | 2.22 | 0.80 | 0.41 | 1.44 | 0.49 | 0.65 | 0.87 | 0.18 | 0.57 |
| Uniform Delay, d1 | 72.7 | 44.8 | 34.4 | 72.3 | 47.0 | 38.9 | 75.7 | 67.9 | 69.4 | 60.0 | 44.8 | 50.7 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.05 | 0.75 | 0.55 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 248.2 | 2.3 | 0.4 | 550.4 | 0.4 | 0.2 | 228.7 | 0.6 | 4.4 | 9.8 | 0.1 | 1.6 |
| Delay (s) | 320.8 | 47.1 | 34.8 | 626.3 | 35.6 | 21.6 | 304.4 | 68.5 | 73.7 | 69.8 | 44.8 | 52.3 |
| Level of Service | F | D | C | F | D | C | F | E | E | E | D | D |
| Approach Delay (s) | | 129.7 | | | 229.8 | | | 117.2 | | | 60.0 | |
| Approach LOS | | F | | | F | | | F | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 153.2 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.11 | | |
| Actuated Cycle Length (s) | 166.0 | Sum of lost time (s) | 26.2 |
| Intersection Capacity Utilization | 101.4% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



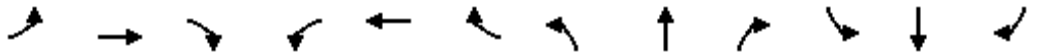
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 170 | 20 | 13 | 4 | 48 | 111 | 1 | 460 | 1 | 160 | 471 | 185 |
| Future Volume (veh/h) | 170 | 20 | 13 | 4 | 48 | 111 | 1 | 460 | 1 | 160 | 471 | 185 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 170 | 20 | 13 | 4 | 48 | 111 | 1 | 460 | 1 | 160 | 471 | 185 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 225 | 435 | 369 | 8 | 206 | 175 | 4 | 1266 | 3 | 212 | 1830 | 568 |
| Arrive On Green | 0.13 | 0.23 | 0.23 | 0.00 | 0.11 | 0.11 | 0.00 | 0.24 | 0.24 | 0.12 | 0.36 | 0.36 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 5261 | 11 | 1781 | 5106 | 1585 |
| Grp Volume(v), veh/h | 170 | 20 | 13 | 4 | 48 | 111 | 1 | 298 | 163 | 160 | 471 | 185 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1702 | 1868 | 1781 | 1702 | 1585 |
| Q Serve(g_s), s | 4.6 | 0.4 | 0.3 | 0.1 | 1.2 | 3.3 | 0.0 | 3.6 | 3.6 | 4.3 | 3.2 | 4.2 |
| Cycle Q Clear(g_c), s | 4.6 | 0.4 | 0.3 | 0.1 | 1.2 | 3.3 | 0.0 | 3.6 | 3.6 | 4.3 | 3.2 | 4.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.01 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 225 | 435 | 369 | 8 | 206 | 175 | 4 | 819 | 450 | 212 | 1830 | 568 |
| V/C Ratio(X) | 0.75 | 0.05 | 0.04 | 0.52 | 0.23 | 0.63 | 0.28 | 0.36 | 0.36 | 0.76 | 0.26 | 0.33 |
| Avail Cap(c_a), veh/h | 719 | 944 | 800 | 719 | 944 | 800 | 719 | 2061 | 1131 | 719 | 3091 | 960 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 20.9 | 14.8 | 14.7 | 24.6 | 20.1 | 21.1 | 24.7 | 15.7 | 15.7 | 21.1 | 11.2 | 11.5 |
| Incr Delay (d2), s/veh | 5.1 | 0.0 | 0.0 | 45.1 | 0.6 | 3.8 | 37.4 | 1.0 | 1.8 | 5.4 | 0.3 | 1.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 0.2 | 0.1 | 0.1 | 0.5 | 1.2 | 0.0 | 1.2 | 1.5 | 1.8 | 1.0 | 1.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 26.0 | 14.8 | 14.8 | 69.7 | 20.7 | 24.9 | 62.1 | 16.6 | 17.4 | 26.5 | 11.5 | 12.7 |
| LnGrp LOS | C | B | B | E | C | C | E | B | B | C | B | B |
| Approach Vol, veh/h | | 203 | | | 163 | | | 462 | | | 816 | |
| Approach Delay, s/veh | | 24.2 | | | 24.7 | | | 17.0 | | | 14.7 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 4.7 | 16.5 | 4.6 | 23.8 | 10.8 | 10.5 | 10.4 | 17.9 |
| Change Period (Y+Rc), s | 4.5 | 5.0 | 4.5 | 6.0 | 4.5 | 5.0 | 4.5 | 6.0 |
| Max Green Setting (Gmax), s | 20.0 | 25.0 | 20.0 | 30.0 | 20.0 | 25.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 2.4 | 2.0 | 6.2 | 6.6 | 5.3 | 6.3 | 5.6 |
| Green Ext Time (p_c), s | 0.0 | 0.1 | 0.0 | 8.7 | 0.4 | 0.5 | 0.3 | 6.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 17.5 |
| HCM 6th LOS | B |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 83 | 1631 | 87 | 298 | 1599 | 280 | 30 | 46 | 285 | 218 | 48 | 36 |
| Future Volume (veh/h) | 83 | 1631 | 87 | 298 | 1599 | 280 | 30 | 46 | 285 | 218 | 48 | 36 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 83 | 1631 | 87 | 298 | 1599 | 280 | 30 | 46 | 285 | 218 | 48 | 36 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 105 | 1755 | 94 | 260 | 1566 | 698 | 44 | 364 | 308 | 242 | 571 | 484 |
| Arrive On Green | 0.06 | 0.35 | 0.35 | 0.15 | 0.44 | 0.44 | 0.02 | 0.19 | 0.19 | 0.14 | 0.31 | 0.31 |
| Sat Flow, veh/h | 1781 | 4962 | 265 | 1781 | 3554 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 83 | 1119 | 599 | 298 | 1599 | 280 | 30 | 46 | 285 | 218 | 48 | 36 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1823 | 1781 | 1777 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 6.3 | 43.4 | 43.5 | 20.0 | 60.5 | 16.5 | 2.3 | 2.8 | 24.2 | 16.5 | 2.5 | 2.2 |
| Cycle Q Clear(g_c), s | 6.3 | 43.4 | 43.5 | 20.0 | 60.5 | 16.5 | 2.3 | 2.8 | 24.2 | 16.5 | 2.5 | 2.2 |
| Prop In Lane | 1.00 | | 0.15 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 105 | 1204 | 645 | 260 | 1566 | 698 | 44 | 364 | 308 | 242 | 571 | 484 |
| V/C Ratio(X) | 0.79 | 0.93 | 0.93 | 1.15 | 1.02 | 0.40 | 0.68 | 0.13 | 0.92 | 0.90 | 0.08 | 0.07 |
| Avail Cap(c_a), veh/h | 260 | 1240 | 664 | 260 | 1566 | 698 | 260 | 409 | 346 | 260 | 571 | 484 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 63.8 | 42.7 | 42.7 | 58.6 | 38.4 | 26.1 | 66.4 | 45.7 | 54.3 | 58.4 | 34.0 | 33.9 |
| Incr Delay (d2), s/veh | 12.5 | 11.7 | 19.0 | 101.9 | 28.3 | 0.5 | 16.6 | 0.2 | 28.3 | 30.3 | 0.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.2 | 19.9 | 22.6 | 16.2 | 31.0 | 6.3 | 1.2 | 1.3 | 12.0 | 9.4 | 1.2 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 76.2 | 54.4 | 61.7 | 160.5 | 66.7 | 26.6 | 83.0 | 45.8 | 82.6 | 88.8 | 34.1 | 34.0 |
| LnGrp LOS | E | D | E | F | F | C | F | D | F | F | C | C |
| Approach Vol, veh/h | | 1801 | | | 2177 | | | 361 | | | 302 | |
| Approach Delay, s/veh | | 57.9 | | | 74.4 | | | 77.9 | | | 73.5 | |
| Approach LOS | | E | | | E | | | E | | | E | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 25.3 | 54.6 | 9.0 | 48.4 | 13.4 | 66.5 | 24.2 | 33.2 |
| Change Period (Y+Rc), s | 5.3 | 6.0 | 5.6 | 6.5 | 5.3 | 6.0 | 5.6 | 6.5 |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | 20.0 | 30.0 | 20.0 | 50.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 22.0 | 45.5 | 4.3 | 4.5 | 8.3 | 62.5 | 18.5 | 26.2 |
| Green Ext Time (p_c), s | 0.0 | 3.1 | 0.0 | 0.3 | 0.1 | 0.0 | 0.1 | 0.4 |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 6th Ctrl Delay | | 68.2 | |
| HCM 6th LOS | | E | |

**Notes**

User approved pedestrian interval to be less than phase max green.

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9.2 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 5 | 59 | 152 | 11 | 37 | 49 | 84 | 117 | 33 | 53 | 0 |
| Future Vol, veh/h | 0 | 5 | 59 | 152 | 11 | 37 | 49 | 84 | 117 | 33 | 53 | 0 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 5 | 59 | 152 | 11 | 37 | 49 | 84 | 117 | 33 | 53 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 7.8 | 9.6 | 9.5 | 8.7 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 20% | 0% | 76% | 38% |
| Vol Thru, % | 34% | 8% | 5% | 62% |
| Vol Right, % | 47% | 92% | 18% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 250 | 64 | 200 | 86 |
| LT Vol | 49 | 0 | 152 | 33 |
| Through Vol | 84 | 5 | 11 | 53 |
| RT Vol | 117 | 59 | 37 | 0 |
| Lane Flow Rate | 250 | 64 | 200 | 86 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.308 | 0.078 | 0.268 | 0.118 |
| Departure Headway (Hd) | 4.434 | 4.413 | 4.823 | 4.935 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 808 | 806 | 742 | 723 |
| Service Time | 2.473 | 2.468 | 2.868 | 2.985 |
| HCM Lane V/C Ratio | 0.309 | 0.079 | 0.27 | 0.119 |
| HCM Control Delay | 9.5 | 7.8 | 9.6 | 8.7 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 1.3 | 0.3 | 1.1 | 0.4 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 32 | 15 | 34 | 36 | 4 |
| Future Vol, veh/h | 0 | 32 | 15 | 34 | 36 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 32 | 15 | 34 | 36 | 4 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 49 | 0 | - | 0 | 64 | 32 |
| Stage 1 | - | - | - | - | 32 | - |
| Stage 2 | - | - | - | - | 32 | - |
| 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 | 1558 | - | - | - | 942 | 1042 |
| Stage 1 | - | - | - | - | 991 | - |
| Stage 2 | - | - | - | - | 991 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 1558 | - | - | - | 942 | 1042 |
| Mov Cap-2 Maneuver | - | - | - | - | 942 | - |
| Stage 1 | - | - | - | - | 991 | - |
| Stage 2 | - | - | - | - | 991 | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 9 |
| HCM LOS | | | A |

| Minor Lane/Major Mvmt | EBL | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1558 | - | - | - | 951 |
| HCM Lane V/C Ratio | - | - | - | - | 0.042 |
| HCM Control Delay (s) | 0 | - | - | - | 9 |
| HCM Lane LOS | A | - | - | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.1 |

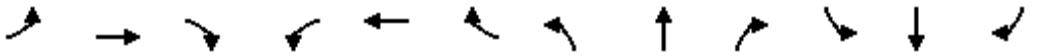
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 12 | 12 | 16 | 187 | 226 | 7 |
| Future Vol, veh/h | 12 | 12 | 16 | 187 | 226 | 7 |
| 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 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 12 | 12 | 16 | 187 | 226 | 7 |

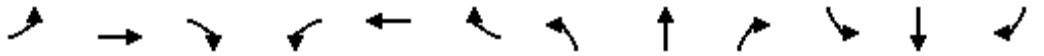
| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 449 | 230 | 233 | 0 | - | 0 |
| Stage 1 | 230 | - | - | - | - | - |
| Stage 2 | 219 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 568 | 809 | 1335 | - | - | - |
| Stage 1 | 808 | - | - | - | - | - |
| Stage 2 | 817 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 561 | 809 | 1335 | - | - | - |
| Mov Cap-2 Maneuver | 561 | - | - | - | - | - |
| Stage 1 | 797 | - | - | - | - | - |
| Stage 2 | 817 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.6 | 0.6 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1335 | - | 663 | - | - |
| HCM Lane V/C Ratio | 0.012 | - | 0.036 | - | - |
| HCM Control Delay (s) | 7.7 | 0 | 10.6 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 331 | 1383 | 0 | 0 | 1370 | 363 | 482 | 7 | 559 | 0 | 0 | 0 |
| Future Volume (veh/h) | 331 | 1383 | 0 | 0 | 1370 | 363 | 482 | 7 | 559 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 331 | 1383 | 0 | 0 | 1370 | 363 | 482 | 7 | 559 | | | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 207 | 1945 | 0 | 0 | 1128 | 291 | 291 | 4 | 337 | | | |
| Arrive On Green | 0.23 | 1.00 | 0.00 | 0.00 | 0.40 | 0.40 | 0.38 | 0.38 | 0.38 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 2890 | 721 | 769 | 11 | 892 | | | |
| Grp Volume(v), veh/h | 331 | 1383 | 0 | 0 | 857 | 876 | 1048 | 0 | 0 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1741 | 1671 | 0 | 0 | | | |
| Q Serve(g_s), s | 17.0 | 0.0 | 0.0 | 0.0 | 58.9 | 58.9 | 55.2 | 0.0 | 0.0 | | | |
| Cycle Q Clear(g_c), s | 17.0 | 0.0 | 0.0 | 0.0 | 58.9 | 58.9 | 55.2 | 0.0 | 0.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.41 | 0.46 | | 0.53 | | | |
| Lane Grp Cap(c), veh/h | 207 | 1945 | 0 | 0 | 717 | 702 | 632 | 0 | 0 | | | |
| V/C Ratio(X) | 1.60 | 0.71 | 0.00 | 0.00 | 1.20 | 1.25 | 1.66 | 0.00 | 0.00 | | | |
| Avail Cap(c_a), veh/h | 207 | 1945 | 0 | 0 | 717 | 702 | 632 | 0 | 0 | | | |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.09 | 0.09 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | | | |
| Uniform Delay (d), s/veh | 56.0 | 0.0 | 0.0 | 0.0 | 43.6 | 43.6 | 45.4 | 0.0 | 0.0 | | | |
| Incr Delay (d2), s/veh | 270.2 | 0.2 | 0.0 | 0.0 | 101.2 | 123.3 | 303.3 | 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 | | | |
| %ile BackOfQ(50%),veh/ln | 22.3 | 0.1 | 0.0 | 0.0 | 45.5 | 48.9 | 75.2 | 0.0 | 0.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 326.2 | 0.2 | 0.0 | 0.0 | 144.7 | 166.8 | 348.7 | 0.0 | 0.0 | | | |
| LnGrp LOS | F | A | A | A | F | F | F | A | A | | | |
| Approach Vol, veh/h | | 1714 | | | 1733 | | | 1048 | | | | |
| Approach Delay, s/veh | | 63.2 | | | 155.9 | | | 348.7 | | | | |
| Approach LOS | | E | | | F | | | F | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 85.0 | | | 21.0 | 64.0 | | 61.0 | | | | |
| Change Period (Y+Rc), s | | 5.1 | | | 4.0 | 5.1 | | 5.8 | | | | |
| Max Green Setting (Gmax), s | | 79.9 | | | 17.0 | 58.9 | | 55.2 | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.0 | | | 19.0 | 60.9 | | 57.2 | | | | |
| Green Ext Time (p_c), s | | 14.3 | | | 0.0 | 0.0 | | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 165.5 | | | | | | | | | |
| HCM 6th LOS | | | F | | | | | | | | | |



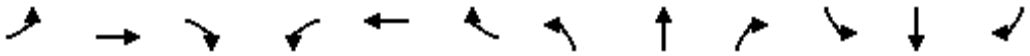
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 1248 | 540 | 379 | 1473 | 0 | 0 | 0 | 0 | 466 | 11 | 352 |
| Future Volume (veh/h) | 0 | 1248 | 540 | 379 | 1473 | 0 | 0 | 0 | 0 | 466 | 11 | 352 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 1248 | 540 | 379 | 1473 | 0 | | | | 466 | 11 | 352 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 909 | 390 | 401 | 972 | 0 | | | | 391 | 9 | 295 |
| Arrive On Green | 0.00 | 0.26 | 0.26 | 0.23 | 0.52 | 0.00 | | | | 0.41 | 0.41 | 0.41 |
| Sat Flow, veh/h | 0 | 3668 | 1504 | 1781 | 1870 | 0 | | | | 952 | 22 | 719 |
| Grp Volume(v), veh/h | 0 | 1214 | 574 | 379 | 1473 | 0 | | | | 829 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1600 | 1781 | 1870 | 0 | | | | 1693 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 37.9 | 37.9 | 30.6 | 75.9 | 0.0 | | | | 59.9 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 37.9 | 37.9 | 30.6 | 75.9 | 0.0 | | | | 59.9 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 0.94 | 1.00 | | 0.00 | | | | 0.56 | | 0.42 |
| Lane Grp Cap(c), veh/h | 0 | 884 | 415 | 401 | 972 | 0 | | | | 695 | 0 | 0 |
| V/C Ratio(X) | 0.00 | 1.37 | 1.38 | 0.94 | 1.51 | 0.00 | | | | 1.19 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 884 | 415 | 415 | 972 | 0 | | | | 695 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 0.09 | 0.09 | 0.00 | | | | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 54.0 | 54.1 | 55.6 | 35.0 | 0.0 | | | | 43.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 175.2 | 187.0 | 4.8 | 232.2 | 0.0 | | | | 100.8 | 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 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 37.6 | 36.7 | 14.2 | 95.8 | 0.0 | | | | 43.4 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 229.2 | 241.0 | 60.5 | 267.3 | 0.0 | | | | 143.8 | 0.0 | 0.0 |
| LnGrp LOS | A | F | F | E | F | A | | | | F | A | A |
| Approach Vol, veh/h | | 1788 | | | 1852 | | | | | | 829 | |
| Approach Delay, s/veh | | 233.0 | | | 224.9 | | | | | | 143.8 | |
| Approach LOS | | F | | | F | | | | | | F | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 38.0 | 43.0 | | 65.0 | | 81.0 |
| Change Period (Y+Rc), s | 5.1 | * 5.1 | | 5.1 | | 5.1 |
| Max Green Setting (Gmax), s | 34.0 | * 38 | | 59.9 | | 75.9 |
| Max Q Clear Time (g_c+I1), s | 32.6 | 39.9 | | 61.9 | | 77.9 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | | 0.0 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 213.1 |
| HCM 6th LOS | | F |

Notes

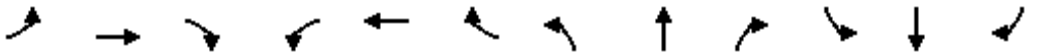
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 588 | 1546 | 0 | 0 | 1459 | 748 | 1417 | 8 | 619 | 0 | 0 | 0 |
| Future Volume (vph) | 588 | 1546 | 0 | 0 | 1459 | 748 | 1417 | 8 | 619 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.2 | 5.8 | | | 5.8 | 4.0 | | 6.8 | 6.8 | | | |
| Lane Util. Factor | 1.00 | 0.95 | | | 0.95 | 1.00 | | 1.00 | 1.00 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 0.85 | | 1.00 | 0.85 | | | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (prot) | 1770 | 3539 | | | 3539 | 1583 | | 1775 | 1583 | | | |
| Flt Permitted | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (perm) | 1770 | 3539 | | | 3539 | 1583 | | 1775 | 1583 | | | |
| Peak-hour factor, PHF | 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. Flow (vph) | 588 | 1546 | 0 | 0 | 1459 | 748 | 1417 | 8 | 619 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 588 | 1546 | 0 | 0 | 1459 | 748 | 0 | 1425 | 560 | 0 | 0 | 0 |
| Turn Type | Prot | NA | | | NA | Free | Split | NA | Prot | | | |
| Protected Phases | 5 | 2 | | | 6 | | 8 | 8 | 8 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | 29.8 | 93.2 | | | 59.2 | 166.0 | | 60.2 | 60.2 | | | |
| Effective Green, g (s) | 29.8 | 93.2 | | | 59.2 | 166.0 | | 60.2 | 60.2 | | | |
| Actuated g/C Ratio | 0.18 | 0.56 | | | 0.36 | 1.00 | | 0.36 | 0.36 | | | |
| Clearance Time (s) | 4.2 | 5.8 | | | 5.8 | | | 6.8 | 6.8 | | | |
| Vehicle Extension (s) | 1.5 | 4.0 | | | 4.0 | | | 1.0 | 1.0 | | | |
| Lane Grp Cap (vph) | 317 | 1986 | | | 1262 | 1583 | | 643 | 574 | | | |
| v/s Ratio Prot | c0.33 | 0.44 | | | c0.41 | | | c0.80 | 0.35 | | | |
| v/s Ratio Perm | | | | | | 0.47 | | | | | | |
| v/c Ratio | 1.85 | 0.78 | | | 1.16 | 0.47 | | 2.22 | 0.98 | | | |
| Uniform Delay, d1 | 68.1 | 28.4 | | | 53.4 | 0.0 | | 52.9 | 52.2 | | | |
| Progression Factor | 1.35 | 0.86 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 390.2 | 1.4 | | | 79.6 | 1.0 | | 552.3 | 31.1 | | | |
| Delay (s) | 481.9 | 25.8 | | | 133.0 | 1.0 | | 605.2 | 83.3 | | | |
| Level of Service | F | C | | | F | A | | F | F | | | |
| Approach Delay (s) | | 151.5 | | | 88.2 | | | 447.2 | | | 0.0 | |
| Approach LOS | | F | | | F | | | F | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 224.3 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.74 | | |
| Actuated Cycle Length (s) | 166.0 | Sum of lost time (s) | 18.8 |
| Intersection Capacity Utilization | 233.9% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

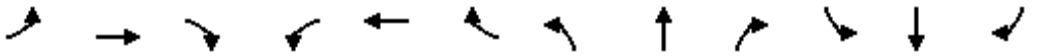


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1656 | 1170 | 396 | 2481 | 0 | 0 | 0 | 0 | 479 | 0 | 682 |
| Future Volume (vph) | 0 | 1656 | 1170 | 396 | 2481 | 0 | 0 | 0 | 0 | 479 | 0 | 682 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | |
| Lane Util. Factor | | 0.91 | 1.00 | 1.00 | 1.00 | | | | | 0.95 | 0.95 | |
| Frt | | 1.00 | 0.85 | 1.00 | 1.00 | | | | | 1.00 | 0.86 | |
| Flt Protected | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1517 | |
| Flt Permitted | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1517 | |
| Peak-hour factor, PHF | 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. Flow (vph) | 0 | 1656 | 1170 | 396 | 2481 | 0 | 0 | 0 | 0 | 479 | 0 | 682 |
| RTOR Reduction (vph) | 0 | 0 | 439 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 0 |
| Lane Group Flow (vph) | 0 | 1656 | 731 | 396 | 2481 | 0 | 0 | 0 | 0 | 431 | 685 | 0 |
| Turn Type | | NA | Perm | Prot | NA | | | | | Split | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | | | 4 | 4 | |
| Permitted Phases | | | 2 | | | | | | | | | |
| Actuated Green, G (s) | | 59.2 | 59.2 | 29.0 | 94.2 | | | | | 60.2 | 60.2 | |
| Effective Green, g (s) | | 59.2 | 59.2 | 29.0 | 94.2 | | | | | 60.2 | 60.2 | |
| Actuated g/C Ratio | | 0.36 | 0.36 | 0.17 | 0.57 | | | | | 0.36 | 0.36 | |
| Clearance Time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | |
| Vehicle Extension (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | 2.5 | 2.5 | |
| Lane Grp Cap (vph) | | 1813 | 564 | 309 | 1057 | | | | | 609 | 550 | |
| v/s Ratio Prot | | 0.33 | | 0.22 | c1.33 | | | | | 0.26 | c0.45 | |
| v/s Ratio Perm | | | 0.46 | | | | | | | | | |
| v/c Ratio | | 0.91 | 1.30 | 1.28 | 2.35 | | | | | 0.71 | 1.24 | |
| Uniform Delay, d1 | | 51.0 | 53.4 | 68.5 | 35.9 | | | | | 45.4 | 52.9 | |
| Progression Factor | | 1.07 | 1.66 | 1.21 | 0.90 | | | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 6.5 | 142.3 | 129.0 | 606.5 | | | | | 3.5 | 124.9 | |
| Delay (s) | | 60.8 | 230.8 | 212.0 | 638.8 | | | | | 48.8 | 177.8 | |
| Level of Service | | E | F | F | F | | | | | D | F | |
| Approach Delay (s) | | 131.2 | | | 580.0 | | | 0.0 | | | 129.9 | |
| Approach LOS | | F | | | F | | | A | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 319.1 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 2.02 | | |
| Actuated Cycle Length (s) | 166.0 | Sum of lost time (s) | 19.6 |
| Intersection Capacity Utilization | 233.9% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

# Appendix I – 2040 Cumulative Conditions plus Project Level of Service Sheets



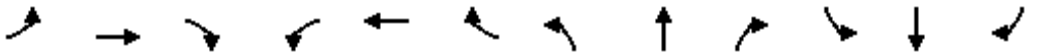
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 67 | 814 | 86 | 627 | 529 | 496 | 350 | 62 | 388 | 169 | 38 | 28 |
| Future Volume (veh/h) | 67 | 814 | 86 | 627 | 529 | 496 | 350 | 62 | 388 | 169 | 38 | 28 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 67 | 814 | 86 | 627 | 529 | 496 | 350 | 62 | 388 | 169 | 38 | 28 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 119 | 1145 | 511 | 419 | 1339 | 597 | 389 | 371 | 553 | 204 | 336 | 150 |
| Arrive On Green | 0.07 | 0.32 | 0.32 | 0.12 | 0.38 | 0.38 | 0.22 | 0.20 | 0.20 | 0.11 | 0.09 | 0.09 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 3456 | 3554 | 1585 | 1781 | 1870 | 2790 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 67 | 814 | 86 | 627 | 529 | 496 | 350 | 62 | 388 | 169 | 38 | 28 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1728 | 1777 | 1585 | 1781 | 1870 | 1395 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 3.0 | 16.6 | 3.2 | 10.0 | 9.0 | 23.4 | 15.8 | 2.3 | 10.7 | 7.7 | 0.8 | 1.3 |
| Cycle Q Clear(g_c), s | 3.0 | 16.6 | 3.2 | 10.0 | 9.0 | 23.4 | 15.8 | 2.3 | 10.7 | 7.7 | 0.8 | 1.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 119 | 1145 | 511 | 419 | 1339 | 597 | 389 | 371 | 553 | 204 | 336 | 150 |
| V/C Ratio(X) | 0.56 | 0.71 | 0.17 | 1.50 | 0.40 | 0.83 | 0.90 | 0.17 | 0.70 | 0.83 | 0.11 | 0.19 |
| Avail Cap(c_a), veh/h | 216 | 2154 | 961 | 419 | 2154 | 961 | 432 | 1134 | 1691 | 216 | 1723 | 769 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.3 | 24.6 | 20.0 | 36.2 | 18.8 | 23.3 | 31.4 | 27.4 | 30.8 | 35.7 | 34.2 | 34.4 |
| Incr Delay (d2), s/veh | 4.2 | 0.8 | 0.2 | 235.7 | 0.2 | 3.4 | 20.2 | 0.2 | 1.6 | 21.6 | 0.1 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.4 | 6.7 | 1.1 | 17.8 | 3.5 | 8.1 | 8.3 | 1.0 | 3.4 | 4.5 | 0.3 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 41.5 | 25.4 | 20.2 | 272.0 | 19.0 | 26.7 | 51.5 | 27.6 | 32.4 | 57.3 | 34.3 | 35.0 |
| LnGrp LOS | D | C | C | F | B | C | D | C | C | E | C | D |
| Approach Vol, veh/h | | 967 | | | 1652 | | | 800 | | | 235 | |
| Approach Delay, s/veh | | 26.1 | | | 117.3 | | | 40.4 | | | 51.0 | |
| Approach LOS | | C | | | F | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.6 | 31.7 | 22.6 | 13.6 | 10.1 | 36.2 | 14.1 | 22.1 |
| Change Period (Y+Rc), s | 4.6 | 5.1 | 4.6 | * 5.8 | 4.6 | 5.1 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | 50.0 | 20.0 | * 40 | 10.0 | 50.0 | 10.0 | 50.0 |
| Max Q Clear Time (g_c+I1), s | 12.0 | 18.6 | 17.8 | 3.3 | 5.0 | 25.4 | 9.7 | 12.7 |
| Green Ext Time (p_c), s | 0.0 | 6.6 | 0.3 | 0.3 | 0.0 | 5.7 | 0.0 | 1.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 72.1 |
| HCM 6th LOS | E |

Notes

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



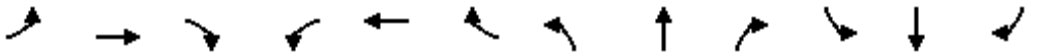
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 151 | 4 | 412 | 28 | 3 | 12 | 152 | 705 | 7 | 28 | 380 | 71 |
| Future Volume (veh/h) | 151 | 4 | 412 | 28 | 3 | 12 | 152 | 705 | 7 | 28 | 380 | 71 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 151 | 4 | 412 | 28 | 3 | 12 | 152 | 705 | 7 | 28 | 380 | 71 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 193 | 5 | 526 | 77 | 88 | 353 | 198 | 1309 | 13 | 77 | 796 | 145 |
| Arrive On Green | 0.11 | 0.33 | 0.33 | 0.04 | 0.27 | 0.27 | 0.11 | 0.25 | 0.25 | 0.04 | 0.18 | 0.18 |
| Sat Flow, veh/h | 1781 | 15 | 1572 | 1781 | 327 | 1308 | 1781 | 5213 | 52 | 1781 | 4344 | 789 |
| Grp Volume(v), veh/h | 151 | 0 | 416 | 28 | 0 | 15 | 152 | 460 | 252 | 28 | 295 | 156 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1587 | 1781 | 0 | 1635 | 1781 | 1702 | 1861 | 1781 | 1702 | 1728 |
| Q Serve(g_s), s | 5.0 | 0.0 | 14.2 | 0.9 | 0.0 | 0.4 | 5.0 | 7.0 | 7.1 | 0.9 | 4.7 | 4.9 |
| Cycle Q Clear(g_c), s | 5.0 | 0.0 | 14.2 | 0.9 | 0.0 | 0.4 | 5.0 | 7.0 | 7.1 | 0.9 | 4.7 | 4.9 |
| Prop In Lane | 1.00 | | 0.99 | 1.00 | | 0.80 | 1.00 | | 0.03 | 1.00 | | 0.46 |
| Lane Grp Cap(c), veh/h | 193 | 0 | 531 | 77 | 0 | 441 | 198 | 855 | 467 | 77 | 624 | 317 |
| V/C Ratio(X) | 0.78 | 0.00 | 0.78 | 0.36 | 0.00 | 0.03 | 0.77 | 0.54 | 0.54 | 0.36 | 0.47 | 0.49 |
| Avail Cap(c_a), veh/h | 296 | 0 | 924 | 296 | 0 | 951 | 592 | 1981 | 1083 | 296 | 1415 | 718 |
| 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 | 1.00 |
| Uniform Delay (d), s/veh | 26.1 | 0.0 | 18.1 | 28.0 | 0.0 | 16.2 | 26.0 | 19.5 | 19.5 | 28.0 | 22.0 | 22.1 |
| Incr Delay (d2), s/veh | 7.3 | 0.0 | 3.6 | 2.8 | 0.0 | 0.0 | 6.1 | 0.8 | 1.4 | 2.8 | 0.8 | 1.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.4 | 0.0 | 5.3 | 0.4 | 0.0 | 0.2 | 2.2 | 2.4 | 2.7 | 0.4 | 1.7 | 1.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 33.4 | 0.0 | 21.7 | 30.8 | 0.0 | 16.2 | 32.1 | 20.3 | 20.9 | 30.8 | 22.8 | 23.7 |
| LnGrp LOS | C | A | C | C | A | B | C | C | C | C | C | C |
| Approach Vol, veh/h | | 567 | | | 43 | | | 864 | | | 479 | |
| Approach Delay, s/veh | | 24.8 | | | 25.7 | | | 22.5 | | | 23.5 | |
| Approach LOS | | C | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.2 | 24.8 | 11.3 | 16.8 | 11.1 | 20.9 | 7.2 | 20.9 |
| Change Period (Y+Rc), s | 4.6 | * 4.7 | 4.6 | 5.8 | 4.6 | * 4.7 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | * 35 | 20.0 | 25.0 | 10.0 | * 35 | 10.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 2.9 | 16.2 | 7.0 | 6.9 | 7.0 | 2.4 | 2.9 | 9.1 |
| Green Ext Time (p_c), s | 0.0 | 3.9 | 0.3 | 3.2 | 0.1 | 0.1 | 0.0 | 6.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 23.5 |
| HCM 6th LOS | C |

Notes

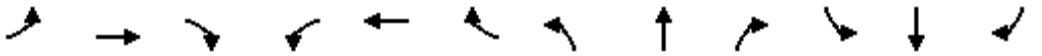
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 430 | 1795 | 98 | 653 | 865 | 212 | 111 | 263 | 632 | 701 | 190 | 238 |
| Future Volume (vph) | 430 | 1795 | 98 | 653 | 865 | 212 | 111 | 263 | 632 | 701 | 190 | 238 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.8 | 5.8 | 4.6 | 5.8 | 5.8 | 5.3 | 5.8 | 5.8 | 5.7 | 5.8 | 5.8 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.88 | 0.97 | 0.91 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 5085 | 2787 | 3433 | 5085 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 5085 | 2787 | 3433 | 5085 | 1583 |
| Peak-hour factor, PHF | 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. Flow (vph) | 430 | 1795 | 98 | 653 | 865 | 212 | 111 | 263 | 632 | 701 | 190 | 238 |
| RTOR Reduction (vph) | 0 | 0 | 60 | 0 | 0 | 129 | 0 | 0 | 274 | 0 | 0 | 164 |
| Lane Group Flow (vph) | 430 | 1795 | 38 | 653 | 865 | 83 | 111 | 263 | 358 | 701 | 190 | 74 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Actuated Green, G (s) | 14.7 | 60.2 | 60.2 | 15.4 | 60.2 | 60.2 | 8.7 | 25.8 | 25.8 | 30.7 | 48.2 | 48.2 |
| Effective Green, g (s) | 14.7 | 60.2 | 60.2 | 15.4 | 60.2 | 60.2 | 8.7 | 25.8 | 25.8 | 30.7 | 48.2 | 48.2 |
| Actuated g/C Ratio | 0.10 | 0.39 | 0.39 | 0.10 | 0.39 | 0.39 | 0.06 | 0.17 | 0.17 | 0.20 | 0.31 | 0.31 |
| Clearance Time (s) | 5.3 | 5.8 | 5.8 | 4.6 | 5.8 | 5.8 | 5.3 | 5.8 | 5.8 | 5.7 | 5.8 | 5.8 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 327 | 1987 | 618 | 343 | 1987 | 618 | 99 | 851 | 466 | 684 | 1591 | 495 |
| v/s Ratio Prot | 0.13 | c0.35 | | c0.19 | 0.17 | | c0.06 | 0.05 | | c0.20 | 0.04 | |
| v/s Ratio Perm | | | 0.02 | | | 0.05 | | | c0.13 | | | 0.05 |
| v/c Ratio | 1.31 | 0.90 | 0.06 | 1.90 | 0.44 | 0.13 | 1.12 | 0.31 | 0.77 | 1.02 | 0.12 | 0.15 |
| Uniform Delay, d1 | 69.7 | 44.2 | 29.3 | 69.3 | 34.4 | 30.1 | 72.7 | 56.3 | 61.2 | 61.6 | 37.8 | 38.1 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.02 | 0.83 | 0.73 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 161.9 | 7.3 | 0.2 | 407.7 | 0.1 | 0.0 | 126.9 | 0.2 | 7.5 | 40.9 | 0.0 | 0.1 |
| Delay (s) | 231.5 | 51.4 | 29.5 | 478.5 | 28.6 | 22.1 | 199.5 | 56.5 | 68.7 | 102.5 | 37.8 | 38.3 |
| Level of Service | F | D | C | F | C | C | F | E | E | F | D | D |
| Approach Delay (s) | | 83.8 | | | 197.6 | | | 79.9 | | | 78.1 | |
| Approach LOS | | F | | | F | | | E | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 114.0 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.06 | | |
| Actuated Cycle Length (s) | 154.0 | Sum of lost time (s) | 26.2 |
| Intersection Capacity Utilization | 99.9% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



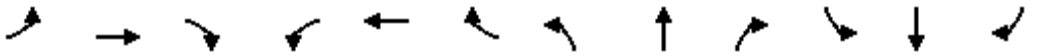
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 313 | 50 | 20 | 4 | 25 | 124 | 7 | 413 | 8 | 102 | 442 | 131 |
| Future Volume (veh/h) | 313 | 50 | 20 | 4 | 25 | 124 | 7 | 413 | 8 | 102 | 442 | 131 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 313 | 50 | 20 | 4 | 25 | 124 | 7 | 413 | 8 | 102 | 442 | 131 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 384 | 613 | 520 | 8 | 219 | 185 | 13 | 1106 | 21 | 135 | 1444 | 448 |
| Arrive On Green | 0.22 | 0.33 | 0.33 | 0.00 | 0.12 | 0.12 | 0.01 | 0.21 | 0.21 | 0.08 | 0.28 | 0.28 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 5157 | 100 | 1781 | 5106 | 1585 |
| Grp Volume(v), veh/h | 313 | 50 | 20 | 4 | 25 | 124 | 7 | 272 | 149 | 102 | 442 | 131 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1702 | 1852 | 1781 | 1702 | 1585 |
| Q Serve(g_s), s | 8.9 | 1.0 | 0.5 | 0.1 | 0.6 | 4.0 | 0.2 | 3.6 | 3.6 | 3.0 | 3.6 | 3.4 |
| Cycle Q Clear(g_c), s | 8.9 | 1.0 | 0.5 | 0.1 | 0.6 | 4.0 | 0.2 | 3.6 | 3.6 | 3.0 | 3.6 | 3.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.05 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 384 | 613 | 520 | 8 | 219 | 185 | 13 | 730 | 397 | 135 | 1444 | 448 |
| V/C Ratio(X) | 0.82 | 0.08 | 0.04 | 0.52 | 0.11 | 0.67 | 0.53 | 0.37 | 0.37 | 0.76 | 0.31 | 0.29 |
| Avail Cap(c_a), veh/h | 673 | 883 | 748 | 673 | 883 | 748 | 673 | 1928 | 1049 | 673 | 2892 | 898 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.8 | 12.3 | 12.1 | 26.3 | 20.9 | 22.4 | 26.2 | 17.8 | 17.8 | 24.0 | 14.9 | 14.9 |
| Incr Delay (d2), s/veh | 4.3 | 0.1 | 0.0 | 45.3 | 0.2 | 4.1 | 29.4 | 1.1 | 2.1 | 8.4 | 0.4 | 1.3 |
| 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 | 3.8 | 0.4 | 0.1 | 0.1 | 0.3 | 1.5 | 0.2 | 1.3 | 1.5 | 1.4 | 1.2 | 1.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 24.0 | 12.3 | 12.1 | 71.7 | 21.2 | 26.6 | 55.6 | 18.9 | 19.9 | 32.4 | 15.3 | 16.2 |
| LnGrp LOS | C | B | B | E | C | C | E | B | B | C | B | B |
| Approach Vol, veh/h | | 383 | | | 153 | | | 428 | | | 675 | |
| Approach Delay, s/veh | | 21.9 | | | 26.9 | | | 19.9 | | | 18.1 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 4.7 | 22.4 | 4.9 | 21.0 | 15.9 | 11.2 | 8.5 | 17.4 |
| Change Period (Y+Rc), s | 4.5 | 5.0 | 4.5 | 6.0 | 4.5 | 5.0 | 4.5 | 6.0 |
| Max Green Setting (Gmax), s | 20.0 | 25.0 | 20.0 | 30.0 | 20.0 | 25.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 3.0 | 2.2 | 5.6 | 10.9 | 6.0 | 5.0 | 5.6 |
| Green Ext Time (p_c), s | 0.0 | 0.3 | 0.0 | 7.7 | 0.7 | 0.5 | 0.2 | 5.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 20.2 |
| HCM 6th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 87 | 1397 | 63 | 172 | 918 | 121 | 58 | 186 | 315 | 591 | 181 | 88 |
| Future Volume (veh/h) | 87 | 1397 | 63 | 172 | 918 | 121 | 58 | 186 | 315 | 591 | 181 | 88 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 87 | 1397 | 63 | 172 | 918 | 121 | 58 | 186 | 315 | 591 | 181 | 88 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 110 | 1630 | 74 | 200 | 1335 | 595 | 75 | 405 | 343 | 284 | 624 | 529 |
| Arrive On Green | 0.06 | 0.33 | 0.33 | 0.11 | 0.38 | 0.38 | 0.04 | 0.22 | 0.22 | 0.16 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1781 | 5008 | 226 | 1781 | 3554 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 87 | 950 | 510 | 172 | 918 | 121 | 58 | 186 | 315 | 591 | 181 | 88 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1830 | 1781 | 1777 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 6.0 | 32.8 | 32.8 | 11.9 | 27.3 | 6.5 | 4.0 | 10.9 | 24.4 | 20.0 | 9.0 | 4.9 |
| Cycle Q Clear(g_c), s | 6.0 | 32.8 | 32.8 | 11.9 | 27.3 | 6.5 | 4.0 | 10.9 | 24.4 | 20.0 | 9.0 | 4.9 |
| Prop In Lane | 1.00 | | 0.12 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 110 | 1108 | 596 | 200 | 1335 | 595 | 75 | 405 | 343 | 284 | 624 | 529 |
| V/C Ratio(X) | 0.79 | 0.86 | 0.86 | 0.86 | 0.69 | 0.20 | 0.77 | 0.46 | 0.92 | 2.08 | 0.29 | 0.17 |
| Avail Cap(c_a), veh/h | 284 | 1356 | 729 | 284 | 1416 | 631 | 284 | 447 | 379 | 284 | 624 | 529 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 58.1 | 39.6 | 39.6 | 54.7 | 33.0 | 26.5 | 59.5 | 42.8 | 48.1 | 52.8 | 30.9 | 29.5 |
| Incr Delay (d2), s/veh | 11.6 | 4.1 | 7.3 | 16.8 | 1.5 | 0.2 | 15.0 | 0.8 | 25.5 | 498.9 | 0.3 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.1 | 14.1 | 15.7 | 6.1 | 11.5 | 2.5 | 2.1 | 5.1 | 11.9 | 48.2 | 4.1 | 1.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 69.7 | 43.7 | 46.9 | 71.5 | 34.5 | 26.7 | 74.5 | 43.6 | 73.6 | 551.6 | 31.1 | 29.7 |
| LnGrp LOS | E | D | D | E | C | C | E | D | E | F | C | C |
| Approach Vol, veh/h | | 1547 | | | 1211 | | | 559 | | | 860 | |
| Approach Delay, s/veh | | 46.2 | | | 39.0 | | | 63.7 | | | 388.7 | |
| Approach LOS | | D | | | D | | | E | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 19.4 | 46.9 | 10.9 | 48.4 | 13.1 | 53.2 | 25.6 | 33.7 |
| Change Period (Y+Rc), s | 5.3 | 6.0 | 5.6 | 6.5 | 5.3 | 6.0 | 5.6 | 6.5 |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | 20.0 | 30.0 | 20.0 | 50.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 13.9 | 34.8 | 6.0 | 11.0 | 8.0 | 29.3 | 22.0 | 26.4 |
| Green Ext Time (p_c), s | 0.2 | 6.1 | 0.1 | 1.1 | 0.1 | 8.8 | 0.0 | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 117.0 |
| HCM 6th LOS | F |

**Notes**

User approved pedestrian interval to be less than phase max green.

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 16.8 |
| Intersection LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 25 | 401 | 173 | 9 | 28 | 62 | 115 | 166 | 49 | 161 | 0 |
| Future Vol, veh/h | 0 | 25 | 401 | 173 | 9 | 28 | 62 | 115 | 166 | 49 | 161 | 0 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 25 | 401 | 173 | 9 | 28 | 62 | 115 | 166 | 49 | 161 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 19.2 | 14 | 17.4 | 14 |
| HCM LOS | C | B | C | B |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 18% | 0% | 82% | 23% |
| Vol Thru, % | 34% | 6% | 4% | 77% |
| Vol Right, % | 48% | 94% | 13% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 343 | 426 | 210 | 210 |
| LT Vol | 62 | 0 | 173 | 49 |
| Through Vol | 115 | 25 | 9 | 161 |
| RT Vol | 166 | 401 | 28 | 0 |
| Lane Flow Rate | 343 | 426 | 210 | 210 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.581 | 0.665 | 0.39 | 0.391 |
| Departure Headway (Hd) | 6.102 | 5.623 | 6.68 | 6.695 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 590 | 639 | 536 | 536 |
| Service Time | 4.166 | 3.681 | 4.751 | 4.767 |
| HCM Lane V/C Ratio | 0.581 | 0.667 | 0.392 | 0.392 |
| HCM Control Delay | 17.4 | 19.2 | 14 | 14 |
| HCM Lane LOS | C | C | B | B |
| HCM 95th-tile Q | 3.7 | 5 | 1.8 | 1.8 |

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ⇕ | | | ⇕ | | | ⇕ | | | ⇕ | |
| Traffic Vol, veh/h | 0 | 126 | 0 | 12 | 24 | 36 | 0 | 0 | 260 | 41 | 0 | 1 |
| Future Vol, veh/h | 0 | 126 | 0 | 12 | 24 | 36 | 0 | 0 | 260 | 41 | 0 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 126 | 0 | 12 | 24 | 36 | 0 | 0 | 260 | 41 | 0 | 1 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 60 | 0 | 0 | 126 | 0 | 0 | 193 | 210 | 126 | 322 | 192 | 42 |
| Stage 1 | - | - | - | - | - | - | 126 | 126 | - | 66 | 66 | - |
| Stage 2 | - | - | - | - | - | - | 67 | 84 | - | 256 | 126 | - |
| 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 | 1544 | - | - | 1460 | - | - | 767 | 687 | 924 | 631 | 703 | 1029 |
| Stage 1 | - | - | - | - | - | - | 878 | 792 | - | 945 | 840 | - |
| Stage 2 | - | - | - | - | - | - | 943 | 825 | - | 749 | 792 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1544 | - | - | 1460 | - | - | 761 | 681 | 924 | 451 | 697 | 1029 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 761 | 681 | - | 451 | 697 | - |
| Stage 1 | - | - | - | - | - | - | 878 | 792 | - | 945 | 832 | - |
| Stage 2 | - | - | - | - | - | - | 934 | 818 | - | 538 | 792 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 1.2 | 10.4 | 13.7 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 924 | 1544 | - | - | 1460 | - | - | 457 |
| HCM Lane V/C Ratio | 0.281 | - | - | - | 0.008 | - | - | 0.092 |
| HCM Control Delay (s) | 10.4 | 0 | - | - | 7.5 | 0 | - | 13.7 |
| HCM Lane LOS | B | A | - | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 1.2 | 0 | - | - | 0 | - | - | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 8 | 5 | 17 | 267 | 228 | 5 |
| Future Vol, veh/h | 8 | 5 | 17 | 267 | 228 | 5 |
| 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 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 8 | 5 | 17 | 267 | 228 | 5 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 532 | 231 | 233 | 0 | - | 0 |
| Stage 1 | 231 | - | - | - | - | - |
| Stage 2 | 301 | - | - | - | - | - |
| 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 | 508 | 808 | 1335 | - | - | - |
| Stage 1 | 807 | - | - | - | - | - |
| Stage 2 | 751 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 500 | 808 | 1335 | - | - | - |
| Mov Cap-2 Maneuver | 500 | - | - | - | - | - |
| Stage 1 | 795 | - | - | - | - | - |
| Stage 2 | 751 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.3 | 0.5 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1335 | - | 586 | - | - |
| HCM Lane V/C Ratio | 0.013 | - | 0.022 | - | - |
| HCM Control Delay (s) | 7.7 | 0 | 11.3 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |

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

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 8 | 17 | 47 | 94 | 32 | 17 |
| Future Vol, veh/h | 8 | 17 | 47 | 94 | 32 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 8 | 17 | 47 | 94 | 32 | 17 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 175 | 94 | 0 | 0 | 141 | 0 |
| Stage 1 | 94 | - | - | - | - | - |
| Stage 2 | 81 | - | - | - | - | - |
| 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 | 815 | 963 | - | - | 1442 | - |
| Stage 1 | 930 | - | - | - | - | - |
| Stage 2 | 942 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 797 | 963 | - | - | 1442 | - |
| Mov Cap-2 Maneuver | 797 | - | - | - | - | - |
| Stage 1 | 930 | - | - | - | - | - |
| Stage 2 | 921 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.1 | 0 | 4.9 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 903 | 1442 | - |
| HCM Lane V/C Ratio | - | - | 0.028 | 0.022 | - |
| HCM Control Delay (s) | - | - | 9.1 | 7.6 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.1 | 0.1 | - |

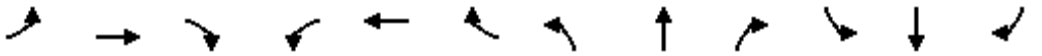
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑↑ | ↑↑ | | | ↱ |
| Traffic Vol, veh/h | 0 | 1548 | 949 | 129 | 0 | 71 |
| Future Vol, veh/h | 0 | 1548 | 949 | 129 | 0 | 71 |
| 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 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 1548 | 949 | 129 | 0 | 71 |

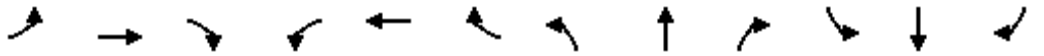
| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 539 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.32 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 487 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 487 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 13.7 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 487 |
| HCM Lane V/C Ratio | - | - | - | 0.146 |
| HCM Control Delay (s) | - | - | - | 13.7 |
| HCM Lane LOS | - | - | - | B |
| HCM 95th %tile Q(veh) | - | - | - | 0.5 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 353 | 1159 | 0 | 0 | 1321 | 391 | 488 | 0 | 406 | 0 | 0 | 0 |
| Future Volume (veh/h) | 353 | 1159 | 0 | 0 | 1321 | 391 | 488 | 0 | 406 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 353 | 1159 | 0 | 0 | 1321 | 391 | 488 | 0 | 406 | | | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 178 | 2184 | 0 | 0 | 1318 | 379 | 278 | 0 | 231 | | | |
| Arrive On Green | 0.20 | 1.00 | 0.00 | 0.00 | 0.48 | 0.48 | 0.30 | 0.00 | 0.30 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 2817 | 783 | 921 | 0 | 766 | | | |
| Grp Volume(v), veh/h | 353 | 1159 | 0 | 0 | 849 | 863 | 894 | 0 | 0 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1729 | 1686 | 0 | 0 | | | |
| Q Serve(g_s), s | 13.0 | 0.0 | 0.0 | 0.0 | 61.3 | 62.9 | 39.2 | 0.0 | 0.0 | | | |
| Cycle Q Clear(g_c), s | 13.0 | 0.0 | 0.0 | 0.0 | 61.3 | 62.9 | 39.2 | 0.0 | 0.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.45 | 0.55 | | 0.45 | | | |
| Lane Grp Cap(c), veh/h | 178 | 2184 | 0 | 0 | 860 | 837 | 509 | 0 | 0 | | | |
| V/C Ratio(X) | 1.98 | 0.53 | 0.00 | 0.00 | 0.99 | 1.03 | 1.76 | 0.00 | 0.00 | | | |
| Avail Cap(c_a), veh/h | 178 | 2184 | 0 | 0 | 860 | 837 | 509 | 0 | 0 | | | |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.09 | 0.09 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | | | |
| Uniform Delay (d), s/veh | 52.0 | 0.0 | 0.0 | 0.0 | 33.1 | 33.6 | 45.4 | 0.0 | 0.0 | | | |
| Incr Delay (d2), s/veh | 443.6 | 0.1 | 0.0 | 0.0 | 27.7 | 39.6 | 349.1 | 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 | | | |
| %ile BackOfQ(50%),veh/ln | 27.1 | 0.0 | 0.0 | 0.0 | 31.8 | 34.4 | 65.1 | 0.0 | 0.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 495.6 | 0.1 | 0.0 | 0.0 | 60.9 | 73.1 | 394.5 | 0.0 | 0.0 | | | |
| LnGrp LOS | F | A | A | A | E | F | F | A | A | | | |
| Approach Vol, veh/h | | 1512 | | | 1712 | | | 894 | | | | |
| Approach Delay, s/veh | | 115.8 | | | 67.1 | | | 394.5 | | | | |
| Approach LOS | | F | | | E | | | F | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 85.0 | | | 17.0 | 68.0 | | 45.0 | | | | |
| Change Period (Y+Rc), s | | 5.1 | | | 4.0 | 5.1 | | 5.8 | | | | |
| Max Green Setting (Gmax), s | | 79.9 | | | 13.0 | 62.9 | | 39.2 | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.0 | | | 15.0 | 64.9 | | 41.2 | | | | |
| Green Ext Time (p_c), s | | 10.4 | | | 0.0 | 0.0 | | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 156.0 | | | | | | | | | |
| HCM 6th LOS | | | F | | | | | | | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 1142 | 447 | 412 | 1397 | 0 | 0 | 0 | 0 | 369 | 5 | 278 |
| Future Volume (veh/h) | 0 | 1142 | 447 | 412 | 1397 | 0 | 0 | 0 | 0 | 369 | 5 | 278 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 1142 | 447 | 412 | 1397 | 0 | | | | 369 | 5 | 278 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 913 | 357 | 519 | 1092 | 0 | | | | 323 | 4 | 244 |
| Arrive On Green | 0.00 | 0.25 | 0.25 | 0.39 | 0.78 | 0.00 | | | | 0.34 | 0.34 | 0.34 |
| Sat Flow, veh/h | 0 | 3777 | 1411 | 1781 | 1870 | 0 | | | | 958 | 13 | 722 |
| Grp Volume(v), veh/h | 0 | 1077 | 512 | 412 | 1397 | 0 | | | | 652 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1616 | 1781 | 1870 | 0 | | | | 1693 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 32.9 | 32.9 | 26.6 | 75.9 | 0.0 | | | | 43.9 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 32.9 | 32.9 | 26.6 | 75.9 | 0.0 | | | | 43.9 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 0.87 | 1.00 | | 0.00 | | | | 0.57 | | 0.43 |
| Lane Grp Cap(c), veh/h | 0 | 861 | 409 | 519 | 1092 | 0 | | | | 572 | 0 | 0 |
| V/C Ratio(X) | 0.00 | 1.25 | 1.25 | 0.79 | 1.28 | 0.00 | | | | 1.14 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 861 | 409 | 534 | 1092 | 0 | | | | 572 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.33 | 1.33 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 0.09 | 0.09 | 0.00 | | | | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 48.5 | 48.6 | 36.3 | 14.5 | 0.0 | | | | 43.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 122.2 | 132.0 | 0.7 | 126.4 | 0.0 | | | | 82.8 | 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 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 28.4 | 28.1 | 10.8 | 57.5 | 0.0 | | | | 30.7 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 170.8 | 180.5 | 37.0 | 140.9 | 0.0 | | | | 125.9 | 0.0 | 0.0 |
| LnGrp LOS | A | F | F | D | F | A | | | | F | A | A |
| Approach Vol, veh/h | | 1589 | | | 1809 | | | | | | 652 | |
| Approach Delay, s/veh | | 173.9 | | | 117.2 | | | | | | 125.9 | |
| Approach LOS | | F | | | F | | | | | | F | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 43.0 | 38.0 | | 49.0 | | 81.0 |
| Change Period (Y+Rc), s | 5.1 | * 5.1 | | 5.1 | | 5.1 |
| Max Green Setting (Gmax), s | 39.0 | * 33 | | 43.9 | | 75.9 |
| Max Q Clear Time (g_c+I1), s | 28.6 | 34.9 | | 45.9 | | 77.9 |
| Green Ext Time (p_c), s | 0.1 | 0.0 | | 0.0 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 140.9 |
| HCM 6th LOS | | F |

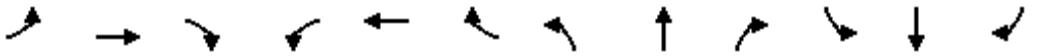
Notes

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 836 | 1383 | 0 | 0 | 1065 | 426 | 887 | 5 | 538 | 0 | 0 | 0 |
| Future Volume (vph) | 836 | 1383 | 0 | 0 | 1065 | 426 | 887 | 5 | 538 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.2 | 5.8 | | | 5.8 | 4.0 | | 6.8 | 6.8 | | | |
| Lane Util. Factor | 1.00 | 0.95 | | | 0.95 | 1.00 | | 1.00 | 1.00 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 0.85 | | 1.00 | 0.85 | | | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (prot) | 1770 | 3539 | | | 3539 | 1583 | | 1775 | 1583 | | | |
| Flt Permitted | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (perm) | 1770 | 3539 | | | 3539 | 1583 | | 1775 | 1583 | | | |
| Peak-hour factor, PHF | 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. Flow (vph) | 836 | 1383 | 0 | 0 | 1065 | 426 | 887 | 5 | 538 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 836 | 1383 | 0 | 0 | 1065 | 426 | 0 | 892 | 465 | 0 | 0 | 0 |
| Turn Type | Prot | NA | | | NA | Free | Split | NA | Prot | | | |
| Protected Phases | 5 | 2 | | | 6 | | 8 | 8 | 8 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | 27.8 | 90.2 | | | 58.2 | 154.0 | | 51.2 | 51.2 | | | |
| Effective Green, g (s) | 27.8 | 90.2 | | | 58.2 | 154.0 | | 51.2 | 51.2 | | | |
| Actuated g/C Ratio | 0.18 | 0.59 | | | 0.38 | 1.00 | | 0.33 | 0.33 | | | |
| Clearance Time (s) | 4.2 | 5.8 | | | 5.8 | | | 6.8 | 6.8 | | | |
| Vehicle Extension (s) | 1.5 | 4.0 | | | 4.0 | | | 1.0 | 1.0 | | | |
| Lane Grp Cap (vph) | 319 | 2072 | | | 1337 | 1583 | | 590 | 526 | | | |
| v/s Ratio Prot | c0.47 | 0.39 | | | c0.30 | | | c0.50 | 0.29 | | | |
| v/s Ratio Perm | | | | | | 0.27 | | | | | | |
| v/c Ratio | 2.62 | 0.67 | | | 0.80 | 0.27 | | 1.51 | 0.88 | | | |
| Uniform Delay, d1 | 63.1 | 21.7 | | | 42.6 | 0.0 | | 51.4 | 48.6 | | | |
| Progression Factor | 1.53 | 0.94 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 730.1 | 0.2 | | | 5.0 | 0.4 | | 239.0 | 15.6 | | | |
| Delay (s) | 826.7 | 20.5 | | | 47.6 | 0.4 | | 290.4 | 64.2 | | | |
| Level of Service | F | C | | | D | A | | F | E | | | |
| Approach Delay (s) | | 324.2 | | | 34.1 | | | 205.3 | | | 0.0 | |
| Approach LOS | | F | | | C | | | F | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 207.0 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.45 | | |
| Actuated Cycle Length (s) | 154.0 | Sum of lost time (s) | 18.8 |
| Intersection Capacity Utilization | 209.2% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

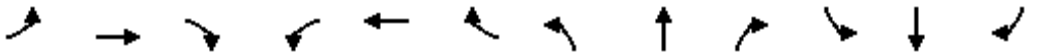
c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1701 | 1454 | 368 | 1583 | 0 | 0 | 0 | 0 | 517 | 0 | 586 |
| Future Volume (vph) | 0 | 1701 | 1454 | 368 | 1583 | 0 | 0 | 0 | 0 | 517 | 0 | 586 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | |
| Lane Util. Factor | | 0.91 | 1.00 | 1.00 | 1.00 | | | | | 0.95 | 0.95 | |
| Frt | | 1.00 | 0.85 | 1.00 | 1.00 | | | | | 1.00 | 0.86 | |
| Flt Protected | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1520 | |
| Flt Permitted | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1520 | |
| Peak-hour factor, PHF | 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. Flow (vph) | 0 | 1701 | 1454 | 368 | 1583 | 0 | 0 | 0 | 0 | 517 | 0 | 586 |
| RTOR Reduction (vph) | 0 | 0 | 556 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 |
| Lane Group Flow (vph) | 0 | 1701 | 898 | 368 | 1583 | 0 | 0 | 0 | 0 | 465 | 588 | 0 |
| Turn Type | | NA | Perm | Prot | NA | | | | | Split | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | | | 4 | 4 | |
| Permitted Phases | | | 2 | | | | | | | | | |
| Actuated Green, G (s) | | 32.2 | 32.2 | 37.5 | 88.2 | | | | | 54.2 | 54.2 | |
| Effective Green, g (s) | | 32.2 | 32.2 | 37.5 | 88.2 | | | | | 54.2 | 54.2 | |
| Actuated g/C Ratio | | 0.21 | 0.21 | 0.24 | 0.57 | | | | | 0.35 | 0.35 | |
| Clearance Time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | |
| Vehicle Extension (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | 2.5 | 2.5 | |
| Lane Grp Cap (vph) | | 1063 | 330 | 431 | 1066 | | | | | 591 | 534 | |
| v/s Ratio Prot | | 0.33 | | 0.21 | c0.85 | | | | | 0.28 | c0.39 | |
| v/s Ratio Perm | | | c0.57 | | | | | | | | | |
| v/c Ratio | | 1.60 | 2.72 | 0.85 | 1.48 | | | | | 0.79 | 1.10 | |
| Uniform Delay, d1 | | 60.9 | 60.9 | 55.6 | 32.9 | | | | | 44.7 | 49.9 | |
| Progression Factor | | 1.22 | 2.09 | 1.07 | 1.07 | | | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 272.1 | 778.4 | 1.7 | 218.7 | | | | | 6.6 | 69.6 | |
| Delay (s) | | 346.1 | 905.5 | 61.2 | 253.9 | | | | | 51.3 | 119.5 | |
| Level of Service | | F | F | E | F | | | | | D | F | |
| Approach Delay (s) | | 603.9 | | | 217.6 | | | 0.0 | | | 90.8 | |
| Approach LOS | | F | | | F | | | A | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 391.4 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.67 | | |
| Actuated Cycle Length (s) | 154.0 | Sum of lost time (s) | 19.6 |
| Intersection Capacity Utilization | 209.2% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



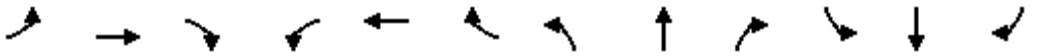
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 67 | 814 | 86 | 627 | 529 | 496 | 350 | 62 | 388 | 169 | 38 | 28 |
| Future Volume (veh/h) | 67 | 814 | 86 | 627 | 529 | 496 | 350 | 62 | 388 | 169 | 38 | 28 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 67 | 814 | 86 | 627 | 529 | 496 | 350 | 62 | 388 | 169 | 38 | 28 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 111 | 1059 | 472 | 649 | 1506 | 672 | 373 | 341 | 508 | 205 | 313 | 140 |
| Arrive On Green | 0.06 | 0.30 | 0.30 | 0.19 | 0.42 | 0.42 | 0.21 | 0.18 | 0.18 | 0.12 | 0.09 | 0.09 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 3456 | 3554 | 1585 | 1781 | 1870 | 2790 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 67 | 814 | 86 | 627 | 529 | 496 | 350 | 62 | 388 | 169 | 38 | 28 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1728 | 1777 | 1585 | 1781 | 1870 | 1395 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 3.4 | 19.3 | 3.7 | 16.7 | 9.3 | 24.3 | 17.9 | 2.6 | 12.2 | 8.6 | 0.9 | 1.5 |
| Cycle Q Clear(g_c), s | 3.4 | 19.3 | 3.7 | 16.7 | 9.3 | 24.3 | 17.9 | 2.6 | 12.2 | 8.6 | 0.9 | 1.5 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 111 | 1059 | 472 | 649 | 1506 | 672 | 373 | 341 | 508 | 205 | 313 | 140 |
| V/C Ratio(X) | 0.61 | 0.77 | 0.18 | 0.97 | 0.35 | 0.74 | 0.94 | 0.18 | 0.76 | 0.82 | 0.12 | 0.20 |
| Avail Cap(c_a), veh/h | 219 | 1798 | 802 | 649 | 2028 | 905 | 373 | 791 | 1180 | 334 | 1472 | 657 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 42.4 | 29.6 | 24.1 | 37.4 | 18.1 | 22.4 | 36.1 | 32.1 | 36.0 | 40.1 | 39.0 | 39.2 |
| Incr Delay (d2), s/veh | 5.3 | 1.2 | 0.2 | 27.1 | 0.1 | 2.2 | 31.3 | 0.3 | 2.4 | 8.3 | 0.2 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.6 | 8.1 | 1.3 | 9.3 | 3.7 | 8.4 | 10.5 | 1.1 | 4.1 | 4.2 | 0.4 | 0.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 47.6 | 30.8 | 24.3 | 64.5 | 18.2 | 24.6 | 67.4 | 32.3 | 38.4 | 48.3 | 39.1 | 39.9 |
| LnGrp LOS | D | C | C | E | B | C | E | C | D | D | D | D |
| Approach Vol, veh/h | | 967 | | | 1652 | | | 800 | | | 235 | |
| Approach Delay, s/veh | | 31.4 | | | 37.7 | | | 50.6 | | | 45.9 | |
| Approach LOS | | C | | | D | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 22.0 | 32.7 | 24.0 | 14.0 | 10.4 | 44.4 | 15.3 | 22.7 |
| Change Period (Y+Rc), s | 4.6 | 5.1 | 4.6 | * 5.8 | 4.6 | 5.1 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 17.4 | 46.9 | 19.4 | * 38 | 11.4 | 52.9 | 17.4 | 39.2 |
| Max Q Clear Time (g_c+I1), s | 18.7 | 21.3 | 19.9 | 3.5 | 5.4 | 26.3 | 10.6 | 14.2 |
| Green Ext Time (p_c), s | 0.0 | 6.3 | 0.0 | 0.3 | 0.1 | 5.8 | 0.2 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 39.4 |
| HCM 6th LOS | D |

Notes

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 87 | 1397 | 63 | 172 | 918 | 121 | 58 | 186 | 315 | 591 | 181 | 88 |
| Future Volume (veh/h) | 87 | 1397 | 63 | 172 | 918 | 121 | 58 | 186 | 315 | 591 | 181 | 88 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 87 | 1397 | 63 | 172 | 918 | 121 | 58 | 283 | 250 | 591 | 181 | 88 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 110 | 1648 | 74 | 230 | 1208 | 849 | 75 | 356 | 302 | 676 | 418 | 203 |
| Arrive On Green | 0.06 | 0.33 | 0.33 | 0.07 | 0.34 | 0.34 | 0.04 | 0.19 | 0.19 | 0.20 | 0.35 | 0.35 |
| Sat Flow, veh/h | 1781 | 5008 | 226 | 3456 | 3554 | 1585 | 1781 | 1870 | 1585 | 3456 | 1189 | 578 |
| Grp Volume(v), veh/h | 87 | 950 | 510 | 172 | 918 | 121 | 58 | 283 | 250 | 591 | 0 | 269 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1830 | 1728 | 1777 | 1585 | 1781 | 1870 | 1585 | 1728 | 0 | 1766 |
| Q Serve(g_s), s | 5.5 | 29.8 | 29.8 | 5.6 | 26.4 | 1.0 | 3.7 | 16.5 | 17.4 | 19.0 | 0.0 | 13.3 |
| Cycle Q Clear(g_c), s | 5.5 | 29.8 | 29.8 | 5.6 | 26.4 | 1.0 | 3.7 | 16.5 | 17.4 | 19.0 | 0.0 | 13.3 |
| Prop In Lane | 1.00 | | 0.12 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.33 |
| Lane Grp Cap(c), veh/h | 110 | 1120 | 602 | 230 | 1208 | 849 | 75 | 356 | 302 | 676 | 0 | 622 |
| V/C Ratio(X) | 0.79 | 0.85 | 0.85 | 0.75 | 0.76 | 0.14 | 0.77 | 0.79 | 0.83 | 0.87 | 0.00 | 0.43 |
| Avail Cap(c_a), veh/h | 151 | 1378 | 740 | 265 | 1410 | 939 | 163 | 701 | 594 | 856 | 0 | 938 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 53.1 | 35.8 | 35.8 | 52.6 | 33.7 | 4.5 | 54.4 | 44.3 | 44.6 | 44.7 | 0.0 | 28.4 |
| Incr Delay (d2), s/veh | 17.6 | 3.6 | 6.5 | 9.6 | 2.4 | 0.1 | 15.4 | 4.0 | 5.8 | 8.3 | 0.0 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.0 | 12.6 | 14.0 | 2.7 | 11.2 | 0.7 | 2.0 | 8.0 | 7.2 | 8.8 | 0.0 | 5.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 70.6 | 39.4 | 42.3 | 62.2 | 36.0 | 4.6 | 69.8 | 48.3 | 50.3 | 53.0 | 0.0 | 28.9 |
| LnGrp LOS | E | D | D | E | D | A | E | D | D | D | A | C |
| Approach Vol, veh/h | | 1547 | | | 1211 | | | 591 | | | 860 | |
| Approach Delay, s/veh | | 42.1 | | | 36.6 | | | 51.3 | | | 45.5 | |
| Approach LOS | | D | | | D | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 13.6 | 43.7 | 10.4 | 46.9 | 12.4 | 45.0 | 28.9 | 28.4 |
| Change Period (Y+Rc), s | 6.0 | * 6 | 5.6 | 6.5 | 5.3 | 6.0 | 6.5 | * 6.5 |
| Max Green Setting (Gmax), s | 8.8 | * 46 | 10.5 | 60.9 | 9.7 | 45.5 | 28.4 | * 43 |
| Max Q Clear Time (g_c+I1), s | 7.6 | 31.8 | 5.7 | 15.3 | 7.5 | 28.4 | 21.0 | 19.4 |
| Green Ext Time (p_c), s | 0.1 | 6.0 | 0.0 | 1.7 | 0.0 | 8.0 | 1.4 | 2.5 |

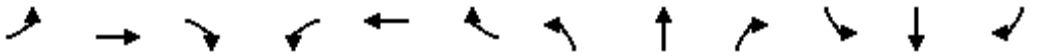
| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 42.5 |
| HCM 6th LOS | D |

**Notes**

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

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

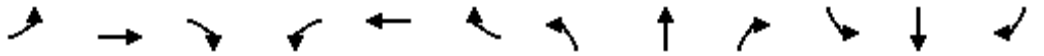


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 353 | 1159 | 0 | 0 | 1321 | 391 | 488 | 0 | 406 | 0 | 0 | 0 |
| Future Volume (veh/h) | 353 | 1159 | 0 | 0 | 1321 | 391 | 488 | 0 | 406 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 353 | 1159 | 0 | 0 | 1321 | 391 | 488 | 0 | 406 | | | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 233 | 2234 | 0 | 0 | 1272 | 366 | 512 | 0 | 456 | | | |
| Arrive On Green | 0.26 | 1.00 | 0.00 | 0.00 | 0.47 | 0.47 | 0.29 | 0.00 | 0.29 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 2817 | 783 | 1781 | 0 | 1585 | | | |
| Grp Volume(v), veh/h | 353 | 1159 | 0 | 0 | 849 | 863 | 488 | 0 | 406 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1729 | 1781 | 0 | 1585 | | | |
| Q Serve(g_s), s | 17.0 | 0.0 | 0.0 | 0.0 | 60.7 | 60.7 | 35.0 | 0.0 | 31.9 | | | |
| Cycle Q Clear(g_c), s | 17.0 | 0.0 | 0.0 | 0.0 | 60.7 | 60.7 | 35.0 | 0.0 | 31.9 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.45 | 1.00 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 233 | 2234 | 0 | 0 | 830 | 808 | 512 | 0 | 456 | | | |
| V/C Ratio(X) | 1.52 | 0.52 | 0.00 | 0.00 | 1.02 | 1.07 | 0.95 | 0.00 | 0.89 | | | |
| Avail Cap(c_a), veh/h | 233 | 2234 | 0 | 0 | 830 | 808 | 537 | 0 | 478 | | | |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.68 | 0.68 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 48.0 | 0.0 | 0.0 | 0.0 | 34.6 | 34.6 | 45.5 | 0.0 | 44.4 | | | |
| Incr Delay (d2), s/veh | 246.5 | 0.6 | 0.0 | 0.0 | 37.0 | 51.7 | 26.4 | 0.0 | 17.3 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 22.4 | 0.2 | 0.0 | 0.0 | 33.7 | 36.1 | 18.6 | 0.0 | 14.3 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 294.5 | 0.6 | 0.0 | 0.0 | 71.6 | 86.3 | 71.8 | 0.0 | 61.6 | | | |
| LnGrp LOS | F | A | A | A | F | F | E | A | E | | | |
| Approach Vol, veh/h | | 1512 | | | 1712 | | | 894 | | | | |
| Approach Delay, s/veh | | 69.2 | | | 79.1 | | | 67.2 | | | | |
| Approach LOS | | E | | | E | | | E | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 86.8 | | | 21.0 | 65.8 | | 43.2 | | | | |
| Change Period (Y+Rc), s | | 5.1 | | | 4.0 | 5.1 | | 5.8 | | | | |
| Max Green Setting (Gmax), s | | 79.9 | | | 17.0 | 58.9 | | 39.2 | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.0 | | | 19.0 | 62.7 | | 37.0 | | | | |
| Green Ext Time (p_c), s | | 10.4 | | | 0.0 | 0.0 | | 0.4 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 72.9 |
| HCM 6th LOS | E |

**Notes**

User approved volume balancing among the lanes for turning movement.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 1142 | 447 | 412 | 1397 | 0 | 0 | 0 | 0 | 369 | 5 | 278 |
| Future Volume (veh/h) | 0 | 1142 | 447 | 412 | 1397 | 0 | 0 | 0 | 0 | 369 | 5 | 278 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 1142 | 447 | 412 | 1397 | 0 | | | | 326 | 65 | 278 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 1292 | 401 | 718 | 1300 | 0 | | | | 403 | 70 | 299 |
| Arrive On Green | 0.00 | 0.25 | 0.25 | 0.81 | 1.00 | 0.00 | | | | 0.23 | 0.23 | 0.23 |
| Sat Flow, veh/h | 0 | 5274 | 1585 | 1781 | 1870 | 0 | | | | 1781 | 309 | 1323 |
| Grp Volume(v), veh/h | 0 | 1142 | 447 | 412 | 1397 | 0 | | | | 326 | 0 | 343 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1585 | 1781 | 1870 | 0 | | | | 1781 | 0 | 1632 |
| Q Serve(g_s), s | 0.0 | 28.0 | 32.9 | 10.9 | 90.4 | 0.0 | | | | 22.5 | 0.0 | 26.8 |
| Cycle Q Clear(g_c), s | 0.0 | 28.0 | 32.9 | 10.9 | 90.4 | 0.0 | | | | 22.5 | 0.0 | 26.8 |
| Prop In Lane | 0.00 | | 1.00 | 1.00 | | 0.00 | | | | 1.00 | | 0.81 |
| Lane Grp Cap(c), veh/h | 0 | 1292 | 401 | 718 | 1300 | 0 | | | | 403 | 0 | 370 |
| V/C Ratio(X) | 0.00 | 0.88 | 1.11 | 0.57 | 1.07 | 0.00 | | | | 0.81 | 0.00 | 0.93 |
| Avail Cap(c_a), veh/h | 0 | 1292 | 401 | 718 | 1300 | 0 | | | | 602 | 0 | 551 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 0.09 | 0.09 | 0.00 | | | | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 46.7 | 48.5 | 8.6 | 0.0 | 0.0 | | | | 47.6 | 0.0 | 49.3 |
| Incr Delay (d2), s/veh | 0.0 | 9.0 | 79.7 | 0.1 | 35.2 | 0.0 | | | | 2.9 | 0.0 | 13.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 12.8 | 21.7 | 2.7 | 12.7 | 0.0 | | | | 10.0 | 0.0 | 12.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 55.7 | 128.2 | 8.7 | 35.2 | 0.0 | | | | 50.5 | 0.0 | 62.8 |
| LnGrp LOS | A | E | F | A | F | A | | | | D | A | E |
| Approach Vol, veh/h | | 1589 | | | 1809 | | | | | | 669 | |
| Approach Delay, s/veh | | 76.1 | | | 29.2 | | | | | | 56.8 | |
| Approach LOS | | E | | | C | | | | | | E | |

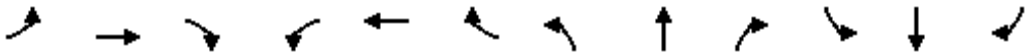
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 57.5 | 38.0 | | 34.5 | | 95.5 |
| Change Period (Y+Rc), s | 5.1 | * 5.1 | | 5.1 | | 5.1 |
| Max Green Setting (Gmax), s | 39.0 | * 33 | | 43.9 | | 75.9 |
| Max Q Clear Time (g_c+I1), s | 12.9 | 34.9 | | 28.8 | | 92.4 |
| Green Ext Time (p_c), s | 0.2 | 0.0 | | 0.7 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 52.1 |
| HCM 6th LOS | | D |

**Notes**

User approved volume balancing among the lanes for turning movement.

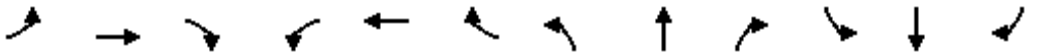
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 836 | 1383 | 0 | 0 | 1065 | 426 | 887 | 5 | 538 | 0 | 0 | 0 |
| Future Volume (vph) | 836 | 1383 | 0 | 0 | 1065 | 426 | 887 | 5 | 538 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.2 | 5.8 | | | 5.8 | 4.0 | 6.8 | 6.8 | 6.8 | | | |
| Lane Util. Factor | 1.00 | 0.95 | | | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | | | |
| Satd. Flow (prot) | 1770 | 3539 | | | 3539 | 1583 | 1681 | 1686 | 1583 | | | |
| Flt Permitted | 0.95 | 1.00 | | | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | | | |
| Satd. Flow (perm) | 1770 | 3539 | | | 3539 | 1583 | 1681 | 1686 | 1583 | | | |
| Peak-hour factor, PHF | 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. Flow (vph) | 836 | 1383 | 0 | 0 | 1065 | 426 | 887 | 5 | 538 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 75 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 836 | 1383 | 0 | 0 | 1065 | 426 | 443 | 449 | 463 | 0 | 0 | 0 |
| Turn Type | Prot | NA | | | NA | Free | Split | NA | Prot | | | |
| Protected Phases | 5 | 2 | | | 6 | | 8 | 8 | 8 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | 29.4 | 91.8 | | | 58.2 | 154.0 | 49.6 | 49.6 | 49.6 | | | |
| Effective Green, g (s) | 29.4 | 91.8 | | | 58.2 | 154.0 | 49.6 | 49.6 | 49.6 | | | |
| Actuated g/C Ratio | 0.19 | 0.60 | | | 0.38 | 1.00 | 0.32 | 0.32 | 0.32 | | | |
| Clearance Time (s) | 4.2 | 5.8 | | | 5.8 | | 6.8 | 6.8 | 6.8 | | | |
| Vehicle Extension (s) | 1.5 | 4.0 | | | 4.0 | | 1.0 | 1.0 | 1.0 | | | |
| Lane Grp Cap (vph) | 337 | 2109 | | | 1337 | 1583 | 541 | 543 | 509 | | | |
| v/s Ratio Prot | c0.47 | 0.39 | | | c0.30 | | 0.26 | 0.27 | c0.29 | | | |
| v/s Ratio Perm | | | | | | 0.27 | | | | | | |
| v/c Ratio | 2.48 | 0.66 | | | 0.80 | 0.27 | 0.82 | 0.83 | 0.91 | | | |
| Uniform Delay, d1 | 62.3 | 20.6 | | | 42.6 | 0.0 | 48.1 | 48.2 | 50.1 | | | |
| Progression Factor | 1.64 | 0.51 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 668.6 | 0.4 | | | 5.0 | 0.4 | 8.9 | 9.5 | 20.1 | | | |
| Delay (s) | 770.6 | 10.9 | | | 47.6 | 0.4 | 57.0 | 57.8 | 70.2 | | | |
| Level of Service | F | B | | | D | A | E | E | E | | | |
| Approach Delay (s) | | 297.1 | | | 34.1 | | | 62.2 | | | 0.0 | |
| Approach LOS | | F | | | C | | | E | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 155.5 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.21 | | |
| Actuated Cycle Length (s) | 154.0 | Sum of lost time (s) | 18.8 |
| Intersection Capacity Utilization | 127.8% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

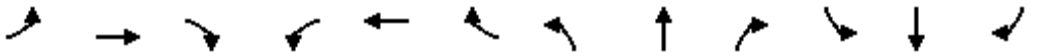
c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1701 | 1454 | 368 | 1583 | 0 | 0 | 0 | 0 | 517 | 0 | 586 |
| Future Volume (vph) | 0 | 1701 | 1454 | 368 | 1583 | 0 | 0 | 0 | 0 | 517 | 0 | 586 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.8 | 4.0 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | 5.8 |
| Lane Util. Factor | | 0.91 | 1.00 | 1.00 | 1.00 | | | | | 0.95 | 0.91 | 0.95 |
| Frt | | 1.00 | 0.85 | 1.00 | 1.00 | | | | | 1.00 | 0.90 | 0.85 |
| Flt Protected | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 0.98 | 1.00 |
| Satd. Flow (prot) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1506 | 1504 |
| Flt Permitted | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 0.98 | 1.00 |
| Satd. Flow (perm) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1506 | 1504 |
| Peak-hour factor, PHF | 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. Flow (vph) | 0 | 1701 | 1454 | 368 | 1583 | 0 | 0 | 0 | 0 | 517 | 0 | 586 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 56 | 56 |
| Lane Group Flow (vph) | 0 | 1701 | 1454 | 368 | 1583 | 0 | 0 | 0 | 0 | 383 | 312 | 296 |
| Turn Type | | NA | Free | Prot | NA | | | | | Split | NA | Perm |
| Protected Phases | | 2 | | 1 | 6 | | | | | 4 | 4 | |
| Permitted Phases | | | Free | | | | | | | | | 4 |
| Actuated Green, G (s) | | 47.2 | 154.0 | 39.4 | 99.9 | | | | | 42.5 | 42.5 | 42.5 |
| Effective Green, g (s) | | 47.2 | 154.0 | 39.4 | 99.9 | | | | | 42.5 | 42.5 | 42.5 |
| Actuated g/C Ratio | | 0.31 | 1.00 | 0.26 | 0.65 | | | | | 0.28 | 0.28 | 0.28 |
| Clearance Time (s) | | 6.8 | | 5.0 | 5.8 | | | | | 5.8 | 5.8 | 5.8 |
| Vehicle Extension (s) | | 4.0 | | 4.0 | 4.0 | | | | | 2.5 | 2.5 | 2.5 |
| Lane Grp Cap (vph) | | 1558 | 1583 | 452 | 1208 | | | | | 463 | 415 | 415 |
| v/s Ratio Prot | | 0.33 | | 0.21 | c0.85 | | | | | 0.23 | 0.21 | |
| v/s Ratio Perm | | | c0.92 | | | | | | | | | 0.20 |
| v/c Ratio | | 1.09 | 0.92 | 0.81 | 1.31 | | | | | 0.83 | 0.75 | 0.71 |
| Uniform Delay, d1 | | 53.4 | 0.0 | 53.9 | 27.0 | | | | | 52.3 | 50.9 | 50.3 |
| Progression Factor | | 0.76 | 1.00 | 0.93 | 1.37 | | | | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | | 46.8 | 5.1 | 6.7 | 143.2 | | | | | 11.3 | 7.2 | 5.4 |
| Delay (s) | | 87.6 | 5.1 | 56.7 | 180.2 | | | | | 63.6 | 58.1 | 55.6 |
| Level of Service | | F | A | E | F | | | | | E | E | E |
| Approach Delay (s) | | 49.6 | | | 156.9 | | | 0.0 | | | 59.2 | |
| Approach LOS | | D | | | F | | | A | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 85.0 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.30 | | |
| Actuated Cycle Length (s) | 154.0 | Sum of lost time (s) | 19.6 |
| Intersection Capacity Utilization | 127.8% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



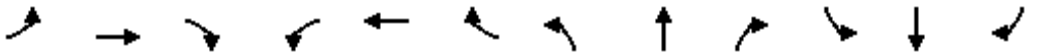
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 110 | 573 | 94 | 865 | 591 | 450 | 348 | 193 | 430 | 429 | 65 | 54 |
| Future Volume (veh/h) | 110 | 573 | 94 | 865 | 591 | 450 | 348 | 193 | 430 | 429 | 65 | 54 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 110 | 573 | 94 | 865 | 591 | 450 | 348 | 193 | 430 | 429 | 65 | 54 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 140 | 1109 | 495 | 413 | 1254 | 559 | 386 | 391 | 584 | 213 | 398 | 177 |
| Arrive On Green | 0.08 | 0.31 | 0.31 | 0.12 | 0.35 | 0.35 | 0.22 | 0.21 | 0.21 | 0.12 | 0.11 | 0.11 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 3456 | 3554 | 1585 | 1781 | 1870 | 2790 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 110 | 573 | 94 | 865 | 591 | 450 | 348 | 193 | 430 | 429 | 65 | 54 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1728 | 1777 | 1585 | 1781 | 1870 | 1395 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 5.1 | 11.1 | 3.6 | 10.0 | 10.8 | 21.5 | 15.9 | 7.6 | 12.1 | 10.0 | 1.4 | 2.6 |
| Cycle Q Clear(g_c), s | 5.1 | 11.1 | 3.6 | 10.0 | 10.8 | 21.5 | 15.9 | 7.6 | 12.1 | 10.0 | 1.4 | 2.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 140 | 1109 | 495 | 413 | 1254 | 559 | 386 | 391 | 584 | 213 | 398 | 177 |
| V/C Ratio(X) | 0.79 | 0.52 | 0.19 | 2.10 | 0.47 | 0.80 | 0.90 | 0.49 | 0.74 | 2.02 | 0.16 | 0.30 |
| Avail Cap(c_a), veh/h | 213 | 2121 | 946 | 413 | 2121 | 946 | 425 | 1116 | 1665 | 213 | 1697 | 757 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.9 | 23.6 | 21.1 | 36.9 | 21.0 | 24.5 | 31.9 | 29.2 | 31.0 | 36.9 | 33.7 | 34.2 |
| Incr Delay (d2), s/veh | 10.3 | 0.4 | 0.2 | 501.8 | 0.3 | 2.8 | 20.7 | 1.0 | 1.8 | 474.1 | 0.2 | 1.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.5 | 4.5 | 1.2 | 32.8 | 4.3 | 7.5 | 8.5 | 3.2 | 3.9 | 32.1 | 0.6 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 48.2 | 24.0 | 21.3 | 538.7 | 21.3 | 27.3 | 52.7 | 30.2 | 32.8 | 510.9 | 33.8 | 35.2 |
| LnGrp LOS | D | C | C | F | C | C | D | C | C | F | C | D |
| Approach Vol, veh/h | | 777 | | | 1906 | | | 971 | | | 548 | |
| Approach Delay, s/veh | | 27.1 | | | 257.5 | | | 39.4 | | | 407.5 | |
| Approach LOS | | C | | | F | | | D | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 14.6 | 31.2 | 22.8 | 15.2 | 11.2 | 34.6 | 14.6 | 23.3 |
| Change Period (Y+Rc), s | 4.6 | 5.1 | 4.6 | * 5.8 | 4.6 | 5.1 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | 50.0 | 20.0 | * 40 | 10.0 | 50.0 | 10.0 | 50.0 |
| Max Q Clear Time (g_c+I1), s | 12.0 | 13.1 | 17.9 | 4.6 | 7.1 | 23.5 | 12.0 | 14.1 |
| Green Ext Time (p_c), s | 0.0 | 4.5 | 0.2 | 0.5 | 0.1 | 6.1 | 0.0 | 2.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 184.1 |
| HCM 6th LOS | F |

Notes

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



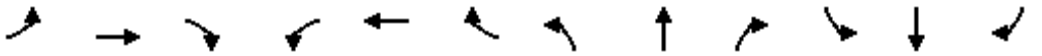
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 115 | 17 | 348 | 84 | 29 | 28 | 326 | 830 | 40 | 53 | 581 | 97 |
| Future Volume (veh/h) | 115 | 17 | 348 | 84 | 29 | 28 | 326 | 830 | 40 | 53 | 581 | 97 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 115 | 17 | 348 | 84 | 29 | 28 | 326 | 830 | 40 | 53 | 581 | 97 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 146 | 21 | 421 | 131 | 234 | 226 | 368 | 1732 | 83 | 107 | 887 | 146 |
| Arrive On Green | 0.08 | 0.28 | 0.28 | 0.07 | 0.27 | 0.27 | 0.21 | 0.35 | 0.35 | 0.06 | 0.20 | 0.20 |
| Sat Flow, veh/h | 1781 | 74 | 1522 | 1781 | 874 | 844 | 1781 | 4991 | 240 | 1781 | 4418 | 726 |
| Grp Volume(v), veh/h | 115 | 0 | 365 | 84 | 0 | 57 | 326 | 565 | 305 | 53 | 446 | 232 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1596 | 1781 | 0 | 1718 | 1781 | 1702 | 1827 | 1781 | 1702 | 1740 |
| Q Serve(g_s), s | 5.1 | 0.0 | 17.4 | 3.7 | 0.0 | 2.0 | 14.4 | 10.5 | 10.6 | 2.3 | 9.8 | 10.0 |
| Cycle Q Clear(g_c), s | 5.1 | 0.0 | 17.4 | 3.7 | 0.0 | 2.0 | 14.4 | 10.5 | 10.6 | 2.3 | 9.8 | 10.0 |
| Prop In Lane | 1.00 | | 0.95 | 1.00 | | 0.49 | 1.00 | | 0.13 | 1.00 | | 0.42 |
| Lane Grp Cap(c), veh/h | 146 | 0 | 441 | 131 | 0 | 460 | 368 | 1181 | 634 | 107 | 683 | 349 |
| V/C Ratio(X) | 0.79 | 0.00 | 0.83 | 0.64 | 0.00 | 0.12 | 0.89 | 0.48 | 0.48 | 0.49 | 0.65 | 0.67 |
| Avail Cap(c_a), veh/h | 220 | 0 | 689 | 220 | 0 | 742 | 439 | 1469 | 789 | 220 | 1049 | 536 |
| 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 | 1.00 |
| Uniform Delay (d), s/veh | 36.5 | 0.0 | 27.5 | 36.5 | 0.0 | 22.5 | 31.3 | 20.7 | 20.7 | 36.9 | 29.8 | 29.9 |
| Incr Delay (d2), s/veh | 10.3 | 0.0 | 6.3 | 5.2 | 0.0 | 0.2 | 17.1 | 0.4 | 0.8 | 3.5 | 1.5 | 3.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.6 | 0.0 | 7.2 | 1.8 | 0.0 | 0.8 | 7.4 | 3.8 | 4.1 | 1.1 | 3.8 | 4.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 46.8 | 0.0 | 33.8 | 41.7 | 0.0 | 22.7 | 48.3 | 21.2 | 21.6 | 40.4 | 31.3 | 33.0 |
| LnGrp LOS | D | A | C | D | A | C | D | C | C | D | C | C |
| Approach Vol, veh/h | | 480 | | | 141 | | | 1196 | | | 731 | |
| Approach Delay, s/veh | | 36.9 | | | 34.0 | | | 28.7 | | | 32.5 | |
| Approach LOS | | D | | | C | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.5 | 27.1 | 21.3 | 22.1 | 11.3 | 26.4 | 9.5 | 33.9 |
| Change Period (Y+Rc), s | 4.6 | * 4.7 | 4.6 | 5.8 | 4.6 | * 4.7 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 10.0 | * 35 | 20.0 | 25.0 | 10.0 | * 35 | 10.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 5.7 | 19.4 | 16.4 | 12.0 | 7.1 | 4.0 | 4.3 | 12.6 |
| Green Ext Time (p_c), s | 0.1 | 3.0 | 0.3 | 4.3 | 0.1 | 0.4 | 0.0 | 7.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 31.6 |
| HCM 6th LOS | C |

Notes

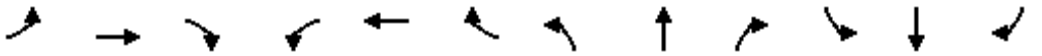
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 653 | 1552 | 157 | 982 | 1886 | 464 | 224 | 309 | 618 | 739 | 256 | 445 |
| Future Volume (vph) | 653 | 1552 | 157 | 982 | 1886 | 464 | 224 | 309 | 618 | 739 | 256 | 445 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.3 | 5.8 | 5.8 | 4.6 | 5.8 | 5.8 | 5.3 | 5.8 | 5.8 | 5.7 | 5.8 | 5.8 |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 0.91 | 0.88 | 0.97 | 0.91 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 5085 | 2787 | 3433 | 5085 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 5085 | 1583 | 3433 | 5085 | 1583 | 1770 | 5085 | 2787 | 3433 | 5085 | 1583 |
| Peak-hour factor, PHF | 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. Flow (vph) | 653 | 1552 | 157 | 982 | 1886 | 464 | 224 | 309 | 618 | 739 | 256 | 445 |
| RTOR Reduction (vph) | 0 | 0 | 96 | 0 | 0 | 226 | 0 | 0 | 390 | 0 | 0 | 190 |
| Lane Group Flow (vph) | 653 | 1552 | 61 | 982 | 1886 | 238 | 224 | 309 | 228 | 739 | 256 | 255 |
| Turn Type | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 5 | 2 | | 1 | 6 | | 3 | 8 | | 7 | 4 | |
| Permitted Phases | | | 2 | | | 6 | | | 8 | | | 4 |
| Actuated Green, G (s) | 20.7 | 61.2 | 61.2 | 21.4 | 61.2 | 61.2 | 14.7 | 20.6 | 20.6 | 40.9 | 47.2 | 47.2 |
| Effective Green, g (s) | 20.7 | 61.2 | 61.2 | 21.4 | 61.2 | 61.2 | 14.7 | 20.6 | 20.6 | 40.9 | 47.2 | 47.2 |
| Actuated g/C Ratio | 0.12 | 0.37 | 0.37 | 0.13 | 0.37 | 0.37 | 0.09 | 0.12 | 0.12 | 0.25 | 0.28 | 0.28 |
| Clearance Time (s) | 5.3 | 5.8 | 5.8 | 4.6 | 5.8 | 5.8 | 5.3 | 5.8 | 5.8 | 5.7 | 5.8 | 5.8 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 428 | 1874 | 583 | 442 | 1874 | 583 | 156 | 631 | 345 | 845 | 1445 | 450 |
| v/s Ratio Prot | 0.19 | 0.31 | | c0.29 | c0.37 | | c0.13 | 0.06 | | c0.22 | 0.05 | |
| v/s Ratio Perm | | | 0.04 | | | 0.15 | | | 0.08 | | | c0.16 |
| v/c Ratio | 1.53 | 0.83 | 0.10 | 2.22 | 1.01 | 0.41 | 1.44 | 0.49 | 0.66 | 0.87 | 0.18 | 0.57 |
| Uniform Delay, d1 | 72.7 | 47.6 | 34.4 | 72.3 | 52.4 | 38.9 | 75.7 | 67.8 | 69.4 | 60.1 | 44.8 | 50.7 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.05 | 0.79 | 0.52 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 248.2 | 4.4 | 0.4 | 550.4 | 7.9 | 0.2 | 228.7 | 0.6 | 4.7 | 10.0 | 0.1 | 1.6 |
| Delay (s) | 320.8 | 52.0 | 34.8 | 626.1 | 49.4 | 20.5 | 304.4 | 68.4 | 74.1 | 70.1 | 44.8 | 52.3 |
| Level of Service | F | D | C | F | D | C | F | E | E | E | D | D |
| Approach Delay (s) | | 125.2 | | | 215.4 | | | 117.4 | | | 60.1 | |
| Approach LOS | | F | | | F | | | F | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 149.1 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.20 | | |
| Actuated Cycle Length (s) | 166.0 | Sum of lost time (s) | 26.2 |
| Intersection Capacity Utilization | 105.7% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



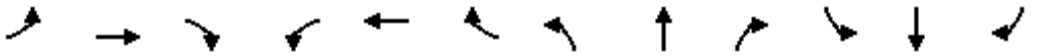
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 170 | 20 | 13 | 4 | 48 | 111 | 1 | 460 | 1 | 160 | 471 | 185 |
| Future Volume (veh/h) | 170 | 20 | 13 | 4 | 48 | 111 | 1 | 460 | 1 | 160 | 471 | 185 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 170 | 20 | 13 | 4 | 48 | 111 | 1 | 460 | 1 | 160 | 471 | 185 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 225 | 435 | 369 | 8 | 206 | 175 | 4 | 1266 | 3 | 212 | 1830 | 568 |
| Arrive On Green | 0.13 | 0.23 | 0.23 | 0.00 | 0.11 | 0.11 | 0.00 | 0.24 | 0.24 | 0.12 | 0.36 | 0.36 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 5261 | 11 | 1781 | 5106 | 1585 |
| Grp Volume(v), veh/h | 170 | 20 | 13 | 4 | 48 | 111 | 1 | 298 | 163 | 160 | 471 | 185 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 | 1781 | 1702 | 1868 | 1781 | 1702 | 1585 |
| Q Serve(g_s), s | 4.6 | 0.4 | 0.3 | 0.1 | 1.2 | 3.3 | 0.0 | 3.6 | 3.6 | 4.3 | 3.2 | 4.2 |
| Cycle Q Clear(g_c), s | 4.6 | 0.4 | 0.3 | 0.1 | 1.2 | 3.3 | 0.0 | 3.6 | 3.6 | 4.3 | 3.2 | 4.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.01 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 225 | 435 | 369 | 8 | 206 | 175 | 4 | 819 | 450 | 212 | 1830 | 568 |
| V/C Ratio(X) | 0.75 | 0.05 | 0.04 | 0.52 | 0.23 | 0.63 | 0.28 | 0.36 | 0.36 | 0.76 | 0.26 | 0.33 |
| Avail Cap(c_a), veh/h | 719 | 944 | 800 | 719 | 944 | 800 | 719 | 2061 | 1131 | 719 | 3091 | 960 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 20.9 | 14.8 | 14.7 | 24.6 | 20.1 | 21.1 | 24.7 | 15.7 | 15.7 | 21.1 | 11.2 | 11.5 |
| Incr Delay (d2), s/veh | 5.1 | 0.0 | 0.0 | 45.1 | 0.6 | 3.8 | 37.4 | 1.0 | 1.8 | 5.4 | 0.3 | 1.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.1 | 0.2 | 0.1 | 0.1 | 0.5 | 1.2 | 0.0 | 1.2 | 1.5 | 1.8 | 1.0 | 1.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 26.0 | 14.8 | 14.8 | 69.7 | 20.7 | 24.9 | 62.1 | 16.6 | 17.4 | 26.5 | 11.5 | 12.7 |
| LnGrp LOS | C | B | B | E | C | C | E | B | B | C | B | B |
| Approach Vol, veh/h | | 203 | | | 163 | | | 462 | | | 816 | |
| Approach Delay, s/veh | | 24.2 | | | 24.7 | | | 17.0 | | | 14.7 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 4.7 | 16.5 | 4.6 | 23.8 | 10.8 | 10.5 | 10.4 | 17.9 |
| Change Period (Y+Rc), s | 4.5 | 5.0 | 4.5 | 6.0 | 4.5 | 5.0 | 4.5 | 6.0 |
| Max Green Setting (Gmax), s | 20.0 | 25.0 | 20.0 | 30.0 | 20.0 | 25.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 2.4 | 2.0 | 6.2 | 6.6 | 5.3 | 6.3 | 5.6 |
| Green Ext Time (p_c), s | 0.0 | 0.1 | 0.0 | 8.7 | 0.4 | 0.5 | 0.3 | 6.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 17.5 |
| HCM 6th LOS | B |

**Notes**

User approved pedestrian interval to be less than phase max green.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 164 | 1631 | 87 | 298 | 1977 | 280 | 30 | 46 | 285 | 440 | 48 | 36 |
| Future Volume (veh/h) | 164 | 1631 | 87 | 298 | 1977 | 280 | 30 | 46 | 285 | 440 | 48 | 36 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 164 | 1631 | 87 | 298 | 1977 | 280 | 30 | 46 | 285 | 440 | 48 | 36 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 189 | 1741 | 93 | 256 | 1380 | 616 | 44 | 363 | 307 | 256 | 585 | 496 |
| Arrive On Green | 0.11 | 0.35 | 0.35 | 0.14 | 0.39 | 0.39 | 0.02 | 0.19 | 0.19 | 0.14 | 0.31 | 0.31 |
| Sat Flow, veh/h | 1781 | 4962 | 265 | 1781 | 3554 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 164 | 1119 | 599 | 298 | 1977 | 280 | 30 | 46 | 285 | 440 | 48 | 36 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1823 | 1781 | 1777 | 1585 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 12.6 | 44.3 | 44.3 | 20.0 | 54.1 | 18.3 | 2.3 | 2.8 | 24.6 | 20.0 | 2.5 | 2.2 |
| Cycle Q Clear(g_c), s | 12.6 | 44.3 | 44.3 | 20.0 | 54.1 | 18.3 | 2.3 | 2.8 | 24.6 | 20.0 | 2.5 | 2.2 |
| Prop In Lane | 1.00 | | 0.15 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 189 | 1195 | 640 | 256 | 1380 | 616 | 44 | 363 | 307 | 256 | 585 | 496 |
| V/C Ratio(X) | 0.87 | 0.94 | 0.94 | 1.17 | 1.43 | 0.45 | 0.68 | 0.13 | 0.93 | 1.72 | 0.08 | 0.07 |
| Avail Cap(c_a), veh/h | 256 | 1222 | 654 | 256 | 1380 | 616 | 256 | 403 | 341 | 256 | 585 | 496 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 61.3 | 43.7 | 43.7 | 59.7 | 42.6 | 31.6 | 67.4 | 46.4 | 55.2 | 59.7 | 33.8 | 33.7 |
| Incr Delay (d2), s/veh | 20.3 | 12.9 | 20.5 | 108.4 | 198.8 | 0.7 | 17.1 | 0.2 | 29.2 | 340.3 | 0.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.8 | 20.5 | 23.3 | 16.5 | 60.8 | 7.1 | 1.3 | 1.3 | 12.2 | 33.1 | 1.2 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 81.6 | 56.6 | 64.3 | 168.1 | 241.4 | 32.4 | 84.5 | 46.6 | 84.4 | 400.0 | 33.8 | 33.7 |
| LnGrp LOS | F | E | E | F | F | C | F | D | F | F | C | C |
| Approach Vol, veh/h | | 1882 | | | 2555 | | | 361 | | | 524 | |
| Approach Delay, s/veh | | 61.2 | | | 210.0 | | | 79.5 | | | 341.3 | |
| Approach LOS | | E | | | F | | | E | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 25.3 | 54.9 | 9.0 | 50.1 | 20.1 | 60.1 | 25.6 | 33.5 |
| Change Period (Y+Rc), s | 5.3 | 6.0 | 5.6 | 6.5 | 5.3 | 6.0 | 5.6 | 6.5 |
| Max Green Setting (Gmax), s | 20.0 | 50.0 | 20.0 | 30.0 | 20.0 | 50.0 | 20.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 22.0 | 46.3 | 4.3 | 4.5 | 14.6 | 56.1 | 22.0 | 26.6 |
| Green Ext Time (p_c), s | 0.0 | 2.6 | 0.0 | 0.3 | 0.2 | 0.0 | 0.0 | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 161.5 |
| HCM 6th LOS | F |

**Notes**

User approved pedestrian interval to be less than phase max green.

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 11.3 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 21 | 281 | 152 | 38 | 37 | 87 | 84 | 117 | 33 | 53 | 0 |
| Future Vol, veh/h | 0 | 21 | 281 | 152 | 38 | 37 | 87 | 84 | 117 | 33 | 53 | 0 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 21 | 281 | 152 | 38 | 37 | 87 | 84 | 117 | 33 | 53 | 0 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 11 | 11.3 | 12.1 | 9.9 |
| HCM LOS | B | B | B | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 30% | 0% | 67% | 38% |
| Vol Thru, % | 29% | 7% | 17% | 62% |
| Vol Right, % | 41% | 93% | 16% | 0% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 288 | 302 | 227 | 86 |
| LT Vol | 87 | 0 | 152 | 33 |
| Through Vol | 84 | 21 | 38 | 53 |
| RT Vol | 117 | 281 | 37 | 0 |
| Lane Flow Rate | 288 | 302 | 227 | 86 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.42 | 0.401 | 0.343 | 0.14 |
| Departure Headway (Hd) | 5.255 | 4.777 | 5.442 | 5.868 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 685 | 752 | 661 | 610 |
| Service Time | 3.292 | 2.814 | 3.483 | 3.917 |
| HCM Lane V/C Ratio | 0.42 | 0.402 | 0.343 | 0.141 |
| HCM Control Delay | 12.1 | 11 | 11.3 | 9.9 |
| HCM Lane LOS | B | B | B | A |
| HCM 95th-tile Q | 2.1 | 1.9 | 1.5 | 0.5 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ⇕ | | | ⇕ | | | ⇕ | | | ⇕ | |
| Traffic Vol, veh/h | 0 | 95 | 0 | 38 | 42 | 34 | 0 | 0 | 174 | 36 | 0 | 4 |
| Future Vol, veh/h | 0 | 95 | 0 | 38 | 42 | 34 | 0 | 0 | 174 | 36 | 0 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 95 | 0 | 38 | 42 | 34 | 0 | 0 | 174 | 36 | 0 | 4 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 76 | 0 | 0 | 95 | 0 | 0 | 232 | 247 | 95 | 317 | 230 | 59 |
| Stage 1 | - | - | - | - | - | - | 95 | 95 | - | 135 | 135 | - |
| Stage 2 | - | - | - | - | - | - | 137 | 152 | - | 182 | 95 | - |
| 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 | 1523 | - | - | 1499 | - | - | 723 | 655 | 962 | 636 | 670 | 1007 |
| Stage 1 | - | - | - | - | - | - | 912 | 816 | - | 868 | 785 | - |
| Stage 2 | - | - | - | - | - | - | 866 | 772 | - | 820 | 816 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1523 | - | - | 1499 | - | - | 706 | 637 | 962 | 510 | 652 | 1007 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 706 | 637 | - | 510 | 652 | - |
| Stage 1 | - | - | - | - | - | - | 912 | 816 | - | 868 | 764 | - |
| Stage 2 | - | - | - | - | - | - | 839 | 751 | - | 672 | 816 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 2.5 | 9.6 | 12.3 |
| HCM LOS | | | A | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 962 | 1523 | - | - | 1499 | - | - | 536 |
| HCM Lane V/C Ratio | 0.181 | - | - | - | 0.025 | - | - | 0.075 |
| HCM Control Delay (s) | 9.6 | 0 | - | - | 7.5 | 0 | - | 12.3 |
| HCM Lane LOS | A | A | - | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.7 | 0 | - | - | 0.1 | - | - | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 12 | 12 | 16 | 203 | 253 | 7 |
| Future Vol, veh/h | 12 | 12 | 16 | 203 | 253 | 7 |
| 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 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 12 | 12 | 16 | 203 | 253 | 7 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 492 | 257 | 260 | 0 | - | 0 |
| Stage 1 | 257 | - | - | - | - | - |
| Stage 2 | 235 | - | - | - | - | - |
| 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 | 536 | 782 | 1304 | - | - | - |
| Stage 1 | 786 | - | - | - | - | - |
| Stage 2 | 804 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 528 | 782 | 1304 | - | - | - |
| Mov Cap-2 Maneuver | 528 | - | - | - | - | - |
| Stage 1 | 775 | - | - | - | - | - |
| Stage 2 | 804 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.9 | 0.6 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1304 | - | 630 | - | - |
| HCM Lane V/C Ratio | 0.012 | - | 0.038 | - | - |
| HCM Control Delay (s) | 7.8 | 0 | 10.9 | - | - |
| HCM Lane LOS | A | A | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 27 | 18 | 32 | 63 | 32 | 54 |
| Future Vol, veh/h | 27 | 18 | 32 | 63 | 32 | 54 |
| 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 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 18 | 32 | 63 | 32 | 54 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 182 | 64 | 0 | 0 | 95 | 0 |
| Stage 1 | 64 | - | - | - | - | - |
| Stage 2 | 118 | - | - | - | - | - |
| 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 | 807 | 1000 | - | - | 1499 | - |
| Stage 1 | 959 | - | - | - | - | - |
| Stage 2 | 907 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 789 | 1000 | - | - | 1499 | - |
| Mov Cap-2 Maneuver | 789 | - | - | - | - | - |
| Stage 1 | 959 | - | - | - | - | - |
| Stage 2 | 887 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 9.4 | 0 | 2.8 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 862 | 1499 | - |
| HCM Lane V/C Ratio | - | - | 0.052 | 0.021 | - |
| HCM Control Delay (s) | - | - | 9.4 | 7.5 | 0 |
| HCM Lane LOS | - | - | A | A | A |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 0.1 | - |

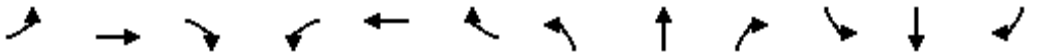
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑↑ | ↑↱ | | | ↱ |
| Traffic Vol, veh/h | 0 | 1882 | 1665 | 421 | 0 | 48 |
| Future Vol, veh/h | 0 | 1882 | 1665 | 421 | 0 | 48 |
| 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 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 1882 | 1665 | 421 | 0 | 48 |

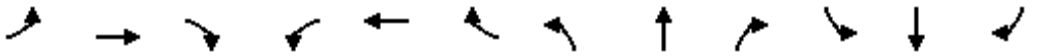
| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 0 | - | 1043 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.32 |
| Pot Cap-1 Maneuver | 0 | - | - | - | 0 | 226 |
| Stage 1 | 0 | - | - | - | 0 | - |
| Stage 2 | 0 | - | - | - | 0 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 226 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 25.2 |
| HCM LOS | | | D |

| Minor Lane/Major Mvmt | EBT | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | 226 |
| HCM Lane V/C Ratio | - | - | - | 0.212 |
| HCM Control Delay (s) | - | - | - | 25.2 |
| HCM Lane LOS | - | - | - | D |
| HCM 95th %tile Q(veh) | - | - | - | 0.8 |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 363 | 1399 | 0 | 0 | 1397 | 363 | 482 | 7 | 559 | 0 | 0 | 0 |
| Future Volume (veh/h) | 363 | 1399 | 0 | 0 | 1397 | 363 | 482 | 7 | 559 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 363 | 1399 | 0 | 0 | 1397 | 363 | 482 | 7 | 559 | | | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 207 | 1945 | 0 | 0 | 1134 | 286 | 291 | 4 | 337 | | | |
| Arrive On Green | 0.23 | 1.00 | 0.00 | 0.00 | 0.40 | 0.40 | 0.38 | 0.38 | 0.38 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 2903 | 710 | 769 | 11 | 892 | | | |
| Grp Volume(v), veh/h | 363 | 1399 | 0 | 0 | 868 | 892 | 1048 | 0 | 0 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1743 | 1671 | 0 | 0 | | | |
| Q Serve(g_s), s | 17.0 | 0.0 | 0.0 | 0.0 | 58.9 | 58.9 | 55.2 | 0.0 | 0.0 | | | |
| Cycle Q Clear(g_c), s | 17.0 | 0.0 | 0.0 | 0.0 | 58.9 | 58.9 | 55.2 | 0.0 | 0.0 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.41 | 0.46 | | 0.53 | | | |
| Lane Grp Cap(c), veh/h | 207 | 1945 | 0 | 0 | 717 | 703 | 632 | 0 | 0 | | | |
| V/C Ratio(X) | 1.75 | 0.72 | 0.00 | 0.00 | 1.21 | 1.27 | 1.66 | 0.00 | 0.00 | | | |
| Avail Cap(c_a), veh/h | 207 | 1945 | 0 | 0 | 717 | 703 | 632 | 0 | 0 | | | |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.09 | 0.09 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 0.00 | | | |
| Uniform Delay (d), s/veh | 56.0 | 0.0 | 0.0 | 0.0 | 43.6 | 43.6 | 45.4 | 0.0 | 0.0 | | | |
| Incr Delay (d2), s/veh | 339.4 | 0.2 | 0.0 | 0.0 | 107.9 | 131.8 | 303.3 | 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 | | | |
| %ile BackOfQ(50%),veh/ln | 26.3 | 0.1 | 0.0 | 0.0 | 46.8 | 50.6 | 75.2 | 0.0 | 0.0 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 395.4 | 0.2 | 0.0 | 0.0 | 151.4 | 175.3 | 348.7 | 0.0 | 0.0 | | | |
| LnGrp LOS | F | A | A | A | F | F | F | A | A | | | |
| Approach Vol, veh/h | | 1762 | | | 1760 | | | 1048 | | | | |
| Approach Delay, s/veh | | 81.6 | | | 163.5 | | | 348.7 | | | | |
| Approach LOS | | F | | | F | | | F | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 85.0 | | | 21.0 | 64.0 | | 61.0 | | | | |
| Change Period (Y+Rc), s | | 5.1 | | | 4.0 | 5.1 | | 5.8 | | | | |
| Max Green Setting (Gmax), s | | 79.9 | | | 17.0 | 58.9 | | 55.2 | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.0 | | | 19.0 | 60.9 | | 57.2 | | | | |
| Green Ext Time (p_c), s | | 14.6 | | | 0.0 | 0.0 | | 0.0 | | | | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 6th Ctrl Delay | | | 174.4 | | | | | | | | | |
| HCM 6th LOS | | | F | | | | | | | | | |



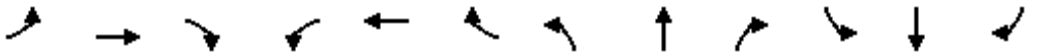
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 1296 | 540 | 379 | 1500 | 0 | 0 | 0 | 0 | 466 | 11 | 406 |
| Future Volume (veh/h) | 0 | 1296 | 540 | 379 | 1500 | 0 | 0 | 0 | 0 | 466 | 11 | 406 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 1296 | 540 | 379 | 1500 | 0 | | | | 466 | 11 | 406 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 921 | 380 | 401 | 972 | 0 | | | | 365 | 9 | 318 |
| Arrive On Green | 0.00 | 0.26 | 0.26 | 0.23 | 0.52 | 0.00 | | | | 0.41 | 0.41 | 0.41 |
| Sat Flow, veh/h | 0 | 3715 | 1464 | 1781 | 1870 | 0 | | | | 890 | 21 | 775 |
| Grp Volume(v), veh/h | 0 | 1243 | 593 | 379 | 1500 | 0 | | | | 883 | 0 | 0 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1607 | 1781 | 1870 | 0 | | | | 1686 | 0 | 0 |
| Q Serve(g_s), s | 0.0 | 37.9 | 37.9 | 30.6 | 75.9 | 0.0 | | | | 59.9 | 0.0 | 0.0 |
| Cycle Q Clear(g_c), s | 0.0 | 37.9 | 37.9 | 30.6 | 75.9 | 0.0 | | | | 59.9 | 0.0 | 0.0 |
| Prop In Lane | 0.00 | | 0.91 | 1.00 | | 0.00 | | | | 0.53 | | 0.46 |
| Lane Grp Cap(c), veh/h | 0 | 884 | 417 | 401 | 972 | 0 | | | | 692 | 0 | 0 |
| V/C Ratio(X) | 0.00 | 1.41 | 1.42 | 0.94 | 1.54 | 0.00 | | | | 1.28 | 0.00 | 0.00 |
| Avail Cap(c_a), veh/h | 0 | 884 | 417 | 415 | 972 | 0 | | | | 692 | 0 | 0 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 0.09 | 0.09 | 0.00 | | | | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d), s/veh | 0.0 | 54.0 | 54.1 | 55.6 | 35.0 | 0.0 | | | | 43.1 | 0.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.0 | 190.0 | 202.8 | 4.8 | 244.7 | 0.0 | | | | 135.4 | 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 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 39.4 | 38.7 | 14.2 | 99.2 | 0.0 | | | | 49.9 | 0.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 244.1 | 256.9 | 60.5 | 279.7 | 0.0 | | | | 178.4 | 0.0 | 0.0 |
| LnGrp LOS | A | F | F | E | F | A | | | | F | A | A |
| Approach Vol, veh/h | | 1836 | | | 1879 | | | | | | 883 | |
| Approach Delay, s/veh | | 248.2 | | | 235.5 | | | | | | 178.4 | |
| Approach LOS | | F | | | F | | | | | | F | |

| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 38.0 | 43.0 | | 65.0 | | 81.0 |
| Change Period (Y+Rc), s | 5.1 | * 5.1 | | 5.1 | | 5.1 |
| Max Green Setting (Gmax), s | 34.0 | * 38 | | 59.9 | | 75.9 |
| Max Q Clear Time (g_c+I1), s | 32.6 | 39.9 | | 61.9 | | 77.9 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | | 0.0 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 229.6 |
| HCM 6th LOS | | F |

Notes

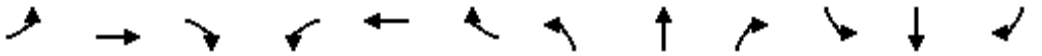
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 667 | 1594 | 0 | 0 | 1540 | 748 | 1579 | 8 | 619 | 0 | 0 | 0 |
| Future Volume (vph) | 667 | 1594 | 0 | 0 | 1540 | 748 | 1579 | 8 | 619 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.2 | 5.8 | | | 5.8 | 4.0 | | 6.8 | 6.8 | | | |
| Lane Util. Factor | 1.00 | 0.95 | | | 0.95 | 1.00 | | 1.00 | 1.00 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 0.85 | | 1.00 | 0.85 | | | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (prot) | 1770 | 3539 | | | 3539 | 1583 | | 1774 | 1583 | | | |
| Flt Permitted | 0.95 | 1.00 | | | 1.00 | 1.00 | | 0.95 | 1.00 | | | |
| Satd. Flow (perm) | 1770 | 3539 | | | 3539 | 1583 | | 1774 | 1583 | | | |
| Peak-hour factor, PHF | 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. Flow (vph) | 667 | 1594 | 0 | 0 | 1540 | 748 | 1579 | 8 | 619 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 667 | 1594 | 0 | 0 | 1540 | 748 | 0 | 1587 | 562 | 0 | 0 | 0 |
| Turn Type | Prot | NA | | | NA | Free | Split | NA | Prot | | | |
| Protected Phases | 5 | 2 | | | 6 | | 8 | 8 | 8 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | 29.8 | 93.2 | | | 59.2 | 166.0 | | 60.2 | 60.2 | | | |
| Effective Green, g (s) | 29.8 | 93.2 | | | 59.2 | 166.0 | | 60.2 | 60.2 | | | |
| Actuated g/C Ratio | 0.18 | 0.56 | | | 0.36 | 1.00 | | 0.36 | 0.36 | | | |
| Clearance Time (s) | 4.2 | 5.8 | | | 5.8 | | | 6.8 | 6.8 | | | |
| Vehicle Extension (s) | 1.5 | 4.0 | | | 4.0 | | | 1.0 | 1.0 | | | |
| Lane Grp Cap (vph) | 317 | 1986 | | | 1262 | 1583 | | 643 | 574 | | | |
| v/s Ratio Prot | c0.38 | 0.45 | | | c0.44 | | | c0.89 | 0.35 | | | |
| v/s Ratio Perm | | | | | | 0.47 | | | | | | |
| v/c Ratio | 2.10 | 0.80 | | | 1.22 | 0.47 | | 2.47 | 0.98 | | | |
| Uniform Delay, d1 | 68.1 | 29.1 | | | 53.4 | 0.0 | | 52.9 | 52.3 | | | |
| Progression Factor | 1.35 | 0.88 | | | 1.00 | 1.00 | | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 500.5 | 1.2 | | | 106.5 | 1.0 | | 665.3 | 31.6 | | | |
| Delay (s) | 592.3 | 26.9 | | | 159.9 | 1.0 | | 718.2 | 83.9 | | | |
| Level of Service | F | C | | | F | A | | F | F | | | |
| Approach Delay (s) | | 193.7 | | | 107.9 | | | 540.2 | | | 0.0 | |
| Approach LOS | | F | | | F | | | F | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 277.8 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.92 | | |
| Actuated Cycle Length (s) | 166.0 | Sum of lost time (s) | 18.8 |
| Intersection Capacity Utilization | 255.2% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

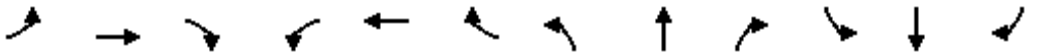
c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1783 | 1265 | 396 | 2724 | 0 | 0 | 0 | 0 | 479 | 0 | 817 |
| Future Volume (vph) | 0 | 1783 | 1265 | 396 | 2724 | 0 | 0 | 0 | 0 | 479 | 0 | 817 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | |
| Lane Util. Factor | | 0.91 | 1.00 | 1.00 | 1.00 | | | | | 0.95 | 0.95 | |
| Frt | | 1.00 | 0.85 | 1.00 | 1.00 | | | | | 1.00 | 0.86 | |
| Flt Protected | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1515 | |
| Flt Permitted | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1515 | |
| Peak-hour factor, PHF | 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. Flow (vph) | 0 | 1783 | 1265 | 396 | 2724 | 0 | 0 | 0 | 0 | 479 | 0 | 817 |
| RTOR Reduction (vph) | 0 | 0 | 441 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 0 |
| Lane Group Flow (vph) | 0 | 1783 | 824 | 396 | 2724 | 0 | 0 | 0 | 0 | 431 | 820 | 0 |
| Turn Type | | NA | Perm | Prot | NA | | | | | Split | NA | |
| Protected Phases | | 2 | | 1 | 6 | | | | | 4 | 4 | |
| Permitted Phases | | | 2 | | | | | | | | | |
| Actuated Green, G (s) | | 59.2 | 59.2 | 29.0 | 94.2 | | | | | 60.2 | 60.2 | |
| Effective Green, g (s) | | 59.2 | 59.2 | 29.0 | 94.2 | | | | | 60.2 | 60.2 | |
| Actuated g/C Ratio | | 0.36 | 0.36 | 0.17 | 0.57 | | | | | 0.36 | 0.36 | |
| Clearance Time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | |
| Vehicle Extension (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | 2.5 | 2.5 | |
| Lane Grp Cap (vph) | | 1813 | 564 | 309 | 1057 | | | | | 609 | 549 | |
| v/s Ratio Prot | | 0.35 | | 0.22 | c1.46 | | | | | 0.26 | c0.54 | |
| v/s Ratio Perm | | | 0.52 | | | | | | | | | |
| v/c Ratio | | 0.98 | 1.46 | 1.28 | 2.58 | | | | | 0.71 | 1.49 | |
| Uniform Delay, d1 | | 52.9 | 53.4 | 68.5 | 35.9 | | | | | 45.4 | 52.9 | |
| Progression Factor | | 1.14 | 1.73 | 1.20 | 0.94 | | | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 13.5 | 213.5 | 129.0 | 709.9 | | | | | 3.5 | 231.4 | |
| Delay (s) | | 73.6 | 306.0 | 211.0 | 743.6 | | | | | 48.8 | 284.3 | |
| Level of Service | | E | F | F | F | | | | | D | F | |
| Approach Delay (s) | | 170.1 | | | 676.0 | | | 0.0 | | | 206.0 | |
| Approach LOS | | F | | | F | | | A | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 387.8 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 2.27 | | |
| Actuated Cycle Length (s) | 166.0 | Sum of lost time (s) | 19.6 |
| Intersection Capacity Utilization | 255.2% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



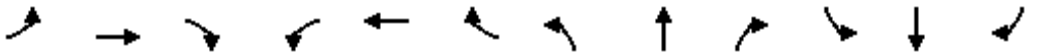
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 110 | 573 | 94 | 865 | 591 | 450 | 348 | 193 | 430 | 429 | 65 | 54 |
| Future Volume (veh/h) | 110 | 573 | 94 | 865 | 591 | 450 | 348 | 193 | 430 | 429 | 65 | 54 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 110 | 573 | 94 | 865 | 591 | 450 | 348 | 193 | 430 | 429 | 65 | 54 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 139 | 859 | 383 | 618 | 1218 | 543 | 355 | 364 | 542 | 318 | 618 | 276 |
| Arrive On Green | 0.08 | 0.24 | 0.24 | 0.18 | 0.34 | 0.34 | 0.20 | 0.19 | 0.19 | 0.18 | 0.17 | 0.17 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 3456 | 3554 | 1585 | 1781 | 1870 | 2790 | 1781 | 3554 | 1585 |
| Grp Volume(v), veh/h | 110 | 573 | 94 | 865 | 591 | 450 | 348 | 193 | 430 | 429 | 65 | 54 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1728 | 1777 | 1585 | 1781 | 1870 | 1395 | 1781 | 1777 | 1585 |
| Q Serve(g_s), s | 5.9 | 14.2 | 4.7 | 17.4 | 12.8 | 25.4 | 18.9 | 9.0 | 14.3 | 17.4 | 1.5 | 2.8 |
| Cycle Q Clear(g_c), s | 5.9 | 14.2 | 4.7 | 17.4 | 12.8 | 25.4 | 18.9 | 9.0 | 14.3 | 17.4 | 1.5 | 2.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 139 | 859 | 383 | 618 | 1218 | 543 | 355 | 364 | 542 | 318 | 618 | 276 |
| V/C Ratio(X) | 0.79 | 0.67 | 0.25 | 1.40 | 0.49 | 0.83 | 0.98 | 0.53 | 0.79 | 1.35 | 0.11 | 0.20 |
| Avail Cap(c_a), veh/h | 209 | 1712 | 763 | 618 | 1931 | 861 | 355 | 753 | 1123 | 318 | 1401 | 625 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 44.1 | 33.4 | 29.8 | 40.0 | 25.2 | 29.4 | 38.8 | 35.2 | 37.4 | 40.0 | 33.8 | 34.4 |
| Incr Delay (d2), s/veh | 11.5 | 0.9 | 0.3 | 190.0 | 0.3 | 3.8 | 42.4 | 1.2 | 2.7 | 176.0 | 0.1 | 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 | 3.0 | 6.1 | 1.7 | 23.5 | 5.3 | 9.4 | 11.9 | 4.0 | 4.8 | 22.8 | 0.6 | 1.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 55.7 | 34.3 | 30.1 | 230.0 | 25.5 | 33.2 | 81.2 | 36.4 | 40.0 | 216.0 | 33.9 | 34.7 |
| LnGrp LOS | E | C | C | F | C | C | F | D | D | F | C | C |
| Approach Vol, veh/h | | 777 | | | 1906 | | | 971 | | | 548 | |
| Approach Delay, s/veh | | 36.8 | | | 120.1 | | | 54.1 | | | 176.5 | |
| Approach LOS | | D | | | F | | | D | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 22.0 | 28.6 | 24.0 | 22.7 | 12.2 | 38.5 | 22.0 | 24.7 |
| Change Period (Y+Rc), s | 4.6 | 5.1 | 4.6 | * 5.8 | 4.6 | 5.1 | 4.6 | 5.8 |
| Max Green Setting (Gmax), s | 17.4 | 46.9 | 19.4 | * 38 | 11.4 | 52.9 | 17.4 | 39.2 |
| Max Q Clear Time (g_c+I1), s | 19.4 | 16.2 | 20.9 | 4.8 | 7.9 | 27.4 | 19.4 | 16.3 |
| Green Ext Time (p_c), s | 0.0 | 4.4 | 0.0 | 0.5 | 0.1 | 6.0 | 0.0 | 2.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 96.8 |
| HCM 6th LOS | F |

Notes

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



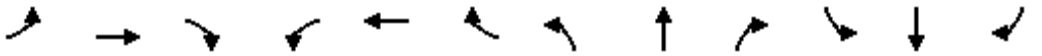
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 164 | 1631 | 87 | 298 | 1977 | 280 | 30 | 46 | 285 | 440 | 48 | 36 |
| Future Volume (veh/h) | 164 | 1631 | 87 | 298 | 1977 | 280 | 30 | 46 | 285 | 440 | 48 | 36 |
| 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 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 164 | 1631 | 87 | 298 | 1977 | 280 | 30 | 0 | 316 | 440 | 48 | 36 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 132 | 1907 | 102 | 724 | 1867 | 982 | 45 | 0 | 385 | 326 | 196 | 147 |
| Arrive On Green | 0.07 | 0.38 | 0.38 | 0.21 | 0.53 | 0.53 | 0.03 | 0.00 | 0.12 | 0.09 | 0.20 | 0.20 |
| Sat Flow, veh/h | 1781 | 4962 | 265 | 3456 | 3554 | 1585 | 1781 | 0 | 3170 | 3456 | 992 | 744 |
| Grp Volume(v), veh/h | 164 | 1119 | 599 | 298 | 1977 | 280 | 30 | 0 | 316 | 440 | 0 | 84 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1702 | 1823 | 1728 | 1777 | 1585 | 1781 | 0 | 1585 | 1728 | 0 | 1736 |
| Q Serve(g_s), s | 9.7 | 39.6 | 39.6 | 9.8 | 69.0 | 3.2 | 2.2 | 0.0 | 12.8 | 12.4 | 0.0 | 5.4 |
| Cycle Q Clear(g_c), s | 9.7 | 39.6 | 39.6 | 9.8 | 69.0 | 3.2 | 2.2 | 0.0 | 12.8 | 12.4 | 0.0 | 5.4 |
| Prop In Lane | 1.00 | | 0.15 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.43 |
| Lane Grp Cap(c), veh/h | 132 | 1308 | 701 | 724 | 1867 | 982 | 45 | 0 | 385 | 326 | 0 | 343 |
| V/C Ratio(X) | 1.25 | 0.85 | 0.86 | 0.41 | 1.06 | 0.29 | 0.66 | 0.00 | 0.82 | 1.35 | 0.00 | 0.25 |
| Avail Cap(c_a), veh/h | 132 | 1659 | 888 | 724 | 1867 | 982 | 92 | 0 | 857 | 326 | 0 | 542 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 60.8 | 37.1 | 37.1 | 44.9 | 31.2 | 3.4 | 63.5 | 0.0 | 56.3 | 59.5 | 0.0 | 44.5 |
| Incr Delay (d2), s/veh | 159.2 | 3.1 | 5.6 | 0.4 | 38.5 | 0.2 | 15.5 | 0.0 | 4.4 | 176.0 | 0.0 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 10.2 | 16.7 | 18.4 | 4.2 | 37.0 | 1.4 | 1.2 | 0.0 | 5.3 | 13.4 | 0.0 | 2.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 220.1 | 40.2 | 42.7 | 45.3 | 69.7 | 3.6 | 79.0 | 0.0 | 60.7 | 235.4 | 0.0 | 44.8 |
| LnGrp LOS | F | D | D | D | F | A | E | A | E | F | A | D |
| Approach Vol, veh/h | | 1882 | | | 2555 | | | 346 | | | 524 | |
| Approach Delay, s/veh | | 56.7 | | | 59.6 | | | 62.3 | | | 204.9 | |
| Approach LOS | | E | | | E | | | E | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 33.5 | 56.5 | 8.9 | 32.4 | 15.0 | 75.0 | 18.9 | 22.5 |
| Change Period (Y+Rc), s | 6.0 | * 6 | 5.6 | 6.5 | 5.3 | 6.0 | 6.5 | * 6.5 |
| Max Green Setting (Gmax), s | 14.7 | * 64 | 6.8 | 41.0 | 9.7 | 69.0 | 12.4 | * 36 |
| Max Q Clear Time (g_c+I1), s | 11.8 | 41.6 | 4.2 | 7.4 | 11.7 | 71.0 | 14.4 | 14.8 |
| Green Ext Time (p_c), s | 0.3 | 8.9 | 0.0 | 0.4 | 0.0 | 0.0 | 0.0 | 1.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 73.1 |
| HCM 6th LOS | E |

**Notes**

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

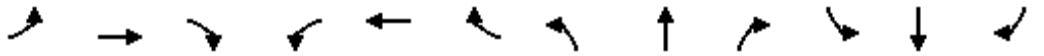


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 363 | 1399 | 0 | 0 | 1397 | 363 | 482 | 7 | 559 | 0 | 0 | 0 |
| Future Volume (veh/h) | 363 | 1399 | 0 | 0 | 1397 | 363 | 482 | 7 | 559 | 0 | 0 | 0 |
| Initial Q (Qb), veh | 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 | | | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Work Zone On Approach | | No | | | No | | | No | | | | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 0 | 0 | 1870 | 1870 | 1870 | 1870 | 1870 | | | |
| Adj Flow Rate, veh/h | 363 | 1399 | 0 | 0 | 1397 | 363 | 482 | 60 | 524 | | | |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Percent Heavy Veh, % | 2 | 2 | 0 | 0 | 2 | 2 | 2 | 2 | 2 | | | |
| Cap, veh/h | 256 | 2213 | 0 | 0 | 1268 | 320 | 482 | 60 | 480 | | | |
| Arrive On Green | 0.29 | 1.00 | 0.00 | 0.00 | 0.45 | 0.45 | 0.30 | 0.30 | 0.30 | | | |
| Sat Flow, veh/h | 1781 | 3647 | 0 | 0 | 2903 | 710 | 1592 | 198 | 1585 | | | |
| Grp Volume(v), veh/h | 363 | 1399 | 0 | 0 | 868 | 892 | 542 | 0 | 524 | | | |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 0 | 0 | 1777 | 1743 | 1791 | 0 | 1585 | | | |
| Q Serve(g_s), s | 21.0 | 0.0 | 0.0 | 0.0 | 65.9 | 65.9 | 44.2 | 0.0 | 44.2 | | | |
| Cycle Q Clear(g_c), s | 21.0 | 0.0 | 0.0 | 0.0 | 65.9 | 65.9 | 44.2 | 0.0 | 44.2 | | | |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.41 | 0.89 | | 1.00 | | | |
| Lane Grp Cap(c), veh/h | 256 | 2213 | 0 | 0 | 802 | 787 | 542 | 0 | 480 | | | |
| V/C Ratio(X) | 1.42 | 0.63 | 0.00 | 0.00 | 1.08 | 1.13 | 1.00 | 0.00 | 1.09 | | | |
| Avail Cap(c_a), veh/h | 256 | 2213 | 0 | 0 | 802 | 787 | 542 | 0 | 480 | | | |
| HCM Platoon Ratio | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Upstream Filter(I) | 0.58 | 0.58 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | | | |
| Uniform Delay (d), s/veh | 52.0 | 0.0 | 0.0 | 0.0 | 40.0 | 40.1 | 50.9 | 0.0 | 50.9 | | | |
| Incr Delay (d2), s/veh | 200.5 | 0.8 | 0.0 | 0.0 | 56.6 | 75.5 | 38.6 | 0.0 | 68.4 | | | |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| %ile BackOfQ(50%),veh/ln | 22.4 | 0.2 | 0.0 | 0.0 | 40.6 | 43.9 | 25.0 | 0.0 | 26.1 | | | |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 252.5 | 0.8 | 0.0 | 0.0 | 96.6 | 115.6 | 89.5 | 0.0 | 119.3 | | | |
| LnGrp LOS | F | A | A | A | F | F | F | A | F | | | |
| Approach Vol, veh/h | | 1762 | | | 1760 | | | 1066 | | | | |
| Approach Delay, s/veh | | 52.7 | | | 106.2 | | | 104.1 | | | | |
| Approach LOS | | D | | | F | | | F | | | | |
| Timer - Assigned Phs | | 2 | | | 5 | 6 | | 8 | | | | |
| Phs Duration (G+Y+Rc), s | | 96.0 | | | 25.0 | 71.0 | | 50.0 | | | | |
| Change Period (Y+Rc), s | | 5.1 | | | 4.0 | 5.1 | | 5.8 | | | | |
| Max Green Setting (Gmax), s | | 90.9 | | | 21.0 | 65.9 | | 44.2 | | | | |
| Max Q Clear Time (g_c+I1), s | | 2.0 | | | 23.0 | 67.9 | | 46.2 | | | | |
| Green Ext Time (p_c), s | | 14.7 | | | 0.0 | 0.0 | | 0.0 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 85.2 |
| HCM 6th LOS | F |

**Notes**

User approved volume balancing among the lanes for turning movement.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 1296 | 540 | 379 | 1500 | 0 | 0 | 0 | 0 | 466 | 11 | 406 |
| Future Volume (veh/h) | 0 | 1296 | 540 | 379 | 1500 | 0 | 0 | 0 | 0 | 466 | 11 | 406 |
| Initial Q (Qb), veh | 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 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | | | | No | |
| Adj Sat Flow, veh/h/ln | 0 | 1870 | 1870 | 1870 | 1870 | 0 | | | | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 0 | 1296 | 540 | 379 | 1500 | 0 | | | | 442 | 45 | 406 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Percent Heavy Veh, % | 0 | 2 | 2 | 2 | 2 | 0 | | | | 2 | 2 | 2 |
| Cap, veh/h | 0 | 1325 | 411 | 607 | 1188 | 0 | | | | 525 | 47 | 427 |
| Arrive On Green | 0.00 | 0.26 | 0.26 | 0.45 | 0.85 | 0.00 | | | | 0.29 | 0.29 | 0.29 |
| Sat Flow, veh/h | 0 | 5274 | 1585 | 1781 | 1870 | 0 | | | | 1781 | 161 | 1449 |
| Grp Volume(v), veh/h | 0 | 1296 | 540 | 379 | 1500 | 0 | | | | 442 | 0 | 451 |
| Grp Sat Flow(s),veh/h/ln | 0 | 1702 | 1585 | 1781 | 1870 | 0 | | | | 1781 | 0 | 1610 |
| Q Serve(g_s), s | 0.0 | 36.8 | 37.9 | 23.7 | 92.8 | 0.0 | | | | 34.0 | 0.0 | 40.1 |
| Cycle Q Clear(g_c), s | 0.0 | 36.8 | 37.9 | 23.7 | 92.8 | 0.0 | | | | 34.0 | 0.0 | 40.1 |
| Prop In Lane | 0.00 | | 1.00 | 1.00 | | 0.00 | | | | 1.00 | | 0.90 |
| Lane Grp Cap(c), veh/h | 0 | 1325 | 411 | 607 | 1188 | 0 | | | | 525 | 0 | 474 |
| V/C Ratio(X) | 0.00 | 0.98 | 1.31 | 0.62 | 1.26 | 0.00 | | | | 0.84 | 0.00 | 0.95 |
| Avail Cap(c_a), veh/h | 0 | 1325 | 411 | 607 | 1188 | 0 | | | | 731 | 0 | 660 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.33 | 1.33 | 1.00 | | | | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 0.00 | 1.00 | 1.00 | 0.09 | 0.09 | 0.00 | | | | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh | 0.0 | 53.6 | 54.0 | 32.8 | 11.3 | 0.0 | | | | 48.3 | 0.0 | 50.4 |
| Incr Delay (d2), s/veh | 0.0 | 19.9 | 157.0 | 0.1 | 118.7 | 0.0 | | | | 4.7 | 0.0 | 17.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 18.0 | 32.9 | 9.6 | 55.7 | 0.0 | | | | 15.4 | 0.0 | 17.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 0.0 | 73.6 | 211.1 | 32.9 | 130.0 | 0.0 | | | | 53.0 | 0.0 | 67.6 |
| LnGrp LOS | A | E | F | C | F | A | | | | D | A | E |
| Approach Vol, veh/h | | 1836 | | | 1879 | | | | | | 893 | |
| Approach Delay, s/veh | | 114.0 | | | 110.4 | | | | | | 60.4 | |
| Approach LOS | | F | | | F | | | | | | E | |

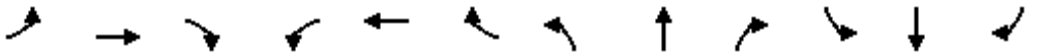
| Timer - Assigned Phs | 1 | 2 | | 4 | | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 54.9 | 43.0 | | 48.1 | | 97.9 |
| Change Period (Y+Rc), s | 5.1 | * 5.1 | | 5.1 | | 5.1 |
| Max Green Setting (Gmax), s | 34.0 | * 38 | | 59.9 | | 75.9 |
| Max Q Clear Time (g_c+I1), s | 25.7 | 39.9 | | 42.1 | | 94.8 |
| Green Ext Time (p_c), s | 0.1 | 0.0 | | 1.0 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 102.1 |
| HCM 6th LOS | | F |

**Notes**

User approved volume balancing among the lanes for turning movement.

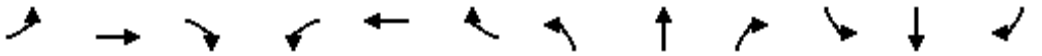
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 667 | 1594 | 0 | 0 | 1540 | 748 | 1579 | 8 | 619 | 0 | 0 | 0 |
| Future Volume (vph) | 667 | 1594 | 0 | 0 | 1540 | 748 | 1579 | 8 | 619 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.2 | 5.8 | | | 5.8 | 4.0 | 6.8 | 6.8 | 6.8 | | | |
| Lane Util. Factor | 1.00 | 0.95 | | | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | | | |
| Frt | 1.00 | 1.00 | | | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | | | |
| Flt Protected | 0.95 | 1.00 | | | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | | | |
| Satd. Flow (prot) | 1770 | 3539 | | | 3539 | 1583 | 1681 | 1686 | 1583 | | | |
| Flt Permitted | 0.95 | 1.00 | | | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | | | |
| Satd. Flow (perm) | 1770 | 3539 | | | 3539 | 1583 | 1681 | 1686 | 1583 | | | |
| Peak-hour factor, PHF | 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. Flow (vph) | 667 | 1594 | 0 | 0 | 1540 | 748 | 1579 | 8 | 619 | 0 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 667 | 1594 | 0 | 0 | 1540 | 748 | 789 | 798 | 562 | 0 | 0 | 0 |
| Turn Type | Prot | NA | | | NA | Free | Split | NA | Prot | | | |
| Protected Phases | 5 | 2 | | | 6 | | 8 | 8 | 8 | | | |
| Permitted Phases | | | | | | Free | | | | | | |
| Actuated Green, G (s) | 29.8 | 93.2 | | | 59.2 | 166.0 | 60.2 | 60.2 | 60.2 | | | |
| Effective Green, g (s) | 29.8 | 93.2 | | | 59.2 | 166.0 | 60.2 | 60.2 | 60.2 | | | |
| Actuated g/C Ratio | 0.18 | 0.56 | | | 0.36 | 1.00 | 0.36 | 0.36 | 0.36 | | | |
| Clearance Time (s) | 4.2 | 5.8 | | | 5.8 | | 6.8 | 6.8 | 6.8 | | | |
| Vehicle Extension (s) | 1.5 | 4.0 | | | 4.0 | | 1.0 | 1.0 | 1.0 | | | |
| Lane Grp Cap (vph) | 317 | 1986 | | | 1262 | 1583 | 609 | 611 | 574 | | | |
| v/s Ratio Prot | c0.38 | 0.45 | | | c0.44 | | 0.47 | c0.47 | 0.35 | | | |
| v/s Ratio Perm | | | | | | 0.47 | | | | | | |
| v/c Ratio | 2.10 | 0.80 | | | 1.22 | 0.47 | 1.30 | 1.31 | 0.98 | | | |
| Uniform Delay, d1 | 68.1 | 29.1 | | | 53.4 | 0.0 | 52.9 | 52.9 | 52.3 | | | |
| Progression Factor | 1.35 | 0.89 | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | |
| Incremental Delay, d2 | 500.8 | 1.3 | | | 106.5 | 1.0 | 144.9 | 149.3 | 31.6 | | | |
| Delay (s) | 593.0 | 27.3 | | | 159.9 | 1.0 | 197.8 | 202.2 | 83.9 | | | |
| Level of Service | F | C | | | F | A | F | F | F | | | |
| Approach Delay (s) | | 194.2 | | | 107.9 | | | 167.4 | | | 0.0 | |
| Approach LOS | | F | | | F | | | F | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 156.2 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.45 | | |
| Actuated Cycle Length (s) | 166.0 | Sum of lost time (s) | 18.8 |
| Intersection Capacity Utilization | 206.6% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



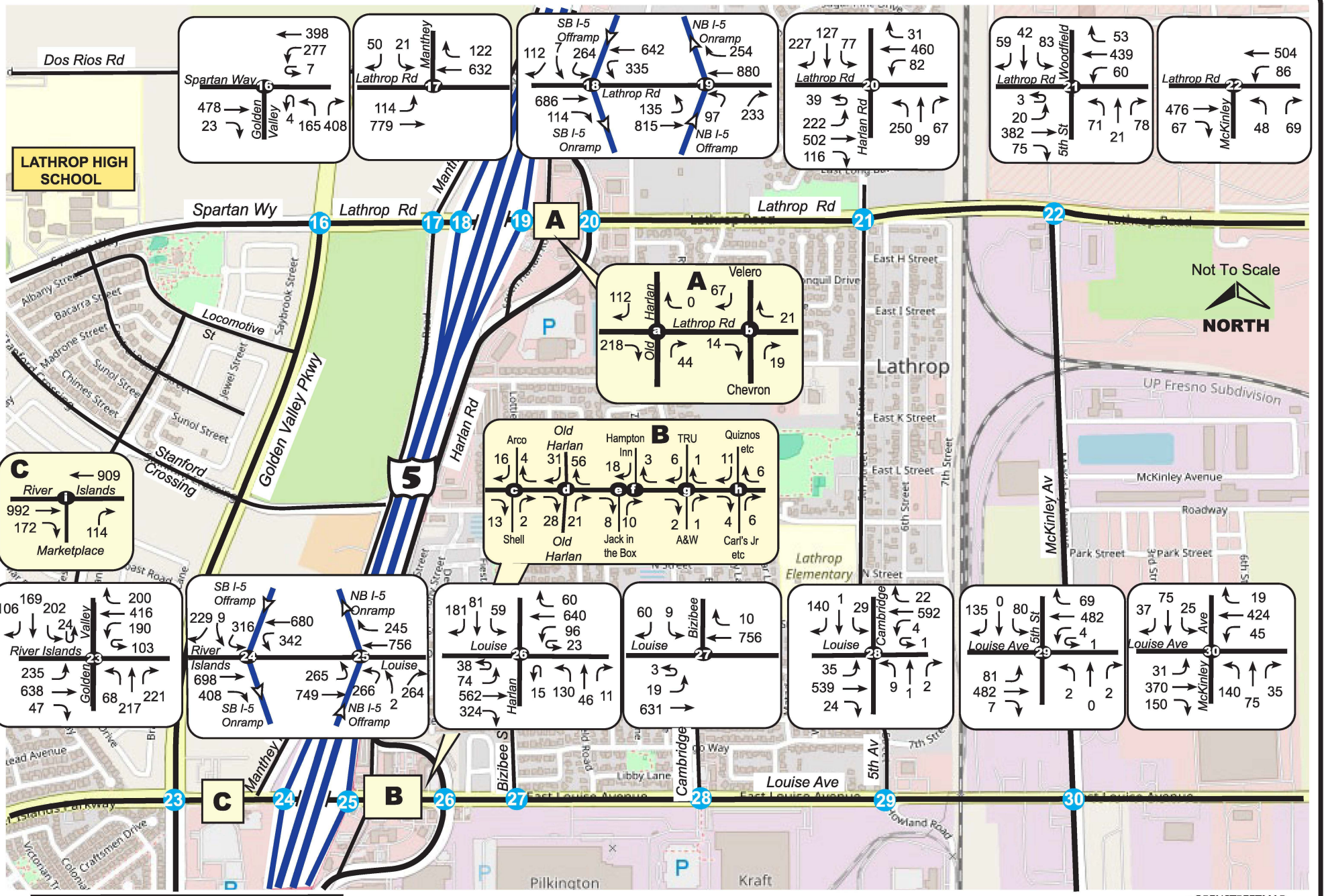
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1783 | 1265 | 396 | 2724 | 0 | 0 | 0 | 0 | 479 | 0 | 817 |
| Future Volume (vph) | 0 | 1783 | 1265 | 396 | 2724 | 0 | 0 | 0 | 0 | 479 | 0 | 817 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | 5.8 |
| Lane Util. Factor | | 0.91 | 1.00 | 1.00 | 1.00 | | | | | 0.95 | 0.91 | 0.95 |
| Frt | | 1.00 | 0.85 | 1.00 | 1.00 | | | | | 1.00 | 0.87 | 0.85 |
| Flt Protected | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 0.99 | 1.00 |
| Satd. Flow (prot) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1461 | 1504 |
| Flt Permitted | | 1.00 | 1.00 | 0.95 | 1.00 | | | | | 0.95 | 0.99 | 1.00 |
| Satd. Flow (perm) | | 5085 | 1583 | 1770 | 1863 | | | | | 1681 | 1461 | 1504 |
| Peak-hour factor, PHF | 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. Flow (vph) | 0 | 1783 | 1265 | 396 | 2724 | 0 | 0 | 0 | 0 | 479 | 0 | 817 |
| RTOR Reduction (vph) | 0 | 0 | 441 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 49 |
| Lane Group Flow (vph) | 0 | 1783 | 824 | 396 | 2724 | 0 | 0 | 0 | 0 | 431 | 383 | 384 |
| Turn Type | | NA | Perm | Prot | NA | | | | | Split | NA | Perm |
| Protected Phases | | 2 | | 1 | 6 | | | | | 4 | 4 | |
| Permitted Phases | | | 2 | | | | | | | | | 4 |
| Actuated Green, G (s) | | 59.2 | 59.2 | 38.7 | 103.9 | | | | | 50.5 | 50.5 | 50.5 |
| Effective Green, g (s) | | 59.2 | 59.2 | 38.7 | 103.9 | | | | | 50.5 | 50.5 | 50.5 |
| Actuated g/C Ratio | | 0.36 | 0.36 | 0.23 | 0.63 | | | | | 0.30 | 0.30 | 0.30 |
| Clearance Time (s) | | 6.8 | 6.8 | 5.0 | 5.8 | | | | | 5.8 | 5.8 | 5.8 |
| Vehicle Extension (s) | | 4.0 | 4.0 | 4.0 | 4.0 | | | | | 2.5 | 2.5 | 2.5 |
| Lane Grp Cap (vph) | | 1813 | 564 | 412 | 1166 | | | | | 511 | 444 | 457 |
| v/s Ratio Prot | | 0.35 | | 0.22 | c1.46 | | | | | 0.26 | c0.26 | |
| v/s Ratio Perm | | | 0.52 | | | | | | | | | 0.26 |
| v/c Ratio | | 0.98 | 1.46 | 0.96 | 2.34 | | | | | 0.84 | 0.86 | 0.84 |
| Uniform Delay, d1 | | 52.9 | 53.4 | 62.9 | 31.0 | | | | | 54.1 | 54.5 | 54.0 |
| Progression Factor | | 1.14 | 1.73 | 1.21 | 0.93 | | | | | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | | 13.5 | 213.5 | 6.7 | 601.5 | | | | | 11.9 | 15.5 | 12.5 |
| Delay (s) | | 73.6 | 306.0 | 83.0 | 630.3 | | | | | 65.9 | 70.0 | 66.5 |
| Level of Service | | E | F | F | F | | | | | E | E | E |
| Approach Delay (s) | | 170.1 | | | 560.8 | | | 0.0 | | | 67.5 | |
| Approach LOS | | F | | | F | | | A | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 315.6 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.95 | | |
| Actuated Cycle Length (s) | 166.0 | Sum of lost time (s) | 19.6 |
| Intersection Capacity Utilization | 206.6% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

# APPENDIX B

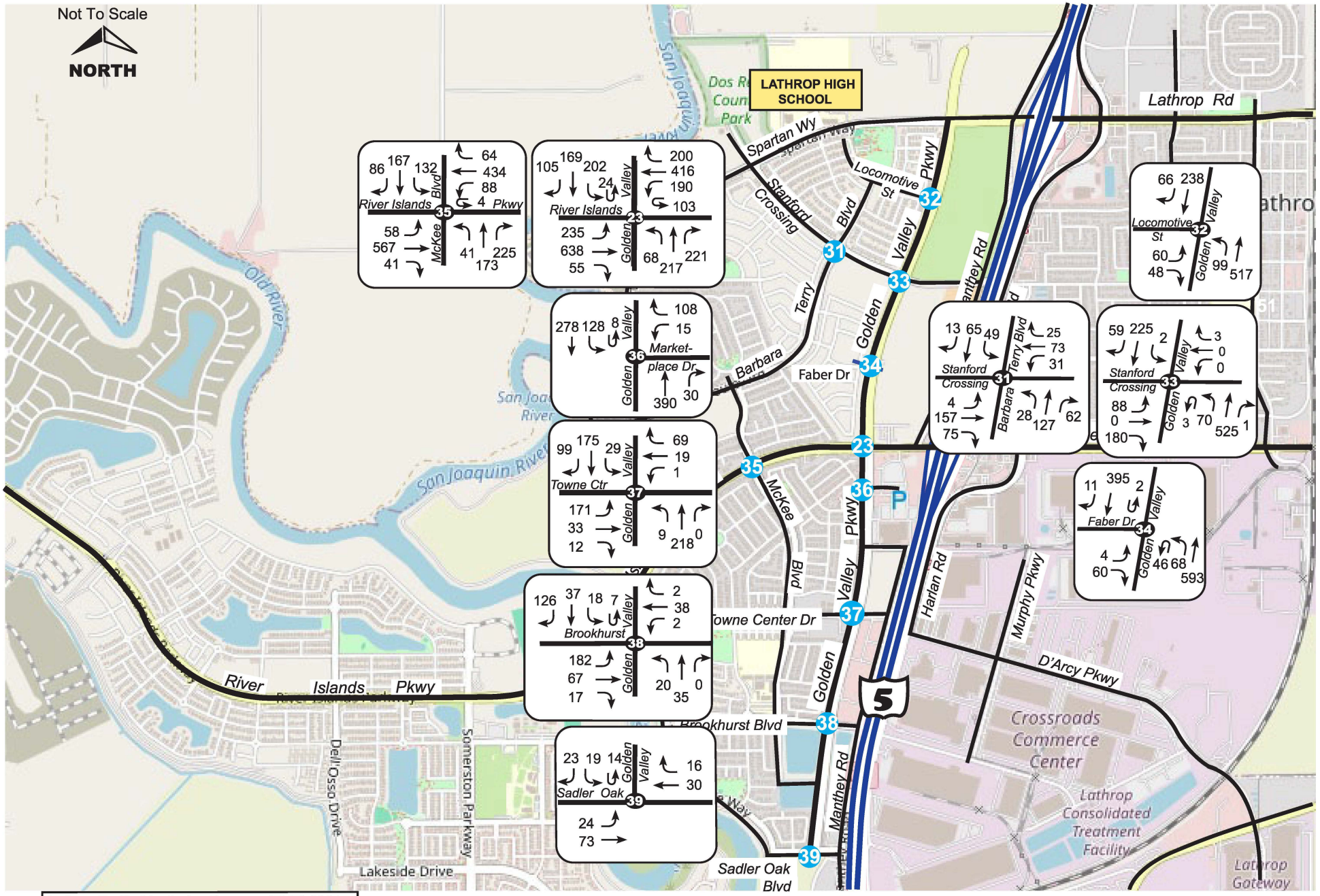
**Lathrop Traffic Monitoring Program (2024) Figures**




Lathrop Traffic Monitoring Program (TMP) 2024

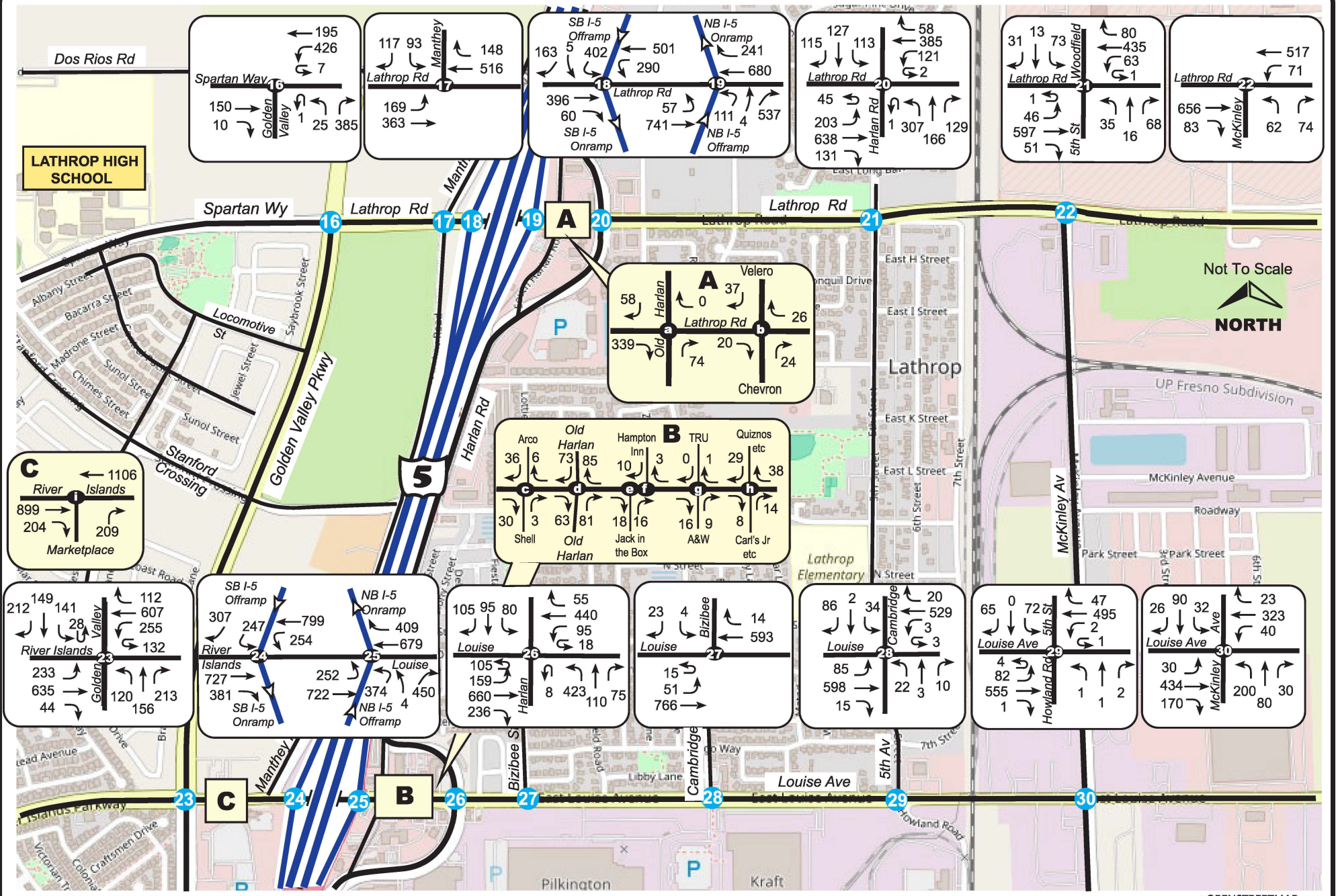
CRANE TRANSPORTATION GROUP

**Figure 2**
**Existing (2024) Central Lathrop**
**AM Peak Hour Volumes**



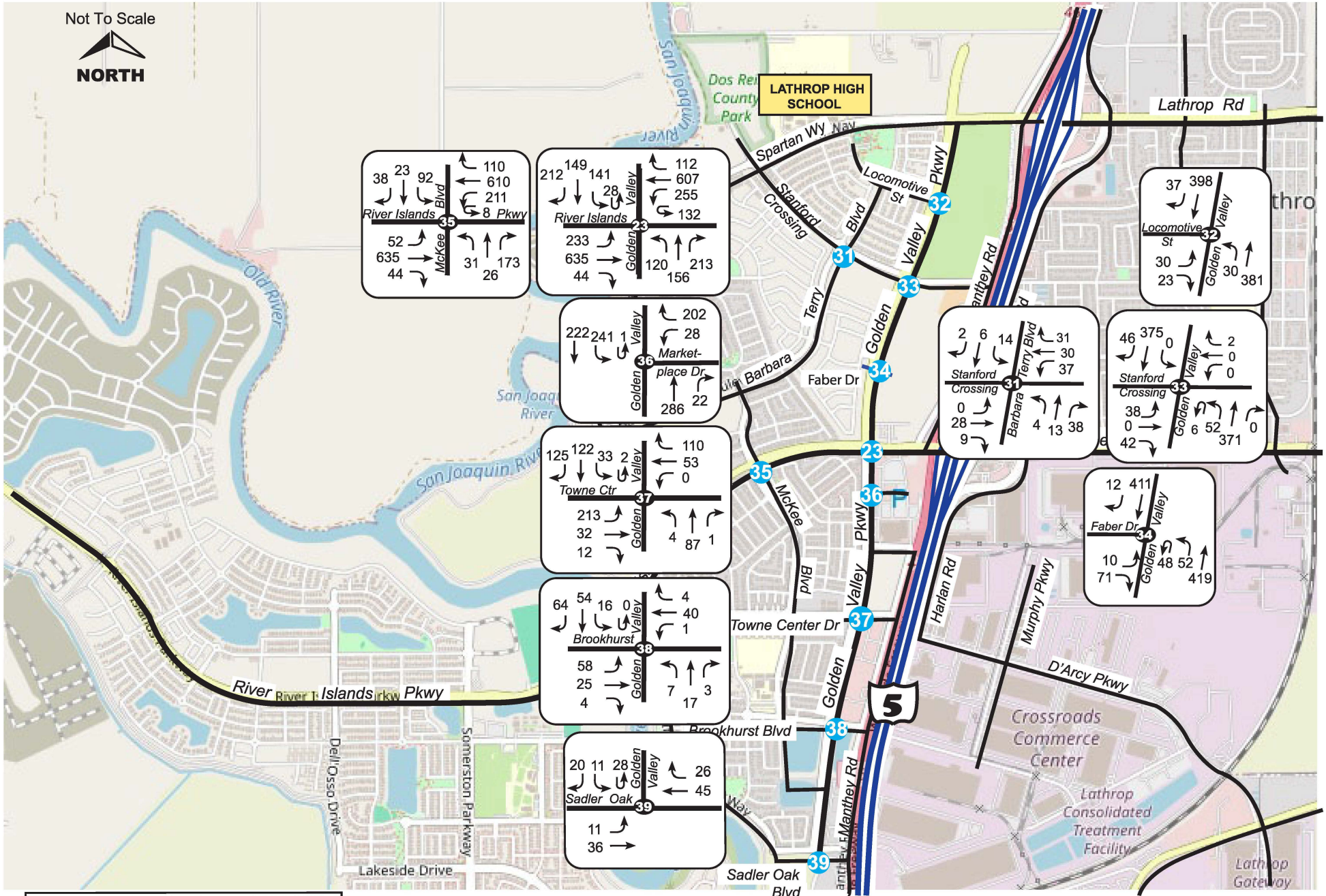

CRANE TRANSPORTATION GROUP

**Figure 3**
**Existing (2024) North-Western Lathrop**
**AM Peak Hour Volumes**




CRANE TRANSPORTATION GROUP

**Figure 7**
**Existing (2024) Central Lathrop**
**PM Peak Hour Volumes**




Lathrop Traffic Monitoring Program (TMP) 2024

@OPENSTREETMAP

CRANE TRANSPORTATION GROUP

**Figure 8**
**Existing (2024) North-Western Lathrop**
**PM Peak Hour Volumes**