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College of Engineering

# I-10 FREEWAY SENIOR PROJECT

California State Polytechnic University, Pomona

## Intersection Safety and Operations Assessment Process (ISOAP)

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# 1. Executive Summary

The Intersection Safety and Operations Assessment Process (ISOAP) aims to provide the reader with an understanding of the existing and proposed alternatives potential transportation impacts based on the *Safe Systems Approach* (SSA), Federal Highway Administration (FHWA). The SSA aims to provide a holistic approach to evaluating various designs based primarily on the safety impacts associated with the design. The ISOAP aims a process to replace the Intersection Control Evaluation (ICE) which primarily evaluates a design's operational feasibility (moving as many vehicles through an intersection as possible), using Level-of-Service (LOS) as the guiding metric.

The ISOAP is separated out in several sections: Pedestrian and Bicyclist Assessment, Operational Feasibility Assessment, Initial Safety Assessment, Transit and Freight Assessment, Detailed Safety Analysis, and Detailed Operations Analysis. The ISOAP is separated into two stages: stage one designated for eliminating interchange designs to conclude with viable alternatives, and stage two dedicated to determining the selected alternative.

The Pedestrian and Bicyclist Assessment evaluates the existing conditions and determines if there are deficiencies the Project could provide a solution with. The Assessment includes an analysis of compliance to the County, City, and Community plans for the site. Associated with this assessment is further detailed in the Complete Streets Decision Document.

The Operational Feasibility Assessment determines the capacity of several designs at a high-level to eliminate further evaluation of other designs. This Assessment uses the Virginia Junction Screening Tool to eliminate alternatives such as the diverging diamond and roundabout interchanges.

The Initial Safety Assessment determines the crash rate of the whole facility at a high-level analysis, using the studies sourced from the FHWA. This Assessment eliminates the partial cloverleaf designs. This section also includes a detailed study of the existing site collision history to determine any trends in geometric safety hazards, and design goals to mitigate these hazards.

The Transit and Freight Assessment provides an analysis of larger vehicles potential impacts of the interchange designs. This section concludes stage one.

The Detailed Safety Analysis is the successor to The Initial Safety Assessment, as it uses the *Highway Safety Manual*, American Association of State Highway Transportation Officials (AASHTO), to project expected crash frequency of each alternative. This Analysis contributes to the Benefit Cost Analysis, which evaluates the cost effectiveness of the alternatives.

The Detailed Operations Analysis is the successor to the Operational Feasibility Assessment, and does not use LOS as the performance metric to compare alternatives. Instead, the Analysis uses projected queue lengths on the off-ramps to determine any potential safety hazards.

As summarized in the Recommendations section, the East Ramsey Street interchange should be designed with Alternative E.2 (Hybrid), and the Main Street interchange should be designed with Alternative M.1 (SPUI).

## 2. Introduction

The Intersection Safety and Operations Assessment Process (ISOAP) documents the framework of analyzing at-grade traffic intersections while incorporating the *Safe System Approach*. The process is a successor to the Intersection Control Evaluation (ICE) policy and procedure. This report is outlined to follow the ISOAP and is accompanied by the methodologies used to conduct its procedures.

The ISOAP evaluates the potential traffic impacts associated with the Interstate 10 (I-10) interchange improvements at the East Ramsey Undercrossing (Postmile R14.83) and the Main Street Overcrossing (Postmile R19.40) located in Riverside County. The traffic study was completed in accordance with the criteria established by the California Department of Transportation (Caltrans), County of Riverside Department of Transportation (RivCo DOT), and City of Banning, and is also consistent with standard traffic engineering techniques.

A summarized evaluation of each alternative is shown in the following format:

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*For informational purposes only.*

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### 2.1. Purpose and Need

The purpose of the proposed Project is to:

- Provide safety and operational improvements along Interstate-10 (I-10) and its access points to accommodate the existing and forecasted travel demand, associated with local and regional growth, for the 2050 design year;
- Improve the existing interchange geometry at the East Ramsey Street and Main Street Interchange; and
- Accommodate multimodal travel that integrates, but is not limited to, with the City of Banning's General Plan, Cabazon Master Plan, and regional plans.

The proposed Project aims to address the following needs:

- The collision history records display a trend that indicates geometric safety hazards, and the forecasted traffic volumes, in conjunction with the current capacity of the existing interchanges, are expected to result in operational safety hazards by the year 2050;
- The sub-standard ramp alignments, ramp intersections, and the absence of the Westbound On- and Eastbound Off-Ramps at the East Ramsey Street interchange and;
- Gaps in the pedestrian and bicycle infrastructure impede the connection between the existing and planned communities at the East Ramsey Street and Main Street interchanges.

# 3. Transportation Setting

## 3.1. Project Description

The analysis of traffic operations is being evaluated for project alternatives at the East Ramsey Street and Main Street Interchange. The following includes the six alternatives:

### I-10 and East Ramsey Street Interchange

Alternative E.1 is a Trumpet (Type L-11) interchange and is commonly used where the crossroad terminates at the freeway – which would be the case in this Project – however, future expansion with the interchange to allow a connection south of the I-10 would not be feasible.

Alternative E.2 is a Hybrid Tight and Spread Diamond (Type L-1 and Type L-2) interchange, the westbound ramps would feature ramps with multiple horizontal curves to achieve greater spacing between the eastbound ramps. Providing additional space between the westbound would allow future expansion with loop ramps if demand warrants the extra capacity.

Alternative E.3 is a Tight Diamond (Type L-1) interchange, the defining attribute is the closely spaced ramps, and is suitable where geometric restrictions do not permit a spread diamond.

### I-10 and Main Street Interchange

Alternative M.1 is a Single Point Interchange (Type L-13), where the westbound and eastbound ramps are terminated at a single at-grade intersection. This interchange allows for left-turning movements to occur simultaneously. The interchange is not feasible to allow future expansion if additional capacity is warranted, as the most likely expansion method would require a new bridge.

Alternative M.2 is a Hooks (Type L-6) interchange, which is typically placed where the freeway alignment is parallel with the local street system – which is the case in its existing condition. The purpose of this alternative is to preserve the Main Street alignment, while accommodating future roadway expansion north of the freeway. The alternative would also address the potential geometric hazards that is discussed further in Collision Rates.

Alternative M.3 is a Tight Diamond (Type L-1) interchange, its placement was chosen due to the geometric constraints associated with the adjacent railway, south of the interchange. Future expansion of the interchange would not be feasible, however, if future demand warrants, a Diverging Diamond could be constructed with relative ease compared to the other alternatives.

## 3.2. Existing Site

### Interstate 10

The I-10 segment within the project study was subjected to an additional safety and operational analysis that is discussed in the Project Study Report.

Within the project area, I-10 is a eight-lane divided freeway with three 12-foot-wide, mixed flow lanes in each direction, and 16-foot-wide inside and 12-foot-wide outside shoulders. A concrete barrier separates the eastbound and westbound lanes of traffic. The existing right-of-way (ROW) width is 200 to 300 feet with access control on either side, where applicable.

I-10 is included in the National Highway System (NHS), the Rural and Single Interstate Routing System (RSIRS), and the Strategic Highway Corridor Network (STRAHNET). It is also a Surface Transportation Assistance Act (STAA) Route for use by oversized trucks. The segment within the project limits is functionally classified as an Urbanized Freeway from Postmile R14.83 to Postmile R16.40, beyond to Postmile R19.40 as a Rural Freeway. I-10 is a major transportation route that connects the City of Banning and the Community of Cabazon to Los Angeles and San Bernardino counties to the west, and the State of Arizona to the east.

The 2017 I-10 Transportation Concept Report (TCR) shows that eight lanes (which includes both directions) are required on I-10 through the project limits to attain a Level of Service (LOS) "D" rating. The project is consistent with the identified goals of the TCR and is recognized as one of the strategies to achieve the corridor concept.

## Study Local Street Interchanges

The Project consists of the following local street interchanges:

**I-10 and East Ramsey Street Interchange** consist of only two access ramps: the eastbound on- and westbound off-ramp. The ramps terminate at a tee intersection, where the crossroad is a driveway to a Caltrans maintenance facility. The east and west approaches (the major road) are free flowing, while the driveway (the minor road) is stop controlled. An eastbound left turn bay exists for the patrons of the maintenance facility.

**I-10 and Main Street Interchange** consist of all four access ramps, where the eastbound and westbound ramps terminate at a four-way intersection. The eastbound ramps are at a two-way stop-controlled intersection, while the westbound ramps are controlled with an all-way-stop. The eastbound ramp intersection connects with Main Street as the crossroad, as well as a connection to the alternative I-10 access road (Railroad Avenue). The Main Street overcrossing is generally a undivided two-lane overcrossing that features multiple horizontal curves.

This study focuses on the East Ramsey Street and Main Street interchanges. Seminole Drive and Apache Trail interchanges are assessed under its on- and off-ramp demands to the mainline—between the East Ramsey Street and Main Street overcrossings—and its potential impacts to the focused interchanges.

## Study Intersections

This list consists of local street intersections, where the ISOAP assesses them as a system that makes an interchange. The study area consists of the following intersections:

- Caltrans Driveway/East Ramsey Street—I-10 Ramps
- North Fern Street/Main Street
- I-10 Eastbound On- and Off-Ramp—Railroad Avenue/Main Street
- I-10 Westbound On-Ramp—Main Street/I-10 Westbound Off-Ramp—Main Street
- Main Street—Driveway/Seminole Drive

Operating conditions during the a.m. and p.m. peak periods were evaluated to capture the highest potential impacts on the existing and proposed transportation network. The morning peak hour occurs

between 7:00 and 10:00 a.m. and reflects conditions during the home to work or school commute, while the p.m. peak hour occurs between 4:00 and 7:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute.

The locations of the study intersections and the existing lane configurations and controls are shown in Appendix A. A detailed description of each intersection is provided below.

**Caltrans Driveway/East Ramsey Street—I-10 Ramps** is a tee intersection, with a stop control for the southbound approach.

**North Fern Street/Main Street** is a tee intersection that has a stop control for the North Fern Street approach.

**I-10 Eastbound On- and Off-Ramp—Railroad Avenue/Main Street** is a four-way intersection with stop controls on the north and south approaches. The on- and off-ramps are connected at the north leg.

**I-10 Westbound On-Ramp—Main Street/I-10 Westbound Off-Ramp—Main Street** is an all-way-stop-control where the east and south leg is the off- and on-ramps, respectively. The eastbound right turn is channelized and free flowing.

**Main Street—Driveway/Seminole Drive** is an all-way-stop-control with a driveway at the north leg.

## 3.3. Traffic Volumes

### Study Segments

The study segments are included to determine any potential safety hazards, which could be mitigated with the proposed alternatives. Operations of the segments were not part of the study. The following study segments are:

**East Ramsey Street** – Starting from the Hargrave Street crossroad to the I-10 Ramps, is generally a two-lane roadway with street parking on either side. The posted speed limit is 40 mph.

**Main Street** – Starting from Apache Trail crossroad and ending at Seminole Drive—I-10 Ramps, is generally a four-lane highway with street parking on the westbound side. At the interchange, the Main Street Overcrossing is a two-lane roadway that features multiple horizontal curves. The posted speed limit is generally 50 mph.

### Existing Conditions

Existing traffic counts and turning movements are collected using Streetlight Data. Streetlight obtains its data with cellphone, connected vehicles, and other sources which are processed under their machine learning algorithm. The traffic counts were averaged over the period of May 1, 2023 to May 31, 2023.

At the time of this report, the *Performance Measurement System* (PeMS), Caltrans, shows that all vehicle detector stations within the project area are not operational. In lieu of recent traffic counts, data was collected using the same methodology with Streetlight Data. Counts were average over the same month of May 2023.

## Primer to Future Condition Analysis

Traditional traffic engineering practices would assume a steady percent growth of traffic year-over-year. However, based on the rural character of the Project Site, this method would not be appropriate to forecast future conditions. Instead, the Planner gathered a list of approved or planned developments in the City of Banning and Community of Cabazon. The four-step model of transportation is then applied to these planned developments.

1. Trip Generation – ITE 11th Edition Trip Generation Manual; reductions to the generated trips were made where applicable.
2. Trip Distribution – Generally assumed 50% from the West on the I-10, 40% from the East, and 10% is local generated traffic. Internal capture was not utilized to perform a conservative approach.
3. Mode Split – All trips are assumed to be private passenger cars, and 2% are trucks; warehouse developments were subjected to additional calculations to reflect generated truck trips and were factored in where applicable.
4. Trip Assignment – Users will pick the fastest route in the micro-simulation.

Shown in Appendix A are the traffic volumes used to analyze the existing, opening, and design year conditions.

## Opening Year Conditions

The opening year analyses encompass all major planned developments within the City of Banning and the Community of Cabazon in the year 2030. A list of all projects, with its relevant land use information is listed below:

**City of Banning**

1. **Atwell** – A master-planned community that plans for 4,400 dwelling units of single-family homes.
2. **Diversified Pacific** – A project that plans for 98 new units of low-density residential housing.
3. **Rancho San Gorgonio** – A master-planned community that plans for 3,385 new residential units, recreational and commercial space, and an elementary school.
4. **Arrowhead Estates** – A project that plans for 143 new dwelling units.
5. **Grandave Studios** – A plan for a 30-acre movie studio.
6. **Logistics Property Company** – An industrial facility that plans for one million square feet of warehousing which is expected to generate trucks.
7. **Warehouse North of Ramsey Interchange** – A 4.2 million square foot plan for a warehouse and is expected to generate a high volume of truck traffic.
8. **Warehouse South of Ramsey Interchange** – A plan for a five million square foot warehouse that will generate a considerable volume of trucks.

Generally, all housing projects are located further than one mile away from the East Ramsey Street interchange. Based on the existing roadway network and other interchange access points, 10% of the total generated trips would utilize the Project from the east; and no patrons would utilize the

interchange from the west, as several interchanges exist west of the East Ramsey Street interchange, and therefore the impacts of these projects would have a marginal or no impact on the interchange.

The North Warehouse development is located just north of the East Ramsey Street interchange. The assumed trip distribution was patrons would be divided as 50% would travel west and 50% would travel east on I-10.

**Community of Cabazon**

1. **Active Adult Community** – A community planned to have approximately 1,200 homes and 10,000 square feet of commercial areas.
2. **Infill Residential-Attached** – A plan to build 200 attached dwelling units of single-family homes.
3. **Infill Residential-Detached** – A plan to build 400 detached dwelling units.

The information provided gave sufficient trip generation results, and no adjustments were made.

## Design Year Conditions

The design year conditions encompass development projects located within the Community of Cabazon in the year 2050. Since the City of Banning Public Works Department did not establish any planned developments within their jurisdiction, a growth factor of 1.7 was used to forecast future traffic conditions at the East Ramsey Interchange. The growth factor was derived from the 2014 I-10 Rehabilitation Project, where the report projects future ramp demands from 2030 to 2050.

**Community of Cabazon**

1. **Industrial Development** – A plan to further build another two million square feet of industrial facilities near the existing airport.
2. **Active Adult Community** – A community planned to expand approximately 1,800 more homes.
3. **Infill Residential-Detached** – A plan to build approximately another 3,600 single-family detached dwelling units.
4. **Transit Oriented Development** – A community planned to expand approximately 2,400 more homes.
5. **Town Center** – A town center planned to build recreational space, restaurants, and a boutique hotel.
6. **Mixed Use Area One** – A lot of approximately 148 acres of land planned to be used for hospitality and office spaces.
7. **Casino/Retail** – A 65-acre lot for planned casino and retail use.
8. **Campgrounds/Recreational-Vehicle Park** – 195 acres planned for camping.
9. **Mixed Use Area Two** – A 169-acre lot planned for hospitality, retail, entertainment, and office use.
10. **Recreational Park** – A park planned for a 242-acre lot.
11. **Commercial Recreation** – A space planned for commercial recreation on a 149-acre lot.
12. **Service Commercial/Industrial** – 159 acres of land planned for commercial and industrial use.
13. **Utility** – A space for utility purposes on 56 acres of land.

Generally, all developments within Cabazon would travel as 40% goes west, 30% goes east, and 30% crosses the overcrossing at the Main Street interchange. Patrons of the northerly developments, that originates from either from I-10 or the southerly developments is assumed that 25% would travel west of the Main Street overcrossing, 40% would continue north, and 35% would travel east. A distribution was adjusted for originating from the north, where 20% of traffic comes from the east, 30% comes from the north, and 50% comes from the east. A shift in distribution was assumed due to the lack of access across I-10, East of the Project. The assumption was based off potential linked trips between the northerly developments.

Since the four-step model would not forecast all the turning movements at adjacent planned local street connections, the report *An Evaluation of Turning Movements Counts and Estimation of Initial Turning Proportions*, Texas A&M University, 2020, was used to estimate future turning demand based on the forecasted trips from the four-step model. The report uses the given intersection geometry to correlate the proportion of turning movements.

# 4. Pedestrian and Bicyclist Assessment

This assessment determines the existing facilities and to plan for future demand to allow pedestrians and bicyclists to traverse the proposed interchange design. Outlined below is an analysis of the overcrossings at the East Ramsey Street and Main Street interchange locations.

## 4.1. Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. In general, a connected network of sidewalks, crosswalks, pedestrian signals, and curb ramps provides access for pedestrians in the vicinity of the project site; however, sidewalk gaps, obstacles, and barriers can be found along some of the roadways connecting to the project site. Existing gaps and obstacles along the connecting roadways impact convenient and continuous access for pedestrians and present safety concerns in those locations where appropriate pedestrian infrastructure would address potential conflict points.

**East Ramsey Street** currently has sidewalk facilities adjacent to the westbound traffic. The sidewalk is separated by landscaping from the edge-of-travel-way. Approximately 700 feet away from the current freeway ramps, the sidewalks terminate then appear at the northeast corner of East Ramsey Street/Hathway Street. There are no pedestrian facilities adjacent to the eastbound direction. Currently, pedestrians are prohibited from crossing the I-10 due to the absence of a local street connection – the only existing crossing connection is with the eastbound on-ramp.

**Main Street Overcrossing** does not contain any pedestrian facilities. On the south side, Main Street has pedestrian facilities at the Main Street/North Fern Street northeast corner. From there to the eastbound ramps, there is an unpaved sidewalk adjacent to the westbound traffic. An eight-foot shoulder and curb currently separate the unpaved sidewalk. Due west of Main Street/North Fern Street currently has no pedestrian facilities until Main Street/Broadway, with curb ramps at the southwest and southeast corners. At the north side, there are no pedestrian facilities at the westbound ramp terminals intersection. Pedestrian facilities exist along the frontage of the Cabazon Dinosaurs attraction site, which are on the westbound side of Seminole Drive. Due west of the attraction site, there are no pedestrian facilities within the influence area of the interchange.

## 4.2. Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2020, classifies bikeways into four categories:

**Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.

**Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.

**Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.

**Class IV Bikeway** – also known as a separated bikeway, a Class IV Bikeway is for the exclusive use of bicycles and includes a separation between the bikeway and the motor vehicle traffic lane. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

In the project area, there are no existing bicycle facilities. The County of Riverside plans on enhancing the bikeway system by adding a Combination Trail, a Regional Trail, and Class I Bike Path, that runs through nearby roads such as Main Street. A bicycle facility warrant analysis was conducted to determine the feasibility of a facility at the crossings of each interchange. The *Bikeway Selection* Guide, FHWA determines the feasibility of bicycle warrants based on average daily traffic and the posted speed limit. A summary of the warrants is shown in Table 1**,** under the proposed section.

Based on the expected traffic volumes and design speeds at the **East Ramsey Street** interchange, shall be extended with pedestrian facilities on the westbound side. Installing pedestrian facilities along the eastbound side is not recommended due to the absence of land use between East Ramsey Street and I-10. The proposed overcrossing would include pedestrian facilities along the southbound side for all alternatives. As well as a separated bike way may be more feasible to the interchange alternative and would need to be consistent with the operational feasibility assessment.

The **Main Street** interchange shall be installed with pedestrian facilities along the northbound side of the overcrossing. There are no plans to install pedestrian facilities on the southbound side of the overcrossing to reduce vehicle-pedestrian conflict points and improve operations at the eastbound off-ramp and the westbound on-ramp. Implementing a Class I bike route at the overcrossing would coincide with the Community of Cabazon plan.

**Table 1 – Bicycle Facility Summary**

| Status | Class | Length (miles) | Begin Point | End Point |
|---|---|---|---|---|
| **Planned** | | | | |
| Combination Trail:<br>I-10 EB On-Ramp—Railroad Ave/I-10 EB Off-Ramp—Main Street | I | N/A | Main St | I-10 On/Off Ramps |
| Combination Trail:<br>I-10 WB On-Ramp—Main Street/I-10 WB Off-Ramp—Main Street | I | N/A | Main St | I-10 On/Off Ramps |
| **Proposed** | | | | |
| E Ramsey St | I | 0.50 | Hargrave St | N Hathaway St |
| E Ramsey St | II | 0.27 | N Hathaway St | Caltrans Driveway |
| Main St | I | 1.50 | Orange St | Seminole Dr |

Source: *County of Riverside- The Pass Area General Plan, 2015*

## 5. Operational Feasibility Assessment

This assessment is a sketch planning method for feasible design alternatives to the interchanges. The tools used is the Virginia Junction Screening Tool (VJuST), *Virginia Department of Transportation*, 2023. VJuST utilizes a high-level analysis methodology to suggest potential designs based on primarily the critical volume-to-capacity ratio for each of the turning movements. All conditions used one approach lane for each alternative. Increasing the approach lanes at the intersections to improve the v/c ratio should not be the goal of this assessment. Using the least amount of approach lanes would reduce the crosswalk length and reduce potential exposure to users within the crosswalk. Therefore, alternatives with the lower v/c ratio would reflect the benefit of preventing the need to increase the approach capacity to accommodate for future demand. The VJuST provides nine types of graded-separated interchanges. Shown in Table 2 and Table 3 are all the potential designs. However, the VJuST tool does not encompass all interchange designs that were included in the Chapter 500, *Highway Design Manual* (HDM), Caltrans.

At the East Ramsey Street interchange, the Trumpet (L-11) is considered based on the reduction of total conflict points compared to a traditional diamond interchange. At the Main Street interchange, the Hooks (L-6) are considered based on their current configuration, as well as their proposed design in the Community Cabazon Master Plans. Due to both configuration types of absence in the VJuST, these designs were not analyzed in this assessment. The operations of these designs are covered in the Detailed Operations Analysis. The contra-flow left, displaced-left, Michigan diamond are interchange designs that are not documented in the HDM, and therefore removed from further analysis.

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The **East Ramsey Street** interchange is further analyzed with the traditional diamond and trumpet designs. The diverging diamond, double and single roundabout, partial cloverleaf are not feasible due to the geometric constraints, as these designs require a larger footprint, where there is a lack of south of the I-10 at the Site.

The **Main Street** interchange is further analyzed with the traditional diamond, single point, diverging diamond, hooks, and partial cloverleaf. The double and single roundabout designs are calculated to have a maximum v/c ratio of greater than 800, which would indicate an inappropriate design for the forecasted volumes.

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| Table 2 – East Ramsey Street Interchange VJuST Summary | | | | | |
|---|---|---|---|---|---|
| **Type** | **Existing Max V/C** | **Opening Max V/C** | **Design Max V/C** | **Pedestrian Accom.** | **Weighted Total Conflict Points** |
| Traditional Diamond | 0.13 (0.20) | 0.32 (0.33) | 0.32 (0.33) | - | 28 |
| Contraflow Left | 0.17 (0.26) | 0.59 (0.43) | 0.59 (0.43) | Similar | 32 |
| Displaced Left Turn | 0.13 (0.20) | 0.32 (0.33) | 0.32 (0.33) | Worse | 28 |
| Diverging Diamond | 0.05 (0.06) | 0.28 (0.11) | 0.28 (0.11) | Worse | 20 |
| Double Roundabout | 0.14 (0.22) | 0.35 (0.36) | 0.35 (0.36) | Better | 16 |
| Michigan Diamond | 0.18 (0.27) | 0.63 (0.45) | 0.63 (0.45) | Better | 24 |
| Partial Cloverleaf | 0.00 (0.00) | 0.00 (0.00) | 0.00 (0.00) | Similar | 20 |
| Single Point | 0.05 (0.06) | 0.28 (0.11) | 0.28 (0.11) | Worse | 32 |
| Single Roundabout | 0.14 (0.22) | 0.35 (0.36) | 0.35 (0.36) | Better | 12 |

Notes: Max V/C = Maximum Volume-to-Capacity Ratio; Values presented as AM (PM); Pedestrian Accom. = Pedestrian Accommodation

| Table 3 – Main Street Interchange VJuST Summary | | | | | |
|---|---|---|---|---|---|
| **Type** | **Existing Max V/C** | **Opening Max V/C** | **Design Max V/C** | **Pedestrian Accom.** | **Weighted Total Conflict Points** |
| Traditional Diamond | 0.18 (0.18) | 0.52 (0.46) | 3.89 (7.28) | - | 28 |
| Contraflow Left | 0.17 (0.21) | 0.80 (0.65) | 3.91 (10.02) | Similar | 32 |
| Displaced Left Turn | 0.14 (0.16) | 0.47 (0.45) | 2.47 (5.91) | Worse | 28 |
| Diverging Diamond | 0.06 (0.08) | 0.47 (0.45) | 2.47 (5.78) | Worse | 20 |
| Double Roundabout | 0.15 (0.18) | 0.66 (0.56) | 66.63 (837.76) | Better | 16 |
| Michigan Diamond | 0.21 (0.22) | 0.66 (0.62) | 4.30 (8.49) | Better | 24 |
| Partial Cloverleaf | 0.07 (0.05) | 0.48 (0.30) | 1.96 (2.54) | Similar | 20 |
| Single Point | 0.06 (0.08 | 0.49 (0.46) | 2.47 (5.78) | Worse | 32 |
| Single Roundabout | 0.15 (0.18) | 0.66 (0.56) | 66.63 (837.76) | Better | 12 |

Notes: Max V/C = Maximum Volume-to-Capacity Ratio; Values presented as AM (PM); Pedestrian Accom. = Pedestrian Accommodation

# 6. Initial Safety Assessment

## 6.1. Predicted Crashes

The Interchange Comparison Safety Tool User Guide, *Federal Highway Administration*, 2023, published a tool to compare local street interchange types based on the predicted crashes. The data was sourced from a national study that aggregated collisions that were relevant to their respective interchange type. Table 4 and Table 5, show the predicted crashes between each design. Since the existing interchanges within the Project are not classified under this Tool, a baseline is established by manually calculating the crash frequency – the results are accompanied with an asterisk (*).

Since all potential interchange designs show a higher property-damage-only (PDO) crash frequency, no alternatives were eliminated based on this measure.

At the **East Ramsey Street** and **Main Street** interchange, the single point and tight diamond interchange is expected to have the lesser total crash frequency compared to their respective existing conditions. The partial cloverleaf type A, AB, A and the diverging diamond are calculated with the three highest total crash frequency and therefore removed from further analysis.

**Table 4 - Predicted Crash Frequency of Designs at East Ramsey Street**

| **Proposed Type**<br>*E Ramsey St. Existing Configuration** | **Total**<br>*16.2** | **KABC**<br>*9.9** | **PDO**<br>*7.1** |
|---|---|---|---|
| Diamond/Compressed Diamond | **21.7** | 5.9 | **15.9** |
| Roundabout Diamond | **17.0** | 4.5 | **12.5** |
| Diverging Diamond | **24.3** | 5.4 | **18.9** |
| Partial Cloverleaf Type B, AB | **26.2** | 6.9 | **19.3** |
| Partial Cloverleaf Type A | **22.2** | 6.5 | **15.8** |
| Single Point Diamond Interchange | 10.8 | 2.6 | **8.2** |
| Tight Diamond | 13.3 | 3.3 | **10.0** |

Note: * = Indicates that crash frequency was based on historical data; KABC = Fatal and Injurious; PDO = Property Damage Only; All values are indicated as crashes-per-year; **Bold** values indicate crash rates higher than the crash frequency of the existing interchange configuration.

| Table 5 – Predicted Crash Frequency of Designs at Main Street | | | |
|---|---|---|---|
| **Proposed Type**<br>*Main St. Existing Configuration** | **Total**<br>*14.0** | **KABC**<br>*11.2** | **PDO**<br>*6.8** |
| Diamond/Compressed Diamond | **18.2** | 4.5 | **13.7** |
| Roundabout Diamond | **14.2** | 3.5 | **10.8** |
| Diverging Diamond | **19.6** | 4.2 | **15.4** |
| Partial Cloverleaf Type B, AB | **21.7** | 5.3 | **16.4** |
| Partial Cloverleaf Type A | **18.4** | 5.0 | **13.4** |
| Single Point Diamond Interchange | 9.5 | 1.9 | **7.6** |
| Tight Diamond | 10.9 | 1.9 | **9.0** |

Note: * = Indicates that crash frequency was based on historical data; KABC = Fatal and Injurious; PDO = Property Damage Only; All values are indicated as crashes-per-year; **Bold** values indicate crash rates higher than the crash frequency of the existing interchange configuration.

## 6.2. Collision Rates

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates were calculated based on records available from the California Highway Patrol as published in their Statewide Integrated Traffic Records System (SWITRS) reports. The most current five-year period available is January 1, 2018, through December 31, 2022. As presented in Table 6, the calculated collision rates for the study intersections were compared to average collision rates for similar facilities statewide, as indicated in *2020 Collision Data on California State Highways*, Caltrans. Intersections that present a rate higher than the statewide average are further reviewed. The collision rate calculations are provided in Appendix B.

Collision rates were also calculated and compared with similar facilities for the study segments. Based on the most current period, the calculated collision rates for the East Ramsey Street and the Main Street segments are 0.24 collisions per million vehicle miles (c/mvm) and 0.16 c/mvm, respectively. Similar facilities to the study segments have average collision rates of 1.07 c/mvm and 0.32 c/mvm, respectively. Both study segments had a lower calculated collision rate than the statewide average, and the collision records were not reviewed further.

| Table 6 – Collision Rates at Study Intersections | | | |
|---|---|---|---|
| **Study Intersection** | **Number of Collisions** | **Calculated Collision Rate (c/mve)** | **Statewide Average Collision Rate (c/mve)** |
| E Ramsey Street—I-10 Ramps | 1 | **0.18** | 0.13 |
| North Fern Street/Main Street | 2 | **0.37** | 0.29 |
| I-10 EB Ramps/Main Street | 15 | **2.00** | 0.36 |
| I-10 WB Ramps/Main Street | 2 | 0.19 | 0.59 |
| Main Street/Seminole Drive | 0 | 0.00 | 0.29 |

Note: c/mve = collisions per million vehicles entering intersection; **Bold** text indicates rates above the statewide average

## Intersections

The following intersections have a higher calculated collision rate than the statewide average, and are accompanied with its review of the respective collision records:

The one collision at the **East Ramsey Street** interchange resulted in a fatality, however, the collision records state that the driver was under the influence and struck a fixed object at the intersection. As this is the only collision at this site, no apparent trend indicates a possible safety hazard. Due to the low volumes at this interchange, adversely affects the calculated collision rate, giving the appearance that there could be a potential safety hazard.

At the **Main Street interchange**, there were two intersections that calculated a collision rate higher than the statewide average. The collision associated with this interchange are spaced approximately 500 feet from each other, which could indicate a correlation between these collision trends. At **North Fern Street/Main Street**, the two collisions were where the driver at fault was proceeding southbound and violated the other party's right-of-way. The southbound approach is a minor stop controlled, and the major road is not controlled. Departing drivers may not have sufficient time-gap acceptance due to the closely spaced I-10 eastbound ramps terminal intersection. At **I-10 Eastbound Ramps/Main Street**, nine of the 15 reported collisions, similarly experienced the majority of the at-fault drivers violating the other party's right-of-way. Five of the nine similar collisions were the at-fault drivers attempting to make a left-turn from either the northbound or southbound approaches. In addition, two collisions are reported where the drivers rear-ended another driver when exiting the eastbound off-ramp due to the at-fault driver travelling at unsafe speeds. This trend could indicate that queues at the terminal extended beyond the acceptable stopping sight distance from the mainline.

## 6.3. Pedestrian Safety

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue for pedestrians. Collision records available from the California Highway Patrol as published in their SWITRS reports were reviewed for the most current five-year period available, which was January 1, 2018, through December 31, 2022 at the time of the analysis. During the five-year study period there was one recorded pedestrian collision at the **Main Street** interchange, eastbound ramps intersection. This collision reported where the pedestrian was crossing southbound at the west leg, where the driver making a northbound left, struck the pedestrian. The officer reported that the collision was caused by the driver's right-of-way being violated. Since there are no stripped crosswalks, curb ramps, or stop bars at the west leg, it appears that this intersection was not designed to accommodate any pedestrian crossings which is the most probable cause of this collision.

## 6.4. Bicyclist Safety

Collision records for the study area were reviewed to determine if there had been any bicyclist-involved crashes. During the five-year study period between January 1, 2018, through December 31, 2022, there were no bicyclist-involved collisions – therefore no trends could be interpreted based on only reported collision records.

## 6.5. Sight Distance

Sight distances were evaluated based on sight distance criteria contained in the Highway Design Manual (HDM) published by Caltrans. The recommended sight distance for the intersection of public streets is based on corner sight distances, with more sight distance needed for a left turn versus a right turn. The corner sight distance criterion for public street intersections was applied for evaluation purposes. The HDM recommends an equation of D = 1.47 * V * T for corner sight distance, where "D" is corner sight distance, "V" is vehicle speed, and "T" is a time gap dependent on turning movement and design vehicles, which for a single-unit truck correlates to a "T" of 9.5 seconds for left turns and 8.5 seconds for right turns. Intersections with minor-approach stop controls were only taken into consideration.

**East Ramsey Street/Caltrans Driveway** – The posted speed limit on East Ramsey Street is 40 mph, whereas the westbound off-ramp is assumed to have a travel speed of 50 mph. Based on the calculated corner sight distance triangles, it appears that no roadside obstructions conflict with the line-of-sight. However, the vertical alignment along the off-ramp appears that the gradient may be significantly large enough to create a potential safety hazard where the westbound does not have adequate sightlines to detect an object at their path.

**Main Street/Eastbound On- and Off-Ramps—Railroad Avenue** – The posted speed limit is 45 mph along Main Street. The eastbound ramps and Railroad Avenue are stopped controlled. Departures from both the northbound and southbound have obstructed sightlines due to the horizontal curve at the Main Street overcrossing. Drivers departing from the minor approach may have difficulty judging an acceptable time-gap due to the eastbound traffic decelerating towards the overcrossing. A trend in collision records, shown in Collision Rates, further supports the conclusion that the minor approaches do not have adequate sightlines to make a left- or right-turn.

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Based on the collision records analysis, it is determined that the existing conditions provide a potential safety hazard, and a no-build alternative would be inappropriate. For an interim design at the **Main Street** interchange, it is recommended that a further study to a signalized or all-way-stop control should be implemented at the Main Street Eastbound Ramps intersection. Alternatives should be designed with traffic signals to accommodate the forecasted traffic volumes.

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# 7. Transit and Freight Assessment

## 7.1. Transit

The Banning Connect Transit Agency provides fixed-route bus service in Banning and surrounding communities such as Beaumont and Cabazon. Pass Transit Route 1 provides loop service to destinations throughout Cabazon and stops on Seminole Drive between Desert Hills Outlet Mall and Casino Morongo. Route 1 operates Monday through Friday with approximately one-hour headways between 5:00 a.m. to 10:00 p.m. on weekdays, and between 8:00 a.m. to 6:00 p.m. on weekends with approximately two-hour headways. The Casino Express provides transit service between Cabazon and surrounding communities. The route stops on Seminole Drive between Cabazon Outlets and Casino Morongo and operates Monday through Friday between 7:20 a.m. and 4:45 p.m. with approximately two-hour headways. Existing transit routes and other routes are summarized in Table 7.

The proposed designs aim to preserve the existing connections throughout the Project's influence area. Each design should allow vehicles with turning paths larger than the typical passenger car. The Banning Connect transit route goes through the Main Street interchange, and consideration should be taken to preserve that connection, as well as allow the transit vehicles to properly make their turns at the intersections.

No interchange design would prohibit transit vehicles navigating properly, and therefore no further analysis into the transit section.

**Table 7 – Existing Transit Connections**

| **Transit Agency**<br>Route | **Service Times** | **Major Connections** |
|---|---|---|
| **Banning Connect/Pass Transit** | | |
| Route 1 | M-F 5:00 a.m. to 10:00 p.m.<br>Sa-Su 8:00 a.m. to 5:56 p.m. | Casino Morongo |
| Route 5 | M-F 5:30a.m. to 6:49 p.m.<br>Sa-Su 7:44 a.m. to 5:44 p.m. | Walmart at Wilson St<br>Sun Lakes Villages |
| Route 6 | M-F 6:00 a.m. to 6:32 p.m. | San Gorgonio Hospital |
| **Casino Express** | M-F 7:20 a.m. to 4:45 p.m. | Walmart, Casino Morongo |
| **Riverside Transit Authority** | | |
| Route 31 | M-F 5:33 a.m. to 8:50 p.m.<br>Sa-Su 7:10 a.m. to 8:16 p.m. | Mt. San Jacinto College, Riverside University Medical Center, Moreno Valley Mall |
| **SunLine** | | |
| Commuter Link 10 | M-F 5:20 a.m. to 9:00 p.m. | San Bernardino Metrolink, CSU San Bernardino, Sunline Indio Facility |

## 7.2. Freight

The Project is not located within the Extra-Legal Load Network, which would require the proposed alternatives to accommodate 20-foot-tall loads. Further analysis uses a California Legal Design Vehicle 60-Foot Radius, from the *Chapter 400*, HDM to determine if there are potential geometric hazards for these vehicles. Any found hazards or deficiencies should be taken into consideration.

The following designs implement significant horizontal curves, in particular:

**Alternative M.2** – The hook ramp interchange comprises of a geometric curve which would cause drivers from the freeway to slow down a significant distance prior to the curve, as the geometric curves are designed for 25 mph. Since the initial departure of the ramp has a design speed of 55 miles per hour, a speed differential of 30-mph may pose a safety hazard due to truck motorists not being readily available to bring their vehicle to a safe operating speed at the curve.

**Alternative M.3** – The tight diamond interchange has the southerly overcrossing approach to have a horizontal curve of 25 mph, due to geometric constraints. Due west of the overcrossing approach, Main Street has a typical posted speed limit of 50-mph to 45-mph. The speed differential of, at most, 25-mph poses a potential safety hazard, as truck motorists may not be readily available to bring their vehicle to a safe operating speed at the curve.

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Alternative M.2 (Hooks) and Alternative M.3 (Tight Diamond) pose potential geometric hazards for freight vehicles and therefore pose potential deficiencies as an alternative at **Main Street** interchange.

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## 8. Detailed Safety Analysis

The purpose of the detailed safety analysis is to determine the expected crash frequency of the specific geometrics of each alternative. The crash predictive model methodologies published in the *Highway Safety Manual,* American Association of State Highway Transportation Officials, 2010, along with the *Highway Safety Software 2023*, McTrans, were used to evaluate the expected crash frequencies of each alternative. The analysis is divided into two parts: ramp terminal and ramp segment. Each analysis is calculated with the same proposed design of the alternative, but varies the average annual daily traffic based on existing, opening, and design year traffic conditions. A comparison with the existing ramp configurations and the alternatives is shown in Table 8 and Table 9.

The crash modification factor (CMF) represents the proportional change of the proposed over the existing crash rates. The benefits are defined as the gains or losses in crash costs compared to the existing configuration. A positive value indicates the design alternative provides savings in crash costs, conversely, a negative value indicates that the design alternative expects a higher crash rate, and a higher societal crash cost. The *Highway Safety Software* defines societal costs as follows:

- Fatal and Injury Crashes (KABC): $158,200 per crash
- Property Damage Only (PDO): $7,400 per crash.

Copies of the Highway Safety Software projections are in Appendix C. The crash analysis comparing the existing East Ramsey Street, that exists with two ramps, and with the proposed alternatives to be designed with four ramps, may not be presented as an accurate comparison. An analysis to alleviate congestion from adjacent interchanges, which could reduce the crash frequency, may provide a more accurate comparison; however, this analysis did not take this into consideration.

The *Highway Safety Manual,* AASHTO, 2010, does not cover every alternative. The *Intersection Crash Prediction Methods for the Highway Safety Manual*, National Cooperative Highway Research Program, 2018, provides supplemental safety performance functions for the tight diamond and single point diamond interchange. These functions were used to calculate the ramp terminal predicted crashes for these alternatives, the crash costs values were derived from the Highway Safety Software default values. However, the hybrid spread-tight diamond used the default diamond interchange (D4) methodology for both its ramp terminals. The trumpet was evaluated with the partial cloverleaf type A2 due to the most similar intersection geometry, and the absence of a safety performance function for the trumpet interchange.

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The **East Ramsey Street** interchange should be designed with either Alternative E.1 (Trumpet) or E.2 (Hybrid) since their CMF are less than one. Alternative E.3 (Tight) has an overall CMF of 1.17 but expects to reduce KABC crashes.

The **Main Street** interchange can be designed with any alternative, as all alternatives expect a lesser crash frequency than the existing configuration. Alternative M.2 (Hooks) would provide the greatest societal benefit.

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| Table 8 – East Ramsey Street Total Expected Crash Costs | | | | |
|---|---|---|---|---|
| **Analysis Periods**<br>Crash Result | **Existing Configuration** | **Alt 1. (Trumpet)** | **Alt. 2 (Spread)** | **Alt. 3 (Tight)** |
| **Existing Year** | | | | |
| KABC | 1.12 | 0.28 | 0.24 | 0.49 |
| PDO | 1.33 | 0.31 | 0.17 | 1.03 |
| Total Crashes | 2.45 | 0.60 | 0.41 | 1.52 |
| Total Cost | $187,067 | $47,197 | $39,258 | $84,881 |
| **Opening Year** | | | | |
| KABC | 1.92 | 0.95 | 0.85 | 1.29 |
| PDO | 2.32 | 0.67 | 0.61 | **2.71** |
| Total Crashes | 4.24 | 1.62 | 1.46 | 4.00 |
| Total Cost | $320,260 | $155,352 | $139,233 | $224,479 |
| CMF | 1.00 | 0.38 | 0.34 | 0.95 |
| Societal Benefit | $0 | $164,908 | $181,027 | $95,781 |
| **Design Year** | | | | |
| KABC | 2.86 | 1.29 | 1.20 | 2.27 |
| PDO | 3.43 | 0.91 | 0.87 | **5.09** |
| Total Crashes | 6.29 | 2.20 | 2.07 | **7.36** |
| Total Cost | $477,140 | $211,297 | $196,020 | $396,419 |
| CMF | 1.00 | 0.35 | 0.33 | **1.17** |
| Societal Benefit | $0 | $265,843 | $281,120 | $80,721 |

Notes: Alternatives are compared with four ramps to the existing configuration with two ramps; KABC = Fatal and injurious crashes; PDO = property damage only crashes; **Bold** indicates values greater than existing

| Table 9 – Main Street Total Expected Crash Costs | | | | |
|---|---|---|---|---|
| **Analysis Periods**<br>Crash Result | **Existing Configuration** | **Alt 1. (SPUI)** | **Alt. 2 (Hooks)** | **Alt. 3 (Tight)** |
| **Existing Year** | | | | |
| KABC | 4.17 | 0.53 | 0.53 | 0.59 |
| PDO | 3.92 | 0.84 | 0.33 | 1.01 |
| Total Crashes | 8.09 | 1.36 | 0.86 | 1.60 |
| Total Cost | $688,927 | $89,777 | $85,741 | $100,058 |
| **Opening Year** | | | | |
| KABC | 9.08 | 1.48 | 1.00 | 2.07 |
| PDO | 8.61 | 3.04 | 0.51 | 4.13 |
| Total Crashes | 17.69 | 4.52 | 1.51 | 6.20 |
| Total Cost | $1,500,527 | $257,003 | $162,466 | $357,799 |
| CMF | 1.00 | 0.26 | 0.09 | 0.35 |
| Societal Benefit | $0 | $1,243,524 | $1,338,061 | $1,142,728 |
| **Design Year** | | | | |
| KABC | 16.01 | 2.45 | 1.37 | 3.14 |
| PDO | 10.18 | 5.46 | 0.85 | 6.69 |
| Total Crashes | 26.19 | 7.91 | 2.22 | 9.83 |
| Total Cost | $2,607,994 | $427,513 | $222,716 | $545,458 |
| CMF | 1.00 | 0.30 | 0.08 | 0.38 |
| Societal Benefit | $0 | $2,180,481 | $2,385,278 | $2,062,536 |

Notes: KABC = Fatal and injurious crashes; PDO = property damage only crashes

# 9. Detailed Operations Analysis

From the Office Division of Traffic Operations, the ISOAP does not use Level of Service (LOS) as the primary performance measure of evaluating interchanges. However, since this assessment is the successor of the Intersection Control Evaluation (ICE), this part of the operation analysis does provide a LOS for each ramp-terminal for informational purposes only. The analysis does not consider LOS as a deciding metric due to the Office directive.

## 9.1. Queues

For the ISOAP analysis, each study facility is evaluated primarily on the forecasted vehicle queues. Queues can indicate deficient operations by forming at a length to where traffic from the freeway mainline could not safely stop within the ramp facility, due to insufficient stopping sight distance. For the East Ramsey Street Interchange, the existing conditions and Alternative E.1 (Trumpet) feature no controlled points at the ramp terminals, meaning traffic is free-flowing and would theoretically not create any queues. However, for informational purposes, the expected results are shown in Table 10.

Under the traffic volumes for each scenario, the projected queues in left-turn and right-turn lanes at the off-ramp approaches were determined using the SIMTRAFFIC application of Synchro and averaging the 95$^{th}$-percentile queue for each of ten simulation runs. Comparisons between the available storage lengths and the projected maximum vehicle queue lengths in these left-turn and right-turn pockets are presented in Table 10 and Table 11. For the freeway off-ramp approaches, the available storage provided is the approximate distance from the gore point (where the ramp diverges from the freeway mainline) to the stop bar at the end of the off-ramp minus the 500 feet stopping sight distance for a travel speed of 55 mph. Additionally, a calculation of the length of queued vehicles versus the provided storage is presented as a volume-to-capacity (V/C) ratio. A queuing V/C ratio greater than one would signify deficient operations. Copies of the SIMTRAFFIC projections are contained in Appendix D.

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The **East Ramsey Street** interchange should be designed with Alternative E.1 (Trumpet) or Alternative E.2 (Hybrid Spread and Tight Diamond) as there are no lane groups that exceed the queuing V/C ratio. However, Alternative E.2, expects to have all approaches morning Design flow rate exceeding the lane group capacity.

The **Main Street** interchange should be designed with Alternative M.1 (SPUI) since there are no approaches exceeding the queuing V/C ratio. However, approach flows exceed lane group capacity at all approaches evening Design flow rate. Alternative M.3 (Tight), may present a viable alternative, as the westbound right during the evening Design scenario has a V/C greater than one, but it exceeds storage bay capacity—as opposed to more critically—the capacity necessary for the exiting traffic to safely stop.

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| Table 10 – East Ramsey Interchange Alternatives Operations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Alternatives** Period | **Off-Ramp Queues** | | | | **Queuing Volume to Capacity Ratio** | | | |
| | **EBL** | **EBR** | **WBL** | **WBR** | **EBL** | **EBR** | **WBL** | **WBR** |
| **Existing** | | | | | | | | |
| Existing | - | - | 0 (0) | 0 (0) | - | - | 0 (0) | 0 (0) |
| Opening | - | - | 0 (0) | 0 (0) | - | - | 0 (0) | 0 (0) |
| Design | - | - | 0 (0) | 0 (0) | - | - | 0 (0) | 0 (0) |
| Capacity | - | - | 1,050 | 1,050 | - | - | - | - |
| **Alt. E.1 (Trumpet)** | | | | | | | | |
| Existing | 0 (0) | - | - | 0 (0) | 0 (0) | - | - | 0 (0) |
| Opening | 0 (0) | - | - | 0 (0) | 0 (0) | - | - | 0 (0) |
| Design | 0 (0) | - | - | 0 (0) | 0 (0) | - | - | 0 (0) |
| Capacity | 2,370 | - | - | 1,430 | - | - | - | - |
| **Alt. E.2 (Hybrid)** | | | | | | | | |
| Existing | 1 (0) | - | 0 (0) | 0 (0) | 0 (0) | - | 0 (0) | 0 (0) |
| Opening | 70 (35) | - | #187 (#116) | #185 (65) | 0.04 (0.02) | - | 0.2 (0.12) | 0.37 (0.13) |
| Design | #120 (50) | - | #420 (85) | #413 (57) | 0.07 (0.03) | - | 0.45 (0.09) | 0.83 (0.11) |
| Capacity | 1,840 | - | 940 | 500 | - | - | - | - |
| **Alt. E.3 (Tight)** | | | | | | | | |
| Existing | 0 (0) | - | 0 (0) | 0 (0) | 0 (0) | - | 0 (0) | 0 (0) |
| Opening | 70 (35) | - | 61 (45) | 53 (36) | 0.06 (0.03) | - | 0.08 (0.06) | 0.14 (0.10) |
| Design | #122 (50) | - | #421 (60) | **#414** (47) | 0.1 (0.04) | - | 0.53 (0.08) | **1.12** (0.13) |
| Capacity | 1,170 | - | 800 | 370 | - | - | - | - |

Notes: Queues shown in feet are reported as AM (PM); **Bold** text indicates deficient operations; # = queues may be longer than presented, approach vehicles per hour exceeds lane group capacity

| Table 11 – Main Street Interchange Alternatives Operations | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Alternatives** Period | **Off-Ramp Queues** | | | | **Queuing Volume to Capacity Ratio** | | | |
| | **EBL** | **EBR** | **WBL** | **WBR** | **EBL** | **EBR** | **WBL** | **WBR** |
| **Existing** | | | | | | | | |
| Existing | 16 (17) | 16 (17) | 52 (63) | 52 (63) | 0.04 (0.04) | 0.04 (0.04) | 0.24 (0.29) | 0.24 (0.29) |
| Opening | 87 (95) | 87 (95) | 43 (94) | 43 (94) | 0.22 (0.24) | 0.22 (0.24) | 0.2 (0.43) | 0.2 (0.43) |
| Design | **1,924 (1,691)** | **1,924 (1,691)** | **2,139 (1,934)** | **2,139 (1,934)** | **4.81 (4.23)** | **4.81 (4.23)** | **9.72 (8.79)** | **9.72 (8.79)** |
| Capacity | 400 | 400 | 220 | 220 | - | - | - | - |
| **Alt. M.1 (SPUI)** | | | | | | | | |
| Existing | 29 (21) | 17 (0) | 30 (34) | 39 (40) | 0.02 (0.01) | 0.01 (0) | 0.05 (0.06) | 0.03 (0.03) |
| Opening | 28 (20) | 34 (42) | 67 (118) | 39 (40) | 0.02 (0.01) | 0.02 (0.03) | 0.12 (0.21) | 0.03 (0.03) |
| Design | 170 (#364) | 41 (#537) | 151 (#408) | 117 (#364) | 0.11 (0.23) | 0.03 (0.34) | 0.27 (0.72) | 0.10 (0.3) |
| Capacity | 1,550 | 1,579 | 569 | 1,201 | - | - | - | - |
| **Alt. M.2 (Hooks)** | | | | | | | | |
| Existing | 75 (26) | 23 (39) | 19 (45) | 8 (11) | 0.04 (0.01) | 0.02 (0.03) | 0.02 (0.04) | 0.01 (0.01) |
| Opening | 77 (77) | 80 (76) | 34 (143) | 14 (28) | 0.04 (0.04) | 0.06 (0.05) | 0.03 (0.12) | 0.01 (0.03) |
| Design | 329 (2478) | 167 (1534) | 283 (2926) | 52 (701) | 0.17 (**1.30**) | 0.12 (**1.10**) | 0.23 (**2.42**) | 0.05 (0.72) |
| Capacity | 1,910 | 1,390 | 1,210 | 980 | - | - | - | - |
| **Alt. M.3 (Tight)** | | | | | | | | |
| Existing | 61 (53) | 33 (19) | 80 (111) | 63 (69) | 0.03 (0.03) | 0.04 (0.03) | 0.05 (0.07) | 0.15 (0.16) |
| Opening | 85 (52) | 60 (93) | 167 (223) | 58 (71) | 0.05 (0.03) | 0.08 (0.13) | 0.1 (0.13) | 0.14 (0.17) |
| Design | 392 (568) | 201 (671) | 351 (588) | 186 (464) | 0.21 (0.31) | 0.27 (0.91) | 0.21 (0.35) | 0.44 (**1.10**) |
| Capacity | 1,860 | 737 | 1,670 | 423 | - | - | - | - |

Notes: Queues shown in feet are reported as AM (PM); **Bold** text indicates deficient operations; # = queues may be longer than presented, approach vehicles per hour exceeds lane group capacity

## 9.2. Level of Service

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation. The ranges of delay associated with the various levels of service are indicated in Table 12. Caltrans District 8 and Riverside County establishes a LOS standard of D. However, the results of this section would not contribute to the decision-making of the preferred alternative. This section serves informational purposes only. Copies of Synchro calculations are shown in Appendix E.

**Table 12 – Intersection Level of Service Criteria**

| LOS | Unsignalized | Signalized |
|---|---|---|
| A | 0 to 10 seconds | 0 to 10 seconds |
| B | 10 to 15 seconds | 10 to 20 seconds |
| C | 15 to 25 seconds | 20 to 35 seconds |
| D | 25 to 35 seconds | 35 to 55 seconds |
| E | 35 to 50 seconds | 55 to 80 seconds |
| F | More than 50 seconds | More than 80 seconds |

Reference: *Highway Capacity Manual*, Transportation Research Board, 2000

| Table 13 – East Ramsey Street Interchange Alternatives Operations | | | | |
|---|---|---|---|---|
| **Alternative** Analysis Period | **Eastbound Off-Ramp** | | **Westbound Off-Ramp** | |
| | **AM** | **PM** | **AM** | **PM** |
| **Existing Configuration** | | | | |
| Existing | 0 (A)* | 0 (A)* | 0 (A)* | 0 (A)* |
| Opening | 0 (A)* | 0 (A)* | 0 (A)* | 0 (A)* |
| Design | 0 (A)* | 0 (A)* | 0 (A)* | 0 (A)* |
| **Alt. E.1 (Trumpet)** | | | | |
| Existing | 0 (A)* | 0 (A)* | 0 (A)* | 0 (A)* |
| Opening | 0 (A)* | 0 (A)* | 0 (A)* | 0 (A)* |
| Design | 0 (A)* | 0 (A)* | 0 (A)* | 0 (A)* |
| **Alt E.2 (Hybrid)** | | | | |
| Existing | 0.0 (A) | 0.0 (A) | 14.9 (B) | 14.7 (B) |
| Opening | 17.1 (B) | 6.9 (A) | 12.8 (B) | 13.7 (B) |
| Design | 19.8 (B) | 14.9 (B) | **76.5 (E)** | **96.2 (F)** |
| **Alt E.3 (Tight)** | | | | |
| Existing | 0.0 (A) | 0.0 (A) | 13.2 (B) | 11.8 (B) |
| Opening | 10.4 (B) | 6.6 (A) | 10.8 (B) | 10.0 (B) |
| Design | 12.3 (B) | 10.5 (B) | **78.0 (E)** | 27.0 (C) |

Notes: Values are reported as Delay (LOS); Delay is reported in seconds; **Bold** text indicates deficient operations; * = Unsignalized intersection

| Table 14 – Main Street Interchange Alternatives Operations | | | | |
|---|---|---|---|---|
| **Alternative** Analysis Period | **Eastbound Off-Ramp** | | **Westbound Off-Ramp** | |
| | **AM** | **PM** | **AM** | **PM** |
| **Existing Configuration** | | | | |
| Existing | 4.3 (A)* | 3.3 (A)* | 7.7 (A)* | 7.0 (A)* |
| Opening | 16.2 (C)* | 16.1 (C)* | 7.4 (A)* | 9.2 (A)* |
| Design | **~ (F)*** | **~ (F)*** | 19.8 (C)* | **390.3 (F)*** |
| **Alt. M.1 (SPUI)** | | | | |
| Existing | 19.6 (B) | 18.0 (B) | 19.0 (B) | 17.6 (B) |
| Opening | 49.9 (D) | 48.2 (D) | 53.8 (D) | 53.3 (D) |
| Design | 39.0 (D) | **63.0 (E)** | 52.4 (D) | **61.9 (E)** |
| **Alt. M.2 (Hooks)** | | | | |
| Existing | 11.2 (B) | 10.2 (B) | 8.9 (A) | 7.5 (A) |
| Opening | 14.4 (B) | 9.9 (A) | 12.9 (B) | 13.6 (B) |
| Design | 19.7 (B) | 38.4 (D) | 17.4 (B) | 21.8 (C) |
| **Alt. M.3 (Tight)** | | | | |
| Existing | 13.3 (B) | 11.0 (B) | 24.6 (C) | 18.9 (B) |
| Opening | 16.7 (B) | 15.7 (B) | 18.7 (B) | 30.1 (C) |
| Design | 21.5 (C) | 54.7 (D) | 21.7 (C) | 31.5 (C) |

Notes: Values are reported as Delay (LOS); Delay is reported in seconds; **Bold** text indicates deficient operations; * = Unsignalized intersection; ~ = delay exceeds calculating capabilities

## 10. Recommendations

The recommended alternative based on a safety and operational assessment for each alternative is provided in a matrix presented in Table 15. The matrix represents the summaries of each section and if there were any recommended (R), deficient (D), or inconclusive (I) determinations for each alternative. The selected alternative with the most recommended and the least deficiencies shall be considered as the selected alternative for the Project.

The total row represents a numerical value of the rankings among each section. The numerical translation of each ranking is as follows,

- Recommended: 1
- Inconclusive: 0
- Deficient: -1.

The higher positive total would determine if the alternative would have more relative benefits for each section, conversely, the lesser negative total alternative would have the most deficiencies. However, the inconclusive determination occurs due to the nature of a preliminary study of each interchange. It is encouraged to do further study for each inconclusive determination upon the next stages of the assessment process.

---

**Alternative E.2**, the hybrid spread and tight diamond interchange, is the selected alternative for the **East Ramsey Street** interchange.

**Alternative M.1**, the single point urban interchange, is the selected alternative for the **Main Street** interchange.

---

| Table 15 – Recommended Alternative Summary Matrix | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | East Ramsey Street | | | | Main Street | | | |
| | Existing Config. | Alt. 1 (Trumpet) | Alt. 2 (Hybrid) | Alt. 3 (Tight) | Existing Config. | Alt. 1 (SPUI) | Alt. 2 (Hooks) | Alt. 3 (Tight) |
| **Pedestrian and Bicyclist Assessment** | D | D | R | R | D | R | R | R |
| **Operational Feasibility Assessment** | D | I | R | R | D | R | I | R |
| **Initial Safety Assessment** | D | I | I | R | D | R | I | I |
| **Transit and Freight Assessment** | D | I | I | I | D | I | D | D |
| **Detailed Safety Analysis** | D | R | R | D | D | R | R | R |
| **Detailed Operations Analysis** | I | I | R | D | D | R | R | D |
| **Totals** | -5 | 0 | 4 | 1 | -6 | 5 | 2 | 1 |

Notes: R = Recommended (1); I = Inconclusive (0); D = Deficient (-1); The highest positive value determines the selected alternative

# APPENDIX A


LEGEND

○ STUDY INTERSECTION

xx AM PEAK HOUR VOLUME

(xx) PM PEAK HOUR VOLUME

—— —— EXISTING ROADWAY

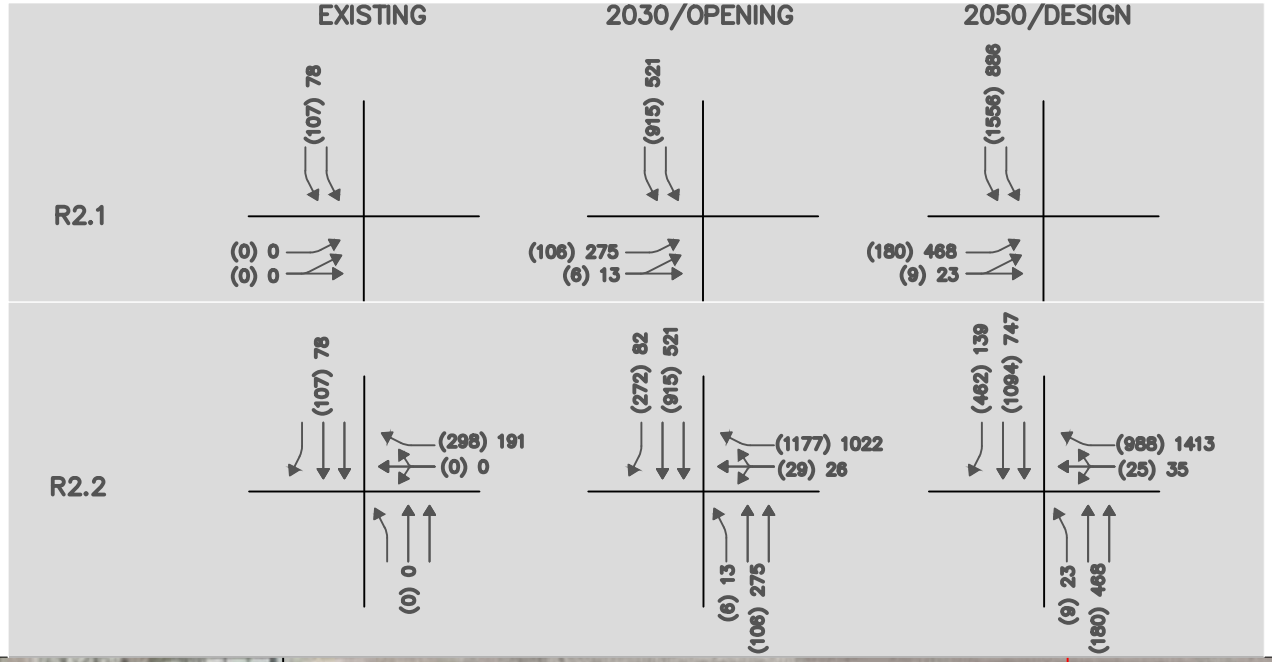
———— PROPOSED ALIGNMENT

N

NOT TO SCALE

# TRAFFIC OPERATIONS ANALYSIS FOR RAMSEY STREET INTERCHANGE

## APPENDIX A: EXISTING CONDITIONS





LEGEND

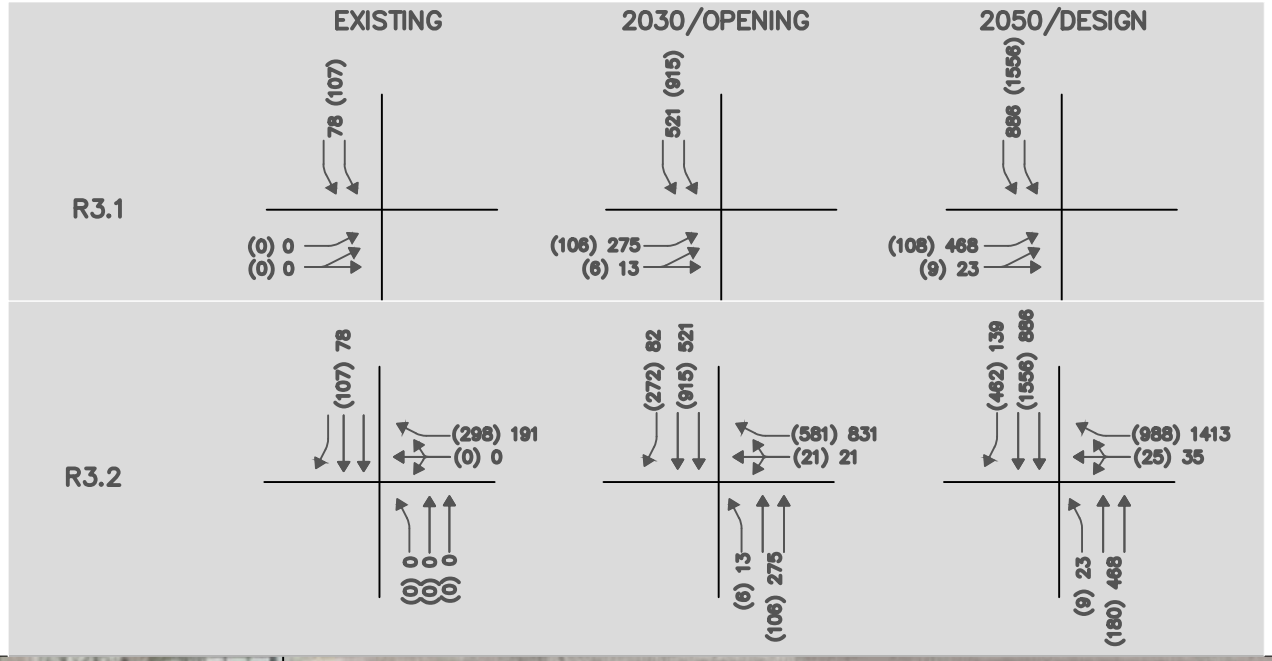
- ○ STUDY INTERSECTION
- xx AM PEAK HOUR VOLUME
- (xx) PM PEAK HOUR VOLUME
- —— —— EXISTING ROADWAY
- ———— PROPOSED ALIGNMENT

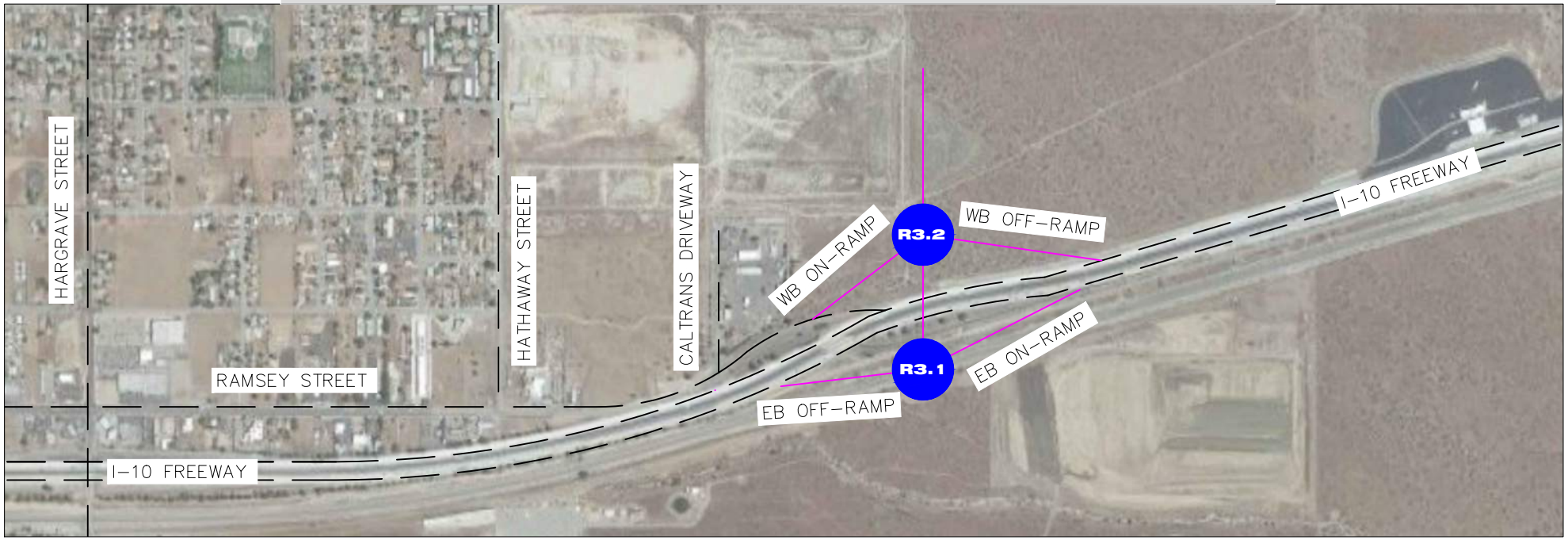
N

NOT TO SCALE

TRAFFIC OPERATIONS ANALYSIS FOR RAMSEY STREET INTERCHANGE

APPENDIX A: ALTERNATIVE 2 – SPREAD DIAMOND




LEGEND

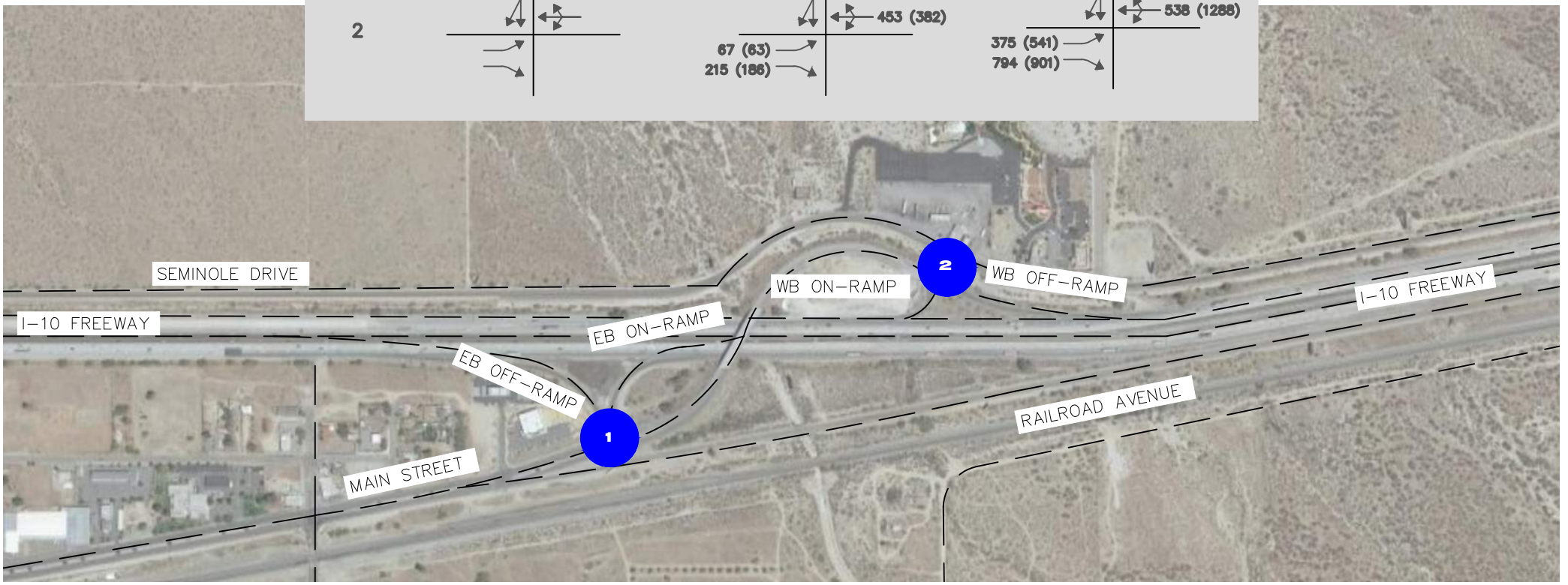
- ○ STUDY INTERSECTION
- xx AM PEAK HOUR VOLUME
- (xx) PM PEAK HOUR VOLUME
- —— —— EXISTING ROADWAY
- ———— PROPOSED ALIGNMENT

N

NOT TO SCALE

TRAFFIC OPERATIONS ANALYSIS FOR RAMSEY STREET INTERCHANGE

APPENDIX A: ALTERNATIVE 3 – TIGHT DIAMOND




N

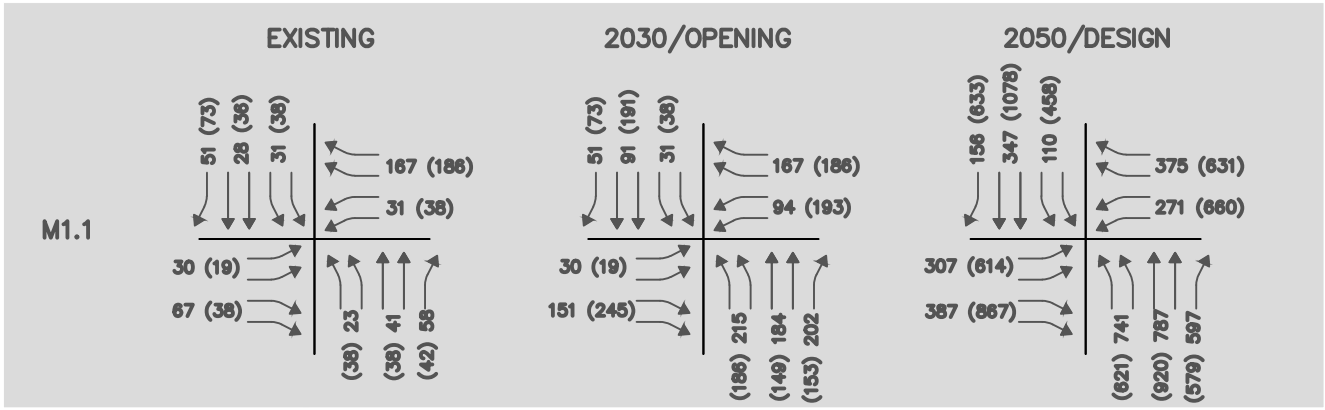
NOT TO SCALE

LEGEND

- ○ STUDY INTERSECTION
- xx AM PEAK HOUR VOLUME
- (xx) PM PEAK HOUR VOLUME
- —— —— EXISTING ROADWAY
- ———— PROPOSED ALIGNMENT

TRAFFIC OPERATIONS ANALYSIS FOR MAIN STREET INTERCHANGE

APPENDIX A: EXISTING CONDITIONS





LEGEND

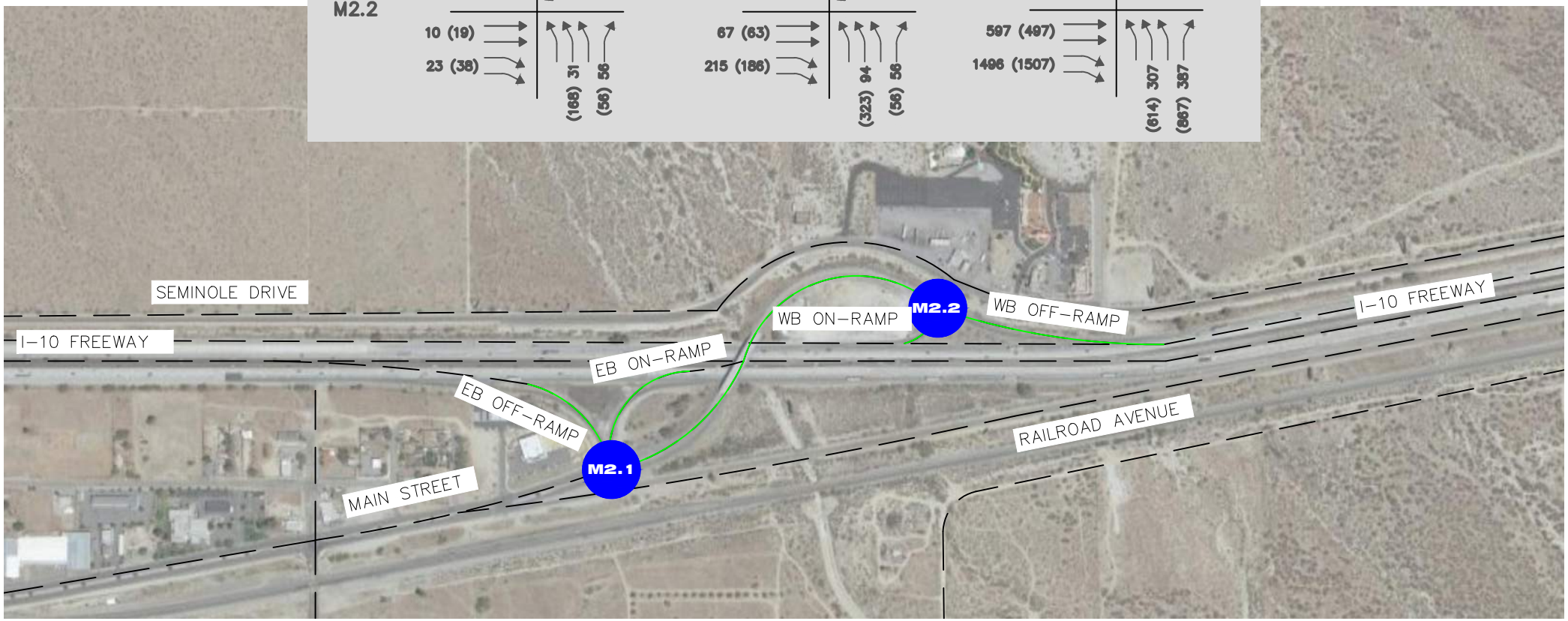
- ○ STUDY INTERSECTION
- xx AM PEAK HOUR VOLUME
- (xx) PM PEAK HOUR VOLUME
- —— —— EXISTING ROADWAY
- ———— PROPOSED ALIGNMENT

N

NOT TO SCALE

TRAFFIC OPERATIONS ANALYSIS FOR MAIN STREET INTERCHANGE

APPENDIX A: ALTERNATIVE 1 – SPUI




LEGEND

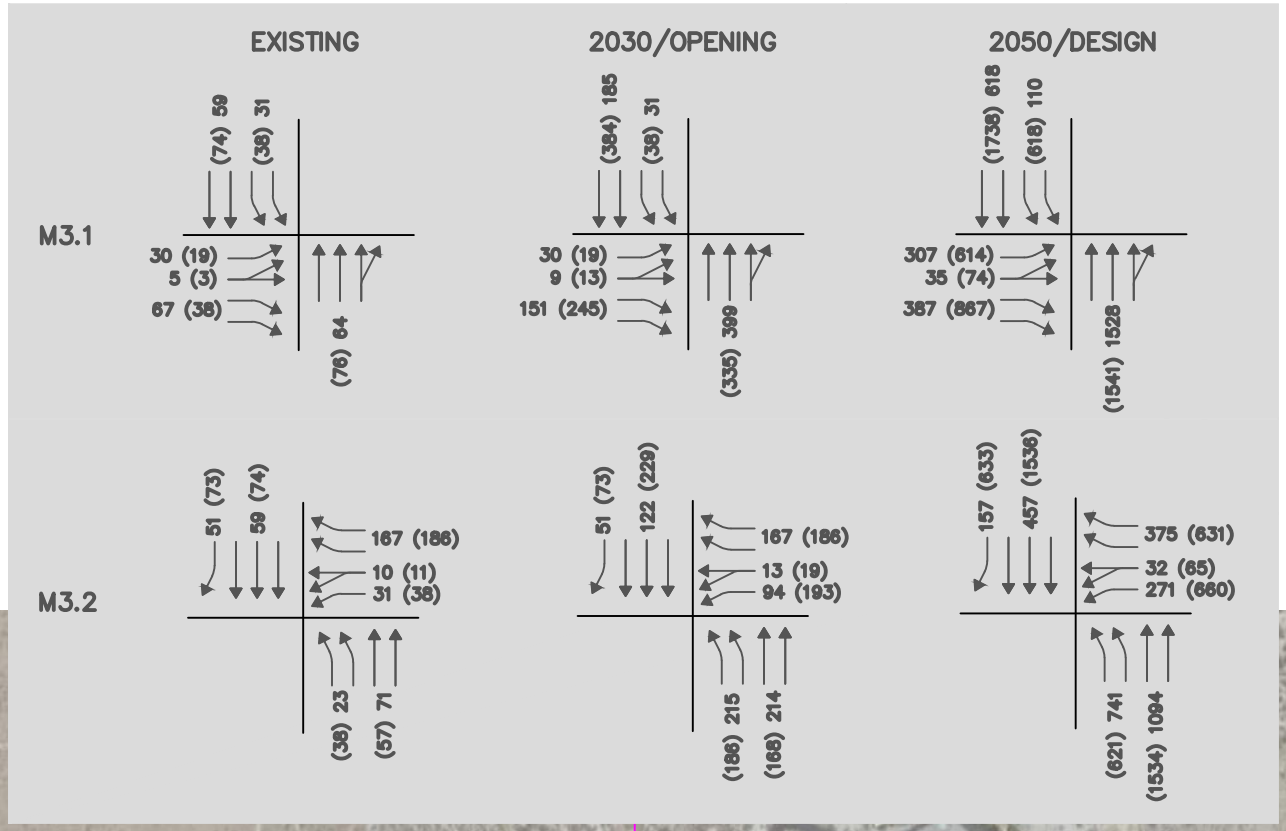
- ○ STUDY INTERSECTION
- xx AM PEAK HOUR VOLUME
- (xx) PM PEAK HOUR VOLUME
- —— —— EXISTING ROADWAY
- ———— PROPOSED ALIGNMENT

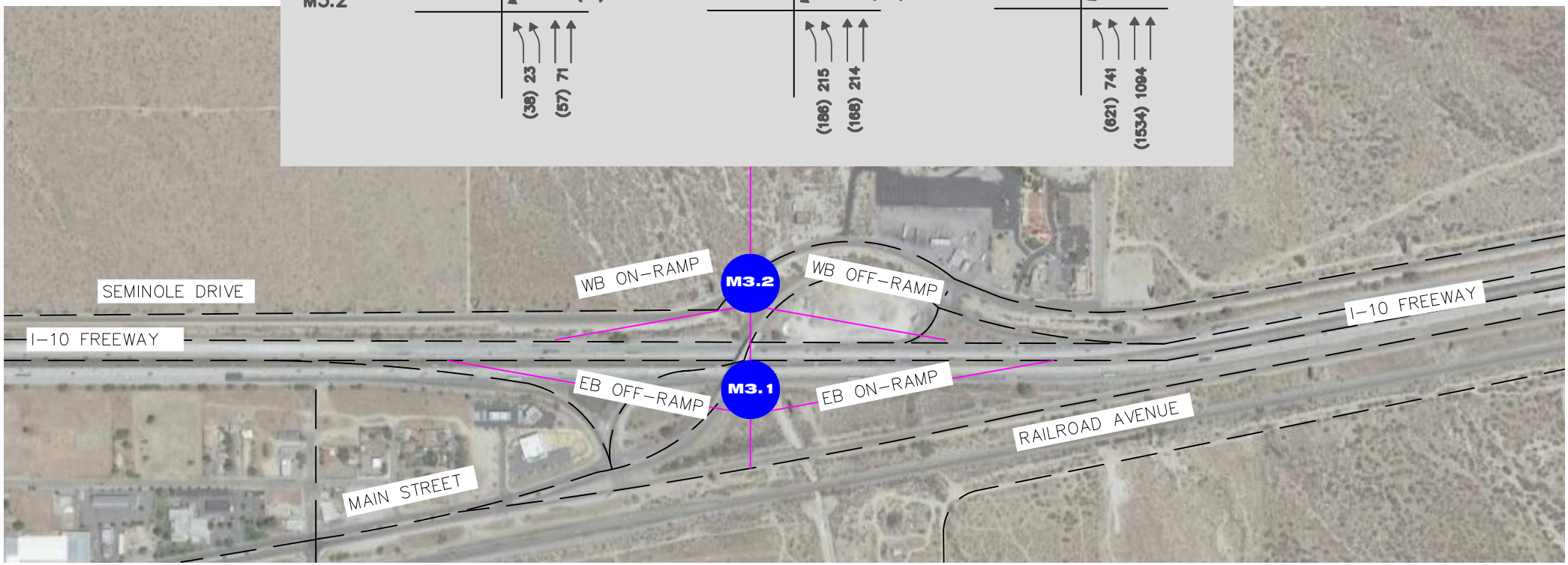
N

NOT TO SCALE

TRAFFIC OPERATIONS ANALYSIS FOR MAIN STREET INTERCHANGE

APPENDIX A: ALTERNATIVE 2 – HOOKS




LEGEND

- ○ STUDY INTERSECTION
- xx AM PEAK HOUR VOLUME
- (xx) PM PEAK HOUR VOLUME
- —— —— EXISTING ROADWAY
- ———— PROPOSED ALIGNMENT

N

NOT TO SCALE

TRAFFIC OPERATIONS ANALYSIS FOR MAIN STREET INTERCHANGE

APPENDIX A: ALTERNATIVE 3 – TIGHT DIAMOND

# APPENDIX B

# Collision Analysis

**Primary Street:** Caltrans Driveway
**Secondary Street:** East Ramsey St_I-10 Ramps
**City/County:** City of Banning
**Starting Date:** 1/1/2018
**Ending Date:** 12/31/2022

**Prepared by:** JH
**Date:** 9/15/2023

**Total Collisions: 1** **Total Injury Collisions: 1** **Total Fatal Collisions: 1**

| Collision ID | Collision Date | Collision Time | Primary Street | Secondary Street | Dist. (ft) | Dir. | Type of Collision | Motor Veh. Involved With | Driver 1 Dir. | Driver 1 Movement | Driver 2 Dir. | Driver 2 Movement | Primary Col. Factor | Inj. | Kil. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 92025647 | 07/29/2022 | 8:35 PM | 0 WESTBOUND TO R/ | HATHAWAY STREET | 1346 | E | Hit Object | Fixed Object | W | Other | E | Proceeding Straight | DUI | 2 | 2 |

# Collision Analysis

**Primary Street:** Main Street
**Secondary Street:** North Fern Street
**City/County:** City of Cabazon
**Starting Date:** 1/1/2018
**Ending Date:** 12/31/2022

**Prepared by:** JH
**Date:** 9/27/2023

**Total Collisions: 2** **Total Injury Collisions: 0** **Total Fatal Collisions: 0**

| Collision ID | Collision Date | Collision Time | Primary Street | Secondary Street | Dist. (ft) | Dir. | Type of Collision | Motor Veh. Involved With | Driver 1 Dir. | Driver 1 Movement | Driver 2 Dir. | Driver 2 Movement | Primary Col. Factor | Inj. | Kil. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 90920110 | 02/01/2019 | 4:30 PM | MAIN STREET | NORTH FERN STREET | 0 | | Broadside | Other Motor Vehicl | S | Entering Traffic | E | Proceeding Straight | Auto ROW | 0 | 0 |
| 91835427 | 08/02/2022 | 5:50 PM | MAIN ST. W/B | FERN ST. | 0 | | Broadside | Other Motor Vehicl | S | Stopped | W | Proceeding Straight | Auto ROW | 0 | 0 |

# Collision Analysis

**Primary Street:** I-10 EB On- and Off-Ramp—Railroad Ave
**Secondary Street:** Main Street
**City/County:** City of Cabazon
**Starting Date:** 1/1/2018
**Ending Date:** 12/31/2022

**Prepared by:** JH
**Date:** 9/27/2023

**Total Collisions: 15** **Total Injury Collisions: 5** **Total Fatal Collisions: 0**

| Collision ID | Collision Date | Collision Time | Primary Street | Secondary Street | Dist. (ft) | Dir. | Type of Collision | Motor Veh. Involved With | Dir. | Driver 1 Movement | Dir. | Driver 2 Movement | Primary Col. Factor | Inj. | Kil. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 90789324 | 07/30/2018 | 12:45 PM | I-10 E/B TO MAIN ST. | MAIN ST. | 0 | | Hit Object | Fixed Object | N | Making Left Turn | | | Improper Turning | 0 | 0 |
| 91280320 | 07/28/2020 | 5:30 AM | 10 E/B TO MAIN STRE | MAIN STREET | 20 | W | Rear-End | Other Motor Vehicl | E | Proceeding Straight | E | Stopped | Unsafe Speed | 0 | 0 |
| 91297043 | 08/23/2020 | 4:50 PM | E/B FROM MAIN STR | MAIN STREET | 200 | E | Rear-End | Other Motor Vehicl | E | Proceeding Straight | E | Proceeding Straight | Unsafe Speed | 0 | 0 |
| 91577960 | 09/12/2021 | 2:08 PM | 10 EASTBOUND TO M | MAIN STREET | 40 | N | Rear-End | Other Motor Vehicl | E | Stopped | E | Proceeding Straight | afe Starting or Bac | 0 | 0 |
| 90662545 | 02/08/2018 | 5:25 AM | MAIN STREET | RAILROAD AVENUE | 32 | W | Broadside | Other Motor Vehicl | S | Making Left Turn | W | Proceeding Straight | Auto ROW | 1 | 0 |
| 90818420 | 09/03/2018 | 7:39 PM | MAIN ST | RAILROAD AVE | 0 | | Broadside | Other Motor Vehicl | N | Proceeding Straight | E | Proceeding Straight | Auto ROW | 0 | 0 |
| 90969136 | 04/08/2019 | 4:00 PM | MAIN ST | RAILROAD AVE | 0 | | ehicle/Pedestria | Other Motor Vehicl | N | Making Left Turn | S | Proceeding Straight | Auto ROW | 0 | 0 |
| 91060591 | 08/19/2019 | 3:12 PM | MAIN ST | RAILROAD AVENUE | 0 | | Broadside | Other Motor Vehicl | S | Proceeding Straight | W | Proceeding Straight | Auto ROW | 1 | 0 |
| 91121617 | 11/08/2019 | 4:30 PM | RAILROAD AVE | MAIN STREET | 0 | | Broadside | Other Motor Vehicl | W | Proceeding Straight | S | Proceeding Straight | Auto ROW | 1 | 0 |
| 91204148 | 02/29/2020 | 10:40 AM | MAIN STREET | RAILROAD AVE | 100 | E | Sideswipe | Other Motor Vehicl | W | Backing | E | Stopped | afe Starting or Bac | 0 | 0 |
| 91351664 | 11/16/2020 | 3:00 PM | MAIN STREET | RAILROAD AVE | 0 | | Broadside | Other Motor Vehicl | N | Proceeding Straight | E | Proceeding Straight | Auto ROW | 0 | 0 |
| 91506436 | 06/18/2021 | 10:50 AM | MAIN STREET | RAILROAD AVENUE | 0 | | Broadside | Other Motor Vehicl | N | Making Left Turn | W | Proceeding Straight | Auto ROW | 0 | 0 |
| 91607772 | 10/26/2021 | 9:50 AM | MAIN STREET | RAILROAD AVE | 127 | E | Overturned | Fixed Object | E | Making Left Turn | | | Unsafe Speed | 1 | 0 |
| 91686736 | 01/17/2022 | 5:55 PM | RAILROAD AVENUE | MAIN STREET | 0 | | Broadside | Other Motor Vehicl | N | Proceeding Straight | E | Proceeding Straight | Auto ROW | 2 | 0 |
| 91780496 | 05/20/2022 | 12:00 PM | MAIN STREET | RAILROAD AVE | 0 | | Broadside | Other Motor Vehicl | W | Making Left Turn | E | Proceeding Straight | Auto ROW | 0 | 0 |

# Collision Analysis

**Primary Street:** I-10 WB On-Ramp—Main Street
**Secondary Street:** I-10 WB Off-Ramp—Main Street
**City/County:** City of Cabazon
**Starting Date:** 1/1/2018
**Ending Date:** 12/31/2022

**Prepared by:** JH
**Date:** 9/28/2023

**Total Collisions: 2** **Total Injury Collisions: 1** **Total Fatal Collisions: 0**

| Collision ID | Collision Date | Collision Time | Primary Street | Secondary Street | Dist. (ft) | Dir. | Type of Collision | Motor Veh. Involved With | Driver 1 Dir. | Driver 1 Movement | Driver 2 Dir. | Driver 2 Movement | Primary Col. Factor | Inj. | Kil. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 91378663 | 12/27/2020 | 1:00 PM | 0 W/B TO MAIN STRE | MAIN STREET | 30 | E | Rear-End | Other Motor Vehicl | W | Stopped | W | Making Right Turn afe | Starting or Bac | 0 | 0 |
| 91799214 | 06/12/2022 | 1:25 PM | SEMINOLE DR | MAIN STREET | 5280 | W | Broadside | Other Motor Vehicl | E | Making Left Turn | W | Proceeding Straight | Auto ROW | 3 | 0 |

# Collision Analysis

| | | | |
|---|---|---|---|
| **Primary Street:** | Seminole Drive | **Prepared by:** | JH |
| **Secondary Street:** | Main Street—Driveway | **Date:** | 9/28/2023 |
| **City/County:** | City of Cabazon | | |
| **Starting Date:** | 1/1/2018 | | |
| **Ending Date:** | 12/31/2022 | | |

**Total Collisions: 0** **Total Injury Collisions: 0** **Total Fatal Collisions: 0**

| Collision ID | Collision Date | Collision Time | Primary Street | Secondary Street | Dist. (ft) | Dir. | Type of Collision | Motor Veh. Involved With | Driver 1 Dir. | Driver 1 Movement | Driver 2 Dir. | Driver 2 Movement | Primary Col. Factor | Inj. | Kil. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

## Intersection Collision Rate Worksheet

**I-10 Interchange Improvement Project**

**Intersection** E Ramsey Street—I-10 Ramps & Caltrans Driveway
**Date of Count:** N/A

**Number of Collisions:** 1
**Number of Injuries:** 1
**Number of Fatalities:** 0
**Average Daily Traffic (ADT):** 3000
**Start Date:** January 1, 2018
**End Date:** December 31, 2022
**Number of Years:** 5

**Intersection Type:** Tee
**Control Type:** Stop & Yield Controls
**Area:** Urban

$$\text{Collision Rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times \text{Days per Year} \times \text{Number of Years}}$$

$$\text{Collision Rate} = \frac{1 \times 1{,}000{,}000}{3{,}000 \times 365 \times 5}$$

| | Collision Rate | Fatality Rate | Injury Rate |
|---|---|---|---|
| **Study Intersection** | **0.18 c/mve** | **0.0%** | **100.0%** |
| **Statewide Average*** | **0.13 c/mve** | **1.3%** | **47.3%** |

**Notes**
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2019 Collision Data on California State Highways, Caltrans

## Intersection Collision Rate Worksheet

**I-10 Improvement Project**

**Intersection** Main Street & North Fern Street
**Date of Count:** N/A

**Number of Collisions:** 2
**Number of Injuries:** 0
**Number of Fatalities:** 0
**Average Daily Traffic (ADT):** 3000
**Start Date:** January 1, 2018
**End Date:** December 31, 2022
**Number of Years:** 5

**Intersection Type:** Tee
**Control Type:** Stop & Yield Controls
**Area:** Rural

$$\text{Collision Rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x Days per Year x Number of Years}}$$

$$\text{Collision Rate} = \frac{2 \times 1{,}000{,}000}{3{,}000 \times 365 \times 5}$$

| | Collision Rate | Fatality Rate | Injury Rate |
|---|---|---|---|
| **Study Intersection** | **0.37 c/mve** | **0.0%** | **0.0%** |
| **Statewide Average*** | **0.29 c/mve** | **1.7%** | **39.8%** |

**Notes**
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2019 Collision Data on California State Highways, Caltrans

**Intersection** Main Street & I-10 EB On- and Off-Ramp—Railroad Ave
**Date of Count:** N/A

**Number of Collisions:** 15
**Number of Injuries:** 5
**Number of Fatalities:** 0
**Average Daily Traffic (ADT):** 4100
**Start Date:** January 1, 2018
**End Date:** December 31, 2022
**Number of Years:** 5

**Intersection Type:** Four-Legged
**Control Type:** Stop & Yield Controls
**Area:** Rural

$$\text{Collision Rate} = \frac{\text{Number of Collisions x 1 Million}}{\text{ADT x Days per Year x Number of Years}}$$

$$\text{Collision Rate} = \frac{15 \times 1{,}000{,}000}{4{,}100 \times 365 \times 5}$$

| | Collision Rate | Fatality Rate | Injury Rate |
|---|---|---|---|
| **Study Intersection** | **2.00 c/mve** | **0.0%** | **33.3%** |
| **Statewide Average*** | **0.36 c/mve** | **2.4%** | **43.4%** |

**Notes**
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2019 Collision Data on California State Highways, Caltrans

## Intersection Collision Rate Worksheet

**I-10 Improvement Project**

**Intersection:** I-10 WB On-Ramp—Main Street & I-10 WB Off-Ramp—Main Street
**Date of Count:** N/A

**Number of Collisions:** 2
**Number of Injuries:** 1
**Number of Fatalities:** 0
**Average Daily Traffic (ADT):** 5800
**Start Date:** January 1, 2018
**End Date:** December 31, 2022
**Number of Years:** 5

**Intersection Type:** Four-Legged
**Control Type:** 4 Way Stop
**Area:** Rural

$$\text{Collision Rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times \text{Days per Year} \times \text{Number of Years}}$$

$$\text{Collision Rate} = \frac{2 \times 1{,}000{,}000}{5{,}800 \times 365 \times 5}$$

| | Collision Rate | Fatality Rate | Injury Rate |
|---|---|---|---|
| **Study Intersection** | **0.19 c/mve** | **0.0%** | **50.0%** |
| **Statewide Average*** | **0.59 c/mve** | **1.0%** | **33.3%** |

**Notes**
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2019 Collision Data on California State Highways, Caltrans

**Intersection:** Seminole Drive & Main Street—Driveway
**Date of Count:** N/A

**Number of Collisions:** 0
**Number of Injuries:** 0
**Number of Fatalities:** 0
**Average Daily Traffic (ADT):** 5300
**Start Date:** January 1, 2018
**End Date:** December 31, 2022
**Number of Years:** 5

**Intersection Type:** Tee
**Control Type:** Stop & Yield Controls
**Area:** Rural

$$\text{Collision Rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times \text{Days per Year} \times \text{Number of Years}}$$

$$\text{Collision Rate} = \frac{0 \times 1{,}000{,}000}{5{,}300 \times 365 \times 5}$$

| | Collision Rate | Fatality Rate | Injury Rate |
|---|---|---|---|
| **Study Intersection** | **0.00 c/mve** | **0.0%** | **0.0%** |
| **Statewide Average*** | **0.29 c/mve** | **1.7%** | **39.8%** |

**Notes**
ADT = average daily total vehicles entering intersection
c/mve = collisions per million vehicles entering intersection
* 2019 Collision Data on California State Highways, Caltrans

# APPENDIX C

# Highway Safety Software Ramp Terminal Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Hooks Main EB Off Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Type of Control at Crossroad Terminal | One-Way Stop-Controlled | | |
| Ramp Terminal Configuration | A2 | Presence of Non-ramp Public Street Leg | No |
| Distance to Next Outside Public Intersection (mi) | 0.150 | Distance to Adjacent Ramp Terminal (mi) | 0.020 |
| # Driveways (Outside Crossroad Leg) | 0 | # Public Street Approaches (Outside Crossroad Leg) | 2 |
| Crossroad Median Width (ft) | 4 | Exit Ramp Skew Angle | 3.0 |

| | Inside Approach | Outside Approach | Exit Ramp Approach |
|---|---|---|---|
| Number of Lanes | 2 | 2 | 2 |
| Right Turn Channelization | No | No | No |
| Left Turn Lane/Bay | No | Yes | - |
| Right Turn Lane/Bay | Yes | No | - |
| AADT (veh/day) | 2944 | 2944 | 990 |
| AADT of Entrance Ramp Approach (veh/day) | 930 | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Total | 0.537 | 0.714 | 1.00 | 0.00 |

## Predicted Roadway Section Crashes

| Crash Severity | $N_{spf,rs}$ by Severity | Predicted Crash Frequency |
|---|---|---|
| Fatal and Injury (FI) | 0.231 | 0.124 |
| Property Damage Only (PDO) | 0.193 | 0.000 |
| Total | - | 0.124 |

## Expected Roadway Section Crashes

| Crash Severity | Average Observed Crashes | Weight | Expected Crash Frequency |
|---|---|---|---|
| Fatal and Injury (FI) | 0.000 | 0.846 | 0.105 |
| Property Damage Only (PDO) | 0.000 | 1.000 | 0.000 |
| Total | - | - | 0.105 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.105 | $16,591.32 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.105 | $16,591.32 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Hooks Main EB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.320 | Number of Through Lanes | 2 |
| Number of Curves | 1 | Segment AADT (veh/day) | 1387 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.161 | 1.189 | 1.00 | 1.00 |
| Single Vehicle | 1.493 | 1.906 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.023 | 0.082 | 0.105 |
| Property Damage Only (PDO) | 0.029 | 0.189 | 0.218 |
| Total | 0.052 | 0.271 | 0.323 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.022 | 0.071 | 0.093 |
| Property Damage Only (PDO) | 0.028 | 0.145 | 0.173 |
| Total | 0.050 | 0.216 | 0.266 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.093 | $14,715.25 |
| Property Damage Only (PDO) | $7,400.00 | 0.173 | $1,281.18 |
| Total | - | 0.266 | $15,996.43 |

# Highway Safety Software Ramp Terminal Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Hooks Main WB Off Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Type of Control at Crossroad Terminal | One-Way Stop-Controlled | | |
| Ramp Terminal Configuration | A2 | Presence of Non-ramp Public Street Leg | No |
| Distance to Next Outside Public Intersection (mi) | 0.150 | Distance to Adjacent Ramp Terminal (mi) | 0.014 |
| # Driveways (Outside Crossroad Leg) | 0 | # Public Street Approaches (Outside Crossroad Leg) | 3 |
| Crossroad Median Width (ft) | 12 | Exit Ramp Skew Angle | 5.0 |

| | Inside Approach | Outside Approach | Exit Ramp Approach |
|---|---|---|---|
| Number of Lanes | 2 | 2 | 2 |
| Right Turn Channelization | No | No | No |
| Left Turn Lane/Bay | No | Yes | - |
| Right Turn Lane/Bay | No | No | - |
| AADT (veh/day) | 2944 | 2944 | 2581 |
| AADT of Entrance Ramp Approach (veh/day) | 2944 | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Total | 0.599 | 0.884 | 1.00 | 0.00 |

## Predicted Roadway Section Crashes

| Crash Severity | $N_{spf,rs}$ by Severity | Predicted Crash Frequency |
|---|---|---|
| Fatal and Injury (FI) | 0.629 | 0.377 |
| Property Damage Only (PDO) | 0.487 | 0.000 |
| Total | - | 0.377 |

## Expected Roadway Section Crashes

| Crash Severity | Average Observed Crashes | Weight | Expected Crash Frequency |
|---|---|---|---|
| Fatal and Injury (FI) | 0.000 | 0.643 | 0.243 |
| Property Damage Only (PDO) | 0.000 | 1.000 | 0.000 |
| Total | - | - | 0.243 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.243 | $38,369.11 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.243 | $38,369.11 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Hooks Main WB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.320 | Number of Through Lanes | 2 |
| Number of Curves | 1 | Segment AADT (veh/day) | 1387 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.108 | 1.149 | 1.00 | 1.00 |
| Single Vehicle | 1.340 | 1.679 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.022 | 0.074 | 0.096 |
| Property Damage Only (PDO) | 0.028 | 0.166 | 0.194 |
| Total | 0.05 | 0.24 | 0.29 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.021 | 0.065 | 0.086 |
| Property Damage Only (PDO) | 0.027 | 0.131 | 0.158 |
| Total | 0.049 | 0.196 | 0.244 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.086 | $13,614.13 |
| Property Damage Only (PDO) | $7,400.00 | 0.158 | $1,171.00 |
| Total | - | 0.244 | $14,785.13 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term SPUI Main EB Off Ramp (Sgmnt) | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.370 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 990 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.336 | 1.139 | 1.00 | 1.00 |
| Single Vehicle | 1.632 | 1.618 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.005 | 0.113 | 0.118 |
| Property Damage Only (PDO) | 0.008 | 0.180 | 0.188 |
| Total | 0.013 | 0.293 | 0.306 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.005 | 0.095 | 0.100 |
| Property Damage Only (PDO) | 0.008 | 0.144 | 0.152 |
| Total | 0.013 | 0.239 | 0.252 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.100 | $15,771.30 |
| Property Damage Only (PDO) | $7,400.00 | 0.152 | $1,125.18 |
| Total | - | 0.252 | $16,896.48 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term SPUI Main EB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.360 | Number of Through Lanes | 2 |
| Number of Curves | 3 | Segment AADT (veh/day) | 930 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.313 | 1.125 | 1.00 | 1.00 |
| Single Vehicle | 1.561 | 1.535 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.024 | 0.072 | 0.096 |
| Property Damage Only (PDO) | 0.019 | 0.129 | 0.148 |
| Total | 0.043 | 0.201 | 0.244 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.023 | 0.064 | 0.087 |
| Property Damage Only (PDO) | 0.019 | 0.109 | 0.128 |
| Total | 0.042 | 0.173 | 0.215 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.087 | $13,824.07 |
| Property Damage Only (PDO) | $7,400.00 | 0.128 | $944.41 |
| Total | - | 0.215 | $14,768.47 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term SPUI Main WB Off Ramp (Sgmnt) | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.320 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 2581 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.398 | 1.136 | 1.00 | 1.00 |
| Single Vehicle | 1.616 | 1.599 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.010 | 0.191 | 0.201 |
| Property Damage Only (PDO) | 0.022 | 0.299 | 0.321 |
| Total | 0.032 | 0.49 | 0.522 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.010 | 0.139 | 0.149 |
| Property Damage Only (PDO) | 0.021 | 0.202 | 0.224 |
| Total | 0.031 | 0.341 | 0.372 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.149 | $23,504.11 |
| Property Damage Only (PDO) | $7,400.00 | 0.224 | $1,655.34 |
| Total | - | 0.372 | $25,159.45 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term SPUI Main WB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.380 | Number of Through Lanes | 2 |
| Number of Curves | 3 | Segment AADT (veh/day) | 1387 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.452 | 1.212 | 1.00 | 1.00 |
| Single Vehicle | 1.987 | 2.039 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.035 | 0.129 | 0.164 |
| Property Damage Only (PDO) | 0.035 | 0.239 | 0.274 |
| Total | 0.07 | 0.368 | 0.438 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.034 | 0.106 | 0.140 |
| Property Damage Only (PDO) | 0.034 | 0.181 | 0.215 |
| Total | 0.068 | 0.287 | 0.355 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.140 | $22,169.97 |
| Property Damage Only (PDO) | $7,400.00 | 0.215 | $1,587.88 |
| Total | - | 0.355 | $23,757.85 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Tight Diamond Main EB Off Ramp (Sgmnt) | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.380 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 990 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.184 | 1.045 | 1.00 | 1.00 |
| Single Vehicle | 1.172 | 1.074 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.006 | 0.082 | 0.088 |
| Property Damage Only (PDO) | 0.007 | 0.122 | 0.129 |
| Total | 0.013 | 0.204 | 0.217 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.006 | 0.072 | 0.078 |
| Property Damage Only (PDO) | 0.007 | 0.105 | 0.112 |
| Total | 0.013 | 0.177 | 0.190 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.078 | $12,359.41 |
| Property Damage Only (PDO) | $7,400.00 | 0.112 | $826.83 |
| Total | - | 0.190 | $13,186.24 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Tight Diamond Main EB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.390 | Number of Through Lanes | 2 |
| Number of Curves | 4 | Segment AADT (veh/day) | 930 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.199 | 1.066 | 1.00 | 1.00 |
| Single Vehicle | 1.280 | 1.201 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.023 | 0.064 | 0.087 |
| Property Damage Only (PDO) | 0.019 | 0.109 | 0.128 |
| Total | 0.042 | 0.173 | 0.215 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.023 | 0.058 | 0.081 |
| Property Damage Only (PDO) | 0.019 | 0.095 | 0.114 |
| Total | 0.041 | 0.153 | 0.195 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.081 | $12,739.82 |
| Property Damage Only (PDO) | $7,400.00 | 0.114 | $843.62 |
| Total | - | 0.195 | $13,583.44 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Tight Diamond Main WB Off Ramp (Sgmnt) | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.320 | Number of Through Lanes | 2 |
| Number of Curves | 1 | Segment AADT (veh/day) | 2581 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.193 | 1.047 | 1.00 | 1.00 |
| Single Vehicle | 1.181 | 1.084 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.008 | 0.139 | 0.147 |
| Property Damage Only (PDO) | 0.020 | 0.203 | 0.223 |
| Total | 0.028 | 0.342 | 0.37 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.008 | 0.109 | 0.117 |
| Property Damage Only (PDO) | 0.020 | 0.153 | 0.173 |
| Total | 0.027 | 0.262 | 0.290 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.117 | $18,507.53 |
| Property Damage Only (PDO) | $7,400.00 | 0.173 | $1,278.48 |
| Total | - | 0.290 | $19,786.01 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Tight Diamond Main WB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.450 | Number of Through Lanes | 2 |
| Number of Curves | 3 | Segment AADT (veh/day) | 1387 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.184 | 1.059 | 1.00 | 1.00 |
| Single Vehicle | 1.242 | 1.156 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.034 | 0.096 | 0.130 |
| Property Damage Only (PDO) | 0.036 | 0.161 | 0.197 |
| Total | 0.07 | 0.257 | 0.327 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.033 | 0.085 | 0.118 |
| Property Damage Only (PDO) | 0.035 | 0.136 | 0.171 |
| Total | 0.068 | 0.221 | 0.289 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.118 | $18,625.69 |
| Property Damage Only (PDO) | $7,400.00 | 0.171 | $1,265.28 |
| Total | - | 0.289 | $19,890.97 |

# Highway Safety Software Ramp Terminal Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Hybrid Ramsey WB Off Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Type of Control at Crossroad Terminal | One-Way Stop-Controlled | | |
| Ramp Terminal Configuration | D4 | Presence of Non-ramp Public Street Leg | No |
| Distance to Next Outside Public Intersection (mi) | 0.076 | Distance to Adjacent Ramp Terminal (mi) | 0.034 |
| # Driveways (Outside Crossroad Leg) | 0 | # Public Street Approaches (Outside Crossroad Leg) | 1 |
| Crossroad Median Width (ft) | 4 | Exit Ramp Skew Angle | 16.9 |

| | Inside Approach | Outside Approach | Exit Ramp Approach |
|---|---|---|---|
| Number of Lanes | 2 | 2 | 1 |
| Right Turn Channelization | No | No | No |
| Left Turn Lane/Bay | Yes | No | - |
| Right Turn Lane/Bay | Yes | No | - |
| AADT (veh/day) | 4008 | 4008 | 2431 |
| AADT of Entrance Ramp Approach (veh/day) | 1577 | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Total | 0.643 | 0.771 | 1.00 | 0.00 |

## Predicted Roadway Section Crashes

| Crash Severity | $N_{spf,rs}$ by Severity | Predicted Crash Frequency |
|---|---|---|
| Fatal and Injury (FI) | 0.242 | 0.156 |
| Property Damage Only (PDO) | 0.550 | 0.000 |
| Total | - | 0.156 |

## Expected Roadway Section Crashes

| Crash Severity | Average Observed Crashes | Weight | Expected Crash Frequency |
|---|---|---|---|
| Fatal and Injury (FI) | 0.000 | 0.768 | 0.120 |
| Property Damage Only (PDO) | 0.000 | 1.000 | 0.000 |
| Total | - | - | 0.120 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.120 | $18,950.10 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.120 | $18,950.10 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2024 |
| Project Description | Near Term Hybrid E Ramsey EB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.410 | Number of Through Lanes | 2 |
| Number of Curves | 3 | Segment AADT (veh/day) | 1577 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.318 | 1.063 | 1.00 | 1.00 |
| Single Vehicle | 1.265 | 1.183 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.037 | 0.097 | 0.134 |
| Property Damage Only (PDO) | 0.039 | 0.163 | 0.202 |
| Total | 0.076 | 0.26 | 0.336 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.036 | 0.084 | 0.120 |
| Property Damage Only (PDO) | 0.038 | 0.135 | 0.173 |
| Total | 0.073 | 0.220 | 0.293 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.120 | $19,026.99 |
| Property Damage Only (PDO) | $7,400.00 | 0.173 | $1,280.46 |
| Total | - | 0.293 | $20,307.45 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Tight Diamond Ramsey WB Off Ramp (Sgmnt) | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.158 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 2431 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.398 | 1.064 | 1.00 | 1.00 |
| Single Vehicle | 1.268 | 1.187 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.004 | 0.071 | 0.075 |
| Property Damage Only (PDO) | 0.010 | 0.104 | 0.114 |
| Total | 0.014 | 0.175 | 0.189 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.004 | 0.055 | 0.059 |
| Property Damage Only (PDO) | 0.010 | 0.078 | 0.088 |
| Total | 0.014 | 0.133 | 0.147 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.059 | $9,374.84 |
| Property Damage Only (PDO) | $7,400.00 | 0.088 | $647.88 |
| Total | - | 0.147 | $10,022.72 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Tight Diamond Ramsey EB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.152 | Number of Through Lanes | 2 |
| Number of Curves | 1 | Segment AADT (veh/day) | 1577 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.404 | 1.067 | 1.00 | 1.00 |
| Single Vehicle | 1.284 | 1.206 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.014 | 0.037 | 0.051 |
| Property Damage Only (PDO) | 0.015 | 0.061 | 0.076 |
| Total | 0.029 | 0.098 | 0.127 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.014 | 0.032 | 0.046 |
| Property Damage Only (PDO) | 0.014 | 0.051 | 0.065 |
| Total | 0.028 | 0.083 | 0.111 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.046 | $7,219.92 |
| Property Damage Only (PDO) | $7,400.00 | 0.065 | $481.34 |
| Total | - | 0.111 | $7,701.26 |

# Highway Safety Software Ramp Terminal Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Trumpet Ramsey WB Off Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Type of Control at Crossroad Terminal | One-Way Stop-Controlled | | |
| Ramp Terminal Configuration | A2 | Presence of Non-ramp Public Street Leg | No |
| Distance to Next Outside Public Intersection (mi) | 0.145 | Distance to Adjacent Ramp Terminal (mi) | 0.010 |
| # Driveways (Outside Crossroad Leg) | 0 | # Public Street Approaches (Outside Crossroad Leg) | 0 |
| Crossroad Median Width (ft) | 5 | Exit Ramp Skew Angle | 0.0 |

| | Inside Approach | Outside Approach | Exit Ramp Approach |
|---|---|---|---|
| Number of Lanes | 2 | 2 | 1 |
| Right Turn Channelization | No | No | No |
| Left Turn Lane/Bay | No | No | - |
| Right Turn Lane/Bay | No | Yes | - |
| AADT (veh/day) | 4008 | 4008 | 2431 |
| AADT of Entrance Ramp Approach (veh/day) | 1577 | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Total | 0.233 | 0.897 | 1.00 | 0.00 |

## Predicted Roadway Section Crashes

| Crash Severity | $N_{spf,rs}$ by Severity | Predicted Crash Frequency |
|---|---|---|
| Fatal and Injury (FI) | 0.364 | 0.085 |
| Property Damage Only (PDO) | 0.466 | 0.000 |
| Total | - | 0.085 |

## Expected Roadway Section Crashes

| Crash Severity | Average Observed Crashes | Weight | Expected Crash Frequency |
|---|---|---|---|
| Fatal and Injury (FI) | 0.000 | 0.889 | 0.076 |
| Property Damage Only (PDO) | 0.000 | 1.000 | 0.000 |
| Total | - | - | 0.076 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.076 | $11,952.89 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.076 | $11,952.89 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Trumpet Ramsey EB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.418 | Number of Through Lanes | 2 |
| Number of Curves | 3 | Segment AADT (veh/day) | 1577 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.856 | 1.336 | 1.00 | 1.00 |
| Single Vehicle | 2.591 | 2.755 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.054 | 0.205 | 0.259 |
| Property Damage Only (PDO) | 0.051 | 0.388 | 0.439 |
| Total | 0.105 | 0.593 | 0.698 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.052 | 0.156 | 0.208 |
| Property Damage Only (PDO) | 0.049 | 0.263 | 0.312 |
| Total | 0.100 | 0.420 | 0.520 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.208 | $32,937.22 |
| Property Damage Only (PDO) | $7,400.00 | 0.312 | $2,306.62 |
| Total | - | 0.520 | $35,243.85 |

# Highway Safety Software Ramp Terminal Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Hooks Main EB Off Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Type of Control at Crossroad Terminal | One-Way Stop-Controlled | | |
| Ramp Terminal Configuration | A2 | Presence of Non-ramp Public Street Leg | No |
| Distance to Next Outside Public Intersection (mi) | 0.150 | Distance to Adjacent Ramp Terminal (mi) | 0.020 |
| # Driveways (Outside Crossroad Leg) | 0 | # Public Street Approaches (Outside Crossroad Leg) | 2 |
| Crossroad Median Width (ft) | 4 | Exit Ramp Skew Angle | 3.0 |

| | Inside Approach | Outside Approach | Exit Ramp Approach |
|---|---|---|---|
| Number of Lanes | 2 | 2 | 2 |
| Right Turn Channelization | No | No | No |
| Left Turn Lane/Bay | No | Yes | - |
| Right Turn Lane/Bay | Yes | No | - |
| AADT (veh/day) | 8759 | 8759 | 3406 |
| AADT of Entrance Ramp Approach (veh/day) | 2346 | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Total | 0.565 | 0.715 | 1.00 | 0.00 |

## Predicted Roadway Section Crashes

| Crash Severity | $N_{spf,rs}$ by Severity | Predicted Crash Frequency |
|---|---|---|
| Fatal and Injury (FI) | 0.868 | 0.491 |
| Property Damage Only (PDO) | 1.172 | 0.000 |
| Total | - | 0.491 |

## Expected Roadway Section Crashes

| Crash Severity | Average Observed Crashes | Weight | Expected Crash Frequency |
|---|---|---|---|
| Fatal and Injury (FI) | 0.000 | 0.581 | 0.285 |
| Property Damage Only (PDO) | 0.000 | 1.000 | 0.000 |
| Total | - | - | 0.285 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.285 | $45,106.59 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.285 | $45,106.59 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Hooks Main EB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.320 | Number of Through Lanes | 2 |
| Number of Curves | 1 | Segment AADT (veh/day) | 2346 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.161 | 1.189 | 1.00 | 1.00 |
| Single Vehicle | 1.493 | 1.906 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Terminal Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Hooks Main WB Off Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Type of Control at Crossroad Terminal | One-Way Stop-Controlled | | |
| Ramp Terminal Configuration | A2 | Presence of Non-ramp Public Street Leg | No |
| Distance to Next Outside Public Intersection (mi) | 0.150 | Distance to Adjacent Ramp Terminal (mi) | 0.014 |
| # Driveways (Outside Crossroad Leg) | 0 | # Public Street Approaches (Outside Crossroad Leg) | 3 |
| Crossroad Median Width (ft) | 12 | Exit Ramp Skew Angle | 5.0 |

| | Inside Approach | Outside Approach | Exit Ramp Approach |
|---|---|---|---|
| Number of Lanes | 2 | 2 | 2 |
| Right Turn Channelization | No | No | No |
| Left Turn Lane/Bay | No | Yes | - |
| Right Turn Lane/Bay | No | No | - |
| AADT (veh/day) | 8579 | 8579 | 7440 |
| AADT of Entrance Ramp Approach (veh/day) | 3965 | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Total | 0.792 | 0.865 | 1.00 | 0.00 |

## Predicted Roadway Section Crashes

| Crash Severity | $N_{spf,rs}$ by Severity | Predicted Crash Frequency |
|---|---|---|
| Fatal and Injury (FI) | 1.650 | 1.307 |
| Property Damage Only (PDO) | 2.103 | 0.000 |
| Total | - | 1.307 |

## Expected Roadway Section Crashes

| Crash Severity | Average Observed Crashes | Weight | Expected Crash Frequency |
|---|---|---|---|
| Fatal and Injury (FI) | 0.000 | 0.342 | 0.447 |
| Property Damage Only (PDO) | 0.000 | 1.000 | 0.000 |
| Total | - | - | 0.447 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.447 | $70,760.86 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.447 | $70,760.86 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Hooks Main WB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.320 | Number of Through Lanes | 2 |
| Number of Curves | 1 | Segment AADT (veh/day) | 3128 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.108 | 1.149 | 1.00 | 1.00 |
| Single Vehicle | 1.340 | 1.679 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term SPUI Main EB Off Ramp (Sgmnt) | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.370 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 3406 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.336 | 1.139 | 1.00 | 1.00 |
| Single Vehicle | 1.632 | 1.618 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term SPUI Main EB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.360 | Number of Through Lanes | 2 |
| Number of Curves | 3 | Segment AADT (veh/day) | 2346 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.313 | 1.125 | 1.00 | 1.00 |
| Single Vehicle | 1.561 | 1.535 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term SPUI Main WB Off Ramp (Sgmnt) | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.320 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 7440 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.398 | 1.136 | 1.00 | 1.00 |
| Single Vehicle | 1.616 | 1.599 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term SPUI Main WB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.380 | Number of Through Lanes | 2 |
| Number of Curves | 3 | Segment AADT (veh/day) | 3965 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.452 | 1.212 | 1.00 | 1.00 |
| Single Vehicle | 1.987 | 2.039 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Tight Diamond Main EB Off Ramp (Sgmnt) | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.380 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 3406 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.184 | 1.045 | 1.00 | 1.00 |
| Single Vehicle | 1.172 | 1.074 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Tight Diamond Main EB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.390 | Number of Through Lanes | 2 |
| Number of Curves | 4 | Segment AADT (veh/day) | 2346 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.199 | 1.066 | 1.00 | 1.00 |
| Single Vehicle | 1.280 | 1.201 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Tight Diamond Main WB Off Ramp (Sgmnt) | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.320 | Number of Through Lanes | 2 |
| Number of Curves | 1 | Segment AADT (veh/day) | 7440 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.193 | 1.047 | 1.00 | 1.00 |
| Single Vehicle | 1.181 | 1.084 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Tight Diamond Main WB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.450 | Number of Through Lanes | 2 |
| Number of Curves | 3 | Segment AADT (veh/day) | 3965 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.184 | 1.059 | 1.00 | 1.00 |
| Single Vehicle | 1.242 | 1.156 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Terminal Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Hybrid Ramsey EB Off Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Type of Control at Crossroad Terminal | One-Way Stop-Controlled | | |
| Ramp Terminal Configuration | D4 | Presence of Non-ramp Public Street Leg | No |
| Distance to Next Outside Public Intersection (mi) | 0.054 | Distance to Adjacent Ramp Terminal (mi) | 0.195 |
| # Driveways (Outside Crossroad Leg) | 0 | # Public Street Approaches (Outside Crossroad Leg) | 1 |
| Crossroad Median Width (ft) | 4 | Exit Ramp Skew Angle | 16.9 |

| | Inside Approach | Outside Approach | Exit Ramp Approach |
|---|---|---|---|
| Number of Lanes | 2 | 2 | 1 |
| Right Turn Channelization | No | No | No |
| Left Turn Lane/Bay | Yes | No | - |
| Right Turn Lane/Bay | No | Yes | - |
| AADT (veh/day) | 7643 | 7643 | 4720 |
| AADT of Entrance Ramp Approach (veh/day) | 4720 | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Total | 0.976 | 0.786 | 1.00 | 0.00 |

## Predicted Roadway Section Crashes

| Crash Severity | $N_{spf,rs}$ by Severity | Predicted Crash Frequency |
|---|---|---|
| Fatal and Injury (FI) | 0.540 | 0.527 |
| Property Damage Only (PDO) | 1.426 | 0.000 |
| Total | - | 0.527 |

## Expected Roadway Section Crashes

| Crash Severity | Average Observed Crashes | Weight | Expected Crash Frequency |
|---|---|---|---|
| Fatal and Injury (FI) | 0.000 | 0.495 | 0.261 |
| Property Damage Only (PDO) | 0.000 | 1.000 | 0.000 |
| Total | - | - | 0.261 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.261 | $41,246.06 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.261 | $41,246.06 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2024 |
| Project Description | Near Term Hybrid E Ramsey EB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.410 | Number of Through Lanes | 2 |
| Number of Curves | 3 | Segment AADT (veh/day) | 3373 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.318 | 1.063 | 1.00 | 1.00 |
| Single Vehicle | 1.265 | 1.183 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.063 | 0.168 | 0.231 |
| Property Damage Only (PDO) | 0.102 | 0.277 | 0.379 |
| Total | 0.165 | 0.445 | 0.61 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.060 | 0.133 | 0.193 |
| Property Damage Only (PDO) | 0.093 | 0.206 | 0.299 |
| Total | 0.153 | 0.339 | 0.492 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.193 | $30,578.24 |
| Property Damage Only (PDO) | $7,400.00 | 0.299 | $2,210.62 |
| Total | - | 0.492 | $32,788.87 |

# Highway Safety Software Ramp Terminal Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Hybrid Ramsey WB Off Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Type of Control at Crossroad Terminal | One-Way Stop-Controlled | | |
| Ramp Terminal Configuration | D4 | Presence of Non-ramp Public Street Leg | No |
| Distance to Next Outside Public Intersection (mi) | 0.076 | Distance to Adjacent Ramp Terminal (mi) | 0.034 |
| # Driveways (Outside Crossroad Leg) | 0 | # Public Street Approaches (Outside Crossroad Leg) | 1 |
| Crossroad Median Width (ft) | 4 | Exit Ramp Skew Angle | 16.9 |

| | Inside Approach | Outside Approach | Exit Ramp Approach |
|---|---|---|---|
| Number of Lanes | 2 | 2 | 1 |
| Right Turn Channelization | No | No | No |
| Left Turn Lane/Bay | Yes | No | - |
| Right Turn Lane/Bay | Yes | No | - |
| AADT (veh/day) | 7643 | 7643 | 3226 |
| AADT of Entrance Ramp Approach (veh/day) | 3226 | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Total | 0.645 | 0.759 | 1.00 | 0.00 |

## Predicted Roadway Section Crashes

| Crash Severity | $N_{spf,rs}$ by Severity | Predicted Crash Frequency |
|---|---|---|
| Fatal and Injury (FI) | 0.505 | 0.325 |
| Property Damage Only (PDO) | 1.190 | 0.000 |
| Total | - | 0.325 |

## Expected Roadway Section Crashes

| Crash Severity | Average Observed Crashes | Weight | Expected Crash Frequency |
|---|---|---|---|
| Fatal and Injury (FI) | 0.000 | 0.614 | 0.199 |
| Property Damage Only (PDO) | 0.000 | 1.000 | 0.000 |
| Total | - | - | 0.199 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.199 | $31,545.95 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.199 | $31,545.95 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Hybrid E Ramsey WB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.390 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 3968 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.323 | 1.050 | 1.00 | 1.00 |
| Single Vehicle | 1.200 | 1.106 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.069 | 0.170 | 0.239 |
| Property Damage Only (PDO) | 0.118 | 0.275 | 0.393 |
| Total | 0.187 | 0.445 | 0.632 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.065 | 0.133 | 0.198 |
| Property Damage Only (PDO) | 0.105 | 0.202 | 0.308 |
| Total | 0.170 | 0.335 | 0.506 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.198 | $31,376.67 |
| Property Damage Only (PDO) | $7,400.00 | 0.308 | $2,275.63 |
| Total | - | 0.506 | $33,652.30 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Tight Diamond Ramsey EB Off Ramp (Sgmnt) | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.158 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 4720 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.409 | 1.070 | 1.00 | 1.00 |
| Single Vehicle | 1.294 | 1.219 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.008 | 0.117 | 0.125 |
| Property Damage Only (PDO) | 0.021 | 0.171 | 0.192 |
| Total | 0.029 | 0.288 | 0.317 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.008 | 0.080 | 0.088 |
| Property Damage Only (PDO) | 0.020 | 0.110 | 0.130 |
| Total | 0.028 | 0.190 | 0.218 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.088 | $13,851.90 |
| Property Damage Only (PDO) | $7,400.00 | 0.130 | $962.02 |
| Total | - | 0.218 | $14,813.93 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Tight Diamond Ramsey EB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.152 | Number of Through Lanes | 2 |
| Number of Curves | 1 | Segment AADT (veh/day) | 3373 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.404 | 1.067 | 1.00 | 1.00 |
| Single Vehicle | 1.284 | 1.206 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.025 | 0.063 | 0.088 |
| Property Damage Only (PDO) | 0.037 | 0.105 | 0.142 |
| Total | 0.062 | 0.168 | 0.23 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.024 | 0.050 | 0.074 |
| Property Damage Only (PDO) | 0.034 | 0.078 | 0.111 |
| Total | 0.057 | 0.127 | 0.185 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.074 | $11,641.61 |
| Property Damage Only (PDO) | $7,400.00 | 0.111 | $823.91 |
| Total | - | 0.185 | $12,465.52 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Tight Diamond Ramsey WB Off Ramp (Sgmnt) | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.158 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 3226 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.398 | 1.064 | 1.00 | 1.00 |
| Single Vehicle | 1.268 | 1.187 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.006 | 0.086 | 0.092 |
| Property Damage Only (PDO) | 0.013 | 0.127 | 0.140 |
| Total | 0.019 | 0.213 | 0.232 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.006 | 0.064 | 0.070 |
| Property Damage Only (PDO) | 0.013 | 0.090 | 0.103 |
| Total | 0.019 | 0.154 | 0.172 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.070 | $11,059.47 |
| Property Damage Only (PDO) | $7,400.00 | 0.103 | $759.06 |
| Total | - | 0.172 | $11,818.54 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Tight Diamond Ramsey WB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.165 | Number of Through Lanes | 2 |
| Number of Curves | 1 | Segment AADT (veh/day) | 3968 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.388 | 1.058 | 1.00 | 1.00 |
| Single Vehicle | 1.237 | 1.151 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.031 | 0.074 | 0.105 |
| Property Damage Only (PDO) | 0.050 | 0.121 | 0.171 |
| Total | 0.081 | 0.195 | 0.276 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.029 | 0.058 | 0.087 |
| Property Damage Only (PDO) | 0.045 | 0.088 | 0.133 |
| Total | 0.074 | 0.146 | 0.219 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.087 | $13,728.78 |
| Property Damage Only (PDO) | $7,400.00 | 0.133 | $981.62 |
| Total | - | 0.219 | $14,710.40 |

# Highway Safety Software Ramp Terminal Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Trumpet Ramsey EB Off Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Type of Control at Crossroad Terminal | One-Way Stop-Controlled | | |
| Ramp Terminal Configuration | A2 | Presence of Non-ramp Public Street Leg | No |
| Distance to Next Outside Public Intersection (mi) | 0.095 | Distance to Adjacent Ramp Terminal (mi) | 0.100 |
| # Driveways (Outside Crossroad Leg) | 0 | # Public Street Approaches (Outside Crossroad Leg) | 0 |
| Crossroad Median Width (ft) | 5 | Exit Ramp Skew Angle | 0.0 |

| | Inside Approach | Outside Approach | Exit Ramp Approach |
|---|---|---|---|
| Number of Lanes | 2 | 2 | 2 |
| Right Turn Channelization | No | No | No |
| Left Turn Lane/Bay | No | No | - |
| Right Turn Lane/Bay | No | No | - |
| AADT (veh/day) | 7643 | 7643 | 4720 |
| AADT of Entrance Ramp Approach (veh/day) | 4720 | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Total | 0.839 | 1.000 | 1.00 | 0.00 |

## Predicted Roadway Section Crashes

| Crash Severity | $N_{spf,rs}$ by Severity | Predicted Crash Frequency |
|---|---|---|
| Fatal and Injury (FI) | 0.968 | 0.812 |
| Property Damage Only (PDO) | 1.629 | 0.000 |
| Total | - | 0.812 |

## Expected Roadway Section Crashes

| Crash Severity | Average Observed Crashes | Weight | Expected Crash Frequency |
|---|---|---|---|
| Fatal and Injury (FI) | 0.000 | 0.456 | 0.370 |
| Property Damage Only (PDO) | 0.000 | 1.000 | 0.000 |
| Total | - | - | 0.370 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.370 | $58,546.72 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.370 | $58,546.72 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Trumpet Ramsey EB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.418 | Number of Through Lanes | 2 |
| Number of Curves | 3 | Segment AADT (veh/day) | 3373 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.856 | 1.336 | 1.00 | 1.00 |
| Single Vehicle | 2.591 | 2.755 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.091 | 0.352 | 0.443 |
| Property Damage Only (PDO) | 0.130 | 0.656 | 0.786 |
| Total | 0.221 | 1.008 | 1.229 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.085 | 0.230 | 0.314 |
| Property Damage Only (PDO) | 0.116 | 0.364 | 0.480 |
| Total | 0.201 | 0.594 | 0.794 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.314 | $49,738.96 |
| Property Damage Only (PDO) | $7,400.00 | 0.480 | $3,549.22 |
| Total | - | 0.794 | $53,288.18 |

# Highway Safety Software Ramp Terminal Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Trumpet Ramsey WB Off Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Type of Control at Crossroad Terminal | One-Way Stop-Controlled | | |
| Ramp Terminal Configuration | A2 | Presence of Non-ramp Public Street Leg | No |
| Distance to Next Outside Public Intersection (mi) | 0.145 | Distance to Adjacent Ramp Terminal (mi) | 0.010 |
| # Driveways (Outside Crossroad Leg) | 0 | # Public Street Approaches (Outside Crossroad Leg) | 0 |
| Crossroad Median Width (ft) | 5 | Exit Ramp Skew Angle | 0.0 |

| | Inside Approach | Outside Approach | Exit Ramp Approach |
|---|---|---|---|
| Number of Lanes | 2 | 2 | 1 |
| Right Turn Channelization | No | No | No |
| Left Turn Lane/Bay | No | No | - |
| Right Turn Lane/Bay | No | Yes | - |
| AADT (veh/day) | 7643 | 7643 | 3226 |
| AADT of Entrance Ramp Approach (veh/day) | 3968 | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Total | 0.232 | 0.895 | 1.00 | 0.00 |

## Predicted Roadway Section Crashes

| Crash Severity | $N_{spf,rs}$ by Severity | Predicted Crash Frequency |
|---|---|---|
| Fatal and Injury (FI) | 0.749 | 0.174 |
| Property Damage Only (PDO) | 1.284 | 0.000 |
| Total | - | 0.174 |

## Expected Roadway Section Crashes

| Crash Severity | Average Observed Crashes | Weight | Expected Crash Frequency |
|---|---|---|---|
| Fatal and Injury (FI) | 0.000 | 0.796 | 0.139 |
| Property Damage Only (PDO) | 0.000 | 1.000 | 0.000 |
| Total | - | - | 0.139 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.139 | $21,918.30 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.139 | $21,918.30 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2030 |
| Project Description | Near Term Trumpet Ramsey WB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.201 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 3968 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.706 | 1.131 | 1.00 | 1.00 |
| Single Vehicle | 1.593 | 1.572 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.046 | 0.116 | 0.162 |
| Property Damage Only (PDO) | 0.064 | 0.201 | 0.265 |
| Total | 0.11 | 0.317 | 0.427 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.043 | 0.085 | 0.128 |
| Property Damage Only (PDO) | 0.057 | 0.133 | 0.190 |
| Total | 0.100 | 0.218 | 0.317 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.128 | $20,194.37 |
| Property Damage Only (PDO) | $7,400.00 | 0.190 | $1,404.72 |
| Total | - | 0.317 | $21,599.09 |

# Highway Safety Software Ramp Terminal Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Near Term Hooks Main EB Off Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Type of Control at Crossroad Terminal | One-Way Stop-Controlled | | |
| Ramp Terminal Configuration | A2 | Presence of Non-ramp Public Street Leg | No |
| Distance to Next Outside Public Intersection (mi) | 0.150 | Distance to Adjacent Ramp Terminal (mi) | 0.020 |
| # Driveways (Outside Crossroad Leg) | 0 | # Public Street Approaches (Outside Crossroad Leg) | 2 |
| Crossroad Median Width (ft) | 4 | Exit Ramp Skew Angle | 3.0 |

| | Inside Approach | Outside Approach | Exit Ramp Approach |
|---|---|---|---|
| Number of Lanes | 2 | 2 | 2 |
| Right Turn Channelization | No | No | No |
| Left Turn Lane/Bay | No | Yes | - |
| Right Turn Lane/Bay | Yes | No | - |
| AADT (veh/day) | 13463 | 13463 | 5229 |
| AADT of Entrance Ramp Approach (veh/day) | 3128 | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Total | 0.591 | 0.711 | 1.00 | 0.00 |

## Predicted Roadway Section Crashes

| Crash Severity | $N_{spf,rs}$ by Severity | Predicted Crash Frequency |
|---|---|---|
| Fatal and Injury (FI) | 1.382 | 0.816 |
| Property Damage Only (PDO) | 2.268 | 0.000 |
| Total | - | 0.816 |

## Expected Roadway Section Crashes

| Crash Severity | Average Observed Crashes | Weight | Expected Crash Frequency |
|---|---|---|---|
| Fatal and Injury (FI) | 0.000 | 0.455 | 0.371 |
| Property Damage Only (PDO) | 0.000 | 1.000 | 0.000 |
| Total | - | - | 0.371 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.371 | $58,677.82 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.371 | $58,677.82 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term Hooks Main EB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.320 | Number of Through Lanes | 2 |
| Number of Curves | 1 | Segment AADT (veh/day) | 5637 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.161 | 1.189 | 1.00 | 1.00 |
| Single Vehicle | 1.493 | 1.906 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Terminal Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term Hooks Main WB Off Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Type of Control at Crossroad Terminal | One-Way Stop-Controlled | | |
| Ramp Terminal Configuration | A2 | Presence of Non-ramp Public Street Leg | No |
| Distance to Next Outside Public Intersection (mi) | 0.150 | Distance to Adjacent Ramp Terminal (mi) | 0.014 |
| # Driveways (Outside Crossroad Leg) | 0 | # Public Street Approaches (Outside Crossroad Leg) | 3 |
| Crossroad Median Width (ft) | 12 | Exit Ramp Skew Angle | 5.0 |

| | Inside Approach | Outside Approach | Exit Ramp Approach |
|---|---|---|---|
| Number of Lanes | 2 | 2 | 2 |
| Right Turn Channelization | No | No | No |
| Left Turn Lane/Bay | No | Yes | - |
| Right Turn Lane/Bay | No | No | - |
| AADT (veh/day) | 13463 | 13463 | 11935 |
| AADT of Entrance Ramp Approach (veh/day) | 6634 | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Total | 1.029 | 0.867 | 1.00 | 0.00 |

## Predicted Roadway Section Crashes

| Crash Severity | $N_{spf,rs}$ by Severity | Predicted Crash Frequency |
|---|---|---|
| Fatal and Injury (FI) | 2.944 | 3.028 |
| Property Damage Only (PDO) | 4.571 | 0.000 |
| Total | - | 3.028 |

## Expected Roadway Section Crashes

| Crash Severity | Average Observed Crashes | Weight | Expected Crash Frequency |
|---|---|---|---|
| Fatal and Injury (FI) | 0.000 | 0.183 | 0.555 |
| Property Damage Only (PDO) | 0.000 | 1.000 | 0.000 |
| Total | - | - | 0.555 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.555 | $87,847.93 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.555 | $87,847.93 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Near Term Hooks Main WB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.320 | Number of Through Lanes | 2 |
| Number of Curves | 1 | Segment AADT (veh/day) | 6634 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.108 | 1.149 | 1.00 | 1.00 |
| Single Vehicle | 1.340 | 1.679 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term SPUI Main EB Off Ramp (Sgmnt) | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.370 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 5229 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.336 | 1.139 | 1.00 | 1.00 |
| Single Vehicle | 1.632 | 1.618 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term SPUI Main EB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.360 | Number of Through Lanes | 2 |
| Number of Curves | 3 | Segment AADT (veh/day) | 3128 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.313 | 1.125 | 1.00 | 1.00 |
| Single Vehicle | 1.561 | 1.535 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term SPUI Main WB Off Ramp (Sgmnt) | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.320 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 11935 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.398 | 1.136 | 1.00 | 1.00 |
| Single Vehicle | 1.616 | 1.599 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term SPUI Main WB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.380 | Number of Through Lanes | 2 |
| Number of Curves | 3 | Segment AADT (veh/day) | 6634 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.452 | 1.212 | 1.00 | 1.00 |
| Single Vehicle | 1.987 | 2.039 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term Tight Diamond Main EB Off Ramp (Sgmnt) | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.380 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 5229 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.184 | 1.045 | 1.00 | 1.00 |
| Single Vehicle | 1.172 | 1.074 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term Tight Diamond Main EB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.390 | Number of Through Lanes | 2 |
| Number of Curves | 4 | Segment AADT (veh/day) | 3128 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.199 | 1.066 | 1.00 | 1.00 |
| Single Vehicle | 1.280 | 1.201 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Near Term Tight Diamond Main WB Off Ramp (Sgmnt) | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.320 | Number of Through Lanes | 2 |
| Number of Curves | 1 | Segment AADT (veh/day) | 11935 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.193 | 1.047 | 1.00 | 1.00 |
| Single Vehicle | 1.181 | 1.084 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term Tight Diamond Ramsey WB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.158 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 6634 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.398 | 1.064 | 1.00 | 1.00 |
| Single Vehicle | 1.268 | 1.187 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | - | - | - |
| Property Damage Only (PDO) | - | - | - |
| Total | 0 | 0 | 0 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.000 | 0.000 | 0.000 |
| Property Damage Only (PDO) | 0.000 | 0.000 | 0.000 |
| Total | 0.000 | 0.000 | 0.000 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.000 | $0.00 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.000 | $0.00 |

# Highway Safety Software Ramp Terminal Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term Hybrid Ramsey EB Off Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Type of Control at Crossroad Terminal | One-Way Stop-Controlled | | |
| Ramp Terminal Configuration | D4 | Presence of Non-ramp Public Street Leg | No |
| Distance to Next Outside Public Intersection (mi) | 0.054 | Distance to Adjacent Ramp Terminal (mi) | 0.195 |
| # Driveways (Outside Crossroad Leg) | 0 | # Public Street Approaches (Outside Crossroad Leg) | 1 |
| Crossroad Median Width (ft) | 4 | Exit Ramp Skew Angle | 16.9 |

| | Inside Approach | Outside Approach | Exit Ramp Approach |
|---|---|---|---|
| Number of Lanes | 2 | 2 | 1 |
| Right Turn Channelization | No | No | No |
| Left Turn Lane/Bay | Yes | No | - |
| Right Turn Lane/Bay | No | Yes | - |
| AADT (veh/day) | 12607 | 12607 | 8028 |
| AADT of Entrance Ramp Approach (veh/day) | 8028 | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Total | 1.320 | 0.789 | 1.00 | 0.00 |

## Predicted Roadway Section Crashes

| Crash Severity | $N_{spf,rs}$ by Severity | Predicted Crash Frequency |
|---|---|---|
| Fatal and Injury (FI) | 0.982 | 1.296 |
| Property Damage Only (PDO) | 2.803 | 0.000 |
| Total | - | 1.296 |

## Expected Roadway Section Crashes

| Crash Severity | Average Observed Crashes | Weight | Expected Crash Frequency |
|---|---|---|---|
| Fatal and Injury (FI) | 0.000 | 0.285 | 0.369 |
| Property Damage Only (PDO) | 0.000 | 1.000 | 0.000 |
| Total | - | - | 0.369 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.369 | $58,385.23 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.369 | $58,385.23 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term Hybrid E Ramsey EB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.410 | Number of Through Lanes | 2 |
| Number of Curves | 3 | Segment AADT (veh/day) | 5637 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.318 | 1.063 | 1.00 | 1.00 |
| Single Vehicle | 1.265 | 1.183 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.096 | 0.243 | 0.339 |
| Property Damage Only (PDO) | 0.194 | 0.394 | 0.588 |
| Total | 0.29 | 0.637 | 0.927 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.089 | 0.177 | 0.266 |
| Property Damage Only (PDO) | 0.164 | 0.264 | 0.428 |
| Total | 0.252 | 0.441 | 0.693 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.266 | $42,025.33 |
| Property Damage Only (PDO) | $7,400.00 | 0.428 | $3,164.58 |
| Total | - | 0.693 | $45,189.91 |

# Highway Safety Software Ramp Terminal Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Near Term Hybrid Ramsey WB Off Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Type of Control at Crossroad Terminal | One-Way Stop-Controlled | | |
| Ramp Terminal Configuration | D4 | Presence of Non-ramp Public Street Leg | No |
| Distance to Next Outside Public Intersection (mi) | 0.076 | Distance to Adjacent Ramp Terminal (mi) | 0.034 |
| # Driveways (Outside Crossroad Leg) | 0 | # Public Street Approaches (Outside Crossroad Leg) | 1 |
| Crossroad Median Width (ft) | 4 | Exit Ramp Skew Angle | 16.9 |

| | Inside Approach | Outside Approach | Exit Ramp Approach |
|---|---|---|---|
| Number of Lanes | 2 | 2 | 1 |
| Right Turn Channelization | No | No | No |
| Left Turn Lane/Bay | Yes | No | - |
| Right Turn Lane/Bay | Yes | No | - |
| AADT (veh/day) | 12633 | 12633 | 4815 |
| AADT of Entrance Ramp Approach (veh/day) | 6735 | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Total | 0.687 | 0.765 | 1.00 | 0.00 |

## Predicted Roadway Section Crashes

| Crash Severity | $N_{spf,rs}$ by Severity | Predicted Crash Frequency |
|---|---|---|
| Fatal and Injury (FI) | 0.928 | 0.638 |
| Property Damage Only (PDO) | 2.401 | 0.000 |
| Total | - | 0.638 |

## Expected Roadway Section Crashes

| Crash Severity | Average Observed Crashes | Weight | Expected Crash Frequency |
|---|---|---|---|
| Fatal and Injury (FI) | 0.000 | 0.447 | 0.285 |
| Property Damage Only (PDO) | 0.000 | 1.000 | 0.000 |
| Total | - | - | 0.285 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.285 | $45,130.59 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.285 | $45,130.59 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term Hybrid E Ramsey WB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.390 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 6735 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.323 | 1.050 | 1.00 | 1.00 |
| Single Vehicle | 1.200 | 1.106 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.110 | 0.250 | 0.360 |
| Property Damage Only (PDO) | 0.228 | 0.396 | 0.624 |
| Total | 0.338 | 0.646 | 0.984 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.100 | 0.178 | 0.278 |
| Property Damage Only (PDO) | 0.185 | 0.261 | 0.446 |
| Total | 0.286 | 0.438 | 0.724 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.278 | $44,014.62 |
| Property Damage Only (PDO) | $7,400.00 | 0.446 | $3,299.87 |
| Total | - | 0.724 | $47,314.49 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term Tight Diamond Ramsey EB Off Ramp (Sgmnt) | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.158 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 8278 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.409 | 1.070 | 1.00 | 1.00 |
| Single Vehicle | 1.294 | 1.219 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.014 | 0.175 | 0.189 |
| Property Damage Only (PDO) | 0.044 | 0.251 | 0.295 |
| Total | 0.058 | 0.426 | 0.484 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.014 | 0.103 | 0.117 |
| Property Damage Only (PDO) | 0.040 | 0.138 | 0.178 |
| Total | 0.053 | 0.241 | 0.295 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.117 | $18,433.68 |
| Property Damage Only (PDO) | $7,400.00 | 0.178 | $1,317.92 |
| Total | - | 0.295 | $19,751.60 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term Tight Diamond Ramsey WB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.152 | Number of Through Lanes | 2 |
| Number of Curves | 1 | Segment AADT (veh/day) | 5637 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.404 | 1.067 | 1.00 | 1.00 |
| Single Vehicle | 1.284 | 1.206 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.038 | 0.091 | 0.129 |
| Property Damage Only (PDO) | 0.073 | 0.148 | 0.221 |
| Total | 0.111 | 0.239 | 0.35 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.035 | 0.066 | 0.101 |
| Property Damage Only (PDO) | 0.061 | 0.099 | 0.160 |
| Total | 0.096 | 0.165 | 0.261 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.101 | $15,981.37 |
| Property Damage Only (PDO) | $7,400.00 | 0.160 | $1,185.26 |
| Total | - | 0.261 | $17,166.63 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term Tight Diamond Ramsey WB Off Ramp (Sgmnt) | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.158 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 4815 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.398 | 1.064 | 1.00 | 1.00 |
| Single Vehicle | 1.268 | 1.187 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.008 | 0.115 | 0.123 |
| Property Damage Only (PDO) | 0.022 | 0.169 | 0.191 |
| Total | 0.03 | 0.284 | 0.314 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.008 | 0.079 | 0.087 |
| Property Damage Only (PDO) | 0.021 | 0.109 | 0.130 |
| Total | 0.029 | 0.188 | 0.217 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.087 | $13,704.30 |
| Property Damage Only (PDO) | $7,400.00 | 0.130 | $962.53 |
| Total | - | 0.217 | $14,666.83 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term Tight Diamond Ramsey WB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.165 | Number of Through Lanes | 2 |
| Number of Curves | 1 | Segment AADT (veh/day) | 6735 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.388 | 1.058 | 1.00 | 1.00 |
| Single Vehicle | 1.237 | 1.151 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.049 | 0.109 | 0.158 |
| Property Damage Only (PDO) | 0.097 | 0.174 | 0.271 |
| Total | 0.146 | 0.283 | 0.429 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.044 | 0.077 | 0.121 |
| Property Damage Only (PDO) | 0.079 | 0.113 | 0.192 |
| Total | 0.123 | 0.190 | 0.313 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.121 | $19,200.49 |
| Property Damage Only (PDO) | $7,400.00 | 0.192 | $1,419.17 |
| Total | - | 0.313 | $20,619.65 |

# Highway Safety Software Ramp Terminal Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Near Term Trumpet Ramsey EB Off Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Type of Control at Crossroad Terminal | One-Way Stop-Controlled | | |
| Ramp Terminal Configuration | A2 | Presence of Non-ramp Public Street Leg | No |
| Distance to Next Outside Public Intersection (mi) | 0.095 | Distance to Adjacent Ramp Terminal (mi) | 0.100 |
| # Driveways (Outside Crossroad Leg) | 0 | # Public Street Approaches (Outside Crossroad Leg) | 0 |
| Crossroad Median Width (ft) | 5 | Exit Ramp Skew Angle | 0.0 |

| | Inside Approach | Outside Approach | Exit Ramp Approach |
|---|---|---|---|
| Number of Lanes | 2 | 2 | 2 |
| Right Turn Channelization | No | No | No |
| Left Turn Lane/Bay | No | No | - |
| Right Turn Lane/Bay | No | No | - |
| AADT (veh/day) | 12607 | 12607 | 8028 |
| AADT of Entrance Ramp Approach (veh/day) | 8028 | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Total | 0.934 | 1.000 | 1.00 | 0.00 |

## Predicted Roadway Section Crashes

| Crash Severity | $N_{spf,rs}$ by Severity | Predicted Crash Frequency |
|---|---|---|
| Fatal and Injury (FI) | 1.824 | 1.704 |
| Property Damage Only (PDO) | 3.824 | 0.000 |
| Total | - | 1.704 |

## Expected Roadway Section Crashes

| Crash Severity | Average Observed Crashes | Weight | Expected Crash Frequency |
|---|---|---|---|
| Fatal and Injury (FI) | 0.000 | 0.285 | 0.486 |
| Property Damage Only (PDO) | 0.000 | 1.000 | 0.000 |
| Total | - | - | 0.486 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.486 | $76,891.57 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.486 | $76,891.57 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Near Term Trumpet Ramsey EB On Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.418 | Number of Through Lanes | 2 |
| Number of Curves | 3 | Segment AADT (veh/day) | 5637 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.856 | 1.336 | 1.00 | 1.00 |
| Single Vehicle | 2.591 | 2.755 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.139 | 0.508 | 0.647 |
| Property Damage Only (PDO) | 0.249 | 0.934 | 1.183 |
| Total | 0.388 | 1.442 | 1.83 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.125 | 0.287 | 0.412 |
| Property Damage Only (PDO) | 0.202 | 0.436 | 0.637 |
| Total | 0.326 | 0.723 | 1.050 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.412 | $65,191.80 |
| Property Damage Only (PDO) | $7,400.00 | 0.637 | $4,716.96 |
| Total | - | 1.050 | $69,908.76 |

# Highway Safety Software Ramp Terminal Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term Trumpet Ramsey WB Off Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Type of Control at Crossroad Terminal | One-Way Stop-Controlled | | |
| Ramp Terminal Configuration | A2 | Presence of Non-ramp Public Street Leg | No |
| Distance to Next Outside Public Intersection (mi) | 0.145 | Distance to Adjacent Ramp Terminal (mi) | 0.010 |
| # Driveways (Outside Crossroad Leg) | 0 | # Public Street Approaches (Outside Crossroad Leg) | 0 |
| Crossroad Median Width (ft) | 5 | Exit Ramp Skew Angle | 0.0 |

| | Inside Approach | Outside Approach | Exit Ramp Approach |
|---|---|---|---|
| Number of Lanes | 2 | 2 | 1 |
| Right Turn Channelization | No | No | No |
| Left Turn Lane/Bay | No | No | - |
| Right Turn Lane/Bay | No | Yes | - |
| AADT (veh/day) | 12607 | 12607 | 4815 |
| AADT of Entrance Ramp Approach (veh/day) | 6735 | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Total | 0.243 | 0.894 | 1.00 | 0.00 |

## Predicted Roadway Section Crashes

| Crash Severity | $N_{spf,rs}$ by Severity | Predicted Crash Frequency |
|---|---|---|
| Fatal and Injury (FI) | 1.335 | 0.324 |
| Property Damage Only (PDO) | 2.864 | 0.000 |
| Total | - | 0.324 |

## Expected Roadway Section Crashes

| Crash Severity | Average Observed Crashes | Weight | Expected Crash Frequency |
|---|---|---|---|
| Fatal and Injury (FI) | 0.000 | 0.677 | 0.219 |
| Property Damage Only (PDO) | 0.000 | 1.000 | 0.000 |
| Total | - | - | 0.219 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.219 | $34,715.76 |
| Property Damage Only (PDO) | $7,400.00 | 0.000 | $0.00 |
| Total | - | 0.219 | $34,715.76 |

# Highway Safety Software Ramp Segment Report

## Project Information

| | | | |
|---|---|---|---|
| Analyst | JH | Date | 2/13/2024 |
| Jurisdiction | | Analysis Year | 2050 |
| Project Description | Long Term Trumpet Ramsey WB Off Ramp | Section Number | 1 |

## Input Data

| | | | |
|---|---|---|---|
| Length of Segment (mi) | 0.201 | Number of Through Lanes | 2 |
| Number of Curves | 2 | Segment AADT (veh/day) | 6735 |
| Right Shoulder Width (ft) | 8 | Left Shoulder Width (ft) | 4 |
| Presence of Lane Add \| Drop | No \| No | Prop. Length Adjacent to Taper | 0.000 |
| Barrier on Left Side | 10.00 (ft) \| 100 % | Barrier on Right Side | 10.00 (ft) \| 100 % |

| | Entrance Ramp | Exit Ramp |
|---|---|---|
| Presence of Type B Weave | None | None |
| Length of Weave (mi) | - | - |
| Prop. Length in Weaving Section | - | - |

## Crash Modification Factors

| | Combined CMF | | Calibration Factor | |
|---|---|---|---|---|
| | Fatal and Injury | Property Damage Only | Fatal and Injury | Property Damage Only |
| Multiple Vehicle | 1.706 | 1.131 | 1.00 | 1.00 |
| Single Vehicle | 1.593 | 1.572 | 1.00 | 1.00 |

## Predicted Roadway Section Crashes

| | Predicted Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.073 | 0.170 | 0.243 |
| Property Damage Only (PDO) | 0.127 | 0.289 | 0.416 |
| Total | 0.2 | 0.459 | 0.659 |

## Expected Roadway Section Crashes

| | Expected Crash Frequency | | |
|---|---|---|---|
| Crash Severity | Multiple Vehicle | Single Vehicle | Total |
| Fatal and Injury (FI) | 0.065 | 0.111 | 0.176 |
| Property Damage Only (PDO) | 0.102 | 0.166 | 0.268 |
| Total | 0.167 | 0.277 | 0.444 |

## Economic Analysis (Expected Crashes)

| Crash Severity | Per Crash Societal Crash Cost | Expected Annual Crashes | Total Societal Crash Cost |
|---|---|---|---|
| Fatal and Injury (FI) | $158,200.00 | 0.176 | $27,795.94 |
| Property Damage Only (PDO) | $7,400.00 | 0.268 | $1,984.62 |
| Total | - | 0.444 | $29,780.57 |

# APPENDIX D

| Lane Group | EBR | NBL |
|---|---|---|
| Lane Group Flow (vph) | 1079 | 1979 |
| v/c Ratio | 0.44 | 0.73 |
| Control Delay | 0.6 | 1.8 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 0.6 | 1.8 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 0 | 0 |
| Internal Link Dist (ft) | | 610 |
| Turn Bay Length (ft) | 500 | |
| Base Capacity (vph) | 2450 | 2694 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.44 | 0.73 |

Intersection Summary

| Lane Group | WBT | WBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 788 | 773 | 24 | 493 | 933 | 146 |
| v/c Ratio | 1.20 | 1.20 | 0.15 | 0.54 | 0.71 | 0.30 |
| Control Delay | 120.3 | 122.4 | 13.8 | 17.6 | 15.0 | 4.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 120.3 | 122.4 | 13.8 | 17.6 | 15.0 | 4.0 |
| Queue Length 50th (ft) | ~236 | ~231 | 7 | 80 | 100 | 0 |
| Queue Length 95th (ft) | #421 | #414 | m11 | 120 | 153 | 25 |
| Internal Link Dist (ft) | 1041 | | | 296 | 610 | |
| Turn Bay Length (ft) | | | 100 | | | 200 |
| Base Capacity (vph) | 657 | 642 | 165 | 908 | 1312 | 494 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.20 | 1.20 | 0.15 | 0.54 | 0.71 | 0.30 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

| Lane Group | EBL | EBT | SBL |
|---|---|---|---|
| Lane Group Flow (vph) | 256 | 261 | 933 |
| v/c Ratio | 0.73 | 0.71 | 0.62 |
| Control Delay | 25.7 | 24.0 | 9.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 |
| Total Delay | 25.7 | 24.0 | 9.2 |
| Queue Length 50th (ft) | 55 | 55 | 40 |
| Queue Length 95th (ft) | #122 | #116 | m93 |
| Internal Link Dist (ft) | | 929 | 296 |
| Turn Bay Length (ft) | | | 100 |
| Base Capacity (vph) | 428 | 446 | 1501 |
| Starvation Cap Reductn | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.60 | 0.59 | 0.62 |

Intersection Summary

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

| Lane Group | EBR | NBL |
|---|---|---|
| Lane Group Flow (vph) | 2124 | 1229 |
| v/c Ratio | 0.95 | 0.41 |
| Control Delay | 12.9 | 0.4 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 12.9 | 0.4 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | #90 | 0 |
| Internal Link Dist (ft) | | 610 |
| Turn Bay Length (ft) | 500 | |
| Base Capacity (vph) | 2238 | 2968 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.95 | 0.41 |

Intersection Summary

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

| Lane Group | WBT | WBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 551 | 541 | 9 | 189 | 1638 | 486 |
| v/c Ratio | 0.72 | 0.69 | 0.05 | 0.16 | 1.03 | 0.64 |
| Control Delay | 8.2 | 6.5 | 12.3 | 10.8 | 50.7 | 6.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 8.2 | 6.5 | 12.3 | 10.8 | 50.7 | 6.8 |
| Queue Length 50th (ft) | 10 | 0 | 2 | 28 | ~260 | 0 |
| Queue Length 95th (ft) | 60 | 47 | m13 | 56 | #417 | #89 |
| Internal Link Dist (ft) | 1041 | | | 296 | 610 | |
| Turn Bay Length (ft) | | | 100 | | | 200 |
| Base Capacity (vph) | 864 | 877 | 165 | 1165 | 1583 | 758 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.64 | 0.62 | 0.05 | 0.16 | 1.03 | 0.64 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

| Lane Group | EBL | EBT | SBL |
|---|---|---|---|
| Lane Group Flow (vph) | 98 | 100 | 1638 |
| v/c Ratio | 0.43 | 0.42 | 0.84 |
| Control Delay | 20.3 | 19.8 | 14.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 |
| Total Delay | 20.3 | 19.8 | 14.5 |
| Queue Length 50th (ft) | 23 | 24 | 113 |
| Queue Length 95th (ft) | 50 | 50 | m#142 |
| Internal Link Dist (ft) | | 929 | 296 |
| Turn Bay Length (ft) | | | 100 |
| Base Capacity (vph) | 431 | 448 | 1954 |
| Starvation Cap Reductn | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.23 | 0.22 | 0.84 |

Intersection Summary

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

| Lane Group | EBR | NBL |
|---|---|---|
| Lane Group Flow (vph) | 164 | 402 |
| v/c Ratio | 0.10 | 0.12 |
| Control Delay | 0.1 | 0.1 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 0.1 | 0.1 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 0 | 0 |
| Internal Link Dist (ft) | | 610 |
| Turn Bay Length (ft) | 250 | |
| Base Capacity (vph) | 1583 | 3433 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.10 | 0.12 |

Intersection Summary

| Lane Group | WBT | WBR | SBT |
|---|---|---|---|
| Lane Group Flow (vph) | 201 | 201 | 164 |
| v/c Ratio | 0.18 | 0.18 | 0.07 |
| Control Delay | 0.3 | 0.3 | 2.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 |
| Total Delay | 0.3 | 0.3 | 2.9 |
| Queue Length 50th (ft) | 0 | 0 | 5 |
| Queue Length 95th (ft) | 0 | 0 | 13 |
| Internal Link Dist (ft) | 1041 | | 610 |
| Turn Bay Length (ft) | | 400 | |
| Base Capacity (vph) | 1256 | 1256 | 2351 |
| Starvation Cap Reductn | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.16 | 0.16 | 0.07 |

Intersection Summary

| Lane Group | SBL |
|---|---|
| Lane Group Flow (vph) | 164 |
| v/c Ratio | 0.05 |
| Control Delay | 0.0 |
| Queue Delay | 0.0 |
| Total Delay | 0.0 |
| Queue Length 50th (ft) | 0 |
| Queue Length 95th (ft) | 0 |
| Internal Link Dist (ft) | 296 |
| Turn Bay Length (ft) | 100 |
| Base Capacity (vph) | 3433 |
| Starvation Cap Reductn | 0 |
| Spillback Cap Reductn | 0 |
| Storage Cap Reductn | 0 |
| Reduced v/c Ratio | 0.05 |

| Intersection Summary |
|---|

| Lane Group | EBR | NBL |
|---|---|---|
| Lane Group Flow (vph) | 225 | 314 |
| v/c Ratio | 0.14 | 0.09 |
| Control Delay | 0.2 | 0.1 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 0.2 | 0.1 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 0 | 0 |
| Internal Link Dist (ft) | | 610 |
| Turn Bay Length (ft) | 250 | |
| Base Capacity (vph) | 1583 | 3433 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.14 | 0.09 |

Intersection Summary

| Lane Group | WBT | WBR | SBT |
|---|---|---|---|
| Lane Group Flow (vph) | 157 | 157 | 225 |
| v/c Ratio | 0.14 | 0.14 | 0.09 |
| Control Delay | 0.2 | 0.2 | 2.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 |
| Total Delay | 0.2 | 0.2 | 2.6 |
| Queue Length 50th (ft) | 0 | 0 | 7 |
| Queue Length 95th (ft) | 0 | 0 | 15 |
| Internal Link Dist (ft) | 1041 | | 610 |
| Turn Bay Length (ft) | | 400 | |
| Base Capacity (vph) | 1256 | 1256 | 2611 |
| Starvation Cap Reductn | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.13 | 0.13 | 0.09 |

Intersection Summary

| Lane Group | SBL |
|---|---|
| Lane Group Flow (vph) | 225 |
| v/c Ratio | 0.07 |
| Control Delay | 0.0 |
| Queue Delay | 0.0 |
| Total Delay | 0.0 |
| Queue Length 50th (ft) | 0 |
| Queue Length 95th (ft) | 0 |
| Internal Link Dist (ft) | 296 |
| Turn Bay Length (ft) | 100 |
| Base Capacity (vph) | 3433 |
| Starvation Cap Reductn | 0 |
| Spillback Cap Reductn | 0 |
| Storage Cap Reductn | 0 |
| Reduced v/c Ratio | 0.07 |

| Intersection Summary |
|---|

| Lane Group | EBR | NBL |
|---|---|---|
| Lane Group Flow (vph) | 635 | 1164 |
| v/c Ratio | 0.28 | 0.50 |
| Control Delay | 0.3 | 0.8 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 0.3 | 0.8 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 0 | 0 |
| Internal Link Dist (ft) | | 610 |
| Turn Bay Length (ft) | 500 | |
| Base Capacity (vph) | 2238 | 2334 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.28 | 0.50 |

Intersection Summary

| Lane Group | WBT | WBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 464 | 455 | 14 | 289 | 548 | 86 |
| v/c Ratio | 0.74 | 0.73 | 0.03 | 0.30 | 0.33 | 0.18 |
| Control Delay | 10.1 | 9.5 | 8.0 | 10.1 | 8.2 | 3.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 10.1 | 9.5 | 8.0 | 10.1 | 8.2 | 3.9 |
| Queue Length 50th (ft) | 9 | 5 | 1 | 41 | 35 | 0 |
| Queue Length 95th (ft) | 61 | 53 | m7 | 78 | 83 | 19 |
| Internal Link Dist (ft) | 1041 | | | 296 | 610 | |
| Turn Bay Length (ft) | | | 100 | | | |
| Base Capacity (vph) | 730 | 719 | 442 | 958 | 1651 | 469 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.64 | 0.63 | 0.03 | 0.30 | 0.33 | 0.18 |

Intersection Summary

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

| Lane Group | EBL | EBT | SBL |
|---|---|---|---|
| Lane Group Flow (vph) | 150 | 153 | 548 |
| v/c Ratio | 0.63 | 0.60 | 0.31 |
| Control Delay | 24.8 | 23.2 | 4.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 |
| Total Delay | 24.8 | 23.2 | 4.1 |
| Queue Length 50th (ft) | 34 | 34 | 17 |
| Queue Length 95th (ft) | 70 | 69 | 26 |
| Internal Link Dist (ft) | | 929 | 296 |
| Turn Bay Length (ft) | | | 100 |
| Base Capacity (vph) | 342 | 361 | 1771 |
| Starvation Cap Reductn | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.44 | 0.42 | 0.31 |

Intersection Summary

| Lane Group | EBR | NBL |
|---|---|---|
| Lane Group Flow (vph) | 1249 | 723 |
| v/c Ratio | 0.64 | 0.27 |
| Control Delay | 1.6 | 0.2 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 1.6 | 0.2 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 0 | 0 |
| Internal Link Dist (ft) | | 610 |
| Turn Bay Length (ft) | 500 | |
| Base Capacity (vph) | 1947 | 2673 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.64 | 0.27 |

Intersection Summary

| Lane Group | WBT | WBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 326 | 318 | 6 | 112 | 963 | 286 |
| v/c Ratio | 0.61 | 0.59 | 0.02 | 0.11 | 0.61 | 0.49 |
| Control Delay | 7.9 | 6.6 | 9.5 | 8.7 | 11.6 | 5.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 7.9 | 6.6 | 9.5 | 8.7 | 11.6 | 5.0 |
| Queue Length 50th (ft) | 7 | 0 | 0 | 0 | 63 | 0 |
| Queue Length 95th (ft) | 45 | 36 | m11 | 38 | #216 | 42 |
| Internal Link Dist (ft) | 1041 | | | 296 | 610 | |
| Turn Bay Length (ft) | | | 100 | | | |
| Base Capacity (vph) | 711 | 710 | 278 | 1030 | 1584 | 583 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.46 | 0.45 | 0.02 | 0.11 | 0.61 | 0.49 |

Intersection Summary

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

| Lane Group | EBL | EBT | SBL |
|---|---|---|---|
| Lane Group Flow (vph) | 59 | 59 | 963 |
| v/c Ratio | 0.36 | 0.34 | 0.48 |
| Control Delay | 20.7 | 19.8 | 6.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 |
| Total Delay | 20.7 | 19.8 | 6.0 |
| Queue Length 50th (ft) | 14 | 13 | 29 |
| Queue Length 95th (ft) | 35 | 35 | 113 |
| Internal Link Dist (ft) | | 929 | 296 |
| Turn Bay Length (ft) | | | 100 |
| Base Capacity (vph) | 342 | 363 | 1993 |
| Starvation Cap Reductn | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.17 | 0.16 | 0.48 |

Intersection Summary

| Lane Group | EBR | NBL |
|---|---|---|
| Lane Group Flow (vph) | 1079 | 1979 |
| v/c Ratio | 0.44 | 0.73 |
| Control Delay | 0.6 | 1.8 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 0.6 | 1.8 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 0 | 0 |
| Internal Link Dist (ft) | | 533 |
| Turn Bay Length (ft) | 500 | |
| Base Capacity (vph) | 2450 | 2694 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.44 | 0.73 |

Intersection Summary

| Lane Group | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 788 | 773 | 24 | 493 | 1079 |
| v/c Ratio | 1.19 | 1.20 | 0.15 | 0.54 | 0.87 |
| Control Delay | 117.2 | 119.3 | 2.8 | 5.3 | 22.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 117.2 | 119.3 | 2.8 | 5.3 | 22.3 |
| Queue Length 50th (ft) | ~234 | ~230 | 0 | 1 | 121 |
| Queue Length 95th (ft) | #420 | #413 | m0 | 2 | #233 |
| Internal Link Dist (ft) | 1610 | | | 740 | 533 |
| Turn Bay Length (ft) | | 400 | 100 | | |
| Base Capacity (vph) | 661 | 646 | 165 | 908 | 1240 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.19 | 1.20 | 0.15 | 0.54 | 0.87 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

| Lane Group | EBL | EBT | SBL |
|---|---|---|---|
| Lane Group Flow (vph) | 256 | 261 | 933 |
| v/c Ratio | 0.73 | 0.71 | 0.62 |
| Control Delay | 25.4 | 23.9 | 22.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 |
| Total Delay | 25.4 | 23.9 | 22.7 |
| Queue Length 50th (ft) | 55 | 55 | 146 |
| Queue Length 95th (ft) | #120 | 114 | m168 |
| Internal Link Dist (ft) | | 909 | 740 |
| Turn Bay Length (ft) | 500 | | |
| Base Capacity (vph) | 431 | 449 | 1504 |
| Starvation Cap Reductn | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.59 | 0.58 | 0.62 |

Intersection Summary

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

| Lane Group | EBR | NBL |
|---|---|---|
| Lane Group Flow (vph) | 2124 | 1229 |
| v/c Ratio | 0.95 | 0.41 |
| Control Delay | 12.9 | 0.4 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 12.9 | 0.4 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | #90 | 0 |
| Internal Link Dist (ft) | | 533 |
| Turn Bay Length (ft) | 500 | |
| Base Capacity (vph) | 2238 | 2968 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.95 | 0.41 |

Intersection Summary

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

| Lane Group | WBT | WBR | NBL | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 551 | 541 | 9 | 189 | 2124 |
| v/c Ratio | 0.76 | 0.72 | 0.07 | 0.14 | 1.28 |
| Control Delay | 10.2 | 7.9 | 9.2 | 7.0 | 147.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 10.2 | 7.9 | 9.2 | 7.0 | 147.8 |
| Queue Length 50th (ft) | 13 | 0 | 1 | 13 | ~485 |
| Queue Length 95th (ft) | 85 | 57 | 9 | 32 | #667 |
| Internal Link Dist (ft) | 1610 | | | 740 | 533 |
| Turn Bay Length (ft) | | 400 | 100 | | |
| Base Capacity (vph) | 823 | 839 | 134 | 1336 | 1661 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.67 | 0.64 | 0.07 | 0.14 | 1.28 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

| Lane Group | EBL | EBT | SBL |
|---|---|---|---|
| Lane Group Flow (vph) | 98 | 100 | 1638 |
| v/c Ratio | 0.43 | 0.42 | 0.84 |
| Control Delay | 20.3 | 19.8 | 17.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 |
| Total Delay | 20.3 | 19.8 | 17.3 |
| Queue Length 50th (ft) | 23 | 24 | 161 |
| Queue Length 95th (ft) | 50 | 50 | #375 |
| Internal Link Dist (ft) | | 909 | 740 |
| Turn Bay Length (ft) | 500 | | |
| Base Capacity (vph) | 431 | 448 | 1954 |
| Starvation Cap Reductn | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.23 | 0.22 | 0.84 |

Intersection Summary

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

| Lane Group | EBR | NBL |
|---|---|---|
| Lane Group Flow (vph) | 82 | 402 |
| v/c Ratio | 0.05 | 0.12 |
| Control Delay | 0.1 | 0.1 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 0.1 | 0.1 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 0 | 0 |
| Internal Link Dist (ft) | | 533 |
| Turn Bay Length (ft) | 250 | |
| Base Capacity (vph) | 1583 | 3433 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.05 | 0.12 |

Intersection Summary

| Lane Group | WBT | WBR | SBT |
|---|---|---|---|
| Lane Group Flow (vph) | 201 | 201 | 82 |
| v/c Ratio | 0.18 | 0.18 | 0.03 |
| Control Delay | 0.3 | 0.3 | 2.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 |
| Total Delay | 0.3 | 0.3 | 2.9 |
| Queue Length 50th (ft) | 0 | 0 | 2 |
| Queue Length 95th (ft) | 0 | 0 | 7 |
| Internal Link Dist (ft) | 1610 | | 533 |
| Turn Bay Length (ft) | | 400 | |
| Base Capacity (vph) | 1256 | 1256 | 2351 |
| Starvation Cap Reductn | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.16 | 0.16 | 0.03 |

Intersection Summary

| Lane Group | SBL |
|---|---|
| Lane Group Flow (vph) | 82 |
| v/c Ratio | 0.02 |
| Control Delay | 0.0 |
| Queue Delay | 0.0 |
| Total Delay | 0.0 |
| Queue Length 50th (ft) | 0 |
| Queue Length 95th (ft) | 1 |
| Internal Link Dist (ft) | 740 |
| Turn Bay Length (ft) | |
| Base Capacity (vph) | 3433 |
| Starvation Cap Reductn | 0 |
| Spillback Cap Reductn | 0 |
| Storage Cap Reductn | 0 |
| Reduced v/c Ratio | 0.02 |

| Intersection Summary |
|---|

| Lane Group | EBR | NBL |
|---|---|---|
| Lane Group Flow (vph) | 113 | 627 |
| v/c Ratio | 0.07 | 0.18 |
| Control Delay | 0.1 | 0.1 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 0.1 | 0.1 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 0 | 0 |
| Internal Link Dist (ft) | | 533 |
| Turn Bay Length (ft) | 250 | |
| Base Capacity (vph) | 1583 | 3433 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.07 | 0.18 |

Intersection Summary

| Lane Group | WBT | WBR | SBT |
|---|---|---|---|
| Lane Group Flow (vph) | 314 | 313 | 113 |
| v/c Ratio | 0.27 | 0.27 | 0.05 |
| Control Delay | 0.6 | 0.6 | 3.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 |
| Total Delay | 0.6 | 0.6 | 3.7 |
| Queue Length 50th (ft) | 0 | 0 | 4 |
| Queue Length 95th (ft) | 0 | 0 | 12 |
| Internal Link Dist (ft) | 1610 | | 533 |
| Turn Bay Length (ft) | | 400 | |
| Base Capacity (vph) | 1256 | 1256 | 2257 |
| Starvation Cap Reductn | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.25 | 0.25 | 0.05 |

Intersection Summary

| Lane Group | SBL |
|---|---|
| Lane Group Flow (vph) | 113 |
| v/c Ratio | 0.03 |
| Control Delay | 0.0 |
| Queue Delay | 0.0 |
| Total Delay | 0.0 |
| Queue Length 50th (ft) | 0 |
| Queue Length 95th (ft) | 0 |
| Internal Link Dist (ft) | 740 |
| Turn Bay Length (ft) | |
| Base Capacity (vph) | 3433 |
| Starvation Cap Reductn | 0 |
| Spillback Cap Reductn | 0 |
| Storage Cap Reductn | 0 |
| Reduced v/c Ratio | 0.03 |

| Intersection Summary |
|---|

| Lane Group | EBR | NBL |
|---|---|---|
| Lane Group Flow (vph) | 635 | 1365 |
| v/c Ratio | 0.28 | 0.55 |
| Control Delay | 0.3 | 0.9 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 0.3 | 0.9 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 0 | 0 |
| Internal Link Dist (ft) | | 533 |
| Turn Bay Length (ft) | 500 | |
| Base Capacity (vph) | 2238 | 2466 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.28 | 0.55 |

Intersection Summary

| Lane Group | WBT | WBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 570 | 560 | 14 | 289 | 548 | 86 |
| v/c Ratio | 0.82 | 0.82 | 0.04 | 0.34 | 0.37 | 0.20 |
| Control Delay | 15.3 | 15.5 | 1.3 | 3.6 | 9.7 | 4.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 15.3 | 15.5 | 1.3 | 3.6 | 9.7 | 4.1 |
| Queue Length 50th (ft) | 24 | 22 | 0 | 1 | 51 | 0 |
| Queue Length 95th (ft) | #187 | #185 | m0 | 1 | 83 | 19 |
| Internal Link Dist (ft) | 1610 | | | 740 | 533 | |
| Turn Bay Length (ft) | | 400 | 100 | | | |
| Base Capacity (vph) | 757 | 741 | 394 | 853 | 1471 | 427 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.75 | 0.76 | 0.04 | 0.34 | 0.37 | 0.20 |

Intersection Summary

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

| Lane Group | EBL | EBT | SBL |
|---|---|---|---|
| Lane Group Flow (vph) | 150 | 153 | 548 |
| v/c Ratio | 0.63 | 0.60 | 0.31 |
| Control Delay | 24.8 | 23.2 | 17.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 |
| Total Delay | 24.8 | 23.2 | 17.9 |
| Queue Length 50th (ft) | 34 | 34 | 86 |
| Queue Length 95th (ft) | 70 | 69 | m126 |
| Internal Link Dist (ft) | | 909 | 740 |
| Turn Bay Length (ft) | 500 | | |
| Base Capacity (vph) | 342 | 361 | 1771 |
| Starvation Cap Reductn | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.44 | 0.42 | 0.31 |

Intersection Summary

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

| Lane Group | EBR | NBL |
|---|---|---|
| Lane Group Flow (vph) | 1249 | 1351 |
| v/c Ratio | 0.64 | 0.45 |
| Control Delay | 1.6 | 0.5 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 1.6 | 0.5 |
| Queue Length 50th (ft) | 0 | 0 |
| Queue Length 95th (ft) | 0 | 0 |
| Internal Link Dist (ft) | | 533 |
| Turn Bay Length (ft) | 500 | |
| Base Capacity (vph) | 1947 | 2993 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.64 | 0.45 |

Intersection Summary

| Lane Group | WBT | WBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 657 | 644 | 6 | 112 | 963 | 286 |
| v/c Ratio | 0.80 | 0.76 | 0.02 | 0.11 | 0.62 | 0.49 |
| Control Delay | 11.2 | 8.2 | 7.8 | 7.6 | 11.5 | 4.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 11.2 | 8.2 | 7.8 | 7.6 | 11.5 | 4.8 |
| Queue Length 50th (ft) | 14 | 0 | 1 | 8 | 109 | 0 |
| Queue Length 95th (ft) | #116 | 65 | 6 | 21 | 184 | 36 |
| Internal Link Dist (ft) | 1610 | | | 740 | 533 | |
| Turn Bay Length (ft) | | 400 | 100 | | | |
| Base Capacity (vph) | 889 | 910 | 262 | 1015 | 1563 | 579 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.74 | 0.71 | 0.02 | 0.11 | 0.62 | 0.49 |

Intersection Summary

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

| Lane Group | EBL | EBT | SBL |
|---|---|---|---|
| Lane Group Flow (vph) | 59 | 59 | 963 |
| v/c Ratio | 0.36 | 0.34 | 0.48 |
| Control Delay | 20.7 | 19.8 | 6.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 |
| Total Delay | 20.7 | 19.8 | 6.3 |
| Queue Length 50th (ft) | 14 | 13 | 61 |
| Queue Length 95th (ft) | 35 | 35 | 138 |
| Internal Link Dist (ft) | | 909 | 740 |
| Turn Bay Length (ft) | 500 | | |
| Base Capacity (vph) | 342 | 363 | 1993 |
| Starvation Cap Reductn | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.17 | 0.16 | 0.48 |

Intersection Summary

## Intersection: 3201: Main St & EB On-Ramp/WB On-Ramp & EB Off-Ramp/WB Off-Ramp

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | > | > | L | L | > | > | L | L | T | T |
| Maximum Queue (ft) | 264 | 325 | 239 | 205 | 188 | 200 | 256 | 223 | 299 | 342 | 380 | 239 |
| Average Queue (ft) | 78 | 121 | 95 | 28 | 78 | 125 | 55 | 7 | 210 | 255 | 177 | 153 |
| 95th Queue (ft) | 158 | 214 | 249 | 134 | 166 | 197 | 175 | 74 | 287 | 331 | 280 | 223 |
| Link Distance (ft) | | 1191 | 1191 | | | 1044 | 1044 | | | | 939 | 939 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 500 | | | 300 | 500 | | | 300 | 250 | 250 | | |
| Storage Blk Time (%) | | | | | | | | | 0 | 6 | 1 | 1 |
| Queuing Penalty (veh) | | | | | | | | | 2 | 25 | 5 | 7 |

## Intersection: 3201: Main St & EB On-Ramp/WB On-Ramp & EB Off-Ramp/WB Off-Ramp

| Movement | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | > | L | L | T | T |
| Maximum Queue (ft) | 293 | 68 | 69 | 169 | 206 |
| Average Queue (ft) | 49 | 29 | 32 | 87 | 111 |
| 95th Queue (ft) | 213 | 61 | 65 | 136 | 170 |
| Link Distance (ft) | | | | 599 | 599 |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (ft) | 200 | 250 | 250 | | |
| Storage Blk Time (%) | 2 | | | | 0 |
| Queuing Penalty (veh) | 7 | | | | 1 |

## Intersection: 3201: Main St & EB On-Ramp/WB On-Ramp & EB Off-Ramp/WB Off-Ramp

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | > | > | L | L | > | > | L | L | T | T |
| Maximum Queue (ft) | 450 | 503 | 559 | 400 | 599 | 630 | 758 | 400 | 295 | 349 | 445 | 331 |
| Average Queue (ft) | 249 | 297 | 351 | 320 | 382 | 429 | 450 | 348 | 180 | 229 | 195 | 207 |
| 95th Queue (ft) | 417 | 467 | 466 | 422 | 586 | 626 | 707 | 458 | 257 | 314 | 344 | 294 |
| Link Distance (ft) | | 1191 | 1191 | | | 1044 | 1044 | | | | 929 | 929 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 500 | | | 300 | 500 | | | 300 | 250 | 250 | | |
| Storage Blk Time (%) | | 0 | 18 | 7 | 1 | 9 | 53 | 37 | 0 | 4 | 2 | 10 |
| Queuing Penalty (veh) | | 1 | 80 | 29 | 5 | 29 | 166 | 115 | 0 | 18 | 15 | 49 |

## Intersection: 3201: Main St & EB On-Ramp/WB On-Ramp & EB Off-Ramp/WB Off-Ramp

| Movement | NB | SB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | > | L | L | T | T | > |
| Maximum Queue (ft) | 300 | 286 | 350 | 644 | 628 | 300 |
| Average Queue (ft) | 66 | 128 | 258 | 433 | 467 | 287 |
| 95th Queue (ft) | 232 | 206 | 431 | 659 | 669 | 348 |
| Link Distance (ft) | | | | 612 | 612 | |
| Upstream Blk Time (%) | | | | 1 | 1 | |
| Queuing Penalty (veh) | | | | 10 | 15 | |
| Storage Bay Dist (ft) | 200 | 250 | 250 | | | 200 |
| Storage Blk Time (%) | 0 | | 0 | 20 | 37 | 12 |
| Queuing Penalty (veh) | 0 | | 2 | 91 | 231 | 64 |

## Intersection: 3201: Main St & EB On-Ramp/WB On-Ramp & EB Off-Ramp/WB Off-Ramp

| Movement | EB | EB | WB | WB | WB | NB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | L | L | > | L | L | T | T | L | L | T |
| Maximum Queue (ft) | 53 | 29 | 30 | 90 | 54 | 25 | 48 | 29 | 52 | 44 | 47 | 28 |
| Average Queue (ft) | 19 | 9 | 4 | 26 | 2 | 2 | 14 | 3 | 3 | 6 | 25 | 3 |
| 95th Queue (ft) | 53 | 29 | 18 | 54 | 18 | 12 | 35 | 17 | 20 | 24 | 52 | 17 |
| Link Distance (ft) | | 1191 | | 1044 | 1044 | | | 938 | 938 | | | 607 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 500 | | 500 | | | 250 | 250 | | | 250 | 250 | |
| Storage Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |

## Intersection: 3201: Main St & EB On-Ramp/WB On-Ramp & EB Off-Ramp/WB Off-Ramp

| Movement | SB |
|---|---|
| Directions Served | T |
| Maximum Queue (ft) | 30 |
| Average Queue (ft) | 2 |
| 95th Queue (ft) | 14 |
| Link Distance (ft) | 607 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 3201: Main St & EB On-Ramp/WB On-Ramp & EB Off-Ramp/WB Off-Ramp

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | L | L | L | L | T | T | L | L | T | T |
| Maximum Queue (ft) | 50 | 48 | 30 | 116 | 24 | 49 | 50 | 30 | 43 | 67 | 28 | 24 |
| Average Queue (ft) | 12 | 6 | 3 | 33 | 6 | 26 | 6 | 5 | 5 | 27 | 4 | 2 |
| 95th Queue (ft) | 38 | 26 | 18 | 74 | 23 | 49 | 27 | 21 | 24 | 59 | 19 | 12 |
| Link Distance (ft) | | 1191 | | 1044 | | | 1076 | 1076 | | | 608 | 608 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 500 | | 500 | | 250 | 250 | | | 250 | 250 | | |
| Storage Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |

## Intersection: 3201: Main St & EB On-Ramp/WB On-Ramp & EB Off-Ramp/WB Off-Ramp

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | L | L | L | L | T | T | L | L | T | T |
| Maximum Queue (ft) | 68 | 31 | 146 | 151 | 189 | 176 | 93 | 52 | 38 | 47 | 50 | 30 |
| Average Queue (ft) | 20 | 5 | 19 | 62 | 68 | 114 | 24 | 6 | 6 | 18 | 12 | 3 |
| 95th Queue (ft) | 49 | 21 | 66 | 119 | 169 | 180 | 63 | 28 | 24 | 42 | 38 | 16 |
| Link Distance (ft) | | 1191 | | 1044 | | | 939 | 939 | | | 608 | 608 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 500 | | 500 | | 250 | 250 | | | 250 | 250 | | |
| Storage Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |

## Intersection: 3201: Main St & EB On-Ramp/WB On-Ramp & EB Off-Ramp/WB Off-Ramp

| Movement | EB | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | > | L | L | L | L | T | T | L | L | T |
| Maximum Queue (ft) | 47 | 38 | 120 | 156 | 170 | 162 | 199 | 69 | 52 | 73 | 89 | 70 |
| Average Queue (ft) | 11 | 11 | 4 | 44 | 105 | 45 | 99 | 22 | 15 | 9 | 25 | 28 |
| 95th Queue (ft) | 33 | 29 | 40 | 122 | 156 | 136 | 168 | 55 | 46 | 37 | 61 | 59 |
| Link Distance (ft) | | 1191 | 1191 | | 1044 | | | 939 | 939 | | | 598 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 500 | | | 500 | | 250 | 250 | | | 250 | 250 | |
| Storage Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |

## Intersection: 3201: Main St & EB On-Ramp/WB On-Ramp & EB Off-Ramp/WB Off-Ramp

| Movement | SB |
|---|---|
| Directions Served | T |
| Maximum Queue (ft) | 119 |
| Average Queue (ft) | 23 |
| 95th Queue (ft) | 69 |
| Link Distance (ft) | 598 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 3301: Main St/OC & EB Off-Ramp/EB On-Ramp

| Movement | EB | EB | EB | EB | NB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | LT | R | R | T | T | T | R | L | L |
| Maximum Queue (ft) | 286 | 260 | 153 | 118 | 435 | 337 | 369 | 146 | 104 | 90 |
| Average Queue (ft) | 122 | 102 | 78 | 29 | 208 | 144 | 100 | 64 | 39 | 27 |
| 95th Queue (ft) | 205 | 187 | 135 | 66 | 349 | 284 | 223 | 133 | 82 | 66 |
| Link Distance (ft) | | 1635 | 1635 | | 1314 | 1314 | 1314 | | | 418 |
| Upstream Blk Time (%) | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | |
| Storage Bay Dist (ft) | 600 | | | 600 | | | | 200 | 150 | |
| Storage Blk Time (%) | | | | | | | 0 | | | |
| Queuing Penalty (veh) | | | | | | | 0 | | | |

## Intersection: 3302: OC/Main St & WB On-Ramp/WB Off-Ramp

| Movement | WB | WB | WB | WB | NB | NB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | LT | R | R | L | L | T | T | T | T | T | T |
| Maximum Queue (ft) | 181 | 218 | 137 | 87 | 249 | 397 | 166 | 111 | 121 | 130 | 95 | 114 |
| Average Queue (ft) | 71 | 121 | 63 | 39 | 186 | 209 | 60 | 27 | 37 | 29 | 33 | 41 |
| 95th Queue (ft) | 165 | 186 | 116 | 70 | 262 | 310 | 132 | 80 | 96 | 77 | 83 | 86 |
| Link Distance (ft) | | 1605 | 1605 | | | 418 | 418 | 418 | 418 | | 412 | 412 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 600 | | | 600 | 150 | | | | | 150 | | |
| Storage Blk Time (%) | | | | | 11 | 16 | | | | 0 | | |
| Queuing Penalty (veh) | | | | | 41 | 59 | | | | 0 | | |

## Intersection: 3302: OC/Main St & WB On-Ramp/WB Off-Ramp

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 152 |
| Average Queue (ft) | 24 |
| 95th Queue (ft) | 82 |
| Link Distance (ft) | 412 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 3303: Main St & Seminolr Dr/Seminole Dr

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | TR | R | L | L | T | TR | L | L | T | T |
| Maximum Queue (ft) | 194 | 25 | 96 | 71 | 166 | 178 | 28 | 72 | 299 | 302 | 93 | 98 |
| Average Queue (ft) | 106 | 5 | 48 | 24 | 68 | 112 | 3 | 32 | 142 | 163 | 33 | 48 |
| 95th Queue (ft) | 186 | 21 | 88 | 55 | 122 | 168 | 16 | 63 | 225 | 246 | 80 | 94 |
| Link Distance (ft) | | 1647 | 1647 | | | | 1662 | 1662 | | | 412 | 412 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | 250 | 500 | 500 | | | 250 | 250 | | |
| Storage Blk Time (%) | | | | | | | | | 0 | 1 | | |
| Queuing Penalty (veh) | | | | | | | | | 0 | 2 | | |

## Intersection: 3303: Main St & Seminolr Dr/Seminole Dr

| Movement | NB | SB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | R | L | L | T | T | R |
| Maximum Queue (ft) | 92 | 53 | 114 | 118 | 108 | 49 |
| Average Queue (ft) | 37 | 13 | 47 | 57 | 40 | 12 |
| 95th Queue (ft) | 83 | 45 | 99 | 103 | 87 | 38 |
| Link Distance (ft) | 412 | | | 1355 | 1355 | |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (ft) | | 250 | 250 | | | 100 |
| Storage Blk Time (%) | | | | | 1 | |
| Queuing Penalty (veh) | | | | | 0 | |

## Network Summary

Network wide Queuing Penalty: 103

## Intersection: 3301: Main St/OC & EB Off-Ramp/EB On-Ramp

| Movement | EB | EB | EB | EB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | LT | R | R | T | T | T | R | L | L | T | T |
| Maximum Queue (ft) | 274 | 340 | 354 | 333 | 1090 | 1058 | 1214 | 300 | 162 | 177 | 207 | 186 |
| Average Queue (ft) | 180 | 217 | 256 | 229 | 564 | 522 | 549 | 197 | 126 | 122 | 120 | 115 |
| 95th Queue (ft) | 265 | 303 | 353 | 318 | 1110 | 1082 | 1085 | 376 | 161 | 179 | 165 | 172 |
| Link Distance (ft) | | 1681 | 1681 | | 1654 | 1654 | 1654 | | | 418 | 418 | 418 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 600 | | | 600 | | | | 200 | 150 | | | |
| Storage Blk Time (%) | | | | | | | 29 | 1 | 2 | 2 | | |
| Queuing Penalty (veh) | | | | | | | 139 | 4 | 4 | 5 | | |

## Intersection: 3301: Main St/OC & EB Off-Ramp/EB On-Ramp

| Movement | SB |
|---|---|
| Directions Served | T |
| Maximum Queue (ft) | 199 |
| Average Queue (ft) | 130 |
| 95th Queue (ft) | 170 |
| Link Distance (ft) | 418 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 3302: OC/Main St & WB On-Ramp/WB Off-Ramp

| Movement | WB | WB | WB | WB | NB | NB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | LT | R | R | L | L | T | T | T | T | T | T |
| Maximum Queue (ft) | 312 | 326 | 301 | 214 | 142 | 138 | 340 | 268 | 250 | 250 | 430 | 426 |
| Average Queue (ft) | 198 | 228 | 154 | 117 | 99 | 89 | 204 | 73 | 144 | 233 | 310 | 299 |
| 95th Queue (ft) | 277 | 311 | 258 | 206 | 137 | 124 | 286 | 185 | 212 | 289 | 429 | 412 |
| Link Distance (ft) | | 1991 | 1991 | | | 418 | 418 | 418 | 418 | | 405 | 405 |
| Upstream Blk Time (%) | | | | | | | | | | | 1 | 1 |
| Queuing Penalty (veh) | | | | | | | | | | | 8 | 5 |
| Storage Bay Dist (ft) | 600 | | | 600 | 150 | | | | | 150 | | |
| Storage Blk Time (%) | | | | | 0 | 0 | | | | 17 | 33 | |
| Queuing Penalty (veh) | | | | | 0 | 0 | | | | 89 | 170 | |

## Intersection: 3302: OC/Main St & WB On-Ramp/WB Off-Ramp

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 424 |
| Average Queue (ft) | 248 |
| 95th Queue (ft) | 391 |
| Link Distance (ft) | 405 |
| Upstream Blk Time (%) | 1 |
| Queuing Penalty (veh) | 9 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 3303: Main St & Seminolr Dr/Seminole Dr

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | TR | R | L | L | L | T | TR | L | L | L |
| Maximum Queue (ft) | 198 | 48 | 539 | 350 | 381 | 394 | 425 | 28 | 137 | 284 | 349 | 417 |
| Average Queue (ft) | 96 | 7 | 200 | 103 | 277 | 292 | 245 | 4 | 51 | 216 | 299 | 314 |
| 95th Queue (ft) | 171 | 28 | 365 | 256 | 398 | 424 | 384 | 19 | 90 | 282 | 386 | 404 |
| Link Distance (ft) | | 1793 | 1793 | | | | | 1734 | 1734 | | | 405 |
| Upstream Blk Time (%) | | | | | | | | | | | | 0 |
| Queuing Penalty (veh) | | | | | | | | | | | | 2 |
| Storage Bay Dist (ft) | 250 | | | 250 | 500 | 500 | 500 | | | 250 | 250 | |
| Storage Blk Time (%) | | | 8 | 0 | | | | | | 1 | 20 | 34 |
| Queuing Penalty (veh) | | | 27 | 0 | | | | | | 2 | 60 | 206 |

## Intersection: 3303: Main St & Seminolr Dr/Seminole Dr

| Movement | NB | NB | NB | SB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | T | T | R | L | L | T | T | R |
| Maximum Queue (ft) | 140 | 154 | 243 | 164 | 178 | 268 | 286 | 200 |
| Average Queue (ft) | 65 | 73 | 76 | 38 | 83 | 151 | 146 | 74 |
| 95th Queue (ft) | 112 | 127 | 174 | 108 | 147 | 232 | 234 | 175 |
| Link Distance (ft) | 405 | 405 | | | | 1320 | 1320 | |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (ft) | | | 250 | 250 | 250 | | | 100 |
| Storage Blk Time (%) | | | 0 | | | 1 | 27 | 3 |
| Queuing Penalty (veh) | | | 0 | | | 1 | 52 | 6 |

## Network Summary

Network wide Queuing Penalty: 789

## Intersection: 3301: Main St/OC & EB Off-Ramp/EB On-Ramp

| Movement | EB | EB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | T | T | R | L | L | T | T |
| Maximum Queue (ft) | 85 | 29 | 5 | 0 | 7 | 17 | 37 | 10 | 29 |
| Average Queue (ft) | 28 | 23 | 0 | 0 | 0 | 1 | 9 | 0 | 1 |
| 95th Queue (ft) | 61 | 33 | 2 | 0 | 2 | 8 | 28 | 3 | 10 |
| Link Distance (ft) | 1136 | | | 687 | | | 418 | 418 | 418 |
| Upstream Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |
| Storage Bay Dist (ft) | | 600 | 150 | | 200 | 150 | | | |
| Storage Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |

## Intersection: 3302: OC/Main St & WB On-Ramp/WB Off-Ramp

| Movement | WB | WB | WB | NB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | LT | R | L | T | T | T | T | T | R |
| Maximum Queue (ft) | 43 | 87 | 74 | 57 | 32 | 8 | 28 | 13 | 10 | 3 |
| Average Queue (ft) | 4 | 26 | 40 | 10 | 3 | 0 | 3 | 1 | 1 | 0 |
| 95th Queue (ft) | 22 | 58 | 63 | 33 | 13 | 3 | 14 | 6 | 5 | 1 |
| Link Distance (ft) | 1078 | 1078 | | 418 | 418 | 418 | 418 | | 412 | |
| Upstream Blk Time (%) | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | |
| Storage Bay Dist (ft) | | | 600 | | | | | 150 | | 200 |
| Storage Blk Time (%) | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | |

## Intersection: 3303: Main St & Seminole Dr

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | T | TR | R | L | L | T | L | L | R |
| Maximum Queue (ft) | 31 | 51 | 31 | 53 | 95 | 31 | 14 | 44 | 21 |
| Average Queue (ft) | 5 | 18 | 22 | 15 | 35 | 6 | 0 | 7 | 3 |
| 95th Queue (ft) | 21 | 44 | 44 | 42 | 79 | 24 | 5 | 30 | 14 |
| Link Distance (ft) | 983 | 983 | | | | 778 | 412 | 412 | 412 |
| Upstream Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |
| Storage Bay Dist (ft) | | | 250 | 250 | 250 | | | | |
| Storage Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |

## Network Summary

Network wide Queuing Penalty: 0

## Intersection: 3301: Main St/OC & EB Off-Ramp/EB On-Ramp

| Movement | EB | EB | EB | NB | NB | SB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | LT | R | T | T | L | L | T | T | T |
| Maximum Queue (ft) | 35 | 59 | 48 | 5 | 1 | 18 | 59 | 34 | 10 | 29 |
| Average Queue (ft) | 5 | 11 | 19 | 0 | 0 | 4 | 22 | 3 | 1 | 1 |
| 95th Queue (ft) | 17 | 36 | 36 | 2 | 0 | 16 | 47 | 14 | 4 | 9 |
| Link Distance (ft) | 1136 | 1136 | | | 1142 | | 418 | 418 | 418 | 418 |
| Upstream Blk Time (%) | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | |
| Storage Bay Dist (ft) | | | 600 | 150 | | 150 | | | | |
| Storage Blk Time (%) | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | |

## Intersection: 3302: OC/Main St & WB On-Ramp/WB Off-Ramp

| Movement | WB | WB | WB | NB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | LT | R | L | L | T | T | T | T | R |
| Maximum Queue (ft) | 75 | 86 | 76 | 39 | 75 | 8 | 2 | 12 | 8 | 25 |
| Average Queue (ft) | 17 | 27 | 41 | 6 | 20 | 0 | 0 | 1 | 1 | 2 |
| 95th Queue (ft) | 47 | 64 | 69 | 23 | 53 | 3 | 1 | 7 | 5 | 12 |
| Link Distance (ft) | 1078 | 1078 | | | 418 | 418 | 418 | | 428 | |
| Upstream Blk Time (%) | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | |
| Storage Bay Dist (ft) | | | 600 | 150 | | | | 150 | | 200 |
| Storage Blk Time (%) | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | |

## Intersection: 3303: Main St

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | T | TR | R | L | L | T | L | L | R |
| Maximum Queue (ft) | 31 | 78 | 54 | 51 | 113 | 31 | 38 | 56 | 36 |
| Average Queue (ft) | 8 | 31 | 23 | 12 | 39 | 5 | 4 | 15 | 4 |
| 95th Queue (ft) | 29 | 53 | 51 | 37 | 83 | 24 | 19 | 42 | 16 |
| Link Distance (ft) | 1150 | 1150 | | | | 928 | 428 | 428 | 428 |
| Upstream Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |
| Storage Bay Dist (ft) | | | 250 | 250 | 250 | | | | |
| Storage Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |

## Network Summary

Network wide Queuing Penalty: 0

## Intersection: 3301: Main St/OC & EB Off-Ramp/EB On-Ramp

| Movement | EB | EB | EB | NB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | LT | R | T | T | T | R | L | L |
| Maximum Queue (ft) | 80 | 66 | 69 | 30 | 20 | 57 | 40 | 18 | 58 |
| Average Queue (ft) | 7 | 20 | 36 | 4 | 1 | 4 | 4 | 3 | 15 |
| 95th Queue (ft) | 33 | 52 | 60 | 18 | 7 | 25 | 21 | 13 | 40 |
| Link Distance (ft) | 1136 | 1136 | | | 687 | 687 | 687 | | 418 |
| Upstream Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |
| Storage Bay Dist (ft) | | | 600 | 150 | | | | 150 | |
| Storage Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |

## Intersection: 3302: OC/Main St & WB On-Ramp/WB Off-Ramp

| Movement | WB | WB | WB | NB | NB | NB | NB | NB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | LT | R | L | L | T | T | T | T | T | T | R |
| Maximum Queue (ft) | 75 | 156 | 73 | 108 | 165 | 11 | 29 | 48 | 31 | 31 | 51 | 19 |
| Average Queue (ft) | 11 | 65 | 36 | 51 | 91 | 1 | 3 | 3 | 2 | 2 | 8 | 1 |
| 95th Queue (ft) | 41 | 126 | 58 | 110 | 141 | 7 | 12 | 19 | 12 | 12 | 28 | 6 |
| Link Distance (ft) | 1078 | 1078 | | | 418 | 418 | 418 | 418 | | 424 | 424 | 424 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | | | 600 | 150 | | | | | 150 | | | |
| Storage Blk Time (%) | | | | | 1 | | | | | | | |
| Queuing Penalty (veh) | | | | | 1 | | | | | | | |

## Intersection: 3303: Main St & Seminolr Dr/Seminole Dr

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | T | TR | R | L | L | T | L | L | R |
| Maximum Queue (ft) | 31 | 49 | 44 | 127 | 140 | 31 | 38 | 54 | 50 |
| Average Queue (ft) | 6 | 26 | 16 | 14 | 47 | 2 | 3 | 17 | 10 |
| 95th Queue (ft) | 24 | 41 | 39 | 58 | 101 | 15 | 17 | 44 | 31 |
| Link Distance (ft) | 1053 | 1053 | | | | 985 | 424 | 424 | 424 |
| Upstream Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |
| Storage Bay Dist (ft) | | | 250 | 250 | 250 | | | | |
| Storage Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |

## Network Summary

Network wide Queuing Penalty: 1

## Intersection: 3301: Main St/OC & EB Off-Ramp/EB On-Ramp

| Movement | EB | EB | EB | NB | NB | NB | NB | SB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | LT | R | T | T | T | R | L | L | T | T | T |
| Maximum Queue (ft) | 35 | 42 | 114 | 68 | 24 | 42 | 18 | 18 | 57 | 33 | 31 | 28 |
| Average Queue (ft) | 5 | 14 | 53 | 12 | 2 | 1 | 3 | 5 | 12 | 4 | 3 | 2 |
| 95th Queue (ft) | 18 | 34 | 93 | 43 | 12 | 14 | 12 | 16 | 36 | 18 | 16 | 10 |
| Link Distance (ft) | 1136 | 1136 | | | 687 | 687 | 687 | | 418 | 418 | 418 | 418 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | | | 600 | 150 | | | | 150 | | | | |
| Storage Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |

## Intersection: 3302: OC/Main St & WB On-Ramp/WB Off-Ramp

| Movement | WB | WB | WB | NB | NB | NB | NB | SB | SB | SB | SB | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | LT | R | L | L | T | T | T | T | T | R | |
| Maximum Queue (ft) | 41 | 221 | 109 | 152 | 165 | 49 | 26 | 15 | 36 | 51 | 29 | |
| Average Queue (ft) | 8 | 122 | 42 | 58 | 87 | 6 | 1 | 0 | 7 | 14 | 2 | |
| 95th Queue (ft) | 23 | 200 | 71 | 122 | 140 | 25 | 9 | 5 | 25 | 38 | 11 | |
| Link Distance (ft) | 1081 | 1081 | | | 418 | 418 | 418 | | 444 | 444 | 444 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | | | 600 | 150 | | | | 150 | | | | |
| Storage Blk Time (%) | | | | 0 | 1 | | | | | | | |
| Queuing Penalty (veh) | | | | 0 | 1 | | | | | | | |

## Intersection: 3303: Main St & Seminole Dr

| Movement | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | T | TR | R | L | L | T | T | L | L | R | | |
| Maximum Queue (ft) | 46 | 96 | 50 | 123 | 158 | 53 | 31 | 60 | 44 | 45 | | |
| Average Queue (ft) | 8 | 40 | 28 | 35 | 73 | 6 | 3 | 10 | 16 | 10 | | |
| 95th Queue (ft) | 30 | 73 | 41 | 86 | 130 | 29 | 18 | 35 | 40 | 28 | | |
| Link Distance (ft) | 1300 | 1300 | | | | 1212 | 1212 | 444 | 444 | 444 | | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | | | 250 | 250 | 250 | | | | | | | |
| Storage Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |

## Network Summary

Network wide Queuing Penalty: 1

## Intersection: 3401: Main St & EB Off-Ramp & EB On-Ramp

| Movement | EB | EB | EB | EB | WB | WB | WB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | T | T | T | T | > | L | L | R | R |
| Maximum Queue (ft) | 351 | 367 | 176 | 430 | 234 | 250 | 31 | 152 | 200 | 140 | 128 |
| Average Queue (ft) | 188 | 237 | 95 | 163 | 79 | 91 | 15 | 74 | 125 | 58 | 18 |
| 95th Queue (ft) | 293 | 329 | 165 | 293 | 161 | 166 | 37 | 133 | 196 | 107 | 60 |
| Link Distance (ft) | | | 1293 | 1293 | 1256 | 1256 | | | 1404 | 1404 | |
| Upstream Blk Time (%) | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | |
| Storage Bay Dist (ft) | 500 | 500 | | | | | 250 | 800 | | | 600 |
| Storage Blk Time (%) | | | | | | 0 | | | | | |
| Queuing Penalty (veh) | | | | | | 0 | | | | | |

## Intersection: 3402: Seminole Dr & Main St Ext

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | TR | R | L | L | T | TR | L | T | TR | R |
| Maximum Queue (ft) | 174 | 20 | 172 | 159 | 155 | 177 | 64 | 146 | 350 | 440 | 173 | 178 |
| Average Queue (ft) | 64 | 2 | 51 | 15 | 67 | 94 | 23 | 39 | 205 | 106 | 112 | 90 |
| 95th Queue (ft) | 141 | 12 | 110 | 62 | 133 | 153 | 52 | 95 | 331 | 250 | 150 | 158 |
| Link Distance (ft) | | 1700 | 1700 | | | 718 | 718 | 718 | | 1256 | 1256 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 300 | | | 300 | 500 | | | | 250 | | | 300 |
| Storage Blk Time (%) | | | | | | | | | 7 | | | |
| Queuing Penalty (veh) | | | | | | | | | 13 | | | |

## Intersection: 3402: Seminole Dr & Main St Ext

| Movement | SB | SB | SB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | L | L | T | T | R |
| Maximum Queue (ft) | 29 | 73 | 98 | 70 | 53 |
| Average Queue (ft) | 2 | 28 | 55 | 30 | 14 |
| 95th Queue (ft) | 13 | 69 | 94 | 61 | 42 |
| Link Distance (ft) | | | 1447 | 1447 | |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (ft) | 300 | 300 | | | 100 |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 3403: WB On-Ramp & WB Off-Ramp & Seminole Dr

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | T | T | > | > | L | L | T | T | L | L | L | R |
| Maximum Queue (ft) | 118 | 140 | 75 | 74 | 75 | 112 | 140 | 56 | 177 | 90 | 59 | 80 |
| Average Queue (ft) | 62 | 72 | 39 | 31 | 11 | 60 | 56 | 21 | 88 | 34 | 23 | 19 |
| 95th Queue (ft) | 105 | 126 | 80 | 68 | 39 | 99 | 106 | 50 | 157 | 72 | 54 | 52 |
| Link Distance (ft) | 718 | 718 | | | | | 887 | 887 | | 939 | 939 | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | | | 300 | 300 | 250 | 250 | | | 600 | | | 150 |
| Storage Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |

## Network Summary

Network wide Queuing Penalty: 13

## Intersection: 3401: Main St/OC & EB Off-Ramp & EB On-Ramp

| Movement | EB | EB | EB | EB | WB | WB | WB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | T | T | T | T | > | L | L | R | R |
| Maximum Queue (ft) | 392 | 438 | 232 | 298 | 410 | 423 | 350 | 1000 | 1419 | 1419 | 706 |
| Average Queue (ft) | 234 | 262 | 141 | 205 | 267 | 282 | 158 | 745 | 846 | 466 | 277 |
| 95th Queue (ft) | 335 | 366 | 226 | 281 | 356 | 372 | 318 | 1157 | 1321 | 1039 | 495 |
| Link Distance (ft) | | | 1407 | 1407 | 1256 | 1256 | | | 1404 | 1404 | |
| Upstream Blk Time (%) | | | | | | | | | 0 | 0 | |
| Queuing Penalty (veh) | | | | | | | | | 0 | 0 | |
| Storage Bay Dist (ft) | 500 | 500 | | | | | 250 | 800 | | | 600 |
| Storage Blk Time (%) | | | | | | 13 | 0 | 0 | 42 | 2 | 0 |
| Queuing Penalty (veh) | | | | | | 58 | 3 | 1 | 129 | 10 | 1 |

## Intersection: 3402: OC/Planned Rdwy & Seminole Dr

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | R | R | L | L | T | TR | L | L | T | T |
| Maximum Queue (ft) | 400 | 678 | 243 | 223 | 735 | 750 | 726 | 600 | 300 | 350 | 1018 | 1014 |
| Average Queue (ft) | 172 | 260 | 141 | 126 | 661 | 667 | 463 | 153 | 292 | 337 | 587 | 481 |
| 95th Queue (ft) | 386 | 583 | 223 | 213 | 843 | 850 | 975 | 477 | 329 | 398 | 1052 | 959 |
| Link Distance (ft) | | 1700 | 1700 | | 705 | 705 | 705 | | | | 1256 | 1256 |
| Upstream Blk Time (%) | | | | | 16 | 28 | 6 | | | | | |
| Queuing Penalty (veh) | | | | | 94 | 162 | 36 | | | | | |
| Storage Bay Dist (ft) | 300 | | | 250 | | | | 500 | 250 | 250 | | |
| Storage Blk Time (%) | | 26 | 0 | | | | 0 | | 49 | 63 | | |
| Queuing Penalty (veh) | | 38 | 0 | | | | 1 | | 96 | 123 | | |

## Intersection: 3402: OC/Planned Rdwy & Seminole Dr

| Movement | NB | NB | SB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | R | R | L | L | T | TR | R |
| Maximum Queue (ft) | 113 | 339 | 124 | 224 | 222 | 249 | 200 |
| Average Queue (ft) | 56 | 162 | 9 | 94 | 134 | 158 | 61 |
| 95th Queue (ft) | 96 | 245 | 49 | 176 | 218 | 241 | 184 |
| Link Distance (ft) | | | | | 772 | 772 | |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | 300 | 300 | 300 | 300 | | | 100 |
| Storage Blk Time (%) | | 0 | | | | 40 | 0 |
| Queuing Penalty (veh) | | 0 | | | | 17 | 0 |

## Intersection: 3403: WB On-Ramp & WB Off-Ramp & Seminole Dr

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | T | T | > | > | L | L | T | T | L | L | L | R |
| Maximum Queue (ft) | 247 | 233 | 162 | 183 | 213 | 350 | 906 | 837 | 994 | 1027 | 900 | 750 |
| Average Queue (ft) | 133 | 134 | 114 | 102 | 87 | 251 | 467 | 389 | 502 | 502 | 450 | 199 |
| 95th Queue (ft) | 212 | 208 | 166 | 158 | 190 | 430 | 928 | 852 | 978 | 988 | 960 | 701 |
| Link Distance (ft) | 705 | 705 | | | | | 891 | 891 | 1657 | 1657 | | |
| Upstream Blk Time (%) | | | | | | | 2 | | | | | |
| Queuing Penalty (veh) | | | | | | | 0 | | | | | |
| Storage Bay Dist (ft) | | | 300 | 300 | 250 | 250 | | | | | 600 | 600 |
| Storage Blk Time (%) | | | | | | 0 | 42 | | | 36 | 27 | |
| Queuing Penalty (veh) | | | | | | 0 | 130 | | | 207 | 98 | |

## Network Summary

Network wide Queuing Penalty: 1207

## Intersection: 3401: Main St & EB Off-Ramp & EB On-Ramp

| Movement | EB | EB | EB | WB | WB | WB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | T | T | T | > | L | L | R |
| Maximum Queue (ft) | 72 | 94 | 31 | 31 | 31 | 49 | 30 | 51 | 28 |
| Average Queue (ft) | 12 | 48 | 2 | 1 | 6 | 6 | 10 | 18 | 6 |
| 95th Queue (ft) | 40 | 82 | 14 | 10 | 25 | 28 | 30 | 45 | 23 |
| Link Distance (ft) | | | 1454 | 1254 | 1254 | | | 1404 | 1404 |
| Upstream Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |
| Storage Bay Dist (ft) | 500 | 500 | | | | 250 | 800 | | |
| Storage Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |

## Intersection: 3402: Seminole Dr

| Movement | EB | EB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|
| Directions Served | T | TR | L | L | LR | R |
| Maximum Queue (ft) | 31 | 72 | 31 | 46 | 68 | 49 |
| Average Queue (ft) | 4 | 23 | 2 | 4 | 26 | 12 |
| 95th Queue (ft) | 20 | 54 | 14 | 23 | 54 | 37 |
| Link Distance (ft) | 1715 | 1715 | 742 | | 1254 | 1254 |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (ft) | | | | 250 | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 3403: WB On-Ramp & WB Off-Ramp & Seminole Dr

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | T | T | > | > | L | L | T | T | L | L | R |
| Maximum Queue (ft) | 31 | 53 | 30 | 30 | 31 | 72 | 71 | 32 | 27 | 19 | 25 |
| Average Queue (ft) | 3 | 10 | 2 | 1 | 4 | 25 | 25 | 6 | 2 | 1 | 1 |
| 95th Queue (ft) | 18 | 35 | 14 | 10 | 21 | 58 | 60 | 25 | 13 | 6 | 8 |
| Link Distance (ft) | 742 | 742 | 742 | | | | 894 | 894 | 1524 | 1524 | |
| Upstream Blk Time (%) | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | |
| Storage Bay Dist (ft) | | | | 300 | 250 | 250 | | | | | 600 |
| Storage Blk Time (%) | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | |

## Network Summary

Network wide Queuing Penalty: 0

## Intersection: 3401: Main St & EB Off-Ramp & EB On-Ramp

| Movement | EB | EB | EB | WB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | L | L | T | > | L | R |
| Maximum Queue (ft) | 31 | 53 | 31 | 31 | 31 | 28 |
| Average Queue (ft) | 16 | 42 | 6 | 6 | 6 | 21 |
| 95th Queue (ft) | 38 | 57 | 26 | 27 | 26 | 39 |
| Link Distance (ft) | | | 1398 | | | 1404 |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (ft) | 500 | 500 | | 250 | 800 | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 3402: Seminole Dr

| Movement | EB | EB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|
| Directions Served | T | TR | L | L | LR | R |
| Maximum Queue (ft) | 30 | 28 | 31 | 81 | 95 | 79 |
| Average Queue (ft) | 18 | 11 | 6 | 16 | 47 | 28 |
| 95th Queue (ft) | 43 | 33 | 27 | 70 | 90 | 75 |
| Link Distance (ft) | 1715 | 1715 | 742 | | 1266 | 1266 |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (ft) | | | | 250 | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 3403: WB On-Ramp & WB Off-Ramp & Seminole Dr

| Movement | EB | EB | WB | WB | NB | NB |
|---|---|---|---|---|---|---|
| Directions Served | T | T | L | L | L | R |
| Maximum Queue (ft) | 31 | 17 | 55 | 53 | 46 | 13 |
| Average Queue (ft) | 22 | 3 | 11 | 40 | 17 | 3 |
| 95th Queue (ft) | 43 | 14 | 47 | 58 | 45 | 11 |
| Link Distance (ft) | 742 | 742 | | | 942 | |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (ft) | | | 250 | 250 | | 600 |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Network Summary

Network wide Queuing Penalty: 0

## Intersection: 3401: Main St & EB Off-Ramp & EB On-Ramp

| Movement | EB | EB | EB | EB | WB | WB | WB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | T | T | T | T | > | L | L | R | R |
| Maximum Queue (ft) | 186 | 200 | 51 | 52 | 31 | 74 | 29 | 51 | 50 | 50 | 47 |
| Average Queue (ft) | 63 | 107 | 5 | 6 | 9 | 25 | 2 | 14 | 11 | 32 | 10 |
| 95th Queue (ft) | 154 | 172 | 25 | 27 | 29 | 62 | 15 | 43 | 34 | 48 | 32 |
| Link Distance (ft) | | | 1448 | 1448 | 1266 | 1266 | | | 1404 | 1404 | |
| Upstream Blk Time (%) | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | |
| Storage Bay Dist (ft) | 500 | 500 | | | | | 250 | 800 | | | 600 |
| Storage Blk Time (%) | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | |

## Intersection: 3402: Seminole Dr

| Movement | EB | EB | WB | WB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | T | TR | L | L | T | L | LR | R |
| Maximum Queue (ft) | 31 | 118 | 27 | 27 | 22 | 88 | 137 | 132 |
| Average Queue (ft) | 8 | 39 | 1 | 7 | 1 | 25 | 76 | 49 |
| 95th Queue (ft) | 26 | 87 | 9 | 26 | 9 | 69 | 129 | 90 |
| Link Distance (ft) | 1715 | 1715 | | 746 | 746 | | 1266 | 1266 |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (ft) | | | 300 | | | 250 | | |
| Storage Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |

## Intersection: 3403: WB On-Ramp & WB Off-Ramp & Seminole Dr

| Movement | EB | EB | EB | WB | WB | WB | NB | NB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | T | > | > | L | T | T | L | R |
| Maximum Queue (ft) | 97 | 27 | 29 | 73 | 93 | 54 | 51 | 23 |
| Average Queue (ft) | 29 | 3 | 7 | 21 | 53 | 15 | 10 | 3 |
| 95th Queue (ft) | 68 | 15 | 26 | 49 | 91 | 43 | 34 | 14 |
| Link Distance (ft) | 746 | 746 | | | 888 | 888 | 961 | |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (ft) | | | 300 | 250 | | | | 600 |
| Storage Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |

## Network Summary

Network wide Queuing Penalty: 0

## Intersection: 3401: Main St & EB Off-Ramp & EB On-Ramp

| Movement | EB | EB | EB | EB | WB | WB | WB | SB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | T | T | T | T | > | L | L | R | R |
| Maximum Queue (ft) | 144 | 157 | 52 | 54 | 74 | 75 | 29 | 48 | 90 | 72 | 46 |
| Average Queue (ft) | 35 | 94 | 6 | 4 | 10 | 35 | 6 | 8 | 13 | 30 | 4 |
| 95th Queue (ft) | 83 | 143 | 27 | 24 | 47 | 69 | 25 | 29 | 48 | 54 | 22 |
| Link Distance (ft) | | | 1408 | 1408 | 1266 | 1266 | | | 1404 | 1404 | |
| Upstream Blk Time (%) | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | |
| Storage Bay Dist (ft) | 500 | 500 | | | | | 250 | 800 | | | 600 |
| Storage Blk Time (%) | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | |

## Intersection: 3402: Seminole Dr

| Movement | EB | EB | WB | WB | WB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | T | TR | L | L | T | T | L | LR | R |
| Maximum Queue (ft) | 58 | 186 | 138 | 133 | 31 | 25 | 80 | 118 | 103 |
| Average Queue (ft) | 5 | 56 | 42 | 67 | 3 | 1 | 39 | 82 | 53 |
| 95th Queue (ft) | 27 | 123 | 95 | 121 | 18 | 8 | 74 | 117 | 87 |
| Link Distance (ft) | 1715 | 1715 | | 746 | 746 | 746 | | 1266 | 1266 |
| Upstream Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |
| Storage Bay Dist (ft) | | | 300 | | | | 250 | | |
| Storage Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |

## Intersection: 3403: WB On-Ramp & WB Off-Ramp & Seminole Dr

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | NB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | T | > | > | L | T | T | L | L | L | R |
| Maximum Queue (ft) | 96 | 26 | 53 | 118 | 94 | 52 | 139 | 49 | 23 | 22 |
| Average Queue (ft) | 50 | 3 | 10 | 44 | 33 | 10 | 40 | 14 | 2 | 5 |
| 95th Queue (ft) | 86 | 17 | 36 | 87 | 75 | 35 | 101 | 42 | 11 | 17 |
| Link Distance (ft) | 746 | 746 | | | 888 | 888 | 961 | 961 | | |
| Upstream Blk Time (%) | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | |
| Storage Bay Dist (ft) | | | 300 | 250 | | | | | 600 | 600 |
| Storage Blk Time (%) | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | |

## Network Summary

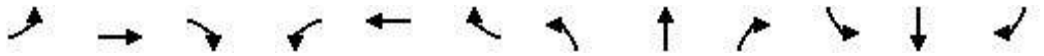
Network wide Queuing Penalty: 0

# APPENDIX E

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 78 | 0 | 0 | 191 | 0 |
| Future Volume (vph) | 0 | 78 | 0 | 0 | 382 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 1.00 | | | 0.97 | |
| Frt | | 0.85 | | | 1.00 | |
| Flt Protected | | 1.00 | | | 0.95 | |
| Satd. Flow (prot) | | 1583 | | | 3433 | |
| Flt Permitted | | 1.00 | | | 0.95 | |
| Satd. Flow (perm) | | 1583 | | | 3433 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 82 | 0 | 0 | 402 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 82 | 0 | 0 | 402 | 0 |
| Turn Type | | pm+ov | Prot | | Prot | |
| Protected Phases | 4 | 2 | 3 | 8 | 2 | |
| Permitted Phases | | 4 | | | | |
| Actuated Green, G (s) | | 54.5 | | | 54.5 | |
| Effective Green, g (s) | | 54.5 | | | 54.5 | |
| Actuated g/C Ratio | | 1.00 | | | 1.00 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 1583 | | | 3433 | |
| v/s Ratio Prot | | 0.05 | | | c0.12 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | 0.05 | | | 0.12 | |
| Uniform Delay, d1 | | 0.0 | | | 0.0 | |
| Progression Factor | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.0 | | | 0.1 | |
| Delay (s) | | 0.0 | | | 0.1 | |
| Level of Service | | A | | | A | |
| Approach Delay (s) | 0.0 | | | 0.0 | 0.1 | |
| Approach LOS | A | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 0.1 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.16 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 9.2% | ICU Level of Service | A |
| 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 | 0 | 0 | 0 | 0 | 191 | 0 | 0 | 0 | 0 | 78 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 0 | 382 | 0 | 0 | 0 | 0 | 78 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 4.5 | 4.5 | | | | | 4.5 | |
| Lane Util. Factor | | | | | 0.95 | 0.95 | | | | | 0.95 | |
| Frt | | | | | 0.85 | 0.85 | | | | | 1.00 | |
| Flt Protected | | | | | 1.00 | 1.00 | | | | | 1.00 | |
| Satd. Flow (prot) | | | | | 1504 | 1504 | | | | | 3539 | |
| Flt Permitted | | | | | 1.00 | 1.00 | | | | | 1.00 | |
| Satd. Flow (perm) | | | | | 1504 | 1504 | | | | | 3539 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 0 | 402 | 0 | 0 | 0 | 0 | 82 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 174 | 174 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 27 | 27 | 0 | 0 | 0 | 0 | 82 | 0 |
| Turn Type | | | | | NA | Perm | | | | | NA | |
| Protected Phases | | | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | 8 | 2 | | | | | |
| Actuated Green, G (s) | | | | | 6.1 | 6.1 | | | | | 29.9 | |
| Effective Green, g (s) | | | | | 6.1 | 6.1 | | | | | 29.9 | |
| Actuated g/C Ratio | | | | | 0.14 | 0.14 | | | | | 0.66 | |
| Clearance Time (s) | | | | | 4.5 | 4.5 | | | | | 4.5 | |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | | | | 3.0 | |
| Lane Grp Cap (vph) | | | | | 203 | 203 | | | | | 2351 | |
| v/s Ratio Prot | | | | | c0.02 | | | | | | c0.02 | |
| v/s Ratio Perm | | | | | | 0.02 | | | | | | |
| v/c Ratio | | | | | 0.13 | 0.13 | | | | | 0.03 | |
| Uniform Delay, d1 | | | | | 17.1 | 17.1 | | | | | 2.6 | |
| Progression Factor | | | | | 1.00 | 1.00 | | | | | 1.00 | |
| Incremental Delay, d2 | | | | | 0.3 | 0.3 | | | | | 0.0 | |
| Delay (s) | | | | | 17.4 | 17.4 | | | | | 2.6 | |
| Level of Service | | | | | B | B | | | | | A | |
| Approach Delay (s) | | 0.0 | | | 17.4 | | | 0.0 | | | 2.6 | |
| Approach LOS | | A | | | B | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 14.9 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.05 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 19.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 78 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 78 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 4.5 | |
| Lane Util. Factor | | | | | 0.97 | |
| Frt | | | | | 1.00 | |
| Flt Protected | | | | | 0.95 | |
| Satd. Flow (prot) | | | | | 3433 | |
| Flt Permitted | | | | | 0.95 | |
| Satd. Flow (perm) | | | | | 3433 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 82 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 82 | 0 |
| Turn Type | Perm | | | | Prot | |
| Protected Phases | | 4 | | | 6 | |
| Permitted Phases | 4 | | | | | |
| Actuated Green, G (s) | | | | | 45.0 | |
| Effective Green, g (s) | | | | | 45.0 | |
| Actuated g/C Ratio | | | | | 1.00 | |
| Clearance Time (s) | | | | | 4.5 | |
| Vehicle Extension (s) | | | | | 3.0 | |
| Lane Grp Cap (vph) | | | | | 3433 | |
| v/s Ratio Prot | | | | | c0.02 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | | | 0.02 | |
| Uniform Delay, d1 | | | | | 0.0 | |
| Progression Factor | | | | | 1.00 | |
| Incremental Delay, d2 | | | | | 0.0 | |
| Delay (s) | | | | | 0.0 | |
| Level of Service | | | | | A | |
| Approach Delay (s) | | 0.0 | 0.0 | | 0.0 | |
| Approach LOS | | A | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 0.0 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.03 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 19.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 107 | 0 | 0 | 298 | 0 |
| Future Volume (vph) | 0 | 107 | 0 | 0 | 596 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 1.00 | | | 0.97 | |
| Frt | | 0.85 | | | 1.00 | |
| Flt Protected | | 1.00 | | | 0.95 | |
| Satd. Flow (prot) | | 1583 | | | 3433 | |
| Flt Permitted | | 1.00 | | | 0.95 | |
| Satd. Flow (perm) | | 1583 | | | 3433 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 113 | 0 | 0 | 627 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 113 | 0 | 0 | 627 | 0 |
| Turn Type | | pm+ov | Prot | | Prot | |
| Protected Phases | 4 | 2 | 3 | 8 | 2 | |
| Permitted Phases | | 4 | | | | |
| Actuated Green, G (s) | | 54.5 | | | 54.5 | |
| Effective Green, g (s) | | 54.5 | | | 54.5 | |
| Actuated g/C Ratio | | 1.00 | | | 1.00 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 1583 | | | 3433 | |
| v/s Ratio Prot | | 0.07 | | | c0.18 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | 0.07 | | | 0.18 | |
| Uniform Delay, d1 | | 0.0 | | | 0.0 | |
| Progression Factor | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.0 | | | 0.1 | |
| Delay (s) | | 0.0 | | | 0.1 | |
| Level of Service | | A | | | A | |
| Approach Delay (s) | 0.0 | | | 0.0 | 0.1 | |
| Approach LOS | A | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 0.1 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.24 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 12.3% | ICU Level of Service | A |
| 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 | 0 | 0 | 0 | 0 | 298 | 0 | 0 | 0 | 0 | 107 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 0 | 596 | 0 | 0 | 0 | 0 | 107 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 4.5 | 4.5 | | | | | 4.5 | |
| Lane Util. Factor | | | | | 0.95 | 0.95 | | | | | 0.95 | |
| Frt | | | | | 0.85 | 0.85 | | | | | 1.00 | |
| Flt Protected | | | | | 1.00 | 1.00 | | | | | 1.00 | |
| Satd. Flow (prot) | | | | | 1504 | 1504 | | | | | 3539 | |
| Flt Permitted | | | | | 1.00 | 1.00 | | | | | 1.00 | |
| Satd. Flow (perm) | | | | | 1504 | 1504 | | | | | 3539 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 0 | 627 | 0 | 0 | 0 | 0 | 113 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 263 | 262 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 51 | 51 | 0 | 0 | 0 | 0 | 113 | 0 |
| Turn Type | | | | | NA | Perm | | | | | NA | |
| Protected Phases | | | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | 8 | 2 | | | | | |
| Actuated Green, G (s) | | | | | 7.3 | 7.3 | | | | | 28.7 | |
| Effective Green, g (s) | | | | | 7.3 | 7.3 | | | | | 28.7 | |
| Actuated g/C Ratio | | | | | 0.16 | 0.16 | | | | | 0.64 | |
| Clearance Time (s) | | | | | 4.5 | 4.5 | | | | | 4.5 | |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | | | | 3.0 | |
| Lane Grp Cap (vph) | | | | | 243 | 243 | | | | | 2257 | |
| v/s Ratio Prot | | | | | c0.03 | | | | | | c0.03 | |
| v/s Ratio Perm | | | | | | 0.03 | | | | | | |
| v/c Ratio | | | | | 0.21 | 0.21 | | | | | 0.05 | |
| Uniform Delay, d1 | | | | | 16.3 | 16.3 | | | | | 3.0 | |
| Progression Factor | | | | | 1.00 | 1.00 | | | | | 1.00 | |
| Incremental Delay, d2 | | | | | 0.4 | 0.4 | | | | | 0.0 | |
| Delay (s) | | | | | 16.8 | 16.8 | | | | | 3.1 | |
| Level of Service | | | | | B | B | | | | | A | |
| Approach Delay (s) | | 0.0 | | | 16.8 | | | 0.0 | | | 3.1 | |
| Approach LOS | | A | | | B | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 14.7 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.08 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 24.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 107 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 107 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 4.5 | |
| Lane Util. Factor | | | | | 0.97 | |
| Frt | | | | | 1.00 | |
| Flt Protected | | | | | 0.95 | |
| Satd. Flow (prot) | | | | | 3433 | |
| Flt Permitted | | | | | 0.95 | |
| Satd. Flow (perm) | | | | | 3433 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 113 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 113 | 0 |
| Turn Type | Perm | | | | Prot | |
| Protected Phases | | 4 | | | 6 | |
| Permitted Phases | 4 | | | | | |
| Actuated Green, G (s) | | | | | 45.0 | |
| Effective Green, g (s) | | | | | 45.0 | |
| Actuated g/C Ratio | | | | | 1.00 | |
| Clearance Time (s) | | | | | 4.5 | |
| Vehicle Extension (s) | | | | | 3.0 | |
| Lane Grp Cap (vph) | | | | | 3433 | |
| v/s Ratio Prot | | | | | c0.03 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | | | 0.03 | |
| Uniform Delay, d1 | | | | | 0.0 | |
| Progression Factor | | | | | 1.00 | |
| Incremental Delay, d2 | | | | | 0.0 | |
| Delay (s) | | | | | 0.0 | |
| Level of Service | | | | | A | |
| Approach Delay (s) | | 0.0 | 0.0 | | 0.0 | |
| Approach LOS | | A | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 0.0 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.04 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 24.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 603 | 0 | 0 | 1297 | 0 |
| Future Volume (vph) | 0 | 603 | 0 | 0 | 1297 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 0.88 | | | 0.97 | |
| Frt | | 0.85 | | | 1.00 | |
| Flt Protected | | 1.00 | | | 0.95 | |
| Satd. Flow (prot) | | 2238 | | | 2466 | |
| Flt Permitted | | 1.00 | | | 0.95 | |
| Satd. Flow (perm) | | 2238 | | | 2466 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 635 | 0 | 0 | 1365 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 635 | 0 | 0 | 1365 | 0 |
| Heavy Vehicles (%) | 2% | 27% | 2% | 2% | 42% | 2% |
| Turn Type | | pm+ov | Prot | | Prot | |
| Protected Phases | 4 | 2 | 3 | 8 | 2 | |
| Permitted Phases | | 4 | | | | |
| Actuated Green, G (s) | | 54.5 | | | 54.5 | |
| Effective Green, g (s) | | 54.5 | | | 54.5 | |
| Actuated g/C Ratio | | 1.00 | | | 1.00 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 2238 | | | 2466 | |
| v/s Ratio Prot | | 0.28 | | | c0.55 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | 0.28 | | | 0.55 | |
| Uniform Delay, d1 | | 0.0 | | | 0.0 | |
| Progression Factor | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | | 0.9 | |
| Delay (s) | | 0.1 | | | 0.9 | |
| Level of Service | | A | | | A | |
| Approach Delay (s) | 0.1 | | | 0.0 | 0.9 | |
| Approach LOS | A | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 0.6 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.74 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 40.8% | ICU Level of Service | A |
| 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 | 0 | 0 | 26 | 26 | 1022 | 13 | 275 | 0 | 0 | 521 | 82 |
| Future Volume (vph) | 0 | 0 | 0 | 26 | 26 | 1022 | 13 | 275 | 0 | 0 | 521 | 82 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Lane Util. Factor | | | | | 0.95 | 0.95 | 1.00 | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | | 0.86 | 0.85 | 1.00 | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | | 1249 | 1208 | 1770 | 1805 | | | 3112 | 808 |
| Flt Permitted | | | | | 1.00 | 1.00 | 0.45 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | | 1249 | 1208 | 832 | 1805 | | | 3112 | 808 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 0 | 0 | 27 | 27 | 1076 | 14 | 289 | 0 | 0 | 548 | 86 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 290 | 290 | 0 | 0 | 0 | 0 | 0 | 45 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 280 | 270 | 14 | 289 | 0 | 0 | 548 | 41 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 27% | 2% | 100% | 2% | 2% | 16% | 100% |
| Turn Type | | | | Perm | NA | Perm | Perm | NA | | | NA | Perm |
| Protected Phases | | | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | 8 | 2 | | | | | 6 |
| Actuated Green, G (s) | | | | | 14.7 | 14.7 | 21.3 | 21.3 | | | 21.3 | 21.3 |
| Effective Green, g (s) | | | | | 14.7 | 14.7 | 21.3 | 21.3 | | | 21.3 | 21.3 |
| Actuated g/C Ratio | | | | | 0.33 | 0.33 | 0.47 | 0.47 | | | 0.47 | 0.47 |
| Clearance Time (s) | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | | 408 | 394 | 393 | 854 | | | 1473 | 382 |
| v/s Ratio Prot | | | | | | | | 0.16 | | | c0.18 | |
| v/s Ratio Perm | | | | | 0.22 | 0.22 | 0.02 | | | | | 0.05 |
| v/c Ratio | | | | | 0.69 | 0.69 | 0.04 | 0.34 | | | 0.37 | 0.11 |
| Uniform Delay, d1 | | | | | 13.2 | 13.1 | 6.3 | 7.4 | | | 7.6 | 6.6 |
| Progression Factor | | | | | 1.00 | 1.00 | 0.13 | 0.28 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | | 4.8 | 4.9 | 0.2 | 1.0 | | | 0.7 | 0.6 |
| Delay (s) | | | | | 17.9 | 18.1 | 1.0 | 3.1 | | | 8.3 | 7.1 |
| Level of Service | | | | | B | B | A | A | | | A | A |
| Approach Delay (s) | | 0.0 | | | 18.0 | | | 3.0 | | | 8.1 | |
| Approach LOS | | A | | | B | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 12.8 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.50 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 64.1% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 275 | 13 | 0 | 0 | 521 | 0 |
| Future Volume (vph) | 275 | 13 | 0 | 0 | 521 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | 0.95 | 0.95 | | | 0.97 | |
| Frt | 1.00 | 1.00 | | | 1.00 | |
| Flt Protected | 0.95 | 0.96 | | | 0.95 | |
| Satd. Flow (prot) | 857 | 904 | | | 3019 | |
| Flt Permitted | 0.95 | 0.96 | | | 0.95 | |
| Satd. Flow (perm) | 857 | 904 | | | 3019 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 289 | 14 | 0 | 0 | 548 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 150 | 153 | 0 | 0 | 548 | 0 |
| Heavy Vehicles (%) | 100% | 2% | 2% | 2% | 16% | 2% |
| Turn Type | Perm | NA | | | Prot | |
| Protected Phases | | 4 | | | 6 | |
| Permitted Phases | 4 | | | | | |
| Actuated Green, G (s) | 11.4 | 11.4 | | | 24.6 | |
| Effective Green, g (s) | 11.4 | 11.4 | | | 24.6 | |
| Actuated g/C Ratio | 0.25 | 0.25 | | | 0.55 | |
| Clearance Time (s) | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 217 | 229 | | | 1650 | |
| v/s Ratio Prot | | | | | c0.18 | |
| v/s Ratio Perm | c0.17 | 0.17 | | | | |
| v/c Ratio | 0.69 | 0.67 | | | 0.33 | |
| Uniform Delay, d1 | 15.2 | 15.1 | | | 5.6 | |
| Progression Factor | 1.00 | 1.00 | | | 2.34 | |
| Incremental Delay, d2 | 9.1 | 7.2 | | | 0.5 | |
| Delay (s) | 24.3 | 22.3 | | | 13.7 | |
| Level of Service | C | C | | | B | |
| Approach Delay (s) | | 23.3 | 0.0 | | 13.7 | |
| Approach LOS | | C | A | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 17.1 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.45 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 95.1% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 1187 | 0 | 0 | 1283 | 0 |
| Future Volume (vph) | 0 | 1187 | 0 | 0 | 1283 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 0.88 | | | 0.97 | |
| Frt | | 0.85 | | | 1.00 | |
| Flt Protected | | 1.00 | | | 0.95 | |
| Satd. Flow (prot) | | 1947 | | | 2993 | |
| Flt Permitted | | 1.00 | | | 0.95 | |
| Satd. Flow (perm) | | 1947 | | | 2993 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 1249 | 0 | 0 | 1351 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1249 | 0 | 0 | 1351 | 0 |
| Heavy Vehicles (%) | 2% | 46% | 2% | 2% | 17% | 2% |
| Turn Type | | pm+ov | Prot | | Prot | |
| Protected Phases | 4 | 2 | 3 | 8 | 2 | |
| Permitted Phases | | 4 | | | | |
| Actuated Green, G (s) | | 54.5 | | | 54.5 | |
| Effective Green, g (s) | | 54.5 | | | 54.5 | |
| Actuated g/C Ratio | | 1.00 | | | 1.00 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 1947 | | | 2993 | |
| v/s Ratio Prot | | c0.64 | | | 0.45 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | 0.64 | | | 0.45 | |
| Uniform Delay, d1 | | 0.0 | | | 0.0 | |
| Progression Factor | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.7 | | | 0.5 | |
| Delay (s) | | 0.7 | | | 0.5 | |
| Level of Service | | A | | | A | |
| Approach Delay (s) | 0.7 | | | 0.0 | 0.5 | |
| Approach LOS | A | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 0.6 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.85 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 45.3% | ICU Level of Service | A |
| 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 | 0 | 0 | 29 | 29 | 1177 | 6 | 106 | 0 | 0 | 915 | 272 |
| Future Volume (vph) | 0 | 0 | 0 | 29 | 29 | 1177 | 6 | 106 | 0 | 0 | 915 | 272 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Lane Util. Factor | | | | | 0.95 | 0.95 | 1.00 | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | | 0.86 | 0.85 | 1.00 | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | | 1424 | 1395 | 1770 | 1805 | | | 2777 | 808 |
| Flt Permitted | | | | | 1.00 | 1.00 | 0.25 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | | 1424 | 1395 | 466 | 1805 | | | 2777 | 808 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 0 | 0 | 31 | 31 | 1239 | 6 | 112 | 0 | 0 | 963 | 286 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 433 | 468 | 0 | 0 | 0 | 0 | 0 | 125 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 224 | 176 | 6 | 112 | 0 | 0 | 963 | 161 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 10% | 2% | 100% | 2% | 2% | 30% | 100% |
| Turn Type | | | | Perm | NA | Perm | Perm | NA | | | NA | Perm |
| Protected Phases | | | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | 8 | 2 | | | | | 6 |
| Actuated Green, G (s) | | | | | 15.0 | 15.0 | 31.0 | 31.0 | | | 31.0 | 31.0 |
| Effective Green, g (s) | | | | | 15.0 | 15.0 | 31.0 | 31.0 | | | 31.0 | 31.0 |
| Actuated g/C Ratio | | | | | 0.27 | 0.27 | 0.56 | 0.56 | | | 0.56 | 0.56 |
| Clearance Time (s) | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | | 388 | 380 | 262 | 1017 | | | 1565 | 455 |
| v/s Ratio Prot | | | | | | | | 0.06 | | | c0.35 | |
| v/s Ratio Perm | | | | | 0.16 | 0.13 | 0.01 | | | | | 0.20 |
| v/c Ratio | | | | | 0.58 | 0.46 | 0.02 | 0.11 | | | 0.62 | 0.35 |
| Uniform Delay, d1 | | | | | 17.3 | 16.6 | 5.3 | 5.6 | | | 8.0 | 6.5 |
| Progression Factor | | | | | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | | 2.1 | 0.9 | 0.2 | 0.2 | | | 1.8 | 2.2 |
| Delay (s) | | | | | 19.4 | 17.5 | 5.5 | 5.8 | | | 9.8 | 8.7 |
| Level of Service | | | | | B | B | A | A | | | A | A |
| Approach Delay (s) | | 0.0 | | | 18.5 | | | 5.8 | | | 9.6 | |
| Approach LOS | | A | | | B | | | A | | | A | |

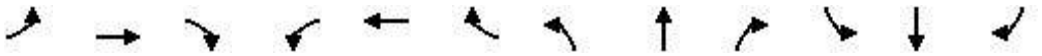
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 13.7 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.60 | | |
| Actuated Cycle Length (s) | 55.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 81.4% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 106 | 6 | 0 | 0 | 915 | 0 |
| Future Volume (vph) | 106 | 6 | 0 | 0 | 915 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | 0.95 | 0.95 | | | 0.97 | |
| Frt | 1.00 | 1.00 | | | 1.00 | |
| Flt Protected | 0.95 | 0.96 | | | 0.95 | |
| Satd. Flow (prot) | 857 | 909 | | | 2694 | |
| Flt Permitted | 0.95 | 0.96 | | | 0.95 | |
| Satd. Flow (perm) | 857 | 909 | | | 2694 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 112 | 6 | 0 | 0 | 963 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 59 | 59 | 0 | 0 | 963 | 0 |
| Heavy Vehicles (%) | 100% | 2% | 2% | 2% | 30% | 2% |
| Turn Type | Perm | NA | | | Prot | |
| Protected Phases | | 4 | | | 6 | |
| Permitted Phases | 4 | | | | | |
| Actuated Green, G (s) | 6.3 | 6.3 | | | 29.7 | |
| Effective Green, g (s) | 6.3 | 6.3 | | | 29.7 | |
| Actuated g/C Ratio | 0.14 | 0.14 | | | 0.66 | |
| Clearance Time (s) | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 119 | 127 | | | 1778 | |
| v/s Ratio Prot | | | | | c0.36 | |
| v/s Ratio Perm | c0.07 | 0.06 | | | | |
| v/c Ratio | 0.50 | 0.46 | | | 0.54 | |
| Uniform Delay, d1 | 17.9 | 17.8 | | | 4.0 | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 3.2 | 2.7 | | | 1.2 | |
| Delay (s) | 21.1 | 20.5 | | | 5.2 | |
| Level of Service | C | C | | | A | |
| Approach Delay (s) | | 20.8 | 0.0 | | 5.2 | |
| Approach LOS | | C | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 6.9 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.53 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 112.4% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 1025 | 0 | 0 | 1880 | 0 |
| Future Volume (vph) | 0 | 1025 | 0 | 0 | 1880 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 0.88 | | | 0.97 | |
| Frt | | 0.85 | | | 1.00 | |
| Flt Protected | | 1.00 | | | 0.95 | |
| Satd. Flow (prot) | | 2450 | | | 2694 | |
| Flt Permitted | | 1.00 | | | 0.95 | |
| Satd. Flow (perm) | | 2450 | | | 2694 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 1079 | 0 | 0 | 1979 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1079 | 0 | 0 | 1979 | 0 |
| Heavy Vehicles (%) | 2% | 16% | 2% | 2% | 30% | 2% |
| Turn Type | | pm+ov | Prot | | Prot | |
| Protected Phases | 4 | 2 | 3 | 8 | 2 | |
| Permitted Phases | | 4 | | | | |
| Actuated Green, G (s) | | 54.5 | | | 54.5 | |
| Effective Green, g (s) | | 54.5 | | | 54.5 | |
| Actuated g/C Ratio | | 1.00 | | | 1.00 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 2450 | | | 2694 | |
| v/s Ratio Prot | | 0.44 | | | c0.73 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | 0.44 | | | 0.73 | |
| Uniform Delay, d1 | | 0.0 | | | 0.0 | |
| Progression Factor | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | | 1.8 | |
| Delay (s) | | 0.1 | | | 1.8 | |
| Level of Service | | A | | | A | |
| Approach Delay (s) | 0.1 | | | 0.0 | 1.8 | |
| Approach LOS | A | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 1.2 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.98 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 57.4% | ICU Level of Service | B |
| 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 | 0 | 0 | 35 | 35 | 1413 | 23 | 468 | 0 | 0 | 886 | 139 |
| Future Volume (vph) | 0 | 0 | 0 | 35 | 35 | 1413 | 23 | 468 | 0 | 0 | 886 | 139 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | | | | | 0.95 | 0.95 | 1.00 | 0.95 | | | 0.95 | |
| Frt | | | | | 0.86 | 0.85 | 1.00 | 1.00 | | | 0.98 | |
| Flt Protected | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | | | | 1325 | 1289 | 1770 | 2270 | | | 3032 | |
| Flt Permitted | | | | | 1.00 | 1.00 | 0.22 | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | | | | | 1325 | 1289 | 414 | 2270 | | | 3032 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 0 | 0 | 37 | 37 | 1487 | 24 | 493 | 0 | 0 | 933 | 146 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 131 | 131 | 0 | 0 | 0 | 0 | 28 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 657 | 642 | 24 | 493 | 0 | 0 | 1051 | 0 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 19% | 2% | 59% | 2% | 2% | 10% | 59% |
| Turn Type | | | | Perm | NA | Perm | Perm | NA | | | NA | |
| Protected Phases | | | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | 8 | 2 | | | | | |
| Actuated Green, G (s) | | | | | 18.0 | 18.0 | 18.0 | 18.0 | | | 18.0 | |
| Effective Green, g (s) | | | | | 18.0 | 18.0 | 18.0 | 18.0 | | | 18.0 | |
| Actuated g/C Ratio | | | | | 0.40 | 0.40 | 0.40 | 0.40 | | | 0.40 | |
| Clearance Time (s) | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | | | | 530 | 515 | 165 | 908 | | | 1212 | |
| v/s Ratio Prot | | | | | | | | 0.22 | | | c0.35 | |
| v/s Ratio Perm | | | | | 0.50 | c0.50 | 0.06 | | | | | |
| v/c Ratio | | | | | 1.24 | 1.25 | 0.15 | 0.54 | | | 0.87 | |
| Uniform Delay, d1 | | | | | 13.5 | 13.5 | 8.6 | 10.3 | | | 12.4 | |
| Progression Factor | | | | | 1.00 | 1.00 | 0.13 | 0.31 | | | 1.00 | |
| Incremental Delay, d2 | | | | | 123.4 | 126.6 | 1.5 | 1.9 | | | 8.5 | |
| Delay (s) | | | | | 136.9 | 140.1 | 2.7 | 5.2 | | | 20.9 | |
| Level of Service | | | | | F | F | A | A | | | C | |
| Approach Delay (s) | | 0.0 | | | 138.5 | | | 5.1 | | | 20.9 | |
| Approach LOS | | A | | | F | | | A | | | C | |

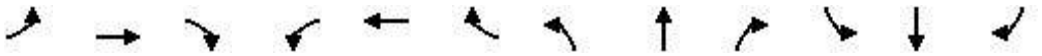
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 76.5 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 1.06 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 94.8% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 468 | 23 | 0 | 0 | 886 | 0 |
| Future Volume (vph) | 468 | 23 | 0 | 0 | 886 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | 0.95 | 0.95 | | | 0.97 | |
| Frt | 1.00 | 1.00 | | | 1.00 | |
| Flt Protected | 0.95 | 0.96 | | | 0.95 | |
| Satd. Flow (prot) | 1078 | 1123 | | | 3183 | |
| Flt Permitted | 0.95 | 0.96 | | | 0.95 | |
| Satd. Flow (perm) | 1078 | 1123 | | | 3183 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 493 | 24 | 0 | 0 | 933 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 256 | 261 | 0 | 0 | 933 | 0 |
| Heavy Vehicles (%) | 59% | 2% | 2% | 2% | 10% | 2% |
| Turn Type | Perm | NA | | | Prot | |
| Protected Phases | | 4 | | | 6 | |
| Permitted Phases | 4 | | | | | |
| Actuated Green, G (s) | 14.7 | 14.7 | | | 21.3 | |
| Effective Green, g (s) | 14.7 | 14.7 | | | 21.3 | |
| Actuated g/C Ratio | 0.33 | 0.33 | | | 0.47 | |
| Clearance Time (s) | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 352 | 366 | | | 1506 | |
| v/s Ratio Prot | | | | | c0.29 | |
| v/s Ratio Perm | c0.24 | 0.23 | | | | |
| v/c Ratio | 0.73 | 0.71 | | | 0.62 | |
| Uniform Delay, d1 | 13.4 | 13.3 | | | 8.8 | |
| Progression Factor | 1.00 | 1.00 | | | 2.12 | |
| Incremental Delay, d2 | 7.3 | 6.5 | | | 0.9 | |
| Delay (s) | 20.7 | 19.7 | | | 19.6 | |
| Level of Service | C | B | | | B | |
| Approach Delay (s) | | 20.2 | 0.0 | | 19.6 | |
| Approach LOS | | C | A | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 19.8 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.66 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 125.8% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 2018 | 0 | 0 | 1168 | 0 |
| Future Volume (vph) | 0 | 2018 | 0 | 0 | 1168 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 0.88 | | | 0.97 | |
| Frt | | 0.85 | | | 1.00 | |
| Flt Protected | | 1.00 | | | 0.95 | |
| Satd. Flow (prot) | | 2238 | | | 2968 | |
| Flt Permitted | | 1.00 | | | 0.95 | |
| Satd. Flow (perm) | | 2238 | | | 2968 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 2124 | 0 | 0 | 1229 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 2124 | 0 | 0 | 1229 | 0 |
| Heavy Vehicles (%) | 2% | 27% | 2% | 2% | 18% | 2% |
| Turn Type | | pm+ov | Prot | | Prot | |
| Protected Phases | 4 | 2 | 3 | 8 | 2 | |
| Permitted Phases | | 4 | | | | |
| Actuated Green, G (s) | | 54.5 | | | 54.5 | |
| Effective Green, g (s) | | 54.5 | | | 54.5 | |
| Actuated g/C Ratio | | 1.00 | | | 1.00 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 2238 | | | 2968 | |
| v/s Ratio Prot | | c0.95 | | | 0.41 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | 0.95 | | | 0.41 | |
| Uniform Delay, d1 | | 0.0 | | | 0.0 | |
| Progression Factor | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 9.6 | | | 0.4 | |
| Delay (s) | | 9.6 | | | 0.4 | |
| Level of Service | | A | | | A | |
| Approach Delay (s) | 9.6 | | | 0.0 | 0.4 | |
| Approach LOS | A | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 6.2 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 1.26 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 74.3% | 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 (vph) | 0 | 0 | 0 | 25 | 25 | 988 | 9 | 180 | 0 | 0 | 1556 | 462 |
| Future Volume (vph) | 0 | 0 | 0 | 25 | 25 | 988 | 9 | 180 | 0 | 0 | 1556 | 462 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | | | | | 0.95 | 0.95 | 1.00 | 0.95 | | | 0.95 | |
| Frt | | | | | 0.86 | 0.85 | 1.00 | 1.00 | | | 0.97 | |
| Flt Protected | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | | 1.00 | |
| Satd. Flow (prot) | | | | | 1413 | 1382 | 1770 | 2270 | | | 2753 | |
| Flt Permitted | | | | | 1.00 | 1.00 | 0.12 | 1.00 | | | 1.00 | |
| Satd. Flow (perm) | | | | | 1413 | 1382 | 230 | 2270 | | | 2753 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 0 | 0 | 26 | 26 | 1040 | 9 | 189 | 0 | 0 | 1638 | 486 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 376 | 407 | 0 | 0 | 0 | 0 | 40 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 175 | 134 | 9 | 189 | 0 | 0 | 2084 | 0 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 11% | 2% | 59% | 2% | 2% | 17% | 59% |
| Turn Type | | | | Perm | NA | Perm | Perm | NA | | | NA | |
| Protected Phases | | | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | 8 | 2 | | | | | |
| Actuated Green, G (s) | | | | | 13.6 | 13.6 | 32.4 | 32.4 | | | 32.4 | |
| Effective Green, g (s) | | | | | 13.6 | 13.6 | 32.4 | 32.4 | | | 32.4 | |
| Actuated g/C Ratio | | | | | 0.25 | 0.25 | 0.59 | 0.59 | | | 0.59 | |
| Clearance Time (s) | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | | | | 349 | 341 | 135 | 1337 | | | 1621 | |
| v/s Ratio Prot | | | | | | | | 0.08 | | | c0.76 | |
| v/s Ratio Perm | | | | | 0.12 | 0.10 | 0.04 | | | | | |
| v/c Ratio | | | | | 0.50 | 0.39 | 0.07 | 0.14 | | | 1.29 | |
| Uniform Delay, d1 | | | | | 17.8 | 17.3 | 4.8 | 5.1 | | | 11.3 | |
| Progression Factor | | | | | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | | | | 1.1 | 0.7 | 1.0 | 0.2 | | | 133.4 | |
| Delay (s) | | | | | 18.9 | 18.0 | 5.8 | 5.3 | | | 144.7 | |
| Level of Service | | | | | B | B | A | A | | | F | |
| Approach Delay (s) | | 0.0 | | | 18.5 | | | 5.3 | | | 144.7 | |
| Approach LOS | | A | | | B | | | A | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 96.2 | HCM 2000 Level of Service | F |
| HCM 2000 Volume to Capacity ratio | 1.05 | | |
| Actuated Cycle Length (s) | 55.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 106.1% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

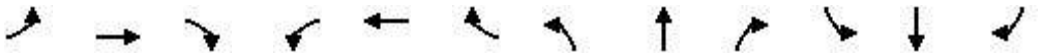
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 180 | 9 | 0 | 0 | 1556 | 0 |
| Future Volume (vph) | 180 | 9 | 0 | 0 | 1556 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | 0.95 | 0.95 | | | 0.97 | |
| Frt | 1.00 | 1.00 | | | 1.00 | |
| Flt Protected | 0.95 | 0.96 | | | 0.95 | |
| Satd. Flow (prot) | 1078 | 1122 | | | 2993 | |
| Flt Permitted | 0.95 | 0.96 | | | 0.95 | |
| Satd. Flow (perm) | 1078 | 1122 | | | 2993 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 189 | 9 | 0 | 0 | 1638 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 98 | 100 | 0 | 0 | 1638 | 0 |
| Heavy Vehicles (%) | 59% | 2% | 2% | 2% | 17% | 2% |
| Turn Type | Perm | NA | | | Prot | |
| Protected Phases | | 4 | | | 6 | |
| Permitted Phases | 4 | | | | | |
| Actuated Green, G (s) | 8.4 | 8.4 | | | 27.6 | |
| Effective Green, g (s) | 8.4 | 8.4 | | | 27.6 | |
| Actuated g/C Ratio | 0.19 | 0.19 | | | 0.61 | |
| Clearance Time (s) | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 201 | 209 | | | 1835 | |
| v/s Ratio Prot | | | | | c0.55 | |
| v/s Ratio Perm | c0.09 | 0.09 | | | | |
| v/c Ratio | 0.49 | 0.48 | | | 0.89 | |
| Uniform Delay, d1 | 16.4 | 16.3 | | | 7.4 | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 1.9 | 1.7 | | | 7.1 | |
| Delay (s) | 18.2 | 18.1 | | | 14.5 | |
| Level of Service | B | B | | | B | |
| Approach Delay (s) | | 18.2 | 0.0 | | 14.5 | |
| Approach LOS | | B | A | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 14.9 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.80 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 137.1% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 78 | 0 | 0 | 191 | 0 |
| Future Volume (vph) | 0 | 156 | 0 | 0 | 382 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 1.00 | | | 0.97 | |
| Frt | | 0.85 | | | 1.00 | |
| Flt Protected | | 1.00 | | | 0.95 | |
| Satd. Flow (prot) | | 1583 | | | 3433 | |
| Flt Permitted | | 1.00 | | | 0.95 | |
| Satd. Flow (perm) | | 1583 | | | 3433 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 164 | 0 | 0 | 402 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 164 | 0 | 0 | 402 | 0 |
| Turn Type | | pm+ov | Prot | | Prot | |
| Protected Phases | 4 | 2 | 3 | 8 | 2 | |
| Permitted Phases | | 4 | | | | |
| Actuated Green, G (s) | | 54.5 | | | 54.5 | |
| Effective Green, g (s) | | 54.5 | | | 54.5 | |
| Actuated g/C Ratio | | 1.00 | | | 1.00 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 1583 | | | 3433 | |
| v/s Ratio Prot | | 0.10 | | | c0.12 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | 0.10 | | | 0.12 | |
| Uniform Delay, d1 | | 0.0 | | | 0.0 | |
| Progression Factor | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.0 | | | 0.1 | |
| Delay (s) | | 0.0 | | | 0.1 | |
| Level of Service | | A | | | A | |
| Approach Delay (s) | 0.0 | | | 0.0 | 0.1 | |
| Approach LOS | A | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 0.1 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.16 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 9.2% | ICU Level of Service | A |
| 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 | 0 | 0 | 0 | 0 | 191 | 0 | 0 | 0 | 0 | 78 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 0 | 382 | 0 | 0 | 0 | 0 | 156 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 4.5 | 4.5 | | | | | 4.5 | |
| Lane Util. Factor | | | | | 0.95 | 0.95 | | | | | 0.95 | |
| Frt | | | | | 0.85 | 0.85 | | | | | 1.00 | |
| Flt Protected | | | | | 1.00 | 1.00 | | | | | 1.00 | |
| Satd. Flow (prot) | | | | | 1504 | 1504 | | | | | 3539 | |
| Flt Permitted | | | | | 1.00 | 1.00 | | | | | 1.00 | |
| Satd. Flow (perm) | | | | | 1504 | 1504 | | | | | 3539 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 0 | 402 | 0 | 0 | 0 | 0 | 164 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 174 | 174 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 27 | 27 | 0 | 0 | 0 | 0 | 164 | 0 |
| Turn Type | | | | | NA | Perm | | | | | NA | |
| Protected Phases | | | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | 8 | 2 | | | | | |
| Actuated Green, G (s) | | | | | 6.1 | 6.1 | | | | | 29.9 | |
| Effective Green, g (s) | | | | | 6.1 | 6.1 | | | | | 29.9 | |
| Actuated g/C Ratio | | | | | 0.14 | 0.14 | | | | | 0.66 | |
| Clearance Time (s) | | | | | 4.5 | 4.5 | | | | | 4.5 | |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | | | | 3.0 | |
| Lane Grp Cap (vph) | | | | | 203 | 203 | | | | | 2351 | |
| v/s Ratio Prot | | | | | c0.02 | | | | | | c0.05 | |
| v/s Ratio Perm | | | | | | 0.02 | | | | | | |
| v/c Ratio | | | | | 0.13 | 0.13 | | | | | 0.07 | |
| Uniform Delay, d1 | | | | | 17.1 | 17.1 | | | | | 2.7 | |
| Progression Factor | | | | | 1.00 | 1.00 | | | | | 1.00 | |
| Incremental Delay, d2 | | | | | 0.3 | 0.3 | | | | | 0.1 | |
| Delay (s) | | | | | 17.4 | 17.4 | | | | | 2.7 | |
| Level of Service | | | | | B | B | | | | | A | |
| Approach Delay (s) | | 0.0 | | | 17.4 | | | 0.0 | | | 2.7 | |
| Approach LOS | | A | | | B | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 13.2 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.08 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 19.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 78 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 156 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 4.5 | |
| Lane Util. Factor | | | | | 0.97 | |
| Frt | | | | | 1.00 | |
| Flt Protected | | | | | 0.95 | |
| Satd. Flow (prot) | | | | | 3433 | |
| Flt Permitted | | | | | 0.95 | |
| Satd. Flow (perm) | | | | | 3433 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 164 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 164 | 0 |
| Turn Type | Perm | | | | Prot | |
| Protected Phases | | 4 | | | 6 | |
| Permitted Phases | 4 | | | | | |
| Actuated Green, G (s) | | | | | 45.0 | |
| Effective Green, g (s) | | | | | 45.0 | |
| Actuated g/C Ratio | | | | | 1.00 | |
| Clearance Time (s) | | | | | 4.5 | |
| Vehicle Extension (s) | | | | | 3.0 | |
| Lane Grp Cap (vph) | | | | | 3433 | |
| v/s Ratio Prot | | | | | c0.05 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | | | 0.05 | |
| Uniform Delay, d1 | | | | | 0.0 | |
| Progression Factor | | | | | 1.00 | |
| Incremental Delay, d2 | | | | | 0.0 | |
| Delay (s) | | | | | 0.0 | |
| Level of Service | | | | | A | |
| Approach Delay (s) | | 0.0 | 0.0 | | 0.0 | |
| Approach LOS | | A | A | | A | |

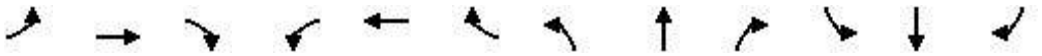
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 0.0 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.06 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 19.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 107 | 0 | 0 | 298 | 0 |
| Future Volume (vph) | 0 | 214 | 0 | 0 | 298 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 1.00 | | | 0.97 | |
| Frt | | 0.85 | | | 1.00 | |
| Flt Protected | | 1.00 | | | 0.95 | |
| Satd. Flow (prot) | | 1583 | | | 3433 | |
| Flt Permitted | | 1.00 | | | 0.95 | |
| Satd. Flow (perm) | | 1583 | | | 3433 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 225 | 0 | 0 | 314 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 225 | 0 | 0 | 314 | 0 |
| Turn Type | | pm+ov | Prot | | Prot | |
| Protected Phases | 4 | 2 | 3 | 8 | 2 | |
| Permitted Phases | | 4 | | | | |
| Actuated Green, G (s) | | 54.5 | | | 54.5 | |
| Effective Green, g (s) | | 54.5 | | | 54.5 | |
| Actuated g/C Ratio | | 1.00 | | | 1.00 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 1583 | | | 3433 | |
| v/s Ratio Prot | | c0.14 | | | 0.09 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | 0.14 | | | 0.09 | |
| Uniform Delay, d1 | | 0.0 | | | 0.0 | |
| Progression Factor | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.0 | | | 0.1 | |
| Delay (s) | | 0.0 | | | 0.1 | |
| Level of Service | | A | | | A | |
| Approach Delay (s) | 0.0 | | | 0.0 | 0.1 | |
| Approach LOS | A | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 0.0 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.19 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 12.3% | ICU Level of Service | A |
| 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 | 0 | 0 | 0 | 0 | 298 | 0 | 0 | 0 | 0 | 107 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 0 | 298 | 0 | 0 | 0 | 0 | 214 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 4.5 | 4.5 | | | | | 4.5 | |
| Lane Util. Factor | | | | | 0.95 | 0.95 | | | | | 0.95 | |
| Frt | | | | | 0.85 | 0.85 | | | | | 1.00 | |
| Flt Protected | | | | | 1.00 | 1.00 | | | | | 1.00 | |
| Satd. Flow (prot) | | | | | 1504 | 1504 | | | | | 3539 | |
| Flt Permitted | | | | | 1.00 | 1.00 | | | | | 1.00 | |
| Satd. Flow (perm) | | | | | 1504 | 1504 | | | | | 3539 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 0 | 314 | 0 | 0 | 0 | 0 | 225 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 141 | 141 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 16 | 16 | 0 | 0 | 0 | 0 | 225 | 0 |
| Turn Type | | | | | NA | Perm | | | | | NA | |
| Protected Phases | | | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | 8 | 2 | | | | | |
| Actuated Green, G (s) | | | | | 4.6 | 4.6 | | | | | 31.4 | |
| Effective Green, g (s) | | | | | 4.6 | 4.6 | | | | | 31.4 | |
| Actuated g/C Ratio | | | | | 0.10 | 0.10 | | | | | 0.70 | |
| Clearance Time (s) | | | | | 4.5 | 4.5 | | | | | 4.5 | |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | | | | | 3.0 | |
| Lane Grp Cap (vph) | | | | | 153 | 153 | | | | | 2469 | |
| v/s Ratio Prot | | | | | c0.01 | | | | | | c0.06 | |
| v/s Ratio Perm | | | | | | 0.01 | | | | | | |
| v/c Ratio | | | | | 0.10 | 0.10 | | | | | 0.09 | |
| Uniform Delay, d1 | | | | | 18.3 | 18.3 | | | | | 2.2 | |
| Progression Factor | | | | | 1.00 | 1.00 | | | | | 1.00 | |
| Incremental Delay, d2 | | | | | 0.3 | 0.3 | | | | | 0.1 | |
| Delay (s) | | | | | 18.6 | 18.6 | | | | | 2.3 | |
| Level of Service | | | | | B | B | | | | | A | |
| Approach Delay (s) | | 0.0 | | | 18.6 | | | 0.0 | | | 2.3 | |
| Approach LOS | | A | | | B | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 11.8 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.09 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 24.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

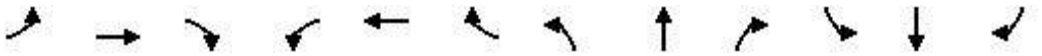
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 107 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 214 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 4.5 | |
| Lane Util. Factor | | | | | 0.97 | |
| Frt | | | | | 1.00 | |
| Flt Protected | | | | | 0.95 | |
| Satd. Flow (prot) | | | | | 3433 | |
| Flt Permitted | | | | | 0.95 | |
| Satd. Flow (perm) | | | | | 3433 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 225 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 225 | 0 |
| Turn Type | Perm | | | | Prot | |
| Protected Phases | | 4 | | | 6 | |
| Permitted Phases | 4 | | | | | |
| Actuated Green, G (s) | | | | | 45.0 | |
| Effective Green, g (s) | | | | | 45.0 | |
| Actuated g/C Ratio | | | | | 1.00 | |
| Clearance Time (s) | | | | | 4.5 | |
| Vehicle Extension (s) | | | | | 3.0 | |
| Lane Grp Cap (vph) | | | | | 3433 | |
| v/s Ratio Prot | | | | | c0.07 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | | | | 0.07 | |
| Uniform Delay, d1 | | | | | 0.0 | |
| Progression Factor | | | | | 1.00 | |
| Incremental Delay, d2 | | | | | 0.0 | |
| Delay (s) | | | | | 0.0 | |
| Level of Service | | | | | A | |
| Approach Delay (s) | | 0.0 | 0.0 | | 0.0 | |
| Approach LOS | | A | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 0.0 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.08 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 24.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 603 | 0 | 0 | 1106 | 0 |
| Future Volume (vph) | 0 | 603 | 0 | 0 | 1106 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 0.88 | | | 0.97 | |
| Frt | | 0.85 | | | 1.00 | |
| Flt Protected | | 1.00 | | | 0.95 | |
| Satd. Flow (prot) | | 2238 | | | 2334 | |
| Flt Permitted | | 1.00 | | | 0.95 | |
| Satd. Flow (perm) | | 2238 | | | 2334 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 635 | 0 | 0 | 1164 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 635 | 0 | 0 | 1164 | 0 |
| Heavy Vehicles (%) | 2% | 27% | 2% | 2% | 50% | 2% |
| Turn Type | | pm+ov | Prot | | Prot | |
| Protected Phases | 4 | 2 | 3 | 8 | 2 | |
| Permitted Phases | | 4 | | | | |
| Actuated Green, G (s) | | 54.5 | | | 54.5 | |
| Effective Green, g (s) | | 54.5 | | | 54.5 | |
| Actuated g/C Ratio | | 1.00 | | | 1.00 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 2238 | | | 2334 | |
| v/s Ratio Prot | | 0.28 | | | c0.50 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | 0.28 | | | 0.50 | |
| Uniform Delay, d1 | | 0.0 | | | 0.0 | |
| Progression Factor | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | | 0.8 | |
| Delay (s) | | 0.1 | | | 0.8 | |
| Level of Service | | A | | | A | |
| Approach Delay (s) | 0.1 | | | 0.0 | 0.8 | |
| Approach LOS | A | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 0.5 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.66 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 35.3% | ICU Level of Service | A |
| 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 | 0 | 0 | 21 | 21 | 831 | 13 | 275 | 0 | 0 | 521 | 82 |
| Future Volume (vph) | 0 | 0 | 0 | 21 | 21 | 831 | 13 | 275 | 0 | 0 | 521 | 82 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Lane Util. Factor | | | | | 0.95 | 0.95 | 1.00 | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | | 0.86 | 0.85 | 1.00 | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | | 1197 | 1154 | 1770 | 1805 | | | 3112 | 808 |
| Flt Permitted | | | | | 1.00 | 1.00 | 0.45 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | | 1197 | 1154 | 833 | 1805 | | | 3112 | 808 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 0 | 0 | 22 | 22 | 875 | 14 | 289 | 0 | 0 | 548 | 86 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 307 | 314 | 0 | 0 | 0 | 0 | 0 | 40 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 157 | 141 | 14 | 289 | 0 | 0 | 548 | 46 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 33% | 2% | 100% | 2% | 2% | 16% | 100% |
| Turn Type | | | | Perm | NA | Perm | Perm | NA | | | NA | Perm |
| Protected Phases | | | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | 8 | 2 | | | | | 6 |
| Actuated Green, G (s) | | | | | 12.1 | 12.1 | 23.9 | 23.9 | | | 23.9 | 23.9 |
| Effective Green, g (s) | | | | | 12.1 | 12.1 | 23.9 | 23.9 | | | 23.9 | 23.9 |
| Actuated g/C Ratio | | | | | 0.27 | 0.27 | 0.53 | 0.53 | | | 0.53 | 0.53 |
| Clearance Time (s) | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | | 321 | 310 | 442 | 958 | | | 1652 | 429 |
| v/s Ratio Prot | | | | | | | | 0.16 | | | c0.18 | |
| v/s Ratio Perm | | | | | 0.13 | 0.12 | 0.02 | | | | | 0.06 |
| v/c Ratio | | | | | 0.49 | 0.45 | 0.03 | 0.30 | | | 0.33 | 0.11 |
| Uniform Delay, d1 | | | | | 13.8 | 13.7 | 5.0 | 5.9 | | | 6.0 | 5.2 |
| Progression Factor | | | | | 1.00 | 1.00 | 0.98 | 1.16 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | | 1.2 | 1.1 | 0.1 | 0.8 | | | 0.5 | 0.5 |
| Delay (s) | | | | | 15.0 | 14.8 | 5.0 | 7.6 | | | 6.5 | 5.7 |
| Level of Service | | | | | B | B | A | A | | | A | A |
| Approach Delay (s) | | 0.0 | | | 14.9 | | | 7.5 | | | 6.4 | |
| Approach LOS | | A | | | B | | | A | | | A | |

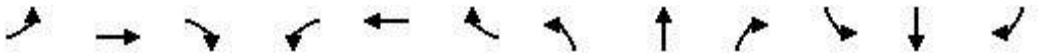
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 10.8 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.38 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 56.2% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 275 | 13 | 0 | 0 | 521 | 0 |
| Future Volume (vph) | 275 | 13 | 0 | 0 | 521 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | 0.95 | 0.95 | | | 0.97 | |
| Frt | 1.00 | 1.00 | | | 1.00 | |
| Flt Protected | 0.95 | 0.96 | | | 0.95 | |
| Satd. Flow (prot) | 857 | 904 | | | 3019 | |
| Flt Permitted | 0.95 | 0.96 | | | 0.95 | |
| Satd. Flow (perm) | 857 | 904 | | | 3019 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 289 | 14 | 0 | 0 | 548 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 150 | 153 | 0 | 0 | 548 | 0 |
| Heavy Vehicles (%) | 100% | 2% | 2% | 2% | 16% | 2% |
| Turn Type | Perm | NA | | | Prot | |
| Protected Phases | | 4 | | | 6 | |
| Permitted Phases | 4 | | | | | |
| Actuated Green, G (s) | 11.4 | 11.4 | | | 24.6 | |
| Effective Green, g (s) | 11.4 | 11.4 | | | 24.6 | |
| Actuated g/C Ratio | 0.25 | 0.25 | | | 0.55 | |
| Clearance Time (s) | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 217 | 229 | | | 1650 | |
| v/s Ratio Prot | | | | | c0.18 | |
| v/s Ratio Perm | c0.17 | 0.17 | | | | |
| v/c Ratio | 0.69 | 0.67 | | | 0.33 | |
| Uniform Delay, d1 | 15.2 | 15.1 | | | 5.6 | |
| Progression Factor | 1.00 | 1.00 | | | 0.49 | |
| Incremental Delay, d2 | 9.1 | 7.2 | | | 0.5 | |
| Delay (s) | 24.3 | 22.3 | | | 3.3 | |
| Level of Service | C | C | | | A | |
| Approach Delay (s) | | 23.3 | 0.0 | | 3.3 | |
| Approach LOS | | C | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 10.4 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.45 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 70.4% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 1187 | 0 | 0 | 687 | 0 |
| Future Volume (vph) | 0 | 1187 | 0 | 0 | 687 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 0.88 | | | 0.97 | |
| Frt | | 0.85 | | | 1.00 | |
| Flt Protected | | 1.00 | | | 0.95 | |
| Satd. Flow (prot) | | 1947 | | | 2673 | |
| Flt Permitted | | 1.00 | | | 0.95 | |
| Satd. Flow (perm) | | 1947 | | | 2673 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 1249 | 0 | 0 | 723 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1249 | 0 | 0 | 723 | 0 |
| Heavy Vehicles (%) | 2% | 46% | 2% | 2% | 31% | 2% |
| Turn Type | | pm+ov | Prot | | Prot | |
| Protected Phases | 4 | 2 | 3 | 8 | 2 | |
| Permitted Phases | | 4 | | | | |
| Actuated Green, G (s) | | 54.5 | | | 54.5 | |
| Effective Green, g (s) | | 54.5 | | | 54.5 | |
| Actuated g/C Ratio | | 1.00 | | | 1.00 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 1947 | | | 2673 | |
| v/s Ratio Prot | | c0.64 | | | 0.27 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | 0.64 | | | 0.27 | |
| Uniform Delay, d1 | | 0.0 | | | 0.0 | |
| Progression Factor | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.7 | | | 0.2 | |
| Delay (s) | | 0.7 | | | 0.2 | |
| Level of Service | | A | | | A | |
| Approach Delay (s) | 0.7 | | | 0.0 | 0.2 | |
| Approach LOS | A | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 0.6 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.85 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 45.3% | ICU Level of Service | A |
| 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 | 0 | 0 | 15 | 15 | 581 | 6 | 106 | 0 | 0 | 915 | 272 |
| Future Volume (vph) | 0 | 0 | 0 | 15 | 15 | 581 | 6 | 106 | 0 | 0 | 915 | 272 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Lane Util. Factor | | | | | 0.95 | 0.95 | 1.00 | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | | 0.86 | 0.85 | 1.00 | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | | 1337 | 1300 | 1770 | 1805 | | | 2777 | 808 |
| Flt Permitted | | | | | 1.00 | 1.00 | 0.26 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | | 1337 | 1300 | 488 | 1805 | | | 2777 | 808 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 0 | 0 | 16 | 16 | 612 | 6 | 112 | 0 | 0 | 963 | 286 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 227 | 245 | 0 | 0 | 0 | 0 | 0 | 123 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 99 | 73 | 6 | 112 | 0 | 0 | 963 | 163 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 18% | 2% | 100% | 2% | 2% | 30% | 100% |
| Turn Type | | | | Perm | NA | Perm | Perm | NA | | | NA | Perm |
| Protected Phases | | | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | 8 | 2 | | | | | 6 |
| Actuated Green, G (s) | | | | | 10.3 | 10.3 | 25.7 | 25.7 | | | 25.7 | 25.7 |
| Effective Green, g (s) | | | | | 10.3 | 10.3 | 25.7 | 25.7 | | | 25.7 | 25.7 |
| Actuated g/C Ratio | | | | | 0.23 | 0.23 | 0.57 | 0.57 | | | 0.57 | 0.57 |
| Clearance Time (s) | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | | 306 | 297 | 278 | 1030 | | | 1585 | 461 |
| v/s Ratio Prot | | | | | | | | 0.06 | | | c0.35 | |
| v/s Ratio Perm | | | | | 0.07 | 0.06 | 0.01 | | | | | 0.20 |
| v/c Ratio | | | | | 0.32 | 0.25 | 0.02 | 0.11 | | | 0.61 | 0.35 |
| Uniform Delay, d1 | | | | | 14.5 | 14.2 | 4.2 | 4.4 | | | 6.3 | 5.2 |
| Progression Factor | | | | | 1.00 | 1.00 | 1.30 | 1.31 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | | 0.6 | 0.4 | 0.1 | 0.2 | | | 1.7 | 2.1 |
| Delay (s) | | | | | 15.1 | 14.6 | 5.6 | 6.0 | | | 8.1 | 7.3 |
| Level of Service | | | | | B | B | A | A | | | A | A |
| Approach Delay (s) | | 0.0 | | | 14.8 | | | 6.0 | | | 7.9 | |
| Approach LOS | | A | | | B | | | A | | | A | |

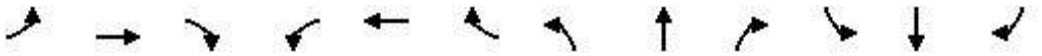
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 10.0 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.53 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 56.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 106 | 6 | 0 | 0 | 915 | 0 |
| Future Volume (vph) | 106 | 6 | 0 | 0 | 915 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | 0.95 | 0.95 | | | 0.97 | |
| Frt | 1.00 | 1.00 | | | 1.00 | |
| Flt Protected | 0.95 | 0.96 | | | 0.95 | |
| Satd. Flow (prot) | 857 | 909 | | | 2694 | |
| Flt Permitted | 0.95 | 0.96 | | | 0.95 | |
| Satd. Flow (perm) | 857 | 909 | | | 2694 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 112 | 6 | 0 | 0 | 963 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 59 | 59 | 0 | 0 | 963 | 0 |
| Heavy Vehicles (%) | 100% | 2% | 2% | 2% | 30% | 2% |
| Turn Type | Perm | NA | | | Prot | |
| Protected Phases | | 4 | | | 6 | |
| Permitted Phases | 4 | | | | | |
| Actuated Green, G (s) | 6.3 | 6.3 | | | 29.7 | |
| Effective Green, g (s) | 6.3 | 6.3 | | | 29.7 | |
| Actuated g/C Ratio | 0.14 | 0.14 | | | 0.66 | |
| Clearance Time (s) | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 119 | 127 | | | 1778 | |
| v/s Ratio Prot | | | | | c0.36 | |
| v/s Ratio Perm | c0.07 | 0.06 | | | | |
| v/c Ratio | 0.50 | 0.46 | | | 0.54 | |
| Uniform Delay, d1 | 17.9 | 17.8 | | | 4.0 | |
| Progression Factor | 1.00 | 1.00 | | | 0.97 | |
| Incremental Delay, d2 | 3.2 | 2.7 | | | 1.0 | |
| Delay (s) | 21.1 | 20.5 | | | 4.9 | |
| Level of Service | C | C | | | A | |
| Approach Delay (s) | | 20.8 | 0.0 | | 4.9 | |
| Approach LOS | | C | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 6.6 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.53 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 70.9% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 1025 | 0 | 0 | 1880 | 0 |
| Future Volume (vph) | 0 | 1025 | 0 | 0 | 1880 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 0.88 | | | 0.97 | |
| Frt | | 0.85 | | | 1.00 | |
| Flt Protected | | 1.00 | | | 0.95 | |
| Satd. Flow (prot) | | 2450 | | | 2694 | |
| Flt Permitted | | 1.00 | | | 0.95 | |
| Satd. Flow (perm) | | 2450 | | | 2694 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 1079 | 0 | 0 | 1979 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 1079 | 0 | 0 | 1979 | 0 |
| Heavy Vehicles (%) | 2% | 16% | 2% | 2% | 30% | 2% |
| Turn Type | | pm+ov | Prot | | Prot | |
| Protected Phases | 4 | 2 | 3 | 8 | 2 | |
| Permitted Phases | | 4 | | | | |
| Actuated Green, G (s) | | 54.5 | | | 54.5 | |
| Effective Green, g (s) | | 54.5 | | | 54.5 | |
| Actuated g/C Ratio | | 1.00 | | | 1.00 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 2450 | | | 2694 | |
| v/s Ratio Prot | | 0.44 | | | c0.73 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | 0.44 | | | 0.73 | |
| Uniform Delay, d1 | | 0.0 | | | 0.0 | |
| Progression Factor | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 0.1 | | | 1.8 | |
| Delay (s) | | 0.1 | | | 1.8 | |
| Level of Service | | A | | | A | |
| Approach Delay (s) | 0.1 | | | 0.0 | 1.8 | |
| Approach LOS | A | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 1.2 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.98 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 57.4% | ICU Level of Service | B |
| 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 | 0 | 0 | 35 | 35 | 1413 | 23 | 468 | 0 | 0 | 886 | 139 |
| Future Volume (vph) | 0 | 0 | 0 | 35 | 35 | 1413 | 23 | 468 | 0 | 0 | 886 | 139 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Lane Util. Factor | | | | | 0.95 | 0.95 | 1.00 | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | | 0.86 | 0.85 | 1.00 | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | | 1315 | 1279 | 1770 | 2270 | | | 3282 | 1016 |
| Flt Permitted | | | | | 1.00 | 1.00 | 0.22 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | | 1315 | 1279 | 414 | 2270 | | | 3282 | 1016 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 0 | 0 | 37 | 37 | 1487 | 24 | 493 | 0 | 0 | 933 | 146 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 131 | 131 | 0 | 0 | 0 | 0 | 0 | 88 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 657 | 642 | 24 | 493 | 0 | 0 | 933 | 58 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 20% | 2% | 59% | 2% | 2% | 10% | 59% |
| Turn Type | | | | Perm | NA | Perm | Perm | NA | | | NA | Perm |
| Protected Phases | | | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | 8 | 2 | | | | | 6 |
| Actuated Green, G (s) | | | | | 18.0 | 18.0 | 18.0 | 18.0 | | | 18.0 | 18.0 |
| Effective Green, g (s) | | | | | 18.0 | 18.0 | 18.0 | 18.0 | | | 18.0 | 18.0 |
| Actuated g/C Ratio | | | | | 0.40 | 0.40 | 0.40 | 0.40 | | | 0.40 | 0.40 |
| Clearance Time (s) | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | | 526 | 511 | 165 | 908 | | | 1312 | 406 |
| v/s Ratio Prot | | | | | | | | 0.22 | | | c0.28 | |
| v/s Ratio Perm | | | | | 0.50 | c0.50 | 0.06 | | | | | 0.06 |
| v/c Ratio | | | | | 1.25 | 1.26 | 0.15 | 0.54 | | | 0.71 | 0.14 |
| Uniform Delay, d1 | | | | | 13.5 | 13.5 | 8.6 | 10.3 | | | 11.3 | 8.6 |
| Progression Factor | | | | | 1.00 | 1.00 | 1.29 | 1.45 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | | 127.4 | 130.8 | 1.5 | 1.9 | | | 3.3 | 0.7 |
| Delay (s) | | | | | 140.9 | 144.3 | 12.6 | 16.9 | | | 14.6 | 9.3 |
| Level of Service | | | | | F | F | B | B | | | B | A |
| Approach Delay (s) | | 0.0 | | | 142.5 | | | 16.7 | | | 13.9 | |
| Approach LOS | | A | | | F | | | B | | | B | |

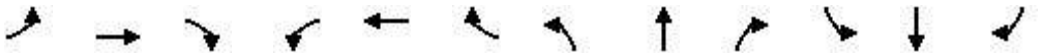
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 78.0 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.98 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 98.1% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 468 | 23 | 0 | 0 | 886 | 0 |
| Future Volume (vph) | 468 | 23 | 0 | 0 | 886 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | 0.95 | 0.95 | | | 0.97 | |
| Frt | 1.00 | 1.00 | | | 1.00 | |
| Flt Protected | 0.95 | 0.96 | | | 0.95 | |
| Satd. Flow (prot) | 1072 | 1116 | | | 3183 | |
| Flt Permitted | 0.95 | 0.96 | | | 0.95 | |
| Satd. Flow (perm) | 1072 | 1116 | | | 3183 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 493 | 24 | 0 | 0 | 933 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 256 | 261 | 0 | 0 | 933 | 0 |
| Heavy Vehicles (%) | 60% | 2% | 2% | 2% | 10% | 2% |
| Turn Type | Perm | NA | | | Prot | |
| Protected Phases | | 4 | | | 6 | |
| Permitted Phases | 4 | | | | | |
| Actuated Green, G (s) | 14.8 | 14.8 | | | 21.2 | |
| Effective Green, g (s) | 14.8 | 14.8 | | | 21.2 | |
| Actuated g/C Ratio | 0.33 | 0.33 | | | 0.47 | |
| Clearance Time (s) | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 352 | 367 | | | 1499 | |
| v/s Ratio Prot | | | | | c0.29 | |
| v/s Ratio Perm | c0.24 | 0.23 | | | | |
| v/c Ratio | 0.73 | 0.71 | | | 0.62 | |
| Uniform Delay, d1 | 13.3 | 13.2 | | | 8.9 | |
| Progression Factor | 1.00 | 1.00 | | | 0.76 | |
| Incremental Delay, d2 | 7.3 | 6.4 | | | 1.3 | |
| Delay (s) | 20.6 | 19.6 | | | 8.0 | |
| Level of Service | C | B | | | A | |
| Approach Delay (s) | | 20.1 | 0.0 | | 8.0 | |
| Approach LOS | | C | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 12.3 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.66 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 107.6% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 2018 | 0 | 0 | 1168 | 0 |
| Future Volume (vph) | 0 | 2018 | 0 | 0 | 1168 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | 4.5 | |
| Lane Util. Factor | | 0.88 | | | 0.97 | |
| Frt | | 0.85 | | | 1.00 | |
| Flt Protected | | 1.00 | | | 0.95 | |
| Satd. Flow (prot) | | 2238 | | | 2968 | |
| Flt Permitted | | 1.00 | | | 0.95 | |
| Satd. Flow (perm) | | 2238 | | | 2968 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 2124 | 0 | 0 | 1229 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 0 | 2124 | 0 | 0 | 1229 | 0 |
| Heavy Vehicles (%) | 2% | 27% | 2% | 2% | 18% | 2% |
| Turn Type | | pm+ov | Prot | | Prot | |
| Protected Phases | 4 | 2 | 3 | 8 | 2 | |
| Permitted Phases | | 4 | | | | |
| Actuated Green, G (s) | | 54.5 | | | 54.5 | |
| Effective Green, g (s) | | 54.5 | | | 54.5 | |
| Actuated g/C Ratio | | 1.00 | | | 1.00 | |
| Clearance Time (s) | | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | | 2238 | | | 2968 | |
| v/s Ratio Prot | | c0.95 | | | 0.41 | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | | 0.95 | | | 0.41 | |
| Uniform Delay, d1 | | 0.0 | | | 0.0 | |
| Progression Factor | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | | 9.6 | | | 0.4 | |
| Delay (s) | | 9.6 | | | 0.4 | |
| Level of Service | | A | | | A | |
| Approach Delay (s) | 9.6 | | | 0.0 | 0.4 | |
| Approach LOS | A | | | A | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 6.2 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 1.26 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 74.3% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

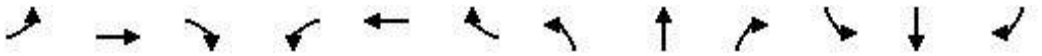


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 25 | 25 | 988 | 9 | 180 | 0 | 0 | 1556 | 462 |
| Future Volume (vph) | 0 | 0 | 0 | 25 | 25 | 988 | 9 | 180 | 0 | 0 | 1556 | 462 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Lane Util. Factor | | | | | 0.95 | 0.95 | 1.00 | 0.95 | | | 0.95 | 1.00 |
| Frt | | | | | 0.86 | 0.85 | 1.00 | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | | 1.00 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | | 1413 | 1382 | 1770 | 2270 | | | 3085 | 1016 |
| Flt Permitted | | | | | 1.00 | 1.00 | 0.17 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | | 1413 | 1382 | 323 | 2270 | | | 3085 | 1016 |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 0 | 0 | 0 | 26 | 26 | 1040 | 9 | 189 | 0 | 0 | 1638 | 486 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 356 | 386 | 0 | 0 | 0 | 0 | 0 | 237 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 195 | 155 | 9 | 189 | 0 | 0 | 1638 | 249 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 11% | 2% | 59% | 2% | 2% | 17% | 59% |
| Turn Type | | | | Perm | NA | Perm | Perm | NA | | | NA | Perm |
| Protected Phases | | | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | | | | 8 | | 8 | 2 | | | | | 6 |
| Actuated Green, G (s) | | | | | 12.9 | 12.9 | 23.1 | 23.1 | | | 23.1 | 23.1 |
| Effective Green, g (s) | | | | | 12.9 | 12.9 | 23.1 | 23.1 | | | 23.1 | 23.1 |
| Actuated g/C Ratio | | | | | 0.29 | 0.29 | 0.51 | 0.51 | | | 0.51 | 0.51 |
| Clearance Time (s) | | | | | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Vehicle Extension (s) | | | | | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | | 405 | 396 | 165 | 1165 | | | 1583 | 521 |
| v/s Ratio Prot | | | | | | | | 0.08 | | | c0.53 | |
| v/s Ratio Perm | | | | | 0.14 | 0.11 | 0.03 | | | | | 0.25 |
| v/c Ratio | | | | | 0.48 | 0.39 | 0.05 | 0.16 | | | 1.03 | 0.48 |
| Uniform Delay, d1 | | | | | 13.3 | 12.9 | 5.5 | 5.8 | | | 10.9 | 7.1 |
| Progression Factor | | | | | 1.00 | 1.00 | 1.35 | 1.36 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | | | | | 0.9 | 0.6 | 0.6 | 0.3 | | | 32.1 | 3.1 |
| Delay (s) | | | | | 14.2 | 13.5 | 8.0 | 8.2 | | | 43.1 | 10.2 |
| Level of Service | | | | | B | B | A | A | | | D | B |
| Approach Delay (s) | | 0.0 | | | 13.9 | | | 8.2 | | | 35.5 | |
| Approach LOS | | A | | | B | | | A | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 27.0 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.84 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 91.3% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 180 | 9 | 0 | 0 | 1556 | 0 |
| Future Volume (vph) | 180 | 9 | 0 | 0 | 1556 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | | | 4.5 | |
| Lane Util. Factor | 0.95 | 0.95 | | | 0.97 | |
| Frt | 1.00 | 1.00 | | | 1.00 | |
| Flt Protected | 0.95 | 0.96 | | | 0.95 | |
| Satd. Flow (prot) | 1078 | 1122 | | | 2993 | |
| Flt Permitted | 0.95 | 0.96 | | | 0.95 | |
| Satd. Flow (perm) | 1078 | 1122 | | | 2993 | |
| Peak-hour factor, PHF | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Adj. Flow (vph) | 189 | 9 | 0 | 0 | 1638 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 98 | 100 | 0 | 0 | 1638 | 0 |
| Heavy Vehicles (%) | 59% | 2% | 2% | 2% | 17% | 2% |
| Turn Type | Perm | NA | | | Prot | |
| Protected Phases | | 4 | | | 6 | |
| Permitted Phases | 4 | | | | | |
| Actuated Green, G (s) | 8.4 | 8.4 | | | 27.6 | |
| Effective Green, g (s) | 8.4 | 8.4 | | | 27.6 | |
| Actuated g/C Ratio | 0.19 | 0.19 | | | 0.61 | |
| Clearance Time (s) | 4.5 | 4.5 | | | 4.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | | 3.0 | |
| Lane Grp Cap (vph) | 201 | 209 | | | 1835 | |
| v/s Ratio Prot | | | | | c0.55 | |
| v/s Ratio Perm | c0.09 | 0.09 | | | | |
| v/c Ratio | 0.49 | 0.48 | | | 0.89 | |
| Uniform Delay, d1 | 16.4 | 16.3 | | | 7.4 | |
| Progression Factor | 1.00 | 1.00 | | | 1.19 | |
| Incremental Delay, d2 | 1.9 | 1.7 | | | 0.7 | |
| Delay (s) | 18.2 | 18.1 | | | 9.6 | |
| Level of Service | B | B | | | A | |
| Approach Delay (s) | | 18.2 | 0.0 | | 9.6 | |
| Approach LOS | | B | A | | A | |

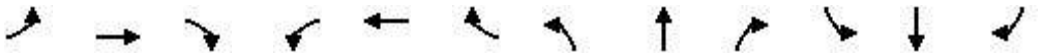
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 10.5 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.80 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 9.0 |
| Intersection Capacity Utilization | 105.5% | ICU Level of Service | G |
| 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) | 202 | 367 | 10 | 0 | 154 | 31 | 25 | 0 | 2 | 30 | 6 | 151 |
| Future Volume (Veh/h) | 202 | 367 | 10 | 0 | 154 | 31 | 25 | 0 | 2 | 30 | 6 | 151 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 213 | 386 | 11 | 0 | 162 | 33 | 26 | 0 | 2 | 32 | 6 | 159 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 195 | | | 386 | | | 1055 | 1007 | 386 | 992 | 990 | 98 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 195 | | | 386 | | | 1055 | 1007 | 386 | 992 | 990 | 98 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 85 | | | 100 | | | 80 | 100 | 100 | 82 | 97 | 83 |
| cM capacity (veh/h) | 1375 | | | 1169 | | | 129 | 202 | 612 | 176 | 207 | 940 |

| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|---|
| Volume Total | 213 | 386 | 11 | 108 | 87 | 28 | 197 |
| Volume Left | 213 | 0 | 0 | 0 | 0 | 26 | 32 |
| Volume Right | 0 | 0 | 11 | 0 | 33 | 2 | 159 |
| cSH | 1375 | 1700 | 1700 | 1700 | 1700 | 137 | 518 |
| Volume to Capacity | 0.15 | 0.23 | 0.01 | 0.06 | 0.05 | 0.21 | 0.38 |
| Queue Length 95th (ft) | 14 | 0 | 0 | 0 | 0 | 18 | 44 |
| Control Delay (s) | 8.1 | 0.0 | 0.0 | 0.0 | 0.0 | 38.0 | 16.2 |
| Lane LOS | A | | | | | E | C |
| Approach Delay (s) | 2.8 | | | 0.0 | | 38.0 | 16.2 |
| Approach LOS | | | | | | E | C |

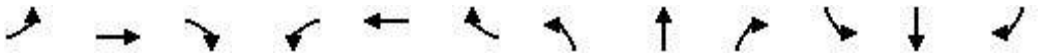
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 5.8 | | | |
| Intersection Capacity Utilization | 37.1% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 67 | 0 | 215 | 3 | 94 | 56 | 0 | 0 | 0 | 0 | 21 | 56 |
| Future Volume (vph) | 67 | 0 | 215 | 3 | 94 | 56 | 0 | 0 | 0 | 0 | 21 | 56 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 71 | 0 | 226 | 3 | 99 | 59 | 0 | 0 | 0 | 0 | 22 | 59 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 71 | 226 | 161 | 81 |
| Volume Left (vph) | 71 | 0 | 3 | 0 |
| Volume Right (vph) | 0 | 226 | 59 | 59 |
| Hadj (s) | 0.23 | -0.57 | -0.18 | -0.40 |
| Departure Headway (s) | 4.5 | 3.2 | 4.0 | 4.0 |
| Degree Utilization, x | 0.09 | 0.20 | 0.18 | 0.09 |
| Capacity (veh/h) | 783 | 1121 | 880 | 847 |
| Control Delay (s) | 7.9 | 7.0 | 7.8 | 7.4 |
| Approach Delay (s) | 7.2 | | 7.8 | 7.4 |
| Approach LOS | A | | A | A |

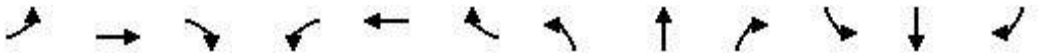
| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | 7.4 | | | |
| Level of Service | A | | | |
| Intersection Capacity Utilization | 36.4% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 153 | 301 | 10 | 0 | 346 | 38 | 25 | 0 | 2 | 19 | 6 | 245 |
| Future Volume (Veh/h) | 153 | 301 | 10 | 0 | 346 | 38 | 25 | 0 | 2 | 19 | 6 | 245 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 161 | 317 | 11 | 0 | 364 | 40 | 26 | 0 | 2 | 20 | 6 | 258 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 404 | | | 317 | | | 1082 | 1043 | 317 | 1025 | 1023 | 202 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 404 | | | 317 | | | 1082 | 1043 | 317 | 1025 | 1023 | 202 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 86 | | | 100 | | | 75 | 100 | 100 | 88 | 97 | 68 |
| cM capacity (veh/h) | 1151 | | | 1240 | | | 102 | 196 | 679 | 168 | 201 | 805 |

| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|---|
| Volume Total | 161 | 317 | 11 | 243 | 161 | 28 | 284 |
| Volume Left | 161 | 0 | 0 | 0 | 0 | 26 | 20 |
| Volume Right | 0 | 0 | 11 | 0 | 40 | 2 | 258 |
| cSH | 1151 | 1700 | 1700 | 1700 | 1700 | 109 | 606 |
| Volume to Capacity | 0.14 | 0.19 | 0.01 | 0.14 | 0.09 | 0.26 | 0.47 |
| Queue Length 95th (ft) | 12 | 0 | 0 | 0 | 0 | 24 | 62 |
| Control Delay (s) | 8.6 | 0.0 | 0.0 | 0.0 | 0.0 | 49.3 | 16.1 |
| Lane LOS | A | | | | | E | C |
| Approach Delay (s) | 2.8 | | | 0.0 | | 49.3 | 16.1 |
| Approach LOS | | | | | | E | C |

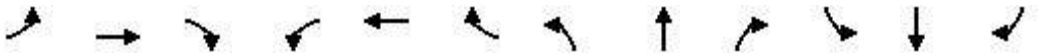
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 6.1 | | | |
| Intersection Capacity Utilization | 45.3% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 63 | 0 | 186 | 3 | 323 | 56 | 0 | 0 | 0 | 0 | 33 | 67 |
| Future Volume (vph) | 63 | 0 | 186 | 3 | 323 | 56 | 0 | 0 | 0 | 0 | 33 | 67 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 66 | 0 | 196 | 3 | 340 | 59 | 0 | 0 | 0 | 0 | 35 | 71 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 66 | 196 | 402 | 106 |
| Volume Left (vph) | 66 | 0 | 3 | 0 |
| Volume Right (vph) | 0 | 196 | 59 | 71 |
| Hadj (s) | 0.23 | -0.57 | -0.05 | -0.37 |
| Departure Headway (s) | 4.8 | 3.2 | 4.2 | 4.6 |
| Degree Utilization, x | 0.09 | 0.17 | 0.47 | 0.13 |
| Capacity (veh/h) | 716 | 1121 | 841 | 719 |
| Control Delay (s) | 8.3 | 6.9 | 10.8 | 8.3 |
| Approach Delay (s) | 7.2 | | 10.8 | 8.3 |
| Approach LOS | A | | B | A |

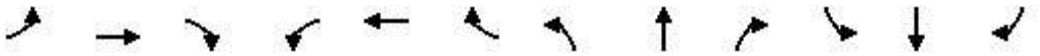
| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | 9.2 | | | |
| Level of Service | A | | | |
| Intersection Capacity Utilization | 47.9% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 597 | 1496 | 10 | 0 | 587 | 110 | 25 | 0 | 2 | 307 | 6 | 387 |
| Future Volume (Veh/h) | 597 | 1496 | 10 | 0 | 587 | 110 | 25 | 0 | 2 | 307 | 6 | 387 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 628 | 1575 | 11 | 0 | 618 | 116 | 26 | 0 | 2 | 323 | 6 | 407 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 734 | | | 1575 | | | 3550 | 3565 | 1575 | 3509 | 3507 | 367 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 734 | | | 1575 | | | 3550 | 3565 | 1575 | 3509 | 3507 | 367 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 28 | | | 100 | | | 0 | 100 | 98 | 0 | 0 | 35 |
| cM capacity (veh/h) | 867 | | | 414 | | | 0 | 2 | 99 | 1 | 2 | 630 |

| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|---|
| Volume Total | 628 | 1575 | 11 | 412 | 322 | 28 | 736 |
| Volume Left | 628 | 0 | 0 | 0 | 0 | 26 | 323 |
| Volume Right | 0 | 0 | 11 | 0 | 116 | 2 | 407 |
| cSH | 867 | 1700 | 1700 | 1700 | 1700 | 0 | 2 |
| Volume to Capacity | 0.72 | 0.93 | 0.01 | 0.24 | 0.19 | Err | 349.12 |
| Queue Length 95th (ft) | 162 | 0 | 0 | 0 | 0 | Err | Err |
| Control Delay (s) | 19.2 | 0.0 | 0.0 | 0.0 | 0.0 | Err | Err |
| Lane LOS | C | | | | | F | F |
| Approach Delay (s) | 5.5 | | | 0.0 | | Err | Err |
| Approach LOS | | | | | | F | F |

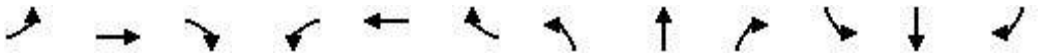
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | Err | | | |
| Intersection Capacity Utilization | 123.1% | ICU Level of Service | H | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 375 | 0 | 794 | 3 | 406 | 129 | 0 | 0 | 0 | 0 | 74 | 196 |
| Future Volume (vph) | 375 | 0 | 794 | 3 | 406 | 129 | 0 | 0 | 0 | 0 | 74 | 196 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 395 | 0 | 836 | 3 | 427 | 136 | 0 | 0 | 0 | 0 | 78 | 206 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 395 | 836 | 566 | 284 |
| Volume Left (vph) | 395 | 0 | 3 | 0 |
| Volume Right (vph) | 0 | 836 | 136 | 206 |
| Hadj (s) | 0.23 | -0.57 | -0.11 | -0.40 |
| Departure Headway (s) | 5.9 | 3.2 | 5.4 | 6.0 |
| Degree Utilization, x | 0.65 | 0.74 | 0.84 | 0.47 |
| Capacity (veh/h) | 585 | 1120 | 659 | 557 |
| Control Delay (s) | 19.2 | 14.8 | 30.5 | 14.3 |
| Approach Delay (s) | 16.2 | | 30.5 | 14.3 |
| Approach LOS | C | | D | B |

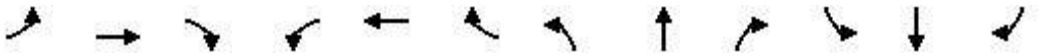
| Intersection Summary | | | | |
|---|---|---|---|---|
| Delay | 19.8 | | | |
| Level of Service | C | | | |
| Intersection Capacity Utilization | 104.5% | ICU Level of Service | G | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 479 | 1507 | 10 | 0 | 1700 | 458 | 25 | 0 | 2 | 614 | 6 | 867 |
| Future Volume (Veh/h) | 479 | 1507 | 10 | 0 | 1700 | 458 | 25 | 0 | 2 | 614 | 6 | 867 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 504 | 1586 | 11 | 0 | 1789 | 482 | 26 | 0 | 2 | 646 | 6 | 913 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 2271 | | | 1586 | | | 4404 | 4865 | 1586 | 4626 | 4624 | 1136 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 2271 | | | 1586 | | | 4404 | 4865 | 1586 | 4626 | 4624 | 1136 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 0 | | | 100 | | | 0 | 0 | 98 | 0 | 0 | 0 |
| cM capacity (veh/h) | 221 | | | 410 | | | 0 | 0 | 97 | 0 | 0 | 196 |

| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|---|---|---|
| Volume Total | 504 | 1586 | 11 | 1193 | 1078 | 28 | 1565 |
| Volume Left | 504 | 0 | 0 | 0 | 0 | 26 | 646 |
| Volume Right | 0 | 0 | 11 | 0 | 482 | 2 | 913 |
| cSH | 221 | 1700 | 1700 | 1700 | 1700 | 0 | 0 |
| Volume to Capacity | 2.28 | 0.93 | 0.01 | 0.70 | 0.63 | Err | Err |
| Queue Length 95th (ft) | 1002 | 0 | 0 | 0 | 0 | Err | Err |
| Control Delay (s) | 624.0 | 0.0 | 0.0 | 0.0 | 0.0 | Err | Err |
| Lane LOS | F | | | | | F | F |
| Approach Delay (s) | 149.7 | | | 0.0 | | Err | Err |
| Approach LOS | | | | | | F | F |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | Err | | | |
| Intersection Capacity Utilization | 178.5% | ICU Level of Service | H | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 541 | 0 | 901 | 3 | 1079 | 212 | 0 | 0 | 0 | 0 | 313 | 650 |
| Future Volume (vph) | 541 | 0 | 901 | 3 | 1079 | 212 | 0 | 0 | 0 | 0 | 313 | 650 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 569 | 0 | 948 | 3 | 1136 | 223 | 0 | 0 | 0 | 0 | 329 | 684 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total (vph) | 569 | 948 | 1362 | 1013 |
| Volume Left (vph) | 569 | 0 | 3 | 0 |
| Volume Right (vph) | 0 | 948 | 223 | 684 |
| Hadj (s) | 0.23 | -0.57 | -0.06 | -0.37 |
| Departure Headway (s) | 7.2 | 3.2 | 6.9 | 6.6 |
| Degree Utilization, x | 1.14 | 0.84 | 2.62 | 1.86 |
| Capacity (veh/h) | 503 | 1114 | 533 | 552 |
| Control Delay (s) | 110.5 | 20.5 | 749.2 | 410.9 |
| Approach Delay (s) | 54.2 | | 749.2 | 410.9 |
| Approach LOS | F | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Delay | 390.3 | | |
| Level of Service | F | | |
| Intersection Capacity Utilization | 192.0% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

| Movement | EBL | EBR2 | WBL | WBR2 | NBL | NBT | NBR2 | SBL | SBT | SBR2 |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 30 | 67 | 31 | 167 | 23 | 41 | 58 | 31 | 28 | 51 |
| Future Volume (vph) | 30 | 67 | 31 | 167 | 23 | 41 | 58 | 31 | 28 | 51 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 0.97 | 0.88 | 0.97 | 0.88 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | 1.00 | 0.85 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 2787 | 3433 | 2787 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 2787 | 3433 | 2787 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 33 | 73 | 34 | 182 | 25 | 45 | 63 | 34 | 30 | 55 |
| RTOR Reduction (vph) | 0 | 68 | 0 | 162 | 0 | 0 | 26 | 0 | 0 | 21 |
| Lane Group Flow (vph) | 33 | 5 | 34 | 20 | 25 | 45 | 37 | 34 | 30 | 34 |
| Turn Type | Prot | Prot | Prot | Prot | Prot | NA | custom | Prot | NA | custom |
| Protected Phases | 7 | 5 | 3 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | 3.3 | 3.3 | 3.3 | 4.9 | 3.3 | 23.3 | 26.6 | 4.9 | 24.9 | 28.2 |
| Effective Green, g (s) | 3.3 | 3.3 | 3.3 | 4.9 | 3.3 | 23.3 | 26.6 | 4.9 | 24.9 | 28.2 |
| Actuated g/C Ratio | 0.07 | 0.07 | 0.07 | 0.11 | 0.07 | 0.52 | 0.59 | 0.11 | 0.55 | 0.63 |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 251 | 204 | 251 | 303 | 251 | 1832 | 1094 | 373 | 1958 | 1150 |
| v/s Ratio Prot | 0.01 | 0.00 | c0.01 | 0.01 | 0.01 | 0.01 | c0.00 | c0.01 | 0.01 | 0.00 |
| v/s Ratio Perm | | | | | | | 0.02 | | | 0.02 |
| v/c Ratio | 0.13 | 0.03 | 0.14 | 0.07 | 0.10 | 0.02 | 0.03 | 0.09 | 0.02 | 0.03 |
| Uniform Delay, d1 | 19.5 | 19.4 | 19.5 | 18.0 | 19.5 | 5.3 | 3.8 | 18.0 | 4.5 | 3.2 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.2 | 0.1 | 0.2 | 0.1 | 0.2 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| Delay (s) | 19.7 | 19.4 | 19.8 | 18.1 | 19.6 | 5.3 | 3.9 | 18.2 | 4.5 | 3.2 |
| Level of Service | B | B | B | B | B | A | A | B | A | A |
| Approach Delay (s) | | | | | | 7.3 | | | 7.8 | |
| Approach LOS | | | | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 13.8 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.06 | | |
| Actuated Cycle Length (s) | 45.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | Err% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR2 | WBL | WBR2 | NBL | NBT | NBR2 | SBL | SBT | SBR2 |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 19 | 38 | 38 | 186 | 38 | 38 | 42 | 38 | 36 | 73 |
| Future Volume (vph) | 19 | 38 | 38 | 186 | 38 | 38 | 42 | 38 | 36 | 73 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 0.97 | 0.88 | 0.97 | 0.88 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | 1.00 | 0.85 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 2787 | 3433 | 2787 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 2787 | 3433 | 2787 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 21 | 41 | 41 | 202 | 41 | 41 | 46 | 41 | 39 | 79 |
| RTOR Reduction (vph) | 0 | 38 | 0 | 182 | 0 | 0 | 20 | 0 | 0 | 31 |
| Lane Group Flow (vph) | 21 | 3 | 41 | 20 | 41 | 41 | 26 | 41 | 39 | 48 |
| Turn Type | Prot | Prot | Prot | Prot | Prot | NA | custom | Prot | NA | custom |
| Protected Phases | 7 | 5 | 3 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | 3.0 | 3.0 | 3.0 | 4.1 | 3.0 | 20.9 | 23.9 | 4.1 | 22.0 | 25.0 |
| Effective Green, g (s) | 3.0 | 3.0 | 3.0 | 4.1 | 3.0 | 20.9 | 23.9 | 4.1 | 22.0 | 25.0 |
| Actuated g/C Ratio | 0.07 | 0.07 | 0.07 | 0.10 | 0.07 | 0.50 | 0.58 | 0.10 | 0.53 | 0.60 |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 248 | 201 | 248 | 275 | 248 | 1782 | 1083 | 339 | 1876 | 1125 |
| v/s Ratio Prot | 0.01 | 0.00 | c0.01 | 0.01 | c0.01 | 0.01 | 0.00 | 0.01 | 0.01 | c0.00 |
| v/s Ratio Perm | | | | | | | 0.01 | | | 0.03 |
| v/c Ratio | 0.08 | 0.01 | 0.17 | 0.07 | 0.17 | 0.02 | 0.02 | 0.12 | 0.02 | 0.04 |
| Uniform Delay, d1 | 18.0 | 17.9 | 18.1 | 17.0 | 18.1 | 5.2 | 3.8 | 17.1 | 4.6 | 3.4 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.1 | 0.0 | 0.3 | 0.1 | 0.3 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 |
| Delay (s) | 18.1 | 17.9 | 18.4 | 17.1 | 18.4 | 5.2 | 3.8 | 17.2 | 4.7 | 3.4 |
| Level of Service | B | B | B | B | B | A | A | B | A | A |
| Approach Delay (s) | | | | | | 8.9 | | | 7.3 | |
| Approach LOS | | | | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 12.9 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.07 | | |
| Actuated Cycle Length (s) | 41.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | Err% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR2 | WBL | WBR2 | NBL | NBT | NBR2 | SBL | SBT | SBR2 |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 30 | 151 | 94 | 167 | 215 | 184 | 202 | 31 | 91 | 51 |
| Future Volume (vph) | 30 | 151 | 94 | 167 | 215 | 184 | 202 | 31 | 91 | 51 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 0.97 | 0.88 | 0.97 | 0.88 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | 1.00 | 0.85 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 2787 | 3433 | 2787 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 2787 | 3433 | 2787 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 33 | 164 | 102 | 182 | 234 | 200 | 220 | 34 | 99 | 55 |
| RTOR Reduction (vph) | 0 | 146 | 0 | 171 | 0 | 0 | 38 | 0 | 0 | 12 |
| Lane Group Flow (vph) | 33 | 18 | 102 | 11 | 234 | 200 | 182 | 34 | 99 | 43 |
| Turn Type | Prot | Prot | Prot | Prot | Prot | NA | custom | Prot | NA | custom |
| Protected Phases | 7 | 5 | 3 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | 9.0 | 13.5 | 9.0 | 7.0 | 13.5 | 90.5 | 99.5 | 7.0 | 84.0 | 93.0 |
| Effective Green, g (s) | 9.0 | 13.5 | 9.0 | 7.0 | 13.5 | 90.5 | 99.5 | 7.0 | 84.0 | 93.0 |
| Actuated g/C Ratio | 0.08 | 0.11 | 0.08 | 0.06 | 0.11 | 0.75 | 0.83 | 0.06 | 0.70 | 0.78 |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 257 | 313 | 257 | 162 | 386 | 2668 | 1371 | 200 | 2477 | 1286 |
| v/s Ratio Prot | 0.01 | 0.01 | c0.03 | 0.00 | c0.07 | 0.06 | c0.01 | 0.01 | 0.03 | 0.00 |
| v/s Ratio Perm | | | | | | | 0.11 | | | 0.02 |
| v/c Ratio | 0.13 | 0.06 | 0.40 | 0.07 | 0.61 | 0.07 | 0.13 | 0.17 | 0.04 | 0.03 |
| Uniform Delay, d1 | 51.8 | 47.6 | 52.9 | 53.4 | 50.7 | 3.8 | 2.0 | 53.7 | 5.6 | 3.1 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.81 | 0.44 | 0.00 |
| Incremental Delay, d2 | 0.2 | 0.1 | 1.0 | 0.2 | 2.7 | 0.1 | 0.0 | 0.4 | 0.0 | 0.0 |
| Delay (s) | 52.1 | 47.7 | 53.9 | 53.6 | 53.4 | 3.9 | 2.0 | 44.2 | 2.5 | 0.0 |
| Level of Service | D | D | D | D | D | A | A | D | A | A |
| Approach Delay (s) | | | | | | 21.0 | | | 9.3 | |
| Approach LOS | | | | | | C | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 30.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.22 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | Err% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR2 | WBL | WBR2 | NBL | NBT | NBR2 | SBL | SBT | SBR2 |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 19 | 245 | 193 | 186 | 186 | 149 | 153 | 38 | 191 | 73 |
| Future Volume (vph) | 19 | 245 | 193 | 186 | 186 | 149 | 153 | 38 | 191 | 73 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 0.97 | 0.88 | 0.97 | 0.88 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | 1.00 | 0.85 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 2787 | 3433 | 2787 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 2787 | 3433 | 2787 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 21 | 266 | 210 | 202 | 202 | 162 | 166 | 41 | 208 | 79 |
| RTOR Reduction (vph) | 0 | 237 | 0 | 190 | 0 | 0 | 29 | 0 | 0 | 18 |
| Lane Group Flow (vph) | 21 | 29 | 210 | 12 | 202 | 162 | 137 | 41 | 208 | 61 |
| Turn Type | Prot | Prot | Prot | Prot | Prot | NA | custom | Prot | NA | custom |
| Protected Phases | 7 | 5 | 3 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | 12.7 | 13.3 | 12.7 | 7.3 | 13.3 | 86.5 | 99.2 | 7.3 | 80.5 | 93.2 |
| Effective Green, g (s) | 12.7 | 13.3 | 12.7 | 7.3 | 13.3 | 86.5 | 99.2 | 7.3 | 80.5 | 93.2 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.11 | 0.06 | 0.11 | 0.72 | 0.83 | 0.06 | 0.67 | 0.78 |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 363 | 308 | 363 | 169 | 380 | 2551 | 1367 | 208 | 2374 | 1288 |
| v/s Ratio Prot | 0.01 | 0.01 | c0.06 | 0.00 | c0.06 | 0.05 | c0.01 | 0.01 | 0.06 | 0.01 |
| v/s Ratio Perm | | | | | | | 0.08 | | | 0.03 |
| v/c Ratio | 0.06 | 0.10 | 0.58 | 0.07 | 0.53 | 0.06 | 0.10 | 0.20 | 0.09 | 0.05 |
| Uniform Delay, d1 | 48.3 | 47.9 | 51.1 | 53.2 | 50.4 | 4.9 | 2.0 | 53.6 | 6.9 | 3.1 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.76 | 0.47 | 0.00 |
| Incremental Delay, d2 | 0.1 | 0.1 | 2.2 | 0.2 | 1.4 | 0.0 | 0.0 | 0.5 | 0.1 | 0.0 |
| Delay (s) | 48.3 | 48.1 | 53.3 | 53.3 | 51.8 | 4.9 | 2.0 | 41.4 | 3.3 | 0.0 |
| Level of Service | D | D | D | D | D | A | A | D | A | A |
| Approach Delay (s) | | | | | | 21.9 | | | 7.3 | |
| Approach LOS | | | | | | C | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 32.0 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.22 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | Err% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR2 | WBL | WBR2 | NBL | NBT | NBR2 | SBL | SBT | SBR2 |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 307 | 387 | 271 | 375 | 741 | 787 | 597 | 110 | 347 | 156 |
| Future Volume (vph) | 307 | 387 | 271 | 375 | 741 | 787 | 597 | 110 | 347 | 156 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 0.97 | 0.88 | 0.97 | 0.88 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | 1.00 | 0.85 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 2787 | 3433 | 2787 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 2787 | 3433 | 2787 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 334 | 421 | 295 | 408 | 805 | 855 | 649 | 120 | 377 | 170 |
| RTOR Reduction (vph) | 0 | 252 | 0 | 235 | 0 | 0 | 100 | 0 | 0 | 29 |
| Lane Group Flow (vph) | 334 | 169 | 295 | 173 | 805 | 855 | 549 | 120 | 377 | 141 |
| Turn Type | Prot | Prot | Prot | Prot | Prot | NA | custom | Prot | NA | custom |
| Protected Phases | 7 | 5 | 3 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | 17.2 | 44.5 | 17.2 | 12.5 | 44.5 | 76.8 | 94.0 | 12.5 | 44.8 | 62.0 |
| Effective Green, g (s) | 17.2 | 44.5 | 17.2 | 12.5 | 44.5 | 76.8 | 94.0 | 12.5 | 44.8 | 62.0 |
| Actuated g/C Ratio | 0.14 | 0.37 | 0.14 | 0.10 | 0.37 | 0.64 | 0.78 | 0.10 | 0.37 | 0.52 |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 492 | 1033 | 492 | 290 | 1273 | 2264 | 1299 | 357 | 1321 | 877 |
| v/s Ratio Prot | c0.10 | 0.06 | 0.09 | c0.06 | c0.23 | 0.24 | c0.06 | 0.03 | 0.11 | 0.02 |
| v/s Ratio Perm | | | | | | | 0.29 | | | 0.07 |
| v/c Ratio | 0.68 | 0.16 | 0.60 | 0.60 | 0.63 | 0.38 | 0.42 | 0.34 | 0.29 | 0.16 |
| Uniform Delay, d1 | 48.8 | 25.3 | 48.2 | 51.3 | 31.0 | 10.3 | 4.2 | 49.9 | 26.4 | 15.3 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.67 | 0.63 | 0.28 |
| Incremental Delay, d2 | 3.7 | 0.1 | 2.0 | 3.3 | 1.0 | 0.5 | 0.2 | 0.6 | 0.5 | 0.1 |
| Delay (s) | 52.5 | 25.4 | 50.1 | 54.6 | 32.1 | 10.7 | 4.4 | 33.8 | 17.2 | 4.4 |
| Level of Service | D | C | D | D | C | B | A | C | B | A |
| Approach Delay (s) | | | | | | 16.4 | | | 16.9 | |
| Approach LOS | | | | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 25.8 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.56 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | Err% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBR2 | WBL | WBR2 | NBL | NBT | NBR2 | SBL | SBT | SBR2 |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Volume (vph) | 614 | 867 | 660 | 631 | 621 | 920 | 479 | 458 | 1078 | 633 |
| Future Volume (vph) | 614 | 867 | 660 | 631 | 621 | 920 | 479 | 458 | 1078 | 633 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 0.97 | 0.88 | 0.97 | 0.88 | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | 1.00 | 0.85 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 3433 | 2787 | 3433 | 2787 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 3433 | 2787 | 3433 | 2787 | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 667 | 942 | 717 | 686 | 675 | 1000 | 521 | 498 | 1172 | 688 |
| RTOR Reduction (vph) | 0 | 65 | 0 | 70 | 0 | 0 | 32 | 0 | 0 | 29 |
| Lane Group Flow (vph) | 667 | 877 | 717 | 616 | 675 | 1000 | 489 | 498 | 1172 | 659 |
| Turn Type | Prot | Prot | Prot | Prot | Prot | NA | custom | Prot | NA | custom |
| Protected Phases | 7 | 5 | 3 | 1 | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | 25.9 | 38.5 | 25.9 | 31.1 | 38.5 | 49.5 | 75.4 | 31.1 | 42.1 | 68.0 |
| Effective Green, g (s) | 25.9 | 38.5 | 25.9 | 31.1 | 38.5 | 49.5 | 75.4 | 31.1 | 42.1 | 68.0 |
| Actuated g/C Ratio | 0.22 | 0.32 | 0.22 | 0.26 | 0.32 | 0.41 | 0.63 | 0.26 | 0.35 | 0.57 |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 740 | 894 | 740 | 722 | 1101 | 1459 | 1054 | 889 | 1241 | 956 |
| v/s Ratio Prot | 0.19 | c0.31 | c0.21 | 0.22 | 0.20 | 0.28 | 0.10 | 0.15 | c0.33 | 0.15 |
| v/s Ratio Perm | | | | | | | 0.21 | | | 0.27 |
| v/c Ratio | 0.90 | 0.98 | 0.97 | 0.85 | 0.61 | 0.69 | 0.46 | 0.56 | 0.94 | 0.69 |
| Uniform Delay, d1 | 45.8 | 40.4 | 46.7 | 42.3 | 34.5 | 28.9 | 11.7 | 38.5 | 37.8 | 18.5 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 14.2 | 25.5 | 25.3 | 9.6 | 1.0 | 2.6 | 0.3 | 0.8 | 15.3 | 2.1 |
| Delay (s) | 60.0 | 65.9 | 71.9 | 51.9 | 35.5 | 31.5 | 12.0 | 39.3 | 53.1 | 20.6 |
| Level of Service | E | E | E | D | D | C | B | D | D | C |
| Approach Delay (s) | | | | | | 28.1 | | | 40.7 | |
| Approach LOS | | | | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 45.9 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.96 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | Err% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | WBT | WBR | WBR2 | SBL | SBR | SWL | SWR |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 58 | 32 | 28 | 0 | 31 | 30 | 67 | 0 | 0 |
| Future Volume (vph) | 58 | 32 | 28 | 0 | 31 | 30 | 67 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 0.95 | | 1.00 | 0.97 | 0.88 | | |
| 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 | 3433 | 2787 | | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1770 | 3539 | 3539 | | 1583 | 3433 | 2787 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 63 | 35 | 30 | 0 | 34 | 33 | 73 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 18 | 0 | 48 | 0 | 0 |
| Lane Group Flow (vph) | 63 | 35 | 30 | 0 | 16 | 33 | 25 | 0 | 0 |
| Turn Type | Prot | NA | NA | | custom | Prot | custom | | |
| Protected Phases | 7 | 4 | 8 | | 1 | 1 | 7 | | |
| Permitted Phases | | | | | 8 | | 4 | | |
| Actuated Green, G (s) | 8.4 | 14.2 | 1.3 | | 19.6 | 18.3 | 14.2 | | |
| Effective Green, g (s) | 8.4 | 14.2 | 1.3 | | 19.6 | 18.3 | 14.2 | | |
| Actuated g/C Ratio | 0.20 | 0.34 | 0.03 | | 0.47 | 0.44 | 0.34 | | |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 358 | 1210 | 110 | | 919 | 1513 | 953 | | |
| v/s Ratio Prot | c0.04 | 0.01 | c0.01 | | 0.01 | c0.01 | 0.01 | | |
| v/s Ratio Perm | | | | | 0.00 | | 0.00 | | |
| v/c Ratio | 0.18 | 0.03 | 0.27 | | 0.02 | 0.02 | 0.03 | | |
| Uniform Delay, d1 | 13.7 | 9.1 | 19.6 | | 5.8 | 6.5 | 9.1 | | |
| Progression Factor | 1.00 | 1.00 | 1.01 | | 1.43 | 1.00 | 1.00 | | |
| Incremental Delay, d2 | 0.2 | 0.0 | 1.3 | | 0.0 | 0.0 | 0.0 | | |
| Delay (s) | 13.9 | 9.1 | 21.2 | | 8.4 | 6.6 | 9.1 | | |
| Level of Service | B | A | C | | A | A | A | | |
| Approach Delay (s) | | 12.2 | 14.4 | | | 8.3 | | 0.0 | |
| Approach LOS | | B | B | | | A | | A | |

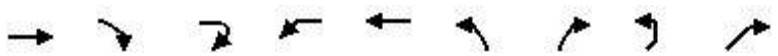
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 11.2 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.08 | | |
| Actuated Cycle Length (s) | 41.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 21.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 10 | 16 | 21 | 10 | 20 | 33 |
| Future Volume (vph) | 10 | 16 | 21 | 10 | 20 | 33 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 0.95 | | 0.97 | 0.95 | 0.97 | 0.91 |
| Frt | 0.91 | | 1.00 | 1.00 | 0.93 | 0.85 |
| Flt Protected | 1.00 | | 0.95 | 1.00 | 0.97 | 1.00 |
| Satd. Flow (prot) | 3217 | | 3433 | 3539 | 3285 | 1441 |
| Flt Permitted | 1.00 | | 0.95 | 1.00 | 0.97 | 1.00 |
| Satd. Flow (perm) | 3217 | | 3433 | 3539 | 3285 | 1441 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 11 | 17 | 23 | 11 | 22 | 36 |
| RTOR Reduction (vph) | 16 | 0 | 0 | 0 | 10 | 7 |
| Lane Group Flow (vph) | 12 | 0 | 23 | 11 | 29 | 12 |
| Turn Type | NA | | Prot | NA | Prot | pm+ov |
| Protected Phases | 4 | | 3 | 8 | 5 | 3 |
| Permitted Phases | | | | | | 5 |
| Actuated Green, G (s) | 1.3 | | 8.4 | 14.2 | 18.3 | 26.7 |
| Effective Green, g (s) | 1.3 | | 8.4 | 14.2 | 18.3 | 26.7 |
| Actuated g/C Ratio | 0.03 | | 0.20 | 0.34 | 0.44 | 0.64 |
| Clearance Time (s) | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 |
| Vehicle Extension (s) | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 100 | | 694 | 1210 | 1448 | 1083 |
| v/s Ratio Prot | c0.00 | | c0.01 | 0.00 | c0.01 | 0.00 |
| v/s Ratio Perm | | | | | | 0.01 |
| v/c Ratio | 0.12 | | 0.03 | 0.01 | 0.02 | 0.01 |
| Uniform Delay, d1 | 19.5 | | 13.3 | 9.0 | 6.5 | 2.7 |
| Progression Factor | 1.00 | | 0.91 | 1.30 | 0.80 | 1.49 |
| Incremental Delay, d2 | 0.5 | | 0.0 | 0.0 | 0.0 | 0.0 |
| Delay (s) | 20.1 | | 12.1 | 11.7 | 5.2 | 4.0 |
| Level of Service | C | | B | B | A | A |
| Approach Delay (s) | 20.1 | | | 12.0 | 4.8 | |
| Approach LOS | C | | | B | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 10.4 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.03 | | |
| Actuated Cycle Length (s) | 41.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 18.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group



| Movement | EBT | EBR | EBR2 | WBL | WBT | NBL | NBR | NEL | NER |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 10 | 0 | 23 | 21 | 31 | 31 | 56 | 0 | 0 |
| Future Volume (vph) | 10 | 0 | 23 | 21 | 31 | 31 | 56 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | |
| Lane Util. Factor | 0.95 | | 0.88 | 0.97 | 0.95 | 0.94 | 1.00 | | |
| Frt | 1.00 | | 0.85 | 1.00 | 1.00 | 1.00 | 0.85 | | |
| Flt Protected | 1.00 | | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 3539 | | 2787 | 3433 | 3539 | 4990 | 1583 | | |
| Flt Permitted | 1.00 | | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 3539 | | 2787 | 3433 | 3539 | 4990 | 1583 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 11 | 0 | 25 | 23 | 34 | 34 | 61 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 6 | 0 | 0 | 0 | 22 | 0 | 0 |
| Lane Group Flow (vph) | 11 | 0 | 19 | 23 | 34 | 34 | 39 | 0 | 0 |
| Turn Type | NA | | custom | Prot | NA | Prot | Perm | | |
| Protected Phases | 4 | | 4 5 | 3 | 8 | 5 | | | |
| Permitted Phases | | | | | | | 5 | | |
| Actuated Green, G (s) | 0.3 | | 31.5 | 1.0 | 5.8 | 26.7 | 26.7 | | |
| Effective Green, g (s) | 0.3 | | 31.5 | 1.0 | 5.8 | 26.7 | 26.7 | | |
| Actuated g/C Ratio | 0.01 | | 0.76 | 0.02 | 0.14 | 0.64 | 0.64 | | |
| Clearance Time (s) | 4.5 | | | 4.5 | 4.5 | 4.5 | 4.5 | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 25 | | 2115 | 82 | 494 | 3210 | 1018 | | |
| v/s Ratio Prot | 0.00 | | 0.01 | c0.01 | c0.01 | 0.01 | | | |
| v/s Ratio Perm | | | | | | | c0.02 | | |
| v/c Ratio | 0.44 | | 0.01 | 0.28 | 0.07 | 0.01 | 0.04 | | |
| Uniform Delay, d1 | 20.5 | | 1.2 | 19.9 | 15.5 | 2.7 | 2.7 | | |
| Progression Factor | 0.76 | | 2.57 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Incremental Delay, d2 | 11.9 | | 0.0 | 1.9 | 0.1 | 0.0 | 0.0 | | |
| Delay (s) | 27.5 | | 3.1 | 21.8 | 15.6 | 2.7 | 2.7 | | |
| Level of Service | C | | A | C | B | A | A | | |
| Approach Delay (s) | 10.6 | | | | 18.1 | 2.7 | | 0.0 | |
| Approach LOS | B | | | | B | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 8.9 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.05 | | |
| Actuated Cycle Length (s) | 41.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | Err% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | WBT | WBR | WBR2 | SBL | SBR | SWL | SWR |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 42 | 42 | 36 | 0 | 38 | 19 | 38 | 0 | 0 |
| Future Volume (vph) | 42 | 42 | 36 | 0 | 38 | 19 | 38 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 0.95 | | 1.00 | 0.97 | 0.88 | | |
| 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 | 3433 | 2787 | | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1770 | 3539 | 3539 | | 1583 | 3433 | 2787 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 46 | 46 | 39 | 0 | 41 | 21 | 41 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 21 | 0 | 18 | 0 | 0 |
| Lane Group Flow (vph) | 46 | 46 | 39 | 0 | 20 | 21 | 23 | 0 | 0 |
| Turn Type | Prot | NA | NA | | custom | Prot | custom | | |
| Protected Phases | 7 | 4 | 8 | | 1 | 1 | 7 | | |
| Permitted Phases | | | | | 8 | | 1 | | |
| Actuated Green, G (s) | 11.5 | 24.0 | 8.0 | | 24.5 | 16.5 | 28.0 | | |
| Effective Green, g (s) | 11.5 | 24.0 | 8.0 | | 24.5 | 16.5 | 28.0 | | |
| Actuated g/C Ratio | 0.23 | 0.48 | 0.16 | | 0.49 | 0.33 | 0.57 | | |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 411 | 1715 | 571 | | 927 | 1144 | 1829 | | |
| v/s Ratio Prot | c0.03 | 0.01 | c0.01 | | c0.01 | 0.01 | 0.00 | | |
| v/s Ratio Perm | | | | | 0.01 | | 0.01 | | |
| v/c Ratio | 0.11 | 0.03 | 0.07 | | 0.02 | 0.02 | 0.01 | | |
| Uniform Delay, d1 | 15.0 | 6.7 | 17.6 | | 6.4 | 11.1 | 4.7 | | |
| Progression Factor | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | | |
| Incremental Delay, d2 | 0.1 | 0.0 | 0.1 | | 0.0 | 0.0 | 0.0 | | |
| Delay (s) | 15.1 | 6.7 | 17.6 | | 6.4 | 11.1 | 4.7 | | |
| Level of Service | B | A | B | | A | B | A | | |
| Approach Delay (s) | | 10.9 | 11.9 | | | 6.9 | | 0.0 | |
| Approach LOS | | B | B | | | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 10.2 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.06 | | |
| Actuated Cycle Length (s) | 49.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 20.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 19 | 52 | 76 | 92 | 37 | 47 |
| Future Volume (vph) | 19 | 52 | 76 | 92 | 37 | 47 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 0.95 | | 0.97 | 0.95 | 0.97 | 0.91 |
| Frt | 0.89 | | 1.00 | 1.00 | 0.95 | 0.85 |
| Flt Protected | 1.00 | | 0.95 | 1.00 | 0.97 | 1.00 |
| Satd. Flow (prot) | 3151 | | 3433 | 3539 | 3314 | 1441 |
| Flt Permitted | 1.00 | | 0.95 | 1.00 | 0.97 | 1.00 |
| Satd. Flow (perm) | 3151 | | 3433 | 3539 | 3314 | 1441 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 21 | 57 | 83 | 100 | 40 | 51 |
| RTOR Reduction (vph) | 47 | 0 | 0 | 0 | 11 | 15 |
| Lane Group Flow (vph) | 31 | 0 | 83 | 100 | 51 | 14 |
| Turn Type | NA | | Prot | NA | Prot | Perm |
| Protected Phases | 4 | | 3 | 8 | 5 | |
| Permitted Phases | | | | | | 5 |
| Actuated Green, G (s) | 9.8 | | 4.4 | 18.7 | 27.3 | 27.3 |
| Effective Green, g (s) | 9.8 | | 4.4 | 18.7 | 27.3 | 27.3 |
| Actuated g/C Ratio | 0.18 | | 0.08 | 0.34 | 0.50 | 0.50 |
| Clearance Time (s) | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 |
| Vehicle Extension (s) | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 561 | | 274 | 1203 | 1644 | 715 |
| v/s Ratio Prot | 0.01 | | c0.02 | c0.03 | c0.02 | |
| v/s Ratio Perm | | | | | | 0.01 |
| v/c Ratio | 0.06 | | 0.30 | 0.08 | 0.03 | 0.02 |
| Uniform Delay, d1 | 18.8 | | 23.9 | 12.3 | 7.1 | 7.0 |
| Progression Factor | 1.00 | | 0.80 | 0.54 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.0 | | 0.6 | 0.0 | 0.0 | 0.0 |
| Delay (s) | 18.8 | | 19.7 | 6.7 | 7.1 | 7.1 |
| Level of Service | B | | B | A | A | A |
| Approach Delay (s) | 18.8 | | | 12.6 | 7.1 | |
| Approach LOS | B | | | B | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 12.6 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.08 | | |
| Actuated Cycle Length (s) | 55.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 20.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | EBR2 | WBL | WBT | NBL | NBR | NEL | NER |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 19 | 0 | 38 | 33 | 5 | 168 | 56 | 0 | 0 |
| Future Volume (vph) | 19 | 0 | 38 | 33 | 5 | 168 | 56 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | |
| Lane Util. Factor | 0.95 | | 0.88 | 0.97 | 0.95 | 0.94 | 1.00 | | |
| Frt | 1.00 | | 0.85 | 1.00 | 1.00 | 1.00 | 0.85 | | |
| Flt Protected | 1.00 | | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 3539 | | 2787 | 3433 | 3539 | 4990 | 1583 | | |
| Flt Permitted | 1.00 | | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 3539 | | 2787 | 3433 | 3539 | 4990 | 1583 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 21 | 0 | 41 | 36 | 5 | 183 | 61 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 8 | 0 | 0 | 0 | 22 | 0 | 0 |
| Lane Group Flow (vph) | 21 | 0 | 33 | 36 | 5 | 183 | 39 | 0 | 0 |
| Turn Type | NA | | custom | Prot | NA | Prot | Perm | | |
| Protected Phases | 4 | | 4 5 | 3 | 8 | 5 | | | |
| Permitted Phases | | | | | | | 5 | | |
| Actuated Green, G (s) | 3.7 | | 43.8 | 2.2 | 10.4 | 35.6 | 35.6 | | |
| Effective Green, g (s) | 3.7 | | 43.8 | 2.2 | 10.4 | 35.6 | 35.6 | | |
| Actuated g/C Ratio | 0.07 | | 0.80 | 0.04 | 0.19 | 0.65 | 0.65 | | |
| Clearance Time (s) | 4.5 | | | 4.5 | 4.5 | 4.5 | 4.5 | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 238 | | 2219 | 137 | 669 | 3229 | 1024 | | |
| v/s Ratio Prot | c0.01 | | 0.01 | c0.01 | 0.00 | c0.04 | | | |
| v/s Ratio Perm | | | | | | | 0.02 | | |
| v/c Ratio | 0.09 | | 0.01 | 0.26 | 0.01 | 0.06 | 0.04 | | |
| Uniform Delay, d1 | 24.1 | | 1.2 | 25.6 | 18.1 | 3.6 | 3.5 | | |
| Progression Factor | 1.27 | | 0.49 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Incremental Delay, d2 | 0.2 | | 0.0 | 1.0 | 0.0 | 0.0 | 0.1 | | |
| Delay (s) | 30.7 | | 0.6 | 26.6 | 18.1 | 3.6 | 3.6 | | |
| Level of Service | C | | A | C | B | A | A | | |
| Approach Delay (s) | 10.8 | | | | 25.6 | 3.6 | | 0.0 | |
| Approach LOS | B | | | | C | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 7.5 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.07 | | |
| Actuated Cycle Length (s) | 55.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | Err% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | WBT | WBR | WBR2 | SBL | SBR | SWL | SWR |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 202 | 367 | 154 | 0 | 31 | 30 | 151 | 0 | 0 |
| Future Volume (vph) | 202 | 367 | 154 | 0 | 31 | 30 | 151 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 0.95 | | 1.00 | 0.97 | 0.88 | | |
| 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 | 3433 | 2787 | | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1770 | 3539 | 3539 | | 1583 | 3433 | 2787 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 220 | 399 | 167 | 0 | 34 | 33 | 164 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 19 | 0 | 33 | 0 | 0 |
| Lane Group Flow (vph) | 220 | 399 | 167 | 0 | 15 | 33 | 131 | 0 | 0 |
| Turn Type | Prot | NA | NA | | custom | Prot | custom | | |
| Protected Phases | 7 | 4 | 8 | | 1 | 1 | 7 | | |
| Permitted Phases | | | | | 8 | | 1 | | |
| Actuated Green, G (s) | 55.2 | 70.7 | 11.0 | | 51.3 | 40.3 | 95.5 | | |
| Effective Green, g (s) | 55.2 | 70.7 | 11.0 | | 51.3 | 40.3 | 95.5 | | |
| Actuated g/C Ratio | 0.46 | 0.59 | 0.09 | | 0.43 | 0.34 | 0.80 | | |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 814 | 2085 | 324 | | 736 | 1152 | 2322 | | |
| v/s Ratio Prot | c0.12 | 0.11 | c0.05 | | 0.01 | 0.01 | c0.03 | | |
| v/s Ratio Perm | | | | | 0.00 | | 0.02 | | |
| v/c Ratio | 0.27 | 0.19 | 0.52 | | 0.02 | 0.03 | 0.06 | | |
| Uniform Delay, d1 | 20.0 | 11.4 | 52.0 | | 19.8 | 26.7 | 2.6 | | |
| Progression Factor | 1.00 | 1.00 | 0.47 | | 0.00 | 1.00 | 1.00 | | |
| Incremental Delay, d2 | 0.2 | 0.0 | 1.4 | | 0.0 | 0.0 | 0.0 | | |
| Delay (s) | 20.2 | 11.5 | 25.6 | | 0.0 | 26.7 | 2.6 | | |
| Level of Service | C | B | C | | A | C | A | | |
| Approach Delay (s) | | 14.6 | 21.3 | | | 6.7 | | 0.0 | |
| Approach LOS | | B | C | | | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 14.4 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.22 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 30.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 10 | 54 | 109 | 10 | 106 | 282 |
| Future Volume (vph) | 10 | 54 | 109 | 10 | 106 | 282 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 0.95 | | 0.97 | 0.95 | 0.97 | 0.91 |
| Frt | 0.87 | | 1.00 | 1.00 | 0.91 | 0.85 |
| Flt Protected | 1.00 | | 0.95 | 1.00 | 0.98 | 1.00 |
| Satd. Flow (prot) | 3092 | | 3433 | 3539 | 3234 | 1441 |
| Flt Permitted | 1.00 | | 0.95 | 1.00 | 0.98 | 1.00 |
| Satd. Flow (perm) | 3092 | | 3433 | 3539 | 3234 | 1441 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 11 | 59 | 118 | 11 | 115 | 307 |
| RTOR Reduction (vph) | 56 | 0 | 0 | 0 | 33 | 24 |
| Lane Group Flow (vph) | 14 | 0 | 118 | 11 | 236 | 129 |
| Turn Type | NA | | Prot | NA | Prot | pm+ov |
| Protected Phases | 4 | | 3 | 8 | 5 | 3 |
| Permitted Phases | | | | | | 5 |
| Actuated Green, G (s) | 5.3 | | 7.3 | 17.1 | 93.9 | 101.2 |
| Effective Green, g (s) | 5.3 | | 7.3 | 17.1 | 93.9 | 101.2 |
| Actuated g/C Ratio | 0.04 | | 0.06 | 0.14 | 0.78 | 0.84 |
| Clearance Time (s) | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 |
| Vehicle Extension (s) | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 136 | | 208 | 504 | 2530 | 1269 |
| v/s Ratio Prot | c0.00 | | c0.03 | 0.00 | 0.07 | c0.01 |
| v/s Ratio Perm | | | | | | 0.08 |
| v/c Ratio | 0.10 | | 0.57 | 0.02 | 0.09 | 0.10 |
| Uniform Delay, d1 | 55.1 | | 54.8 | 44.3 | 3.1 | 1.6 |
| Progression Factor | 1.00 | | 0.74 | 0.71 | 0.09 | 0.08 |
| Incremental Delay, d2 | 0.3 | | 3.5 | 0.0 | 0.0 | 0.0 |
| Delay (s) | 55.4 | | 44.1 | 31.2 | 0.3 | 0.2 |
| Level of Service | E | | D | C | A | A |
| Approach Delay (s) | 55.4 | | | 43.0 | 0.2 | |
| Approach LOS | E | | | D | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 15.3 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.14 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 23.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | EBR2 | WBL | WBT | NBL | NBR | NEL | NER |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 67 | 0 | 215 | 21 | 56 | 94 | 56 | 0 | 0 |
| Future Volume (vph) | 67 | 0 | 215 | 21 | 56 | 94 | 56 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | |
| Lane Util. Factor | 1.00 | | 0.88 | 1.00 | 0.95 | 0.94 | 1.00 | | |
| Frt | 1.00 | | 0.85 | 1.00 | 1.00 | 1.00 | 0.85 | | |
| Flt Protected | 1.00 | | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1863 | | 2787 | 1770 | 3539 | 4990 | 1583 | | |
| Flt Permitted | 1.00 | | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1863 | | 2787 | 1770 | 3539 | 4990 | 1583 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 73 | 0 | 234 | 23 | 61 | 102 | 61 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 27 | 0 | 0 | 0 | 14 | 0 | 0 |
| Lane Group Flow (vph) | 73 | 0 | 207 | 23 | 61 | 102 | 47 | 0 | 0 |
| Turn Type | NA | | custom | Prot | NA | Prot | Perm | | |
| Protected Phases | 4 | | 4 5 | 3 | 8 | 5 | | | |
| Permitted Phases | | | 4 | | | | 5 | | |
| Actuated Green, G (s) | 10.1 | | 106.2 | 4.8 | 19.4 | 91.6 | 91.6 | | |
| Effective Green, g (s) | 10.1 | | 106.2 | 4.8 | 19.4 | 91.6 | 91.6 | | |
| Actuated g/C Ratio | 0.08 | | 0.89 | 0.04 | 0.16 | 0.76 | 0.76 | | |
| Clearance Time (s) | 4.5 | | | 4.5 | 4.5 | 4.5 | 4.5 | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 156 | | 2466 | 70 | 572 | 3809 | 1208 | | |
| v/s Ratio Prot | c0.04 | | c0.07 | c0.01 | 0.02 | 0.02 | | | |
| v/s Ratio Perm | | | | | | | 0.03 | | |
| v/c Ratio | 0.47 | | 0.08 | 0.33 | 0.11 | 0.03 | 0.04 | | |
| Uniform Delay, d1 | 52.4 | | 0.9 | 56.0 | 42.9 | 3.4 | 3.5 | | |
| Progression Factor | 0.63 | | 0.36 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Incremental Delay, d2 | 2.2 | | 0.0 | 2.7 | 0.1 | 0.0 | 0.0 | | |
| Delay (s) | 35.0 | | 0.3 | 58.8 | 43.0 | 3.4 | 3.5 | | |
| Level of Service | D | | A | E | D | A | A | | |
| Approach Delay (s) | 8.6 | | | | 47.3 | 3.4 | | 0.0 | |
| Approach LOS | A | | | | D | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 12.9 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.13 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | Err% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | WBT | WBR | WBR2 | SBL | SBR | SWL | SWR |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 153 | 301 | 346 | 0 | 38 | 19 | 245 | 0 | 0 |
| Future Volume (vph) | 153 | 301 | 346 | 0 | 38 | 19 | 245 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 0.95 | | 1.00 | 0.97 | 0.88 | | |
| 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 | 3433 | 2787 | | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1770 | 3539 | 3539 | | 1583 | 3433 | 2787 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 166 | 327 | 376 | 0 | 41 | 21 | 266 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 10 | 0 | 31 | 0 | 0 |
| Lane Group Flow (vph) | 166 | 327 | 376 | 0 | 31 | 21 | 235 | 0 | 0 |
| Turn Type | Prot | NA | NA | | custom | Prot | custom | | |
| Protected Phases | 7 | 4 | 8 | | 1 | 1 | 7 | | |
| Permitted Phases | | | | | 8 | | 4 | | |
| Actuated Green, G (s) | 16.6 | 105.8 | 84.7 | | 89.9 | 5.2 | 105.8 | | |
| Effective Green, g (s) | 16.6 | 105.8 | 84.7 | | 89.9 | 5.2 | 105.8 | | |
| Actuated g/C Ratio | 0.14 | 0.88 | 0.71 | | 0.75 | 0.04 | 0.88 | | |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 244 | 3120 | 2497 | | 1245 | 148 | 2457 | | |
| v/s Ratio Prot | c0.09 | 0.09 | c0.11 | | 0.00 | c0.01 | 0.01 | | |
| v/s Ratio Perm | | | | | 0.02 | | 0.07 | | |
| v/c Ratio | 0.68 | 0.10 | 0.15 | | 0.02 | 0.14 | 0.10 | | |
| Uniform Delay, d1 | 49.2 | 0.9 | 5.8 | | 3.8 | 55.3 | 0.9 | | |
| Progression Factor | 1.00 | 1.00 | 0.29 | | 0.00 | 1.00 | 1.00 | | |
| Incremental Delay, d2 | 7.6 | 0.1 | 0.1 | | 0.0 | 0.4 | 0.0 | | |
| Delay (s) | 56.8 | 1.0 | 1.8 | | 0.0 | 55.7 | 0.9 | | |
| Level of Service | E | A | A | | A | E | A | | |
| Approach Delay (s) | | 19.8 | 1.6 | | | 4.9 | | 0.0 | |
| Approach LOS | | B | A | | | A | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 9.9 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.23 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 33.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 19 | 145 | 293 | 92 | 104 | 239 |
| Future Volume (vph) | 19 | 145 | 293 | 92 | 104 | 239 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 0.95 | | 0.97 | 0.95 | 0.97 | 0.91 |
| Frt | 0.87 | | 1.00 | 1.00 | 0.92 | 0.85 |
| Flt Protected | 1.00 | | 0.95 | 1.00 | 0.98 | 1.00 |
| Satd. Flow (prot) | 3071 | | 3433 | 3539 | 3248 | 1441 |
| Flt Permitted | 1.00 | | 0.95 | 1.00 | 0.98 | 1.00 |
| Satd. Flow (perm) | 3071 | | 3433 | 3539 | 3248 | 1441 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 21 | 158 | 318 | 100 | 113 | 260 |
| RTOR Reduction (vph) | 118 | 0 | 0 | 0 | 119 | 48 |
| Lane Group Flow (vph) | 61 | 0 | 318 | 100 | 124 | 82 |
| Turn Type | NA | | Prot | NA | Prot | pm+ov |
| Protected Phases | 4 | | 3 | 8 | 5 | 3 |
| Permitted Phases | | | | | | 5 |
| Actuated Green, G (s) | 30.5 | | 66.3 | 101.3 | 9.7 | 76.0 |
| Effective Green, g (s) | 30.5 | | 66.3 | 101.3 | 9.7 | 76.0 |
| Actuated g/C Ratio | 0.25 | | 0.55 | 0.84 | 0.08 | 0.63 |
| Clearance Time (s) | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 |
| Vehicle Extension (s) | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 780 | | 1896 | 2987 | 262 | 966 |
| v/s Ratio Prot | c0.02 | | c0.09 | 0.03 | c0.04 | 0.05 |
| v/s Ratio Perm | | | | | | 0.01 |
| v/c Ratio | 0.08 | | 0.17 | 0.03 | 0.47 | 0.09 |
| Uniform Delay, d1 | 34.1 | | 13.2 | 1.5 | 52.7 | 8.5 |
| Progression Factor | 1.00 | | 1.20 | 0.83 | 1.07 | 0.83 |
| Incremental Delay, d2 | 0.0 | | 0.2 | 0.0 | 1.3 | 0.0 |
| Delay (s) | 34.1 | | 16.1 | 1.3 | 57.6 | 7.1 |
| Level of Service | C | | B | A | E | A |
| Approach Delay (s) | 34.1 | | | 12.5 | 40.0 | |
| Approach LOS | C | | | B | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 27.1 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.17 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 30.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | EBR2 | WBL | WBT | NBL | NBR | NEL | NER |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 63 | 0 | 186 | 33 | 67 | 323 | 56 | 0 | 0 |
| Future Volume (vph) | 63 | 0 | 186 | 33 | 67 | 323 | 56 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | |
| Lane Util. Factor | 1.00 | | 0.88 | 1.00 | 0.95 | 0.94 | 1.00 | | |
| Frt | 1.00 | | 0.85 | 1.00 | 1.00 | 1.00 | 0.85 | | |
| Flt Protected | 1.00 | | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1863 | | 2787 | 1770 | 3539 | 4990 | 1583 | | |
| Flt Permitted | 1.00 | | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1863 | | 2787 | 1770 | 3539 | 4990 | 1583 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 68 | 0 | 202 | 36 | 73 | 351 | 61 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 24 | 0 | 0 | 0 | 15 | 0 | 0 |
| Lane Group Flow (vph) | 68 | 0 | 178 | 36 | 73 | 351 | 46 | 0 | 0 |
| Turn Type | NA | | custom | Prot | NA | Prot | Perm | | |
| Protected Phases | 4 | | 4 2 | 3 | 8 | 2 | | | |
| Permitted Phases | | | | | | | 2 | | |
| Actuated Green, G (s) | 9.8 | | 105.5 | 5.5 | 19.8 | 91.2 | 91.2 | | |
| Effective Green, g (s) | 9.8 | | 105.5 | 5.5 | 19.8 | 91.2 | 91.2 | | |
| Actuated g/C Ratio | 0.08 | | 0.88 | 0.05 | 0.17 | 0.76 | 0.76 | | |
| Clearance Time (s) | 4.5 | | | 4.5 | 4.5 | 4.5 | 4.5 | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 152 | | 2450 | 81 | 583 | 3792 | 1203 | | |
| v/s Ratio Prot | c0.04 | | 0.06 | c0.02 | 0.02 | c0.07 | | | |
| v/s Ratio Perm | | | | | | | 0.03 | | |
| v/c Ratio | 0.45 | | 0.07 | 0.44 | 0.13 | 0.09 | 0.04 | | |
| Uniform Delay, d1 | 52.5 | | 0.9 | 55.8 | 42.7 | 3.7 | 3.6 | | |
| Progression Factor | 0.98 | | 1.54 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Incremental Delay, d2 | 2.1 | | 0.0 | 3.9 | 0.1 | 0.0 | 0.1 | | |
| Delay (s) | 53.7 | | 1.5 | 59.6 | 42.8 | 3.8 | 3.6 | | |
| Level of Service | D | | A | E | D | A | A | | |
| Approach Delay (s) | 14.6 | | | | 48.4 | 3.7 | | 0.0 | |
| Approach LOS | B | | | | D | A | | A | |

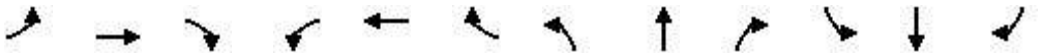
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 13.6 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.14 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | Err% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | WBT | WBR | WBR2 | SBL | SBR | SWL | SWR |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 597 | 1496 | 587 | 0 | 110 | 307 | 387 | 0 | 0 |
| Future Volume (vph) | 597 | 1496 | 587 | 0 | 110 | 307 | 387 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 0.95 | | 1.00 | 0.97 | 0.88 | | |
| 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 | 3433 | 2787 | | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1770 | 3539 | 3539 | | 1583 | 3433 | 2787 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 649 | 1626 | 638 | 0 | 120 | 334 | 421 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 64 | 0 | 87 | 0 | 0 |
| Lane Group Flow (vph) | 649 | 1626 | 638 | 0 | 56 | 334 | 334 | 0 | 0 |
| Turn Type | Prot | NA | NA | | custom | Prot | Perm | | |
| Protected Phases | 7 | 4 | 8 | | 1 | 1 | | | |
| Permitted Phases | | | | | 8 | | 4 | | |
| Actuated Green, G (s) | 50.5 | 95.1 | 40.1 | | 56.0 | 15.9 | 95.1 | | |
| Effective Green, g (s) | 50.5 | 95.1 | 40.1 | | 56.0 | 15.9 | 95.1 | | |
| Actuated g/C Ratio | 0.42 | 0.79 | 0.33 | | 0.47 | 0.13 | 0.79 | | |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 744 | 2804 | 1182 | | 798 | 454 | 2208 | | |
| v/s Ratio Prot | c0.37 | c0.46 | 0.18 | | 0.01 | c0.10 | | | |
| v/s Ratio Perm | | | | | 0.03 | | 0.12 | | |
| v/c Ratio | 0.87 | 0.58 | 0.54 | | 0.07 | 0.74 | 0.15 | | |
| Uniform Delay, d1 | 31.8 | 4.8 | 32.5 | | 17.6 | 50.0 | 2.9 | | |
| Progression Factor | 1.00 | 1.00 | 0.76 | | 0.30 | 1.00 | 1.00 | | |
| Incremental Delay, d2 | 11.0 | 0.9 | 1.7 | | 0.0 | 6.1 | 0.1 | | |
| Delay (s) | 42.8 | 5.7 | 26.5 | | 5.4 | 56.1 | 3.1 | | |
| Level of Service | D | A | C | | A | E | A | | |
| Approach Delay (s) | | 16.3 | 23.1 | | | 26.6 | | 0.0 | |
| Approach LOS | | B | C | | | C | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 19.7 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.75 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 69.3% | ICU Level of Service | C |
| 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) | 111 | 31 | 130 | 426 | 62 | 83 | 326 | 352 | 1116 | 32 | 119 | 30 |
| Future Volume (vph) | 111 | 31 | 130 | 426 | 62 | 83 | 326 | 352 | 1116 | 32 | 119 | 30 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 0.97 | 0.95 | | 0.97 | 0.95 | 0.88 | 0.97 | 0.95 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.91 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1770 | 1863 | 2787 | 3433 | 3235 | | 3433 | 3539 | 2787 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1770 | 1863 | 2787 | 3433 | 3235 | | 3433 | 3539 | 2787 | 3433 | 3539 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 121 | 34 | 141 | 463 | 67 | 90 | 354 | 383 | 1213 | 35 | 129 | 33 |
| RTOR Reduction (vph) | 0 | 0 | 94 | 0 | 84 | 0 | 0 | 0 | 266 | 0 | 0 | 17 |
| Lane Group Flow (vph) | 121 | 34 | 47 | 463 | 73 | 0 | 354 | 383 | 947 | 35 | 129 | 16 |
| Turn Type | Prot | NA | pm+ov | Prot | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | 41.2 | 5.3 | 39.8 | 44.2 | 8.3 | | 34.5 | 49.5 | 93.7 | 3.0 | 18.0 | 59.2 |
| Effective Green, g (s) | 41.2 | 5.3 | 39.8 | 44.2 | 8.3 | | 34.5 | 49.5 | 93.7 | 3.0 | 18.0 | 59.2 |
| Actuated g/C Ratio | 0.34 | 0.04 | 0.33 | 0.37 | 0.07 | | 0.29 | 0.41 | 0.78 | 0.02 | 0.15 | 0.49 |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| 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 |
| Lane Grp Cap (vph) | 607 | 82 | 1028 | 1264 | 223 | | 986 | 1459 | 2280 | 85 | 530 | 840 |
| v/s Ratio Prot | 0.07 | 0.02 | 0.01 | 0.13 | c0.02 | | c0.10 | 0.11 | c0.15 | 0.01 | 0.04 | 0.01 |
| v/s Ratio Perm | | | 0.00 | | | | | | 0.19 | | | 0.00 |
| v/c Ratio | 0.20 | 0.41 | 0.05 | 0.37 | 0.33 | | 0.36 | 0.26 | 0.42 | 0.41 | 0.24 | 0.02 |
| Uniform Delay, d1 | 27.8 | 55.8 | 27.2 | 27.7 | 53.2 | | 34.0 | 23.2 | 4.3 | 57.6 | 45.0 | 15.6 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.55 | 0.46 | | 1.09 | 1.14 | 4.33 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.2 | 3.4 | 0.0 | 0.8 | 0.9 | | 0.2 | 0.4 | 0.5 | 3.2 | 1.1 | 0.0 |
| Delay (s) | 27.9 | 59.2 | 27.2 | 16.1 | 25.1 | | 37.3 | 26.9 | 18.9 | 60.9 | 46.1 | 15.6 |
| Level of Service | C | E | C | B | C | | D | C | B | E | D | B |
| Approach Delay (s) | | 31.2 | | | 18.4 | | | 23.8 | | | 43.6 | |
| Approach LOS | | C | | | B | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 24.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.44 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 58.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | EBR2 | WBL | WBT | NBL | NBR | NEL | NER |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 375 | 0 | 794 | 74 | 196 | 406 | 129 | 0 | 0 |
| Future Volume (vph) | 375 | 0 | 794 | 74 | 196 | 406 | 129 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | |
| Lane Util. Factor | 0.95 | | 0.88 | 0.97 | 0.95 | 0.94 | 1.00 | | |
| Frt | 1.00 | | 0.85 | 1.00 | 1.00 | 1.00 | 0.85 | | |
| Flt Protected | 1.00 | | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 3539 | | 2787 | 3433 | 3539 | 4990 | 1583 | | |
| Flt Permitted | 1.00 | | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 3539 | | 2787 | 3433 | 3539 | 4990 | 1583 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 408 | 0 | 863 | 80 | 213 | 441 | 140 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 95 | 0 | 0 | 0 | 86 | 0 | 0 |
| Lane Group Flow (vph) | 408 | 0 | 768 | 80 | 213 | 441 | 54 | 0 | 0 |
| Turn Type | NA | | custom | Prot | NA | Prot | Perm | | |
| Protected Phases | 4 | | 4 5 | 3 | 8 | 5 | | | |
| Permitted Phases | | | | | | | 5 | | |
| Actuated Green, G (s) | 53.0 | | 104.0 | 7.0 | 64.5 | 46.5 | 46.5 | | |
| Effective Green, g (s) | 53.0 | | 104.0 | 7.0 | 64.5 | 46.5 | 46.5 | | |
| Actuated g/C Ratio | 0.44 | | 0.87 | 0.06 | 0.54 | 0.39 | 0.39 | | |
| Clearance Time (s) | 4.5 | | | 4.5 | 4.5 | 4.5 | 4.5 | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 1563 | | 2415 | 200 | 1902 | 1933 | 613 | | |
| v/s Ratio Prot | 0.12 | | c0.28 | c0.02 | 0.06 | 0.09 | | | |
| v/s Ratio Perm | | | | | | | 0.03 | | |
| v/c Ratio | 0.26 | | 0.32 | 0.40 | 0.11 | 0.23 | 0.09 | | |
| Uniform Delay, d1 | 21.1 | | 1.5 | 54.5 | 13.7 | 24.7 | 23.3 | | |
| Progression Factor | 1.05 | | 4.78 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Incremental Delay, d2 | 0.4 | | 0.3 | 1.3 | 0.1 | 0.3 | 0.3 | | |
| Delay (s) | 22.5 | | 7.4 | 55.8 | 13.8 | 25.0 | 23.6 | | |
| Level of Service | C | | A | E | B | C | C | | |
| Approach Delay (s) | 12.2 | | | | 25.2 | 24.6 | | 0.0 | |
| Approach LOS | B | | | | C | C | | A | |

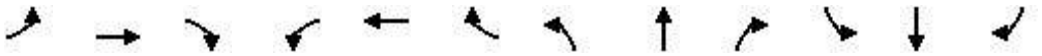
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 17.4 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.34 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | Err% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBL | EBT | WBT | WBR | WBR2 | SBL | SBR | SWL | SWR |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 479 | 1507 | 1700 | 0 | 458 | 614 | 867 | 0 | 0 |
| Future Volume (vph) | 479 | 1507 | 1700 | 0 | 458 | 614 | 867 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 0.91 | | 1.00 | 0.97 | 0.88 | | |
| 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 | 5085 | | 1583 | 3433 | 2787 | | |
| Flt Permitted | 0.95 | 1.00 | 1.00 | | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 1770 | 3539 | 5085 | | 1583 | 3433 | 2787 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 521 | 1638 | 1848 | 0 | 498 | 667 | 942 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 26 | 0 | 8 | 0 | 0 |
| Lane Group Flow (vph) | 521 | 1638 | 1848 | 0 | 472 | 667 | 934 | 0 | 0 |
| Turn Type | Prot | NA | NA | | custom | Prot | custom | | |
| Protected Phases | 7 | 4 | 8 | | 1 | 1 | 7 1 | | |
| Permitted Phases | | | | | 8 | | | | |
| Actuated Green, G (s) | 30.5 | 90.5 | 55.5 | | 76.0 | 20.5 | 55.5 | | |
| Effective Green, g (s) | 30.5 | 90.5 | 55.5 | | 76.0 | 20.5 | 55.5 | | |
| Actuated g/C Ratio | 0.25 | 0.75 | 0.46 | | 0.63 | 0.17 | 0.46 | | |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | | |
| Lane Grp Cap (vph) | 449 | 2668 | 2351 | | 1061 | 586 | 1288 | | |
| v/s Ratio Prot | c0.29 | 0.46 | c0.36 | | 0.08 | c0.19 | 0.34 | | |
| v/s Ratio Perm | | | | | 0.22 | | | | |
| v/c Ratio | 1.16 | 0.61 | 0.79 | | 0.45 | 1.14 | 0.73 | | |
| Uniform Delay, d1 | 44.8 | 6.8 | 27.2 | | 11.2 | 49.8 | 26.1 | | |
| Progression Factor | 1.00 | 1.00 | 0.55 | | 0.65 | 1.00 | 1.00 | | |
| Incremental Delay, d2 | 94.3 | 1.1 | 2.0 | | 0.2 | 81.5 | 2.1 | | |
| Delay (s) | 139.1 | 7.8 | 17.0 | | 7.5 | 131.3 | 28.2 | | |
| Level of Service | F | A | B | | A | F | C | | |
| Approach Delay (s) | | 39.5 | 15.0 | | | 70.9 | | 0.0 | |
| Approach LOS | | D | B | | | E | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 38.4 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.96 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 88.2% | 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 (vph) | 147 | 187 | 514 | 1343 | 270 | 111 | 602 | 390 | 1152 | 112 | 355 | 84 |
| Future Volume (vph) | 147 | 187 | 514 | 1343 | 270 | 111 | 602 | 390 | 1152 | 112 | 355 | 84 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 0.94 | 0.95 | | 0.97 | 0.95 | 0.88 | 0.97 | 0.91 | 0.91 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.96 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1770 | 1863 | 2787 | 4990 | 3384 | | 3433 | 3539 | 2787 | 3433 | 3379 | 1441 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1770 | 1863 | 2787 | 4990 | 3384 | | 3433 | 3539 | 2787 | 3433 | 3379 | 1441 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 160 | 203 | 559 | 1460 | 293 | 121 | 654 | 424 | 1252 | 122 | 386 | 91 |
| RTOR Reduction (vph) | 0 | 0 | 97 | 0 | 36 | 0 | 0 | 0 | 54 | 0 | 2 | 59 |
| Lane Group Flow (vph) | 160 | 203 | 462 | 1460 | 378 | 0 | 654 | 424 | 1198 | 122 | 393 | 23 |
| Turn Type | Prot | NA | pm+ov | Prot | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | 15.5 | 12.5 | 34.1 | 49.9 | 46.9 | | 21.6 | 31.0 | 80.9 | 8.6 | 18.0 | 33.5 |
| Effective Green, g (s) | 15.5 | 12.5 | 34.1 | 49.9 | 46.9 | | 21.6 | 31.0 | 80.9 | 8.6 | 18.0 | 33.5 |
| Actuated g/C Ratio | 0.13 | 0.10 | 0.28 | 0.42 | 0.39 | | 0.18 | 0.26 | 0.67 | 0.07 | 0.15 | 0.28 |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| 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 |
| Lane Grp Cap (vph) | 228 | 194 | 896 | 2075 | 1322 | | 617 | 914 | 1878 | 246 | 506 | 456 |
| v/s Ratio Prot | 0.09 | c0.11 | 0.09 | c0.29 | 0.11 | | c0.19 | 0.12 | 0.27 | 0.04 | c0.12 | 0.01 |
| v/s Ratio Perm | | | 0.07 | | | | | | 0.16 | | | 0.01 |
| v/c Ratio | 0.70 | 1.05 | 0.52 | 0.70 | 0.29 | | 1.06 | 0.46 | 0.64 | 0.50 | 0.78 | 0.05 |
| Uniform Delay, d1 | 50.0 | 53.8 | 36.0 | 28.9 | 25.1 | | 49.2 | 37.5 | 11.2 | 53.6 | 49.1 | 31.6 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 0.76 | 0.85 | | 1.03 | 1.09 | 0.69 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 9.4 | 77.4 | 0.5 | 1.9 | 0.1 | | 46.1 | 1.1 | 1.1 | 1.6 | 11.2 | 0.0 |
| Delay (s) | 59.4 | 131.1 | 36.5 | 24.0 | 21.5 | | 96.6 | 42.1 | 8.8 | 55.2 | 60.2 | 31.7 |
| Level of Service | E | F | D | C | C | | F | D | A | E | E | C |
| Approach Delay (s) | | 61.3 | | | 23.4 | | | 39.5 | | | 55.3 | |
| Approach LOS | | E | | | C | | | D | | | E | |

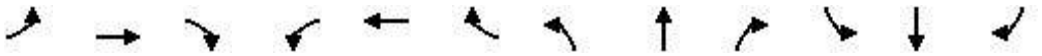
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 39.4 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.83 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 78.3% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | EBR2 | WBL | WBT | NBL | NBR | NEL | NER |
|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | |
| Traffic Volume (vph) | 541 | 0 | 901 | 313 | 650 | 1079 | 212 | 0 | 0 |
| Future Volume (vph) | 541 | 0 | 901 | 313 | 650 | 1079 | 212 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | |
| Lane Util. Factor | 0.95 | | 0.88 | 0.97 | 0.95 | 0.94 | 1.00 | | |
| Frt | 1.00 | | 0.85 | 1.00 | 1.00 | 1.00 | 0.85 | | |
| Flt Protected | 1.00 | | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 3539 | | 2787 | 3433 | 3539 | 4990 | 1583 | | |
| Flt Permitted | 1.00 | | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (perm) | 3539 | | 2787 | 3433 | 3539 | 4990 | 1583 | | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 588 | 0 | 979 | 340 | 707 | 1173 | 230 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 38 | 0 | 0 | 0 | 118 | 0 | 0 |
| Lane Group Flow (vph) | 588 | 0 | 941 | 340 | 707 | 1173 | 112 | 0 | 0 |
| Turn Type | NA | | custom | Prot | NA | Prot | Perm | | |
| Protected Phases | 4 | | 4 5 | 3 | 8 | 5 | | | |
| Permitted Phases | | | | | | | 5 | | |
| Actuated Green, G (s) | 31.1 | | 93.9 | 17.1 | 52.7 | 58.3 | 58.3 | | |
| Effective Green, g (s) | 31.1 | | 93.9 | 17.1 | 52.7 | 58.3 | 58.3 | | |
| Actuated g/C Ratio | 0.26 | | 0.78 | 0.14 | 0.44 | 0.49 | 0.49 | | |
| Clearance Time (s) | 4.5 | | | 4.5 | 4.5 | 4.5 | 4.5 | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 917 | | 2180 | 489 | 1554 | 2424 | 769 | | |
| v/s Ratio Prot | c0.17 | | 0.34 | c0.10 | 0.20 | c0.24 | | | |
| v/s Ratio Perm | | | | | | | 0.07 | | |
| v/c Ratio | 0.64 | | 0.43 | 0.70 | 0.45 | 0.48 | 0.15 | | |
| Uniform Delay, d1 | 39.5 | | 4.3 | 49.0 | 23.6 | 20.7 | 17.1 | | |
| Progression Factor | 0.89 | | 0.51 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Incremental Delay, d2 | 1.1 | | 0.1 | 4.3 | 0.2 | 0.7 | 0.4 | | |
| Delay (s) | 36.2 | | 2.3 | 53.2 | 23.8 | 21.4 | 17.5 | | |
| Level of Service | D | | A | D | C | C | B | | |
| Approach Delay (s) | 15.0 | | | | 33.4 | 20.8 | | 0.0 | |
| Approach LOS | B | | | | C | C | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 21.8 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.56 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | Err% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

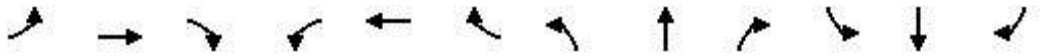
c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 30 | 5 | 67 | 0 | 0 | 0 | 0 | 64 | 58 | 31 | 59 | 0 |
| Future Volume (vph) | 30 | 5 | 67 | 0 | 0 | 0 | 0 | 64 | 58 | 31 | 59 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | | | | | 4.5 | | 4.5 | 4.5 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.88 | | | | | 0.91 | | 0.97 | 0.95 | |
| Frt | 1.00 | 1.00 | 0.85 | | | | | 0.93 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 0.96 | 1.00 | | | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1681 | 1707 | 2787 | | | | | 4724 | | 3433 | 3539 | |
| Flt Permitted | 0.95 | 0.96 | 1.00 | | | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1681 | 1707 | 2787 | | | | | 4724 | | 3433 | 3539 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 33 | 5 | 73 | 0 | 0 | 0 | 0 | 70 | 63 | 34 | 64 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 59 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 19 | 19 | 14 | 0 | 0 | 0 | 0 | 103 | 0 | 34 | 64 | 0 |
| Turn Type | Prot | NA | Perm | | | | | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | | | | | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | | | | | | | |
| Actuated Green, G (s) | 10.8 | 10.8 | 10.8 | | | | | 28.2 | | 2.0 | 34.7 | |
| Effective Green, g (s) | 10.8 | 10.8 | 10.8 | | | | | 28.2 | | 2.0 | 34.7 | |
| Actuated g/C Ratio | 0.20 | 0.20 | 0.20 | | | | | 0.52 | | 0.04 | 0.64 | |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | | | | | 4.5 | | 4.5 | 4.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | | | | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 333 | 338 | 552 | | | | | 2444 | | 125 | 2253 | |
| v/s Ratio Prot | c0.01 | 0.01 | | | | | | c0.02 | | c0.01 | 0.02 | |
| v/s Ratio Perm | | | 0.01 | | | | | | | | | |
| v/c Ratio | 0.06 | 0.06 | 0.03 | | | | | 0.04 | | 0.27 | 0.03 | |
| Uniform Delay, d1 | 17.7 | 17.7 | 17.6 | | | | | 6.5 | | 25.5 | 3.7 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | | | | | 1.00 | | 1.69 | 0.94 | |
| Incremental Delay, d2 | 0.1 | 0.1 | 0.0 | | | | | 0.0 | | 1.2 | 0.0 | |
| Delay (s) | 17.8 | 17.8 | 17.6 | | | | | 6.5 | | 44.2 | 3.5 | |
| Level of Service | B | B | B | | | | | A | | D | A | |
| Approach Delay (s) | | 17.7 | | | 0.0 | | | 6.5 | | | 17.6 | |
| Approach LOS | | B | | | A | | | A | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 13.3 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.06 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 23.8% | ICU Level of Service | A |
| 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 | 0 | 0 | 31 | 10 | 167 | 23 | 71 | 0 | 0 | 59 | 51 |
| Future Volume (vph) | 0 | 0 | 0 | 31 | 10 | 167 | 23 | 71 | 0 | 0 | 59 | 51 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Lane Util. Factor | | | | 0.95 | 0.95 | 0.88 | 0.97 | 0.95 | | | 0.91 | 1.00 |
| Frt | | | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | 0.95 | 0.97 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | 1681 | 1725 | 2787 | 3433 | 3539 | | | 5085 | 1583 |
| Flt Permitted | | | | 0.95 | 0.97 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | 1681 | 1725 | 2787 | 3433 | 3539 | | | 5085 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 0 | 34 | 11 | 182 | 25 | 77 | 0 | 0 | 64 | 55 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 134 | 0 | 0 | 0 | 0 | 0 | 29 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 22 | 23 | 48 | 25 | 77 | 0 | 0 | 64 | 26 |
| Turn Type | | | | Prot | NA | Perm | Prot | NA | | | NA | Perm |
| Protected Phases | | | | 3 | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | 6 |
| Actuated Green, G (s) | | | | 14.4 | 14.4 | 14.4 | 1.0 | 31.1 | | | 25.6 | 25.6 |
| Effective Green, g (s) | | | | 14.4 | 14.4 | 14.4 | 1.0 | 31.1 | | | 25.6 | 25.6 |
| Actuated g/C Ratio | | | | 0.26 | 0.26 | 0.26 | 0.02 | 0.57 | | | 0.47 | 0.47 |
| Clearance Time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | 444 | 455 | 736 | 62 | 2019 | | | 2388 | 743 |
| v/s Ratio Prot | | | | 0.01 | 0.01 | | c0.01 | c0.02 | | | 0.01 | |
| v/s Ratio Perm | | | | | | c0.02 | | | | | | 0.02 |
| v/c Ratio | | | | 0.05 | 0.05 | 0.07 | 0.40 | 0.04 | | | 0.03 | 0.03 |
| Uniform Delay, d1 | | | | 14.9 | 15.0 | 15.0 | 26.5 | 5.1 | | | 7.8 | 7.8 |
| Progression Factor | | | | 1.00 | 1.00 | 1.00 | 1.37 | 1.08 | | | 1.36 | 12.77 |
| Incremental Delay, d2 | | | | 0.0 | 0.0 | 0.0 | 4.2 | 0.0 | | | 0.0 | 0.1 |
| Delay (s) | | | | 15.0 | 15.0 | 15.0 | 40.6 | 5.6 | | | 10.6 | 99.5 |
| Level of Service | | | | B | B | B | D | A | | | B | F |
| Approach Delay (s) | | 0.0 | | | 15.0 | | | 14.2 | | | 51.7 | |
| Approach LOS | | A | | | B | | | B | | | D | |

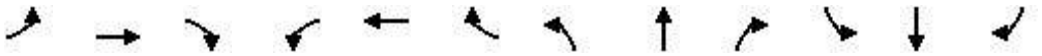
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 24.6 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.06 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 23.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 7 | 59 | 40 | 4 | 161 | 107 |
| Future Volume (vph) | 7 | 59 | 40 | 4 | 161 | 107 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 0.91 | 0.91 | 0.97 | 0.95 | 0.97 | 1.00 |
| Frt | 0.88 | 0.85 | 1.00 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 1.00 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (prot) | 2983 | 1441 | 3433 | 3539 | 3433 | 1583 |
| Flt Permitted | 1.00 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (perm) | 2983 | 1441 | 3433 | 3539 | 3433 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 8 | 64 | 43 | 4 | 175 | 116 |
| RTOR Reduction (vph) | 30 | 30 | 0 | 0 | 0 | 41 |
| Lane Group Flow (vph) | 10 | 2 | 43 | 4 | 175 | 75 |
| Turn Type | NA | Perm | Prot | NA | Prot | Perm |
| Protected Phases | 4 | | 3 | 8 | 5 | |
| Permitted Phases | | 4 | | | | 2 |
| Actuated Green, G (s) | 3.9 | 3.9 | 2.0 | 10.4 | 35.1 | 35.1 |
| Effective Green, g (s) | 3.9 | 3.9 | 2.0 | 10.4 | 35.1 | 35.1 |
| Actuated g/C Ratio | 0.07 | 0.07 | 0.04 | 0.19 | 0.64 | 0.64 |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 213 | 103 | 125 | 675 | 2210 | 1019 |
| v/s Ratio Prot | c0.00 | | c0.01 | 0.00 | c0.05 | |
| v/s Ratio Perm | | 0.00 | | | | 0.05 |
| v/c Ratio | 0.05 | 0.02 | 0.34 | 0.01 | 0.08 | 0.07 |
| Uniform Delay, d1 | 23.6 | 23.5 | 25.6 | 17.9 | 3.6 | 3.6 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.12 | 1.34 |
| Incremental Delay, d2 | 0.1 | 0.1 | 1.7 | 0.0 | 0.0 | 0.1 |
| Delay (s) | 23.7 | 23.6 | 27.3 | 17.9 | 4.1 | 5.0 |
| Level of Service | C | C | C | B | A | A |
| Approach Delay (s) | 23.6 | | | 26.5 | 4.5 | |
| Approach LOS | C | | | C | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 10.4 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.09 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 19.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

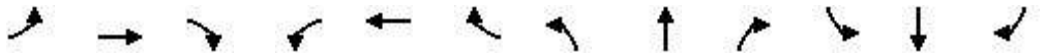
c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 19 | 3 | 38 | 0 | 0 | 0 | 0 | 76 | 42 | 38 | 74 | 0 |
| Future Volume (vph) | 19 | 3 | 38 | 0 | 0 | 0 | 0 | 76 | 42 | 38 | 74 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | | | | | 4.5 | | 4.5 | 4.5 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.88 | | | | | 0.91 | | 0.97 | 0.95 | |
| Frt | 1.00 | 1.00 | 0.85 | | | | | 0.95 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 0.96 | 1.00 | | | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1681 | 1706 | 2787 | | | | | 4813 | | 3433 | 3539 | |
| Flt Permitted | 0.95 | 0.96 | 1.00 | | | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1681 | 1706 | 2787 | | | | | 4813 | | 3433 | 3539 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 21 | 3 | 41 | 0 | 0 | 0 | 0 | 83 | 46 | 41 | 80 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 36 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 12 | 12 | 5 | 0 | 0 | 0 | 0 | 110 | 0 | 41 | 80 | 0 |
| Turn Type | Prot | NA | Perm | | | | | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | | | | | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | | | | | | | |
| Actuated Green, G (s) | 7.2 | 7.2 | 7.2 | | | | | 31.8 | | 2.0 | 38.3 | |
| Effective Green, g (s) | 7.2 | 7.2 | 7.2 | | | | | 31.8 | | 2.0 | 38.3 | |
| Actuated g/C Ratio | 0.13 | 0.13 | 0.13 | | | | | 0.58 | | 0.04 | 0.70 | |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | | | | | 4.5 | | 4.5 | 4.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | | | | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 222 | 225 | 368 | | | | | 2808 | | 125 | 2487 | |
| v/s Ratio Prot | c0.01 | 0.01 | | | | | | c0.02 | | c0.01 | 0.02 | |
| v/s Ratio Perm | | | 0.00 | | | | | | | | | |
| v/c Ratio | 0.05 | 0.05 | 0.01 | | | | | 0.04 | | 0.33 | 0.03 | |
| Uniform Delay, d1 | 20.7 | 20.7 | 20.6 | | | | | 4.8 | | 25.6 | 2.5 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | | | | | 1.00 | | 1.25 | 0.67 | |
| Incremental Delay, d2 | 0.1 | 0.1 | 0.0 | | | | | 0.0 | | 1.5 | 0.0 | |
| Delay (s) | 20.8 | 20.8 | 20.6 | | | | | 4.9 | | 33.5 | 1.7 | |
| Level of Service | C | C | C | | | | | A | | C | A | |
| Approach Delay (s) | | 20.7 | | | 0.0 | | | 4.9 | | | 12.5 | |
| Approach LOS | | C | | | A | | | A | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 11.0 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.06 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 24.1% | ICU Level of Service | A |
| 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 | 0 | 0 | 38 | 11 | 186 | 38 | 57 | 0 | 0 | 74 | 73 |
| Future Volume (vph) | 0 | 0 | 0 | 38 | 11 | 186 | 38 | 57 | 0 | 0 | 74 | 73 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Lane Util. Factor | | | | 0.95 | 0.95 | 0.88 | 0.97 | 0.95 | | | 0.91 | 1.00 |
| Frt | | | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | 0.95 | 0.97 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | 1681 | 1722 | 2787 | 3433 | 3539 | | | 5085 | 1583 |
| Flt Permitted | | | | 0.95 | 0.97 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | 1681 | 1722 | 2787 | 3433 | 3539 | | | 5085 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 0 | 41 | 12 | 202 | 41 | 62 | 0 | 0 | 80 | 79 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 145 | 0 | 0 | 0 | 0 | 0 | 45 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 26 | 27 | 57 | 41 | 62 | 0 | 0 | 80 | 34 |
| Turn Type | | | | Prot | NA | Perm | Prot | NA | | | NA | Perm |
| Protected Phases | | | | 3 | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | 6 |
| Actuated Green, G (s) | | | | 15.5 | 15.5 | 15.5 | 2.0 | 30.0 | | | 23.5 | 23.5 |
| Effective Green, g (s) | | | | 15.5 | 15.5 | 15.5 | 2.0 | 30.0 | | | 23.5 | 23.5 |
| Actuated g/C Ratio | | | | 0.28 | 0.28 | 0.28 | 0.04 | 0.55 | | | 0.43 | 0.43 |
| Clearance Time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | 478 | 489 | 792 | 125 | 1948 | | | 2192 | 682 |
| v/s Ratio Prot | | | | 0.02 | 0.02 | | c0.01 | 0.02 | | | 0.02 | |
| v/s Ratio Perm | | | | | | c0.02 | | | | | | c0.02 |
| v/c Ratio | | | | 0.05 | 0.06 | 0.07 | 0.33 | 0.03 | | | 0.04 | 0.05 |
| Uniform Delay, d1 | | | | 14.2 | 14.2 | 14.2 | 25.6 | 5.6 | | | 9.0 | 9.0 |
| Progression Factor | | | | 1.00 | 1.00 | 1.00 | 1.18 | 0.89 | | | 1.35 | 4.98 |
| Incremental Delay, d2 | | | | 0.0 | 0.0 | 0.0 | 1.5 | 0.0 | | | 0.0 | 0.1 |
| Delay (s) | | | | 14.2 | 14.2 | 14.3 | 31.7 | 5.0 | | | 12.1 | 45.0 |
| Level of Service | | | | B | B | B | C | A | | | B | D |
| Approach Delay (s) | | 0.0 | | | 14.3 | | | 15.7 | | | 28.4 | |
| Approach LOS | | A | | | B | | | B | | | C | |

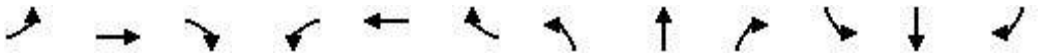
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 18.9 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.07 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 24.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 9 | 79 | 53 | 6 | 157 | 105 |
| Future Volume (vph) | 9 | 79 | 53 | 6 | 157 | 105 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 0.91 | 0.91 | 0.97 | 0.95 | 0.97 | 1.00 |
| Frt | 0.88 | 0.85 | 1.00 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 1.00 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (prot) | 2978 | 1441 | 3433 | 3539 | 3433 | 1583 |
| Flt Permitted | 1.00 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (perm) | 2978 | 1441 | 3433 | 3539 | 3433 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 10 | 86 | 58 | 7 | 171 | 114 |
| RTOR Reduction (vph) | 40 | 40 | 0 | 0 | 0 | 43 |
| Lane Group Flow (vph) | 13 | 3 | 58 | 7 | 171 | 71 |
| Turn Type | NA | Perm | Prot | NA | Prot | Perm |
| Protected Phases | 4 | | 3 | 8 | 5 | |
| Permitted Phases | | 4 | | | | 2 |
| Actuated Green, G (s) | 4.0 | 4.0 | 3.0 | 11.5 | 34.0 | 34.0 |
| Effective Green, g (s) | 4.0 | 4.0 | 3.0 | 11.5 | 34.0 | 34.0 |
| Actuated g/C Ratio | 0.07 | 0.07 | 0.06 | 0.21 | 0.62 | 0.62 |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 218 | 105 | 188 | 746 | 2141 | 987 |
| v/s Ratio Prot | c0.00 | | c0.02 | 0.00 | c0.05 | |
| v/s Ratio Perm | | 0.00 | | | | 0.04 |
| v/c Ratio | 0.06 | 0.03 | 0.31 | 0.01 | 0.08 | 0.07 |
| Uniform Delay, d1 | 23.5 | 23.4 | 24.8 | 17.0 | 4.1 | 4.0 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.18 | 1.59 |
| Incremental Delay, d2 | 0.1 | 0.1 | 0.9 | 0.0 | 0.0 | 0.1 |
| Delay (s) | 23.6 | 23.6 | 25.7 | 17.0 | 4.8 | 6.6 |
| Level of Service | C | C | C | B | A | A |
| Approach Delay (s) | 23.6 | | | 24.8 | 5.5 | |
| Approach LOS | C | | | C | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 12.2 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.09 | | |
| Actuated Cycle Length (s) | 54.5 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 20.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

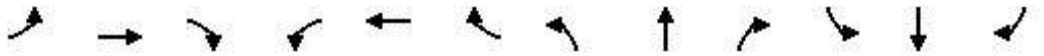
c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 30 | 9 | 151 | 0 | 0 | 0 | 0 | 399 | 202 | 31 | 185 | 0 |
| Future Volume (vph) | 30 | 9 | 151 | 0 | 0 | 0 | 0 | 399 | 202 | 31 | 185 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | | | | | 4.5 | | 4.5 | 4.5 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.88 | | | | | 0.91 | | 0.97 | 0.95 | |
| Frt | 1.00 | 1.00 | 0.85 | | | | | 0.95 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 0.97 | 1.00 | | | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1681 | 1723 | 2787 | | | | | 4829 | | 3433 | 3539 | |
| Flt Permitted | 0.95 | 0.97 | 1.00 | | | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1681 | 1723 | 2787 | | | | | 4829 | | 3433 | 3539 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 33 | 10 | 164 | 0 | 0 | 0 | 0 | 434 | 220 | 34 | 201 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 117 | 0 | 0 | 0 | 0 | 59 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 21 | 22 | 47 | 0 | 0 | 0 | 0 | 595 | 0 | 34 | 201 | 0 |
| Turn Type | Prot | NA | Perm | | | | | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | | | | | | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | | | | | | | |
| Actuated Green, G (s) | 34.3 | 34.3 | 34.3 | | | | | 67.8 | | 4.4 | 76.7 | |
| Effective Green, g (s) | 34.3 | 34.3 | 34.3 | | | | | 67.8 | | 4.4 | 76.7 | |
| Actuated g/C Ratio | 0.29 | 0.29 | 0.29 | | | | | 0.56 | | 0.04 | 0.64 | |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | | | | | 4.5 | | 4.5 | 4.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | | | | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 480 | 492 | 796 | | | | | 2728 | | 125 | 2262 | |
| v/s Ratio Prot | 0.01 | 0.01 | | | | | | c0.12 | | c0.01 | 0.06 | |
| v/s Ratio Perm | | | c0.02 | | | | | | | | | |
| v/c Ratio | 0.04 | 0.04 | 0.06 | | | | | 0.22 | | 0.27 | 0.09 | |
| Uniform Delay, d1 | 31.0 | 31.0 | 31.1 | | | | | 12.9 | | 56.2 | 8.3 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | | | | | 1.00 | | 1.19 | 0.60 | |
| Incremental Delay, d2 | 0.0 | 0.0 | 0.0 | | | | | 0.2 | | 1.2 | 0.1 | |
| Delay (s) | 31.0 | 31.0 | 31.2 | | | | | 13.1 | | 67.9 | 5.0 | |
| Level of Service | C | C | C | | | | | B | | E | A | |
| Approach Delay (s) | | 31.1 | | | 0.0 | | | 13.1 | | | 14.1 | |
| Approach LOS | | C | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 16.7 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.17 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 31.8% | ICU Level of Service | A |
| 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 | 0 | 0 | 94 | 13 | 167 | 215 | 214 | 0 | 0 | 122 | 51 |
| Future Volume (vph) | 0 | 0 | 0 | 94 | 13 | 167 | 215 | 214 | 0 | 0 | 122 | 51 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Lane Util. Factor | | | | 0.95 | 0.95 | 0.88 | 0.97 | 0.95 | | | 0.91 | 1.00 |
| Frt | | | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | 0.95 | 0.96 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | 1681 | 1705 | 2787 | 3433 | 3539 | | | 5085 | 1583 |
| Flt Permitted | | | | 0.95 | 0.96 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | 1681 | 1705 | 2787 | 3433 | 3539 | | | 5085 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 0 | 102 | 14 | 182 | 234 | 233 | 0 | 0 | 133 | 55 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 116 | 0 | 0 | 0 | 0 | 0 | 41 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 58 | 58 | 66 | 234 | 233 | 0 | 0 | 133 | 14 |
| Turn Type | | | | Prot | NA | Perm | Prot | NA | | | NA | Perm |
| Protected Phases | | | | 3 | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | 6 |
| Actuated Green, G (s) | | | | 43.5 | 43.5 | 43.5 | 31.5 | 67.5 | | | 31.5 | 31.5 |
| Effective Green, g (s) | | | | 43.5 | 43.5 | 43.5 | 31.5 | 67.5 | | | 31.5 | 31.5 |
| Actuated g/C Ratio | | | | 0.36 | 0.36 | 0.36 | 0.26 | 0.56 | | | 0.26 | 0.26 |
| Clearance Time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | 609 | 618 | 1010 | 901 | 1990 | | | 1334 | 415 |
| v/s Ratio Prot | | | | c0.03 | 0.03 | | c0.07 | c0.07 | | | 0.03 | |
| v/s Ratio Perm | | | | | | 0.02 | | | | | | 0.01 |
| v/c Ratio | | | | 0.10 | 0.09 | 0.07 | 0.26 | 0.12 | | | 0.10 | 0.03 |
| Uniform Delay, d1 | | | | 25.3 | 25.2 | 25.0 | 35.0 | 12.3 | | | 33.5 | 32.9 |
| Progression Factor | | | | 1.00 | 1.00 | 1.00 | 0.80 | 0.37 | | | 0.52 | 0.16 |
| Incremental Delay, d2 | | | | 0.1 | 0.1 | 0.0 | 0.2 | 0.1 | | | 0.1 | 0.2 |
| Delay (s) | | | | 25.3 | 25.3 | 25.0 | 28.1 | 4.6 | | | 17.6 | 5.3 |
| Level of Service | | | | C | C | C | C | A | | | B | A |
| Approach Delay (s) | | 0.0 | | | 25.1 | | | 16.4 | | | 14.0 | |
| Approach LOS | | A | | | C | | | B | | | B | |

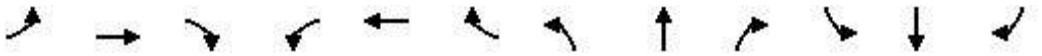
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 18.7 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.15 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 31.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 7 | 97 | 65 | 4 | 247 | 164 |
| Future Volume (vph) | 7 | 97 | 65 | 4 | 247 | 164 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 0.91 | 0.91 | 0.97 | 0.95 | 0.97 | 1.00 |
| Frt | 0.87 | 0.85 | 1.00 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 1.00 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (prot) | 2948 | 1441 | 3433 | 3539 | 3433 | 1583 |
| Flt Permitted | 1.00 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (perm) | 2948 | 1441 | 3433 | 3539 | 3433 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 8 | 105 | 71 | 4 | 268 | 178 |
| RTOR Reduction (vph) | 50 | 50 | 0 | 0 | 0 | 38 |
| Lane Group Flow (vph) | 11 | 2 | 71 | 4 | 268 | 140 |
| Turn Type | NA | Perm | Prot | NA | Prot | Perm |
| Protected Phases | 4 | | 3 | 8 | 5 | |
| Permitted Phases | | 4 | | | | 2 |
| Actuated Green, G (s) | 5.7 | 5.7 | 6.7 | 16.9 | 94.1 | 94.1 |
| Effective Green, g (s) | 5.7 | 5.7 | 6.7 | 16.9 | 94.1 | 94.1 |
| Actuated g/C Ratio | 0.05 | 0.05 | 0.06 | 0.14 | 0.78 | 0.78 |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 140 | 68 | 191 | 498 | 2692 | 1241 |
| v/s Ratio Prot | c0.00 | | c0.02 | 0.00 | 0.08 | |
| v/s Ratio Perm | | 0.00 | | | | c0.09 |
| v/c Ratio | 0.08 | 0.04 | 0.37 | 0.01 | 0.10 | 0.11 |
| Uniform Delay, d1 | 54.6 | 54.5 | 54.6 | 44.3 | 3.0 | 3.1 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.48 | 0.07 |
| Incremental Delay, d2 | 0.2 | 0.2 | 1.2 | 0.0 | 0.1 | 0.2 |
| Delay (s) | 54.9 | 54.7 | 55.8 | 44.3 | 1.5 | 0.4 |
| Level of Service | D | D | E | D | A | A |
| Approach Delay (s) | 54.8 | | | 55.2 | 1.1 | |
| Approach LOS | D | | | E | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 17.1 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.13 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 23.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

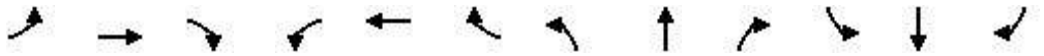
c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 19 | 13 | 245 | 0 | 0 | 0 | 0 | 335 | 153 | 38 | 384 | 0 |
| Future Volume (vph) | 19 | 13 | 245 | 0 | 0 | 0 | 0 | 335 | 153 | 38 | 384 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | | | | | 4.5 | | 4.5 | 4.5 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.88 | | | | | 0.91 | | 0.97 | 0.95 | |
| Frt | 1.00 | 1.00 | 0.85 | | | | | 0.95 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 0.99 | 1.00 | | | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1681 | 1750 | 2787 | | | | | 4846 | | 3433 | 3539 | |
| Flt Permitted | 0.95 | 0.99 | 1.00 | | | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1681 | 1750 | 2787 | | | | | 4846 | | 3433 | 3539 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 21 | 14 | 266 | 0 | 0 | 0 | 0 | 364 | 166 | 41 | 417 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 250 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 17 | 18 | 16 | 0 | 0 | 0 | 0 | 506 | 0 | 41 | 417 | 0 |
| Turn Type | Split | NA | Perm | | | | | NA | | Prot | NA | |
| Protected Phases | 4 | 4 | | | | | | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | | | | | | | |
| Actuated Green, G (s) | 7.3 | 7.3 | 7.3 | | | | | 93.4 | | 5.8 | 103.7 | |
| Effective Green, g (s) | 7.3 | 7.3 | 7.3 | | | | | 93.4 | | 5.8 | 103.7 | |
| Actuated g/C Ratio | 0.06 | 0.06 | 0.06 | | | | | 0.78 | | 0.05 | 0.86 | |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | | | | | 4.5 | | 4.5 | 4.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | | | | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 102 | 106 | 169 | | | | | 3771 | | 165 | 3058 | |
| v/s Ratio Prot | 0.01 | c0.01 | | | | | | 0.10 | | c0.01 | c0.12 | |
| v/s Ratio Perm | | | 0.01 | | | | | | | | | |
| v/c Ratio | 0.17 | 0.17 | 0.10 | | | | | 0.13 | | 0.25 | 0.14 | |
| Uniform Delay, d1 | 53.5 | 53.5 | 53.2 | | | | | 3.3 | | 55.0 | 1.3 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | | | | | 1.00 | | 0.99 | 0.16 | |
| Incremental Delay, d2 | 0.8 | 0.8 | 0.2 | | | | | 0.1 | | 0.8 | 0.1 | |
| Delay (s) | 54.2 | 54.2 | 53.5 | | | | | 3.4 | | 55.3 | 0.3 | |
| Level of Service | D | D | D | | | | | A | | E | A | |
| Approach Delay (s) | | 53.6 | | | 0.0 | | | 3.4 | | | 5.2 | |
| Approach LOS | | D | | | A | | | A | | | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 15.7 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.15 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 29.5% | ICU Level of Service | A |
| 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 | 0 | 0 | 193 | 19 | 186 | 186 | 168 | 0 | 0 | 229 | 73 |
| Future Volume (vph) | 0 | 0 | 0 | 193 | 19 | 186 | 186 | 168 | 0 | 0 | 229 | 73 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Lane Util. Factor | | | | 0.95 | 0.95 | 0.88 | 0.97 | 0.95 | | | 0.91 | 1.00 |
| Frt | | | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | 0.95 | 0.96 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | 1681 | 1700 | 2787 | 3433 | 3539 | | | 5085 | 1583 |
| Flt Permitted | | | | 0.95 | 0.96 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | 1681 | 1700 | 2787 | 3433 | 3539 | | | 5085 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 0 | 210 | 21 | 202 | 202 | 183 | 0 | 0 | 249 | 79 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 179 | 0 | 0 | 0 | 0 | 0 | 26 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 115 | 116 | 23 | 202 | 183 | 0 | 0 | 249 | 53 |
| Turn Type | | | | Split | NA | Perm | Prot | NA | | | NA | Perm |
| Protected Phases | | | | 8 | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | 6 |
| Actuated Green, G (s) | | | | 13.8 | 13.8 | 13.8 | 12.4 | 97.2 | | | 80.3 | 80.3 |
| Effective Green, g (s) | | | | 13.8 | 13.8 | 13.8 | 12.4 | 97.2 | | | 80.3 | 80.3 |
| Actuated g/C Ratio | | | | 0.12 | 0.12 | 0.12 | 0.10 | 0.81 | | | 0.67 | 0.67 |
| Clearance Time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | 193 | 195 | 320 | 354 | 2866 | | | 3402 | 1059 |
| v/s Ratio Prot | | | | c0.07 | 0.07 | | c0.06 | 0.05 | | | c0.05 | |
| v/s Ratio Perm | | | | | | 0.01 | | | | | | 0.03 |
| v/c Ratio | | | | 0.60 | 0.59 | 0.07 | 0.57 | 0.06 | | | 0.07 | 0.05 |
| Uniform Delay, d1 | | | | 50.5 | 50.4 | 47.4 | 51.3 | 2.3 | | | 6.9 | 6.8 |
| Progression Factor | | | | 1.00 | 1.00 | 1.00 | 1.01 | 0.95 | | | 0.46 | 0.00 |
| Incremental Delay, d2 | | | | 4.9 | 4.8 | 0.1 | 2.2 | 0.0 | | | 0.0 | 0.1 |
| Delay (s) | | | | 55.3 | 55.3 | 47.5 | 53.9 | 2.2 | | | 3.2 | 0.1 |
| Level of Service | | | | E | E | D | D | A | | | A | A |
| Approach Delay (s) | | 0.0 | | | 51.6 | | | 29.3 | | | 2.5 | |
| Approach LOS | | A | | | D | | | C | | | A | |

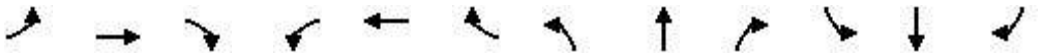
| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 30.1 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.20 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 29.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 9 | 172 | 115 | 6 | 224 | 149 |
| Future Volume (vph) | 9 | 172 | 115 | 6 | 224 | 149 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 0.91 | 0.91 | 0.97 | 0.95 | 0.97 | 1.00 |
| Frt | 0.86 | 0.85 | 1.00 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 1.00 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (prot) | 2931 | 1441 | 3433 | 3539 | 3433 | 1583 |
| Flt Permitted | 1.00 | 1.00 | 0.95 | 1.00 | 0.95 | 1.00 |
| Satd. Flow (perm) | 2931 | 1441 | 3433 | 3539 | 3433 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 10 | 187 | 125 | 7 | 243 | 162 |
| RTOR Reduction (vph) | 88 | 87 | 0 | 0 | 0 | 41 |
| Lane Group Flow (vph) | 16 | 6 | 125 | 7 | 243 | 121 |
| Turn Type | NA | Perm | Prot | NA | Prot | Perm |
| Protected Phases | 4 | | 3 | 8 | 5 | |
| Permitted Phases | | 4 | | | | 2 |
| Actuated Green, G (s) | 7.2 | 7.2 | 9.7 | 21.4 | 89.6 | 89.6 |
| Effective Green, g (s) | 7.2 | 7.2 | 9.7 | 21.4 | 89.6 | 89.6 |
| Actuated g/C Ratio | 0.06 | 0.06 | 0.08 | 0.18 | 0.75 | 0.75 |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 175 | 86 | 277 | 631 | 2563 | 1181 |
| v/s Ratio Prot | c0.01 | | c0.04 | 0.00 | 0.07 | |
| v/s Ratio Perm | | 0.00 | | | | c0.08 |
| v/c Ratio | 0.09 | 0.06 | 0.45 | 0.01 | 0.09 | 0.10 |
| Uniform Delay, d1 | 53.3 | 53.2 | 52.6 | 40.6 | 4.1 | 4.2 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.75 | 0.23 |
| Incremental Delay, d2 | 0.2 | 0.3 | 1.2 | 0.0 | 0.1 | 0.2 |
| Delay (s) | 53.5 | 53.5 | 53.8 | 40.6 | 3.2 | 1.1 |
| Level of Service | D | D | D | D | A | A |
| Approach Delay (s) | 53.5 | | | 53.1 | 2.3 | |
| Approach LOS | D | | | D | A | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 25.2 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.13 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 23.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

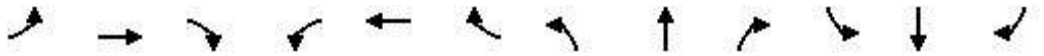
c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 307 | 35 | 387 | 0 | 0 | 0 | 0 | 1528 | 597 | 110 | 618 | 0 |
| Future Volume (vph) | 307 | 35 | 387 | 0 | 0 | 0 | 0 | 1528 | 597 | 110 | 618 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | | | | | 4.5 | | 4.5 | 4.5 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.88 | | | | | 0.91 | | 0.97 | 0.95 | |
| Frt | 1.00 | 1.00 | 0.85 | | | | | 0.96 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 0.96 | 1.00 | | | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1681 | 1702 | 2787 | | | | | 4871 | | 3433 | 3539 | |
| Flt Permitted | 0.95 | 0.96 | 1.00 | | | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1681 | 1702 | 2787 | | | | | 4871 | | 3433 | 3539 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 334 | 38 | 421 | 0 | 0 | 0 | 0 | 1661 | 649 | 120 | 672 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 350 | 0 | 0 | 0 | 0 | 43 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 184 | 188 | 71 | 0 | 0 | 0 | 0 | 2267 | 0 | 120 | 672 | 0 |
| Turn Type | Split | NA | Perm | | | | | NA | | Prot | NA | |
| Protected Phases | 4 | 4 | | | | | | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | | | | | | | |
| Actuated Green, G (s) | 20.2 | 20.2 | 20.2 | | | | | 76.8 | | 9.5 | 90.8 | |
| Effective Green, g (s) | 20.2 | 20.2 | 20.2 | | | | | 76.8 | | 9.5 | 90.8 | |
| Actuated g/C Ratio | 0.17 | 0.17 | 0.17 | | | | | 0.64 | | 0.08 | 0.76 | |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | | | | | 4.5 | | 4.5 | 4.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | | | | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 282 | 286 | 469 | | | | | 3117 | | 271 | 2677 | |
| v/s Ratio Prot | 0.11 | c0.11 | | | | | | c0.47 | | c0.03 | 0.19 | |
| v/s Ratio Perm | | | 0.03 | | | | | | | | | |
| v/c Ratio | 0.65 | 0.66 | 0.15 | | | | | 0.73 | | 0.44 | 0.25 | |
| Uniform Delay, d1 | 46.6 | 46.7 | 42.6 | | | | | 14.5 | | 52.7 | 4.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | | | | | 1.00 | | 1.43 | 0.02 | |
| Incremental Delay, d2 | 5.3 | 5.4 | 0.2 | | | | | 1.5 | | 1.1 | 0.2 | |
| Delay (s) | 52.0 | 52.0 | 42.7 | | | | | 16.1 | | 76.5 | 0.3 | |
| Level of Service | D | D | D | | | | | B | | E | A | |
| Approach Delay (s) | | 47.1 | | | 0.0 | | | 16.1 | | | 11.9 | |
| Approach LOS | | D | | | A | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 21.5 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.69 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 67.7% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

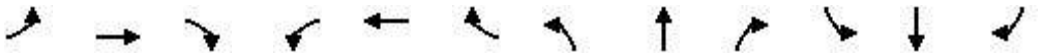
c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 271 | 32 | 375 | 741 | 1094 | 0 | 0 | 457 | 157 |
| Future Volume (vph) | 0 | 0 | 0 | 271 | 32 | 375 | 741 | 1094 | 0 | 0 | 457 | 157 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Lane Util. Factor | | | | 0.95 | 0.95 | 0.88 | 0.97 | 0.95 | | | 0.91 | 1.00 |
| Frt | | | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | 0.95 | 0.96 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | 1681 | 1703 | 2787 | 3433 | 3539 | | | 5085 | 1583 |
| Flt Permitted | | | | 0.95 | 0.96 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | 1681 | 1703 | 2787 | 3433 | 3539 | | | 5085 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 0 | 295 | 35 | 408 | 805 | 1189 | 0 | 0 | 497 | 171 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 128 | 0 | 0 | 0 | 0 | 0 | 112 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 165 | 165 | 280 | 805 | 1189 | 0 | 0 | 497 | 59 |
| Turn Type | | | | Split | NA | Perm | Prot | NA | | | NA | Perm |
| Protected Phases | | | | 8 | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | 6 |
| Actuated Green, G (s) | | | | 18.4 | 18.4 | 18.4 | 46.5 | 92.6 | | | 41.6 | 41.6 |
| Effective Green, g (s) | | | | 18.4 | 18.4 | 18.4 | 46.5 | 92.6 | | | 41.6 | 41.6 |
| Actuated g/C Ratio | | | | 0.15 | 0.15 | 0.15 | 0.39 | 0.77 | | | 0.35 | 0.35 |
| Clearance Time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | 257 | 261 | 427 | 1330 | 2730 | | | 1762 | 548 |
| v/s Ratio Prot | | | | 0.10 | 0.10 | | c0.23 | c0.34 | | | 0.10 | |
| v/s Ratio Perm | | | | | | c0.10 | | | | | | 0.04 |
| v/c Ratio | | | | 0.64 | 0.63 | 0.66 | 0.61 | 0.44 | | | 0.28 | 0.11 |
| Uniform Delay, d1 | | | | 47.7 | 47.6 | 47.8 | 29.4 | 4.7 | | | 28.4 | 26.6 |
| Progression Factor | | | | 1.00 | 1.00 | 1.00 | 1.11 | 0.22 | | | 0.46 | 0.05 |
| Incremental Delay, d2 | | | | 5.4 | 4.9 | 3.6 | 0.5 | 0.4 | | | 0.4 | 0.4 |
| Delay (s) | | | | 53.1 | 52.6 | 51.4 | 33.2 | 1.4 | | | 13.3 | 1.7 |
| Level of Service | | | | D | D | D | C | A | | | B | A |
| Approach Delay (s) | | 0.0 | | | 52.1 | | | 14.3 | | | 10.3 | |
| Approach LOS | | A | | | D | | | B | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 21.7 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.56 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 67.7% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

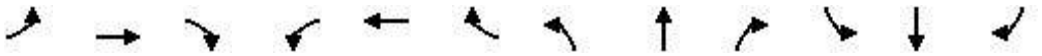
c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 166 | 7 | 194 | 258 | 4 | 103 | 519 | 435 | 545 | 63 | 151 | 38 |
| Future Volume (vph) | 166 | 7 | 194 | 258 | 4 | 103 | 519 | 435 | 545 | 63 | 151 | 38 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 1.00 | 0.91 | 0.91 | 0.97 | 0.95 | | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | 1.00 | 0.86 | 0.85 | 1.00 | 0.86 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1770 | 2917 | 1441 | 3433 | 3027 | | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1770 | 2917 | 1441 | 3433 | 3027 | | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 180 | 8 | 211 | 280 | 4 | 112 | 564 | 473 | 592 | 68 | 164 | 41 |
| RTOR Reduction (vph) | 0 | 100 | 72 | 0 | 111 | 0 | 0 | 0 | 147 | 0 | 0 | 19 |
| Lane Group Flow (vph) | 180 | 14 | 33 | 280 | 5 | 0 | 564 | 473 | 445 | 68 | 164 | 22 |
| Turn Type | Prot | NA | pm+ov | Prot | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | 17.6 | 6.6 | 37.8 | 16.5 | 5.5 | | 31.2 | 73.7 | 90.2 | 5.2 | 47.7 | 65.3 |
| Effective Green, g (s) | 17.6 | 6.6 | 37.8 | 16.5 | 5.5 | | 31.2 | 73.7 | 90.2 | 5.2 | 47.7 | 65.3 |
| Actuated g/C Ratio | 0.15 | 0.05 | 0.31 | 0.14 | 0.05 | | 0.26 | 0.61 | 0.75 | 0.04 | 0.40 | 0.54 |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| 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 |
| Lane Grp Cap (vph) | 259 | 160 | 507 | 472 | 138 | | 892 | 2173 | 1249 | 148 | 1406 | 920 |
| v/s Ratio Prot | c0.10 | 0.00 | c0.02 | 0.08 | 0.00 | | c0.16 | 0.13 | c0.05 | 0.02 | 0.05 | 0.00 |
| v/s Ratio Perm | | | 0.01 | | | | | | 0.23 | | | 0.01 |
| v/c Ratio | 0.69 | 0.09 | 0.07 | 0.59 | 0.04 | | 0.63 | 0.22 | 0.36 | 0.46 | 0.12 | 0.02 |
| Uniform Delay, d1 | 48.6 | 53.8 | 28.7 | 48.6 | 54.7 | | 39.3 | 10.3 | 5.1 | 56.0 | 22.8 | 12.6 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.01 | 1.10 | 3.08 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 7.8 | 0.2 | 0.1 | 2.0 | 0.1 | | 1.4 | 0.2 | 0.2 | 2.3 | 0.2 | 0.0 |
| Delay (s) | 56.5 | 54.1 | 28.8 | 50.6 | 54.8 | | 41.2 | 11.6 | 15.7 | 58.3 | 23.0 | 12.6 |
| Level of Service | E | D | C | D | D | | D | B | B | E | C | B |
| Approach Delay (s) | | 48.5 | | | 51.8 | | | 23.3 | | | 30.2 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 32.0 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.50 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 53.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

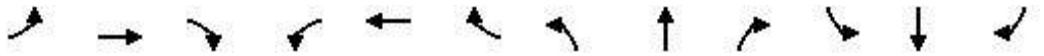
c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 614 | 74 | 867 | 0 | 0 | 0 | 0 | 1541 | 479 | 458 | 1738 | 0 |
| Future Volume (vph) | 614 | 74 | 867 | 0 | 0 | 0 | 0 | 1541 | 479 | 458 | 1738 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | | | | | 4.5 | | 4.5 | 4.5 | |
| Lane Util. Factor | 0.95 | 0.95 | 0.88 | | | | | 0.91 | | 0.97 | 0.95 | |
| Frt | 1.00 | 1.00 | 0.85 | | | | | 0.96 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 0.96 | 1.00 | | | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1681 | 1703 | 2787 | | | | | 4904 | | 3433 | 3539 | |
| Flt Permitted | 0.95 | 0.96 | 1.00 | | | | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | 1681 | 1703 | 2787 | | | | | 4904 | | 3433 | 3539 | |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 667 | 80 | 942 | 0 | 0 | 0 | 0 | 1675 | 521 | 498 | 1889 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 36 | 0 | 0 | 0 | 0 | 47 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 374 | 373 | 906 | 0 | 0 | 0 | 0 | 2149 | 0 | 498 | 1889 | 0 |
| Turn Type | Split | NA | Perm | | | | | NA | | Prot | NA | |
| Protected Phases | 4 | 4 | | | | | | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | | | | | | | |
| Actuated Green, G (s) | 41.1 | 41.1 | 41.1 | | | | | 48.1 | | 17.3 | 69.9 | |
| Effective Green, g (s) | 41.1 | 41.1 | 41.1 | | | | | 48.1 | | 17.3 | 69.9 | |
| Actuated g/C Ratio | 0.34 | 0.34 | 0.34 | | | | | 0.40 | | 0.14 | 0.58 | |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | | | | | 4.5 | | 4.5 | 4.5 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | | | | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 575 | 583 | 954 | | | | | 1965 | | 494 | 2061 | |
| v/s Ratio Prot | 0.22 | 0.22 | | | | | | c0.44 | | 0.15 | c0.53 | |
| v/s Ratio Perm | | | c0.33 | | | | | | | | | |
| v/c Ratio | 0.65 | 0.64 | 0.95 | | | | | 1.09 | | 1.01 | 0.92 | |
| Uniform Delay, d1 | 33.4 | 33.2 | 38.4 | | | | | 36.0 | | 51.4 | 22.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | | | | | 1.00 | | 0.43 | 0.83 | |
| Incremental Delay, d2 | 2.6 | 2.3 | 17.9 | | | | | 51.0 | | 33.8 | 5.0 | |
| Delay (s) | 36.0 | 35.5 | 56.4 | | | | | 87.0 | | 56.0 | 23.6 | |
| Level of Service | D | D | E | | | | | F | | E | C | |
| Approach Delay (s) | | 47.3 | | | 0.0 | | | 87.0 | | | 30.3 | |
| Approach LOS | | D | | | A | | | F | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 54.7 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 1.03 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 88.1% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

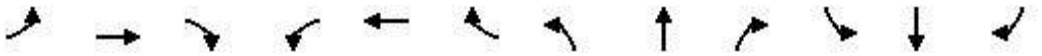
c Critical Lane Group



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 660 | 65 | 631 | 621 | 1534 | 0 | 0 | 1536 | 633 |
| Future Volume (vph) | 0 | 0 | 0 | 660 | 65 | 631 | 621 | 1534 | 0 | 0 | 1536 | 633 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Lane Util. Factor | | | | 0.95 | 0.95 | 0.88 | 0.97 | 0.95 | | | 0.91 | 1.00 |
| Frt | | | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | | | 1.00 | 0.85 |
| Flt Protected | | | | 0.95 | 0.96 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (prot) | | | | 1681 | 1700 | 2787 | 3433 | 3539 | | | 5085 | 1583 |
| Flt Permitted | | | | 0.95 | 0.96 | 1.00 | 0.95 | 1.00 | | | 1.00 | 1.00 |
| Satd. Flow (perm) | | | | 1681 | 1700 | 2787 | 3433 | 3539 | | | 5085 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 0 | 0 | 0 | 717 | 71 | 686 | 675 | 1667 | 0 | 0 | 1670 | 688 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 43 | 0 | 0 | 0 | 0 | 0 | 276 |
| Lane Group Flow (vph) | 0 | 0 | 0 | 394 | 394 | 643 | 675 | 1667 | 0 | 0 | 1670 | 412 |
| Turn Type | | | | Split | NA | Perm | Prot | NA | | | NA | Perm |
| Protected Phases | | | | 8 | 8 | | 5 | 2 | | | 6 | |
| Permitted Phases | | | | | | 8 | | | | | | 6 |
| Actuated Green, G (s) | | | | 32.3 | 32.3 | 32.3 | 22.7 | 78.7 | | | 51.5 | 51.5 |
| Effective Green, g (s) | | | | 32.3 | 32.3 | 32.3 | 22.7 | 78.7 | | | 51.5 | 51.5 |
| Actuated g/C Ratio | | | | 0.27 | 0.27 | 0.27 | 0.19 | 0.66 | | | 0.43 | 0.43 |
| Clearance Time (s) | | | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | | 4.5 | 4.5 |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | | | 452 | 457 | 750 | 649 | 2320 | | | 2182 | 679 |
| v/s Ratio Prot | | | | c0.23 | 0.23 | | c0.20 | 0.47 | | | c0.33 | |
| v/s Ratio Perm | | | | | | 0.23 | | | | | | 0.26 |
| v/c Ratio | | | | 0.87 | 0.86 | 0.86 | 1.04 | 0.72 | | | 0.77 | 0.61 |
| Uniform Delay, d1 | | | | 41.9 | 41.7 | 41.7 | 48.6 | 13.4 | | | 29.1 | 26.4 |
| Progression Factor | | | | 1.00 | 1.00 | 1.00 | 1.66 | 0.55 | | | 0.50 | 0.14 |
| Incremental Delay, d2 | | | | 16.6 | 15.3 | 9.5 | 23.1 | 0.8 | | | 1.2 | 1.9 |
| Delay (s) | | | | 58.5 | 57.1 | 51.2 | 104.0 | 8.1 | | | 15.8 | 5.6 |
| Level of Service | | | | E | E | D | F | A | | | B | A |
| Approach Delay (s) | | 0.0 | | | 54.7 | | | 35.7 | | | 12.8 | |
| Approach LOS | | A | | | D | | | D | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 31.5 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.86 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 13.5 |
| Intersection Capacity Utilization | 88.1% | 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 (vph) | 201 | 9 | 709 | 978 | 6 | 130 | 900 | 501 | 783 | 117 | 467 | 195 |
| Future Volume (vph) | 201 | 9 | 709 | 978 | 6 | 130 | 900 | 501 | 783 | 117 | 467 | 195 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| Lane Util. Factor | 1.00 | 0.91 | 0.91 | 0.97 | 0.95 | | 0.97 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | 1.00 | 0.85 | 0.85 | 1.00 | 0.86 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1770 | 2895 | 1441 | 3433 | 3033 | | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Flt Permitted | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1770 | 2895 | 1441 | 3433 | 3033 | | 3433 | 3539 | 1583 | 3433 | 3539 | 1583 |
| Peak-hour factor, PHF | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Adj. Flow (vph) | 218 | 10 | 771 | 1063 | 7 | 141 | 978 | 545 | 851 | 127 | 508 | 212 |
| RTOR Reduction (vph) | 0 | 361 | 56 | 0 | 133 | 0 | 0 | 0 | 210 | 0 | 0 | 103 |
| Lane Group Flow (vph) | 218 | 35 | 329 | 1063 | 15 | 0 | 978 | 545 | 641 | 127 | 508 | 109 |
| Turn Type | Prot | NA | pm+ov | Prot | NA | | Prot | NA | pm+ov | Prot | NA | pm+ov |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | | 5 | 2 | 3 | 1 | 6 | 7 |
| Permitted Phases | | | 4 | | | | | | 2 | | | 6 |
| Actuated Green, G (s) | 34.7 | 7.8 | 49.5 | 33.5 | 6.6 | | 41.7 | 50.9 | 84.4 | 9.8 | 19.0 | 53.7 |
| Effective Green, g (s) | 34.7 | 7.8 | 49.5 | 33.5 | 6.6 | | 41.7 | 50.9 | 84.4 | 9.8 | 19.0 | 53.7 |
| Actuated g/C Ratio | 0.29 | 0.06 | 0.41 | 0.28 | 0.05 | | 0.35 | 0.42 | 0.70 | 0.08 | 0.16 | 0.45 |
| Clearance Time (s) | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 | 4.5 |
| 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 |
| Lane Grp Cap (vph) | 511 | 188 | 648 | 958 | 166 | | 1192 | 1501 | 1172 | 280 | 560 | 708 |
| v/s Ratio Prot | 0.12 | 0.01 | c0.18 | c0.31 | 0.00 | | c0.28 | 0.15 | 0.15 | 0.04 | c0.14 | 0.04 |
| v/s Ratio Perm | | | 0.05 | | | | | | 0.25 | | | 0.02 |
| v/c Ratio | 0.43 | 0.19 | 0.51 | 1.11 | 0.09 | | 0.82 | 0.36 | 0.55 | 0.45 | 0.91 | 0.15 |
| Uniform Delay, d1 | 34.6 | 53.1 | 26.2 | 43.2 | 53.8 | | 35.7 | 23.5 | 8.6 | 52.5 | 49.6 | 19.7 |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.13 | 1.06 | 0.33 | 1.00 | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.6 | 0.5 | 0.6 | 64.0 | 0.2 | | 3.1 | 0.4 | 0.3 | 1.2 | 20.9 | 0.1 |
| Delay (s) | 35.2 | 53.6 | 26.8 | 107.2 | 54.1 | | 43.5 | 25.5 | 3.2 | 53.7 | 70.6 | 19.8 |
| Level of Service | D | D | C | F | D | | D | C | A | D | E | B |
| Approach Delay (s) | | 39.3 | | | 100.7 | | | 24.9 | | | 55.3 | |
| Approach LOS | | D | | | F | | | C | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 49.2 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.92 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 89.4% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group