

Appendix I

Traffic Study



Ventana Specific Plan Amendment

TRAFFIC STUDY CITY OF FONTANA

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LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
CA MUTCD	California Manual on Uniform Traffic Control Devices
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CMP	Congestion Management Program
DIF	Development Impact Fee
HCM	Highway Capacity Manual
ITE	Institute of Transportation Engineers
LOS	Level of Service
NCHRP	National Cooperative Highway Research Program
OD	Origination-Destination
OPR	Office of Planning and Research
PHF	Peak Hour Factor
Project	Ventana Specific Plan Amendment
RCTC	Riverside County Transportation Commission
RTA	Riverside Transit Agency
SB 743	Senate Bill 743
SBTAM	San Bernardino Transportation Analysis Model
SHS	State Highway System
TA	Traffic Analysis
TAZ	Traffic Analysis Zone
TPA	Transit Priority Area
V/C	Volume to Capacity
VMT	Vehicle Miles Traveled

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1 INTRODUCTION

This report presents the results of the Traffic Analysis (TA) for the proposed Ventana Specific Plan Amendment development (“Project”), which is located east of the I-15 Freeway, west of Citrus Avenue, and to the north and south of Duncan Canyon Road in the City of Fontana, as shown on Exhibit 1-1.

The purpose of this TA is to evaluate the potential deficiencies related to traffic, identify circulation system deficiencies that may result from the development of the proposed Project, and to recommend improvements to resolve identified deficiencies in order to achieve acceptable operational conditions at study area intersections and ensure consistency with the City’s General Plan. This TA has been prepared in accordance with the City of Fontana’s Traffic Impact Analysis (TIA) Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment (October 21, 2020) and through consultation with City of Fontana staff during the scoping process. (1) The Project traffic study scoping agreement is provided in Appendix 1.1 of this TA, which has been approved by the City of Fontana.

1.1 SUMMARY OF FINDINGS

The Project is to construct the following improvements as design features in conjunction with development of the site for Phase 1:

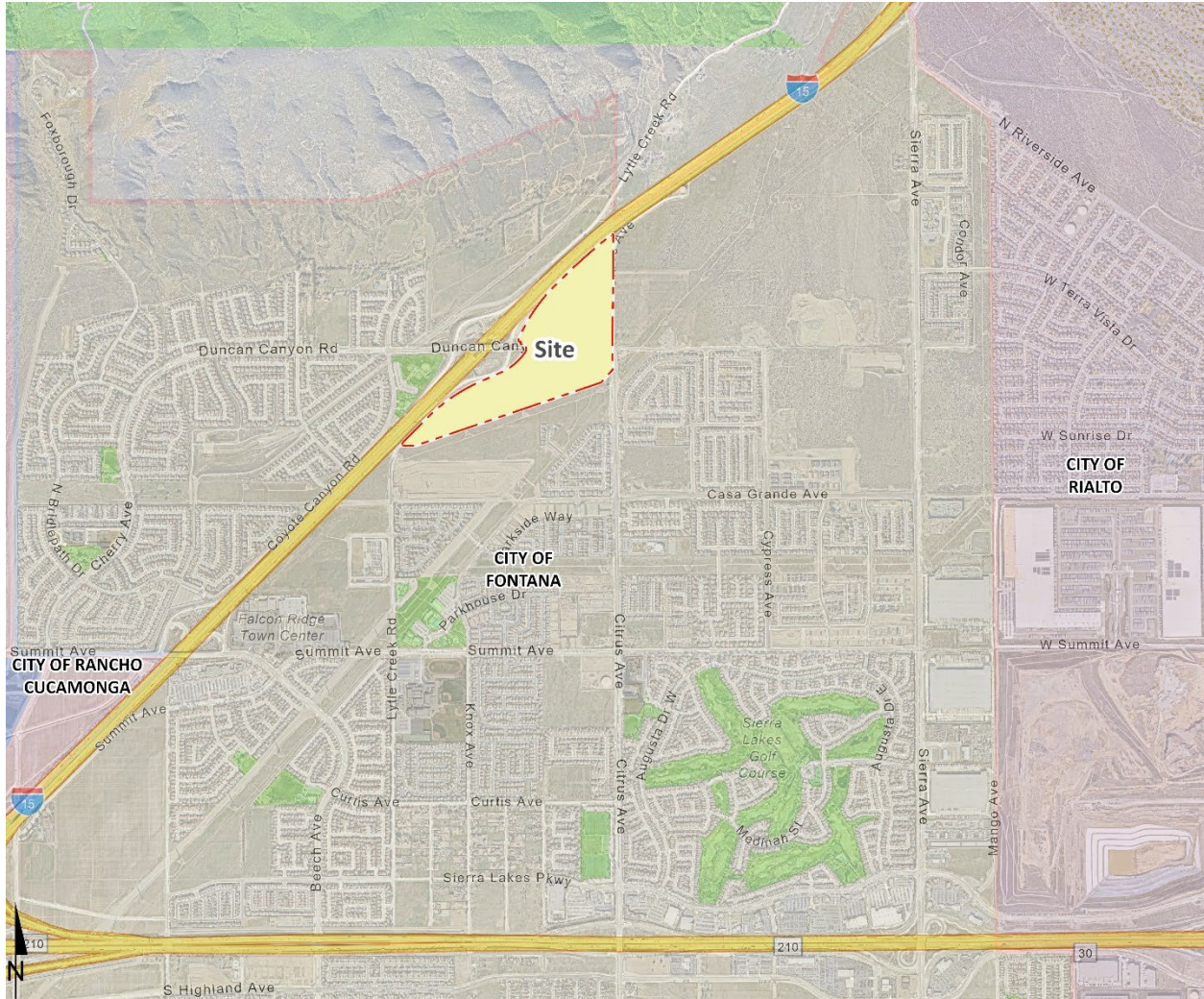
- Project to construct Duncan Canyon Road at its ultimate half-width (north side) as a Major Highway (132-foot right-of-way) from the western Project boundary to Citrus Avenue consistent with the City’s standards.
- Project to construct Citrus Avenue at its ultimate half-width as a Primary Highway (104-foot right-of-way) from the northern Project boundary to Duncan Canyon Road consistent with the City’s standards.
- Project to construct Lytle Creek Road at its ultimate full-width as a Local Street (68-foot right-of-way) between Duncan Canyon Road to Citrus Avenue consistent with the City’s standards.

The Project is to construct the following improvements as design features in conjunction with development of the site for Project Buildout:

- Project to construct Duncan Canyon Road at its ultimate half-width (south side) as a Major Highway (132-foot right-of-way) from the western Project boundary to Citrus Avenue consistent with the City’s standards.
- Project to construct Citrus Avenue at its ultimate half-width as a Primary Highway (104-foot right-of-way) from the southern Project boundary to Duncan Canyon Road consistent with the City’s standards.
- Project to construct Lytle Creek Road at its ultimate full-width as a Secondary (92-foot right-of-way) between Duncan Canyon Road to Citrus Avenue consistent with the City’s standards.

Additional details and intersection lane geometrics are provided in Section 1.6 *Recommendations* of this report.

EXHIBIT 1-1: LOCATION MAP



The proposed Project is not anticipated to require the construction of any off-site improvements, however, there are improvement needs identified at off-site intersections for future cumulative traffic study scenarios. As such, the Project Applicant's responsibility for the Project's contributions towards deficient off-site intersections is fulfilled through payment of fair share and/or payment into pre-existing fee programs (if applicable) that would be assigned to the future construction of the identified recommended improvements. The Project Applicant would be required to pay requisite fees and/or fair share contributions consistent with the City's requirements (see Section 8 *Local and Regional Funding Mechanisms*).

As required by City Guidelines, a project-level vehicle miles traveled (VMT) analysis was conducted consistent with the requirements identified for single use warehouse projects. The Project's VMT per service population does not exceed the City's adopted threshold of 15% below County of San Bernardino baseline VMT per service population in both Baseline and Cumulative scenarios. Additionally, the cumulative assessment was not found to increase under the plus project condition compared to the no project condition in both Baseline and Cumulative scenarios. The Project VMT impact is therefore considered less than significant. Detail traffic analysis can be found in Section 9 *Vehicle Miles Traveled Analysis* of this TS.

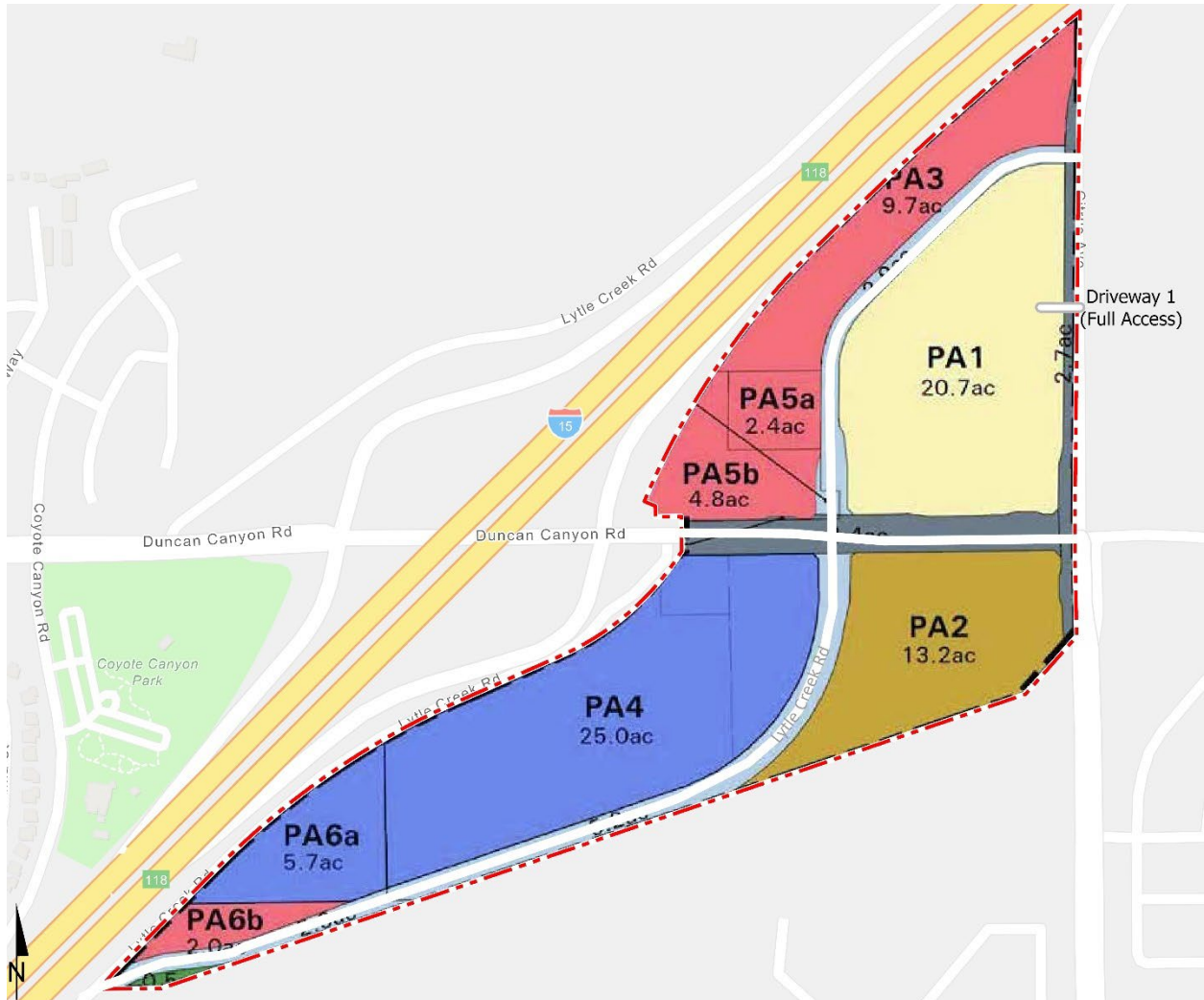
1.2 PROJECT OVERVIEW

The proposed Project includes the development of 538 multifamily housing (mid-rise) dwelling units, 154,000 square feet of commercial retail use, and 26,000 square feet of medical-dental office in the first Phase (Planning Areas 1 and 3). Phase 1 is anticipated to have an Opening Year of 2023. The remainder of the development is anticipated to build out by Year 2030 and includes the development of 1,671 multifamily housing (mid-rise) dwelling units and 476,500 square feet of commercial use (includes 100,000 square feet of medical-dental office use). Although future development may vary from those listed below, the following land uses, and intensities have been evaluated in the commercial retail and mixed-use areas for the purposes of this traffic analysis:

- 252,250 square feet of commercial retail use
- 56,833 square feet of high turnover (sit-down) restaurant use
- 15,417 square feet of fast-food restaurant with drive-through window use
- 31,200 square foot supermarket
- 20,800 square foot pharmacy with drive-through window
- 100,000 square feet of medical-dental office

The proposed planning areas for the proposed Project are shown on Exhibit 1-2. As indicated on Exhibit 1-2, access to the Project site will be provided to Citrus Avenue and Duncan Canyon Road via Lytle Creek Road. Regional access to the Project site is available from the I-15 Freeway via Duncan Canyon Road and Beech Avenue interchanges. Exhibit 1-2 depicts the location of the proposed Project in relation to the existing roadway network and the study area intersections.

EXHIBIT 1-2: SITE MAP



In order to develop the traffic characteristics of the proposed project, trip-generation statistics published in the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition, 2017) for the following land uses has been utilized (2):

- Multifamily Housing (Mid-Rise) (ITE Land Use Code 221)
- Medical-Dental office (ITE Land Use Code 720)
- Shopping Center (ITE Land Use Code 820)
- Supermarket (ITE Land Use code 850)
- Pharmacy (ITE Land Use Code 881)
- High Turnover (Sit-Down) Restaurant (ITE Land Use Code 932)
- Fast-Food Restaurant with Drive-Through Window (ITE Land Use Code 934)

The Project is anticipated to generate a net total of 17,352 trip-ends per day with 1,786 AM peak hour trips and 1,531 PM peak hour trips. The assumptions and methods used to estimate the Project's trip generation characteristics are discussed in greater detail in Section 4.1 *Project Trip Generation* of this report.

1.3 ANALYSIS SCENARIOS

For the purposes of this traffic study, potential deficiencies to traffic and circulation have been assessed for each of the following conditions:

- Existing (2021)
- Opening Year Cumulative (2023) Without Project
- Opening Year Cumulative (2023) With Project (Project Phase 1)
- Opening Year Cumulative (2030) Without Project
- Opening Year Cumulative (2030) With Project (Project Buildout)
- Horizon Year (2040) Without Project
- Horizon Year (2040) With Project (Project Buildout)

1.3.1 EXISTING (2021) CONDITIONS

Information for Existing (2021) conditions is disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared.

1.3.3 OPENING YEAR CUMULATIVE (2023) CONDITIONS

The Opening Year Cumulative (2023) conditions analysis determines the potential near-term cumulative circulation system deficiencies. To account for background traffic growth, traffic associated with other known cumulative development projects in conjunction with an ambient growth from Existing (2021) conditions of 2.33% is included for Opening Year Cumulative (2023) traffic conditions. This comprehensive list was compiled from information provided by the City of Fontana and is consistent with other recent studies in the study area.

1.3.3 OPENING YEAR CUMULATIVE (2030) CONDITIONS

The Opening Year Cumulative (2030) conditions analysis determines the potential near-term cumulative circulation system deficiencies. To account for background traffic growth, traffic associated with other known cumulative development projects in conjunction with an ambient growth from Existing (2021) conditions of 10.94% is included for Opening Year Cumulative (2030) traffic conditions. This comprehensive list was compiled from information provided by the City of Fontana and is consistent with other recent studies in the study area.

1.3.4 HORIZON YEAR (2040) CONDITIONS

Traffic projections for Horizon Year (2040) with Project conditions were derived from the San Bernardino Transportation Analysis Model (SBTAM) modified to represent buildout of the City of Fontana. The Horizon Year (2040) conditions analysis will be utilized to determine if improvements funded through regional transportation fee programs, such as the County's Development Impact Fee (DIF) program, or other approved funding mechanisms can accommodate the long-range cumulative traffic at the target level of service (LOS) identified by the City of Fontana (lead agency). Other improvements needed beyond the "funded" improvements (such as localized improvements to non-DIF facilities) are identified as such.

1.4 STUDY AREA

To ensure that this TA satisfies the City of Fontana's traffic study requirements, Urban Crossroads, Inc. prepared a Project traffic study scoping package for review by City of Fontana staff prior to the preparation of this report. This agreement provides an outline of the Project study area, trip generation, trip distribution, and analysis methodology. The agreement approved by the City of Fontana is included in Appendix 1.1 of this TA.

1.4.1 INTERSECTIONS

The 19 study area intersections shown on Exhibit 1-3 and listed in Table 1-1 were selected for evaluation in this TA based on consultation with City of Fontana staff. The study area includes intersections where the Project is anticipated to contribute 50 or more peak hour trips per the City of Fontana's traffic study guidelines. (1) The "50 peak hour trip" criteria represents a minimum number of trips at which a typical intersection would have the potential to be substantively affected by a given development proposal. The 50 peak hour trip criterion is a traffic engineering rule of thumb that is accepted and widely used within San Bernardino County for estimating a potential area of influence (i.e., study area).

The intent of a CMP is to more directly link land use, transportation, and air quality, thereby prompting reasonable growth management programs that will effectively utilize new transportation funds, alleviate traffic congestion and related deficiencies, and improve air quality. Counties within California have developed CMPs with varying methods and strategies to meet the intent of the CMP legislation.

TABLE 1-1: INTERSECTION ANALYSIS LOCATIONS

ID	Intersection Location	Jurisdiction	CMP?
1	Coyote Canyon Rd. & Duncan Canyon Rd.	City of Fontana	No
2	W. Lytle Creek Rd. & Duncan Canyon Rd.	City of Fontana	No
3	I-15 SB Ramps & Duncan Canyon Rd.	City of Fontana, Caltrans	No
4	I-15 SB Ramps & Beech Av.	City of Fontana, Caltrans	No
5	I-15 NB Ramps & Duncan Canyon Rd.	City of Fontana, Caltrans	No
6	I-15 NB Ramps & Beech Av.	City of Fontana, Caltrans	No
7	Beech Av. & Summit Av.	City of Fontana	No
8	Lytle Creek Dr. & Duncan Canyon Rd. – Future Intersection	City of Fontana	No
9	Lytle Creek Dr. & Summit Av.	City of Fontana	No
10	Citrus Av. & Lytle Creek Rd. – Future Intersection	City of Fontana	No
11	Citrus Av. & Driveway 1 – Future Intersection	City of Fontana	No
12	Citrus Av. & Duncan Canyon Rd.	City of Fontana	No
13	Citrus Av. & Casa Grande Av.	City of Fontana	No
14	Citrus Av. & Summit Av.	City of Fontana	No
15	Citrus Av. & Sierra Lakes Pkwy.	City of Fontana	No
16	Sierra Av. & Riverside Av.	City of Fontana, City of Rialto	No
17	Sierra Av. & Casa Grande Av.	City of Fontana	No
18	Sierra Av. & Summit Av.	City of Fontana	No
19	Sierra Av. & Sierra Lakes Pkwy.	City of Fontana	No

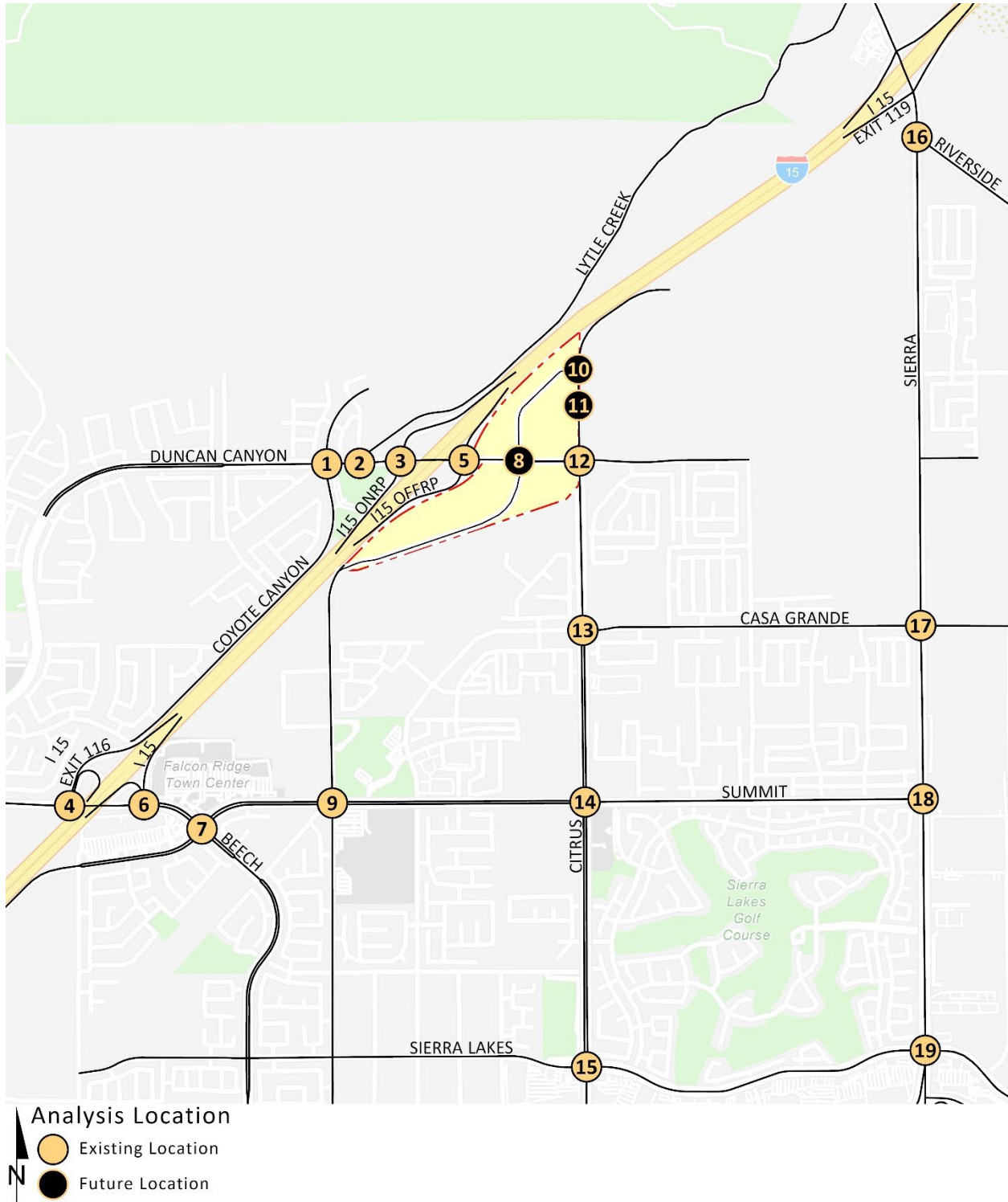
1.4.2 ROADWAY SEGMENTS

At the request of City staff, daily volume-to-capacity (v/c) has been evaluated for the following roadway segments list in Table 1-2:

TABLE 1-2: ROADWAY SEGMENT ANALYSIS LOCATIONS

ID	Roadway Segments
1	Lytle Creek, North of Duncan Canyon Rd. – Future Roadway Segment
2	Lytle Creek, South of Duncan Canyon Rd. – Future Roadway Segment
3	Duncan Canyon Road, I-15 NB Ramps to Lytle Creek Dr.
4	Duncan Canyon Road, North of Duncan Canyon Rd.

EXHIBIT 1-3: STUDY AREA



1.5 DEFICIENCIES

This section provides a summary of deficiencies by analysis scenario. Section 2 *Methodologies* provides information on the methodologies used in the analysis and Section 5 *Opening Year Cumulative (2023) Traffic Conditions*, Section 6 *Opening Year Cumulative (2030) Traffic Conditions*, and Section 7 *Horizon Year (2040)* includes the detailed analysis. A summary of LOS results for all analysis scenarios is presented on Table 1-3.

1.5.1 EXISTING (2021) CONDITIONS

Intersections

The study area intersections are currently operating at an acceptable LOS during the peak hours, with the exception of the following intersections:

- Citrus Avenue & Duncan Canyon Road (#12) – LOS F AM peak hour only
- Citrus Avenue & Sierra Lakes Parkway (#15) – LOS D AM peak hour; LOS E PM peak hour
- Sierra Avenue & Riverside Avenue (#16) – LOS F AM and PM peak hours
- Sierra Avenue & Sierra Lakes Parkway (#19) – LOS E PM peak hour only

Roadway Segments

The study area roadway segments are currently operating at an acceptable LOS based on the City's planning level daily roadway capacity thresholds.

Off-Ramp Queues

There are no movements that are currently experiencing queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows.

TABLE 1-3: SUMMARY OF LOS

#	Intersection	Existing		Opening Year Cumulative (2023) Without Project		Opening Year Cumulative (2023) With Project		Opening Year Cumulative (2030) Without Project		Opening Year Cumulative (2030) With Project		Horizon Year (2040) Without Project		Horizon Year (2040) With Project	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Coyote Canyon Rd. & Duncan Canyon Rd.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2	W. Lytle Creek Rd. & Duncan Canyon Rd.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
3	I-15 SB Ramps & Duncan Canyon Rd.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
4	I-15 SB Ramps & Beech Av.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
5	I-15 NB Ramps & Duncan Canyon Rd.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
6	I-15 NB Ramps & Beech Av.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
7	Beech Av. & Summit Av.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
8	Lytle Creek Dr. & Duncan Canyon Rd.	N/A	N/A	N/A	N/A	●	●	N/A	N/A	●	●	N/A	N/A	●	●
9	Lytle Creek Dr. & Summit Av.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
10	Citrus Av. & Lytle Creek Rd.	N/A	N/A	N/A	N/A	●	●	N/A	N/A	●	●	N/A	N/A	●	●
11	Citrus Av. & Driveway 1	N/A	N/A	N/A	N/A	●	●	N/A	N/A	●	●	N/A	N/A	●	●
12	Citrus Av. & Duncan Canyon Rd.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
13	Citrus Av. & Casa Grande Av.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
14	Citrus Av. & Summit Av.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
15	Citrus Av. & Sierra Lakes Pkwy.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
16	Sierra Av. & Riverside Av.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
17	Sierra Av. & Casa Grande Av.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
18	Sierra Av. & Summit Av.	●	●	●	●	●	●	●	●	●	●	●	●	●	●
19	Sierra Av. & Sierra Lakes Pkwy.	●	●	●	●	●	●	●	●	●	●	●	●	●	●

● LOS=A-C/D
 ● LOS=D/E
 ● LOS=F

1.5.2 OPENING YEAR CUMULATIVE (2023) CONDITIONS

Intersections

the following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours under Opening Year Cumulative (2023) Without Project:

- Citrus Avenue & Duncan Canyon Road (#12) – LOS F AM and PM peak hours
- Citrus Avenue & Summit Avenue (#14) – LOS E AM peak hour; LOS F PM peak hour
- Citrus Avenue & Sierra Lakes Parkway (#15) – LOS F AM and PM peak hours
- Sierra Avenue & Riverside Avenue (#16) – LOS F AM and PM peak hours
- Sierra Avenue & Casa Grande Avenue (#17) – LOS D AM and PM peak hours
- Sierra Avenue & Sierra Lakes Parkway (#19) – LOS D AM peak hour; LOS F PM peak hour

There are no additional study area intersections anticipated to operate at an unacceptable LOS with the addition of Project (Phase 1) traffic, in addition to the intersections previously identified under Opening Year Cumulative (2023) Without Project traffic conditions.

Roadway Segments

The following study area roadway segments are anticipated to operate at an unacceptable LOS based on the City's planning level daily roadway capacity thresholds for Opening Year Cumulative (2023) Without Project and With Project traffic conditions:

- Duncan Canyon Road, I-15 Northbound Ramps to Lytle Creek Drive (#3) – LOS E
- Duncan Canyon Road, Lytle Creek Drive to Citrus Avenue (#4) – LOS E

Off-Ramp Queues

Consistent with Existing (2021) Conditions, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows with the addition of Project traffic.

1.5.3 OPENING YEAR CUMULATIVE (2030) CONDITIONS

Intersections

The following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours under Opening Year Cumulative (2030) Without Project:

- Coyote Canyon Road & Duncan Canyon Road (#1) – LOS D AM and PM peak hours
- Citrus Avenue & Duncan Canyon Road (#12) – LOS F AM and PM peak hours
- Citrus Avenue & Summit Avenue (#14) – LOS F AM and PM peak hours
- Citrus Avenue & Sierra Lakes Parkway (#15) – LOS F AM and PM peak hours
- Sierra Avenue & Riverside Avenue (#16) – LOS F AM and PM peak hours
- Sierra Avenue & Casa Grande Avenue (#17) – LOS F AM and PM peak hours
- Sierra Avenue & Summit Avenue (#18) – LOS D AM peak hour only
- Sierra Avenue & Sierra Lakes Parkway (#19) – LOS D AM peak hour; LOS F PM peak hour

The following additional study area intersections anticipated to operate at an unacceptable LOS with the addition of Project (Project Buildout) traffic, in addition to the intersections previously identified under Opening Year Cumulative (2030) Without Project traffic conditions:

- Beech Avenue & Summit Avenue (#7) – LOS D PM peak hour only
- Citrus Avenue & Casa Grande Avenue (#13) – LOS D PM peak hour only

Roadway Segments

The following study area roadway segments are anticipated to operate at an unacceptable LOS based on the City's planning level daily roadway capacity thresholds for Opening Year Cumulative (2030) Without Project and With Project traffic conditions:

- Duncan Canyon Road, I-15 Northbound Ramps to Lytle Creek Drive (#3) – LOS F
- Duncan Canyon Road, Lytle Creek Drive to Citrus Avenue (#4) – LOS F

Off-Ramp Queues

There are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows under Opening Year Cumulative (2030) Without Project and With Project traffic conditions.

1.5.4 HORIZON YEAR (2040) CONDITIONS

Intersections

The following study area intersections are anticipated to operate at an unacceptable LOS under Horizon Year (2040) Without Project traffic conditions:

- Coyote Canyon Road & Duncan Canyon Road (#1) – LOS E AM and PM peak hours
- Beech Avenue & Summit Avenue (#7) – LOS D AM and PM peak hours
- Citrus Avenue & Duncan Canyon Road (#12) – LOS F AM and PM peak hours
- Citrus Avenue & Summit Avenue (#14) – LOS F AM and PM peak hours
- Citrus Avenue & Sierra Lakes Parkway (#15) – LOS F AM and PM peak hours
- Sierra Avenue & Riverside Avenue (#16) – LOS F AM and PM peak hours
- Sierra Avenue & Casa Grande Avenue (#17) – LOS F AM and PM peak hours
- Sierra Avenue & Summit Avenue (#18) – LOS F AM peak hour only
- Sierra Avenue & Sierra Lakes Parkway (#19) – LOS E AM peak hour; LOS F PM peak hour

There are no additional study area intersections anticipated to operate at a deficient LOS during one or both peak hours for Horizon Year (2040) With Project traffic conditions, in addition to the locations identified above for Horizon Year (2040) Without Project traffic conditions.

Roadway Segments

The following study area roadway segments are anticipated to operate at an unacceptable LOS based on the City's planning level daily roadway capacity thresholds for Horizon Year (2040) Without Project and With Project traffic conditions:

- Duncan Canyon Road, I-15 Northbound Ramps to Lytle Creek Drive (#3) – LOS F
- Duncan Canyon Road, Lytle Creek Drive to Citrus Avenue (#4) – LOS F

Off-Ramp Queues

The southbound left turn movement at the intersection of I-15 Northbound Ramps & Beech Avenue is anticipated to experience queuing issues during the PM peak hour under Horizon Year (2040) Without and With Project traffic conditions.

1.6 RECOMMENDATIONS

1.6.1 SITE ADJACENT AND SITE ACCESS RECOMMENDATIONS

The following recommendations are based on the minimum improvements needed to accommodate site access and maintain acceptable peak hour operations. The site adjacent recommendations are shown on Exhibits 1-4 for Phase 1 and Exhibit 1-5 for Project Buildout.

Phase 1

Recommendation 1 – Lytle Creek Road & Duncan Canyon Road (#8) – The following improvements are necessary to accommodate site access:

- Project to install a traffic signal.
- Project to construct southbound dual left turn lanes with a minimum of 175-feet of storage and a right turn lane.
- Project to construct an eastbound left turn lane with a minimum of 250-feet of storage.
- Project to construct two westbound through lanes and a right turn lane with a minimum of 200-feet of storage.

Recommendation 2 – Citrus Avenue & Lytle Creek Road (#10) – The following improvements are necessary to accommodate site access:

- Project to construct a northbound left turn lane with a minimum of 100-feet of storage and a through lane.
- Project to construct a southbound through lane and shared through-right turn lane.
- Project to install a stop control on the eastbound approach (Project driveway) and a shared left-right turn lane.

Recommendation 3 – Citrus Avenue & Driveway 1 (#11) – The following improvements are necessary to accommodate site access:

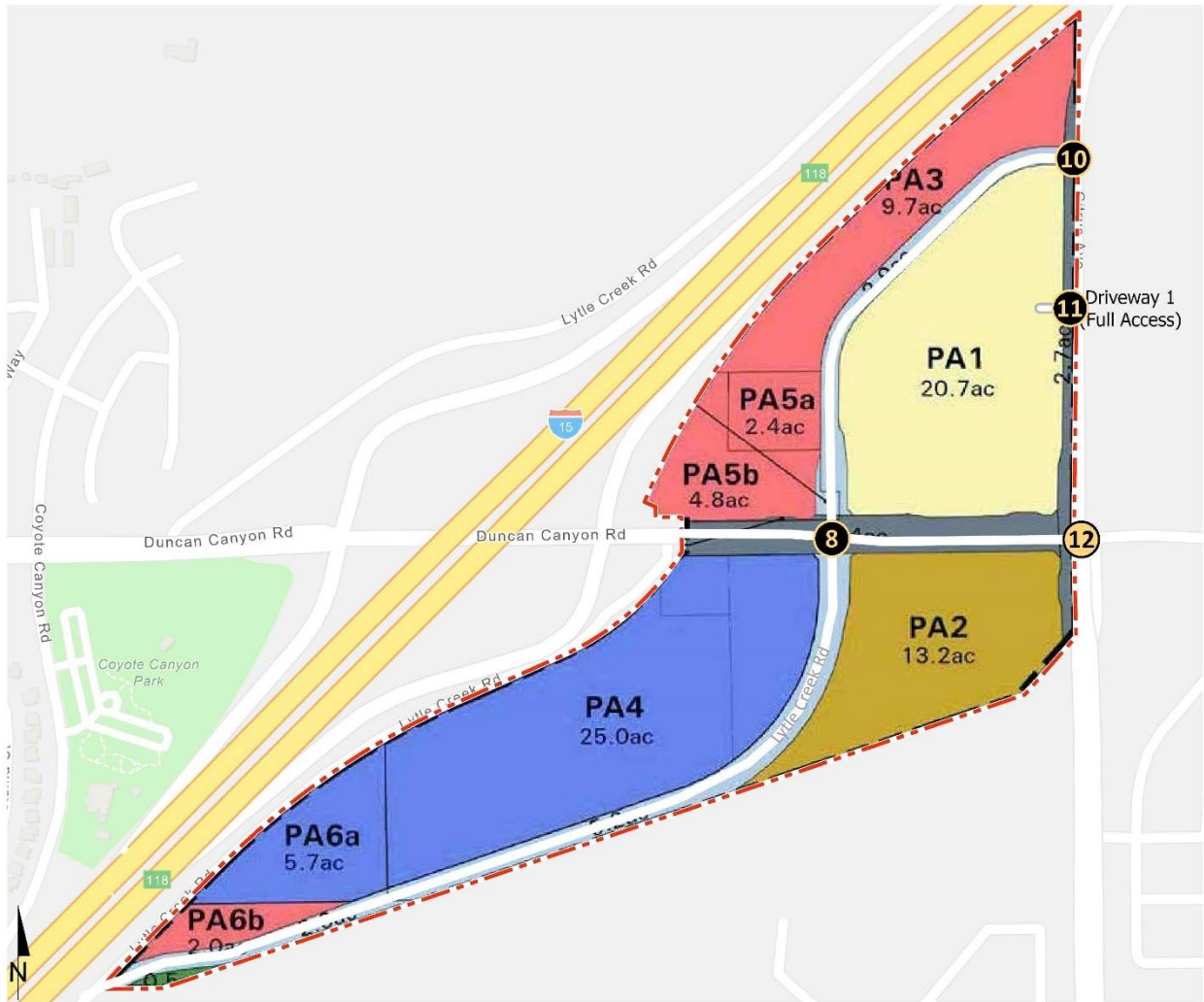
- Project to install a traffic signal.
- Project to construct a northbound left turn lane with a minimum of 100-feet of storage and a through lane.
- Project to construct a southbound through lane and shared through-right turn lane.
- Project to construct an eastbound shared left-right turn lane.

EXHIBIT 1-4: SITE ADJACENT ROADWAY AND SITE ACCESS RECOMMENDATIONS FOR PHASE 1



8	Lytle Creek Rd. & Duncan Canyon Rd.	10	Citrus Av. & Lytle Creek Rd.	11	Citrus Av. & Dwy. 1	12	Citrus Av. & Duncan Canyon Rd.	LEGEND:
				<ul style="list-style-type: none"> = NEW TRAFFIC SIGNAL = ALL WAY STOP = STOP SIGN = STOP SIGN IMPROVEMENT = EXISTING LANE = LANE IMPROVEMENT 				

EXHIBIT 1-5: SITE ADJACENT ROADWAY AND SITE ACCESS RECOMMENDATIONS FOR PROJECT BUILDOUT



8	10	11	12	LEGEND:
Lytle Creek Rd. & Duncan Canyon Rd.	Citrus Av. & Lytle Creek Rd.	Citrus Av. & Dwy. 1	Citrus Av. & Duncan Canyon Rd.	
				<p> = PREVIOUS TRAFFIC SIGNAL IMPROVEMENT</p> <p> = STOP SIGN</p> <p> = EXISTING LANE</p> <p> = PREVIOUS PHASE LANE IMPROVEMENT</p> <p> = LANE IMPROVEMENT</p>

Recommendation 4 – Citrus Avenue & Duncan Canyon Road (#12) – The following improvements are necessary to accommodate site access:

- Project to install a traffic signal.
- Project to stripe a northbound left turn lane and through lane.
- Project to construct a southbound left turn lane with a minimum of 100-feet of storage, a through lane, and a right turn lane with a minimum of 100-feet of storage.
- Project to construct an eastbound left turn lane with a minimum of 300-feet of storage.
- Project to construct a westbound left turn lane with a minimum of 100-feet of storage.

Recommendation 5 – Duncan Canyon Road is an east-west oriented roadway located on the Project’s southern boundary. Project to construct Duncan Canyon Road at its ultimate half-width (north side) as a Major Highway (134-foot right-of-way) from the western Project boundary to Citrus Avenue consistent with the City’s standards.

Recommendation 6 – Citrus Avenue is a north-south oriented roadway located on the Project’s eastern boundary. Project to construct Citrus Avenue at its ultimate half-width as a Primary Highway (104-foot right-of-way) from the northern Project boundary to Duncan Canyon Road consistent with the City’s standards.

Recommendation 7 – Lytle Creek Road is a north-south oriented roadway that bisects the Project between Duncan Canyon Road to Citrus Avenue. Project to construct Lytle Creek Road at its ultimate full-width as a Local Street (68-foot right-of-way) between Duncan Canyon Road to Citrus Avenue consistent with the City’s standards.

Project Buildout

Recommendation 8 – Lytle Creek Road & Duncan Canyon Road (#8) – The following improvements are necessary to accommodate site access:

- Project to construct dual northbound left turn lanes with 200-feet of storage, two through lanes, and a right turn lane with 100-feet of storage.
- Project to construct two southbound through lanes.
- Project to construct two eastbound through lanes and a right turn lane with a minimum of 250-feet of storage.
- Project to construct dual westbound left turn lanes with a minimum of 250-feet of storage.

Recommendation 9 – Citrus Avenue & Duncan Canyon Road (#12) – The following improvements are necessary to accommodate site access:

- Project to construct an eastbound left turn lane with a minimum of 300-feet of storage, a through lane, and a right turn lane.

Recommendation 10 – Duncan Canyon Road is an east-west oriented roadway located on the Project’s southern boundary. Project to construct Duncan Canyon Road at its ultimate half-width (south side) as a Major Highway (132-foot right-of-way) from the western Project boundary to Citrus Avenue consistent with the City’s standards.

Recommendation 11 – Citrus Avenue is a north-south oriented roadway located on the Project’s eastern boundary. Project to construct Citrus Avenue at its ultimate half-width as a Primary Highway (104-foot right-of-way) from the northern Project boundary to Duncan Canyon Road consistent with the City’s standards.

Recommendation 12 – Lytle Creek Road is a north-south oriented roadway that bisects the Project between Duncan Canyon Road and its existing terminus north of Summit Avenue. Project to construct Lytle Creek Road at its ultimate full-width as a Secondary (92-foot right-of-way) between Duncan Canyon Road to Citrus Avenue consistent with the City’s standards.

On-site traffic signing and striping should be implemented agreeable with the provisions of the California Manual on Uniform Traffic Control Devices (CA MUTCD) and in conjunction with detailed construction plans for the Project site.

Sight distance at each project access point should be reviewed with respect to standard Caltrans and City of Fontana sight distance standards at the time of preparation of final grading, landscape, and street improvement plans.

1.6.2 QUEUING ANALYSIS

A queuing analysis has been performed for the Project driveways and the site adjacent intersection of Citrus Avenue and Duncan Canyon Road for Horizon Year (2040) With Project traffic conditions. The traffic modeling and signal timing optimization software package SimTraffic has been utilized to assess the queues. SimTraffic is designed to model networks of signalized and unsignalized intersections, with the primary purpose of checking and fine-tuning signal operations. SimTraffic uses the input parameters from Synchro to generate random simulations. These random simulations generated by SimTraffic have been utilized to determine the 95th percentile queue lengths observed for each applicable turn lane. A SimTraffic simulation has been recorded up to 5 times, during the weekday AM and weekday PM peak hours, and has been seeded for 30-minute periods with 60-minute recording intervals. Queuing analysis worksheets for the weekday AM and PM peak hours are provided in Appendix 1.2 of this report.

1.6.3 OFF-SITE RECOMMENDATIONS

The recommended improvements needed to address the cumulative deficiencies identified under Existing (2021), Opening Year Cumulative (2023), Opening Year Cumulative (2030), and Horizon Year (2040) traffic conditions are shown in Table 1-4. For those improvements listed in Table 1-4 and not constructed as part of the Project, the Project Applicant’s responsibility for the Project’s contributions towards deficient intersections is fulfilled through payment of fair share that would be assigned to construction of the identified recommended improvements. The Project Applicant would be required to pay fair share fees consistent with the City’s requirements (see Section 8 *Local and Regional Funding Mechanisms*).

1.7 VEHICLE MILES TRAVELED (VMT) ANALYSIS

The Project was evaluated against City Guideline’s stated VMT screening criteria, but was found to not meet the available screening thresholds. As required by City Guidelines, a project level VMT analysis was conducted. The Project’s VMT per service population does not exceed the City’s adopted threshold of 15% below County of San Bernardino baseline VMT per service population in both Baseline and Cumulative scenarios. Additionally, the cumulative assessment was not found to increase under the plus project condition compared to the no project condition in both Baseline and Cumulative scenarios. The Project VMT impact is therefore considered less than significant. Detail traffic analysis can be found in Section 9 *Vehicle Miles Traveled Analysis* of this TA.

TABLE 1-4: SUMMARY OF IMPROVEMENTS BY ANALYSIS SCENARIO

#	Intersection Location	Jurisdiction	Analysis Scenarios			Improvements included in Fee Program? ¹	Mechanism for Mitigation ²	Total Cost ³	Fair Share % ⁴	Estimated Fair Share Cost
			Opening Year Cumulative (2023) With Project	Opening Year Cumulative (2030) With Project	2040 With Project					
1	Coyote Canyon Rd. & Duncan Canyon Rd.	Fontana	None	None	Install a Traffic Signal	No	Fair Share	\$400,000	7.8%	\$31,195
								Total		\$400,000
7	Beech Av. & Summit Av.	Fontana	None	Modify the traffic signal to implement overlap phasing on the SB right turn	Same	No	Fair Share	\$117,600	15.0%	\$17,698
								Total		\$117,600
12	Citrus Av. & Duncan Canyon Rd.	Fontana	Install a Traffic Signal Add 2nd NB left turn lane Add NB through lane Add NB right turn lane Add SB left turn lane Add SB through lane Add EB left turn lane Add WB left turn lane	Same	Same	No	Construct	\$0	23.8%	\$0
				Same	Same	No	Construct	\$0		\$0
				Same	Same	No	Construct	\$0		\$0
				Same	Same	No	Construct	\$0		\$0
				Same	Same	No	Construct	\$0		\$0
				Same	Same	No	Construct	\$0		\$0
				Same	Same	No	Construct	\$0		\$0
				Same	Same	No	Construct	\$0		\$0
				Modify the traffic signal to implement overlap phasing on the EB right turn	Same	No	Fair Share	\$117,600		\$27,947
				Add 2nd SB through lane	Same	No	Construct	\$0		\$0
				Add EB right turn lane	Same	No	Construct	\$0		\$0
Add 2nd NB through lane	Same	No	Construct	\$0	\$0					
Total	\$117,600	\$27,947								
14	Citrus Av. & Summit Av.	Fontana	Add 2nd NB left turn lane	None	Same	No	Fair Share	\$78,400	17.6%	\$13,821
				Modify the traffic signal to implement overlap phasing on the EB right turn	Same	No	Fair Share	\$117,600		\$20,731
				Modify the traffic signal to implement a 130-second cycle length	Same	No	Fair Share	\$117,600		\$20,731
				Total	\$313,600	\$55,284				

#	Intersection Location	Jurisdiction	Analysis Scenarios			Improvements included in Fee Program ¹	Mechanism for Mitigation ²	Total Cost ³	Fair Share % ⁴	Estimated Fair Share Cost
			Opening Year Cumulative (2023) With Project	Opening Year Cumulative (2030) With Project	2040 With Project					
15	Citrus Av. & Sierra Lakes Pkwy.	Fontana	Modify the traffic signal to implement overlap phasing on the NB and EB right turns	Same	Same	No	Fair Share	\$117,600	10.2%	\$12,047
				Modify the traffic signal to implement a 130-second cycle length	Same	No	Fair Share	\$117,600		\$12,047
				Total				\$235,200		\$24,094
16	Sierra Av. & Riverside Av.	Fontana	Install a Traffic Signal	Same	Same	No	Fair Share	\$400,000	5.5%	\$21,829
				Total				\$400,000		\$21,829
17	Sierra Av. & Casa Grande Av.	Fontana	Install a Traffic Signal Add NB left turn lane	Same	Same	No	Fair Share	\$627,200	14.3%	\$89,600
				Same	Same	No	Fair Share	\$78,400		\$11,200
				Add 2nd NB through lane	Same	No	Fair Share	\$282,240		\$40,320
				Add 2nd SB through lane	Same	No	Fair Share	\$282,240		\$40,320
				Total				\$1,270,080		\$181,440
18	Sierra Av. & Summit Av.	Fontana	None	Modify the traffic signal to implement overlap phasing on the EB right turn	Same	No	Fair Share	\$117,600	11.8%	\$13,894
				Total				\$117,600		\$13,894
19	Sierra Av. & Sierra Lakes Pkwy.	Fontana	None	Modify the traffic signal to implement a 130-second cycle length	Same	No	Fair Share	\$117,600	7.0%	\$8,231
				Total				\$117,600		\$8,231
Total Costs for Horizon Year (2040) Improvements								\$3,089,280		\$381,612
Total Project Fair Share Contribution to the City of Fontana (non-DIF)⁵										\$381,612

¹ Improvements are included in the SBCTA Nexus Study Fee program or the SSBCTA Measure I Funding.

² Identifies the Project's responsibility to construct an improvement or contribute fair share or fee payment towards the implementation of the improvements shown.

³ Costs have been estimated using the data provided in Appendix G of the San Bernardino County CMP (2016 Update) for preliminary construction costs. Appendix G costs escalated by a factor of 1.568 to reflect 2021 conditions, except for Traffic Signals.

⁴ Program improvements constructed may be eligible for fee credit, at discretion of City. See Table 8-1 for Fair Share Calculations.

⁵ Total project fair share contribution consists of the improvements which are not already included in the City of Fontana's DIF for those intersections wholly or partially within the City of Fontana.

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2 METHODOLOGIES

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are generally consistent with the City of Fontana's traffic study guidelines. (1)

2.1 LEVEL OF SERVICE

Traffic operations of roadway facilities are described using the term "Level of Service" (LOS). LOS is a qualitative description of traffic flow based on several factors such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined ranging from LOS A, representing completely free-flow conditions, to LOS F, representing breakdown in flow resulting in stop-and-go conditions. LOS E represents operations at or near capacity, an unstable level where vehicles are operating with the minimum spacing for maintaining uniform flow.

2.2 INTERSECTION CAPACITY ANALYSIS

The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control. The LOS is typically dependent on the quality of traffic flow at the intersections along a roadway. The Highway Capacity Manual (HCM) methodology expresses the LOS at an intersection in terms of delay time for the various intersection approaches. (4) The HCM uses different procedures depending on the type of intersection control.

2.2.1 SIGNALIZED INTERSECTIONS

The City of Fontana and Caltrans require signalized intersection operations analysis based on the methodology described in the HCM (6th Edition). Intersection LOS operations are based on an intersection's average control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections, LOS is directly related to the average control delay per vehicle and is correlated to a LOS designation as described in Table 2-1. Study area intersections have been evaluated using the Synchro (Version 10) analysis software package.

The traffic modeling and signal timing optimization software package Synchro (Version 10) is utilized to analyze signalized intersections within the study area. Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis as specified in the HCM. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the study intersections. Equations are used to determine measures of effectiveness such as delay and queue length. The level of service and capacity analysis performed by Synchro takes into consideration optimization and coordination of signalized intersections within a network.

TABLE 2-1: SIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0	Level of Service, V/C > 1.0
Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00	A	F
Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00	B	F
Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00	C	F
Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.01 to 55.00	D	F
Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.01 to 80.00	E	F
Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths	80.01 and up	F	F

Source: HCM, 6th Edition

A saturation flow rate of 1900 has been utilized for all study area intersections located within the City of Fontana. The peak hour traffic volumes are adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. Common practice for LOS analysis is to use a peak 15-minute rate of flow. However, flow rates are typically expressed in vehicles per hour. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume (e.g., $PHF = [Hourly\ Volume] / [4 \times Peak\ 15\text{-minute}\ Flow\ Rate]$). The use of a 15-minute PHF produces a more detailed analysis as compared to analyzing vehicles per hour. Existing PHFs have been used for all analysis scenarios. Per the HCM, PHF values over 0.95 often are indicative of high traffic volumes with capacity constraints on peak hour flows while lower PHF values are indicative of greater variability of flow during the peak hour. (4)

California Department of Transportation (Caltrans)

Per the California Department of Transportation (Caltrans) traffic study guidance, the traffic modeling and signal timing optimization software package Synchro (Version 10) has also been utilized to analyze signalized intersections under Caltrans' jurisdiction, which include interchange to arterial ramps (i.e., I-15 Freeway ramps at Beech Avenue and Duncan Canyon Road). (5) Signal timing for the freeway arterial-to-ramp intersections have been obtained from Caltrans District 8 and were utilized for the purposes of this analysis.

2.2.2 UNSIGNALIZED INTERSECTIONS

The City of Fontana require the operations of unsignalized intersections be evaluated using the methodology described the HCM. (4) The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (see Table 2-2).

TABLE 2-2: UNSIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay Per Vehicle (Seconds)	Level of Service, V/C ≤ 1.0	Level of Service, V/C > 1.0
Little or no delays.	0 to 10.00	A	F
Short traffic delays.	10.01 to 15.00	B	F
Average traffic delays.	15.01 to 25.00	C	F
Long traffic delays.	25.01 to 35.00	D	F
Very long traffic delays.	35.01 to 50.00	E	F
Extreme traffic delays with intersection capacity exceeded.	> 50.00	F	F

Source: HCM, 6th Edition

At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and for the left turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. Per the HCM, the highest delay and associated LOS on the minor approach is reported for two-way stop-controlled intersections. For all-way stop controlled intersections, LOS is computed for the intersection as a whole and the average delay is reported (similar to signalized intersections).

2.3 TRAFFIC SIGNAL WARRANT ANALYSIS METHODOLOGY

The term "signal warrants" refers to the list of established criteria used by the Caltrans and other public agencies to quantitatively justify or ascertain the potential need for installation of a traffic signal at an otherwise unsignalized intersection. This TA uses the signal warrant criteria presented in the latest edition of the Caltrans California Manual on Uniform Traffic Control Devices (CA MUTCD). (6)

The signal warrant criteria for Existing conditions are based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. The Caltrans CA MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. (6) Specifically, this TA utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for existing study area intersections for all analysis scenarios. Warrant 3 is appropriate to use for this TA because it provides specialized warrant criteria for intersections with rural characteristics (e.g. located in communities with populations of less than 10,000 persons or with adjacent major streets operating above 40 miles per hour). For the purposes of this study, the speed limit was the basis for determining whether Urban or Rural warrants were used for a given intersection.

Traffic signal warrant analyses were performed for the following unsignalized study area intersection shown in Table 2-3:

TABLE 2-3: TRAFFIC SIGNAL WARRANT ANALYSIS LOCATIONS

ID	Intersection Location	Jurisdiction
1	Coyote Canyon Rd. & Duncan Canyon Rd.	Fontana
2	W. Lytle Creek Rd. & Duncan Canyon Rd.	Fontana
8	Lytle Creek Dr. & Duncan Canyon Rd.	Fontana
10	Citrus Av. & Lytle Creek Rd.	Fontana
11	Citrus Av. & Driveway 1	Fontana
12	Citrus Av. & Duncan Canyon Rd.	Fontana
16	Sierra Av. & Riverside Av.	Fontana
17	Sierra Av. & Sierra Lakes Pkwy.	Fontana

The Existing conditions traffic signal warrant analysis is presented in the subsequent section, Section 3 *Area Conditions* of this report. The traffic signal warrant analyses for future conditions are presented in Section 5 *Opening Year Cumulative (2023) Traffic Conditions*, Section 6 *Opening Year Cumulative (2030) Traffic Conditions*, and Section 7 *Horizon Year (2040) Traffic Conditions* of this report.

It is important to note that a signal warrant defines the minimum condition under which the installation of a traffic signal might be warranted. Meeting this threshold condition does not require that a traffic control signal be installed at a particular location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified. It should also be noted that signal warrants do not necessarily correlate with LOS. An intersection may satisfy a signal warrant condition and operate at or above acceptable LOS or operate below acceptable LOS and not meet a signal warrant.

2.4 ROADWAY SEGMENT CAPACITY ANALYSIS

Roadway segment operations have been evaluated using the daily roadway segment capacities for each type of roadway. Per the City of Fontana traffic study guidelines, arterial capacity is assumed to be 9,000 vehicles per lane per day. This capacity has been utilized for the roadway segment capacity analysis.

These roadway capacities are “rule of thumb” estimates for planning purposes and are affected by such factors as intersections (spacing, configuration and control features), degree of access control, roadway grades, design geometrics (horizontal and vertical alignment standards), sight distance, vehicle mix (truck and bus traffic) and pedestrian bicycle traffic. As such, where the average daily volume (ADT) based roadway segment analysis indicates a deficiency (unacceptable LOS), a review of the more detailed peak hour intersection analysis and progression analysis are undertaken. The more detailed peak hour intersection analysis explicitly accounts for factors that affect roadway capacity. Therefore, for the purposes of this analysis, roadway segment widening is typically only recommended if the peak hour intersection analysis indicates the need for additional through lanes.

2.5 FREEWAY OFF-RAMP QUEUING ANALYSIS

Consistent with Caltrans requirements, the 95th percentile queuing of vehicles has been assessed at the off-ramps to determine potential queuing deficiencies at the freeway ramp intersections at the I-15 Freeway at Duncan Canyon Road and Beech Avenue interchanges. Specifically, the queuing analysis is utilized to identify any potential queuing and “spill back” onto the I-15 Freeway mainline from the off-ramps.

The traffic progression analysis tool and HCM intersection analysis program, Synchro, has been used to assess the potential deficiencies/needs of the intersections with traffic added from the proposed Project. Storage (turn-pocket) length recommendations at the ramps have been based upon the 95th percentile queue resulting from the Synchro progression analysis. The footnote from the Synchro output sheets indicates if the 95th percentile cycle exceeds capacity. Traffic is simulated for two complete cycles of the 95th percentile traffic in Synchro in order to account for the effects of spillover between cycles. In practice, the 95th percentile queue shown will rarely be exceeded and the queues shown with the footnote are acceptable for the design of storage bays. The 95th percentile queue is derived from the average queue plus 1.65 standard deviations. The 95th percentile queue is not necessarily ever observed it is simply based on statistical calculations.

2.6 MINIMUM LEVEL OF SERVICE (LOS)

The definition of an intersection deficiency has been obtained from each of the applicable surrounding jurisdictions.

2.6.1 CITY OF FONTANA

The City’s General Plan recommends a LOS standard of LOS C. Intersections which are forecast to operate at unsatisfactory conditions (i.e. at LOS worse than LOS C for city intersections) shall be identified as cumulatively deficient intersections. Therefore, any intersection operating at LOS D, E, or F will be considered deficient for the purposes of this analysis. (1)

2.6.2 CALTRANS

Senate Bill 743 (SB 743), approved in 2013, endeavors to change the way transportation impacts will be determined according to the California Environmental Quality Act (CEQA). The Office of Planning and Research (OPR) has recommended the use of vehicle miles traveled (VMT) as the replacement for automobile delay-based LOS. Caltrans acknowledges automobile delay will no longer be considered a CEQA impact for development projects and will use VMT as the metric for determining impacts on the State Highway System (SHS). However, LOS D has been utilized as the target LOS for Caltrans facilities, consistent with other recent studies in the City of Fontana.

2.7 DEFICIENCY CRITERIA

For the intersections that lie within the City of Fontana, determination of direct project-related deficiencies will be based on a comparison of without and with project levels of service for each analysis year. A project-related deficiency occurs if project traffic increases the average delay at an intersection by more than the thresholds identified on Table 2-4. The thresholds for LOS A, B, and C do not apply to projects consistent with the General Plan.

TABLE 2-4: THRESHOLDS OF SIGNIFICANT IMPACT

Pre-Project LOS	Significant Impact Threshold ¹
A/B	10.0 Seconds
C	8.0 Seconds
D	5.0 Seconds
E	2.0 Seconds
F	1.0 Second

Source: Fontana Traffic Study Guidelines, October 2020

¹ Increase in delay

Cumulative traffic impacts are deficiencies that are not directly caused by the Project, but occur as a result of regional growth combined with that or other nearby cumulative development projects. Cumulative impacts utilize the same thresholds of significant impacts as shown on Table 2-4. The Project’s contribution to a particular cumulative transportation deficiency is deemed cumulatively considerable if the Project adds significant traffic to the forecasted deficiency (Per Table 2-4). A Project’s contribution to a cumulatively considerable impact can be reduced to less than significant if the Project is required to implement or fund its fair share of improvements designed to alleviate the potential cumulative impact. If full funding of future cumulative improvements is not reasonably assured, a temporary unmitigated cumulative impact may occur until the needed improvement is fully funded and constructed.

2.8 PROJECT FAIR SHARE CALCULATION METHODOLOGY

In cases where this TA identifies that the Project would contribute additional traffic volumes to traffic deficiencies, Project fair share costs of improvements necessary to address deficiencies have been identified. The Project’s fair share cost of improvements is determined based on the following equation, which is the ratio of Project traffic to new traffic, and new traffic is total future (Horizon Year) traffic less existing baseline traffic:

$$\text{Project Fair Share \%} = \frac{\text{Project (2040) AM/PM Traffic}}{\text{(2040 With Project AM/PM Total Traffic - Existing AM/PM Traffic)}}$$

The project fair share percentage has been calculated for both the AM peak hour and PM peak hour and the highest of the two has been selected. The Project fair share contribution calculations are presented in Section 8 *Local and Regional Funding Mechanisms* of this TA. The cost of implementing the improvements shown on Table 1-3 have been estimated based on the preliminary construction cost estimates found in Appendix G of the San Bernardino County CMP in conjunction with a total cost escalation factor of 1.568 to more closely approximate current (2020) costs. These cost estimates have been utilized in conjunction with the Project fair share percentages to determine the Project's fair share cost of the recommended improvements (see Table 8-1). These estimates are a rough order of magnitude only as they are intended only for discussion purposes and do not imply any legal responsibility or formula for contributions or physical improvements.

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3 AREA CONDITIONS

This section provides a summary of the existing circulation network, the City of Fontana General Plan Circulation Network, and a review of existing peak hour intersection operations, traffic signal warrant, roadway segment, and off-ramp queuing analyses.

3.1 EXISTING CIRCULATION NETWORK

Pursuant to the scoping agreement with City of Fontana staff (Appendix 1.1), the study area includes a total of 19 existing and future intersections as shown previously on Exhibit 1-2. Exhibit 3-1 illustrates the study area intersections located near the proposed Project and identifies the number of through traffic lanes for existing roadways and intersection traffic controls.

3.2 GENERAL PLAN CIRCULATION ELEMENTS

As noted previously, the Project site is located within the City of Fontana. The roadway classifications and planned (ultimate) roadway cross-sections of the major roadways within the study area, as identified on City of Fontana General Plan Hierarchy of Streets, are described subsequently. Exhibit 3-2 shows the City of Fontana General Plan Circulation Element. The City of Fontana General Plan does not include roadway cross-sections in its General Plan.

Major Highways are four-to-six-lane divided roadways (typically divided by a raised median or painted two-way turn-lane). These roadways serve both regional through-traffic and inter-city traffic and typically direct traffic onto and off-of the freeways. The following study area roadway within the City of Fontana is classified as a Major Highways:

- Duncan Canyon Road, from I-15 Freeway to Citrus Avenue
- Beech Avenue, from I-15 Freeway to Summit Avenue
- Sierra Avenue

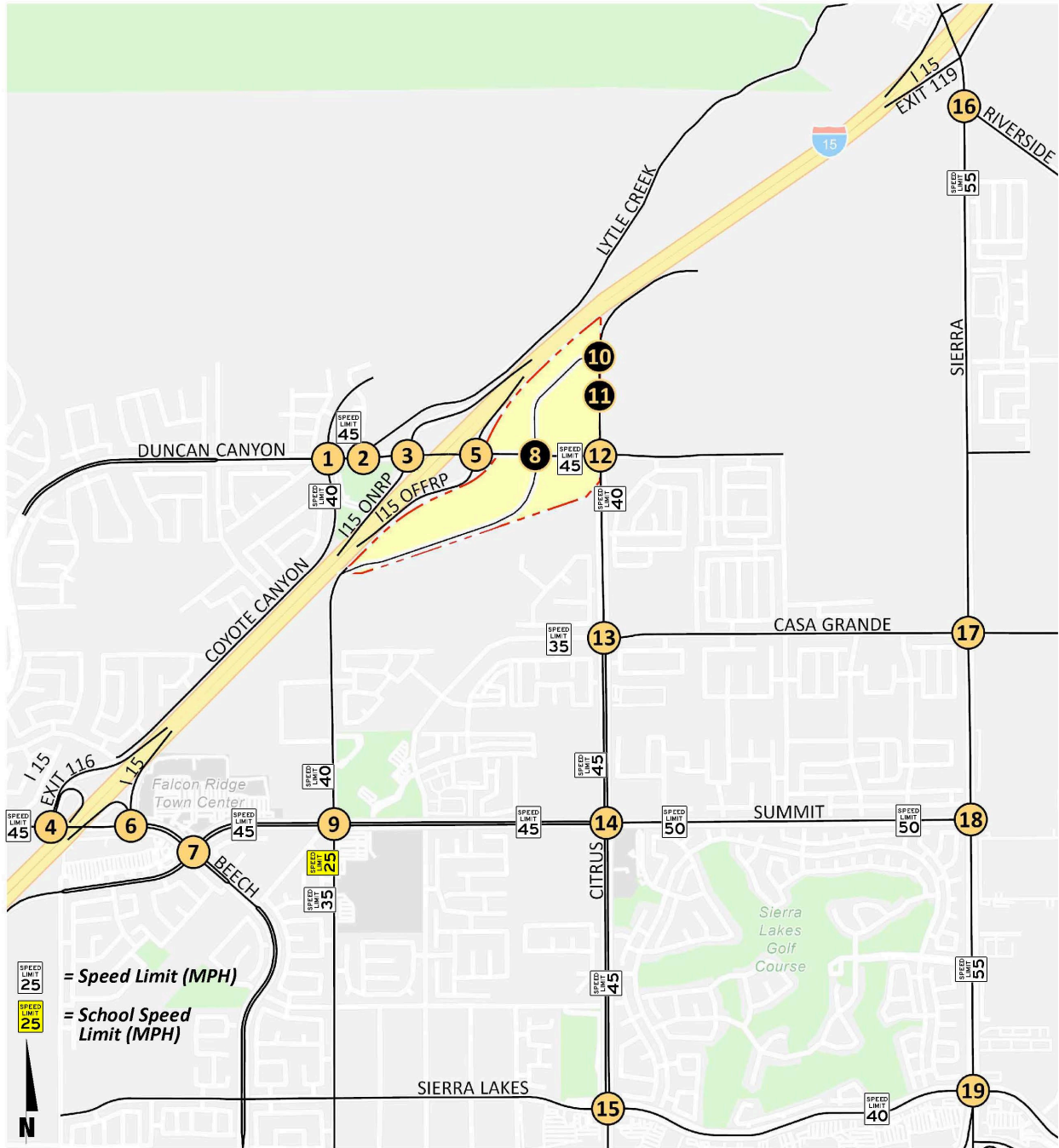
Primary Highways are four-lane roadways and may include a painted median. These roadways typically direct traffic through major development areas. The following study area roadways within the City of Fontana are classified as a Primary Highways:

- Beech Avenue, west of I-15 Freeway and south of Summit Avenue
- Citrus Avenue
- Duncan Canyon Road, west of I-15 Freeway
- Sierra Lakes Parkway

Secondary Highways are two-lane streets, providing one lane in each direction, separated by a raised median. The following study area roadway within the study area is classified as a Secondary Highways:

- Summit Avenue
- Lytle Creek Road, north of Summit Avenue
- Casa Grande

EXHIBIT 3-1: EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS (PAGE 1 OF 2)



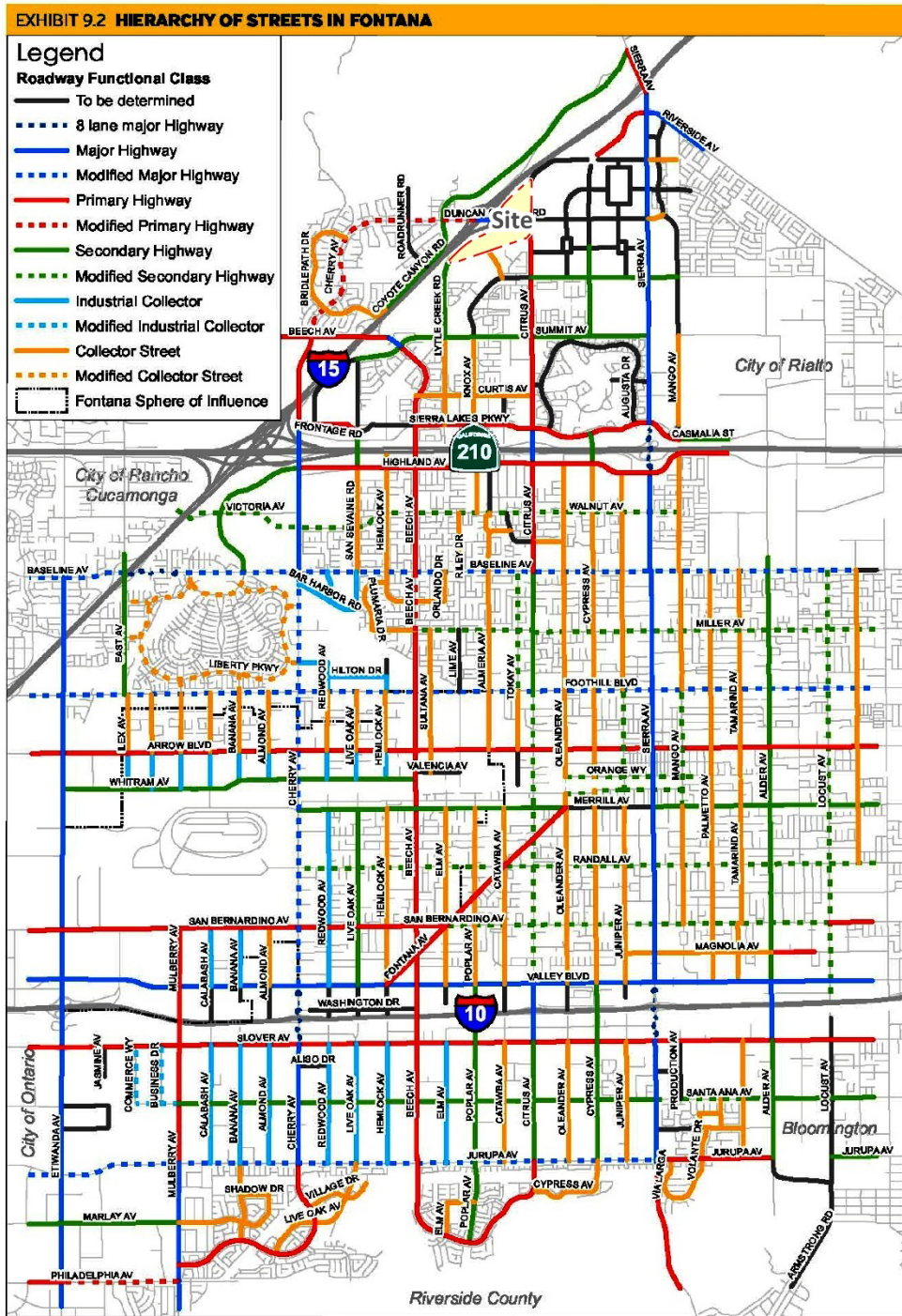
(Page 2 of 2)

1 Coyote Canyon Rd. & Duncan Canyon Rd.	2 W. Lytle Creek Rd. & Duncan Canyon Rd.	3 I-15 SB Ramps & Duncan Canyon Rd.	4 I-15 SB Ramps & Beech Av.	5 I-15 NB Ramps & Duncan Canyon Rd.
6 I-15 NB Ramps & Beech Av.	7 Beech Av. & Summit Av.	8 Lytle Creek Rd. & Duncan Canyon Rd.	9 Lytle Creek Rd. & Summit Av.	10 Citrus Av. & Lytle Creek Rd.
		<p style="text-align: center;">Future Intersection</p>		<p style="text-align: center;">Future Intersection</p>
11 Citrus Av. & Dwy. 1	12 Citrus Av. & Duncan Canyon Rd.	13 Citrus Av. & Casa Grande Av.	14 Citrus Av. & Summit Av.	15 Citrus Av. & Sierra Lakes Pkwy.
<p style="text-align: center;">Future Intersection</p>				
16 Sierra Av. & Riverside Av.	17 Sierra Av. & Casa Grande Av.	18 Sierra Av. & Summit Av.	19 Sierra Av. & Sierra Lakes Pkwy.	
	<p style="text-align: center;">Future Intersection</p>			

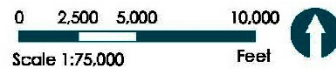
- = Traffic Signal
- = Stop Sign
- 4** = Number of Lanes
- D** = Divided
- U** = Undivided



EXHIBIT 3-2: CITY OF FONTANA HIERARCHY OF STREETS



Roadway Functional Classifications
 March, 2017
 Data source: City of Fontana, 2017



Approved and Adopted by City Council November 13, 2018

City Council Resolution 2018-096
 City Council Resolution 2018-097

Collector Streets are two-lane streets, providing one lane in each direction. The following study area roadway within the study area is classified as a Modified Local Street:

- Lytle Creek Road, south of Summit Avenue

3.3 BICYCLE & PEDESTRIAN FACILITIES

The City of Fontana bike facilities are shown on Exhibit 3-3. There are existing Class II bike facilities along Duncan Canyon Road, west of Coyote Canyon, Citrus Avenue, Beech Avenue, and Summit Avenue, and Sierra Lakes Parkway east of Citrus Avenue. There are proposed Class II Duncan Canyon Road, east of Coyote Canyon Road, and Sierra Lakes Parkway, west of Citrus Avenue. Exhibit 3-4 illustrates the existing pedestrian facilities, including sidewalks and crosswalks. As shown on Exhibit 3-4, there are limited pedestrian facilities along Duncan Canyon Road.

3.4 TRANSIT SERVICE

The study area is currently served by Omnitrans Transit Agency with bus services along Citrus Avenue, Summit Avenue, Sierra Lakes Avenue, and Sierra Avenue. Routes 312 and 22 serve the City of Fontana, north of the I-210 Freeway, but there are currently no transit routes that would serve the Project site. The transit services are illustrated on Exhibit 3-5. Transit service is reviewed and updated by Omnitrans periodically to address ridership, budget, and community demand needs. Changes in land use can affect these periodic adjustments which may lead to either enhanced or reduced service where appropriate.

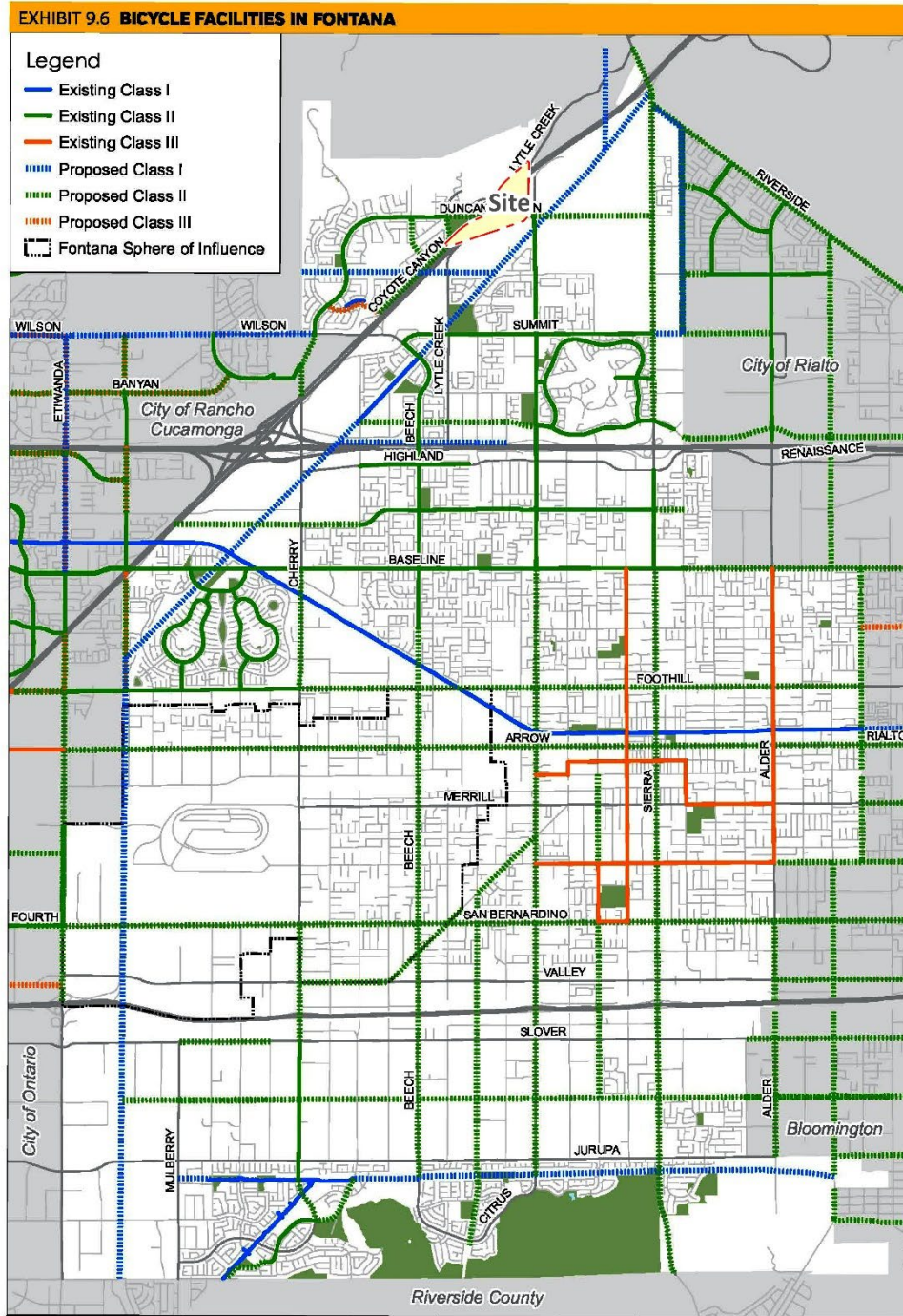
3.5 EXISTING TRAFFIC COUNTS

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in 2018. The following peak hours were selected for analysis:

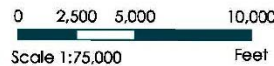
- Weekday AM Peak Hour (peak hour between 7:00 AM and 9:00 AM)
- Weekday PM Peak Hour (peak hour between 4:00 PM and 6:00 PM)

Due to the currently ongoing COVID-19 pandemic, schools and businesses within the study area were closed or operating at less than full capacity at the time this study was prepared. As such, historic traffic counts from 2018 were utilized in conjunction with a 1.16% per year, compounded annually, growth rate to develop traffic volumes for 2021 conditions. The historic weekday AM and weekday PM peak hour count data is representative of typical weekday peak hour traffic conditions in the study area. There were no observations made in the field that would indicate atypical traffic conditions on the count dates, such as construction activity or detour routes and near-by schools were in session and operating on normal schedules.

EXHIBIT 3-3: CITY OF FONTANA BICYCLE FACILITIES



Bicycle Facilities
 March, 2017
 Data sources: City of Fontana, 2015;
 SANBAG NMTP, 2014



9.14 Fontana General Plan
 Approved and Adopted by City Council November 13, 2018

City Council Resolution 2018-096
 City Council Resolution 2018-097

EXHIBIT 3-4: EXISTING PEDESTRIAN FACILITIES

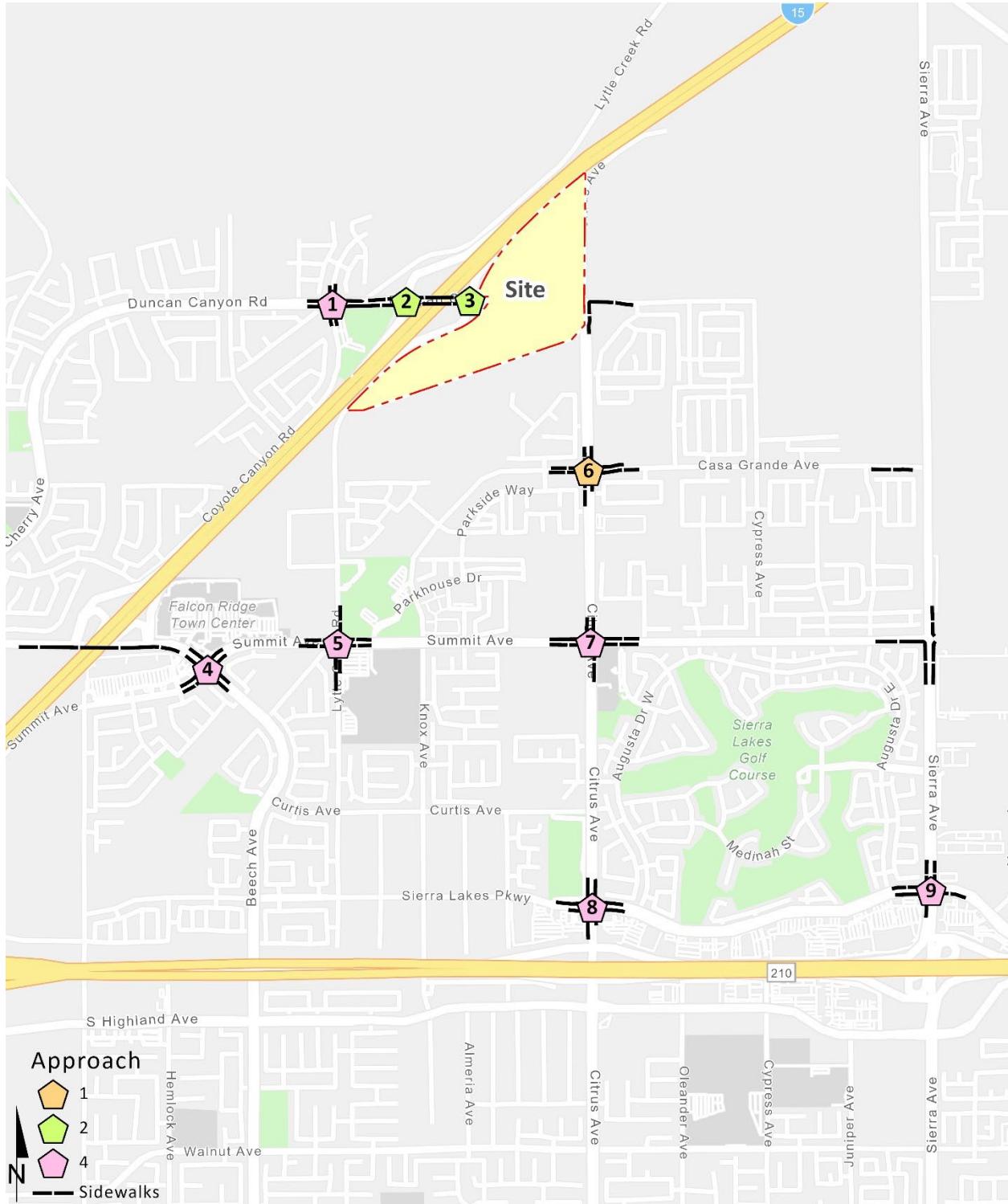
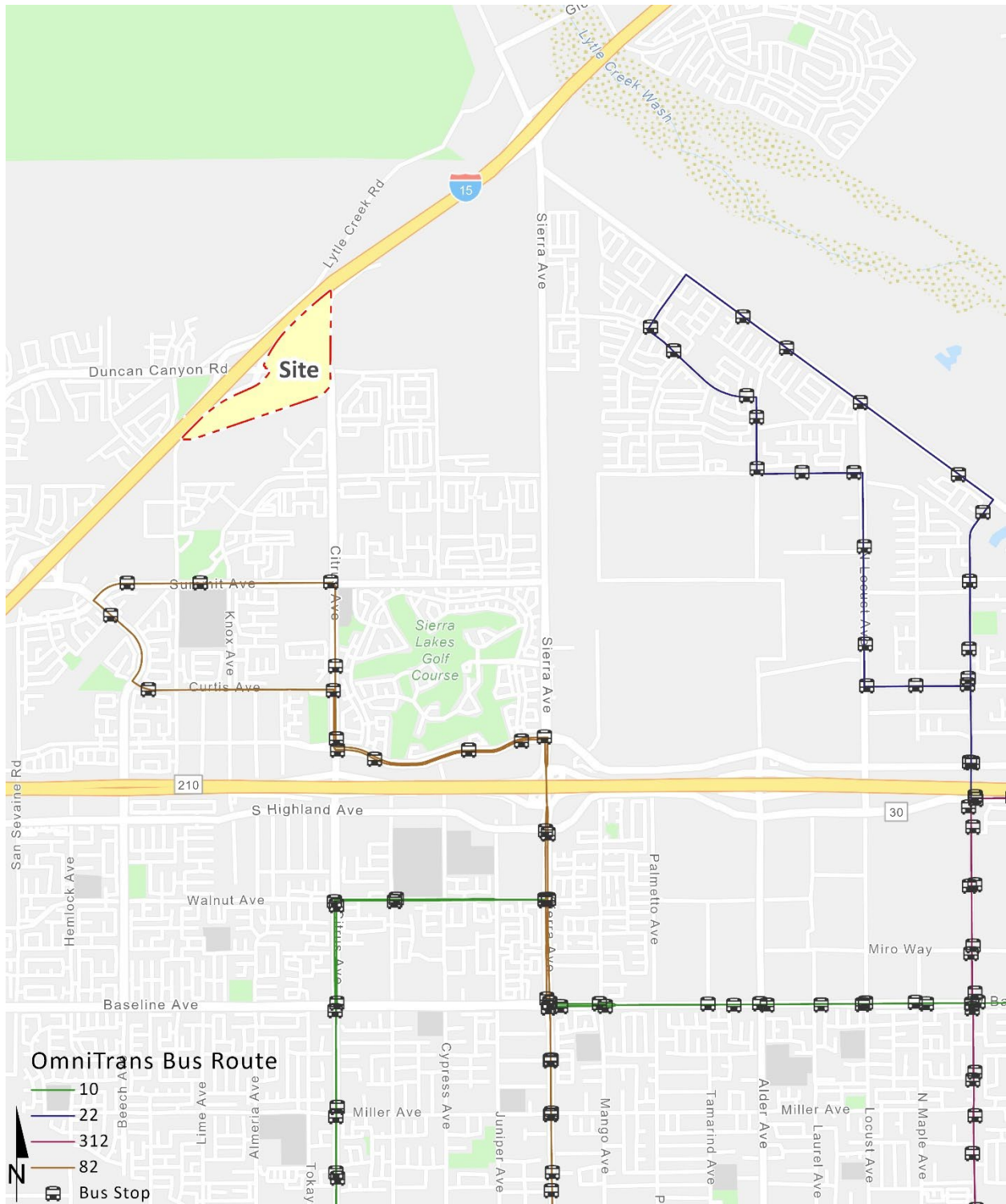


EXHIBIT 3-5: EXISTING TRANSIT ROUTES



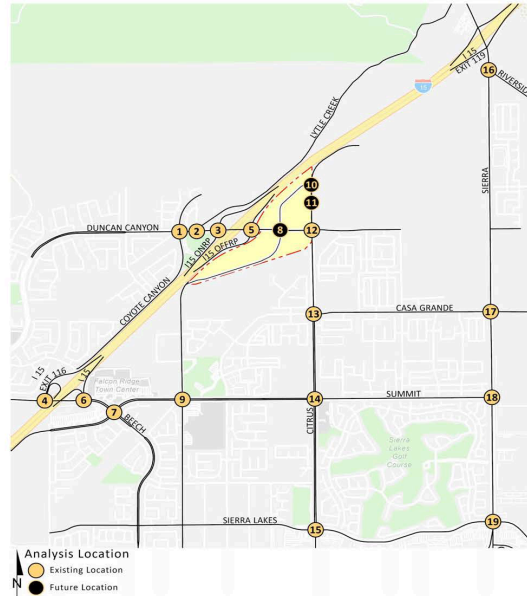
Historic traffic count data was not readily available for all study area intersections. As such, 2021 traffic counts have been collected at these intersections. Traffic counts have also been collected at the I-15 Freeway Ramps at Beech Avenue in order to compare and develop an adjustment factor based on a comparison to historic 2018 traffic count data to the recently collected 2021 traffic count data. This adjustment factor has been applied to the 2021 traffic count data at the intersections lacking historic data to reflect non-COVID traffic conditions. Where applicable, traffic volumes have been flow conserved in order to not have any loss of vehicles. The raw manual peak hour turning movement traffic count data sheets are included in Appendix 3.1.

Existing weekday ADT volumes on arterial highways throughout the study area are shown on Exhibit 3-6. Where actual 24-hour tube count data was not available, Existing ADT volumes were based upon factored intersection peak hour counts collected by Urban Crossroads, Inc. using the following formula for each intersection leg:

$$\text{Weekday PM Peak Hour (Approach Volume + Exit Volume)} \times 12.61 = \text{Leg Volume}$$

A comparison of the PM peak hour and daily traffic volumes of various roadway segments within the study area indicated that the peak-to-daily relationship is approximately 7.93 percent. As such, the above equation utilizing a factor of 12.61 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of approximately 7.93 percent (i.e., $1/0.0793 = 12.61$) and was assumed to sufficiently estimate ADT volumes for planning-level analyses. Existing weekday AM and weekday PM peak hour intersection volumes are shown on Exhibit 3-6.

EXHIBIT 3-6: EXISTING (2021) TRAFFIC VOLUMES



<p>1 Coyote Canyon Rd. & Duncan Canyon Rd.</p> <p>1,200 8(3) 40(0) 92(31) 33(50) 227(263) 47(130) 9(10) 5(9) 3(1) 150(95) 10,250 3,150 6,850</p>	<p>2 W. Lytle Creek Rd. & Duncan Canyon Rd.</p> <p>300 16(6) 2(18) 292(437) 646(370) 10,400 10,250</p>	<p>3 I-15 SB Ramps & Duncan Canyon Rd.</p> <p>1,550 41(54) 11(0) 202(71) 252(402) 388(115) 222(224) 425(145) 10,250 10,400</p>	<p>4 I-15 SB Ramps & Beech Av.</p> <p>10,150 252(79) 194(207) 491(393) 424(482) 262(125) 457(561) 15,750</p>	<p>5 I-15 NB Ramps & Duncan Canyon Rd.</p> <p>10,200 96(121) 538(292) 70(95) 354(200) 2(12) 257(196) 5,450</p>
<p>6 I-15 NB Ramps & Beech Av.</p> <p>17,900 93(167) 288(685) 72(169) 578(599) 30,200 153(401) 822(710) 20,750</p>	<p>7 Beech Av. & Summit Av.</p> <p>20,050 30(87) 212(424) 239(423) 75(111) 107(249) 21(113) 38(94) 288(295) 43(89) 17,650 14,150 11,800</p>	<p>8 Lytle Creek Dr. & Duncan Canyon Rd.</p> <p>Future Intersection</p>	<p>9 Lytle Creek Dr. & Summit Av.</p> <p>2,000 158(50) 73(6) 34(21) 62(21) 515(768) 17(35) 139(43) 271(928) 41(40) 53(43) 109(15) 17(23) 23,600 2,100</p>	<p>10 Citrus Av. & Lytle Creek Rd.</p> <p>Future Intersection</p>
<p>11 Citrus Av. & Driveway 1</p> <p>Future Intersection</p>	<p>12 Citrus Av. & Duncan Canyon Rd.</p> <p>3,000 122(79) 28(18) 182(118) 428(278) 513(334) 32(21) 8,200</p>	<p>13 Citrus Av. & Casa Grande Av.</p> <p>8,100 71(95) 171(166) 70(71) 88(41) 38(29) 43(44) 71(48) 19(33) 32(12) 81(69) 174(263) 43(44) 3,300 7,300</p>	<p>14 Citrus Av. & Summit Av.</p> <p>7,650 41(12) 184(198) 56(37) 54(43) 203(349) 137(127) 30(35) 128(445) 124(278) 152(399) 192(284) 68(101) 18,400</p>	<p>15 Citrus Av. & Sierra Lakes Pkwy.</p> <p>30,050 54(71) 507(472) 92(199) 85(223) 154(295) 487(593) 53(79) 192(318) 314(290) 312(341) 387(583) 575(797) 16,750 36,300</p>
<p>11 Sierra Av. & Riverside Av.</p> <p>23,150 530(433) 369(453) 458(443) 41(20) 306(506) 35(20) 12,350</p>	<p>17 Sierra Av. & Casa Grande Av.</p> <p>19,850 2(0) 896(644) 2(1) 2(0) 4(1) 2(1) 8(1) 419(930) 13(0) 19,900</p>	<p>18 Sierra Av. & Summit Av.</p> <p>20,050 92(152) 812(511) 58(219) 241(341) 246(566) 436(707) 13,600</p>	<p>19 Sierra Av. & Sierra Lakes Pkwy.</p> <p>28,450 441(160) 906(711) 120(284) 472(857) 160(188) 522(780) 586(824) 244(237) 15,950 201(158) 167(206) 132(191) 244(237) 45,400</p>	

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

3.6 EXISTING (2021) INTERSECTION OPERATIONS ANALYSIS

Existing peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2.2 *Intersection Capacity Analysis* of this report. The intersection operations analysis results are summarized in Table 3-1 which indicates that the study area intersections are currently operating at an acceptable LOS during the peak hours, with the exception of the following intersections:

- Citrus Avenue & Duncan Canyon Road (#12) – LOS F AM peak hour only
- Citrus Avenue & Sierra Lakes Parkway (#15) – LOS D AM peak hour; LOS F PM peak hour
- Sierra Avenue & Riverside Avenue (#16) – LOS F AM and PM peak hours
- Sierra Avenue & Sierra Lakes Parkway (#19) – LOS E PM peak hour only

TABLE 3-1: INTERSECTION ANALYSIS FOR EXISTING (2021) CONDITIONS

#	Intersection	Traffic Control ²	Delay ¹ (secs.)		Level of Service	
			AM	PM	AM	PM
1	Coyote Canyon Rd. & Duncan Canyon Rd.	AWS	12.4	10.9	B	B
2	W. Lytle Creek Rd. & Duncan Canyon Rd.	CSS	8.8	9.8	A	A
3	I-15 SB Ramps & Duncan Canyon Rd.	TS	25.7	13.4	C	B
4	I-15 SB Ramps & Beech Av.	TS	25.1	14.3	C	B
5	I-15 NB Ramps & Duncan Canyon Rd.	TS	18.4	27.1	B	C
6	I-15 NB Ramps & Beech Av.	TS	14.2	32.3	B	C
7	Beech Av. & Summit Av.	TS	20.1	21.4	C	C
8	Lytle Creek Dr. & Duncan Canyon Rd.		Future Intersection			
9	Lytle Creek Dr. & Summit Av.	TS	13.3	12.0	B	B
10	Citrus Av. & Lytle Creek Rd.		Future Intersection			
11	Citrus Av. & Driveway 1		Future Intersection			
12	Citrus Av. & Duncan Canyon Rd.	AWS	70.3	15.3	F	C
13	Citrus Av. & Casa Grande Av.	TS	18.1	16.6	B	B
14	Citrus Av. & Summit Av.	TS	27.8	24.6	C	C
15	Citrus Av. & Sierra Lakes Pkwy.	TS	40.6	56.5	D	E
16	Sierra Av. & Riverside Av.	AWS	51.0	71.6	F	F
17	Sierra Av. & Casa Grande Av.	CSS	16.6	16.4	C	C
18	Sierra Av. & Summit Av.	TS	26.2	16.3	C	B
19	Sierra Av. & Sierra Lakes Pkwy.	TS	31.1	79.6	C	E

* **BOLD** = Unacceptable LOS

¹ Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

² CSS = Cross-street Stop; AWS = All-Way Stop; TS = Traffic Signal

The intersection operations analysis worksheets are included in Appendix 3.2 of this TA.

3.7 EXISTING (2021) TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. The following unsignalized study area intersection currently meet a traffic signal for Existing (2021) traffic conditions (see Appendix 3.3):

- Citrus Avenue & Duncan Canyon Road (#12)
- Sierra Avenue & Riverside Avenue (#16)

3.8 EXISTING (2021) ROADWAY SEGMENT CAPACITY ANALYSIS

The City of Fontana General Plan provides roadway volume capacity values and are approximate figures only and are used at the General Plan level to assist in determining the roadway functional classification (number of through lanes) needed to meet traffic demand. Table 3-2 provides a summary of the Existing (2021) conditions roadway segment capacity analysis. As shown in Table 3-2, the study area roadway segments are currently operating at an acceptable LOS based on the City’s planning level daily roadway capacity thresholds.

TABLE 3-2: ROADWAY SEGMENT CAPACITY ANALYSIS FOR EXISTING (2021) CONDITIONS

#	Roadway	Segment Limits	Roadway Section	LOS Capacity ¹	Existing 2021	V/C ²	LOS ³
1	Lytle Creek	North of Duncan Canyon Rd.	----	----	Future Roadway Segment		
2		South of Duncan Canyon Rd.	----	----			
3	Duncan Canyon	I-15 NB Ramps to Lytle Creek Dr.	2U	18,000	10,205	0.57	A
4		Lytle Creek Dr. to Citrus Av.	2U	18,000	10,205	0.57	A

¹ These maximum roadway capacities assume 9,000 vehicles per lane per day for arterials.

² V/C = Volume to Capacity Ratio

³ LOS = Level of Service

3.9 EXISTING (2021) OFF-RAMP QUEUING ANALYSIS

A queuing analysis was performed for the off-ramps at the I-15 Freeway at Duncan Canyon Road and Beech Avenue interchanges to assess vehicle queues for the off ramps that may potentially result in deficient peak hour operations at the ramp-to-arterial intersections and may potentially “spill back” onto the I-15 Freeway mainline. Queuing analysis findings are presented in Table 3-3. It is important to note that off-ramp lengths are consistent with the measured distance between the intersection and the freeway mainline. As shown in Table 3-3, there are no movements that are currently experiencing queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows. Worksheets for Existing (2021) traffic conditions off-ramp queuing analysis are provided in Appendix 3.4.

TABLE 3-3: PEAK HOUR FREEWAY OFF-RAMP QUEUING SUMMARY FOR EXISTING (2021) CONDITIONS

Intersection	Movement	Available Stacking Distance (Feet)	95th Percentile Queue (Feet) ³		Acceptable? ¹	
			AM Peak	PM Peak	AM	PM
I-15 SB Ramps & Duncan Canyon Rd. (#3)	SBL	2,170	152	68	Yes	Yes
	SBL/T	1,370	150	68	Yes	Yes
	SBR	290	34	42	Yes	Yes
I-15 SB Ramps & Beech Av. (#4)	SBL	530	231	235	Yes	Yes
	SBR	2,150	72	42	Yes	Yes
I-15 NB Ramps & Duncan Canyon Rd. (#5)	NBL/T	530	139	261	Yes	Yes
	NBR	3,600	42	32	Yes	Yes
I-15 NB Ramps & Beech Av. (#6)	SBL	170	293 ^{2,3}	669 ^{2,3}	Yes	Yes
	SBR	1,455	38	73	Yes	Yes

¹ Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

² 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

³ Although 95th percentile queue is anticipated to exceed the available storage for the turn lane, the adjacent through lane has sufficient storage to accommodate any spillover without spilling back and affecting the I-15 Freeway mainline.

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4 PROJECTED FUTURE TRAFFIC

The proposed Project includes the development of 538 multifamily housing (mid-rise) dwelling units, 154,000 square feet of commercial retail use, and 26,000 square feet of medical-dental office in the first Phase (Planning Areas 1 and 3). Phase 1 is anticipated to have an Opening Year of 2023. The remainder of the development is anticipated to build out by Year 2030 and includes the development of 1,671 multifamily housing (mid-rise) dwelling units and 476,500 square feet of commercial use (includes 100,000 square feet of medical-dental office use). Although future development may vary from those listed below, the following land uses, and intensities have been evaluated in the commercial retail and mixed-use areas for the purposes of this traffic analysis:

- 252,250 square feet of commercial retail use
- 56,833 square feet of high turnover (sit-down) restaurant use
- 15,417 square feet of fast-food restaurant with drive-through window use
- 31,200 square foot supermarket
- 20,800 square foot pharmacy with drive-through window
- 100,000 square feet of medical-dental office

As indicated previously on Exhibit 1-2, access to the Project site will be provided to Citrus Avenue and Duncan Canyon Road via Lytle Creek Road. Regional access to the Project site is available from the I-15 Freeway via Duncan Canyon Road and Beech Avenue interchanges. Exhibit 1-2 depicts the location of the proposed Project in relation to the existing roadway network and the study area intersections.

4.1 PROJECT TRIP GENERATION

In order to develop the traffic characteristics of the proposed project, trip-generation statistics published in the ITE Trip Generation Manual (10th Edition, 2017) for the following land uses has been utilized (2):

- Multifamily Housing (Mid-Rise) (ITE Land Use Code 221)
- Medical-Dental office (ITE Land Use Code 720)
- Shopping Center (ITE Land Use Code 820)
- Supermarket (ITE Land Use code 850)
- Pharmacy (ITE Land Use Code 881)
- High Turnover (Sit-Down) Restaurant (ITE Land Use Code 932)
- Fast-Food Restaurant with Drive-Through Window (ITE Land Use Code 934)

As the Project is proposed to include shopping center, restaurant, office, and other complementary uses, pass-by percentages have been obtained from the ITE Trip Generation Handbook (3rd Edition, 2017). (2) Patrons of the retail use may also visit other uses on-site, including the restaurant and office uses, without leaving the site. The ITE Trip Generation Handbook has been utilized to determine the internal capture for the applicable mix of uses.

Internal capture is a percentage reduction that can be applied to the trip generation estimates for individual land uses to account for trips internal to the site. In other words, trips may be made between individual retail uses on-site and can be made either by walking or using internal roadways without using external streets. As the trip generation for the site was conservatively estimated based on individual land uses as opposed to the average ITE Shopping Center rate, an internal capture reduction was applied to recognize the interactions that would occur between the various complementary land uses. The internal capture is based on the National Cooperative Highway Research Program's (NCHRP Report 684) internal capture trip capture estimation tool.

The Project trip generation summary is shown in Table 4-1 for Phase 1 and Table 4-2 for Project Buildout. As shown in Table 4-2, the Project is anticipated to generate a net total of 17,352 trip-ends per day with 1,786 AM peak hour trips and 1,531 PM peak hour trips. The assumptions and methods used to estimate the Project's trip generation characteristics are discussed in greater detail in Section 4.1 *Project Trip Generation* of this report.

4.2 PROJECT TRIP DISTRIBUTION

The Project trip distribution and assignment process represents the directional orientation of traffic to and from the Project site. Trip distribution is the process of identifying the probable destinations, directions or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute. Separate distributions have been evaluated for Phase 1 of the Project and for Project Buildout. The Project trip distribution patterns are graphically depicted on Exhibit 4-1 for Phase 1, Exhibit 4-2 for Project Buildout (North of Duncan Canyon Road), and Exhibit 4-3 for Project Buildout (South of Duncan Canyon Road). It is assumed that Duncan Canyon Road will be constructed to the east to Sierra Avenue. As such, traffic is anticipated to utilize this future connection under Horizon Year (2040) conditions only, as shown in the Project trip distribution exhibits.

TABLE 4-1: PROJECT TRIP GENERATION SUMMARY FOR PHASE 1

Land Use ¹	Units ²	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Trip Generation Rates:									
Multifamily Housing (Mid-Rise)	DU	221	0.09	0.27	0.36	0.27	0.17	0.44	5.44
Medical-Dental Office	TSF	720	2.17	0.61	2.78	0.97	2.49	3.46	34.80
Shopping Center	TSF	820	0.58	0.36	0.94	1.83	1.98	3.81	37.75
Supermarket	TSF	850	2.29	1.53	3.82	4.71	4.53	9.24	106.78
Pharmacy	TSF	881	2.04	1.80	3.84	5.15	5.14	10.29	109.16
High Turnover Sit-Down Restaurant	TSF	932	5.47	4.47	9.94	6.06	3.71	9.77	112.18
Fast-Food Restaurant w/ Drive-Through Window	TSF	934	20.50	19.69	40.19	16.99	15.68	32.67	470.95

¹ Trip Generation Source: Institute of Transportation Engineers (ITE), *Trip Generation Manual*, Tenth Edition (2017).

² TSF = Thousand Square Feet; DU = Dwelling Unit

Land Use	Quantity Units ¹	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Trip Generation Summary:								
Planning Area 1								
Multifamily Housing (Mid-Rise)	538 DU	50	143	193	144	92	236	2,928
Internal Capture		-4	-32	-36	-90	-60	-150	-1,862
Planning Area 1 Subtotal		46	111	157	54	32	86	1,066
Planning Area 3								
Commercial Retail	154.000 TSF	90	55	145	282	305	587	5,814
Medical-Dental Office	26.000 TSF	56	16	72	25	65	90	906
Internal Capture		-23	-23	-46	-171	-162	-333	-3,304
Pass-by Reduction (Commercial Retail)		0	0	0	-93	-93	-186	-982
Planning Area 3 Subtotal		123	48	171	43	115	158	2,434
Planning Area 5A								
Commercial Retail	30.000 TSF	17	11	28	55	59	114	1,134
High Turnover Sit-Down Restaurant	20.000 TSF	109	89	198	121	74	195	2,244
Fast-Food Restaurant w/ Drive-Through	10.000 TSF	205	197	402	170	157	327	4,710
Internal Capture		-33	-15	-48	-118	-143	-261	-3,314
Pass-by Reduction (Total)		-90	-90	-180	-65	-65	-130	-2,194
Planning Area 5A Subtotal		208	192	400	163	82	245	2,580
Planning Area 5B								
Commercial Retail	16.250 TSF	9	6	15	30	32	62	614
High Turnover Sit-Down Restaurant	10.833 TSF	59	48	107	66	40	106	1,216
Fast-Food Restaurant w/ Drive-Through	5.417 TSF	111	107	218	92	85	177	2,552
Internal Capture		-18	-8	-26	-63	-77	-140	-1,784
Pass-by Reduction (Total)		-49	-49	-98	-35	-35	-69	-1,192
Planning Area 5B Subtotal		112	104	216	90	45	135	1,406
Total (North of Duncan Canyon Rd.)		489	455	944	350	274	625	7,486

¹ TSF = Thousand Square Feet; DU = Dwelling Unit

TABLE 4-2: PROJECT TRIP GENERATION SUMMARY FOR PROJECT BUILDOUT

Land Use ¹	Units ²	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Trip Generation Rates:									
Multifamily Housing (Mid-Rise)	DU	221	0.09	0.27	0.36	0.27	0.17	0.44	5.44
Medical-Dental Office	TSF	720	2.17	0.61	2.78	0.97	2.49	3.46	34.80
Shopping Center	TSF	820	0.58	0.36	0.94	1.83	1.98	3.81	37.75
Supermarket	TSF	850	2.29	1.53	3.82	4.71	4.53	9.24	106.78
Pharmacy	TSF	881	2.04	1.80	3.84	5.15	5.14	10.29	109.16
High Turnover Sit-Down Restaurant	TSF	932	5.47	4.47	9.94	6.06	3.71	9.77	112.18
Fast-Food Restaurant w/ Drive-Through Window	TSF	934	20.50	19.69	40.19	16.99	15.68	32.67	470.95

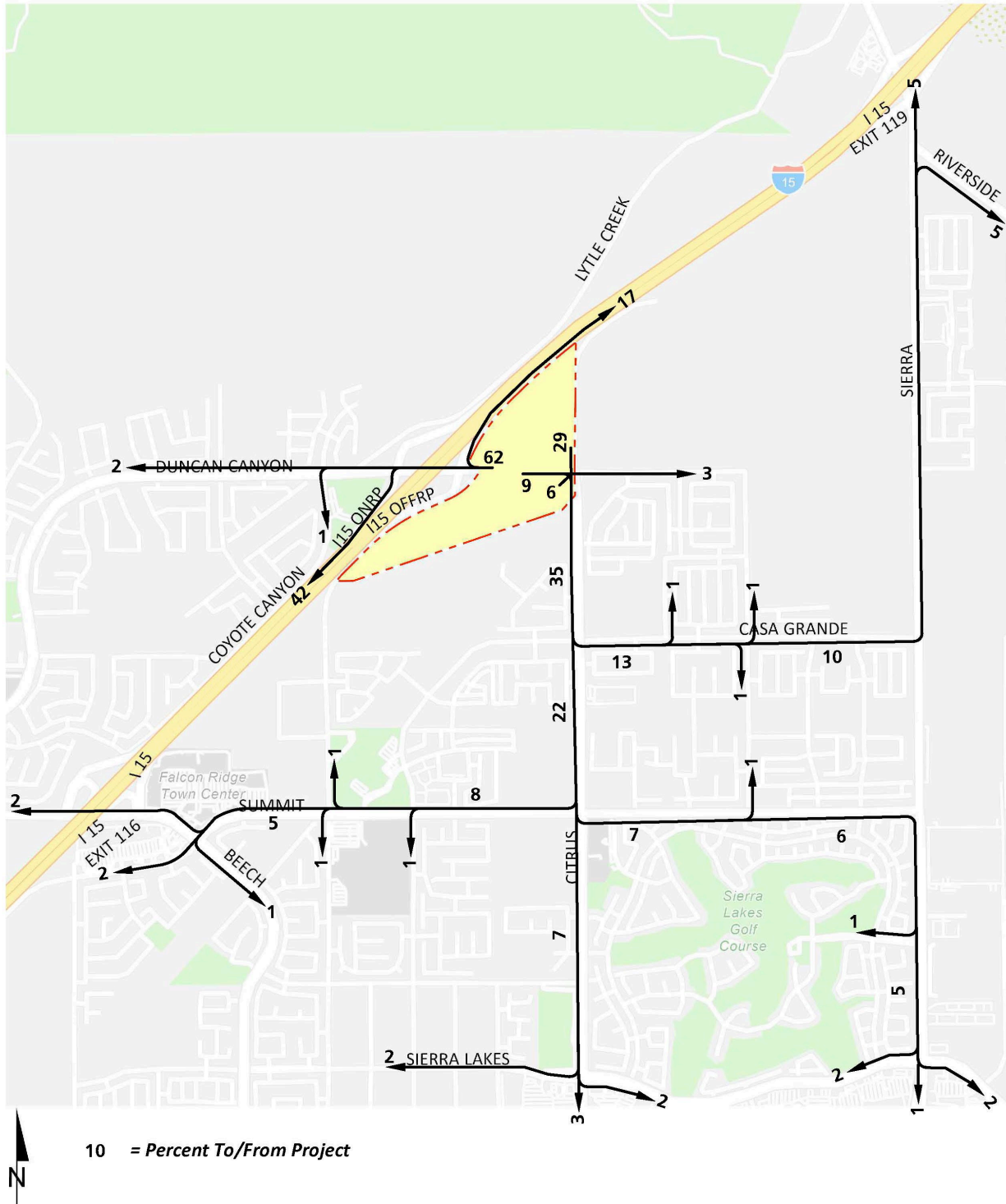
¹ Trip Generation Source: Institute of Transportation Engineers (ITE), *Trip Generation Manual*, Tenth Edition (2017).

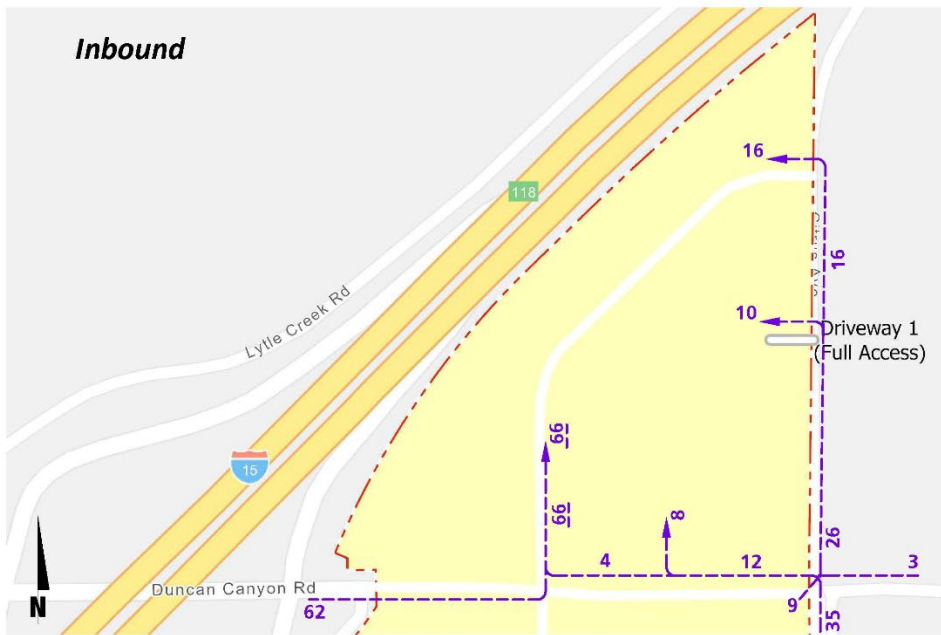
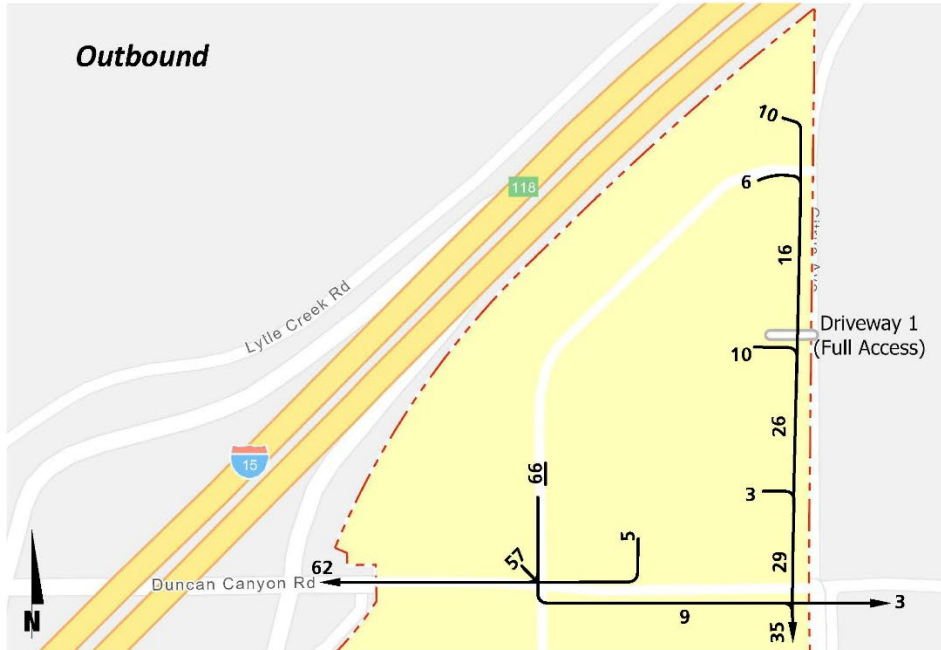
² TSF = Thousand Square Feet; DU = Dwelling Unit

Land Use	Quantity Units ¹	AM Peak Hour			PM Peak Hour			Daily	
		In	Out	Total	In	Out	Total		
Planning Area 2									
Multifamily Housing (Mid-Rise)	396 DU	37	105	142	106	68	174	2,154	
Internal Capture		-2	-12	-14	-38	-22	-60	-744	
Planning Area 2 Subtotal		35	93	128	68	46	114	1,410	
Planning Area 4									
Multifamily Housing (Mid-Rise)	600 DU	56	160	216	161	103	264	3,264	
Commercial Retail	26.000 TSF	15	9	24	48	52	100	982	
Supermarket	31.200 TSF	72	48	120	147	141	288	3,332	
Pharmacy	20.800 TSF	42	38	80	107	107	214	2,272	
High Turnover Sit-Down Restaurant	26.000 TSF	142	116	258	157	97	254	2,918	
Internal Capture		-98	-77	-175	-219	-220	-439	-5,022	
Pass-by Reduction (Total)		0	0	0	-86	-86	-172	-2,304	
Planning Area 4 Subtotal		229	294	523	314	194	508	5,442	
Planning Area 6A									
Multifamily Housing (Mid-Rise)	137 DU	13	36	49	37	24	61	746	
Medical-Dental Office	74.000 TSF	160	45	205	72	184	256	2,576	
Internal Capture		-34	-46	-80	-34	-44	-78	-844	
Planning Area 6A Subtotal		139	35	174	75	164	239	2,478	
Planning Area 6B									
Commercial Retail	26.000 TSF	15	9	24	48	52	100	982	
Internal Capture		-4	-3	-7	-13	-19	-32	-318	
Pass-by Reduction (Commercial Retail)		0	0	0	-11	-11	-23	-128	
Planning Area 6B Subtotal		11	6	18	23	22	45	536	
Total (South of Duncan Canyon Rd.)			414	428	842	481	426	906	9,866
Project Buildout Total			903	883	1,786	831	700	1,531	17,352

¹ TSF = Thousand Square Feet; DU = Dwelling Unit

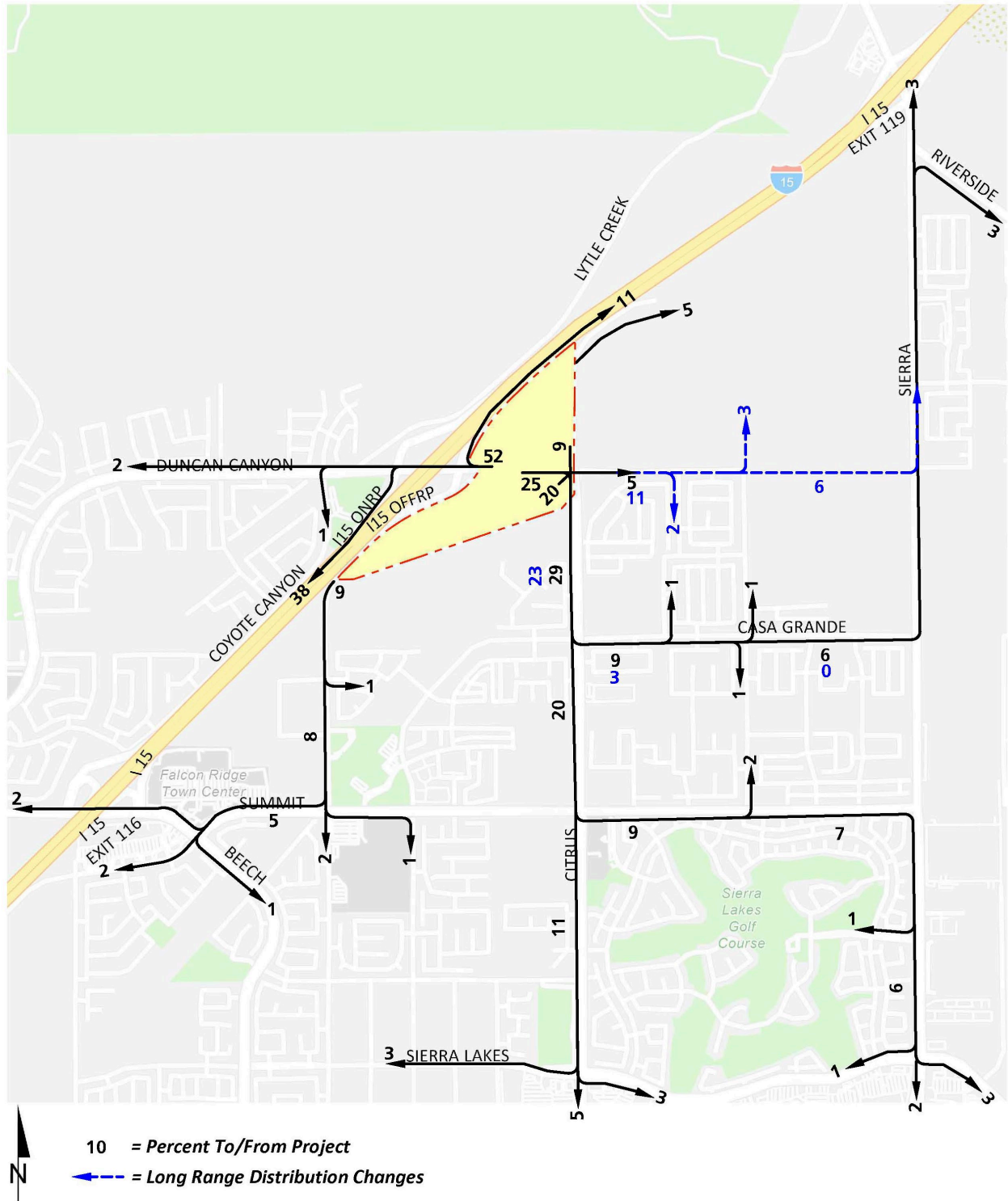
EXHIBIT 4-1: PROJECT (PHASE 1) TRIP DISTRIBUTION

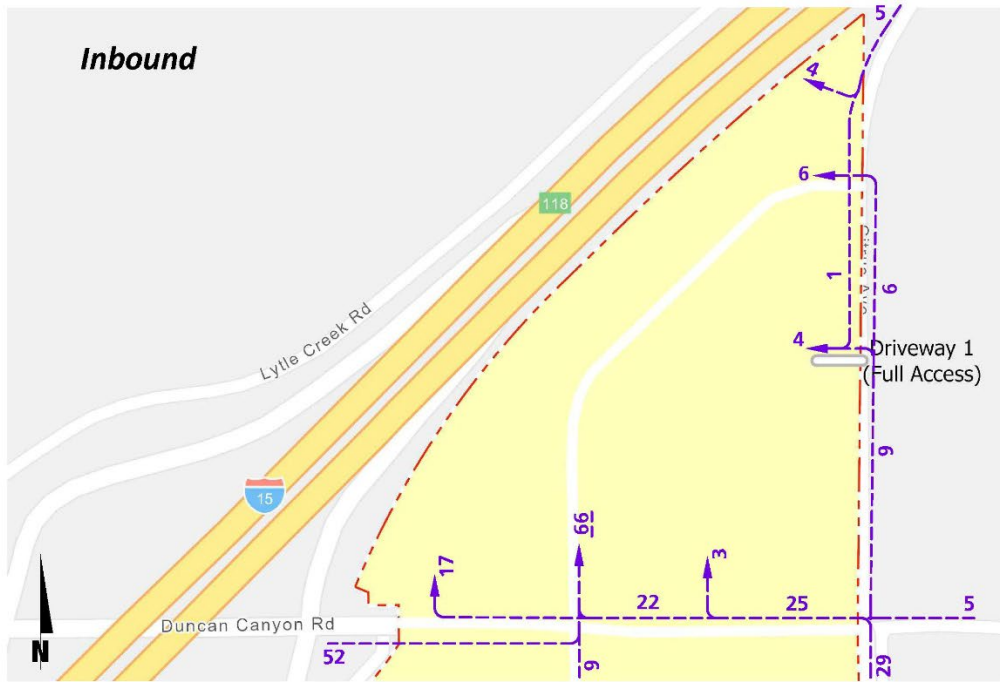
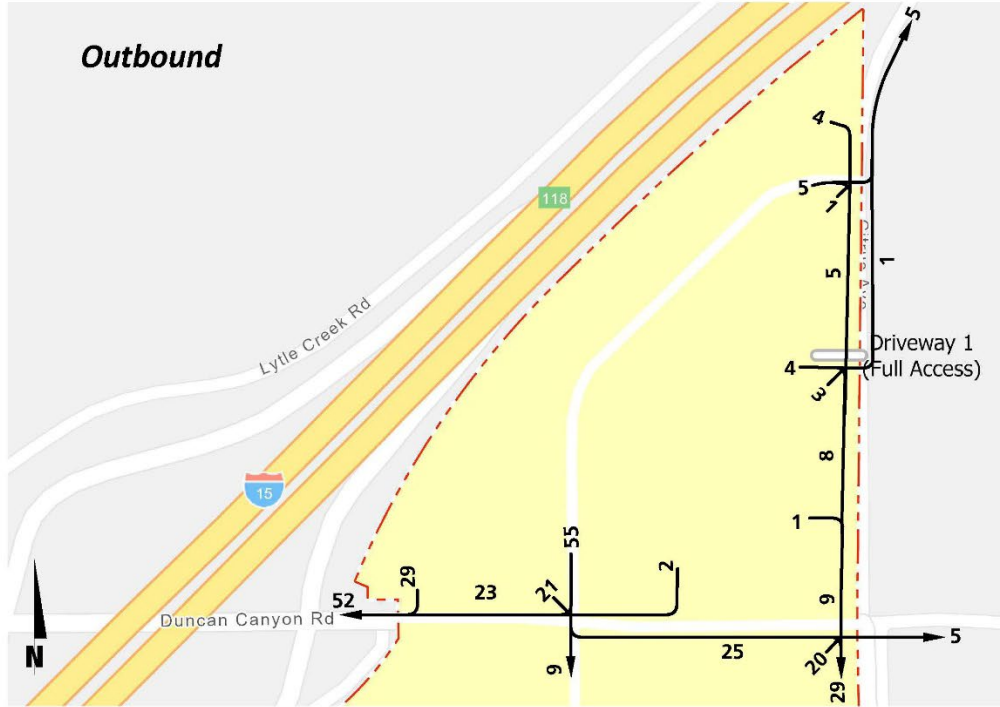




10 = Percent To/From Project
 ← = Outbound
 ← = Inbound

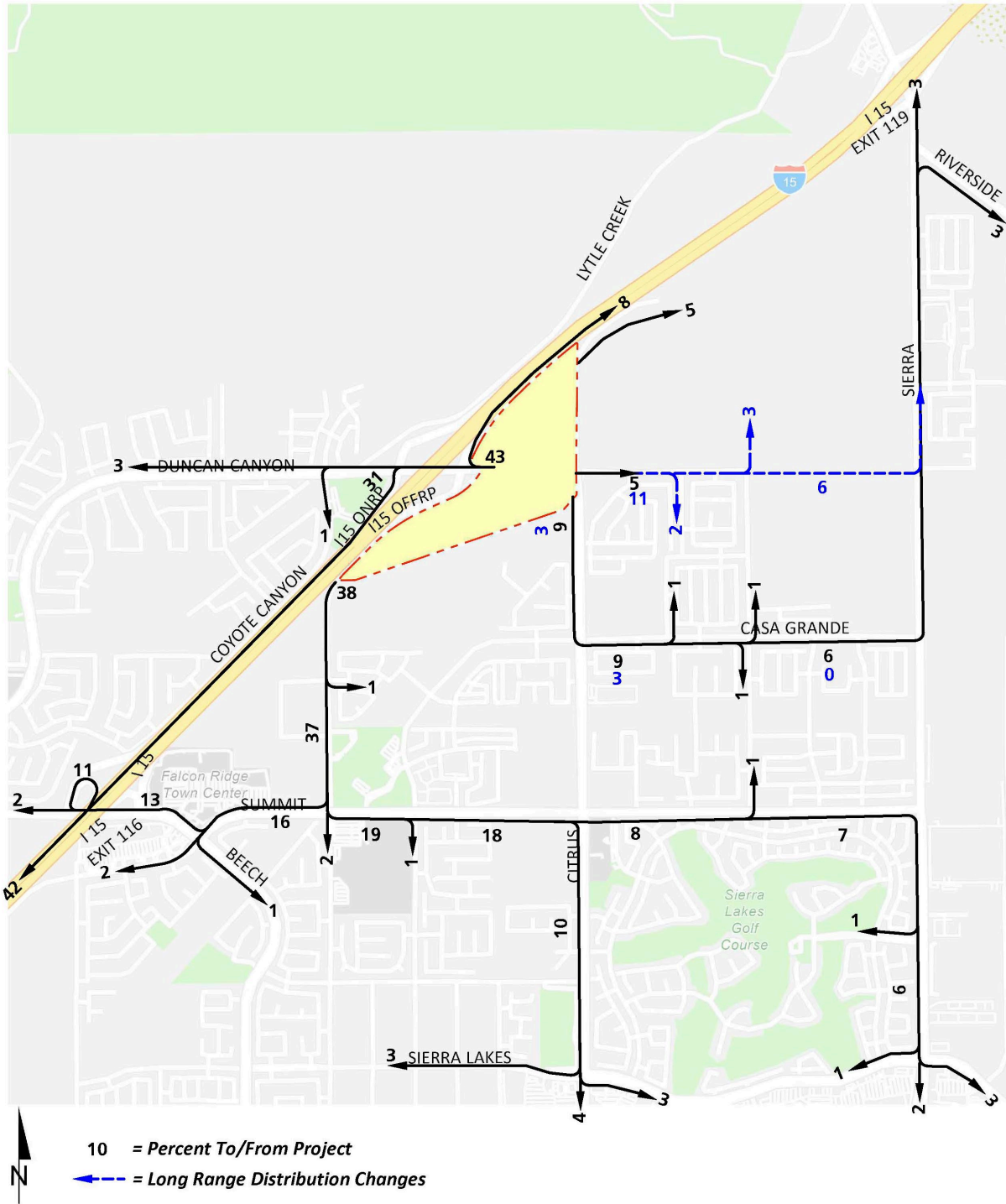
EXHIBIT 4-2: PROJECT (NORTH OF DUNCAN CANYON ROAD) TRIP DISTRIBUTION

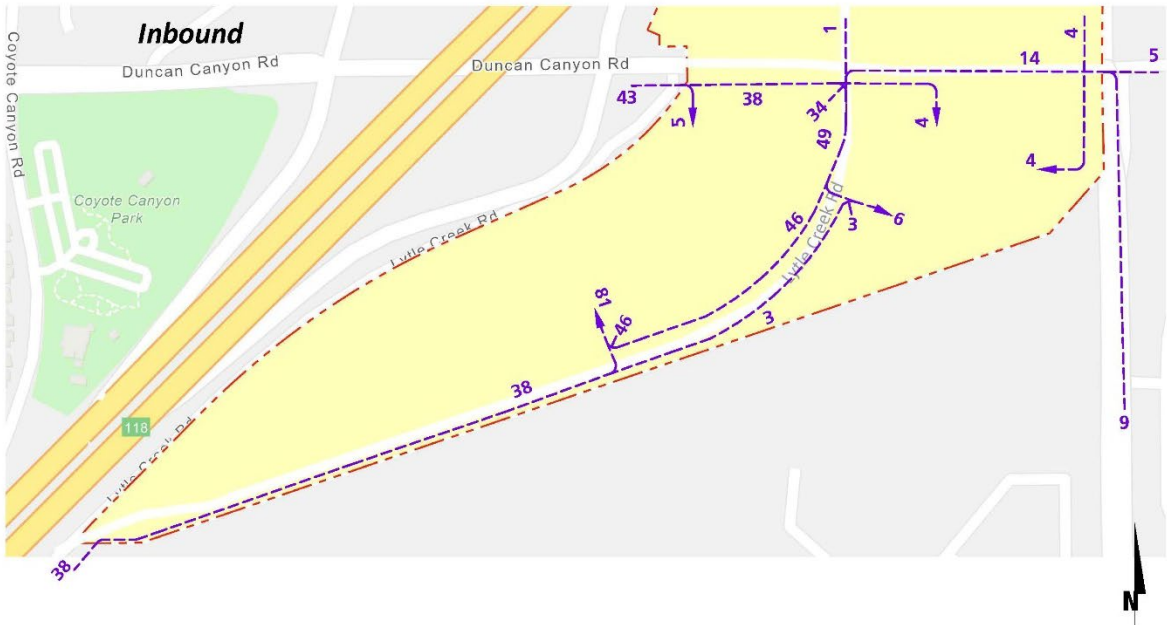
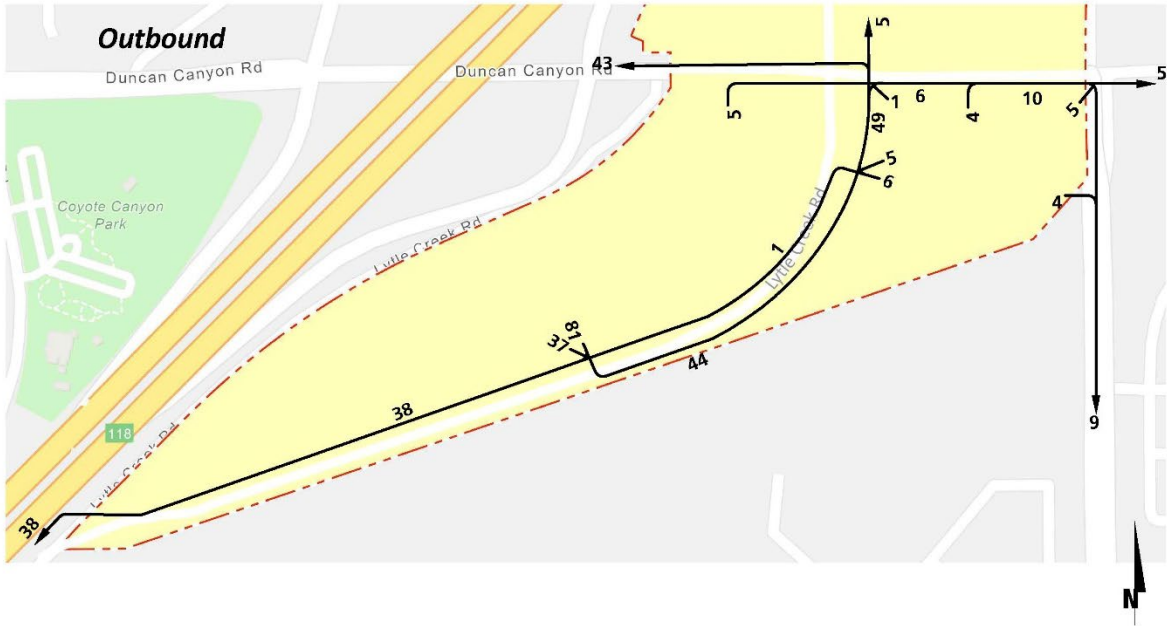




- 10 = Percent To/From Project
- ← = Outbound
- ← (dashed) = Inbound

EXHIBIT 4-3: PROJECT (SOUTH OF DUNCAN CANYON ROAD) TRIP DISTRIBUTION





10 = Percent To/From Project
 — = Outbound
 - - - = Inbound

4.3 MODAL SPLIT

The traffic reducing potential of public transit, walking, or bicycling have not been considered in this TA. Essentially, the traffic projections are "conservative" in that these alternative travel modes might be able to reduce the forecasted traffic volumes.

4.4 PROJECT TRIP ASSIGNMENT

The assignment of traffic from the Project area to the adjoining roadway system is based upon the Project trip generation, trip distribution, and the arterial highway and local street system improvements that would be in place by the time of initial occupancy of the Project. Based on the identified Project traffic generation and trip distribution patterns, the Project only ADT and peak hour intersection turning movement volumes are shown on Exhibit 4-4 for Phase 1, Exhibit 4-5 for Project Buildout, and Exhibit 4-6 for Project Buildout (Horizon Year).

4.5 BACKGROUND TRAFFIC

Future year traffic forecasts have been based upon background (ambient) growth at 1.16% per year for 2023 and 2030 traffic conditions, consistent with other recent studies performed in the area. The total ambient growth is 2.33% for 2023 traffic conditions (compounded growth of 1.16 percent per year over 2 years or 1.0116^2 years) and 10.94% for 2030 traffic condition (compounded growth of 1.16 percent per year over 9 years or 1.0116^9 years). The ambient growth factor is intended to approximate regional traffic growth. This ambient growth rate is added to existing traffic volumes to account for area-wide growth not reflected by cumulative development projects. Ambient growth has been added to daily and peak hour traffic volumes on surrounding roadways, in addition to traffic generated by the development of future projects that have been approved but not yet built and/or for which development applications have been filed and are under consideration by governing agencies. Opening Year Cumulative (2023) and Opening Year Cumulative (2030) traffic volumes are provided in Section 6 and 7 of this TA. The traffic generated by the proposed Project was then manually added to the base volume to determine Opening Year Cumulative "With Project" forecasts.

4.6 CUMULATIVE DEVELOPMENT TRAFFIC

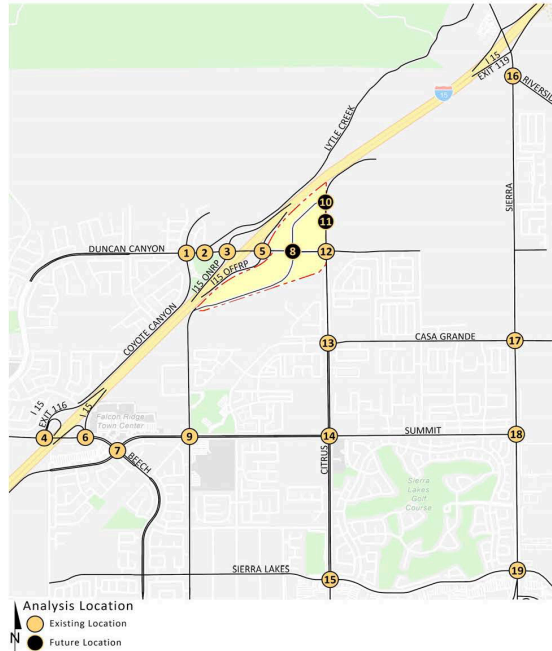
A cumulative project list was developed for the purposes of this analysis through consultation with planning and engineering staff from the City of Fontana. The cumulative project list includes known and foreseeable projects that are anticipated to contribute traffic to the study area intersections.

Where applicable, cumulative projects anticipated to contribute measurable traffic (i.e., 50 or more peak hour trips) to study area intersections have been manually added to the study area network to generate Opening Year Cumulative (2023) and Opening Year Cumulative (2030) forecasts. In other words, this list of cumulative development projects has been reviewed to determine which projects would likely contribute measurable traffic through the study area intersections (e.g., those cumulative projects in close proximity to the proposed Project). For the purposes of this analysis, the cumulative projects that were determined to affect one or more of

the study area intersections are shown on Exhibit 4-5, listed in Table 4-3, and have been considered for inclusion.

Although it is unlikely that all of these cumulative projects would be fully built and occupied by Years 2023 and Year 2030, they have been included in an effort to conduct a conservative analysis and overstate as opposed to understate potential traffic deficiencies. An absorption percentage of 60% has been utilized for the Year 2023, since it is unlikely that all the cumulative development projects would be fully constructed and occupied by 2023. Any other cumulative projects located beyond the cumulative study area that are not expected to contribute measurable traffic to study area intersections have not been included since the traffic would dissipate due to the distance from the Project site and study area intersections. Any additional traffic generated by other projects not on the cumulative projects list is likely accounted for through background ambient growth factors that have been applied to the peak hour volumes at study area intersections as discussed in Section 4.5 *Background Traffic*. Cumulative Only ADT and peak hour intersection turning movement volumes are shown on Exhibit 4-8.

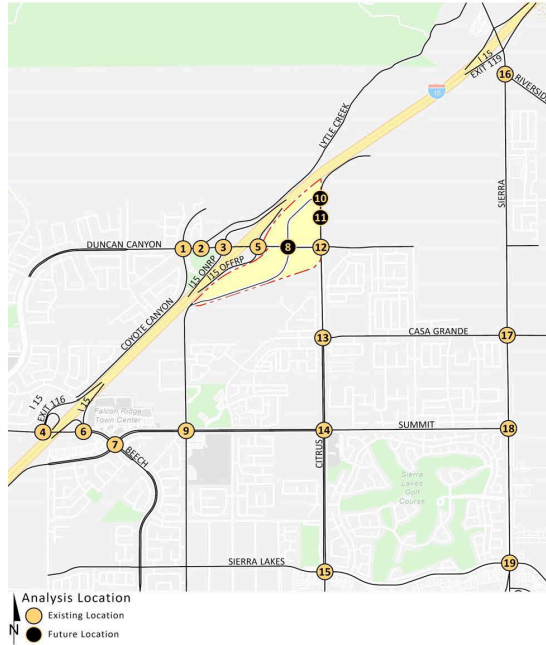
EXHIBIT 4-4: PROJECT ONLY (PHASE 1) TRAFFIC VOLUMES



1 Coyote Canyon Rd. & Duncan Canyon Rd.	2 W. Lytle Creek Rd. & Duncan Canyon Rd.	3 I-15 SB Ramps & Duncan Canyon Rd.	4 I-15 SB Ramps & Beech Av.	5 I-15 NB Ramps & Duncan Canyon Rd.
200 ← 9(5) ↗ 5(3) 10(7) → 5(4) ↖ Nominal	200 ← 14(8) 15(11) →	650 83(60) ← 14(8) ↗ 191(115) 15(11) →	2,450 ← 9(5) 10(7) →	650 ← 77(47) ← 205(123) 98(70) → 205(147) ↖ Nominal
150	200	200	1,550	2,450
6 I-15 NB Ramps & Beech Av.	7 Beech Av. & Summit Av.	8 Lytle Creek Dr. & Duncan Canyon Rd.	9 Lytle Creek Dr. & Summit Av.	10 Citrus Av. & Lytle Creek Rd.
150 ← 9(5) 10(7) →	150 ↖ 10(7) ↗ 9(5) ↖ 9(5) ↗ 5(3) 10(7) → 5(4) ↖ Nominal	4,950 ← 259(156) 4.1(25) ↖ 20(14) ↗ 23(14) 303(217) ↖ Nominal	650 Nominal ↖ 5(4) ↗ 5(3) ↖ 23(14) ↗ 5(3) 24(18) → 5(4) ↖ Nominal	350 ← 46(27) 27(16) ↖ Nominal
150	150	4,650	350	800
11 Citrus Av. & Driveway 1	12 Citrus Av. & Duncan Canyon Rd.	13 Citrus Av. & Casa Grande Av.	14 Citrus Av. & Summit Av.	15 Citrus Av. & Sierra Lakes Pkwy.
1,200 ← 73(44) 46(27) ↖ 49(35) ↗ 78(56) →	2,050 ← 132(79) 14(8) → 27(16) ↖ 44(32) ↗ 127(91) → 15(11) ↖	2,600 ← 100(60) 59(36) ↖ 64(46) 108(77) →	1,650 ← 36(22) ↖ 32(19) ↗ 32(19) 39(28) ↖ 34(25) → 34(25) ↖	500 ← 9(5) ← 14(8) ↖ 9(5) 10(7) ↖ 15(11) →
750	1,950	2,600	1,650	150
16 Sierra Av. & Riverside Av.	17 Sierra Av. & Casa Grande Av.	18 Sierra Av. & Summit Av.	19 Sierra Av. & Sierra Lakes Pkwy.	
350 ← 24(18) ↖ 24(18) ↗ 23(14) ↖ 23(14)	750 ↖ 49(35) 46(27) ↖	450 27(16) ↖ 29(21) ↖	350 ↖ 9(5) ↖ 5(3) ↖ 9(5) ↖ 10(7) ↖ 5(4)	150 Nominal
750	750	450	150	

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

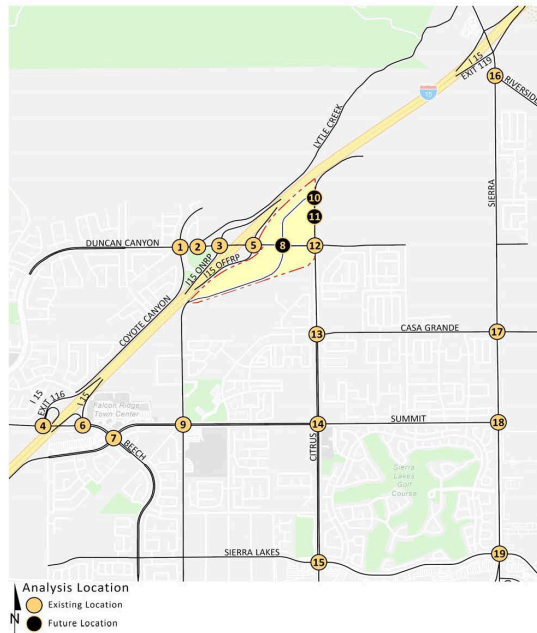
EXHIBIT 4-5: PROJECT ONLY (PROJECT BUILDOUT) TRAFFIC VOLUMES



1	2	3	4	5
Coyote Canyon Rd. & Duncan Canyon Rd.	W. Lytle Creek Rd. & Duncan Canyon Rd.	I-15 SB Ramps & Duncan Canyon Rd.	I-15 SB Ramps & Beech Av.	I-15 NB Ramps & Duncan Canyon Rd.
600 ← 22(18) ↑ 9(7) 22(21) → 9(9) ↑	600 ← 31(25) 32(30) →	800 ← 87(77) ↑ 31(25) ↓ 306(236) 32(30) →	550 ↑ 47(47) ← 18(14) 18(17) →	800 ↑ 84(64) ← 337(261) 314(282) ↑
450	150	600	2,950	4,400
6	7	8	9	10
I-15 NB Ramps & Beech Av.	Beech Av. & Summit Av.	Lytle Creek Dr. & Duncan Canyon Rd.	Lytle Creek Dr. & Summit Av.	Citrus Av. & Lytle Creek Rd.
550 ← 46(53) ↑ 65(60) 18(17) →	1,450 ↑ 64(70) ↑ 65(60) ↑ 18(14) ↑ 9(7) 18(17) → 9(9) ↑	4,850 96(58) ↓ 45(30) ↓ 114(69) 254(182) ↓ 38(41) ↓ 141(164) ↓ 184(183) ↓ 65(53) ↓ 4(4) ↑	4,250 91(82) ↓ 18(14) ↓ 86(84) 90(95) ↓ 84(95)	550 ↓ 40(33) 18(11) ↓ 5(3) ↓
900	350	7,700	1,950	400
11	12	13	14	15
Citrus Av. & Driveway 1	Citrus Av. & Duncan Canyon Rd.	Citrus Av. & Casa Grande Av.	Citrus Av. & Summit Av.	Citrus Av. & Sierra Lakes Pkwy.
700 ↓ 5(4) ↓ 40(33) 5(3) ↓ 14(8) ↓ 15(11) ↑ 29(21) ↑	850 ↓ 58(44) ↑ 45(42) 44(35) → 112(76) ↓ 135(113) ↑ 44(32) ↑	3,050 ↓ 91(65) ↑ 80(63) ↑ 81(75) 98(70) →	1,500 ↓ 36(22) ↑ 41(25) ↑ 44(32) ↑ 33(38) 34(34) ↓ 43(43) ↓ 69(67) ↑ 39(28) ↑	1,450 14(8) ↓ 23(14) 15(11) 27(25)
300	850	1,500	1,800	500
16	17	18	19	
Sierra Av. & Riverside Av.	Sierra Av. & Casa Grande Av.	Sierra Av. & Summit Av.	Sierra Av. & Sierra Lakes Pkwy.	
500 ← 27(25) ↑ 27(25) 27(21) ↑ 27(21) ↑	1,050 ↓ 54(50) 53(42) ↓	62(49) ↓ 63(59) ↑	1,050 ↓ 9(7) ↓ 18(14) ↓ 27(21) ↑ 27(25) 18(17) →	
1,050	1,050	1,200	350	

##(##) AM(PM) Peak Hour Intersection Volumes
 ## Average Daily Trips

EXHIBIT 4-6: PROJECT ONLY (PROJECT BUILDOUT HORIZON YEAR) TRAFFIC VOLUME



1	2	3	4	5																																											
Coyote Canyon Rd. & Duncan Canyon Rd.	W. Lytle Creek Rd. & Duncan Canyon Rd.	I-15 SB Ramps & Duncan Canyon Rd.	I-15 SB Ramps & Beech Av.	I-15 NB Ramps & Duncan Canyon Rd.																																											
<table border="1"> <tr><td>600</td></tr> <tr><td>← 22(18)</td></tr> <tr><td>↑ 9(7)</td></tr> <tr><td>22(19) →</td></tr> <tr><td>9(8) ↓</td></tr> <tr><td>450</td></tr> </table>	600	← 22(18)	↑ 9(7)	22(19) →	9(8) ↓	450	<table border="1"> <tr><td>600</td></tr> <tr><td>← 31(25)</td></tr> <tr><td>32(28) →</td></tr> <tr><td>600</td></tr> </table>	600	← 31(25)	32(28) →	600	<table border="1"> <tr><td>800</td></tr> <tr><td>← 87(72)</td></tr> <tr><td>↑ 31(25)</td></tr> <tr><td>↑ 306(237)</td></tr> <tr><td>32(28) →</td></tr> <tr><td>600</td></tr> </table>	800	← 87(72)	↑ 31(25)	↑ 306(237)	32(28) →	600	<table border="1"> <tr><td>500</td></tr> <tr><td>↑ 47(47)</td></tr> <tr><td>↑ 18(14)</td></tr> <tr><td>18(15) →</td></tr> <tr><td>350</td></tr> </table>	500	↑ 47(47)	↑ 18(14)	18(15) →	350	<table border="1"> <tr><td>900</td></tr> <tr><td>↑ 84(64)</td></tr> <tr><td>← 337(262)</td></tr> <tr><td>118(99) →</td></tr> <tr><td>314(261) ↓</td></tr> <tr><td>4,400</td></tr> </table>	900	↑ 84(64)	← 337(262)	118(99) →	314(261) ↓	4,400																
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##(##) AM(PM) Peak Hour Intersection Volumes
 ## Average Daily Trips

EXHIBIT 4-7: CUMULATIVE DEVELOPMENT LOCATION MAP

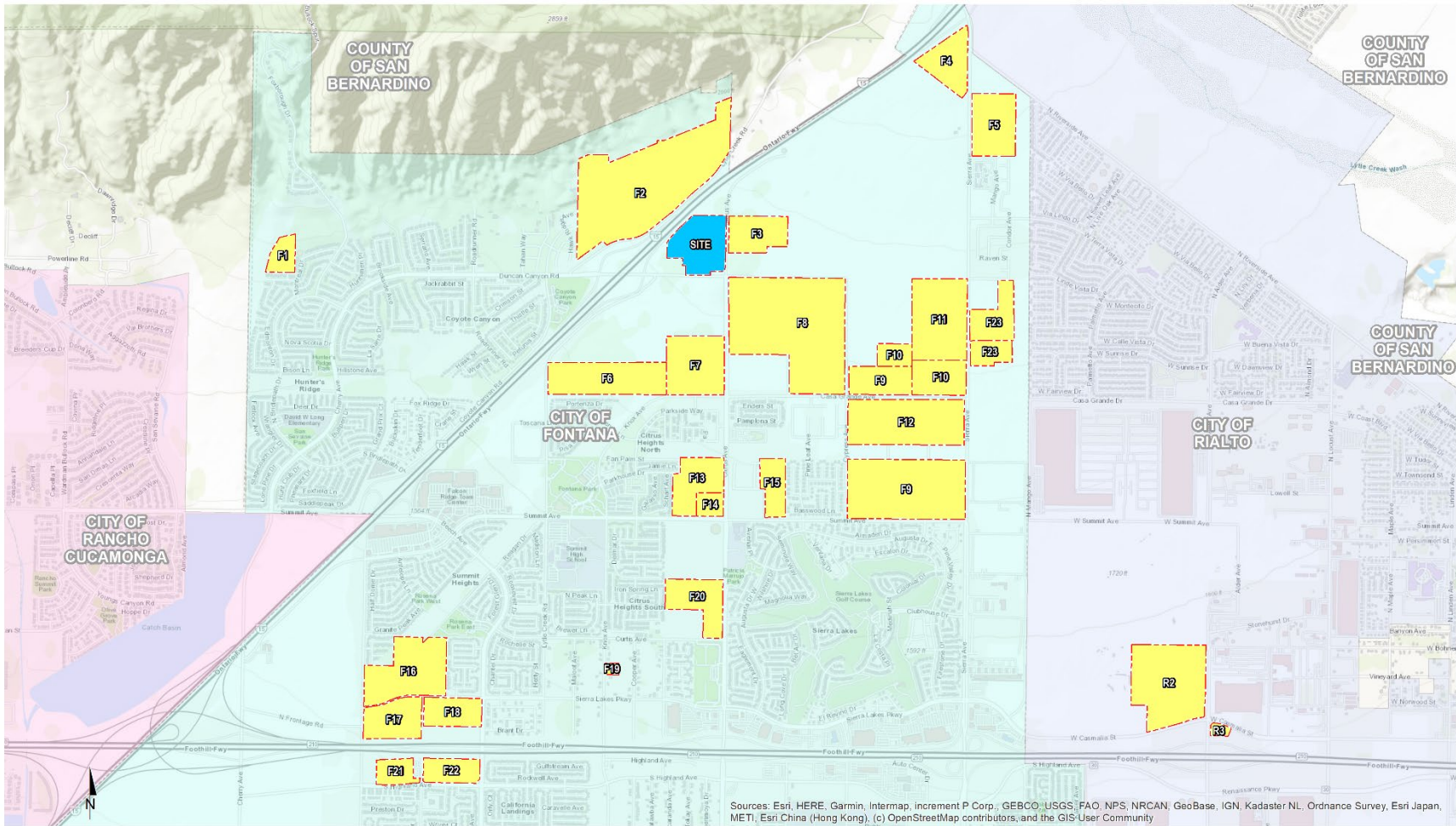
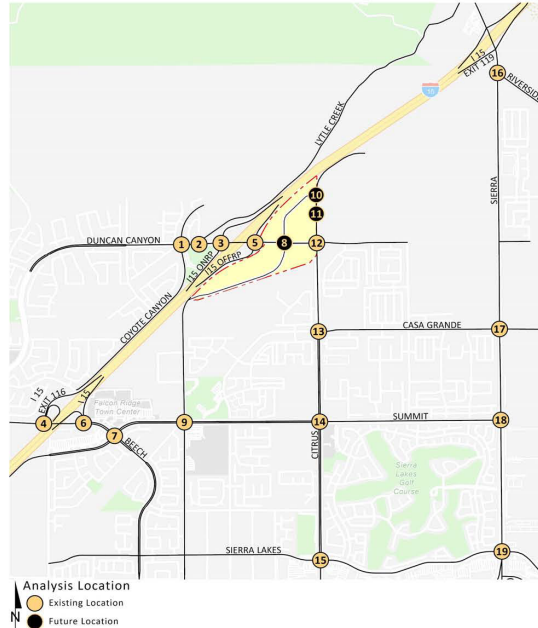


EXHIBIT 4-8: CUMULATIVE ONLY TRAFFIC VOLUMES



1	2	3	4	5
Coyote Canyon Rd. & Duncan Canyon Rd. 4,600 47(31) 3(2) 225(148) 16(52) 19(42) 1,500 4,800 350	W. Lytle Creek Rd. & Duncan Canyon Rd. 4,800 131(291) 250(210) 4,800	I-15 SB Ramps & Duncan Canyon Rd. 1,500 11(35) 49(159) 120(256) 413(273) 8,300 4,800 4,400	I-15 SB Ramps & Beech Av. 1,900 2(7) 28(60) 1,000 2,900 52(44) 4,400	I-15 NB Ramps & Duncan Canyon Rd. 1,500 144(95) 496(409) 31(21) 159(277) 37(120) 140(457) 8,300 4,400
I-15 NB Ramps & Beech Av. 2,050 77(253) 16(11) 271(190) 30(67) 2,900	Beech Av. & Summit Av. 4,950 6(4) 26(77) 76(239) 2(6) 13(41) 1(4) 750 4,650 1,600	Lytle Creek Dr. & Duncan Canyon Rd. 12,000 640(504) 10(7) 299(734) 3(11) 11,800 1,600	Lytle Creek Dr. & Summit Av. 1,700 58(38) 5(3) 37(24) 19(64) 73(233) 6(4) 4,650 4,750 750	Citrus Av. & Lytle Creek Rd. 1,800 105(69) 1,800
Citrus Av. & Driveway 1 1,800 105(69) 36(117) 1,800	Citrus Av. & Duncan Canyon Rd. 1,800 68(45) 23(15) 14(9) 23(75) 29(94) 251(576) 497(410) 8(26) 12,000 1,700 85(56) 9,800	Citrus Av. & Casa Grande Av. 8,450 145(125) 126(362) 5(3) 78(170) 101(297) 100 10,350 2(5) 265(187) 2,450	Citrus Av. & Summit Av. 9,650 101(67) 51(34) 25(18) 34(112) 28(64) 60(132) 515(626) 18(56) 29(28) 4,950 2,100 2,100	Citrus Av. & Sierra Lakes Pkwy. 7,050 6(4) 9(6) 18(10) 2(7) 42(42) 41(73) 435(556) 3(10) 70(60) 2,300 2,650 5,800
Sierra Av. & Riverside Av. 4,350 89(269) 26(78) 254(186) 71(46) 5,550 1,200 5,550	Sierra Av. & Casa Grande Av. 5,200 37(103) 158(137) 91(67) 107(71) 36(119) 121(217) 3,450 5,400 1,650	Sierra Av. & Summit Av. 5,400 31(31) 234(177) 21(38) 59(39) 20(65) 136(297) 5,750 1,900	Sierra Av. & Sierra Lakes Pkwy. 5,950 55(45) 148(112) 101(65) 27(64) 44(25) 4(3) 1(5) 98(199) 13(7) 5,950 2,750 3,500	

##(##) AM(PM) Peak Hour Intersection Volumes
 ## Average Daily Trips

TABLE 4-3: CUMULATIVE DEVELOPMENT LAND USE SUMMARY

TAZ	Project	Land Use	Quantity ¹
City of Fontana			
F1	Hunter's Ridge	Single Family Detached	20 DU
F2	Monarch Hills	Single Family Detached	489 DU
F3	Monterado	Single Family Detached	198 DU
F4	PAM 20-062	Single Family Detached	182 DU
F5	Sierra Crest II	Single Family Detached	179 DU
F6	Frome	Single Family Detached	155 DU
F7	Citrus Heights North (Shady Trails) PA3	Single Family Detached	99 DU
F8	Arboretum The Meadows	Single Family Detached	585 DU
F9	Summit at Rosena PA 1, 10-19	Single Family Detached	553 DU
F10	The Gardens at Arboretum PA G-5, G-6, G-7	Single Family Detached	278 DU
F11	The Gardens at Arboretum PA G-8, G-9, G-10	Single Family Detached	250 DU
F12	Summit at Roseana	Single Family Detached	227 DU
F13	Citrus Heights North (Shady Trails) PA16,17	Single Family Detached	290 DU
F14	Citrus Heights North (Shady Trails) PA12	Single Family Detached	102 DU
F15	Summit 18825	Single Family Detached	94 DU
F16	MCN 18-120	Single Family Detached	86 DU
F17	MCN 14-043R1	Single Family Detached	102 DU
F18	MCN 13-029	Single Family Detached	96 DU
F19	MCN 18-91 TTM No. 18974	Single Family Detached	5 DU
F20	MCN 18-062	Single Family Detached	105 DU
F21	Stratham Homes	Single Family Detached	107 DU
F22	MCN 18-088 Strathem	Single Family Detached	94 DU
F23	North Fontana Industrial Complex (Acacia & Shea)	Warehousing	88.746 TSF
		High-Cube Fulfillment Center	449.367 TSF
		High-Cube Cold Storage	49.930 TSF
City of Rialto			
R1	Golden Springs, LLC	Warehouse	630.000 TSF
R2	Warehouse (Alder/Casmalia)	Warehouse	618.400 TSF
R3	Rialto Retail Center	Auto Wash	1.800 TSF
		Fast-Food w/ Drive-thru	5.300 TSF
		Shopping Center	2.200 TSF
		Hotel	77 RM

¹ DU = Dwelling Units; TSF = Thousand Square Foot

4.7 NEAR-TERM TRAFFIC CONDITIONS

The “buildup” approach combines existing traffic counts with a background ambient growth factor to forecast the near-term 2023 and 2030 traffic conditions. An ambient growth factor of 1.16% per year, compounded annually, accounts for background (area-wide) traffic increases that occur over time up to the years 2023 and 2030 from the year 2021. Traffic volumes generated by cumulative development projects are then added to assess the Opening Year Cumulative (2023) and Opening Year Cumulative (2030) traffic conditions. Lastly, Project traffic is added to assess “With Project” traffic conditions. The 2023 and 2030 roadway network are similar to the existing conditions roadway network with the exception of intersections proposed to be developed by the Project. The near-term traffic analysis includes the following traffic conditions, with the various traffic components:

- Opening Year Cumulative (2023) Without Project
 - Adjusted Existing 2021 counts
 - Ambient growth traffic (2.33%)
 - 60% of Cumulative Development Project traffic
- Opening Year Cumulative (2023) With Project
 - Adjusted Existing 2021 counts
 - Ambient growth traffic (2.33%)
 - 60% of Cumulative Development Project traffic
 - Project (Phase 1) traffic
- Opening Year Cumulative (2030) Without Project
 - Adjusted Existing 2021 counts
 - Ambient growth traffic (10.94%)
 - 100% of Cumulative Development Project traffic
- Opening Year Cumulative (2030) With Project
 - Adjusted Existing 2021 counts
 - Ambient growth traffic (10.94%)
 - 100% of Cumulative Development Project traffic
 - Project (Project Buildout) traffic

4.8 HORIZON YEAR (2040) VOLUME DEVELOPMENT

Traffic projections for Horizon Year (2040) without Project conditions were derived from the San Bernardino Transportation Analysis Model (SBTAM) using accepted procedures for model forecast refinement and smoothing for study area intersections located within the County of San Bernardino. The current version of the SBTAM (Version 2.20, March 2019) reflects the local input in the adopted 2016 SCAG RTP within the County of San Bernardino. The post processing volume worksheets are provided in Appendix 4.1 of this TA.

The traffic forecasts reflect the area-wide growth anticipated between Existing (2021) conditions and Horizon Year (2040) traffic conditions. In most instances the traffic model zone structure is

not designed to provide accurate turning movements along arterial roadways unless refinement and reasonableness checking is performed. Therefore, the Horizon Year (2040) peak hour forecasts were refined using the model derived long range forecasts, base (validation) year model forecasts, along with existing peak hour traffic count data collected at each analysis location. The SBTAM has a base (validation) year of 2012 and a horizon (future forecast) year of 2040. The difference in model volumes (2040-2012) defines the growth in traffic over the 28-year period.

The refined future peak hour approach and departure volumes obtained from the model output data are then entered into a spreadsheet program consistent with the National Cooperative Highway Research Program (NCHRP Report 765), along with initial estimates of turning movement proportions. A linear programming algorithm is used to calculate individual turning movements which match the known directional roadway segment forecast volumes computed in the previous step. This program computes a likely set of intersection turning movements from intersection approach counts and the initial turning proportions from each approach leg.

The SBTAM uses an AM peak period-to-peak hour factor of 0.35 and a PM peak period-to-peak hour factor of 0.27. These factors represent the relationship of the highest single AM peak hour to the modeled 3-hour AM peak period (an even distribution would result in a factor of 0.33) and the highest single PM peak hour to the modeled 4-hour PM peak period (an even distribution would result in a factor of 0.25).

Typically, the model growth is prorated and is subsequently added to the existing (base validation) traffic volumes to represent Horizon Year traffic conditions. In an effort to conduct a conservative analysis, reductions to traffic forecasts from either Existing or Opening Year Cumulative traffic conditions were not assumed as part of this analysis. As such, in conjunction with the addition of cumulative projects that are not consistent with the General Plan, additional growth has also been applied on a movement-by-movement basis, where applicable, to estimate reasonable Horizon Year (2040) forecasts. Horizon Year (2040) turning volumes were compared to Opening Year Cumulative (2030) volumes in order to ensure a minimum growth as a part of the refinement process. The minimum growth includes any additional growth between Opening Year Cumulative (2030) and Horizon Year (2040) traffic conditions that is not accounted for by the traffic generated by cumulative development projects and ambient growth rates assumed between Existing (2021) and Opening Year Cumulative (2030) conditions. Future estimated peak hour traffic data was used for new intersections and intersections with an anticipated change in travel patterns to further refine the Horizon Year (2040) peak hour forecasts.

The future Horizon Year (2040) Without Project peak hour turning movements were then reviewed by Urban Crossroads, Inc. for reasonableness, and in some cases, were adjusted to achieve flow conservation, reasonable growth, and reasonable diversion between parallel routes. Flow conservation checks ensure that traffic flow between two closely spaced intersections, such as two adjacent driveway locations, is verified in order to make certain that vehicles leaving one intersection are entering the adjacent intersection and that there is no unexplained loss of vehicles. The result of this traffic forecasting procedure is a series of traffic volumes which are suitable for traffic operations analysis.

5 OPENING YEAR CUMULATIVE (2023) TRAFFIC CONDITIONS

This section discusses the methods used to develop Opening Year Cumulative (2023) Without and With Project (Phase 1) traffic forecasts, and the resulting intersection operations, traffic signal warrant, roadway segment, and off-ramp queuing analyses.

5.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Opening Year Cumulative (2023) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Opening Year Cumulative conditions only (e.g., intersection and roadway improvements along the Project's frontage and driveways, including Lytle Creek Road).
- Driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for Opening Year Cumulative conditions only (e.g., intersection and roadway improvements along the cumulative development's frontages and driveways).

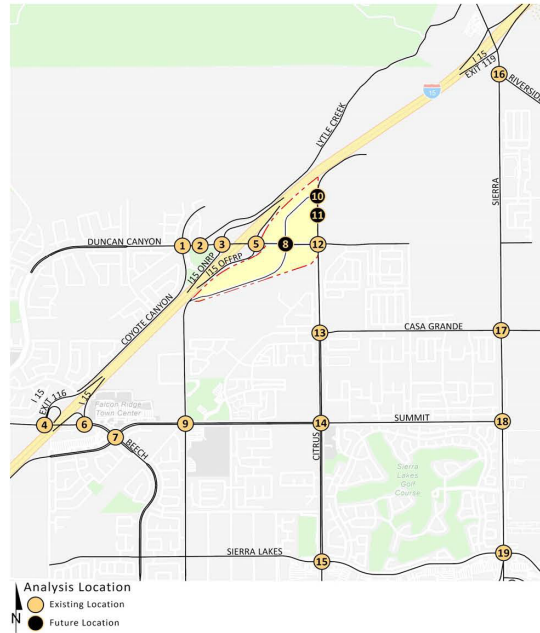
5.2 OPENING YEAR CUMULATIVE (2023) WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus an ambient growth factor of 2.33% plus traffic from pending and approved but not yet constructed known development projects in the area. The ADT and peak hour intersection turning movement volumes which can be expected for Opening Year Cumulative (2023) Without Project conditions are shown on Exhibit 5-1.

5.3 OPENING YEAR CUMULATIVE (2023) WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes, an ambient growth factor of 2.33%, traffic from pending and approved but not yet constructed known development projects in the area and the addition of Project (Phase 1) traffic. The ADT and peak hour intersection turning movement volumes which can be expected for Opening Year Cumulative (2023) With Project conditions are shown on Exhibit 5-2.

EXHIBIT 5-1: OPENING YEAR CUMULATIVE (2023) WITHOUT PROJECT TRAFFIC VOLUMES

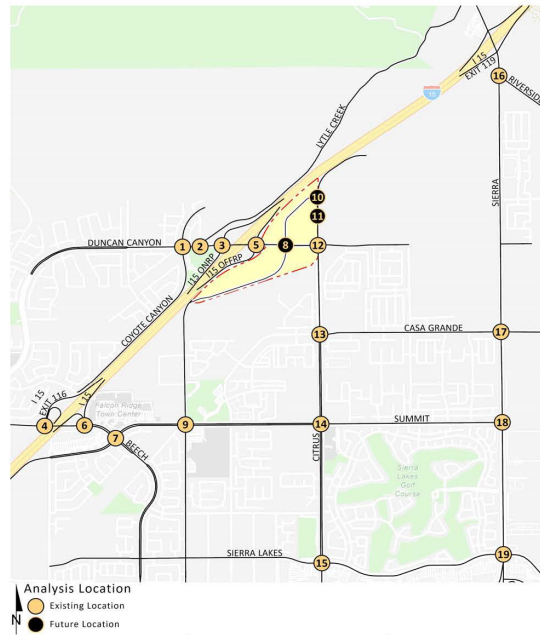


1 Coyote Canyon Rd. & Duncan Canyon Rd.	2 W. Lytle Creek Rd. & Duncan Canyon Rd.	3 I-15 SB Ramps & Duncan Canyon Rd.	4 I-15 SB Ramps & Beech Av.	5 I-15 NB Ramps & Duncan Canyon Rd.
4,000 37(22) 6(1) 229(120) 19(42) 425(275) 6(15)	13,350 80(200) 255(288) 59(140) 5(10) 4(3) 157(108)	2,500 49(76) 12(0) 236(168) 330(565) 644(281)	11,500 257(81) 199(216) 268(128) 484(610)	22,950 634(490) 466(520)
7,900	3,450	13,500	16,700	15,450
6 I-15 NB Ramps & Beech Av.	7 Beech Av. & Summit Av.	8 Lytle Creek Dr. & Duncan Canyon Rd.	9 Lytle Creek Dr. & Summit Av.	10 Citrus Av. & Lytle Creek Rd.
19,600 95(171) 341(853) 74(173) 609(654)	33,900 166(417) 1004(840) 78(117) 117(279) 22(118)	20,850 522(342) 166(304) 78(119) 40(97) 336(331) 50(104)	17,650 1034(725) 6(4) 2(7)	1,050 63(41)
22,950	12,550	17,550	26,950	1,050
11 Citrus Av. & Driveway 1	12 Citrus Av. & Duncan Canyon Rd.	13 Citrus Av. & Casa Grande Av.	14 Citrus Av. & Summit Av.	15 Citrus Av. & Sierra Lakes Pkwy.
1,050 63(41)	1,050 41(27) 14(9) 14(45) 204(177) 589(630)	4,050 3(10) 176(115) 29(19) 5(16) 32(21)	9,600 284(180) 40(33) 203(157) 81(49) 218(365) 104(222)	15,150 60(59) 236(376) 148(148) 465(722) 207(344) 87(120)
1,050	1,050	13,200	13,650	25,200
16 Sierra Av. & Riverside Av.	17 Sierra Av. & Casa Grande Av.	18 Sierra Av. & Summit Av.	19 Sierra Av. & Sierra Lakes Pkwy.	
26,300 596(604) 377(464) 466(630) 79(48)	12,800 468(453) 58(67) 79(48)	23,300 113(175) 971(629) 72(247) 282(373)	32,700 177(190) 1016(795) 110(259) 149(306) 485(879)	17,950 227(228) 182(238) 138(204) 535(601) 659(963) 258(246)
15,950	2,100	14,900	33,450	48,550

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

EXHIBIT 5-2: OPENING YEAR CUMULATIVE (2023) WITH PROJECT TRAFFIC VOLUMES



1 Coyote Canyon Rd. & Duncan Canyon Rd.	2 W. Lytle Creek Rd. & Duncan Canyon Rd.	3 I-15 SB Ramps & Duncan Canyon Rd.	4 I-15 SB Ramps & Beech Av.	5 I-15 NB Ramps & Duncan Canyon Rd.
4,000 37(22) 6(1) 225(120) 19(42) 435(282) 6(15) 8,050	13,600 16(6) 2(19) 391(630) 826(515) 13,600	3,150 49(76) 12(0) 319(228) 327(324) 499(191) 13,750	17,900 344(573) 835(396) 268(128) 494(617) 16,850	23,100 634(490) 475(525) 90(110) 556(441) 17,900
6 I-15 NB Ramps & Beech Av.	7 Beech Av. & Summit Av.	8 Lytle Creek Dr. & Duncan Canyon Rd.	9 Lytle Creek Dr. & Summit Av.	10 Citrus Av. & Lytle Creek Rd.
19,600 95(171) 344(653) 74(173) 619(661) 23,100	34,050 166(417) 1013(845) 78(117) 127(286) 22(118) 12,700	21,250 531(347) 175(309) 83(122) 40(97) 336(331) 55(108) 15,550	18,300 20(14) 1057(739) 6(4) 2(7) 303(217) 804(846) 22,150	26,550 76(49) 677(885) 42(52) 55(48) 113(19) 29(49) 2,650
11 Citrus Av. & Driveway 1	12 Citrus Av. & Duncan Canyon Rd.	13 Citrus Av. & Casa Grande Av.	14 Citrus Av. & Summit Av.	15 Citrus Av. & Sierra Lakes Pkwy.
2,250 136(85) 46(27) 750	3,100 41(27) 146(68) 14(45) 218(185) 616(646) 18,100	4,300 3(10) 191(126) 29(19) 8(5) 85(612) 132(107) 32(21) 16,700	10,550 348(226) 40(33) 203(157) 81(49) 326(442) 104(222) 13,400	15,650 94(84) 236(376) 148(148) 68(80) 539(494) 65(92) 221(351) 346(341) 19,550
16 Sierra Av. & Riverside Av.	17 Sierra Av. & Casa Grande Av.	18 Sierra Av. & Summit Av.	19 Sierra Av. & Sierra Lakes Pkwy.	
26,650 620(622) 377(464) 468(453) 82(85) 489(644) 102(62) 16,700	13,150 73(97) 1012(741) 2(0) 68(44) 24(73) 501(1082) 13(0) 23,600	23,300 113(175) 971(629) 72(247) 309(389) 293(434) 528(902) 15,350	33,050 186(195) 1021(798) 233(236) 181(235) 182(238) 138(204) 535(801) 664(967) 258(246) 48,650	18,100

##(##) AM(PM) Peak Hour Intersection Volumes
 ## Average Daily Trips

5.4 INTERSECTION OPERATIONS ANALYSIS

5.4.1 OPENING YEAR CUMULATIVE (2023) WITHOUT PROJECT TRAFFIC CONDITIONS

Opening Year Cumulative (2023) peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2.2 *Intersection Capacity Analysis* of this report. The intersection analysis results are summarized in Table 6-1, which indicate that the following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours under Opening Year Cumulative (2023) Without Project:

- Citrus Avenue & Duncan Canyon Road (#12) – LOS F AM and PM peak hours
- Citrus Avenue & Summit Avenue (#14) – LOS E AM peak hour; LOS F PM peak hour
- Citrus Avenue & Sierra Lakes Parkway (#15) – LOS F AM and PM peak hours
- Sierra Avenue & Riverside Avenue (#16) – LOS F AM and PM peak hours
- Sierra Avenue & Casa Grande Avenue (#17) – LOS D AM and PM peak hours
- Sierra Avenue & Sierra Lakes Parkway (#19) – LOS D AM peak hour; LOS F PM peak hour

The intersection operations analysis worksheets for Opening Year Cumulative (2023) Without Project traffic conditions are included in Appendix 5.1 of this TA.

TABLE 5-1: INTERSECTION ANALYSIS FOR OPENING YEAR CUMULATIVE (2023) CONDITIONS

#	Intersection	Traffic Control ²	2023 Without Project				2023 With Project				Difference in Delay	
			Delay ¹ (secs.)		Level of Service		Delay ¹ (secs.)		Level of Service		AM	PM
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Coyote Canyon Rd. & Duncan Canyon Rd.	AWS	17.0	14.8	C	B	17.5	15.1	C	C	0.5	0.3
2	W. Lytle Creek Rd. & Duncan Canyon Rd.	CSS	8.9	10.6	A	B	9.0	10.6	A	B	0.1	0.0
3	I-15 SB Ramps & Duncan Canyon Rd.	TS	29.8	19.1	C	B	34.2	22.9	C	C	4.4	3.8
4	I-15 SB Ramps & Beech Av.	TS	25.5	13.4	C	B	25.8	19.0	C	B	0.3	5.6
5	I-15 NB Ramps & Duncan Canyon Rd.	TS	18.5	26.6	B	C	23.7	26.8	C	C	5.2	0.2
6	I-15 NB Ramps & Beech Av.	TS	11.5	28.7	B	C	16.6	33.4	B	C	5.1	4.7
7	Beech Av. & Summit Av.	TS	23.6	25.0	C	C	24.0	25.3	C	C	0.4	0.3
8	Lytle Creek Dr. & Duncan Canyon Rd.	<u>TS</u>	Future Intersection				25.0	19.7	C	B	--	--
9	Lytle Creek Dr. & Summit Av.	TS	14.4	13.6	B	B	14.5	13.7	B	B	0.1	0.1
10	Citrus Av. & Lytle Creek Rd.	<u>CSS</u>	Future Intersection				8.7	8.6	A	A	--	--
11	Citrus Av. & Driveway 1	<u>TS</u>	Future Intersection				22.7	4.0	C	A	--	--
12	Citrus Av. & Duncan Canyon Rd.	AWS/ <u>TS</u> ³	>100.0	>100.0	F	F	29.8	23.4	C	C	--	--
13	Citrus Av. & Casa Grande Av.	TS	22.0	25.6	C	C	23.5	27.7	C	C	1.5	2.1
14	Citrus Av. & Summit Av.	TS	63.2	80.5	E	F	63.9	83.6	E	F	0.7	3.1
15	Citrus Av. & Sierra Lakes Pkwy.	TS	115.3	147.7	F	F	117.0	148.9	F	F	1.7	1.2
16	Sierra Av. & Riverside Av.	AWS	76.0	>100.0	F	F	87.7	>100.0	F	F	11.7	>1.0
17	Sierra Av. & Casa Grande Av.	CSS	32.1	29.3	D	D	49.8	41.3	E	E	17.7	12.0
18	Sierra Av. & Summit Av.	TS	30.5	19.0	C	B	34.9	20.1	C	C	4.4	1.1
19	Sierra Av. & Sierra Lakes Pkwy.	TS	35.6	91.0	D	F	35.9	91.4	D	F	0.3	0.4

¹ **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).
² Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or
³ CSS = Cross-street Stop; AWS = All-Way Stop; TS = Traffic Signal; TS = Improvement
³ The Project will construct a traffic signal as part of the Project design features.

5.4.2 OPENING YEAR CUMULATIVE (2023) WITH PROJECT TRAFFIC CONDITIONS

As shown in Table 5-1, there are no additional study area intersections anticipated to operate at an unacceptable LOS with the addition of Project (Phase 1) traffic, in addition to the intersections previously identified under Opening Year Cumulative (2023) Without Project traffic conditions. The intersection operations analysis worksheets for Opening Year Cumulative (2023) With Project traffic conditions are included in Appendix 5.2 of this TA.

5.5 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants have been performed (based on CA MUTCD) for Opening Year Cumulative (2023) traffic conditions based on peak hour intersection turning movements volumes or planning level (ADT) volumes. The following additional unsignalized study area intersection is anticipated to meet a traffic signal warrant under Opening Year Cumulative (2023) Without Project traffic conditions, in addition to the intersections identified previously under Existing (2021) traffic conditions (see Appendix 5.3):

- Coyote Canyon Road & Duncan Canyon Road (#1)

The following additional unsignalized study area intersection is anticipated to meet a traffic signal warrant under Opening Year Cumulative (2023) With Project (Phase 1) traffic conditions, in addition to the intersections identified previously under Existing (2021) and Opening Year Cumulative (2023) Without Project traffic conditions (see Appendix 5.4):

- Lytle Creek Drive & Duncan Canyon Road (#8)

5.6 ROADWAY SEGMENT CAPACITY ANALYSIS

The City of Fontana General Plan provides roadway volume capacity values and are approximate figures only and are used at the General Plan level to assist in determining the roadway functional classification (number of through lanes) needed to meet traffic demand. Table 5-2 provides a summary of the Opening Year Cumulative (2023) conditions roadway segment capacity analysis. As shown in Table 5-2, the following study area roadway segments are anticipated to operate at an unacceptable LOS based on the City's planning level daily roadway capacity thresholds for Opening Year Cumulative (2023) Without Project and With Project traffic conditions:

- Duncan Canyon Road, I-15 Northbound Ramps to Lytle Creek Drive (#3) – LOS E
- Duncan Canyon Road, Lytle Creek Drive to Citrus Avenue (#4) – LOS E

It should be noted, the roadway segments identified above are anticipated to improve operations to acceptable LOS with the implementation of the Project design features discussed in Section 1.6 *Recommendations*.

TABLE 5-2: ROADWAY SEGMENT CAPACITY ANALYSIS FOR OPENING YEAR CUMULATIVE (2023) CONDITIONS

#	Roadway	Segment Limits	Roadway Section ⁴	LOS Capacity ^{1,5}	2023 Without Project	V/C ²	LOS ³	2023 With Project	V/C ²	LOS ³
1	Lytle Creek	North of Duncan Canyon Rd.	2U	18,000	Future Roadway Segment	----	----	4,942	0.27	A
2		South of Duncan Canyon Rd.	2U	18,000		Future Segment	----			
3	Duncan Canyon	I-15 NB Ramps to Lytle Creek Dr.	2U/ 4U	18,000/ 36,000	17,531	0.97	E	22,173	0.62	B
4		Lytle Creek Dr. to Citrus Av.	2U/ 4U	18,000/ 36,000						

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

¹ These maximum roadway capacities assume 9,000 vehicles per lane per day for arterials.

² V/C = Volume to Capacity Ratio

³ LOS = Level of Service

⁴ **3U** = Improvement

⁵ **36,000** = Improvement

5.7 OFF-RAMP QUEUING ANALYSIS

Queuing analysis findings for Opening Year Cumulative (2023) are presented in Table 5-3. As shown in Table 5-3, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows under Opening Year Cumulative (2023) Without Project and With Project traffic conditions. Worksheets for Opening Year Cumulative (2023) Without Project and With Project traffic conditions off-ramp queuing analyses are provided Appendices 5.5 and 5.6, respectively.

TABLE 5-3: PEAK HOUR FREEWAY OFF-RAMP QUEUING SUMMARY FOR OPENING YEAR CUMULATIVE (2023) CONDITIONS

Intersection	Movement	Available Stacking Distance (Feet)	2023 Without Project				2023 With Project			
			95th Percentile Queue (Feet)		Acceptable? ¹		95th Percentile Queue (Feet)		Acceptable? ¹	
			AM Peak Hour	PM Peak Hour	AM	PM	AM Peak Hour	PM Peak Hour	AM	PM
I-15 SB Ramps & Duncan Canyon Rd. (#3)	SBL	2,170	169	126	Yes	Yes	221	378	Yes	Yes
	SBL/T	1,370	172	127	Yes	Yes	221	378	Yes	Yes
	SBR	290	36	46	Yes	Yes	36	416 ³	Yes	Yes
I-15 SB Ramps & Beech Av. (#4)	SBL	530	235	243	Yes	Yes	235	243	Yes	Yes
	SBR	2,150	72	42	Yes	Yes	72	42	Yes	Yes
I-15 NB Ramps & Duncan Canyon Rd. (#5)	NBL/T	530	164	315	Yes	Yes	161	307	Yes	Yes
	NBR	3,600	46	39	Yes	Yes	53	61	Yes	Yes
I-15 NB Ramps & Beech Av. (#6)	SBL/R	1,455	114	471	Yes	Yes	211	501	Yes	Yes

¹ Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

² Although 95th percentile queue is anticipated to exceed the available storage for the turn lane, the adjacent lane has sufficient storage to accommodate any spillover without spilling back and affecting the I-15 Freeway mainline.

5.8 DEFICIENCIES AND IMPROVEMENTS

This section provides a summary of deficiencies, based on the City of Fontana’s deficiency criteria discussed in Section 2.7 *Deficiency Criteria*, and improvements needed to improve operations back to acceptable levels.

5.8.1 IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

The effectiveness of the recommended improvement strategies to address Opening Year Cumulative (2023) traffic deficiencies are presented in Table 5-4. Worksheets for Opening Year Cumulative (2023) Without and With Project conditions, with improvements, HCM calculation worksheets are provided in Appendices 5.7 and 5.8, respectively.

TABLE 5-4: INTERSECTION ANALYSIS FOR OPENING YEAR CUMULATIVE (2023) CONDITIONS WITH IMPROVEMENTS

#	Intersection	Traffic Control ³	Intersection Approach Lanes ¹												Delay ² (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM
			L	T	R	L	T	R	L	T	R	L	T	R				
14	Citrus Av. & Summit Av. - Without Project	TS	<u>2</u>	2	1	1	2	1	1	2	1	1	2	1	21.3	28.1	C	C
		TS	<u>2</u>	2	1	1	2	1	1	2	1	1	2	1	21.7	28.1	C	C
15	Citrus Av. & Sierra Lakes Pkwy. - Without Project	TS	2	2	<u>1></u>	2	2	1	2	2	<u>1></u>	2	2	1	26.6	29.8	C	C
		TS	2	2	<u>1></u>	2	2	1	2	2	<u>1></u>	2	2	1	26.9	30.0	C	C
16	Sierra Av. & Riverside Av. - Without Project	<u>TS</u>	0	2	0	1	2	0	0	0	0	1	0	1	15.3	8.3	B	A
		<u>TS</u>	0	2	0	1	2	0	0	0	0	1	0	1	15.8	8.4	B	A
17	Sierra Av. & Casa Grande Av. - Without Project	<u>TS</u>	<u>1</u>	1	0	0	1	0	0	1	0	0	0	0	13.8	12.0	B	B
		<u>TS</u>	<u>1</u>	1	0	0	1	0	0	1	0	0	0	0	17.3	13.0	B	B

¹ When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; > = Right-Turn Overlap Phasing; 1 = Improvement

² Per the Highway Capacity Manual 6th Edition, overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

³ TS = Traffic Signal; TS = Improvement

5.8.2 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON ROADWAY SEGMENTS

Where the ADT based roadway segment analysis indicates a deficiency (unacceptable LOS), the more detailed peak hour intersection analysis has also been reviewed. The more detailed peak hour intersection analysis explicitly accounts for factors that affect roadway capacity. While this traffic study recognizes LOS C is the City’s target LOS for roadway segments, a review of the more detailed peak hour intersection analysis is necessary to determine whether roadway widening along the segment is necessary. For the purposes of this analysis, if the peak hour intersection operations on either side of the roadway segment are anticipated to operate at an acceptable LOS, then additional roadway segment widening has not been recommended. Therefore, for the purposes of this assessment, roadway segment widening has only been recommended if the peak hour intersection analysis indicates the need for additional through lanes or if the improvement is consistent with the City’s General Plan. Additionally, the roadway segments are anticipated to improve operations to acceptable LOS with the implementation of the Project design features discussed in Section 1.6 *Recommendations*.

5.8.3 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON OFF-RAMP QUEUES

As shown previously in Table 5-3, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows for Opening Year Cumulative (2023) traffic conditions. As such, no improvements have been identified.

6 OPENING YEAR CUMULATIVE (2030) TRAFFIC CONDITIONS

This section discusses the methods used to develop Opening Year Cumulative (2030) Without and With Project traffic forecasts, and the resulting intersection operations, traffic signal warrant, roadway segment, and off-ramp queuing analyses.

6.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Opening Year Cumulative (2030) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Opening Year Cumulative conditions only (e.g., intersection and roadway improvements along the Project's frontage and driveways, including Lytle Creek Road).
- Driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for Opening Year Cumulative conditions only (e.g., intersection and roadway improvements along the cumulative development's frontages and driveways).

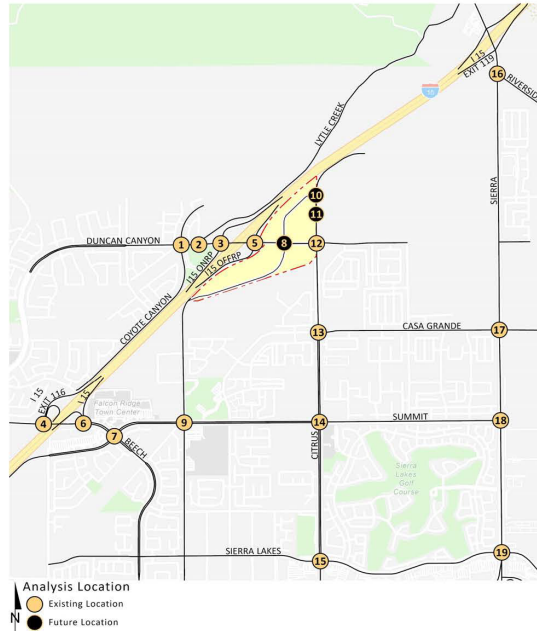
6.2 OPENING YEAR CUMULATIVE (2030) WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus an ambient growth factor of 10.94% plus traffic from pending and approved but not yet constructed known development projects in the area. The ADT and peak hour intersection turning movement volumes which can be expected for Opening Year Cumulative (2030) Without Project conditions are shown on Exhibit 6-1.

6.3 OPENING YEAR CUMULATIVE (2030) WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes, an ambient growth factor of 10.94%, traffic from pending and approved but not yet constructed known development projects in the area and the addition of Project (Project Buildout) traffic. The ADT and peak hour intersection turning movement volumes which can be expected for Opening Year Cumulative (2030) With Project (Project Buildout) conditions are shown on Exhibit 6-2.

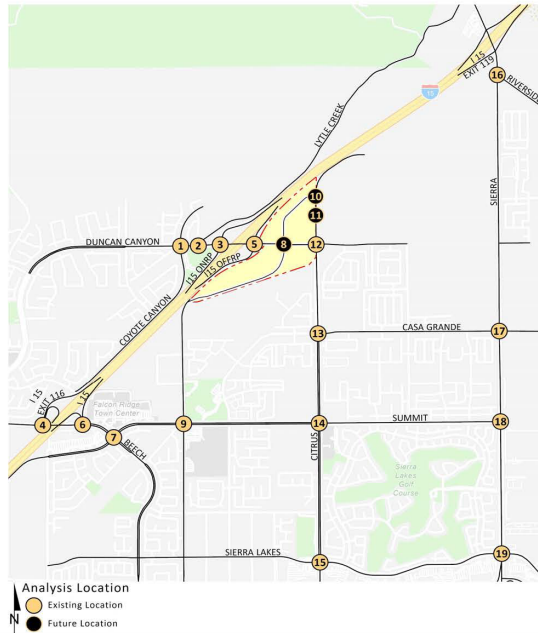
EXHIBIT 6-1: OPENING YEAR CUMULATIVE (2030) WITHOUT PROJECT TRAFFIC VOLUMES



1	Coyote Canyon Rd. & Duncan Canyon Rd.	2	W. Lytle Creek Rd. & Duncan Canyon Rd.	3	I-15 SB Ramps & Duncan Canyon Rd.	4	I-15 SB Ramps & Beech Av.	5	I-15 NB Ramps & Duncan Canyon Rd.
5,950 56(34) 8(2) 327(182) 113(304) 289(323) 70(156) 26(63) 467(313) 7(16)	16,150 113(304) 289(323) 70(156) 6(10) 4(4) 172(124)	350 17(7) 2(20) 455(776) 967(620)	16,350 2(20) 455(776)	3,200 57(95) 13(0) 273(237) 400(702) 843(400) 388(388) 579(232)	19,650 400(702) 843(400)	13,150 279(87) 217(237) 291(139) 534(682)	25,900 763(581) 523(579)	4,700 108(126) 552(499) 150(370) 21(4) 425(675)	23,150 251(230) 1093(732) 425(675)
9,100	3,850	16,150		16,350	8,050	18,450		19,650	10,450
6	I-15 NB Ramps & Beech Av.	7	Beech Av. & Summit Av.	8	Lytle Creek Dr. & Duncan Canyon Rd.	9	Lytle Creek Dr. & Summit Av.	10	Citrus Av. & Lytle Creek Rd.
21,950 103(185) 396(1013) 186(455) 1183(977) 80(187) 671(732)	38,450 186(455) 1183(977)	27,200 39(100) 262(548) 341(708) 641(421) 193(338) 91(135) 85(129) 132(317) 24(130)	24,250 641(421) 193(338) 91(135) 45(106) 388(376) 58(121)	23,300 1344(962) 10(7) 977(1174) 3(11)	3,900 233(93) 86(12) 75(47) 81(64) 782(993) 51(60) 173(111) 373(1262) 52(49)	29,850 81(64) 782(993) 51(60) 123(22) 30(61) 60(54) 123(22) 30(61)	1,800 105(69)	1,800	
25,900	3,850	13,850	17,300	23,150	150	30,850	3,050		1,800
11	Citrus Av. & Driveway 1	12	Citrus Av. & Casa Grande Canyon Rd.	13	Citrus Av. & Casa Grande Av.	14	Citrus Av. & Summit Av.	15	Citrus Av. & Sierra Lakes Pkwy.
1,800 105(69)	1,800 68(45) 23(15) 14(9) 5(16) 221(144) 31(20)	5,000 71(55) 316(291) 196(433) 420(275) 44(37) 313(236) 79(53) 26(40) 35(14) 81(49) 249(433) 144(341)	14,000 420(275) 44(37) 313(236) 79(53) 26(40) 35(14) 81(49) 249(433) 144(341)	16,550 71(55) 316(291) 196(433) 420(275) 44(37) 313(236) 79(53) 26(40) 35(14) 81(49) 249(433) 144(341)	14,700 147(81) 255(253) 88(59) 64(71) 258(395) 155(162) 64(147) 156(509) 184(410) 684(1002) 231(371) 104(140)	15,950 64(71) 258(395) 155(162) 64(147) 156(509) 184(410) 684(1002) 231(371) 104(140)	29,800 66(82) 572(529) 120(230) 60(95) 255(395) 389(395) 781(935) 432(657) 708(900)	36,000 101(266) 202(378) 580(738) 60(95) 255(395) 389(395) 781(935) 432(657) 708(900)	
1,800	1,800	18,000	18,000	16,750	14,700	23,300	25,650	21,800	48,250
16	Sierra Av. & Riverside Av.	17	Sierra Av. & Casa Grande Av.	18	Sierra Av. & Summit Av.	19	Sierra Av. & Sierra Lakes Pkwy.		
30,000 677(749) 409(503) 594(748) 110(68)	14,300 508(492) 72(100)	27,250 39(103) 1152(851) 2(0) 93(68) 111(72) 38(120) 586(1249) 15(0)	4(0) 8(1) 15(0)	25,450 133(200) 1135(744) 86(281) 326(418) 293(471) 620(1081)	37,500 211(222) 1153(901) 278(273) 129(303) 177(340) 527(954) 581(871) 748(1113) 284(269)	20,450 258(286) 204(274) 151(225) 129(303) 177(340) 527(954) 581(871) 748(1113) 284(269)	53,850		
	19,200	3,500	27,450	16,750	32,650	36,950	53,850		

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

EXHIBIT 6-2: OPENING YEAR CUMULATIVE (2030) WITH PROJECT TRAFFIC VOLUMES



<p>1 Coyote Canyon Rd. & Duncan Canyon Rd.</p> <p>5,950 56(34) 8(2) 327(182) 16,800 ↑ 113(304) ↑ 311(341) ↓ 79(163) 26(63) 489(334) 7(16) 6(10) 4(4) 381(133) 4,000</p>	<p>2 W. Lytle Creek Rd. & Duncan Canyon Rd.</p> <p>350 17(7) 2(20) 486(801) 16,950 999(650) 16,800</p>	<p>3 I-15 SB Ramps & Duncan Canyon Rd.</p> <p>4,000 57(95) 13(0) 360(314) 24,050 ↑ 431(727) ↑ 1149(636) 420(418) 579(232) 16,950</p>	<p>4 I-15 SB Ramps & Beech Av.</p> <p>13,700 275(87) 217(237) 26,800 ↑ 810(628) ↑ 541(593) 291(139) 552(699) 18,800</p>	<p>5 I-15 NB Ramps & Duncan Canyon Rd.</p> <p>5,500 335(294) 1430(993) 108(126) 670(606) 150(570) 2(14) 739(957) 13,400</p>
<p>6 I-15 NB Ramps & Beech Av.</p> <p>22,500 103(185) 8(2) 442(1066) 40,150 ↑ 186(455) ↑ 1248(1037) 80(187) 689(749) 26,800</p>	<p>7 Beech Av. & Summit Av.</p> <p>28,600 39(100) 262(548) 405(778) 26,200 ↑ 706(481) ↑ 211(352) 100(142) 85(129) 150(334) 24(130) 45(106) 388(376) 67(130) 17,500</p>	<p>8 Lytle Creek Dr. & Duncan Canyon Rd.</p> <p>4,850 96(58) 45(30) 114(69) 26,300 ↑ 24(18) ↑ 1436(1027) 68(74) 254(182) 1015(1215) 141(164) 184(183) 65(53) 7(15) 5,700</p>	<p>9 Lytle Creek Dr. & Summit Av.</p> <p>8,150 324(175) 104(26) 161(131) 31,800 ↑ 165(159) ↑ 782(993) 51(60) 263(206) 373(1262) 52(49) 60(54) 141(39) 30(61) 3,400</p>	<p>10 Citrus Av. & Lytle Creek Rd.</p> <p>2,350 145(102) 18(11) 5(3) 2,450</p>
<p>11 Citrus Av. & Driveway 1</p> <p>2,450 5(4) 145(102) 5(3) 14(8) 15(11) 65(138) 300</p>	<p>12 Citrus Av. & Duncan Canyon Rd.</p> <p>2,650 68(45) 81(59) 14(9) 5,850 ↑ 5(16) ↑ 266(186) 31(20) 23(75) 275(260) 838(960) 1145(857) 52(58) 32(21) 21,050</p>	<p>13 Citrus Av. & Casa Grande Av.</p> <p>19,600 71(55) 407(346) 276(496) 15,550 ↑ 501(350) 44(37) 313(236) 79(53) 26(40) 35(14) 81(49) 347(503) 144(341) 16,200</p>	<p>14 Citrus Av. & Summit Av.</p> <p>19,650 147(81) 291(275) 129(84) 17,450 ↑ 108(103) ↑ 291(433) 155(162) 64(147) 190(543) 227(453) 753(1069) 270(399) 104(140) 25,100</p>	<p>15 Citrus Av. & Sierra Lakes Pkwy.</p> <p>31,600 80(90) 595(543) 75(106) 255(395) 401(409) 828(984) 456(675) 735(921) 36,550 ↑ 101(266) ↑ 202(378) 607(763) 49,050</p>
<p>16 Sierra Av. & Riverside Av.</p> <p>30,500 704(774) 409(503) 99(125) 621(769) 137(89) 20,250</p>	<p>17 Sierra Av. & Casa Grande Av.</p> <p>28,300 93(153) 1152(851) 2(0) 146(110) 111(72) 38(120) 586(1249) 15(0) 4,500</p>	<p>18 Sierra Av. & Summit Av.</p> <p>25,450 133(200) 1135(744) 86(281) 388(467) 356(530) 620(1081) 33,900</p>	<p>19 Sierra Av. & Sierra Lakes Pkwy.</p> <p>38,550 220(229) 1171(915) 305(294) 20,950 ↑ 285(311) ↑ 204(274) ↑ 151(225) 138(312) 177(340) 527(954) 561(871) 766(1130) 284(269) 54,200</p>	

##(##) AM(PM) Peak Hour Intersection Volumes

Average Daily Trips

6.4 INTERSECTION OPERATIONS ANALYSIS

6.4.1 OPENING YEAR CUMULATIVE (2030) WITHOUT PROJECT TRAFFIC CONDITIONS

Opening Year Cumulative (2030) peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2.2 *Intersection Capacity Analysis* of this report. The intersection analysis results are summarized in Table 6-1, which indicate that the following study area intersections are anticipated to operate at an unacceptable LOS during the peak hours under Opening Year Cumulative (2030) Without Project:

- Coyote Canyon Road & Duncan Canyon Road (#1) – LOS D AM and PM peak hours
- Citrus Avenue & Duncan Canyon Road (#12) – LOS F AM and PM peak hours
- Citrus Avenue & Summit Avenue (#14) – LOS F AM and PM peak hours
- Citrus Avenue & Sierra Lakes Parkway (#15) – LOS F AM and PM peak hours
- Sierra Avenue & Riverside Avenue (#16) – LOS F AM and PM peak hours
- Sierra Avenue & Casa Grande Avenue (#17) – LOS F AM and PM peak hours
- Sierra Avenue & Summit Avenue (#18) – LOS D AM peak hour only
- Sierra Avenue & Sierra Lakes Parkway (#19) – LOS D AM peak hour; LOS F PM peak hour

The intersection operations analysis worksheets for Opening Year Cumulative Without Project traffic conditions are included in Appendix 6.1 of this TA.

6.4.2 OPENING YEAR CUMULATIVE (2030) WITH PROJECT TRAFFIC CONDITIONS

As shown in Table 6-1, the following additional study area intersections anticipated to operate at an unacceptable LOS with the addition of Project (Project Buildout) traffic, in addition to the intersections previously identified under Opening Year Cumulative (2030) Without Project traffic conditions:

- Beech Avenue & Summit Avenue (#7) – LOS D AM and PM peak hours
- Citrus Avenue & Casa Grande Avenue (#13) – LOS D PM peak hour only

The intersection operations analysis worksheets for Opening Year Cumulative (2030) With Project traffic conditions are included in Appendix 6.2 of this TA.

TABLE 6-1: INTERSECTION ANALYSIS FOR OPENING YEAR CUMULATIVE (2030) CONDITIONS

#	Intersection	Traffic Control ²	2030 Without Project				2030 With Project				Difference in Delay	
			Delay ¹ (secs.)		Level of Service		Delay ¹ (secs.)		Level of Service		AM	PM
1	Coyote Canyon Rd. & Duncan Canyon Rd.	AWS	29.3	27.6	D	D	32.7	31.7	D	D	3.4	4.1
2	W. Lytle Creek Rd. & Duncan Canyon Rd.	CSS	9.1	11.3	A	B	9.1	11.4	A	B	0.0	0.1
3	I-15 SB Ramps & Duncan Canyon Rd.	TS	45.1	21.3	D	C	48.0	27.6	D	C	2.9	6.3
4	I-15 SB Ramps & Beech Av.	TS	37.7	13.1	D	B	42.1	13.2	D	B	4.4	0.1
5	I-15 NB Ramps & Duncan Canyon Rd.	TS	20.3	28.2	C	C	26.1	29.6	C	C	5.8	1.4
6	I-15 NB Ramps & Beech Av.	TS	18.6	32.0	B	C	20.3	33.7	C	C	1.7	1.7
7	Beech Av. & Summit Av.	TS	31.2	32.1	C	C	38.7	40.4	D	D	7.5	8.3
8	Lytle Creek Dr. & Duncan Canyon Rd.	<u>TS</u>	Future Intersection				29.1	25.7	C	C	--	--
9	Lytle Creek Dr. & Summit Av.	TS	16.0	14.9	B	B	22.8	20.2	C	C	6.8	5.3
10	Citrus Av. & Lytle Creek Rd.	<u>CSS</u>	Future Intersection				10.0	9.9	B	A	--	--
11	Citrus Av. & Driveway 1	<u>TS</u>	Future Intersection				11.1	3.4	B	A	--	--
12	Citrus Av. & Duncan Canyon Rd.	AWS/ <u>TS</u> ³	> 100.0	> 100.0	F	F	28.2	22.8	C	C	--	--
13	Citrus Av. & Casa Grande Av.	TS	28.2	32.9	C	C	31.6	36.5	C	D	3.4	3.6
14	Citrus Av. & Summit Av.	TS	150.2	183.4	F	F	181.0	> 200.0	F	F	30.8	> 1.0
15	Citrus Av. & Sierra Lakes Pkwy.	TS	> 200.0	> 200.0	F	F	> 200.0	> 200.0	F	F	> 1.0	> 1.0
16	Sierra Av. & Riverside Av.	AWS	> 100.0	> 100.0	F	F	> 100.0	> 100.0	F	F	> 1.0	> 1.0
17	Sierra Av. & Casa Grande Av.	CSS	> 100.0	81.2	F	F	> 100.0	> 100.0	F	F	> 1.0	> 1.0
18	Sierra Av. & Summit Av.	TS	43.7	25.3	D	C	71.3	33.4	E	C	27.6	8.1
19	Sierra Av. & Sierra Lakes Pkwy.	TS	48.2	118.9	D	F	49.3	121.4	D	F	1.1	2.5

* **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).
¹ Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual
² CSS = Cross-street Stop; AWS = All-Way Stop; TS = Traffic Signal; TS = Improvement
³ The Project will construct a traffic signal as part of the Project design features.

6.5 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants have been performed (based on CA MUTCD) for Opening Year Cumulative (2030) traffic conditions based on peak hour intersection turning movements volumes or planning level (ADT) volumes. There is no additional unsignalized study area intersections anticipated to meet a traffic signal warrant under Opening Year Cumulative (2030) Without Project or With Project traffic conditions, in addition to the intersections identified previously under Existing (2021) and Opening Year Cumulative (2023) Without and With Project traffic conditions (see Appendices 6.3 and 6.4).

6.6 ROADWAY SEGMENT CAPACITY ANALYSIS

The City of Fontana General Plan provides roadway volume capacity values and are approximate figures only and are used at the General Plan level to assist in determining the roadway functional classification (number of through lanes) needed to meet traffic demand. Table 6-2 provides a summary of the Opening Year Cumulative (2030) conditions roadway segment capacity analysis.

TABLE 6-2: ROADWAY SEGMENT CAPACITY ANALYSIS FOR OPENING YEAR CUMULATIVE (2023) CONDITIONS

#	Roadway	Segment Limits	Roadway Section ⁴	LOS Capacity ^{1,5}	2030 Without Project	V/C ²	LOS ³	2030 With Project	V/C ²	LOS ³
1	Lytle Creek	North of Duncan Canyon Rd.	2U	18,000	Future Roadway Segment	----	----	4,825	0.27	A
2		South of Duncan Canyon Rd.	4U	36,000		----	----			
3	Duncan Canyon	I-15 NB Ramps to Lytle Creek Dr.	2U/ <u>6D</u>	18,000/ 54,000	23,135	1.29	F	30,820	0.57	A
4		Lytle Creek Dr. to Citrus Av.	2U/ <u>6D</u>	18,000/ 54,000						

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

¹ These maximum roadway capacities assume 9,000 vehicles per lane per day for arterials.

² V/C = Volume to Capacity Ratio

³ LOS = Level of Service

⁴ 4U = Improvement

⁵ **54,000** = Improvement

As shown in Table 6-2, the following study area roadway segments are anticipated to operate at an unacceptable LOS based on the City’s planning level daily roadway capacity thresholds for Opening Year Cumulative (2030) Without Project and With Project traffic conditions:

- Duncan Canyon Road, I-15 Northbound Ramps to Lytle Creek Drive (#3) – LOS F
- Duncan Canyon Road, Lytle Creek Drive to Citrus Avenue (#4) – LOS F

It should be noted, the roadway segments identified above are anticipated to improve operations to acceptable LOS with the implementation of the Project design features discussed in Section 1.6 Recommendations.

6.7 OFF-RAMP QUEUING ANALYSIS

Queuing analysis findings for Opening Year Cumulative (2030) are presented in Table 6-3. As shown in Table 6-3, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows under Opening Year Cumulative (2030) Without Project and With Project traffic conditions. Worksheets for Opening Year Cumulative (2030) Without Project and With Project traffic conditions off-ramp queuing analyses are provided Appendices 6.5 and 6.6, respectively.

TABLE 6-3: PEAK HOUR FREEWAY OFF-RAMP QUEUING SUMMARY FOR OPENING YEAR CUMULATIVE (2030) CONDITIONS

Intersection	Movement	Available Stacking Distance (Feet)	2030 Without Project				2030 With Project			
			95th Percentile Queue (Feet)		Acceptable? ¹		95th Percentile Queue (Feet)		Acceptable? ¹	
			AM Peak Hour	PM Peak Hour	AM	PM	AM Peak Hour	PM Peak Hour	AM	PM
I-15 SB Ramps & Duncan Canyon Rd. (#3)	SBL	2,170	191	163	Yes	Yes	249	202	Yes	Yes
	SBL/T	1,370	193	164	Yes	Yes	247	203	Yes	Yes
	SBR	290	39	49	Yes	Yes	39	47	Yes	Yes
I-15 SB Ramps & Beech Av. (#4)	SBL	530	257	261	Yes	Yes	257	261	Yes	Yes
	SBR	2,150	76	42	Yes	Yes	76	42	Yes	Yes
I-15 NB Ramps & Duncan Canyon Rd. (#5)	NBL/T	530	186	384	Yes	Yes	176	384	Yes	Yes
	NBR	3,600	47	125	Yes	Yes	232	382	Yes	Yes
I-15 NB Ramps & Beech Av. (#6)	SBL/R	1,455	247	621 ²	Yes	Yes	275	669 ²	Yes	Yes

¹ Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn
² 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

6.8 DEFICIENCIES AND IMPROVEMENTS

This section provides a summary of deficiencies, based on the City of Fontana’s deficiency criteria discussed in Section 2.7 Deficiency Criteria, and improvements needed to improve operations back to acceptable levels.

6.8.1 IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

The effectiveness of the recommended improvement strategies to address Opening Year Cumulative (2030) traffic deficiencies are presented in Table 6-4. Worksheets for Opening Year Cumulative (2030) Without and With Project conditions, with improvements, HCM calculation worksheets are provided in Appendices 6.7 and 6.8, respectively.

6.8.2 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON ROADWAY SEGMENTS

Where the ADT based roadway segment analysis indicates a deficiency (unacceptable LOS), the more detailed peak hour intersection analysis has also been reviewed. The more detailed peak hour intersection analysis explicitly accounts for factors that affect roadway capacity. While this traffic study recognizes LOS C is the City's target LOS for roadway segments, a review of the more detailed peak hour intersection analysis is necessary to determine whether roadway widening along the segment is necessary. For the purposes of this analysis, if the peak hour intersection operations on either side of the roadway segment are anticipated to operate at an acceptable LOS, then additional roadway segment widening has not been recommended. Therefore, for the purposes of this assessment, roadway segment widening has only been recommended if the peak hour intersection analysis indicates the need for additional through lanes or if the improvement is consistent with the City's General Plan. Additionally, the roadway segments identified above are anticipated to improve operations to acceptable LOS with the implementation of the Project design features discussed in Section 1.6 *Recommendations*.

6.8.3 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON OFF-RAMP QUEUES

As shown previously in Table 6-3, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows for Opening Year Cumulative (2030) traffic conditions. As such, no improvements have been identified.

TABLE 6-4: INTERSECTION ANALYSIS FOR OPENING YEAR CUMULATIVE (2023) CONDITIONS WITH IMPROVEMENTS

#	Intersection	Traffic Control ³	Intersection Approach Lanes ¹												Delay ² (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM
			L	T	R	L	T	R	L	T	R	L	T	R				
7	Beech Av. & Summit Av.																	
	- Without Project	TS	2	2	1	2	2	<u>1</u> >	2	2	0	2	2	1	24.3	26.6	C	C
	- With Project	TS	2	2	1	2	2	<u>1</u> >	2	2	0	2	2	1	27.4	29.6	C	C
14	Citrus Av. & Summit Av.																	
	- Without Project ^{4,5}	TS	<u>2</u>	2	1	1	2	1	1	2	<u>1</u> >	1	2	1	22.9	34.7	C	C
	- With Project ^{4,5}	TS	<u>2</u>	2	1	1	2	1	1	2	<u>1</u> >	1	2	1	23.5	38.9	C	D
15	Citrus Av. & Sierra Lakes Pkwy.																	
	- Without Project ^{4,5}	TS	2	2	<u>1</u> >	2	2	1	2	2	<u>1</u> >	2	2	1	30.9	38.6	C	D
	- With Project ^{4,5}	TS	2	2	<u>1</u> >	2	2	1	2	2	<u>1</u> >	2	2	1	34.3	42.9	C	D
16	Sierra Av. & Riverside Av.																	
	- Without Project	<u>TS</u>	0	2	0	1	2	0	0	0	0	1	0	1	19.2	9.2	B	A
	- With Project	<u>TS</u>	0	2	0	1	2	0	0	0	0	1	0	1	20.1	9.2	C	A
17	Sierra Av. & Casa Grande Av.																	
	- Without Project	<u>TS</u>	<u>1</u>	<u>2</u>	0	0	<u>2</u>	0	0	1	0	0	0	0	11.6	10.8	B	B
	- With Project	<u>TS</u>	<u>1</u>	<u>2</u>	0	0	<u>2</u>	0	0	1	0	0	0	0	12.9	11.4	B	B
18	Sierra Av. & Summit Av.																	
	- Without Project	TS	1	2	0	0	2	1	1	0	<u>1</u> >	0	0	0	19.1	20.9	B	C
	- With Project	TS	1	2	0	0	2	1	1	0	<u>1</u> >	0	0	0	22.7	23.8	C	C
19	Sierra Av. & Sierra Lakes Pkwy.																	
	- Without Project ⁶	TS	2	3	1	2	3	1	2	2	1>	2	2	1	37.7	39.9	D	D
	- With Project ⁶	TS	2	3	1	2	3	1	2	2	1>	2	2	1	38.4	40.6	D	D

¹ When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; > = Right-Turn Overlap Phasing; 1 = Improvement

² Per the Highway Capacity Manual 6th Edition, overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

³ TS = Traffic Signal; TS = Improvement

⁴ Improvement consists of modifying the cycle length to 130-seconds. No other physical improvements are recommended.

⁵ Per the City of Fontana, LOS D is acceptable in urbanized areas of the City where improvements to maintain LOS C are infeasible.

⁶ Improvement consists of restriping the southbound approach to provide a left turn lane and a shared left-right turn lane.

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7 HORIZON YEAR (2040) TRAFFIC CONDITIONS

This section discusses the methods used to develop Horizon Year (2040) Without and With Project traffic forecasts, and the resulting intersection operations, traffic signal warrant, roadway segment, and off-ramp queuing analyses.

7.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for Horizon Year (2040) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Horizon Year conditions only (e.g., intersection and roadway improvements along the Project's frontage and driveways).
- Driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for Horizon Year conditions only (e.g., intersection and roadway improvements along the cumulative development's frontages and driveways).
- The future extension of Duncan Canyon Road to Sierra Avenue is assumed to be completed.
- Other parallel facilities, that although not evaluated for the purposes of this analysis, are anticipated to be in place for Horizon Year traffic conditions and would affect the travel patterns within the study area.

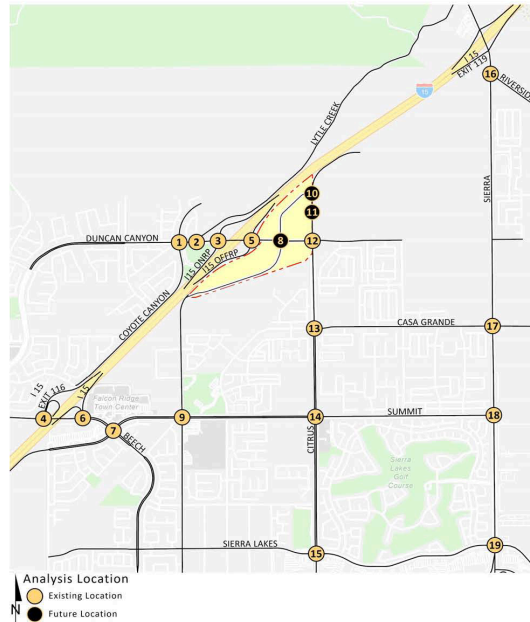
7.2 HORIZON YEAR (2040) WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes the refined post-process volumes obtained from the SBTAM (see Section 4.7 *Horizon Year (2040) Volume Development* of this TA for a detailed discussion on the post-processing methodology). The weekday ADT and weekday AM and PM peak hour volumes which can be expected for Horizon Year (2040) Without Project traffic conditions are shown on Exhibit 7-1.

7.3 HORIZON YEAR (2040) WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes the refined post-process volumes obtained from the SBTAM, plus the traffic generated by the proposed Project (Project Buildout). The weekday ADT and weekday AM and PM peak hour volumes which can be expected for Horizon Year (2040) With Project traffic conditions are shown on Exhibit 7-2.

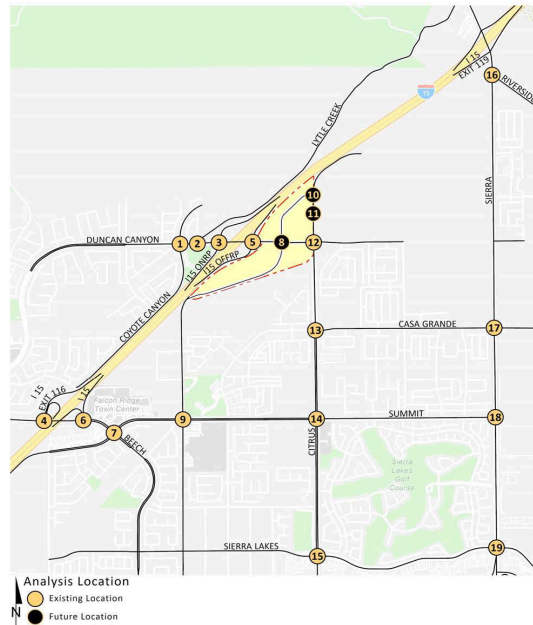
EXHIBIT 7-1: HORIZON YEAR (2040) WITHOUT PROJECT TRAFFIC VOLUMES



1 Coyote Canyon Rd. & Duncan Canyon Rd.	2 W. Lytle Creek Rd. & Duncan Canyon Rd.	3 I-15 SB Ramps & Duncan Canyon Rd.	4 I-15 SB Ramps & Beech Av.	5 I-15 NB Ramps & Duncan Canyon Rd.	
6,550 62(34) ↓ ↓ ↓ 29(63) 515(334) 8(16) 10,000	17,800 ↑ 129(304) ↑ 330(341) 79(163) 6(10) → 6(4) → 190(133) → 4,200	1,450 38(7) 1064(650) → 17,800	17,950 ↑ 3(20) ↑ 501(801) 17,950	3,550 63(95) ↓ ↓ ↓ 427(418) → 637(232) ↓ 17,950	21,650 ↑ 440(727) ↑ 927(636) 8,850
6 I-15 NB Ramps & Beech Av.	7 Beech Av. & Summit Av.	8 Lytle Creek Dr. & Duncan Canyon Rd.	9 Lytle Creek Dr. & Summit Av.	10 Citrus Av. & Lytle Creek Rd.	
24,150 116(185) ↓ ↓ ↓ 89(187) 747(749) → 28,500	42,300 ↑ 225(455) ↑ 1301(1037) 15,250	29,900 71(100) ↓ ↓ ↓ 116(129) 145(334) 26(130) 19,050	26,650 ↑ 705(481) ↑ 298(352) ↑ 100(142) 61(106) → 427(376) → 64(130) → 10,050	25,450 0(58) ↓ ↓ ↓ 1096(1215) 0(164) ↓ 25,450	25,650 0(18) ↓ ↓ ↓ 1479(1027) 11(74) 0(182) ↓ 0(53) ↓ 3(15) ↓ 200
11 Citrus Av. & Driveway 1	12 Citrus Av. & Duncan Canyon Rd.	13 Citrus Av. & Casa Grande Av.	14 Citrus Av. & Summit Av.	15 Citrus Av. & Sierra Lakes Pkwy.	
1,950 0(4) ↓ ↓ ↓ 0(3) 0(8) 1,800	1,950 84(45) ↓ ↓ ↓ 25(75) 257(260) 814(960) 25,650	5,500 ↑ 6(16) ↑ 262(186) 52(20) → 9(58) → 35(21) → 1133(857) → 19,800	15,400 16,550 79(55) ↓ ↓ ↓ 87(53) ↓ 28(40) ↓ 39(14) ↓ 89(49) ↓ 536(503) ↓ 159(341) ↓ 14,700	20,000 162(61) ↓ ↓ ↓ 70(147) ↓ 178(543) ↓ 202(453) ↓ 752(1069) ↓ 263(399) ↓ 114(140) ↓ 28,200	
16 Sierra Av. & Riverside Av.	17 Sierra Av. & Casa Grande Av.	18 Sierra Av. & Summit Av.	19 Sierra Av. & Sierra Lakes Pkwy.		
40,350 44(0) ↓ ↓ ↓ 4(0) 15(0) 1(0) 1,750	28,950 ↑ 708(492) ↑ 108(0) ↑ 127(124) 9(0) → 634(739) → 204(89) → 20,800	6,700 ↑ 38(0) ↑ 24(0) ↑ 179(1) 42(120) → 590(1207) → 157(0) → 29,350	3,850 27,100 146(200) ↓ ↓ ↓ 94(281) ↓ 387(467) ↓ 322(530) ↓ 627(1093) ↓ 35,050	40,400 233(229) ↓ ↓ ↓ 142(312) 195(340) 580(954) 639(871) ↓ 284(311) 224(274) 166(225) 768(1088) ↓ 312(369) ↓ 58,350	

##(##) AM(PM) Peak Hour Intersection Volumes
 ## Average Daily Trips

EXHIBIT 7-2: HORIZON YEAR (2040) WITH PROJECT TRAFFIC VOLUMES



1	2	3	4	5
Coyote Canyon Rd. & Duncan Canyon Rd.	W. Lytle Creek Rd. & Duncan Canyon Rd.	I-15 SB Ramps & Duncan Canyon Rd.	I-15 SB Ramps & Beech Av.	I-15 NB Ramps & Duncan Canyon Rd.
6,550 62(38) 10(2) 360(200) 129(335) 352(374) 88(179) 29(70) 537(396) 8(18)	18,400 1,450 38(9) 3(41) 532(879) 1096(742)	4,350 63(106) 14(0) 417(333) 471(814) 1233(677) 459(461) 637(281)	26,000 15,000 307(96) 248(295) 888(693) 594(657) 320(153) 606(834)	29,400 5,950 360(485) 1540(1079) 128(140) 747(653)
10,450	18,400	18,600	20,650	26,000
6	7	8	9	10
I-15 NB Ramps & Beech Av.	Beech Av. & Summit Av.	Lytle Creek Dr. & Duncan Canyon Rd.	Lytle Creek Dr. & Summit Av.	Citrus Av. & Lytle Creek Rd.
24,700 116(214) 10(2) 482(1161) 225(548) 1366(1136) 89(292) 765(837)	43,950 31,350 71(113) 288(602) 439(840) 770(524) 316(386) 109(156) 116(142) 163(364) 26(143) 61(123) 427(414) 73(145)	28,650 4,850 96(98) 45(29) 114(69) 39(28) 1557(1292) 69(66) 184(184) 7(16) 254(182) 1134(1341) 141(141) 65(53) 7(16)	28,650 8,550 347(185) 113(28) 168(136) 173(153) 860(1092) 56(66) 153(39) 336(67) 281(206) 411(1389) 57(53) 66(60) 153(39) 336(67)	34,800 2,500 173(153) 860(1092) 56(66) 153(39) 336(67) 18(11) 5(3)
29,400	15,600	33,150	35,850	400
11	12	13	14	15
Citrus Av. & Driveway 1	Citrus Av. & Duncan Canyon Rd.	Citrus Av. & Casa Grande Av.	Citrus Av. & Summit Av.	Citrus Av. & Sierra Lakes Pkwy.
2,650 5(4) 203(107) 5(3) 14(8)	2,800 84(50) 95(42) 42(26) 25(83) 314(296) 914(1037) 15(11) 69(150) 1243(950) 24(40) 48(47)	7,400 2,800 35(39) 332(384) 52(22) 35(39) 332(384) 52(22) 87(69) 28(43) 39(15) 89(54) 634(1313) 159(375) 137(78) 48(41) 344(259)	15,900 21,450 162(69) 520(375) 196(114) 152(155) 327(505) 171(178) 70(162) 212(623) 245(494) 821(1162) 302(682) 114(154) 152(155) 327(505) 171(178)	19,050 34,600 89(99) 824(596) 132(254) 111(292) 222(416) 665(835) 81(123) 280(435) 440(446) 906(1075) 500(858) 806(1011) 111(292) 222(416) 665(835)
300	2,600	28,700	27,450	24,500
16	17	18	19	
Sierra Av. & Riverside Av.	Sierra Av. & Casa Grande Av.	Sierra Av. & Summit Av.	Sierra Av. & Sierra Lakes Pkwy.	
40,850 44(14) 763(839) 1021(999) 708(1081) 108(53) 154(280) 4(29) 15(104) 1(7)	29,450 29,100 43(113) 1261(916) 69(64) 102(75) 16(44) 122(80) 42(132) 38(92) 24(18) 179(161) 157(143) 590(1328) 157(143)	6,700 27,100 146(220) 1242(798) 94(310) 449(508) 385(572) 627(1143)	3,850 41,450 242(251) 1348(985) 353(322) 311(337) 224(301) 166(248) 151(342) 195(374) 580(1049) 639(958) 786(1193) 312(286)	23,000 58,700 639(958) 786(1193) 312(286)
1,750	21,850	19,650	40,800	58,700

##(##) AM(PM) Peak Hour Intersection Volumes
Average Daily Trips

7.4 INTERSECTION OPERATIONS ANALYSIS

7.4.1 HORIZON YEAR (2040) WITHOUT PROJECT TRAFFIC CONDITIONS

LOS calculations were conducted for the study intersections to evaluate their operations under Horizon Year (2040) Without Project conditions with roadway and intersection geometrics consistent with Section 7.1 *Roadway Improvements*. As shown on Table 7-1, the following study area intersections are anticipated to operate at an unacceptable LOS under Horizon Year (2040) Without Project traffic conditions:

- Coyote Canyon Road & Duncan Canyon Road (#1) – LOS E AM and PM peak hours
- Beech Avenue & Summit Avenue (#7) – LOS D AM and PM peak hours
- Citrus Avenue & Duncan Canyon Road (#12) – LOS F AM and PM peak hours
- Citrus Avenue & Summit Avenue (#14) – LOS F AM and PM peak hours
- Citrus Avenue & Sierra Lakes Parkway (#15) – LOS F AM and PM peak hours
- Sierra Avenue & Riverside Avenue (#16) – LOS F AM and PM peak hours
- Sierra Avenue & Casa Grande Avenue (#17) – LOS F AM and PM peak hours
- Sierra Avenue & Summit Avenue (#18) – LOS F AM peak hour only
- Sierra Avenue & Sierra Lakes Parkway (#19) – LOS E AM peak hour; LOS F PM peak hour

The intersection operations analysis worksheets for Opening Year Cumulative Without Project traffic conditions are included in Appendix 7.1 of this TA.

7.4.2 HORIZON YEAR (2040) WITH PROJECT TRAFFIC CONDITIONS

As shown on Table 7-1, there are no additional study area intersections anticipated to operate at a deficient LOS during one or both peak hours for Horizon Year (2040) With Project traffic conditions, in addition to the locations identified above for Horizon Year (2040) Without Project traffic conditions. The intersection operations analysis worksheets for Horizon Year (2040) With Project traffic conditions are included in Appendix 7.2 of this TA.

7.5 TRAFFIC SIGNAL WARRANTS ANALYSIS

Traffic signal warrants have been performed (based on CA MUTCD) for Horizon Year (2040) traffic conditions based on peak hour intersection turning movements volumes or planning level (ADT) volumes. There are no additional unsignalized study area intersections anticipated to meet a traffic signal warrant under Horizon Year (2040) Without Project or With Project traffic conditions, in addition to the intersections identified previously under Existing (2021) and Opening Year Cumulative (2023) traffic conditions (see Appendices 7.3 and 7.4).

TABLE 7-1: INTERSECTION ANALYSIS FOR HORIZON YEAR (2040) CONDITIONS

#	Intersection	Traffic Control ²	2040 Without Project				2040 With Project				Difference in Delay	
			Delay ¹ (secs.)		Level of Service		Delay ¹ (secs.)		Level of Service		AM	PM
			AM	PM	AM	PM	AM	PM	AM	PM		
1	Coyote Canyon Rd. & Duncan Canyon Rd.	AWS	46.0	46.4	E	E	51.8	51.6	F	F	5.8	5.2
2	W. Lytle Creek Rd. & Duncan Canyon Rd.	CSS	9.2	11.9	A	B	9.3	12.0	A	B	0.1	0.1
3	I-15 SB Ramps & Duncan Canyon Rd.	TS	50.0	21.3	D	C	51.7	21.8	D	C	1.7	0.5
4	I-15 SB Ramps & Beech Av.	TS	43.9	14.5	D	B	46.7	14.8	D	B	2.8	0.3
5	I-15 NB Ramps & Duncan Canyon Rd.	TS	21.8	30.5	C	C	25.7	32.5	C	C	3.9	2.0
6	I-15 NB Ramps & Beech Av.	TS	20.4	44.6	C	D	24.0	49.1	C	D	3.6	4.5
7	Beech Av. & Summit Av.	TS	38.7	41.1	D	D	49.9	55.7	D	E	11.2	14.6
8	Lytle Creek Dr. & Duncan Canyon Rd.	<u>TS</u>	Future Intersection				21.7	18.8	C	B	--	--
9	Lytle Creek Dr. & Summit Av.	TS	17.9	15.8	B	B	25.5	21.8	C	C	7.6	6.0
10	Citrus Av. & Lytle Creek Rd.	<u>CSS</u>	Future Intersection				10.5	9.9	B	A	--	--
11	Citrus Av. & Driveway 1	<u>TS</u>	Future Intersection				9.2	3.3	A	A	--	--
12	Citrus Av. & Duncan Canyon Rd.	AWS/ <u>TS</u> ³	>100.0	>100.0	F	F	28.2	22.8	C	C	--	--
13	Citrus Av. & Casa Grande Av.	TS	29.7	34.0	C	C	32.1	34.7	C	C	2.4	0.7
14	Citrus Av. & Summit Av.	TS	167.8	>200.0	F	F	>200.0	>200.0	F	F	>1.0	>1.0
15	Citrus Av. & Sierra Lakes Pkwy.	TS	>200.0	>200.0	F	F	>200.0	>200.0	F	F	>1.0	>1.0
16	Sierra Av. & Riverside Av.	AWS	>100.0	>100.0	F	F	>100.0	>100.0	F	F	>1.0	>1.0
17	Sierra Av. & Casa Grande Av.	CSS	>100.0	>100.0	F	F	>100.0	>100.0	F	F	>1.0	>1.0
18	Sierra Av. & Summit Av.	TS	87.0	33.6	F	C	108.2	45.2	F	D	21.2	11.6
19	Sierra Av. & Sierra Lakes Pkwy.	TS	69.5	147.0	E	F	71.5	148.1	E	F	2.0	1.1

¹ **BOLD** = Level of Service (LOS) does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).
² Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single stop control).
³ CSS = Cross-street Stop; AWS = All-Way Stop; TS = Traffic Signal; TS = Improvement

7.6 ROADWAY SEGMENT CAPACITY ANALYSIS

The City of Fontana General Plan provides roadway volume capacity values and are approximate figures only and are used at the General Plan level to assist in determining the roadway functional classification (number of through lanes) needed to meet traffic demand. Table 7-2 provides a summary of the Opening Year Cumulative (2030) conditions roadway segment capacity analysis.

As shown in Table 7-2, the following study area roadway segments are anticipated to operate at an unacceptable LOS based on the City’s planning level daily roadway capacity thresholds for Horizon Year (2040) Without Project and With Project traffic conditions:

- Duncan Canyon Road, I-15 Northbound Ramps to Lytle Creek Drive (#3) – LOS F
- Duncan Canyon Road, Lytle Creek Drive to Citrus Avenue (#4) – LOS F

It should be noted, the roadway segments identified above are anticipated to improve operations to acceptable LOS with the implementation of the Project design features discussed in Section 1.6 Recommendations.

TABLE 7-2: ROADWAY SEGMENT CAPACITY ANALYSIS FOR HORIZON YEAR (2040) CONDITIONS

#	Roadway	Segment Limits	Roadway Section ⁴	LOS Capacity ^{1,5}	2040 Without Project	V/C ²	LOS ³	2040 With Project	V/C ²	LOS ³
1	Lytle Creek	North of Duncan Canyon Rd.	2U	18,000	Future Roadway Segment	----	----	5,693	0.32	A
2		South of Duncan Canyon Rd.	2U	18,000		4,825	0.27	A		
3	Duncan Canyon	I-15 NB Ramps to Lytle Creek Dr.	2U/ 6D	18,000/ 54,000	25,449	1.41	F	33,134	0.61	B
4		Lytle Creek Dr. to Citrus Av.	2U/ 6D	18,000/ 54,000						

BOLD = LOS does not meet the applicable jurisdictional requirements (i.e., unacceptable LOS).

¹ These maximum roadway capacities assume 9,000 vehicles per lane per day for arterials.

² V/C = Volume to Capacity Ratio

³ LOS = Level of Service

⁴ **6U** = Improvement

⁵ **54,000** = Improvement

7.7 OFF-RAMP QUEUING ANALYSIS

Queuing analysis findings for Horizon Year (2040) are presented in Table 7-3. As shown in Table 7-3, the southbound left turn movement at the intersection of I-15 Northbound Ramps & Beech Avenue is anticipated to experience queuing issues during the PM peak hour under Horizon Year (2040) Without and With Project traffic conditions. Worksheets for Opening Year Cumulative (2030) Without Project and With Project traffic conditions off-ramp queuing analyses are provided Appendices 7.5 and 7.6, respectively.

TABLE 7-3: PEAK HOUR FREEWAY OFF-RAMP QUEUING SUMMARY FOR HORIZON YEAR (2040) CONDITIONS

Intersection	Movement	Available Stacking Distance (Feet)	2040 Without Project				2040 With Project			
			95th Percentile Queue (Feet)		Acceptable? ¹		95th Percentile Queue (Feet)		Acceptable? ¹	
			AM Peak Hour	PM Peak Hour	AM	PM	AM Peak Hour	PM Peak Hour	AM	PM
I-15 SB Ramps & Duncan Canyon Rd. (#3)	SBL	2,170	229	174	Yes	Yes	320 ²	211	Yes	Yes
	SBL/T	1,370	230	174	Yes	Yes	312 ²	211	Yes	Yes
	SBR	290	41	50	Yes	Yes	41	48	Yes	Yes
I-15 SB Ramps & Beech Av. (#4)	SBL	530	309 ²	324	Yes	Yes	309 ²	324	Yes	Yes
	SBR	2,150	80	43	Yes	Yes	80	43	Yes	Yes
I-15 NB Ramps & Duncan Canyon Rd. (#5)	NBL/T	530	198	456	Yes	Yes	192	456	Yes	Yes
	NBR	3,600	47	201	Yes	Yes	334 ²	494 ²	Yes	Yes
I-15 NB Ramps & Beech Av. (#6)	SBL	1,455	278	763 ²	Yes	Yes	271	764 ²	Yes	Yes

¹ Stacking Distance is acceptable if the required stacking distance is less than or equal to the stacking distance provided. An additional 15 feet of stacking which is assumed to be provided in the transition for turn pockets is reflected in the stacking distance shown on this table, where applicable.

² 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

7.8 DEFICIENCIES AND IMPROVEMENTS

This section provides a summary of deficiencies, based on the City of Fontana’s deficiency criteria discussed in Section 2.7 *Deficiency Criteria*, and improvements needed to improve operations back to acceptable levels.

7.8.1 IMPROVEMENTS TO ADDRESS DEFICIENCIES AT INTERSECTIONS

The effectiveness of the recommended improvement strategies to address Horizon Year (2040) traffic deficiencies are presented in Table 7-4. Worksheets for Horizon Year (2040) Without and With Project conditions, with improvements, HCM calculation worksheets are provided in Appendices 7.7 and 7.8, respectively.

TABLE 7-4: INTERSECTION ANALYSIS FOR HORIZON YEAR (2040) CONDITIONS WITH IMPROVEMENTS

#	Intersection	Traffic Control ³	Intersection Approach Lanes ¹												Delay ² (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound			AM	PM	AM	PM
			L	T	R	L	T	R	L	T	R	L	T	R				
1	Coyote Canyon Rd. & Duncan Canyon Rd.																	
	- Without Project	TS	1	1	1	1	1	1	1	2	0	1	2	0	24.9	23.9	C	C
	- With Project	TS	1	1	1	1	1	1	1	2	0	1	2	0	25.4	24.2	C	C
7	Beech Av. & Summit Av.																	
	- Without Project	TS	2	2	1	2	2	1>	2	2	0	2	2	1	28.1	30.5	C	C
	- With Project	TS	2	2	1	2	2	1>	2	2	0	2	2	1	32.1	34.9	C	C
14	Citrus Av. & Summit Av.																	
	- Without Project ^{4,5}	TS	2	2	1	1	2	1	1	2	1>	1	2	1	27.5	47.0	C	D
	- With Project ^{4,5}	TS	2	2	1	1	2	1	1	2	1>	1	2	1	29.5	54.9	C	D
15	Citrus Av. & Sierra Lakes Pkwy.																	
	- Without Project ^{4,5}	TS	2	2	1>	2	2	1	2	2	1>	2	2	1	47.4	49.8	D	D
	- With Project ^{4,5}	TS	2	2	1>	2	2	1	2	2	1>	2	2	1	53.9	54.9	D	D
16	Sierra Av. & Riverside Av.																	
	- Without Project	TS	0	2	0	1	2	0	0	0	0	1	0	1	30.2	32.2	C	C
	- With Project	TS	0	2	0	1	2	0	0	0	0	1	0	1	32.2	34.4	C	C
17	Sierra Av. & Casa Grande Av.																	
	- Without Project	TS	1	2	0	0	2	0	0	1	0	0	0	0	12.3	11.2	B	B
	- With Project	TS	1	2	0	0	2	0	0	1	0	0	0	0	12.3	11.2	B	B
18	Sierra Av. & Summit Av.																	
	- Without Project	TS	1	2	0	0	2	1	1	0	1>	0	0	0	22.7	25.9	C	C
	- With Project	TS	1	2	0	0	2	1	1	0	1>	0	0	0	32.4	29.5	C	C
19	Sierra Av. & Sierra Lakes Pkwy.																	
	- Without Project ⁶	TS	2	3	1	2	3	1	2	2	1>	2	2	1	47.5	53.8	D	D
	- With Project ⁶	TS	2	3	1	2	3	1	2	2	1>	2	2	1	48.4	54.4	D	D

¹ When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; > = Right-Turn Overlap Phasing; 1 = Improvement

² Per the Highway Capacity Manual 6th Edition, overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

³ TS = Traffic Signal; **TS** = Improvement

⁴ Improvement consists of modifying the cycle length to 130-seconds. No other physical improvements are recommended.

⁵ Per the City of Fontana, LOS D is acceptable in urbanized areas of the City where improvements to maintain LOS C are infeasible.

⁶ Improvement consists of restriping the southbound approach to provide a left turn lane and a shared left-right turn lane.

7.8.2 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON ROADWAY SEGMENTS

Where the ADT based roadway segment analysis indicates a deficiency (unacceptable LOS), the more detailed peak hour intersection analysis has also been reviewed. The more detailed peak hour intersection analysis explicitly accounts for factors that affect roadway capacity. While this traffic study recognizes LOS C is the City’s target LOS for roadway segments, a review of the more detailed peak hour intersection analysis is necessary to determine whether roadway widening along the segment is necessary. For the purposes of this analysis, if the peak hour intersection operations on either side of the roadway segment are anticipated to operate at an acceptable LOS, then additional roadway segment widening has not been recommended. Therefore, for the purposes of this assessment, roadway segment widening has only been recommended if the peak hour intersection analysis indicates the need for additional through lanes or if the improvement is consistent with the City’s General Plan. Additionally, the roadway segments identified above are anticipated to improve operations to acceptable LOS with the implementation of the Project design features discussed in Section 1.6 *Recommendations*.

7.8.3 IMPROVEMENTS TO ADDRESS DEFICIENCIES ON OFF-RAMP QUEUES

As shown previously in Table 7-3, there are no movements that are anticipated to experience queuing issues during the weekday AM or weekday PM peak 95th percentile traffic flows for Horizon Year (2040) traffic conditions. As such, no improvements have been identified.

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8 LOCAL AND REGIONAL FUNDING MECHANISMS

Transportation improvements within the City of Fontana are funded through a combination of direct project mitigation, development impact fee programs or fair share contributions, such as the City of Fontana DIF program. Identification and timing of needed improvements is generally determined through local jurisdictions based upon a variety of factors.

8.1 MEASURE “I” FUNDS

In 2004, the voters of San Bernardino County approved the 30-year extension of Measure “I”, a one-half of one percent sales tax on retail transactions, through the year 2040, for transportation projects including, but not limited to, infrastructure improvements, commuter rail, public transit, and other identified improvements. The Measure “I” extension requires that a regional traffic impact fee be created to ensure development is paying its fair share. A regional Nexus study was prepared by SBCTA and concluded that each jurisdiction should include a regional fee component in their local programs in order to meet the Measure “I” requirement. The regional component assigns specific facilities and cost sharing formulas to each jurisdiction and was most recently updated in May 2018. Revenues collected through these programs are used in tandem with Measure “I” funds to deliver projects identified in the Nexus Study.

While Measure “I” is a self-executing sales tax administered by SBCTA, it bears discussion here because the funds raised through Measure “I” have funded in the past and will continue to fund new transportation facilities in San Bernardino County, including within the City of Fontana.

8.2 CITY OF FONTANA DEVELOPMENT IMPACT FEE (DIF)

The City of Fontana adopted the latest update to their DIF program in September 2019. Fees from new residential, commercial and industrial development are collected to fund Measure “I” compliant regional facilities as well as local facilities. Under the City’s DIF program, the City may grant to developers a credit against specific components of fees when those developers construct certain facilities and landscaped medians identified in the list of improvements funded by the DIF program.

After the City’s DIF fees are collected, they are placed in a separate restricted use account pursuant to the requirements of Government Code sections 66000 *et seq.* The timing to use the DIF fees is established through periodic capital improvement programs which are overseen by the City’s Engineering Department. Periodic traffic counts, review of traffic accidents, and a review of traffic trends throughout the City are also periodically performed by City staff and consultants. The City uses this data to determine the timing of the improvements listed in its facilities list. The City also uses this data to ensure that the improvements listed on the facilities list are constructed before the LOS falls below the LOS performance standards adopted by the City. In this way, the improvements are constructed before the LOS falls below the City’s LOS performance thresholds. The City’s DIF program establishes a timeline to fund, design, and build the improvements.

8.3 FAIR SHARE CONTRIBUTION

Project improvements may include a combination of fee payments to established programs, construction of specific improvements, payment of a fair share contribution toward future improvements or a combination of these approaches. Improvements constructed by development may be eligible for a fee credit or reimbursement through the program where appropriate (to be determined at the City's discretion). When off-site improvements are identified with a minor share of responsibility assigned to proposed development, the approving jurisdiction may elect to collect a fair share contribution or require the development to construct improvements. Detailed fair share calculations, for each peak hour, have been provided in Table 8-1 for the applicable deficient study area intersection and for each applicable phase. These fees are collected with the proceeds solely used as part of a funding mechanism aimed at ensuring that regional highways and arterial expansions keep pace with the projected population increases.

TABLE 8-1: PROJECT FAIR SHARE CALCULATIONS

#	Intersection	Existing	Project	2040 With Project	Total New Traffic	Project % of New Traffic ¹	
1	Coyote Canyon Rd. & Duncan Canyon Rd.	AM:	990	62	1,785	795	7.8%
		PM:	851	52	1,772	921	5.6%
6	I-15 NB Ramps & Beech Av.	AM:	2,006	129	3,043	1,037	12.4%
		PM:	2,730	122	4,188	1,458	8.4%
7	Beech Av. & Summit Av.	AM:	1,643	183	2,859	1,216	15.0%
		PM:	2,524	166	3,951	1,427	11.6%
12	Citrus Av. & Duncan Canyon Rd.	AM:	1,306	452	3,208	1,902	23.8%
		PM:	848	344	3,014	2,166	15.9%
14	Citrus Av. & Summit Av.	AM:	1,370	339	3,293	1,923	17.6%
		PM:	2,247	277	4,693	2,446	11.3%
15	Citrus Av. & Sierra Lakes Pkwy.	AM:	3,212	189	5,057	1,845	10.2%
		PM:	4,221	154	6,440	2,219	6.9%
16	Sierra Av. & Riverside Av.	AM:	1,739	108	3,718	1,979	5.5%
		PM:	1,875	88	4,448	2,573	3.4%
17	Sierra Av. & Casa Grande Av. ¹	AM:	1,351	107	2,100	749	14.3%
		PM:	1,579	92	2,498	919	10.0%
18	Sierra Av. & Summit Av.	AM:	1,885	125	2,943	1,058	11.8%
		PM:	2,297	103	3,552	1,255	8.2%
19	Sierra Av. & Sierra Lakes Pkwy.	AM:	3,744	108	5,287	1,543	7.0%
		PM:	4,812	88	6,657	1,845	4.8%

BOLD = Highest fair share percentage is highlighted.

¹ Project is not anticipated to contribute trips to this intersection under Horizon Year (2040) traffic conditions. As such, traffic volumes are utilized from Opening Year Cumulative (2030)

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9 VEHICLE MILES TRAVELED

Changes to California Environmental Quality Act (CEQA) Guidelines were adopted in December 2018, which require all lead agencies to adopt VMT as a replacement for automobile delay-based LOS as the measure for identifying transportation impacts for land use projects. This statewide mandate went into effect July 1, 2020. To aid in this transition, the Governor’s Office of Planning and Research (OPR) released a Technical Advisory on Evaluating Transportation Impacts in CEQA (December of 2018) (**Technical Advisory**). (7) Based on OPR’s Technical Advisory, the SBCTA prepared the SBCTA Countywide SB 743 VMT Implementation Study (February 2020) to assist its member agencies with implementation tools necessary to adopt analysis methodology, impact thresholds and mitigation approaches for VMT. Included in this work effort, SBCTA in February 2020 also released to each of its member agencies Recommended Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment (**SBCTA Guidelines**) (8), which provides a template of specific procedures for complying with the new CEQA requirements for VMT analysis. (8) Based on the SBCTA Guidelines, the City’s Traffic Study Guidelines (1), which documents the City’s VMT analysis methodology and approved impact thresholds. The VMT screening evaluation presented in this report has been developed based on the adopted City Guidelines.

9.1 PROJECT SCREENING

The City Guidelines describe specific “screening thresholds” that can be used to identify when a proposed land use project is anticipated to result in a less than significant impact without conducting a more detailed project level VMT analysis. Screening thresholds are described in the following four steps:

- Step 1: Transit Priority Area (TPA) Screening
- Step 2: Low VMT Area Screening
- Step 3: Low Project Type Screening
- Step 4: Project net daily trips less than 500 ADT

Consistent with City Guidelines a land use project needs only to satisfy one of the above screening thresholds to result in a less than significant impact.

For the purposes of this analysis, the initial VMT screening process has been conducted with the SBCTA VMT Screening Tool (**Screening Tool**), which uses screening criteria consistent with the screening thresholds recommended in the Technical Advisory and City Guidelines.

9.1.1 STEP 1: TPA SCREENING

Consistent with guidance identified in the City Guidelines, projects located within a TPA (i.e., within ½ mile of an existing “major transit stop”¹ or an existing stop along a “high-quality transit

¹ Pub. Resources Code, § 21064.3 (“Major transit stop” means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute

corridor”²) may be presumed to have a less than significant impact absent substantial evidence to the contrary. However, the presumption may not be appropriate if a project:

- Has a Floor Area Ratio (FAR) of less than 0.75;
- Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking);
- Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization); or
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

Based on the Screening Tool results presented in Attachment A, the Project site is not located within ½ mile of an existing major transit stop, or along a high-quality transit corridor.

TPA screening criteria is not met.

9.1.2 STEP 2: LOW VMT AREA SCREENING

As noted in the City Guidelines, “Residential and office projects located within a low VMT-generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary. In addition, other employment-related and mixed-use land use projects may qualify for the use of screening if the project can reasonably be expected to generate VMT per resident, per worker, or per service population that is similar to the existing land uses in the low VMT area.”³ The Screening Tool uses the sub-regional SBTAM to measure VMT performance within San Bernardino County for individual traffic analysis zones (TAZ’s) within each city. The Project’s physical location based on APN is input into the Screening Tool to determine the VMT generated within the respective TAZ as compared to the jurisdictional average inclusive of a particular threshold (e.g., 15% below baseline County of San Bernardino VMT per service population). The results are displayed in Attachment A, which indicates that the Project is not located within a low VMT area.

Low VMT Area screening criteria is not met.

9.1.3 STEP 3: LOW PROJECT TYPE SCREENING

The City Guidelines identify that local serving retail with buildings less than 50,000 square feet or other local serving essential services (e.g., day care centers, public schools, medical/dental office buildings, etc.) are presumed to have a less than significant impact absent substantial evidence to the contrary. The proposed Project is not considered a local serving use based on the examples provided in the City Guidelines.⁴

periods.”).

² Pub. Resources Code, § 21155 (“For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.”).

³ City Guidelines; Page 12.

⁴ City Guidelines; Page 13.

Low Project Type screening criteria is not met.

9.1.4 STEP 4: PROJECT NET DAILY TRIPS LESS THAN 500 ADT SCREENING

Projects that generate fewer than 500 ADT (stated in actual vehicles) are deemed to not cause a substantial increase in the total citywide or regional VMT and are therefore presumed to have a less than significant impact on VMT. Substantial evidence in support this daily trip threshold is documented in the City Guidelines.⁵ Trip generation rates and a summary of daily vehicle trips for the Project are presented in Attachment B of this memorandum. The trip generation rates used for this analysis are based on the trip generation statistics published in the ITE Trip Generation Manual (10th Edition, 2017). (10)

The Project will generate an ADT which would exceed the City's screening threshold of 500 ADT. (see Attachment B).

Project net daily trips less than 500 ADT screening criteria is not met.

As none of the aforementioned VMT screening criteria are met a project-level VMT analysis has been prepared.

9.2 VMT METHODOLOGY

As described in the City Guidelines, "VMT analysis and forecasting through the SBTAM model to determine if they have a significant VMT impact." The analysis presented in this report has utilized the most current version of the SBTAM travel forecasting model and the City's adopted VMT calculation methodology of VMT per service population.

9.3 VMT ANALYSIS

SBTAM is a useful tool to estimate VMT as it considers interaction between different land uses based on socio-economic data such as population, households, and employment. As the SBTAM model is based on socio-economic data, the first step in preparing the analysis is to convert Project land use information (e.g., building square footage, dwelling units) into socio-economic data inputs (e.g., employment, population) that can be used to represent the Project within SBTAM. Because specific tenants have not been identified for the Project, this analysis estimates employment based on future building tenants utilizing standard employment factors consistent with the Southern California Association of Governments Employment Density Report (October 2001)⁶ to estimate employment for the commercial land use. This analysis estimates population based on future households utilizing standard housing density factors consistent with the City's adopted General Plan to estimate population⁷. Table 9-1 summarizes the conversion of building square footage (SF) to employment and dwelling units (DU) to population estimates for the proposed Project. Population and employee estimates were then added resulting in the Project's service population.

⁵ City Guidelines; Appendix B.

⁶ SCAG Employment Density Report; Page 4, Table II-B

⁷ City of Fontana General Plan; Page 35

TABLE 9-1: SOCIO-ECONOMIC DATA ESTIMATES

	Units	Density Factor	SED
Residential	1,671 DU	4.07 Person/DU	6,801 Population
Commercial	476,500 SF	1,009 Employees/SF	473 Employees
		Total	7,274 Service Population

Adjustments to employment and population within the Project's TAZ were made to both the SBTAM baseline and cumulative models. Each model was then run with the updated employment factors and population factors included for the Project TAZ.

Consistent with City Guidelines, Project generated VMT includes all vehicle trips that are traced to the project zone or zones. This includes internal to internal (II), internal to external (IX) and external to internal (XI) trips. Project generated VMT is extracted from the SBTAM model using the origin-destination (OD) trip matrix and that matrix is then multiplied by the final assignment (distance) skims. Project VMT was then normalized by dividing by the Project's service population (i.e., population plus employment). This calculation changes the raw VMT value into an efficiency metric for ease of comparison. As shown in Table 9-2, the Project's Baseline VMT per service population is 27.03 and Cumulative VMT per service population is 23.50.

TABLE 9-2: PROJECT VMT PER SERVICE POPULATION

	Baseline	Cumulative
Service Population	7,274	7,274
Total VMT	196,612	170,966
Total VMT per Service Population	27.03	23.50

9.3.1 IMPACT ASSESSMENT

As noted in the City Guidelines, the project would result in a significant project-generated VMT impact if either of the following conditions are satisfied:

1. The baseline project-generated VMT per service population exceeds 15% below the baseline County of San Bernardino VMT per service population, or
2. The cumulative project-generated VMT per service population exceeds 15% below the baseline County of San Bernardino VMT per service population.

Table 9-3 illustrates the comparison between Project Baseline and Cumulative VMT per service population to the City's adopted impact threshold. As shown, the Project would not exceed the City's adopted impact threshold of 15% below the baseline County of San Bernardino VMT per service population in both the Baseline and Cumulative scenarios. As such, the Project's VMT impact is less than significant.

TABLE 9-3: PROJECT VMT PER SERVICE POPULATION COMPARISON

	Baseline	Cumulative
Regional Threshold	32.7	32.7
Project	27.03	23.50
Difference	-5.63	-9.15
Percent Change	-17.24%	-28.03%
Potentially Significant?	No	No

9.3.2 CUMULATIVE ASSESSMENT

Consistent with City Guidelines, an additional assessment to evaluate the Project's effect on VMT is required since the Project proposes to amend the City's General Plan land use (i.e., the Project is not consistent with the RTP/SCS). Per City Guidelines, the analysis is performed using the boundary method, which includes all vehicle trips with one or both trip-ends within a specific geographic area of interest (i.e., the City of Fontana). Once the areawide VMT value is calculated, it is then normalized by dividing by the City's service population. As shown on Table 9-4 (see below), there is a net decrease of 0.30 VMT per service population within the City for baseline conditions and a net decrease of 0.22 VMT per service population within the City for cumulative conditions, which would indicate that the proposed Project does not have a negative effect on VMT under baseline and cumulative conditions.

TABLE 9-4: CUMULATIVE EFFECT ON VMT

	Baseline Without Project	Baseline With Project	Cumulative Without Project	Cumulative With Project
Population	216,148	222,949	283,806	289,887
Employment	53,650	54,123	68,753	69,226
Service Population	269,798	277,072	352,559	359,113
VMT	3,456,519	3,467,168	4,643,981	4,649,759
VMT/Service Population	12.81	12.51	13.17	12.95
Change in VMT		-0.30		-0.22
Potentially Significant?		No		No

9.4 CONCLUSION

In summary, the Project's VMT per service population does not exceed the City's adopted threshold of 15% below County of San Bernardino baseline VMT per service population in both Baseline and Cumulative scenarios. Additionally, the cumulative assessment was not found to increase under the plus project condition compared to the no project condition in both Baseline and Cumulative scenarios. The Project VMT impact is therefore considered less than significant.

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10 REFERENCES

1. **City of Fontana Public Works Department.** *Traffic Impact Analysis (TIA) Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment.* Fontana : s.n., October 21, 2020.
2. **Institute of Transportation Engineers.** *Trip Generation Manual.* 10th Edition. 2017.
3. **Riverside County Transportation Commission.** *2011 Riverside County Congestion Management Program.* County of Riverside : RCTC, December 14, 2011.
4. **Transportation Research Board.** *Highway Capacity Manual (HCM).* 6th Edition. s.l. : National Academy of Sciences, 2016.
5. **California Department of Transportation.** *Guide for the Preparation of Traffic Impact Studies.* December 2002.
6. —. *California Manual on Uniform Traffic Control Devices (MUTCD).* [book auth.] California Department of Transportation. *California Manual on Uniform Traffic Control Devices (CAMUTCD).* 2017.
7. **Office of Planning and Research.** *Technical Advisory on Evaluating Transportation Impacts in CEQA.* State of California : s.n., December 2018.
8. **San Bernardino County Transportation Authority (SBCTA).** *Recommended Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment.* February 2020.
9. **Institute of Transportation Engineers.** *Trip Generation Manual.* 10th Edition. 2017.

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APPENDIX 1.1:

APPROVED TRAFFIC STUDY SCOPING AGREEMENT

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Exhibit B

SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY

This letter acknowledges the City of Fontana Engineering Department requirements for traffic impact analysis of the following project. The analysis must follow the City of Fontana Department of Engineering Draft Traffic Impact Analysis (TIA) Guidelines Updated October 2019.

Case No. _____
Related Cases - _____
SP No. _____
EIR No. _____
GPA No. _____
CZ No. _____
Project Name: _____
Project Address: _____
Project Description: _____

Consultant Developer
Name: _____
Address: _____
Telephone: _____
Fax: _____

A. Trip Generation Source: _____

Current GP Land Use				Proposed Land Use			
Current Zoning	_____			Proposed Zoning	_____		
Current Trip Generation				Proposed Trip Generation			
	In	Out	Total	In	Out	Total	
AM Trips	_____	_____	_____	_____	_____	_____	_____
PM Trips	_____	_____	_____	_____	_____	_____	_____
Internal Trip Allowance	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	(_____ % Trip Discount)		
Pass-By Trip Allowance	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	(_____ % Trip Discount)		

A pass-by trip discount is allowed for appropriate land uses per ITE trip generation handbook 3rd edition. The pass-by trips at adjacent study area intersections and project driveways shall be indicated on a report figure. (Attach table for detailed trip generation)

B. Trip Geographic Distribution: N % S % E % W %
(attach exhibit for detailed assignment) See attached distribution exhibits (Phase 1 plus Project Buildout)

C. Background Traffic

Project Opening & Future Build-Out Year: _____ Annual Ambient Growth Rate: _____%

Phase Year(s) _____
Other area projects to be analyzed: _____

Model/Forecast methodology _____

Exhibit B – Scoping Agreement – Page 2

D. Study intersections: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)

- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |

E. Study Roadway Segments: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)

- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |

E. Other Jurisdictional Impacts

Is this project within a City’s Sphere of Influence or one-mile radius of City boundaries? Yes No

If so, name of City Jurisdiction: _____

F. Site Plan (please attach reduced copy)

G. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (To be filled out by Engineering Department)

(NOTE: If the traffic study states that “a traffic signal is warranted” (or “a traffic signal appears to be warranted,” or similar statement) at an existing unsignalized intersection under existing conditions, 8-hour approach traffic volume information must be submitted in addition to the peak hourly turning movement counts for that intersection.)

H. Existing Conditions

Traffic count data must be new or recent. Provide traffic count dates if using other than new counts.
Date of counts _____

Recommended by:

Charlene S

Consultant’s Representative Date

Approved Scoping Agreement:

Mahmoud Khodr

City of Fontana Traffic Engineer Date

Scoping Agreement Submitted on _____

Revised on _____

March 9, 2021

Mr. Mahmoud Khodr
City of Fontana
8353 Sierra Avenue
Fontana, CA 92335

SUBJECT: SCOPING AGREEMENT FOR THE VENTANA SPECIFIC PLAN AMENDMENT TRAFFIC ANALYSIS

Dear Mr. Mahmoud Khodr:

The firm of Urban Crossroads, Inc. is pleased to submit this letter documenting the recommended Scope of Work for the traffic analysis in support of the proposed Ventana Specific Plan Amendment (**Project**), which is located east of the I-15 Freeway, west of Citrus Avenue, and to the north and south of Duncan Canyon Road in the City of Fontana. Exhibit 1 depicts the location of the proposed Project in relation to the existing roadway network. Our goal is to obtain comments from City of Fontana staff, to ensure that the traffic assessment fully addresses the potential impacts of the proposed Project. The remainder of this letter describes the draft proposed analysis methodology, project trip generation, trip distribution, and project traffic assignment/project trips on the surrounding roadway network, which have been used to establish the draft proposed project study area and analysis locations.

PROJECT DESCRIPTION

The proposed Project includes the development of 538 multifamily housing (mid-rise) dwelling units, 154,000 square feet of commercial retail use, and 26,000 square feet of medical-dental office in the first Phase (Planning Areas 1 and 3). Phase 1 is anticipated to have an Opening Year of 2023. The remainder of the development is anticipated to build out by Year 2030 and includes the development of 1,671 multifamily housing (mid-rise) dwelling units and 476,500 square feet of commercial use (includes 100,000 square feet of medical-dental office use). Although future development may vary from those listed below, the following land uses, and intensities have been evaluated in the commercial retail and mixed-use areas for the purposes of this traffic analysis:

- 252,250 square feet of commercial retail use
- 56,833 square feet of high turnover (sit-down) restaurant use
- 15,417 square feet of fast-food restaurant with drive-through window use
- 31,200 square foot supermarket
- 20,800 square foot pharmacy with drive-through window
- 100,000 square feet of medical-dental office

The proposed planning areas for the proposed Project are shown on Exhibit 2. As indicated on Exhibit 2, access to the Project site will be provided to Citrus Avenue and Duncan Canyon Road via Lytle Creek Road.

STUDY AREA

The purpose of this traffic analysis is to evaluate the peak hour operations of study area intersections based on the proposed distribution of Project traffic. Exhibit 3 presents the proposed study area intersection analysis locations (and listed on Table 1). The study area intersections will be evaluated using the HCM 6th Edition methodology.

TABLE 1: STUDY AREA INTERSECTIONS

#	Intersection	#	Intersection
1	Coyote Canyon Rd. & Duncan Canyon Rd.	11	Citrus Av. & Driveway 1
2	W. Lytle Creek Rd. & Duncan Canyon Rd.	12	Citrus Av. & Duncan Canyon Rd.
3	I-15 SB Ramps & Duncan Canyon Rd.	13	Citrus Av. & Casa Grande Av.
4	I-15 SB Ramps & Summit Av.	14	Citrus Av. & Summit Av.
5	I-15 NB Ramps & Duncan Canyon Rd.	15	Citrus Av. & Sierra Lakes Pkwy.
6	I-15 NB Ramps & Summit Av.	16	Sierra Av. & Riverside Av.
7	Beech Av. & Summit Av.	17	Sierra Av. & Casa Grande Av.
8	Lytle Creek Dr. & Duncan Canyon Rd.	18	Sierra Av. & Summit Av.
9	Lytle Creek Dr. & Summit Av.	19	Sierra Av. & Sierra Lakes Pkwy.
10	Citrus Av. & Lytle Creek Rd.		

ANALYSIS SCENARIOS

The analysis of peak hour operations at study area intersections will be provided for the following analysis scenarios:

- Existing (2021) Conditions
- Opening Year Cumulative (2023) Without and With Project (Project Phase 1)
- Opening Year Cumulative (2030) Without and With Project (Project Buildout)
- Horizon Year (2040) Without and With Project (Project Buildout)

EXISTING COUNT DATA

Due to the currently ongoing COVID-19 pandemic, historic traffic count data for the study area intersections that we collected during the **weekday AM (7-9AM)** and **weekday PM (4-6PM)** under pre-pandemic traffic conditions will be utilized. Counts utilized will have been conducted when local schools were in session and operating on normal bell schedules. An ambient growth rate of 1.16

percent per year is proposed to adjust the historic count data to the current baseline year (2021). The growth rate is based on the average growth for population (1.06% per year), households (1.43% per year), and employment (0.97% per year) between 2016 and 2045 in the 2020 SCAG RTP/SCS for the City of Fontana (Connect SoCal, adopted September 3, 2020).

For study area intersections where historic traffic count data is unavailable, new traffic counts will be conducted at those locations in addition to key locations where historic count data is available. An adjustment factor will be calculated based on a comparison of the adjusted 2021 (using historic counts) and current 2021 traffic counts. This adjustment factor will then be applied to the 2021 counts for all study area intersections where historic count data is not available in order to establish a non-COVID baseline.

TRIP GENERATION

Trip generation represents the amount of traffic that is attracted and produced by a development and is based upon the specific land uses planned for a given project. In order to develop the traffic characteristics of the proposed project, trip-generation statistics published in the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition, 2017) was used to estimate the trip generation. Trip generation rates for the Project are shown in Table 2.

TABLE 2: TRIP GENERATION RATES

Land Use ¹	Units ²	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Trip Generation Rates:									
Multifamily Housing (Mid-Rise)	DU	221	0.09	0.27	0.36	0.27	0.17	0.44	5.44
Medical-Dental Office	TSF	720	2.17	0.61	2.78	0.97	2.49	3.46	34.80
Shopping Center	TSF	820	0.58	0.36	0.94	1.83	1.98	3.81	37.75
Supermarket	TSF	850	2.29	1.53	3.82	4.71	4.53	9.24	106.78
Pharmacy	TSF	881	2.04	1.80	3.84	5.15	5.14	10.29	109.16
High Turnover Sit-Down Restaurant	TSF	932	5.47	4.47	9.94	6.06	3.71	9.77	112.18
Fast-Food Restaurant w/ Drive-Through Window	TSF	934	20.50	19.69	40.19	16.99	15.68	32.67	470.95

¹ Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Tenth Edition (2017).

² TSF = Thousand Square Feet; DU = Dwelling Unit

Internal capture is a percentage reduction that can be applied to the trip generation estimates for individual land uses to account for trips internal to the site. In other words, trips may be made between individual retail uses on-site and can be made either by walking or using internal roadways without using external streets. Internal capture reductions between the proposed land uses have been taken into account based on the National Cooperative Highway Research Program (NCHRP) 684 Internal Trip Capture Estimation Tool. Attachment A includes the internal capture calculations for both Phase 1 and Project Buildout (northern and southern halves). Internal trip activity between Planning

Areas will be added onto the network in order to account for these trips at the driveways and along Lytle Creek Road.

Pass-by trip reductions have been applied to the proposed Project uses based on percentages have been obtained from the ITE Trip Generation Handbook (3rd Edition, 2017). These percentages represent traffic that is already on the roadway today that would make an intermediate stop at the site before continuing on to their ultimate destination. The pass-by trip reductions will be applied to off-site study area intersections only while the applicable Project driveways will evaluate 100% of the Project traffic (pass-by trip reductions to be added back).

The trip generation summary for Phase 1 of the Project (Planning Areas 1 and 3) is shown on Table 3. As shown on Table 3, Phase 1 of the Project is anticipated to generate a net total of 5,462 two-way trips per day with 390 AM peak hour trips and 517 PM peak hour trips.

TABLE 3: TRIP GENERATION SUMMARY – PHASE 1

Land Use	Quantity Units ¹	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Trip Generation Summary:								
Planning Area 1								
Multifamily Housing (Mid-Rise)	538 DU	50	143	193	144	92	236	2,928
Internal Capture		-1	-3	-4	-67	-32	-99	-1,228
Planning Area 1 Subtotal		49	140	189	77	60	137	1,700
Planning Area 3								
Commercial Retail	154.000 TSF	90	55	145	282	305	587	5,814
Medical-Dental Office	26.000 TSF	56	16	72	25	65	90	906
Internal Capture		-9	-7	-16	-51	-86	-137	-1,360
Pass-by Reduction (Commercial Retail)		0	0	0	-80	-80	-160	-1,598
Planning Area 3 Subtotal		137	64	201	176	204	380	3,762
Project Phase 1 (2023) Total		186	204	390	253	264	517	5,462

¹ TSF = Thousand Square Feet; DU = Dwelling Unit

The trip generation summary for Project Buildout (North of Duncan Canyon Rd.) is shown on Table 4. As shown on Table 4, the northern portion of the Project is anticipated to generate a net total of 7,486 two-way trips per day with 944 AM peak hour trips and 625 PM peak hour trips at Project Buildout.

TABLE 4: PROJECT BUILDOUT TRIP GENERATION SUMMARY – NORTH OF DUNCAN CANYON ROAD

Land Use	Quantity Units ¹	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Trip Generation Summary:								
Planning Area 1								
Multifamily Housing (Mid-Rise)	538 DU	50	143	193	144	92	236	2,928
Internal Capture		-4	-32	-36	-90	-60	-150	-1,862
Planning Area 1 Subtotal		46	111	157	54	32	86	1,066
Planning Area 3								
Commercial Retail	154.000 TSF	90	55	145	282	305	587	5,814
Medical-Dental Office	26.000 TSF	56	16	72	25	65	90	906
Internal Capture		-23	-23	-46	-171	-162	-333	-3,304
Pass-by Reduction (Commercial Retail)		0	0	0	-93	-93	-186	-982
Planning Area 3 Subtotal		123	48	171	43	115	158	2,434
Planning Area 5A								
Commercial Retail	30.000 TSF	17	11	28	55	59	114	1,134
High Turnover Sit-Down Restaurant	20.000 TSF	109	89	198	121	74	195	2,244
Fast-Food Restaurant w/ Drive-Through	10.000 TSF	205	197	402	170	157	327	4,710
Internal Capture		-33	-15	-48	-118	-143	-261	-3,314
Pass-by Reduction (Total)		-90	-90	-180	-65	-65	-130	-2,194
Planning Area 5A Subtotal		208	192	400	163	82	245	2,580
Planning Area 5B								
Commercial Retail	16.250 TSF	9	6	15	30	32	62	614
High Turnover Sit-Down Restaurant	10.833 TSF	59	48	107	66	40	106	1,216
Fast-Food Restaurant w/ Drive-Through	5.417 TSF	111	107	218	92	85	177	2,552
Internal Capture		-18	-8	-26	-63	-77	-140	-1,784
Pass-by Reduction (Total)		-49	-49	-98	-35	-35	-69	-1,192
Planning Area 5B Subtotal		112	104	216	90	45	135	1,406
Total (North of Duncan Canyon Rd.)		489	455	944	350	274	625	7,486

¹ TSF = Thousand Square Feet; DU = Dwelling Unit

The trip generation summary for Project Buildout (South of Duncan Canyon Road) is shown on Table 5. As shown on Table 5, the southern portion of the Project is anticipated to generate a net total of 9,866 two-way trips per day with 842 AM peak hour trips and 906 PM peak hour trips. Also shown on Table 5 is the total Project trip generation at Project Buildout. The Project is anticipated to generate a net total of 17,352 two-way trips per day with 1,786 AM peak hour trips and 1,531 PM peak hour trips at Project Buildout.

TABLE 5: PROJECT BUILDOUT TRIP GENERATION SUMMARY – SOUTH OF DUNCAN CANYON ROAD

Land Use	Quantity Units ¹	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Planning Area 2								
Multifamily Housing (Mid-Rise)	396 DU	37	105	142	106	68	174	2,154
Internal Capture		-2	-12	-14	-38	-22	-60	-744
Planning Area 2 Subtotal		35	93	128	68	46	114	1,410
Planning Area 4								
Multifamily Housing (Mid-Rise)	600 DU	56	160	216	161	103	264	3,264
Commercial Retail	26.000 TSF	15	9	24	48	52	100	982
Supermarket	31.200 TSF	72	48	120	147	141	288	3,332
Pharmacy	20.800 TSF	42	38	80	107	107	214	2,272
High Turnover Sit-Down Restaurant	26.000 TSF	142	116	258	157	97	254	2,918
Internal Capture		-98	-77	-175	-219	-220	-439	-5,022
Pass-by Reduction (Total)		0	0	0	-86	-86	-172	-2,304
Planning Area 4 Subtotal		229	294	523	314	194	508	5,442
Planning Area 6A								
Multifamily Housing (Mid-Rise)	137 DU	13	36	49	37	24	61	746
Medical-Dental Office	74.000 TSF	160	45	205	72	184	256	2,576
Internal Capture		-34	-46	-80	-34	-44	-78	-844
Planning Area 6A Subtotal		139	35	174	75	164	239	2,478
Planning Area 6B								
Commercial Retail	26.000 TSF	15	9	24	48	52	100	982
Internal Capture		-4	-3	-7	-13	-19	-32	-318
Pass-by Reduction (Commercial Retail)		0	0	0	-11	-11	-23	-128
Planning Area 6B Subtotal		11	6	18	23	22	45	536
Total (South of Duncan Canyon Rd.)		414	428	842	481	426	906	9,866
Project Buildout Total		903	883	1,786	831	700	1,531	17,352

¹ TSF = Thousand Square Feet; DU = Dwelling Unit

TRIP DISTRIBUTION

Trip distribution is the process of identifying the probable destinations, directions, or traffic routes that will be utilized by Project traffic. The potential interaction between the planned land uses and surrounding regional access routes are considered, to identify the route where the Project traffic would distribute.

- **Exhibit 4:** Phase 1 trip distribution patterns based on ultimate distribution patterns with modifications to account for near-term roadway connections.
- **Exhibit 5:** Project Buildout trip distribution patterns for the northern portion of the Project. Trip distribution patterns are similar to those used in the Ventana at Duncan Canyon Traffic Impact Study (prepared by Katz, Okitsu & Associates, dated August 3, 2006) which were based on select zone runs from the North Fontana Traffic Model.
- **Exhibit 6:** Project Buildout trip distribution patterns for the southern portion of the Project. Trip distribution patterns are similar to those used in the Ventana at Duncan Canyon Traffic Impact Study (prepared by Katz, Okitsu & Associates, dated August 3, 2006) which were based on select zone runs from the North Fontana Traffic Model.

It should be noted that a select zone run for the proposed Project has been prepared from the current SBTAM traffic model and the distributions are very similar to those originally utilized. For consistency purposes, the distributions shown are consistent with those used in the 2006 Traffic Study.

LEVEL OF SERVICE (LOS) CRITERIA

The City of Fontana has set the goal for acceptable LOS as LOS C or better, wherever feasible (see Goal #1, Policy #12 of the City of Fontana General Plan Circulation Element). However, in some instances maintaining the LOS C threshold within a built environment may require extensive roadway widening that could affect existing uses, property rights and substantial costs associated with implementing these improvements. In the event that the improvements required to maintain LOS C is determined to be infeasible, the City of Fontana recognizes that LOS D may be considered the worst acceptable level of service in urbanized areas of the City.

DEFICIENCY CRITERIA – INTERSECTIONS

For the intersections that lie within the City of Fontana, determination of whether the Project has an adverse effect on intersection operations will be based on a comparison of without and with project levels of service. A deficiency occurs if project traffic increases the average delay at an intersection by more than the thresholds identified on Table 6. The thresholds for LOS A, B, and C do not apply to projects consistent with the General Plan. The deficiency criteria will be applied to Opening Year

Cumulative traffic conditions to determine off-site construct obligations and will recommend improvements needed to reduce delays to pre-project conditions (as applicable).

TABLE 6: INTERSECTION DEFICIENCY CRITERIA

Pre-Project LOS	Deficiency Criteria ¹
LOS A/B	10.0 Seconds
LOS C	8.0 Seconds
LOS D	5.0 Seconds
LOS E	2.0 Seconds
LOS F	1.0 Second

¹ Increase in delay.

AMBIENT GROWTH

Consistent with other studies performed in the area, an ambient growth rate of 1.16% per year is proposed for the study area intersections to approximate background traffic growth not identified by nearby cumulative development projects. The rate will be compounded over a two-year period for Phase 1 (i.e., $1.0116^{2\text{years}} = 1.0233$ or 2.33% for 2023). An ambient growth of 10.94% will be used for 2030 traffic conditions. Alternatively, the forecasts for Opening Year Cumulative (2030) conditions could be interpolated between Opening Year Cumulative (2023) and Horizon Year (2040) conditions.

SPECIAL ISSUES

The following special issues will also be addressed as part of the focused traffic assessment:

- Conduct traffic signal warrant analysis for all existing and future unsignalized study area intersections.
- Evaluate the roadway capacity along Lytle Creek Road both north and south of Duncan Canyon Road to determine if the planned roadway section is sufficient to support the anticipated Project traffic.
- Provide a queuing analysis for applicable Project driveways and site adjacent intersections of Lytle Creek Road at Duncan Canyon Road and Citrus Avenue at Duncan Canyon Road.

OPEN ITEMS – CUMULATIVE DEVELOPMENT PROJECTS

We request that City staff provide a list/map of cumulative projects for inclusion in the traffic study. We may need to discuss with City staff an appropriate absorption percentage of cumulative traffic to assume for Year 2023 and Year 2030. If known, it is requested that City staff also provide an approximation of completion for the adjacent Arboretum Specific Plan. We will also reach out to the

Mr. Mahmoud Khodr
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County of San Bernardino and the City of Rialto for any relative cumulative projects within their respective agencies.

SIGNAL TIMING

Applicable signal timing will be utilized for the I-15 Ramps at Duncan Canyon Road and Summit Avenue based on signal timing information provided by Caltrans District 8. It is requested that the City provide any signal timing that should be considered for signalized study area intersections within the City.

The analysis findings and recommendations (if applicable) will be presented in a draft report for the City's review.

If you have any questions, please contact me directly at (949) 861-0177.

Respectfully submitted,



Charlene So, PE
Associate Principal

EXHIBIT 1: LOCATION MAP

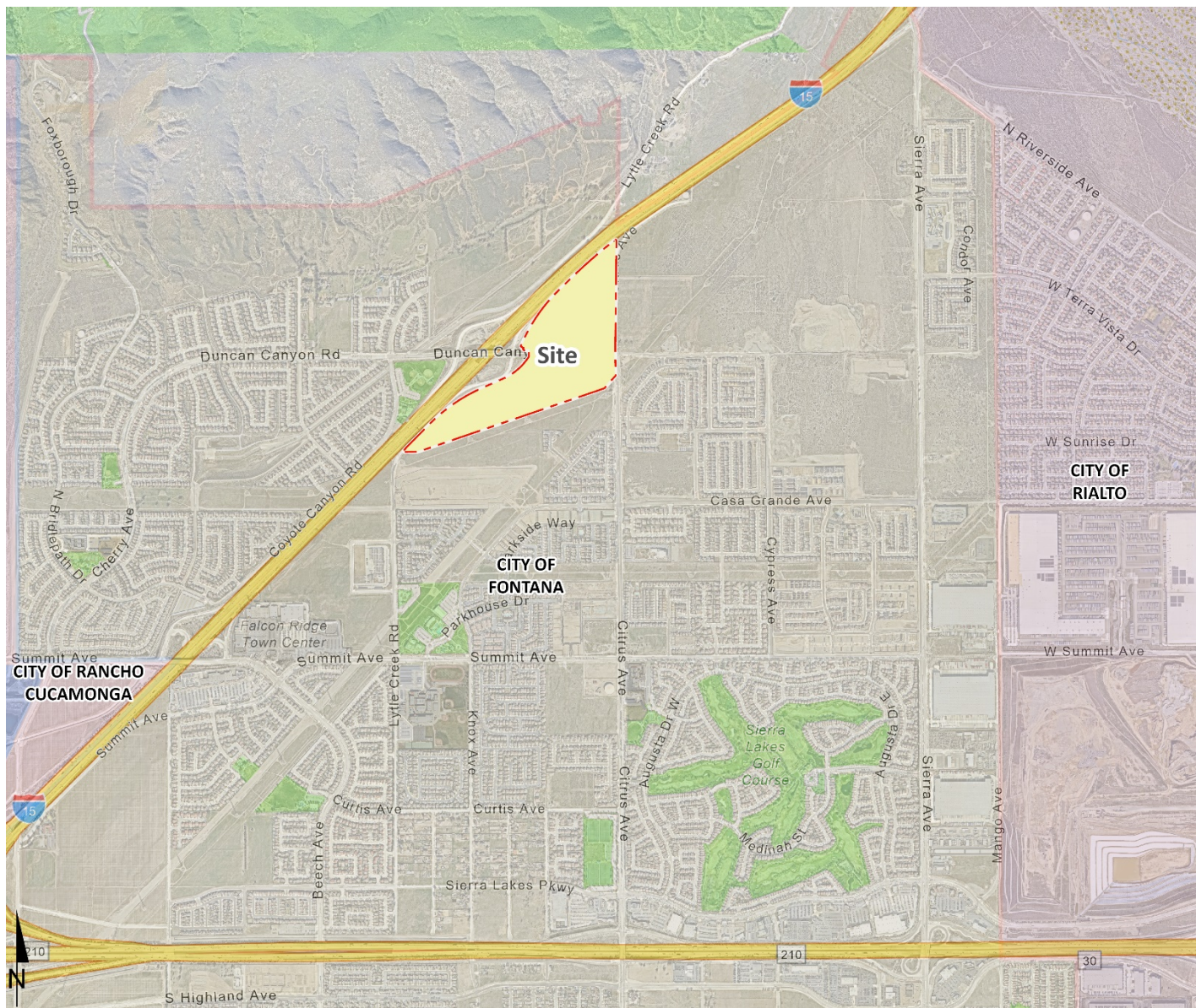


EXHIBIT 2: PLANNING AREA MAP

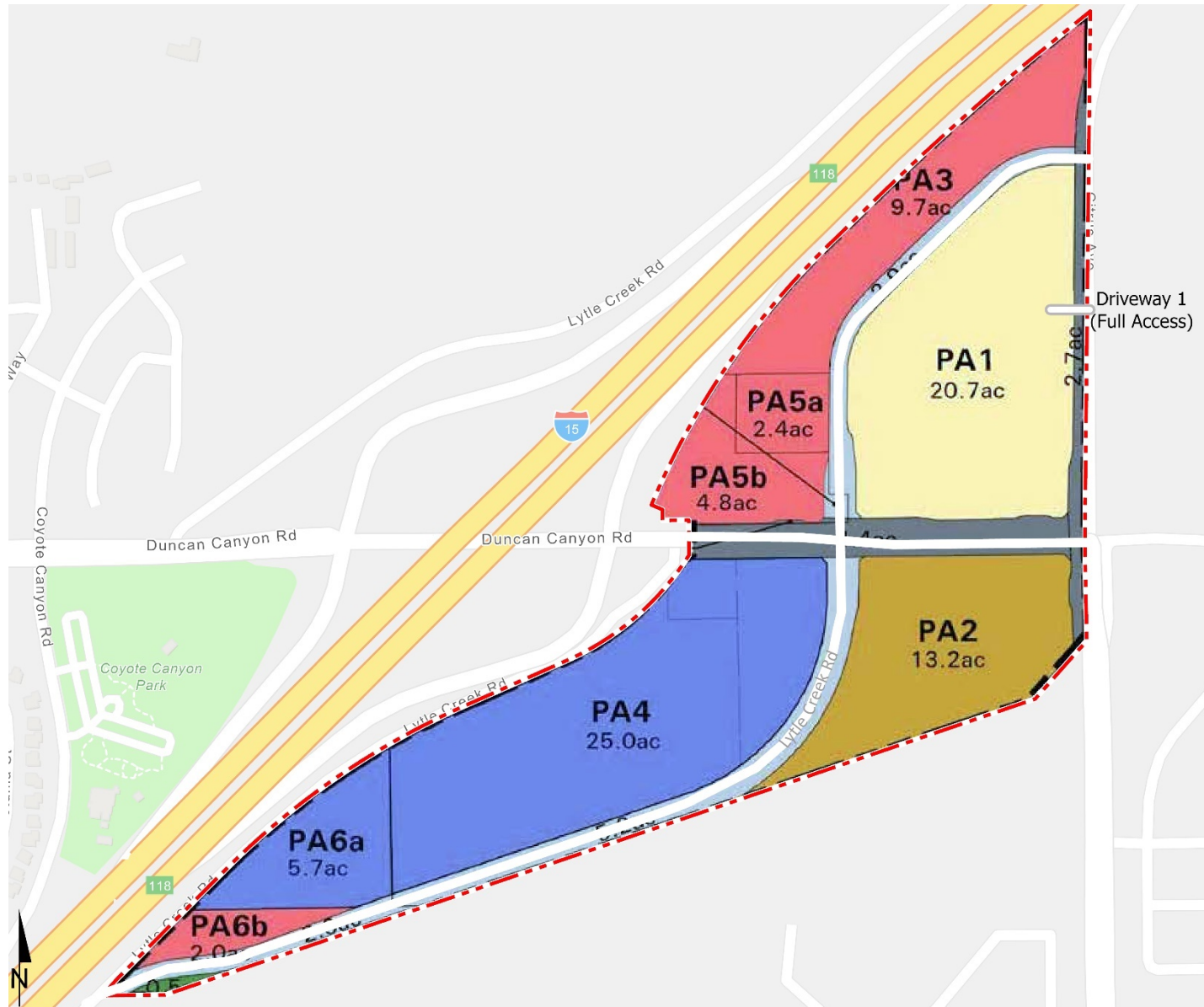


EXHIBIT 3: STUDY AREA

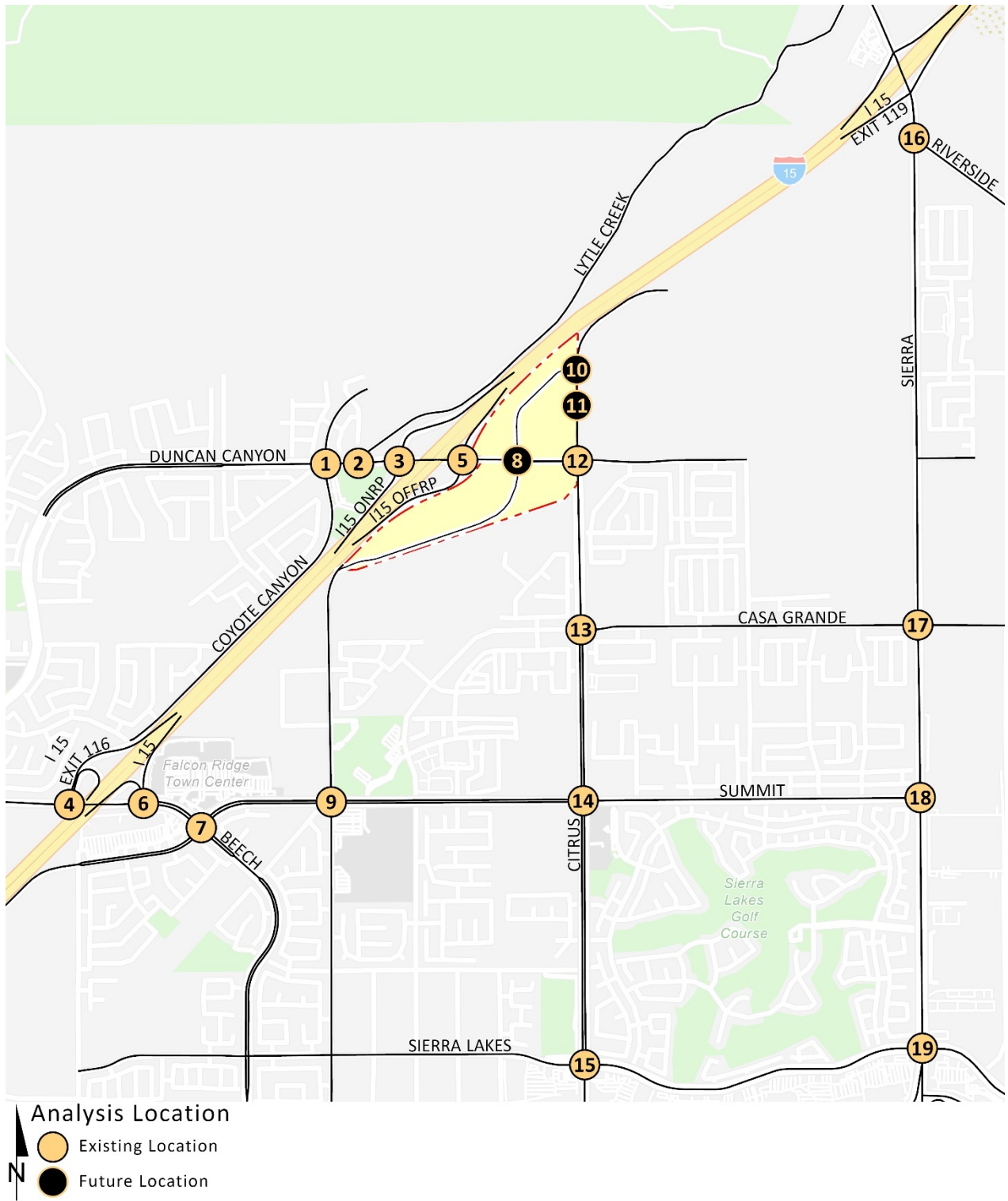
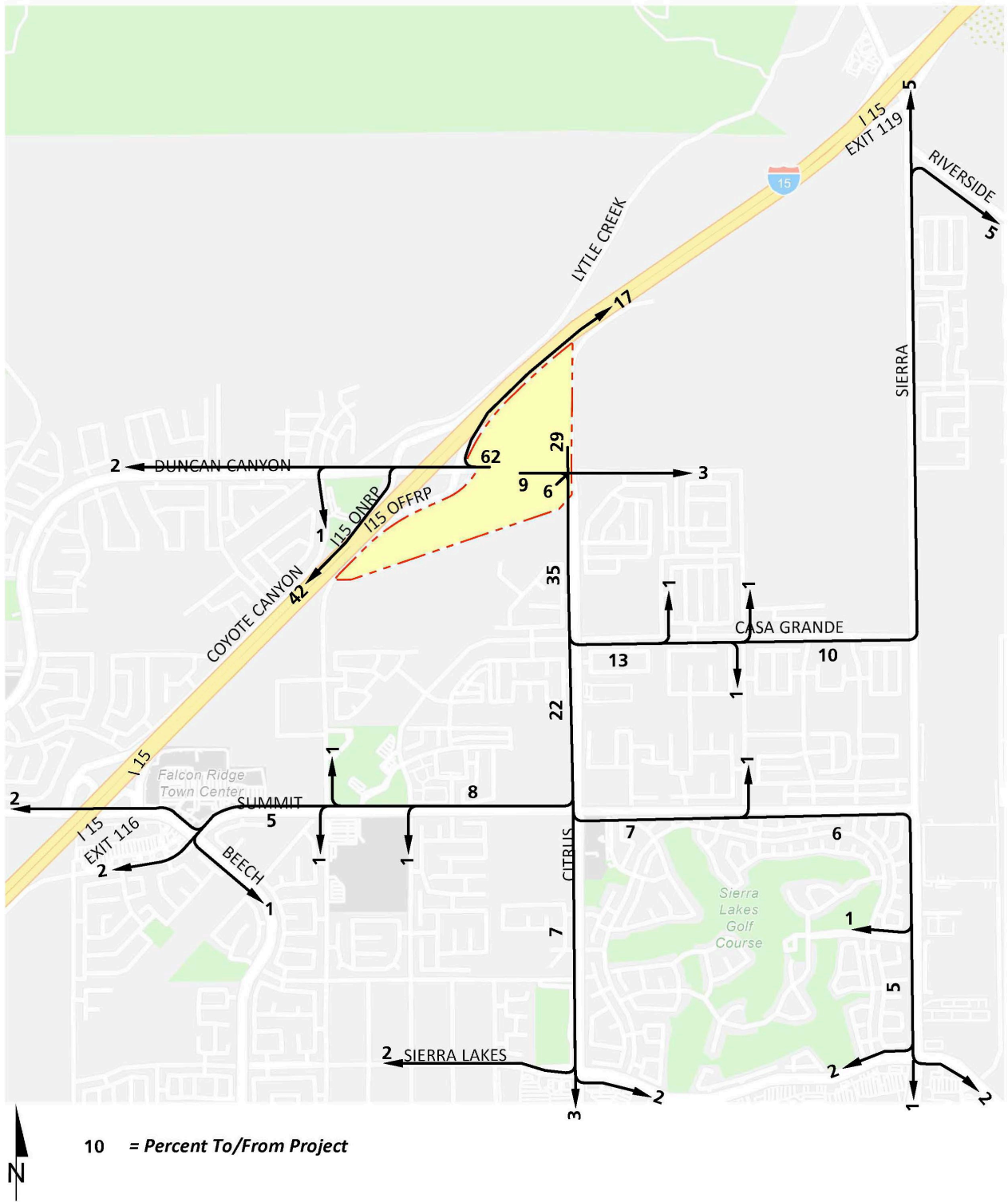
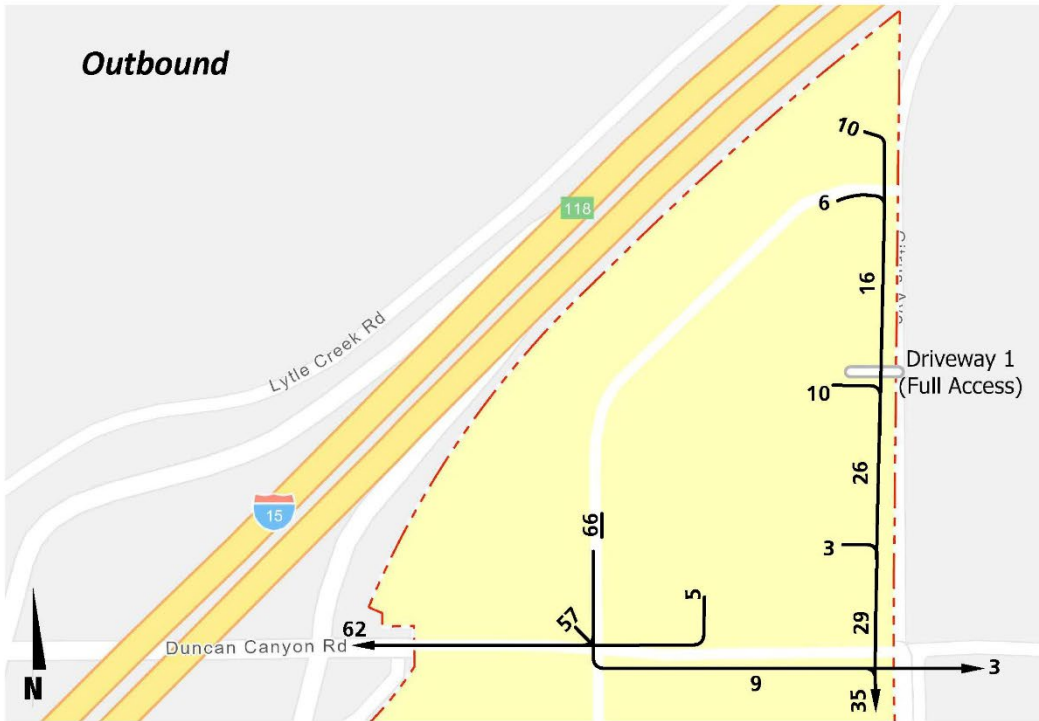


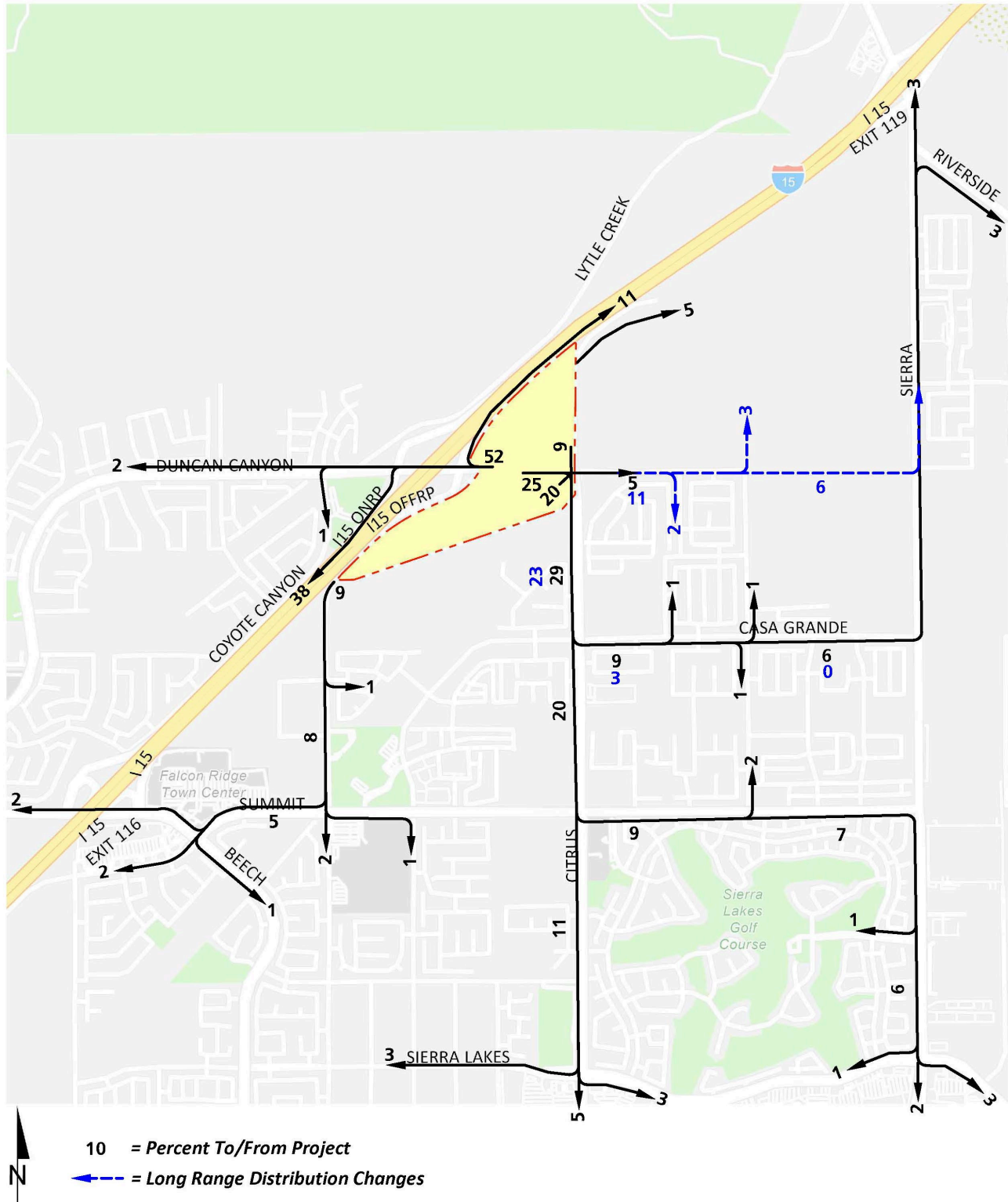
EXHIBIT 4: PROJECT (PHASE 1) TRIP DISTRIBUTION

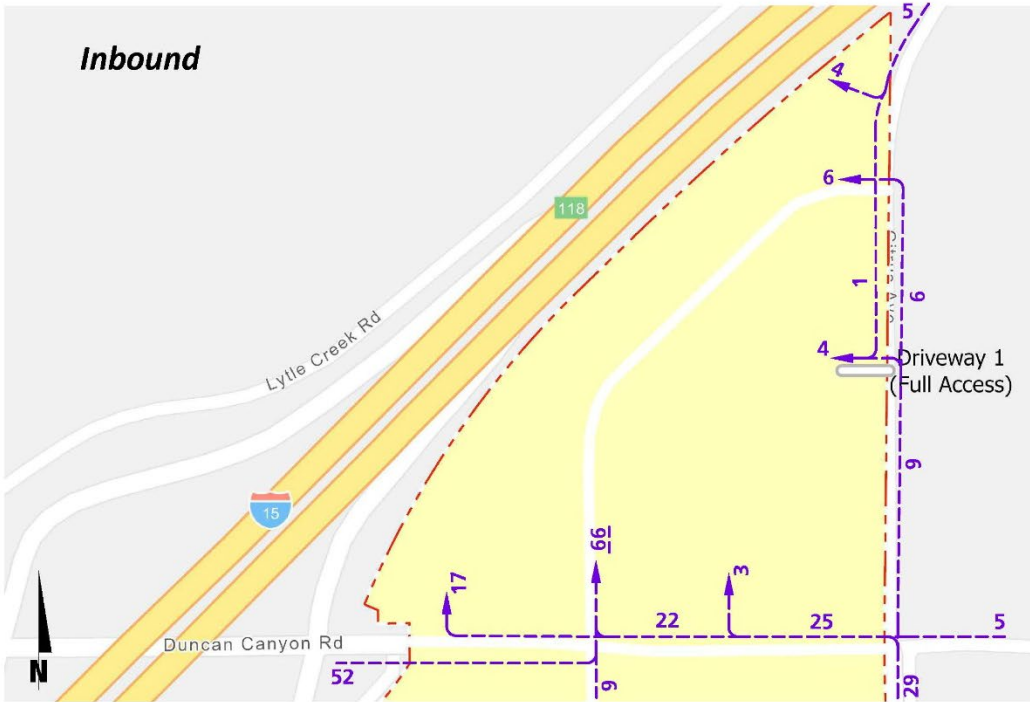
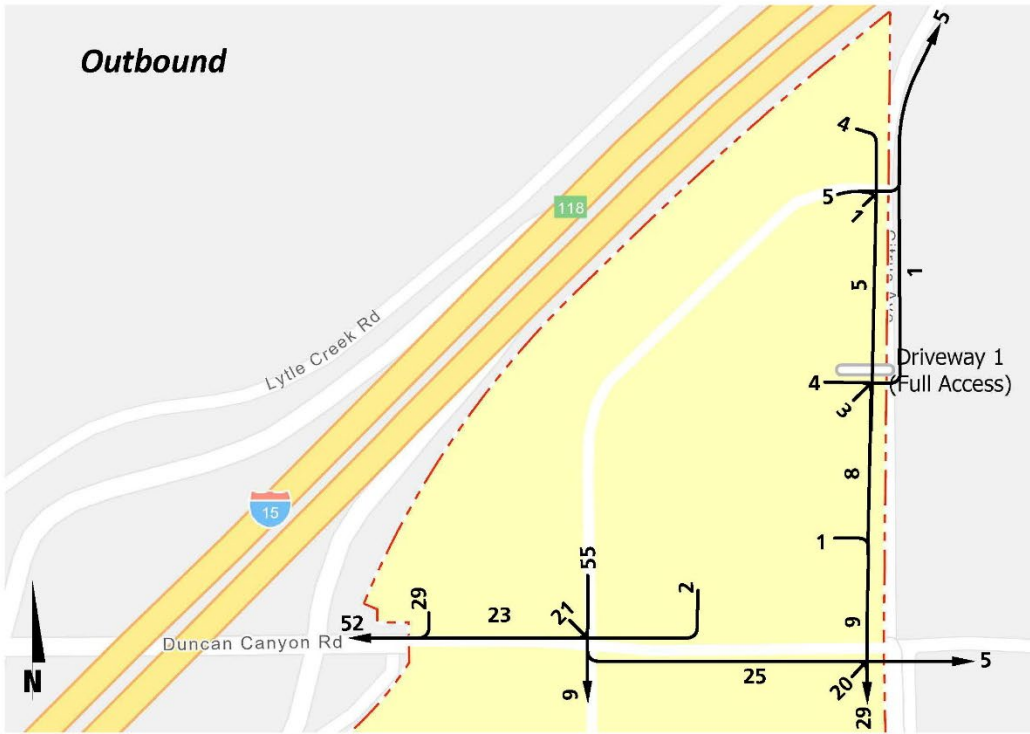




- 10 = Percent To/From Project
- ← = Outbound
- ← = Inbound

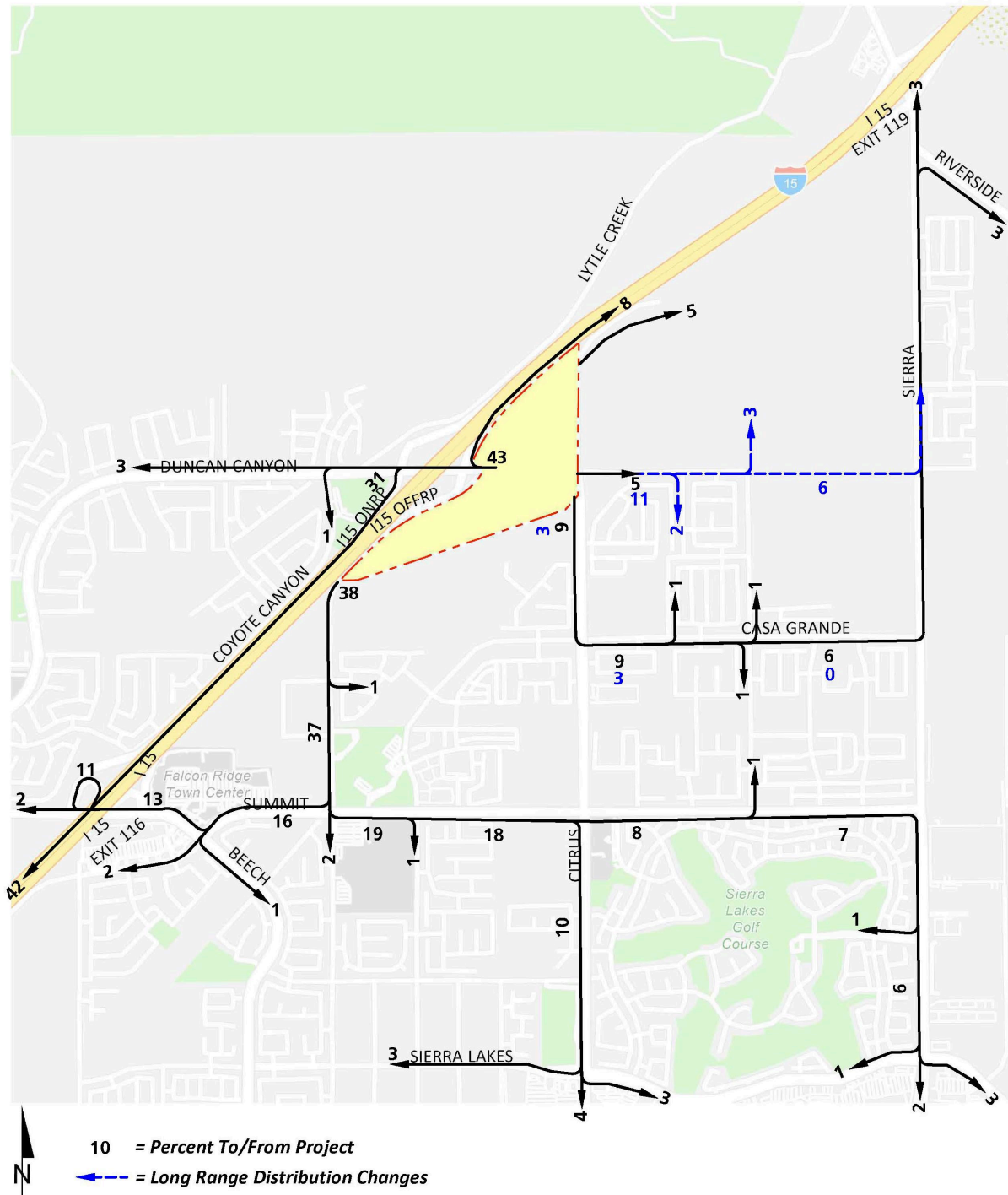
EXHIBIT 5: PROJECT BUILDOUT (NORTH OF DUNCAN CANYON ROAD) TRIP DISTRIBUTION

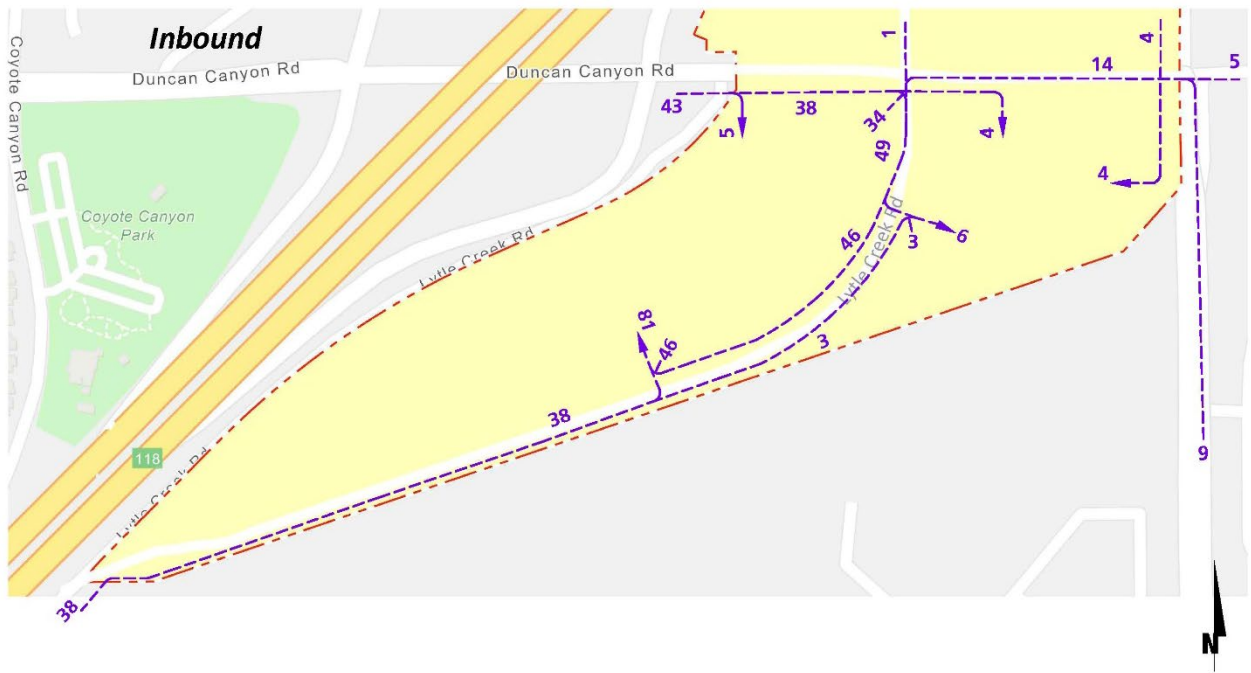
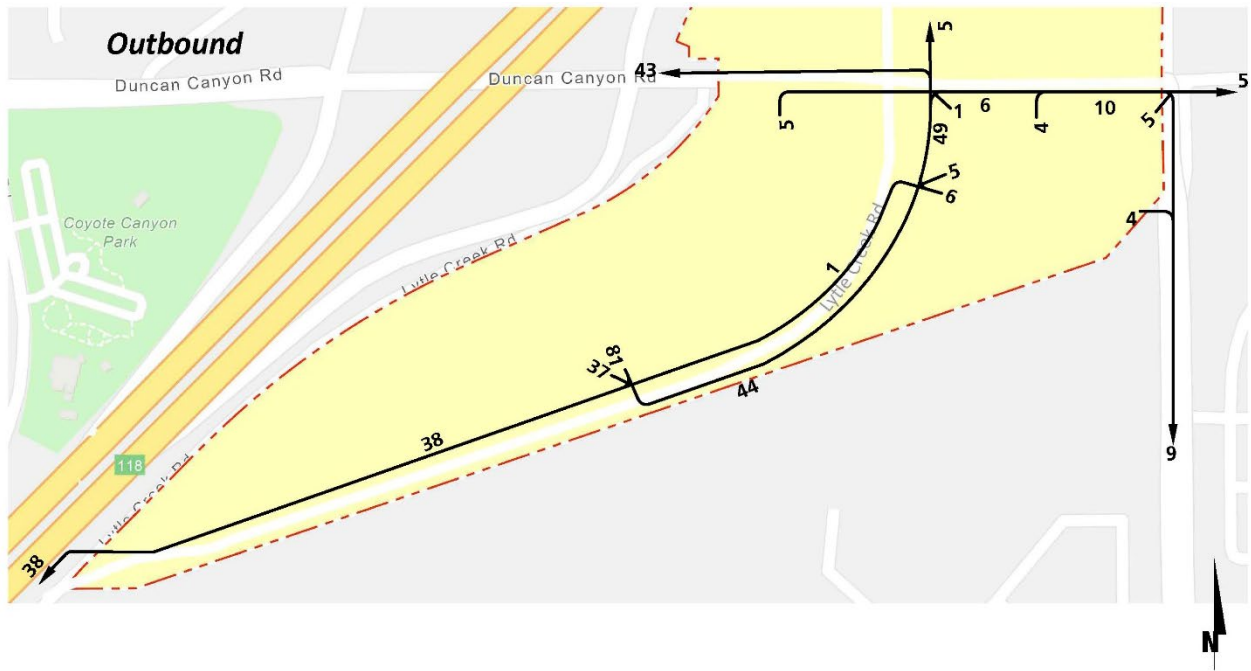




- 10 = Percent To/From Project
- ← = Outbound
- ← (dashed) = Inbound

EXHIBIT 6: PROJECT BUILDOUT (SOUTH OF DUNCAN CANYON ROAD) TRIP DISTRIBUTION





10 = Percent To/From Project
 ← = Outbound
 ← = Inbound

ATTACHMENT A: NCHRP INTERNAL CAPTURE WORKSHEETS

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Ventana SP	Organization:	Urban Crossroads		
Project Location:	Fontana	Performed By:	CS		
Scenario Description:	Phase 1	Date:	2/16/2021		
Analysis Year:		Checked By:			
Analysis Period:	AM Street Peak Hour	Date:			

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				72	56	16
Retail				145	90	55
Restaurant				0		
Cinema/Entertainment				0		
Residential				193	50	143
Hotel				0		
All Other Land Uses ²				0		
				410	196	214

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		4	0	0	0	0
Retail	2		0	0	1	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	1	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	410	196	214
Internal Capture Percentage	5%	5%	5%
External Vehicle-Trips ⁵	390	186	204
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	7%	25%
Retail	6%	5%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	2%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Ventana SP	Organization:	Urban Crossroads
Project Location:	Fontana	Performed By:	CS
Scenario Description:	Phase 1	Date:	2/16/2021
Analysis Year:		Checked By:	
Analysis Period:	PM Street Peak Hour	Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				90	25	65
Retail				587	282	305
Restaurant				0		
Cinema/Entertainment				0		
Residential				236	144	92
Hotel				0		
All Other Land Uses ²				0		
				913	451	462

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		13	0	0	1	0
Retail	6		0	0	66	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	4	28	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	913	451	462
Internal Capture Percentage	26%	26%	26%
External Vehicle-Trips ⁵	677	333	344
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	40%	22%
Retail	15%	24%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	47%	35%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Ventana SP	Organization:	Urban Crossroads		
Project Location:	Fontana	Performed By:	CS		
Scenario Description:	Project Buildout - Northern Half	Date:	2/16/2021		
Analysis Year:		Checked By:			
Analysis Period:	AM Street Peak Hour	Date:			

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				72	56	16
Retail				187	115	72
Restaurant				925	484	441
Cinema/Entertainment				0		
Residential				193	50	143
Hotel				0		
All Other Land Uses ²				0		
				1,377	705	672

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		4	10	0	0	0
Retail	2		9	0	1	0
Restaurant	8	9		0	3	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	1	29	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	1,377	705	672
Internal Capture Percentage	11%	11%	12%
External Vehicle-Trips ⁵	1,221	627	594
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	21%	88%
Retail	12%	17%
Restaurant	10%	5%
Cinema/Entertainment	N/A	N/A
Residential	8%	22%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Ventana SP	Organization:	Urban Crossroads
Project Location:	Fontana	Performed By:	CS
Scenario Description:	Project Buildout - Northern Half	Date:	2/16/2021
Analysis Year:		Checked By:	
Analysis Period:	PM Street Peak Hour	Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				90	25	65
Retail				759	365	394
Restaurant				805	449	356
Cinema/Entertainment				0		
Residential				236	144	92
Hotel				0		
All Other Land Uses ²				0		
				1,890	983	907

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		13	3	0	1	0
Retail	8		114	0	66	0
Restaurant	8	146		0	23	0
Cinema/Entertainment	0	0	0		0	0
Residential	4	37	19	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	1,890	983	907
Internal Capture Percentage	47%	45%	49%
External Vehicle-Trips ⁵	1,006	541	465
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	80%	26%
Retail	54%	48%
Restaurant	30%	50%
Cinema/Entertainment	N/A	N/A
Residential	63%	65%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool					
Project Name:	Ventana SP	Organization:	Urban Crossroads		
Project Location:	Fontana	Performed By:	CS		
Scenario Description:	Project Buildout - Southern Half	Date:	2/16/2021		
Analysis Year:		Checked By:			
Analysis Period:	AM Street Peak Hour	Date:			

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				205	160	45
Retail				248	144	104
Restaurant				258	142	116
Cinema/Entertainment				0		
Residential				407	106	301
Hotel				0		
All Other Land Uses ²				0		
				1,118	552	566

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		13	28	0	0	0
Retail	6		14	0	2	0
Restaurant	22	12		0	5	0
Cinema/Entertainment	0	0	0		0	0
Residential	5	3	28	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	1,118	552	566
Internal Capture Percentage	25%	25%	24%
External Vehicle-Trips ⁵	842	414	428
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	21%	91%
Retail	19%	21%
Restaurant	49%	34%
Cinema/Entertainment	N/A	N/A
Residential	7%	12%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Ventana SP	Organization:	Urban Crossroads
Project Location:	Fontana	Performed By:	CS
Scenario Description:	Project Buildout - Southern Half	Date:	2/16/2021
Analysis Year:		Checked By:	
Analysis Period:	PM Street Peak Hour	Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				256	72	184
Retail				702	350	352
Restaurant				254	157	97
Cinema/Entertainment				0		
Residential				499	304	195
Hotel				0		
All Other Land Uses ²				0		
				1,711	883	828

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses ²						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		28	3	0	4	0
Retail	7		46	0	92	0
Restaurant	3	40		0	17	0
Cinema/Entertainment	0	0	0		0	0
Residential	8	35	22	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	1,711	883	828
Internal Capture Percentage	36%	35%	37%
External Vehicle-Trips ⁵	1,101	578	523
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	25%	19%
Retail	29%	41%
Restaurant	45%	62%
Cinema/Entertainment	N/A	N/A
Residential	37%	33%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

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APPENDIX 1.2:
SITE ADJACENT QUEUING WORKSHEETS

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Intersection: 8: Lytle Creek Dr. & Duncan Canyon Rd.

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	188	206	162	376	435	175	58	134	304	311	323	224
Average Queue (ft)	80	130	53	121	237	78	14	44	184	200	215	28
95th Queue (ft)	178	199	114	298	381	206	42	91	300	313	332	128
Link Distance (ft)			941	941	941				733	733	733	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250				150	250	250				200
Storage Blk Time (%)	0	0	0		20	0			2		13	0
Queuing Penalty (veh)	0	0	0		28	0			1		5	0

Intersection: 8: Lytle Creek Dr. & Duncan Canyon Rd.

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	R	L	L	T	T	R
Maximum Queue (ft)	157	186	100	21	102	175	61	28	84
Average Queue (ft)	39	108	39	5	9	80	22	6	34
95th Queue (ft)	128	176	81	18	52	148	52	22	67
Link Distance (ft)			524				552	552	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	325	325		265	200	200			150
Storage Blk Time (%)						0			
Queuing Penalty (veh)						0			

Intersection: 10: Citrus Ave. & Lytle Creek Dr.

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	37	29
Average Queue (ft)	17	2
95th Queue (ft)	43	14
Link Distance (ft)	475	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Citrus Ave. & Driveway 1

Movement	EB	NB	NB	SB	SB
Directions Served	LR	L	T	T	TR
Maximum Queue (ft)	46	38	14	29	46
Average Queue (ft)	17	15	1	2	3
95th Queue (ft)	43	38	8	16	21
Link Distance (ft)	484		879	434	434
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		100			
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 12: Citrus Ave. & Duncan Canyon Rd.

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	R	L	L	T	T	T	R	L
Maximum Queue (ft)	26	51	156	143	473	44	46	132	123	96	28	337
Average Queue (ft)	3	14	77	80	210	14	16	71	57	15	4	269
95th Queue (ft)	17	40	135	131	429	35	40	117	104	54	15	371
Link Distance (ft)			733	733	733			2511	2511	2511		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250				250	250				200	325
Storage Blk Time (%)												1
Queuing Penalty (veh)												0

Intersection: 12: Citrus Ave. & Duncan Canyon Rd.

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	349	677	38	42	85	84	62	64
Average Queue (ft)	295	110	5	10	32	38	16	24
95th Queue (ft)	370	467	21	30	71	71	45	49
Link Distance (ft)		1267	1267			879	879	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	325			265	200		150	
Storage Blk Time (%)	4	0						
Queuing Penalty (veh)	0	0						

Network Summary

Network wide Queuing Penalty: 36

Intersection: 8: Lytle Creek Dr. & Duncan Canyon Rd.

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	147	179	165	377	443	175	49	124	260	278	326	223
Average Queue (ft)	42	97	73	197	262	98	15	45	159	177	202	25
95th Queue (ft)	116	157	134	348	399	228	45	93	254	271	317	116
Link Distance (ft)			941	941	941				733	733	733	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	250	250				150	250	250				200
Storage Blk Time (%)					23	0			1		9	0
Queuing Penalty (veh)					32	1			0		3	0

Intersection: 8: Lytle Creek Dr. & Duncan Canyon Rd.

Movement	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	R	L	L	T	T	R
Maximum Queue (ft)	152	183	91	37	25	121	71	28	58
Average Queue (ft)	38	106	30	8	3	50	19	3	21
95th Queue (ft)	122	169	70	26	17	96	51	15	45
Link Distance (ft)			524				552	552	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	325	325		265	200	200			150
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 10: Citrus Ave. & Lytle Creek Dr.

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	37	31
Average Queue (ft)	14	2
95th Queue (ft)	39	16
Link Distance (ft)	475	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Citrus Ave. & Driveway 1

Movement	EB	NB	NB	SB	SB
Directions Served	LR	L	T	T	TR
Maximum Queue (ft)	36	22	50	36	30
Average Queue (ft)	11	3	5	3	1
95th Queue (ft)	35	16	29	17	11
Link Distance (ft)	484		879	434	434
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		100			
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Intersection: 12: Citrus Ave. & Duncan Canyon Rd.

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	R	L	L	T	T	T	R	L
Maximum Queue (ft)	73	95	140	416	720	23	48	134	156	131	20	325
Average Queue (ft)	19	43	65	85	281	4	13	80	81	32	6	186
95th Queue (ft)	54	80	115	246	576	18	34	123	135	96	18	282
Link Distance (ft)			733	733	733			2511	2511	2511		
Upstream Blk Time (%)					0							
Queuing Penalty (veh)					0							
Storage Bay Dist (ft)	250	250				250	250				200	325
Storage Blk Time (%)												0
Queuing Penalty (veh)												0

Intersection: 12: Citrus Ave. & Duncan Canyon Rd.

Movement	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	T	T	R	L	T	T	R
Maximum Queue (ft)	332	116	43	42	82	75	68	44
Average Queue (ft)	219	7	6	10	29	21	11	18
95th Queue (ft)	309	67	25	31	69	53	39	38
Link Distance (ft)		1267	1267			879	879	
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	325			265	200		150	
Storage Blk Time (%)	0							
Queuing Penalty (veh)	0							

Network Summary

Network wide Queuing Penalty: 36

APPENDIX 3.1:
EXISTING & HISTORICAL TRAFFIC COUNTS

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County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

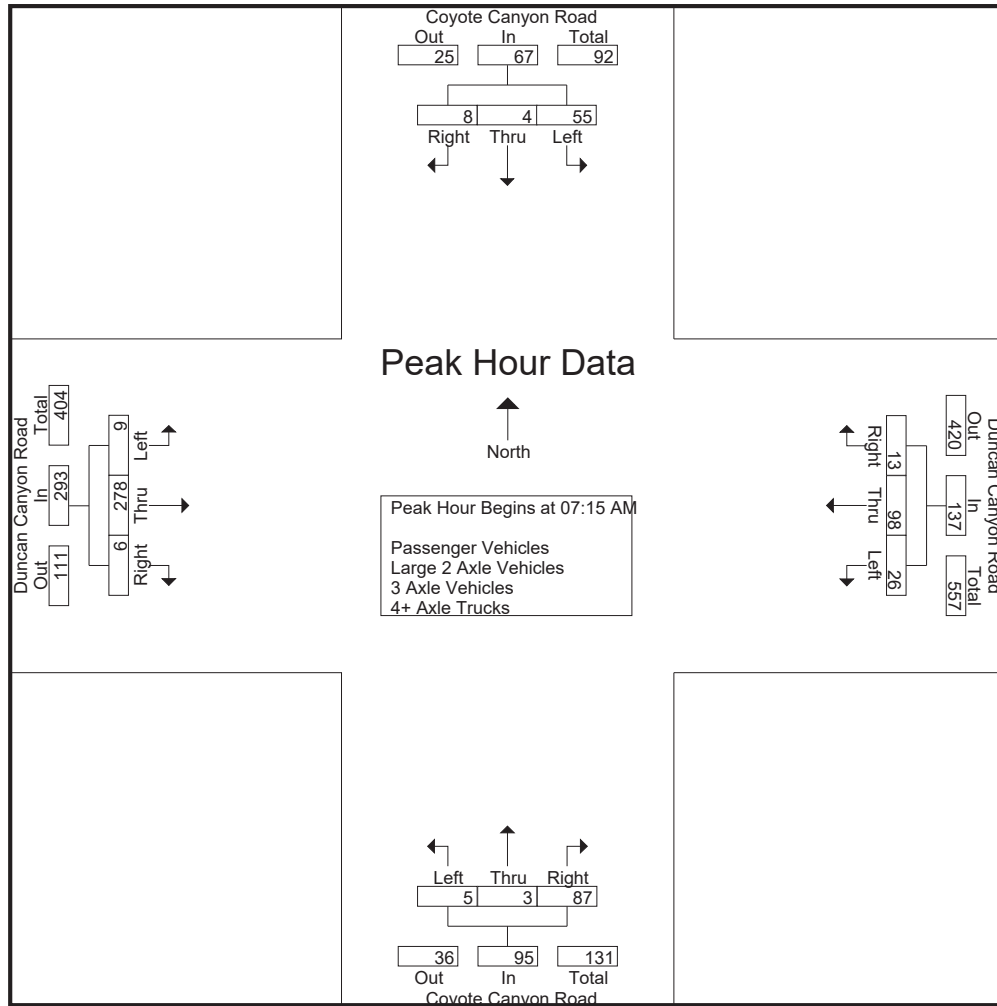
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	13	0	2	15	9	20	2	31	1	1	27	29	2	56	0	58	133
07:15 AM	17	2	2	21	7	21	2	30	0	0	30	30	0	76	1	77	158
07:30 AM	16	0	4	20	9	19	2	30	1	0	27	28	2	71	0	73	151
07:45 AM	10	0	1	11	6	27	5	38	1	1	15	17	2	60	2	64	130
Total	56	2	9	67	31	87	11	129	3	2	99	104	6	263	3	272	572
08:00 AM	12	2	1	15	4	31	4	39	3	2	15	20	5	71	3	79	153
08:15 AM	11	0	2	13	7	23	8	38	1	0	21	22	4	43	1	48	121
08:30 AM	9	1	0	10	10	25	7	42	0	0	12	12	4	42	2	48	112
08:45 AM	6	1	2	9	6	15	3	24	0	0	16	16	1	32	2	35	84
Total	38	4	5	47	27	94	22	143	4	2	64	70	14	188	8	210	470
Grand Total	94	6	14	114	58	181	33	272	7	4	163	174	20	451	11	482	1042
Apprch %	82.5	5.3	12.3		21.3	66.5	12.1		4	2.3	93.7		4.1	93.6	2.3		
Total %	9	0.6	1.3	10.9	5.6	17.4	3.2	26.1	0.7	0.4	15.6	16.7	1.9	43.3	1.1	46.3	
Passenger Vehicles	94	6	13	113	57	178	33	268	7	4	161	172	20	449	11	480	1033
% Passenger Vehicles	100	100	92.9	99.1	98.3	98.3	100	98.5	100	100	98.8	98.9	100	99.6	100	99.6	99.1
Large 2 Axle Vehicles	0	0	1	1	1	3	0	4	0	0	2	2	0	2	0	2	9
% Large 2 Axle Vehicles	0	0	7.1	0.9	1.7	1.7	0	1.5	0	0	1.2	1.1	0	0.4	0	0.4	0.9
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	17	2	2	21	7	21	2	30	0	0	30	30	0	76	1	77	158
07:30 AM	16	0	4	20	9	19	2	30	1	0	27	28	2	71	0	73	151
07:45 AM	10	0	1	11	6	27	5	38	1	1	15	17	2	60	2	64	130
08:00 AM	12	2	1	15	4	31	4	39	3	2	15	20	5	71	3	79	153
Total Volume	55	4	8	67	26	98	13	137	5	3	87	95	9	278	6	293	592
% App. Total	82.1	6	11.9		19	71.5	9.5		5.3	3.2	91.6		3.1	94.9	2		
PHF	.809	.500	.500	.798	.722	.790	.650	.878	.417	.375	.725	.792	.450	.914	.500	.927	.937

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn AM
 Site Code : 12218022
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM				07:45 AM				07:00 AM				07:15 AM			
+0 mins.	13	0	2	15	6	27	5	38	1	1	27	29	0	76	1	77
+15 mins.	17	2	2	21	4	31	4	39	0	0	30	30	2	71	0	73
+30 mins.	16	0	4	20	7	23	8	38	1	0	27	28	2	60	2	64
+45 mins.	10	0	1	11	10	25	7	42	1	1	15	17	5	71	3	79
Total Volume	56	2	9	67	27	106	24	157	3	2	99	104	9	278	6	293
% App. Total	83.6	3	13.4		17.2	67.5	15.3		2.9	1.9	95.2		3.1	94.9	2	
PHF	.824	.250	.563	.798	.675	.855	.750	.935	.750	.500	.825	.867	.450	.914	.500	.927

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

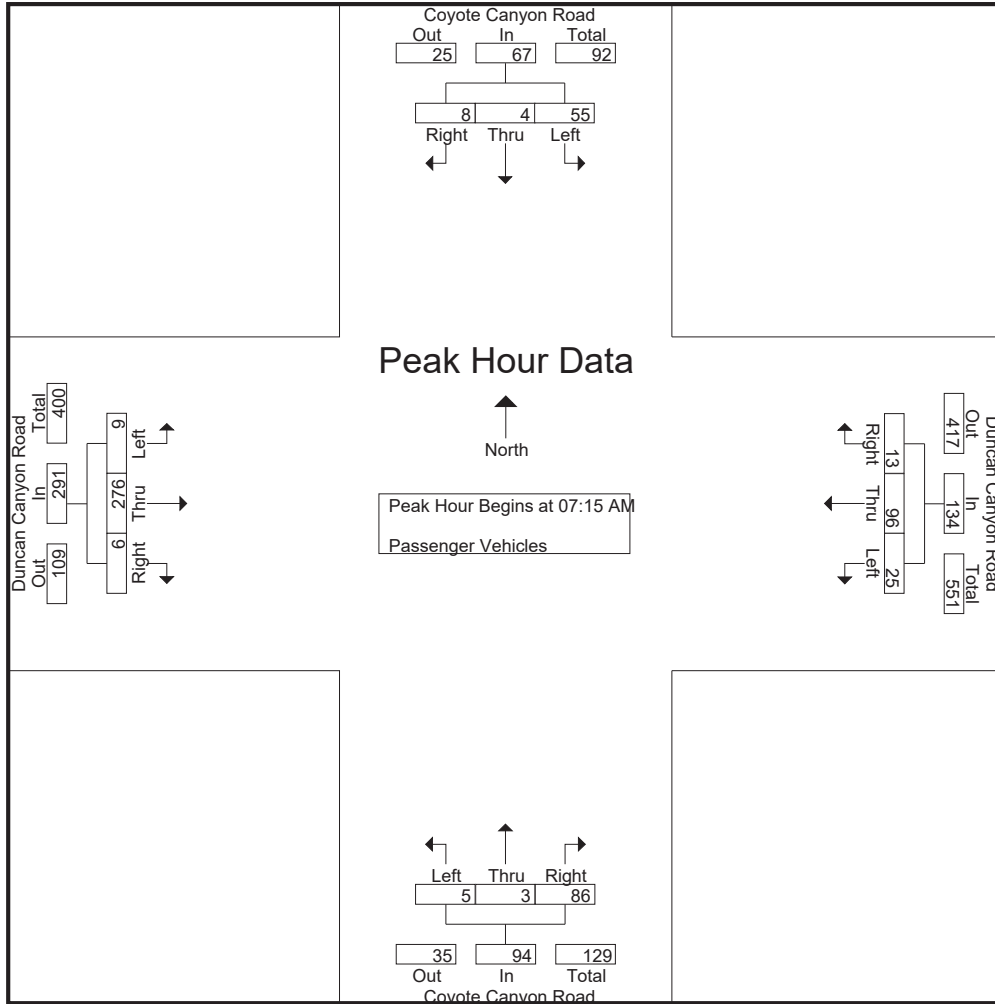
Groups Printed- Passenger Vehicles

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	13	0	1	14	9	20	2	31	1	1	27	29	2	56	0	58	132
07:15 AM	17	2	2	21	7	21	2	30	0	0	30	30	0	75	1	76	157
07:30 AM	16	0	4	20	9	19	2	30	1	0	26	27	2	71	0	73	150
07:45 AM	10	0	1	11	5	25	5	35	1	1	15	17	2	60	2	64	127
Total	56	2	8	66	30	85	11	126	3	2	98	103	6	262	3	271	566
08:00 AM	12	2	1	15	4	31	4	39	3	2	15	20	5	70	3	78	152
08:15 AM	11	0	2	13	7	23	8	38	1	0	21	22	4	43	1	48	121
08:30 AM	9	1	0	10	10	24	7	41	0	0	12	12	4	42	2	48	111
08:45 AM	6	1	2	9	6	15	3	24	0	0	15	15	1	32	2	35	83
Total	38	4	5	47	27	93	22	142	4	2	63	69	14	187	8	209	467
Grand Total	94	6	13	113	57	178	33	268	7	4	161	172	20	449	11	480	1033
Apprch %	83.2	5.3	11.5		21.3	66.4	12.3		4.1	2.3	93.6		4.2	93.5	2.3		
Total %	9.1	0.6	1.3	10.9	5.5	17.2	3.2	25.9	0.7	0.4	15.6	16.7	1.9	43.5	1.1	46.5	

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	17	2	2	21	7	21	2	30	0	0	30	30	0	75	1	76	157
07:30 AM	16	0	4	20	9	19	2	30	1	0	26	27	2	71	0	73	150
07:45 AM	10	0	1	11	5	25	5	35	1	1	15	17	2	60	2	64	127
08:00 AM	12	2	1	15	4	31	4	39	3	2	15	20	5	70	3	78	152
Total Volume	55	4	8	67	25	96	13	134	5	3	86	94	9	276	6	291	586
% App. Total	82.1	6	11.9		18.7	71.6	9.7		5.3	3.2	91.5		3.1	94.8	2.1		
PHF	.809	.500	.500	.798	.694	.774	.650	.859	.417	.375	.717	.783	.450	.920	.500	.933	.933

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn AM
 Site Code : 12218022
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	17	2	2	21	7	21	2	30	0	0	30	30	0	75	1	76
+15 mins.	16	0	4	20	9	19	2	30	1	0	26	27	2	71	0	73
+30 mins.	10	0	1	11	5	25	5	35	1	1	15	17	2	60	2	64
+45 mins.	12	2	1	15	4	31	4	39	3	2	15	20	5	70	3	78
Total Volume	55	4	8	67	25	96	13	134	5	3	86	94	9	276	6	291
% App. Total	82.1	6	11.9		18.7	71.6	9.7		5.3	3.2	91.5		3.1	94.8	2.1	
PHF	.809	.500	.500	.798	.694	.774	.650	.859	.417	.375	.717	.783	.450	.920	.500	.933

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

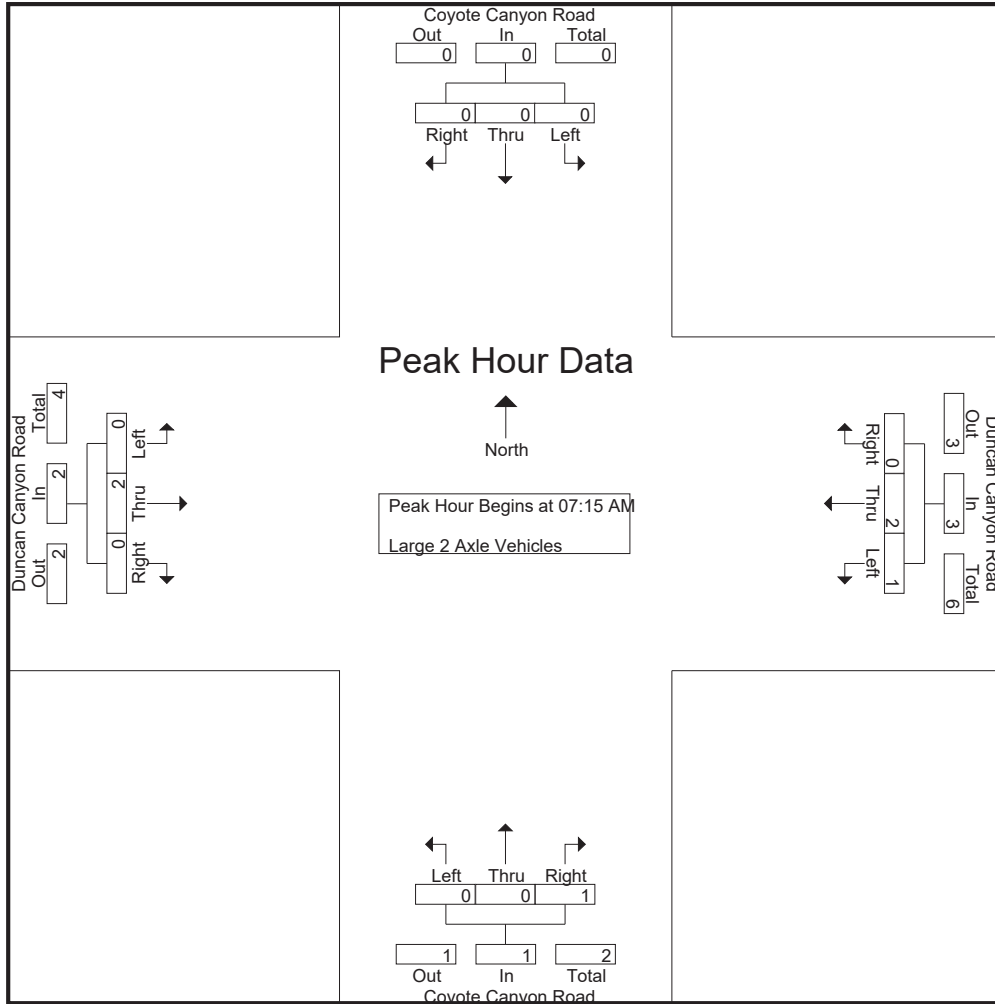
Groups Printed- Large 2 Axle Vehicles

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
07:45 AM	0	0	0	0	1	2	0	3	0	0	0	0	0	0	0	0	3
Total	0	0	1	1	1	2	0	3	0	0	1	1	0	1	0	1	6
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total	0	0	0	0	0	1	0	1	0	0	1	1	0	1	0	1	3
Grand Total	0	0	1	1	1	3	0	4	0	0	2	2	0	2	0	2	9
Apprch %	0	0	100		25	75	0		0	0	100		0	100	0		
Total %	0	0	11.1	11.1	11.1	33.3	0	44.4	0	0	22.2	22.2	0	22.2	0	22.2	

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
07:45 AM	0	0	0	0	1	2	0	3	0	0	0	0	0	0	0	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	0	0	1	2	0	3	0	0	1	1	0	2	0	2	6
% App. Total	0	0	0		33.3	66.7	0		0	0	100		0	100	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.250	.000	.000	.250	.250	.000	.500	.000	.500	.500

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn AM
 Site Code : 12218022
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
+30 mins.	0	0	0	0	1	2	0	3	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total Volume	0	0	0	0	1	2	0	3	0	0	1	1	0	2	0	2
% App. Total	0	0	0	0	33.3	66.7	0	0	0	0	100	0	0	100	0	0
PHF	.000	.000	.000	.000	.250	.250	.000	.250	.000	.000	.250	.250	.000	.500	.000	.500

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

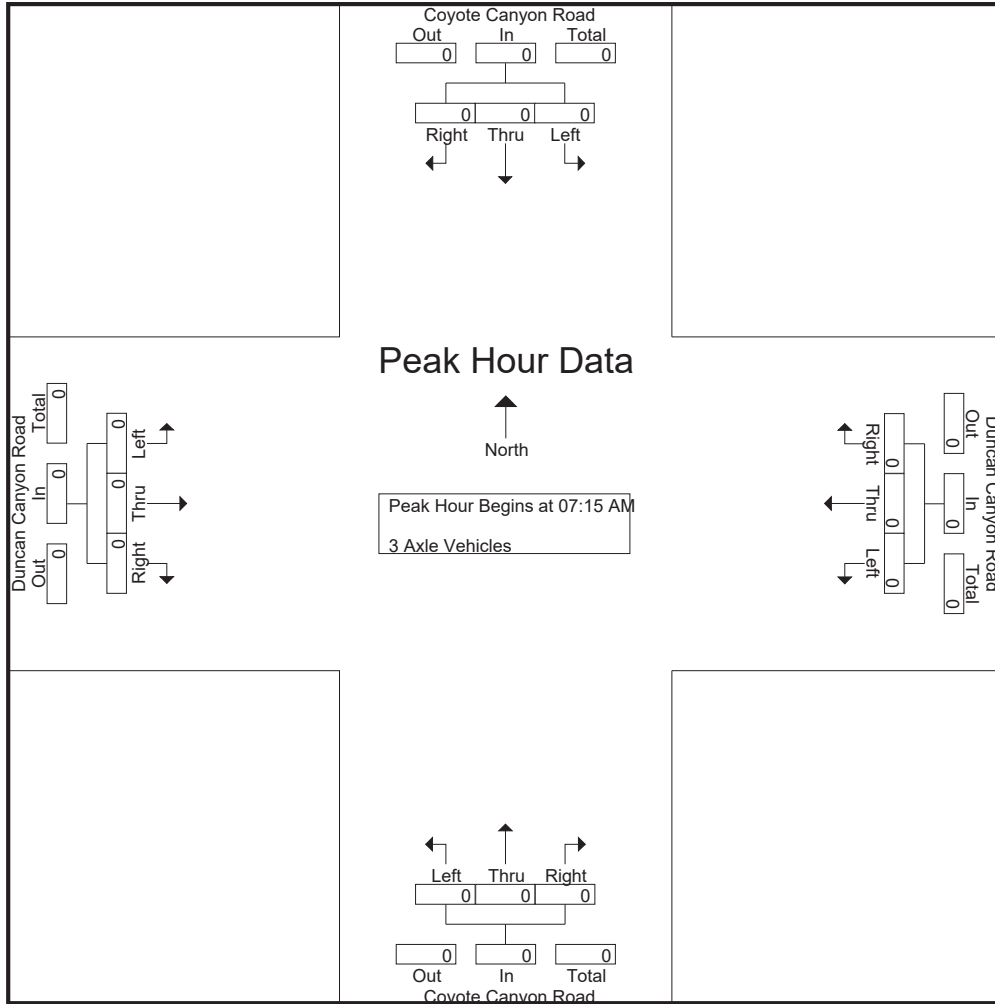
Groups Printed- 3 Axle Vehicles

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

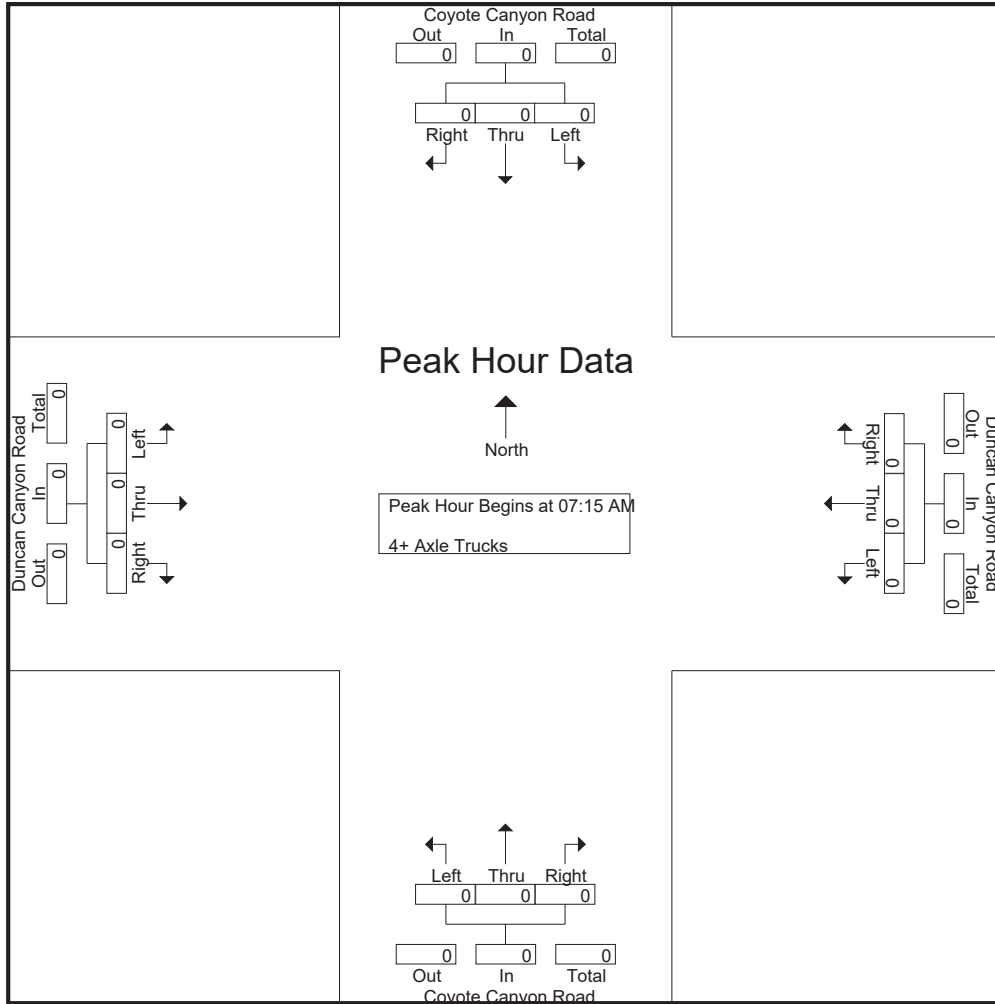
Groups Printed- 4+ Axle Trucks

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

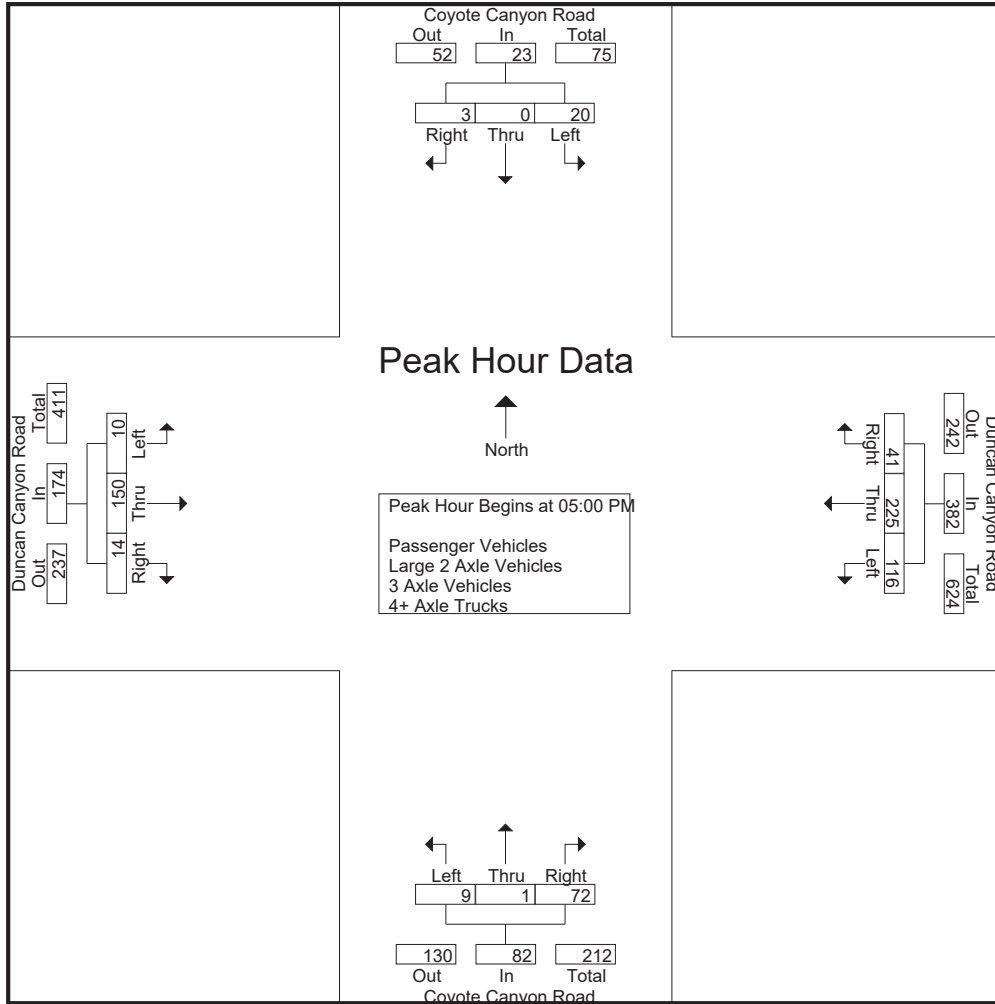
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	4	2	1	7	18	53	3	74	0	0	12	12	0	30	3	33	126
04:15 PM	1	0	1	2	18	65	7	90	1	2	17	20	3	39	1	43	155
04:30 PM	5	0	1	6	19	42	4	65	3	1	23	27	4	43	3	50	148
04:45 PM	10	0	0	10	24	56	6	86	0	0	13	13	3	33	0	36	145
Total	20	2	3	25	79	216	20	315	4	3	65	72	10	145	7	162	574
05:00 PM	6	0	0	6	26	55	12	93	2	0	17	19	2	32	3	37	155
05:15 PM	2	0	0	2	39	65	12	116	2	1	18	21	2	42	6	50	189
05:30 PM	7	0	1	8	26	45	8	79	3	0	22	25	4	40	3	47	159
05:45 PM	5	0	2	7	25	60	9	94	2	0	15	17	2	36	2	40	158
Total	20	0	3	23	116	225	41	382	9	1	72	82	10	150	14	174	661
Grand Total	40	2	6	48	195	441	61	697	13	4	137	154	20	295	21	336	1235
Apprch %	83.3	4.2	12.5		28	63.3	8.8		8.4	2.6	89		6	87.8	6.2		
Total %	3.2	0.2	0.5	3.9	15.8	35.7	4.9	56.4	1.1	0.3	11.1	12.5	1.6	23.9	1.7	27.2	
Passenger Vehicles	40	2	6	48	194	438	61	693	13	4	137	154	19	293	21	333	1228
% Passenger Vehicles	100	100	100	100	99.5	99.3	100	99.4	100	100	100	100	95	99.3	100	99.1	99.4
Large 2 Axle Vehicles	0	0	0	0	1	2	0	3	0	0	0	0	1	2	0	3	6
% Large 2 Axle Vehicles	0	0	0	0	0.5	0.5	0	0.4	0	0	0	0	5	0.7	0	0.9	0.5
3 Axle Vehicles	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
% 3 Axle Vehicles	0	0	0	0	0	0.2	0	0.1	0	0	0	0	0	0	0	0	0.1
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	6	0	0	6	26	55	12	93	2	0	17	19	2	32	3	37	155
05:15 PM	2	0	0	2	39	65	12	116	2	1	18	21	2	42	6	50	189
05:30 PM	7	0	1	8	26	45	8	79	3	0	22	25	4	40	3	47	159
05:45 PM	5	0	2	7	25	60	9	94	2	0	15	17	2	36	2	40	158
Total Volume	20	0	3	23	116	225	41	382	9	1	72	82	10	150	14	174	661
% App. Total	87	0	13		30.4	58.9	10.7		11	1.2	87.8		5.7	86.2	8		
PHF	.714	.000	.375	.719	.744	.865	.854	.823	.750	.250	.818	.820	.625	.893	.583	.870	.874

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:45 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	10	0	0	10	26	55	12	93	2	0	17	19	2	32	3	37
+15 mins.	6	0	0	6	39	65	12	116	2	1	18	21	2	42	6	50
+30 mins.	2	0	0	2	26	45	8	79	3	0	22	25	4	40	3	47
+45 mins.	7	0	1	8	25	60	9	94	2	0	15	17	2	36	2	40
Total Volume	25	0	1	26	116	225	41	382	9	1	72	82	10	150	14	174
% App. Total	96.2	0	3.8		30.4	58.9	10.7		11	1.2	87.8		5.7	86.2	8	
PHF	.625	.000	.250	.650	.744	.865	.854	.823	.750	.250	.818	.820	.625	.893	.583	.870

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

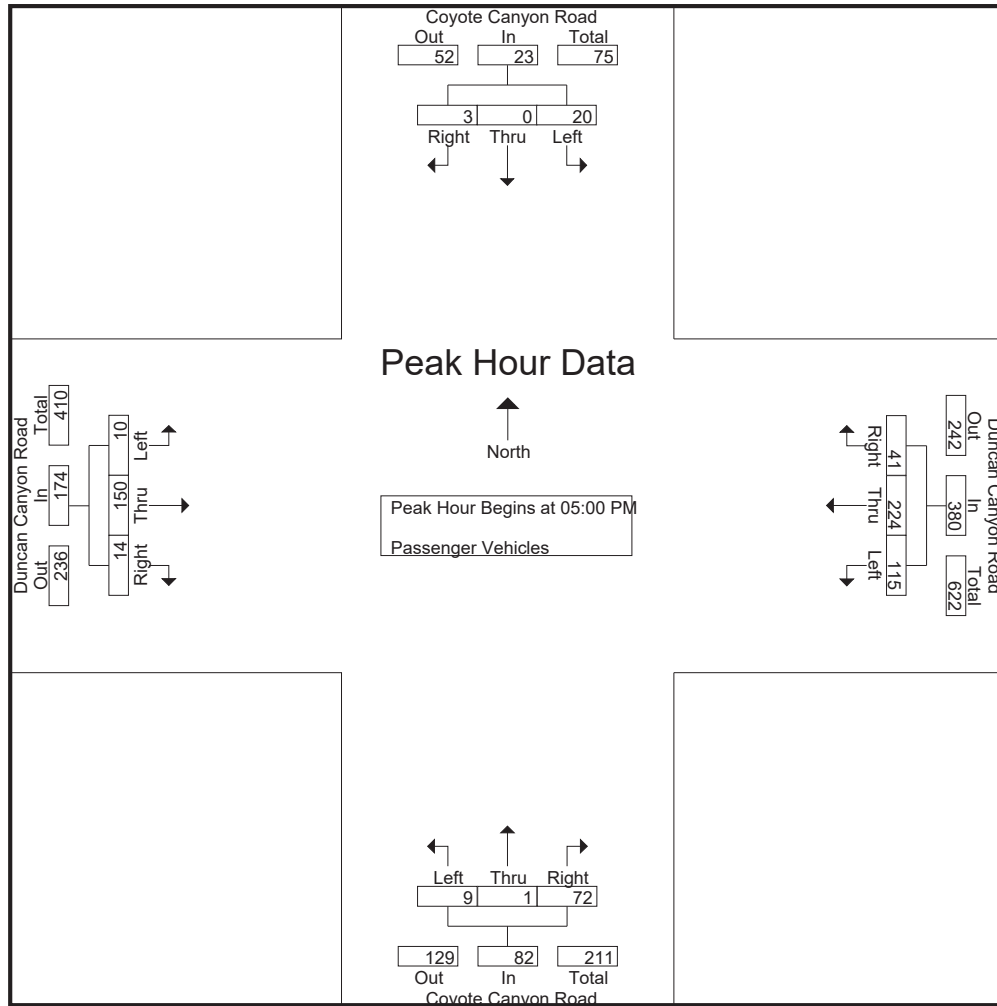
Groups Printed- Passenger Vehicles

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	4	2	1	7	18	53	3	74	0	0	12	12	0	30	3	33	126
04:15 PM	1	0	1	2	18	63	7	88	1	2	17	20	3	39	1	43	153
04:30 PM	5	0	1	6	19	42	4	65	3	1	23	27	3	42	3	48	146
04:45 PM	10	0	0	10	24	56	6	86	0	0	13	13	3	32	0	35	144
Total	20	2	3	25	79	214	20	313	4	3	65	72	9	143	7	159	569
05:00 PM	6	0	0	6	26	55	12	93	2	0	17	19	2	32	3	37	155
05:15 PM	2	0	0	2	39	64	12	115	2	1	18	21	2	42	6	50	188
05:30 PM	7	0	1	8	26	45	8	79	3	0	22	25	4	40	3	47	159
05:45 PM	5	0	2	7	24	60	9	93	2	0	15	17	2	36	2	40	157
Total	20	0	3	23	115	224	41	380	9	1	72	82	10	150	14	174	659
Grand Total	40	2	6	48	194	438	61	693	13	4	137	154	19	293	21	333	1228
Apprch %	83.3	4.2	12.5		28	63.2	8.8		8.4	2.6	89		5.7	88	6.3		
Total %	3.3	0.2	0.5	3.9	15.8	35.7	5	56.4	1.1	0.3	11.2	12.5	1.5	23.9	1.7	27.1	

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	6	0	0	6	26	55	12	93	2	0	17	19	2	32	3	37	155
05:15 PM	2	0	0	2	39	64	12	115	2	1	18	21	2	42	6	50	188
05:30 PM	7	0	1	8	26	45	8	79	3	0	22	25	4	40	3	47	159
05:45 PM	5	0	2	7	24	60	9	93	2	0	15	17	2	36	2	40	157
Total Volume	20	0	3	23	115	224	41	380	9	1	72	82	10	150	14	174	659
% App. Total	87	0	13		30.3	58.9	10.8		11	1.2	87.8		5.7	86.2	8		
PHF	.714	.000	.375	.719	.737	.875	.854	.826	.750	.250	.818	.820	.625	.893	.583	.870	.876

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	6	0	0	6	26	55	12	93	2	0	17	19	2	32	3	37
+15 mins.	2	0	0	2	39	64	12	115	2	1	18	21	2	42	6	50
+30 mins.	7	0	1	8	26	45	8	79	3	0	22	25	4	40	3	47
+45 mins.	5	0	2	7	24	60	9	93	2	0	15	17	2	36	2	40
Total Volume	20	0	3	23	115	224	41	380	9	1	72	82	10	150	14	174
% App. Total	87	0	13		30.3	58.9	10.8		11	1.2	87.8		5.7	86.2	8	
PHF	.714	.000	.375	.719	.737	.875	.854	.826	.750	.250	.818	.820	.625	.893	.583	.870

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

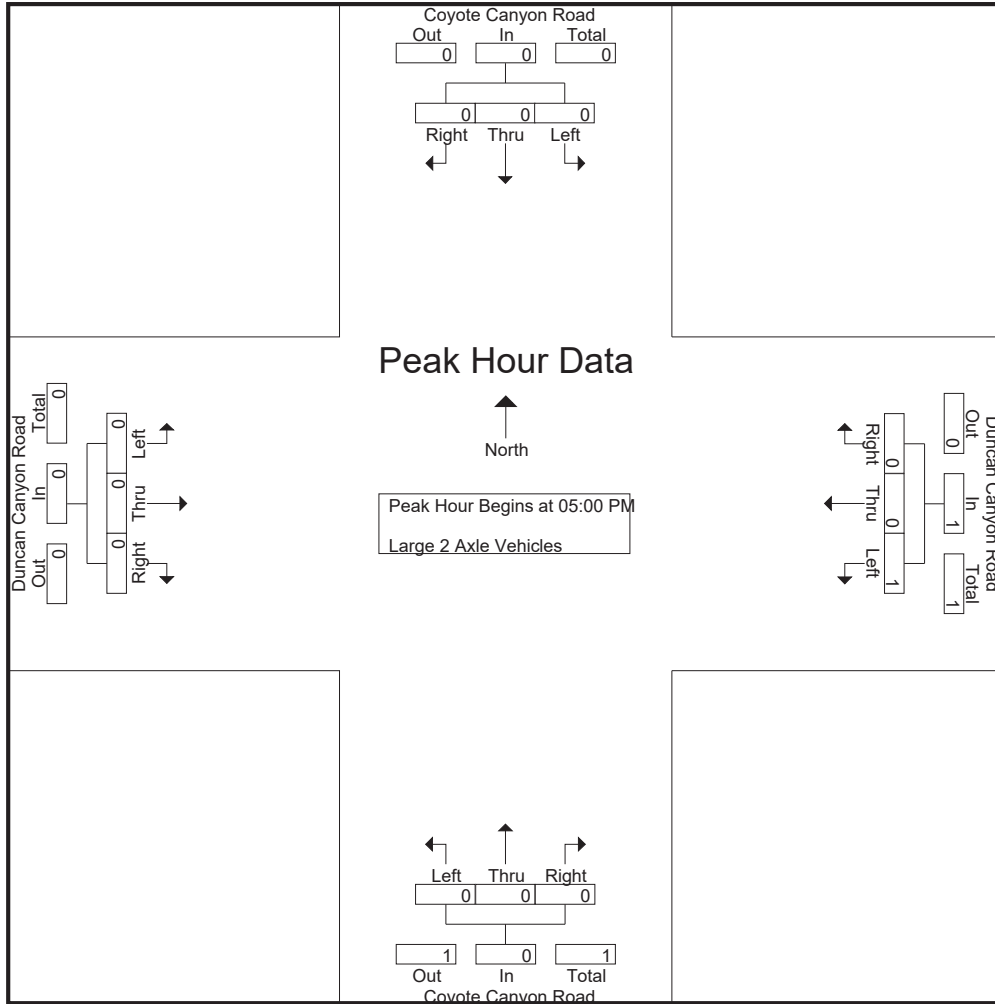
Groups Printed- Large 2 Axle Vehicles

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	2	0	2	0	0	0	0	1	2	0	3	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	1	2	0	3	0	0	0	0	1	2	0	3	6
Apprch %	0	0	0		33.3	66.7	0		0	0	0		33.3	66.7	0		
Total %	0	0	0		16.7	33.3	0	50	0	0	0		16.7	33.3	0	50	

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

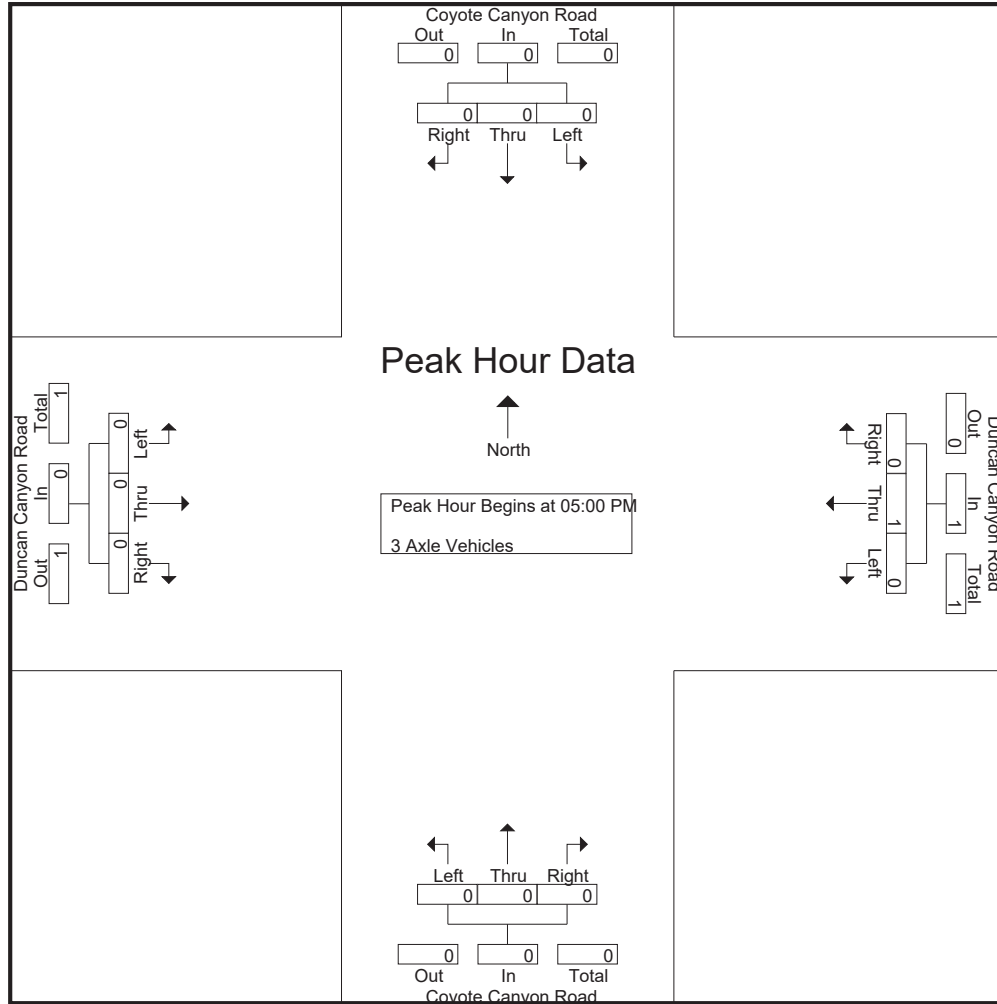
Groups Printed- 3 Axle Vehicles

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Apprch %	0	0	0		0	100	0		0	0	0		0	0	0		
Total %	0	0	0		0	100	0	100	0	0	0		0	0	0		

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		0	100	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

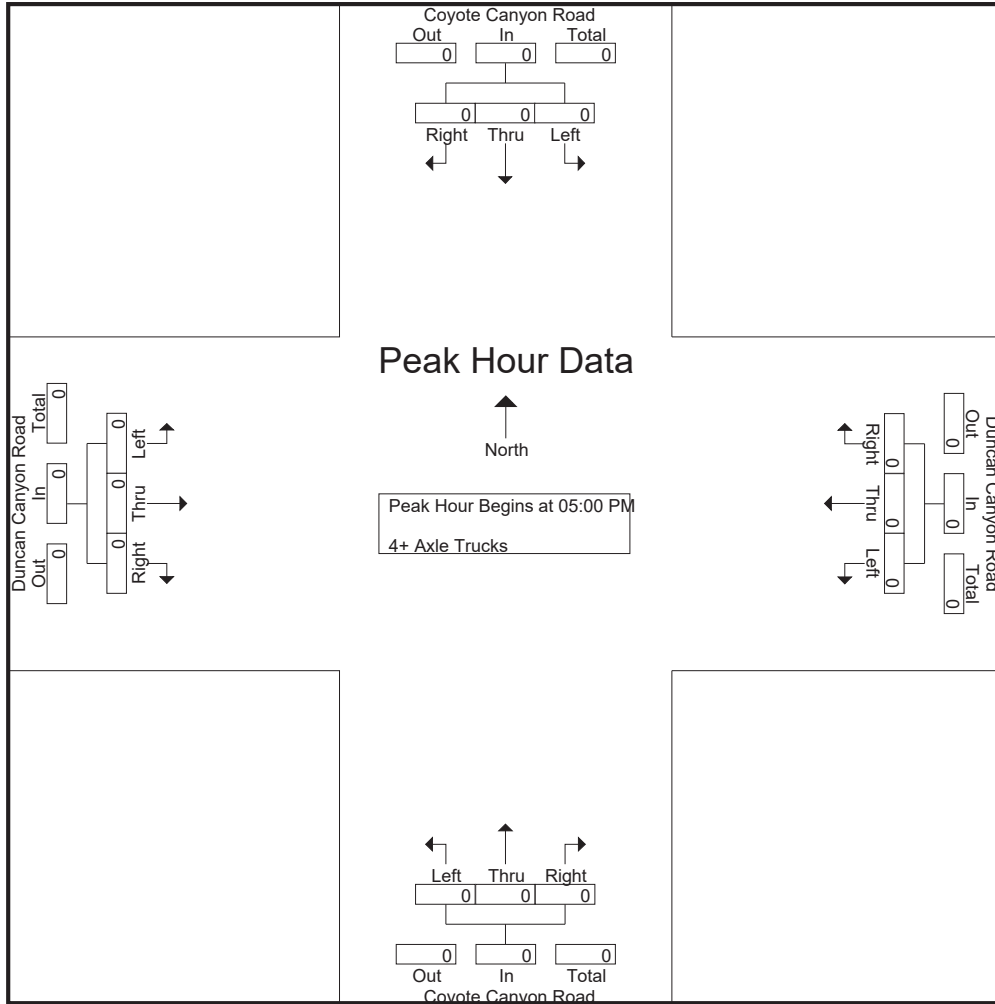
Groups Printed- 4+ Axle Trucks

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0		
Total %																	

Start Time	Coyote Canyon Road Southbound				Duncan Canyon Road Westbound				Coyote Canyon Road Northbound				Duncan Canyon Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

County of San Bernardino
 N/S: Coyote Canyon Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 01_CSB_Coyote Cyn_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	05:00 PM				05:00 PM				05:00 PM				05:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

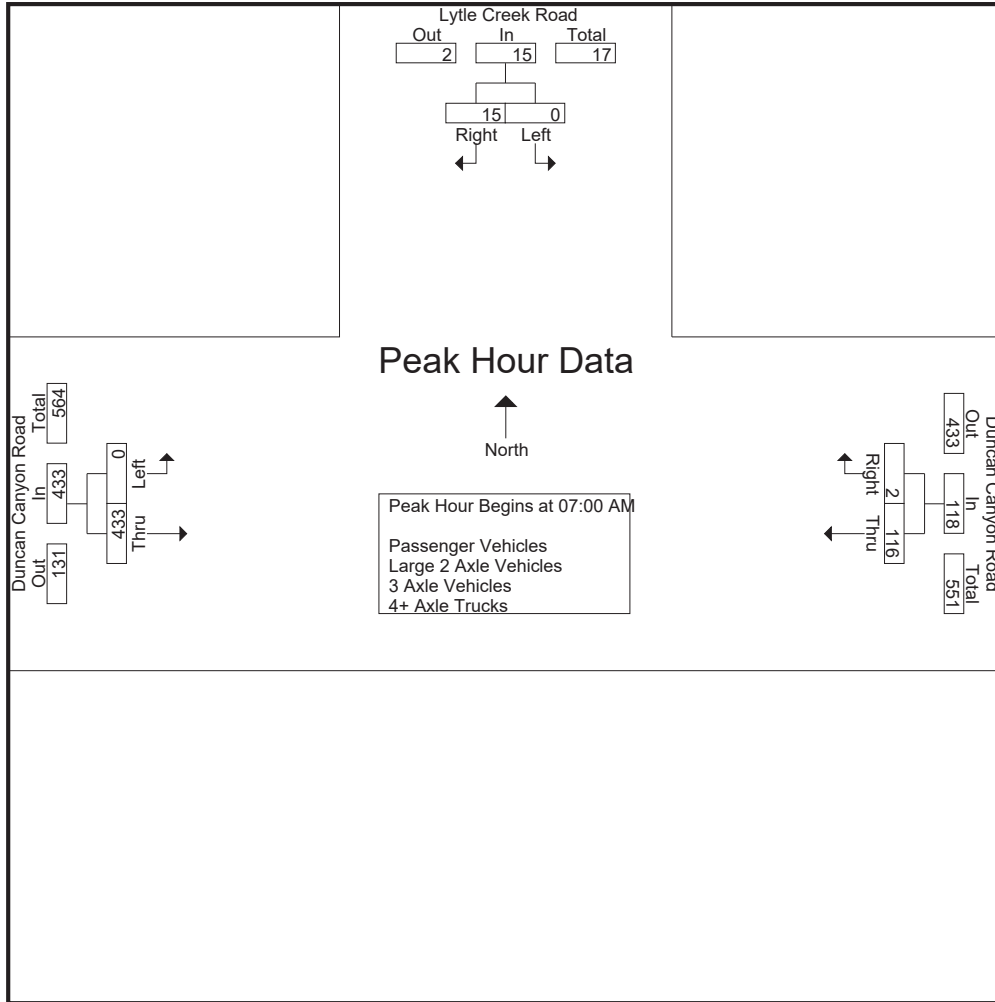
Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
07:00 AM	0	5	5	27	0	27	0	106	106	138
07:15 AM	0	6	6	22	0	22	0	118	118	146
07:30 AM	0	3	3	32	1	33	0	115	115	151
07:45 AM	0	1	1	35	1	36	0	94	94	131
Total	0	15	15	116	2	118	0	433	433	566
08:00 AM	0	0	0	34	1	35	0	95	95	130
08:15 AM	0	1	1	39	1	40	0	75	75	116
08:30 AM	0	1	1	38	0	38	0	56	56	95
08:45 AM	0	1	1	23	0	23	0	53	53	77
Total	0	3	3	134	2	136	0	279	279	418
Grand Total	0	18	18	250	4	254	0	712	712	984
Apprch %	0	100		98.4	1.6		0	100		
Total %	0	1.8	1.8	25.4	0.4	25.8	0	72.4	72.4	
Passenger Vehicles	0	18	18	246	2	248	0	708	708	974
% Passenger Vehicles	0	100	100	98.4	50	97.6	0	99.4	99.4	99
Large 2 Axle Vehicles	0	0	0	4	2	6	0	4	4	10
% Large 2 Axle Vehicles	0	0	0	1.6	50	2.4	0	0.6	0.6	1
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0

Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
07:00 AM	0	5	5	27	0	27	0	106	106	138
07:15 AM	0	6	6	22	0	22	0	118	118	146
07:30 AM	0	3	3	32	1	33	0	115	115	151
07:45 AM	0	1	1	35	1	36	0	94	94	131
Total Volume	0	15	15	116	2	118	0	433	433	566
% App. Total	0	100		98.3	1.7		0	100		
PHF	.000	.625	.625	.829	.500	.819	.000	.917	.917	.937

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:00 AM

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:45 AM			07:00 AM		
+0 mins.	0	5	5	35	1	36	0	106	106
+15 mins.	0	6	6	34	1	35	0	118	118
+30 mins.	0	3	3	39	1	40	0	115	115
+45 mins.	0	1	1	38	0	38	0	94	94
Total Volume	0	15	15	146	3	149	0	433	433
% App. Total	0	100		98	2		0	100	
PHF	.000	.625	.625	.936	.750	.931	.000	.917	.917

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSBLytle Creek_Duncan Cyn AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

Groups Printed- Passenger Vehicles

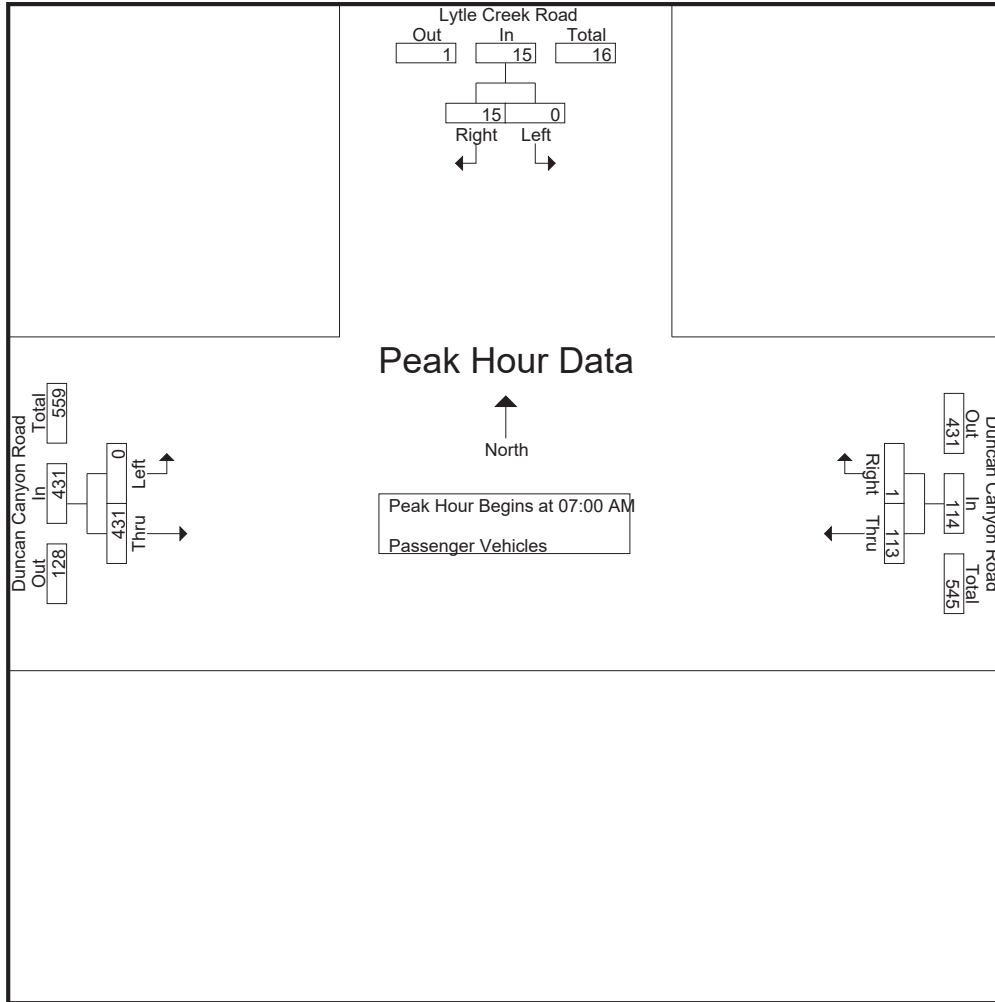
Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
07:00 AM	0	5	5	27	0	27	0	106	106	138
07:15 AM	0	6	6	22	0	22	0	117	117	145
07:30 AM	0	3	3	32	1	33	0	114	114	150
07:45 AM	0	1	1	32	0	32	0	94	94	127
Total	0	15	15	113	1	114	0	431	431	560
08:00 AM	0	0	0	34	1	35	0	94	94	129
08:15 AM	0	1	1	39	0	39	0	75	75	115
08:30 AM	0	1	1	37	0	37	0	56	56	94
08:45 AM	0	1	1	23	0	23	0	52	52	76
Total	0	3	3	133	1	134	0	277	277	414
Grand Total	0	18	18	246	2	248	0	708	708	974
Apprch %	0	100		99.2	0.8		0	100		
Total %	0	1.8	1.8	25.3	0.2	25.5	0	72.7	72.7	

Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
07:00 AM	0	5	5	27	0	27	0	106	106	138
07:15 AM	0	6	6	22	0	22	0	117	117	145
07:30 AM	0	3	3	32	1	33	0	114	114	150
07:45 AM	0	1	1	32	0	32	0	94	94	127
Total Volume	0	15	15	113	1	114	0	431	431	560
% App. Total	0	100		99.1	0.9		0	100		
PHF	.000	.625	.625	.883	.250	.864	.000	.921	.921	.933

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:00 AM

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CS_B_Lytle Creek_Duncan Cyn AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	5	5	27	0	27	0	106	106
+15 mins.	0	6	6	22	0	22	0	117	117
+30 mins.	0	3	3	32	1	33	0	114	114
+45 mins.	0	1	1	32	0	32	0	94	94
Total Volume	0	15	15	113	1	114	0	431	431
% App. Total	0	100		99.1	0.9		0	100	
PHF	.000	.625	.625	.883	.250	.864	.000	.921	.921

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

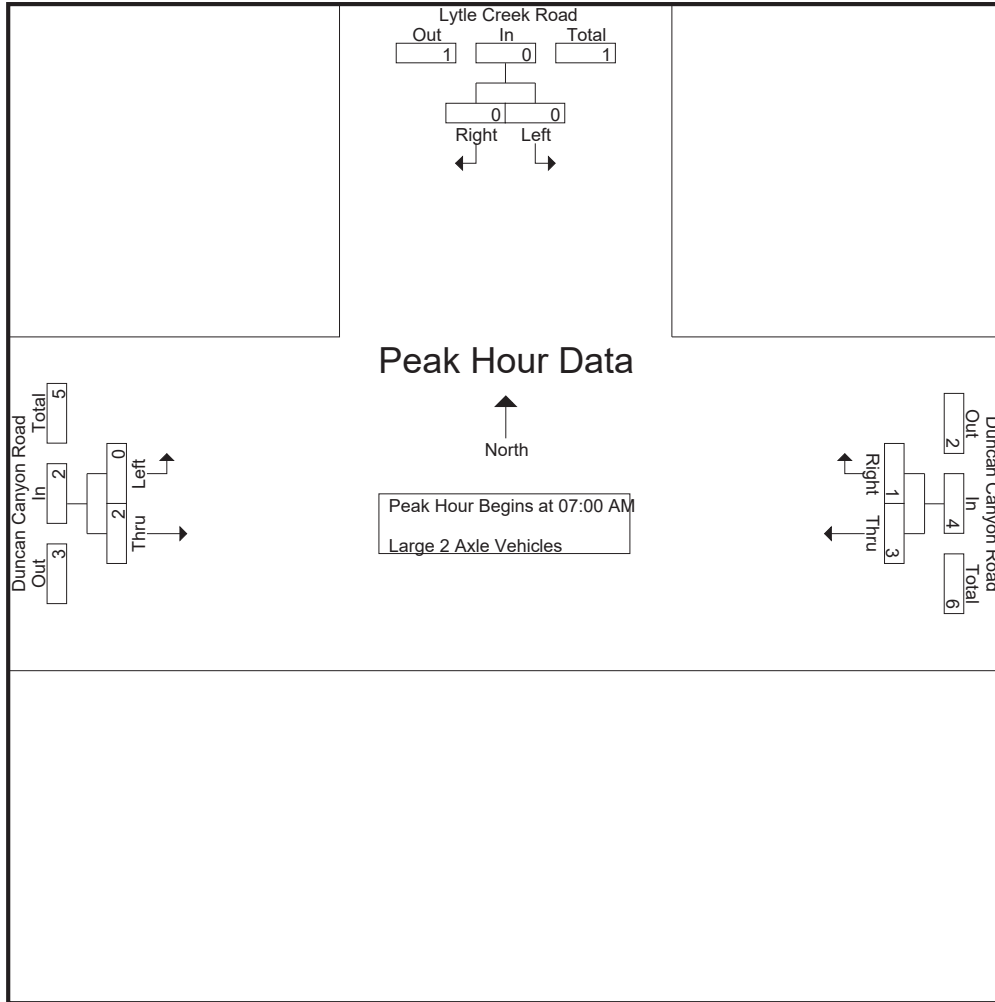
Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	1	1	1
07:30 AM	0	0	0	0	0	0	0	1	1	1
07:45 AM	0	0	0	3	1	4	0	0	0	4
Total	0	0	0	3	1	4	0	2	2	6
08:00 AM	0	0	0	0	0	0	0	1	1	1
08:15 AM	0	0	0	0	1	1	0	0	0	1
08:30 AM	0	0	0	1	0	1	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	1	1	2	0	2	2	4
Grand Total	0	0	0	4	2	6	0	4	4	10
Apprch %	0	0		66.7	33.3		0	100		
Total %	0	0		40	20	60	0	40	40	

Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	1	1	1
07:30 AM	0	0	0	0	0	0	0	1	1	1
07:45 AM	0	0	0	3	1	4	0	0	0	4
Total Volume	0	0	0	3	1	4	0	2	2	6
% App. Total	0	0		75	25		0	100		
PHF	.000	.000	.000	.250	.250	.250	.000	.500	.500	.375

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:00 AM

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	1	1
+30 mins.	0	0	0	0	0	0	0	1	1
+45 mins.	0	0	0	3	1	4	0	0	0
Total Volume	0	0	0	3	1	4	0	2	2
% App. Total	0	0	0	75	25	100	0	100	500
PHF	.000	.000	.000	.250	.250	.250	.000	.500	.500

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

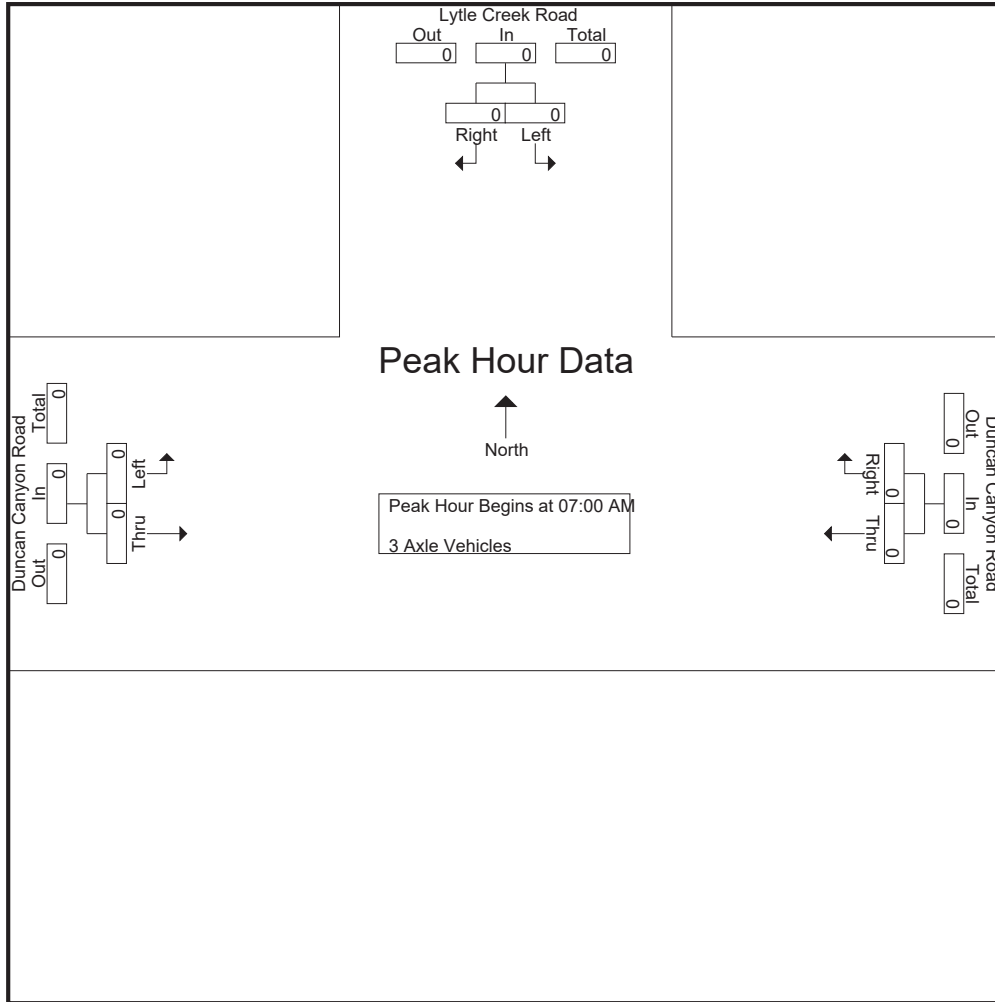
Groups Printed- 3 Axle Vehicles

Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

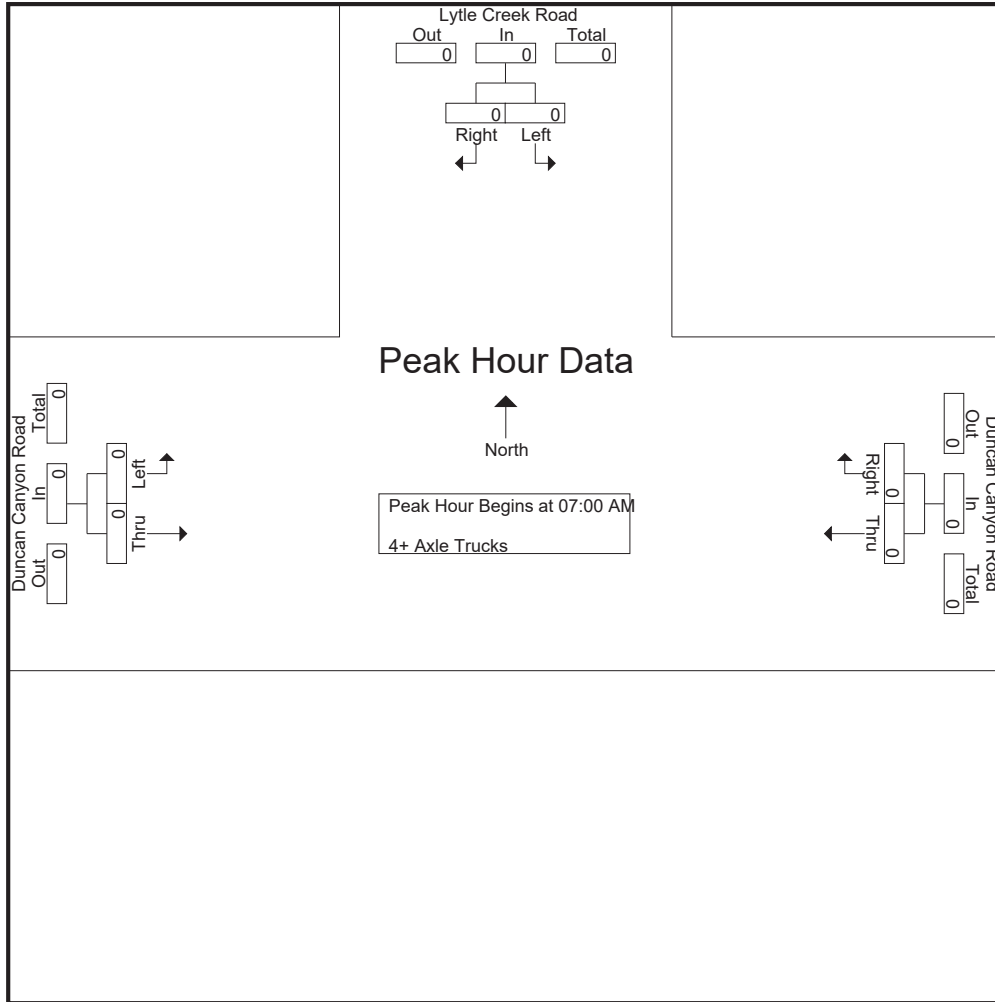
Groups Printed- 4+ Axle Trucks

Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

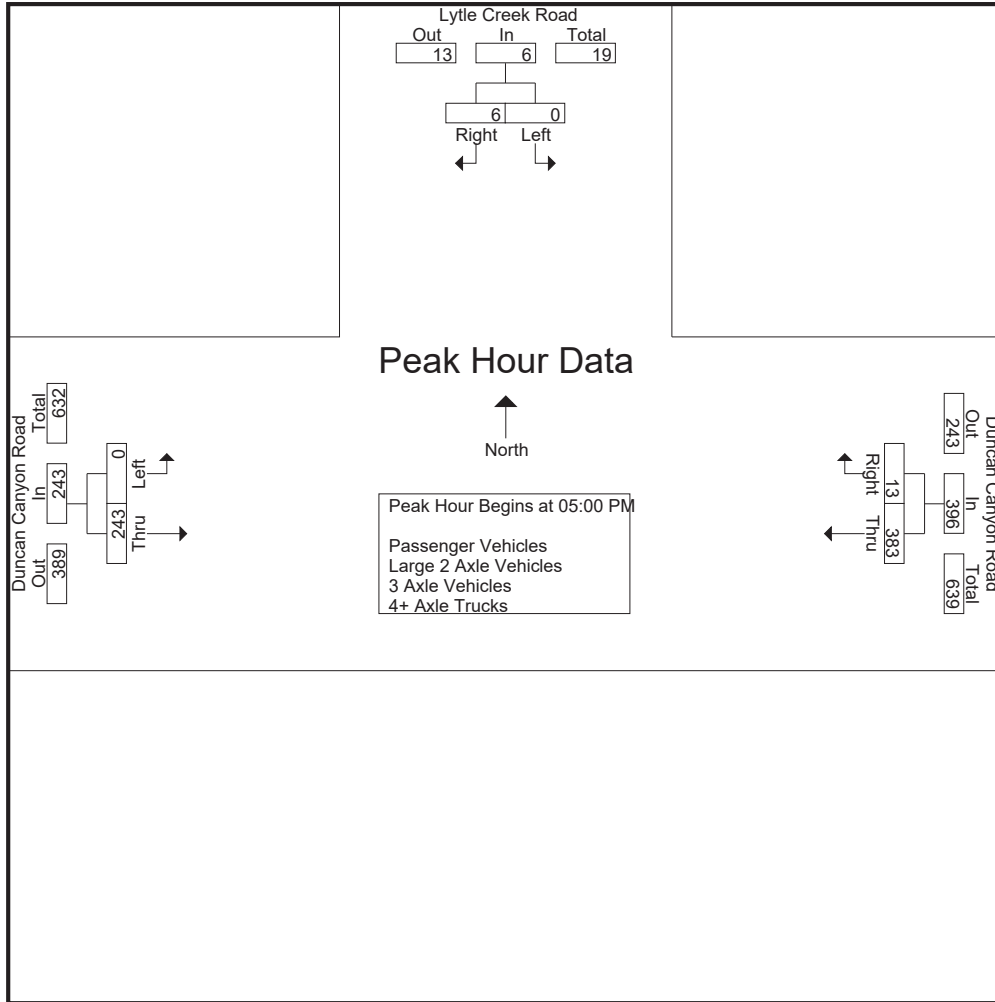
Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
04:00 PM	0	3	3	75	3	78	0	49	49	130
04:15 PM	0	1	1	89	5	94	0	62	62	157
04:30 PM	0	1	1	69	1	70	0	67	67	138
04:45 PM	0	1	1	86	3	89	0	57	57	147
Total	0	6	6	319	12	331	0	235	235	572
05:00 PM	0	1	1	97	3	100	0	55	55	156
05:15 PM	0	0	0	109	6	115	0	65	65	180
05:30 PM	0	2	2	84	1	85	0	67	67	154
05:45 PM	0	3	3	93	3	96	0	56	56	155
Total	0	6	6	383	13	396	0	243	243	645
Grand Total	0	12	12	702	25	727	0	478	478	1217
Apprch %	0	100		96.6	3.4		0	100		
Total %	0	1	1	57.7	2.1	59.7	0	39.3	39.3	
Passenger Vehicles	0	12	12	698	25	723	0	476	476	1211
% Passenger Vehicles	0	100	100	99.4	100	99.4	0	99.6	99.6	99.5
Large 2 Axle Vehicles	0	0	0	3	0	3	0	2	2	5
% Large 2 Axle Vehicles	0	0	0	0.4	0	0.4	0	0.4	0.4	0.4
3 Axle Vehicles	0	0	0	1	0	1	0	0	0	1
% 3 Axle Vehicles	0	0	0	0.1	0	0.1	0	0	0	0.1
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0

Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
05:00 PM	0	1	1	97	3	100	0	55	55	156
05:15 PM	0	0	0	109	6	115	0	65	65	180
05:30 PM	0	2	2	84	1	85	0	67	67	154
05:45 PM	0	3	3	93	3	96	0	56	56	155
Total Volume	0	6	6	383	13	396	0	243	243	645
% App. Total	0	100		96.7	3.3		0	100		
PHF	.000	.500	.500	.878	.542	.861	.000	.907	.907	.896

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 05:00 PM

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:00 PM			05:00 PM			04:30 PM		
+0 mins.	0	3	3	97	3	100	0	67	67
+15 mins.	0	1	1	109	6	115	0	57	57
+30 mins.	0	1	1	84	1	85	0	55	55
+45 mins.	0	1	1	93	3	96	0	65	65
Total Volume	0	6	6	383	13	396	0	244	244
% App. Total	0	100		96.7	3.3		0	100	
PHF	.000	.500	.500	.878	.542	.861	.000	.910	.910

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

Groups Printed- Passenger Vehicles

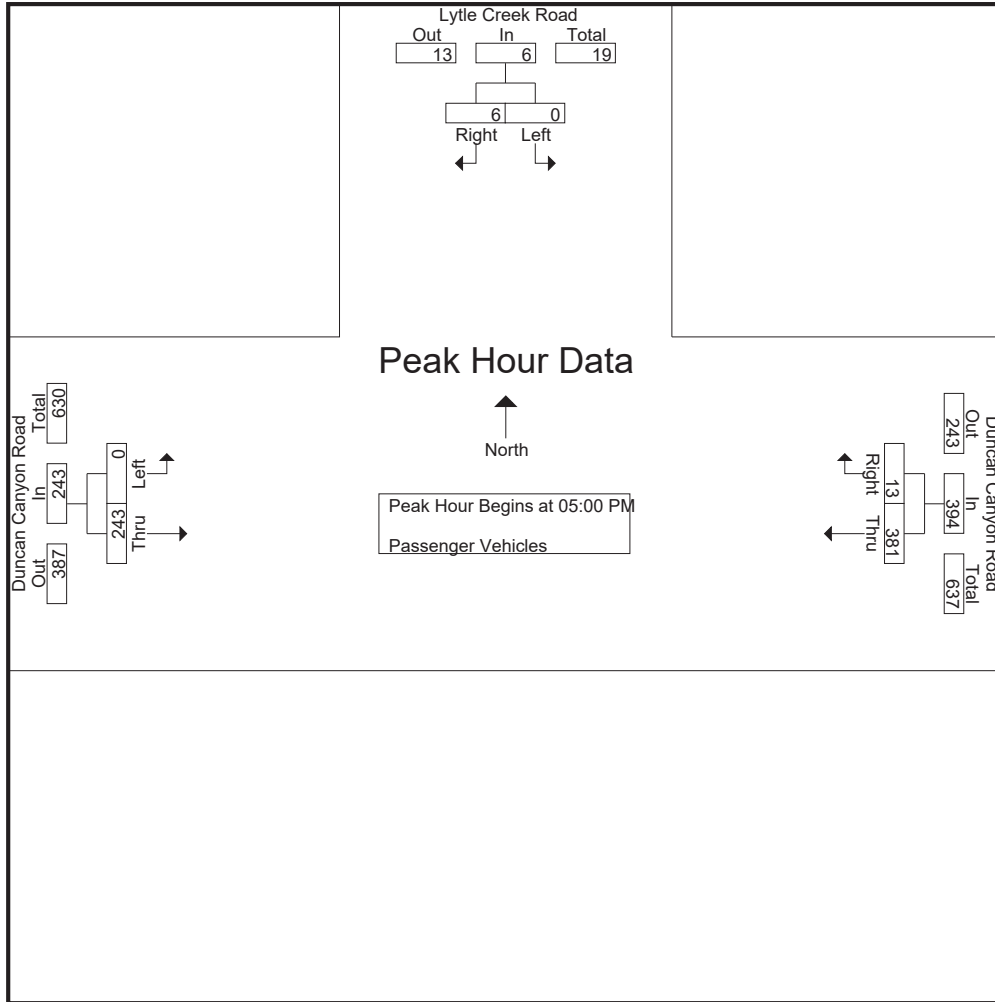
Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
04:00 PM	0	3	3	75	3	78	0	49	49	130
04:15 PM	0	1	1	87	5	92	0	61	61	154
04:30 PM	0	1	1	69	1	70	0	67	67	138
04:45 PM	0	1	1	86	3	89	0	56	56	146
Total	0	6	6	317	12	329	0	233	233	568
05:00 PM	0	1	1	96	3	99	0	55	55	155
05:15 PM	0	0	0	109	6	115	0	65	65	180
05:30 PM	0	2	2	84	1	85	0	67	67	154
05:45 PM	0	3	3	92	3	95	0	56	56	154
Total	0	6	6	381	13	394	0	243	243	643
Grand Total	0	12	12	698	25	723	0	476	476	1211
Apprch %	0	100		96.5	3.5		0	100		
Total %	0	1	1	57.6	2.1	59.7	0	39.3	39.3	

Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
05:00 PM	0	1	1	96	3	99	0	55	55	155
05:15 PM	0	0	0	109	6	115	0	65	65	180
05:30 PM	0	2	2	84	1	85	0	67	67	154
05:45 PM	0	3	3	92	3	95	0	56	56	154
Total Volume	0	6	6	381	13	394	0	243	243	643
% App. Total	0	100		96.7	3.3		0	100		
PHF	.000	.500	.500	.874	.542	.857	.000	.907	.907	.893

Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 05:00 PM

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	05:00 PM			05:00 PM			05:00 PM		
+0 mins.	0	1	1	96	3	99	0	55	55
+15 mins.	0	0	0	109	6	115	0	65	65
+30 mins.	0	2	2	84	1	85	0	67	67
+45 mins.	0	3	3	92	3	95	0	56	56
Total Volume	0	6	6	381	13	394	0	243	243
% App. Total	0	100		96.7	3.3		0	100	
PHF	.000	.500	.500	.874	.542	.857	.000	.907	.907

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

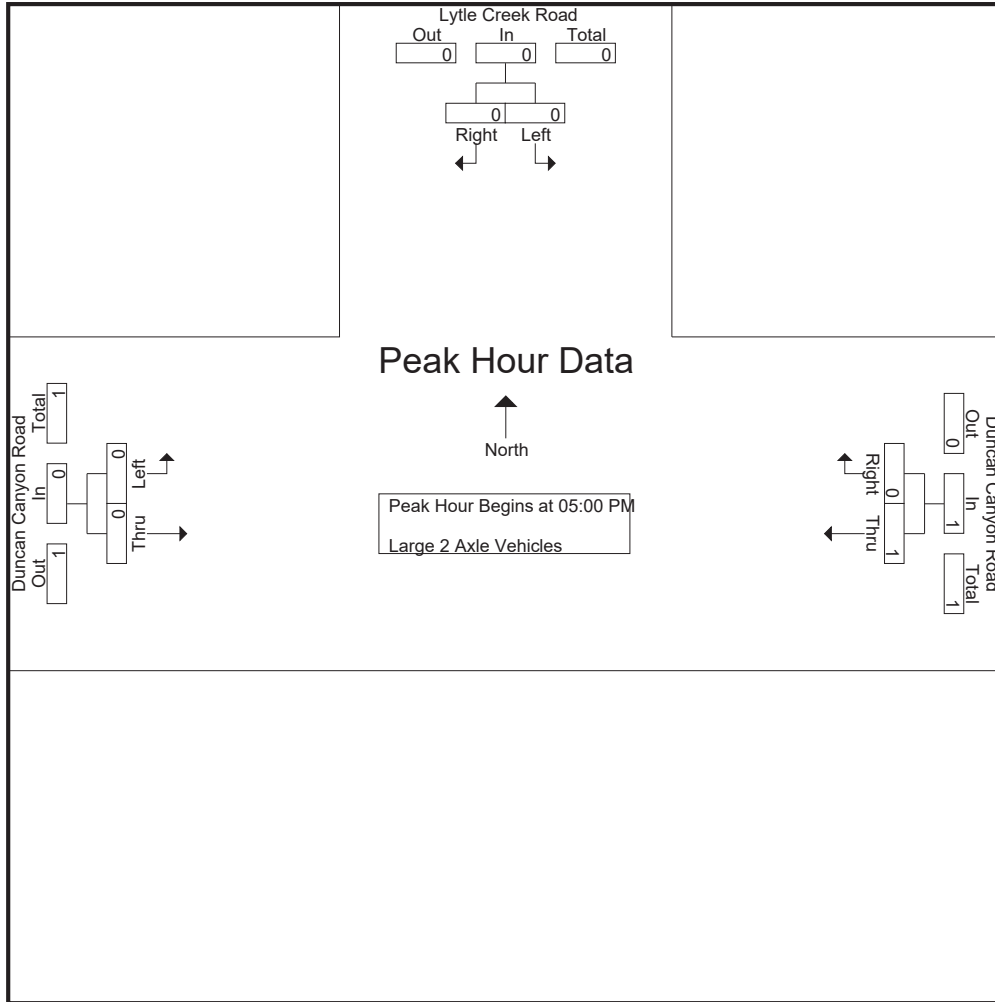
Groups Printed- Large 2 Axle Vehicles

Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	2	0	2	0	1	1	3
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	2	0	2	0	2	2	4
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	1	0	1	0	0	0	1
Total	0	0	0	1	0	1	0	0	0	1
Grand Total	0	0	0	3	0	3	0	2	2	5
Apprch %	0	0		100	0		0	100		
Total %	0	0		60	0	60	0	40	40	

Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	1	0	1	0	0	0	1
Total Volume	0	0	0	1	0	1	0	0	0	1
% App. Total	0	0		100	0		0	0		
PHF	.000	.000	.000	.250	.000	.250	.000	.000	.000	.250

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	05:00 PM			05:00 PM			05:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	1	0	1	0	0	0
Total Volume	0	0	0	1	0	1	0	0	0
% App. Total	0	0	0	100	0		0	0	
PHF	.000	.000	.000	.250	.000	.250	.000	.000	.000

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

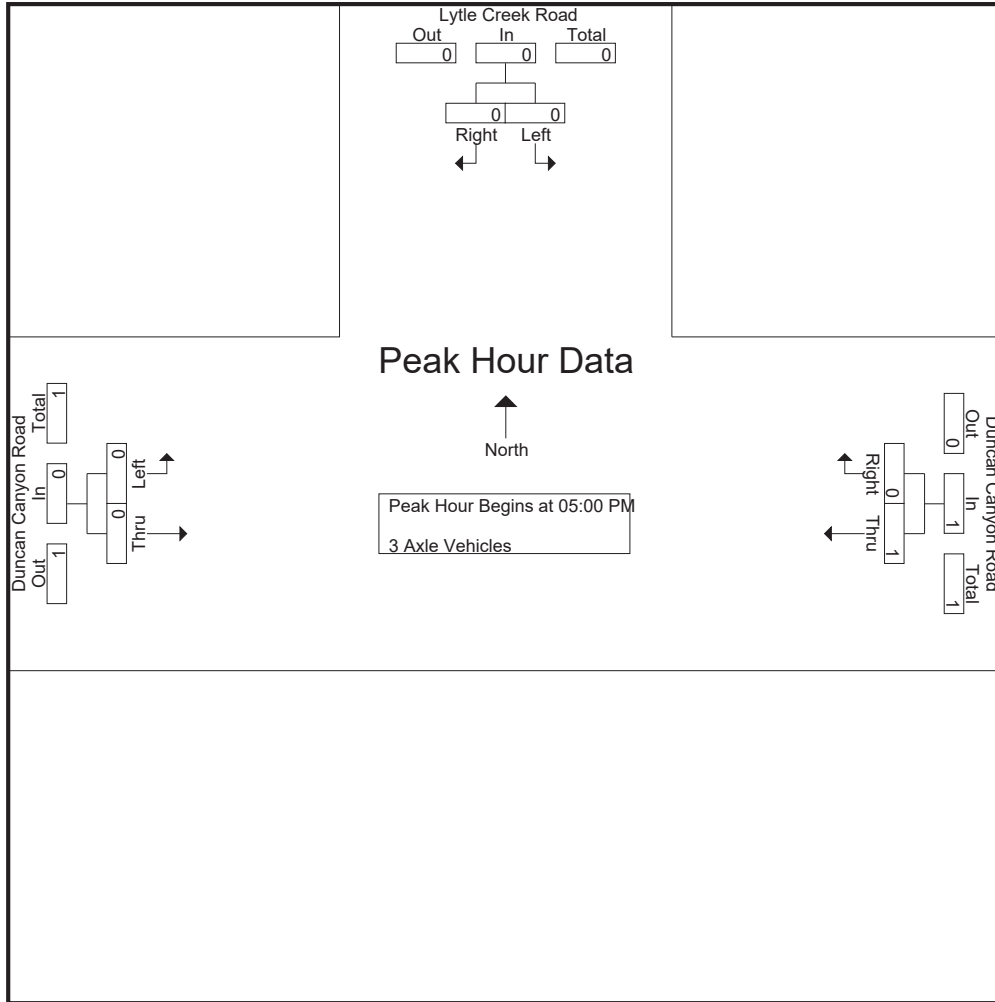
Groups Printed- 3 Axle Vehicles

Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	1	0	1	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	1	0	0	0	1
Grand Total	0	0	0	1	0	1	0	0	0	1
Apprch %	0	0		100	0		0	0		
Total %	0	0		100	0	100	0	0		

Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	0	0	0	1	0	1	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	1	0	1	0	0	0	1
% App. Total	0	0		100	0		0	0		
PHF	.000	.000	.000	.250	.000	.250	.000	.000	.000	.250

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	05:00 PM			05:00 PM			05:00 PM		
+0 mins.	0	0	0	1	0	1	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	1	0	1	0	0	0
% App. Total	0	0	0	100	0	100	0	0	0
PHF	.000	.000	.000	.250	.000	.250	.000	.000	.000

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

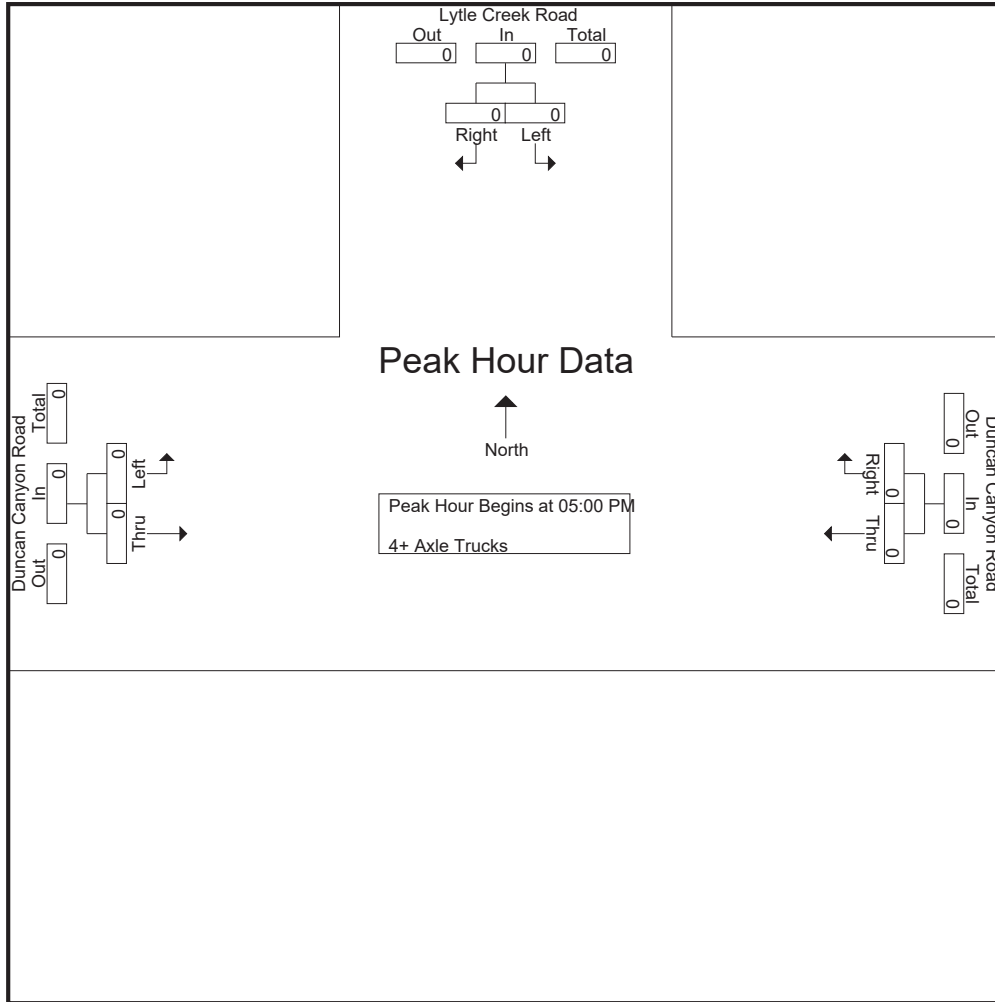
Groups Printed- 4+ Axle Trucks

Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0		
Total %										

Start Time	Lytle Creek Road Southbound			Duncan Canyon Road Westbound			Duncan Canyon Road Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

County of San Bernardino
 N/S: Lytle Creek Road
 E/W: Duncan Canyon Road
 Weather: Clear

File Name : 02_CSB_Lytle Creek_Duncan Cyn PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	05:00 PM			05:00 PM			05:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

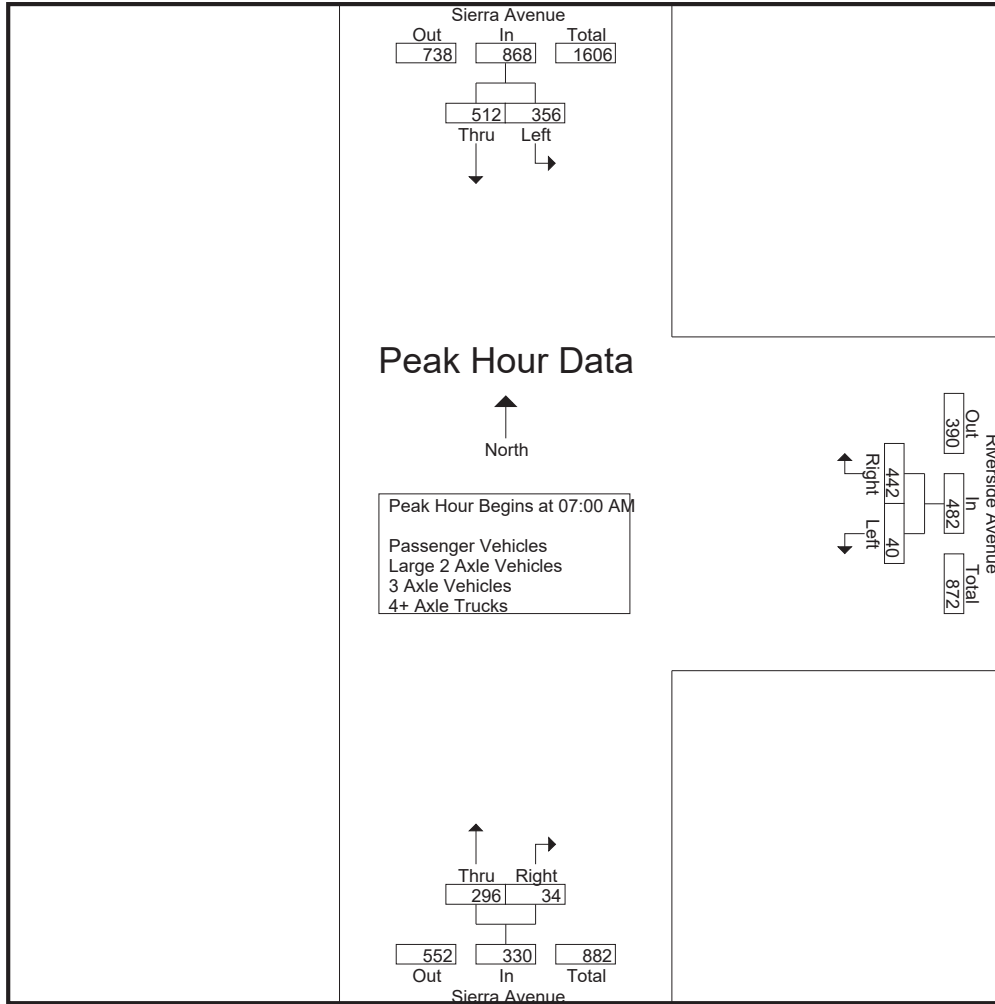
Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	93	99	192	8	115	123	66	1	67	382
07:15 AM	76	143	219	10	132	142	87	6	93	454
07:30 AM	94	161	255	12	107	119	77	8	85	459
07:45 AM	93	109	202	10	88	98	66	19	85	385
Total	356	512	868	40	442	482	296	34	330	1680
08:00 AM	65	122	187	8	81	89	78	7	85	361
08:15 AM	72	104	176	3	70	73	55	1	56	305
08:30 AM	63	102	165	2	63	65	56	4	60	290
08:45 AM	49	113	162	3	49	52	56	0	56	270
Total	249	441	690	16	263	279	245	12	257	1226
Grand Total	605	953	1558	56	705	761	541	46	587	2906
Apprch %	38.8	61.2		7.4	92.6		92.2	7.8		
Total %	20.8	32.8	53.6	1.9	24.3	26.2	18.6	1.6	20.2	
Passenger Vehicles	555	927	1482	54	666	720	512	41	553	2755
% Passenger Vehicles	91.7	97.3	95.1	96.4	94.5	94.6	94.6	89.1	94.2	94.8
Large 2 Axle Vehicles	15	9	24	2	11	13	13	4	17	54
% Large 2 Axle Vehicles	2.5	0.9	1.5	3.6	1.6	1.7	2.4	8.7	2.9	1.9
3 Axle Vehicles	3	6	9	0	3	3	10	1	11	23
% 3 Axle Vehicles	0.5	0.6	0.6	0	0.4	0.4	1.8	2.2	1.9	0.8
4+ Axle Trucks	32	11	43	0	25	25	6	0	6	74
% 4+ Axle Trucks	5.3	1.2	2.8	0	3.5	3.3	1.1	0	1	2.5

Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	93	99	192	8	115	123	66	1	67	382
07:15 AM	76	143	219	10	132	142	87	6	93	454
07:30 AM	94	161	255	12	107	119	77	8	85	459
07:45 AM	93	109	202	10	88	98	66	19	85	385
Total Volume	356	512	868	40	442	482	296	34	330	1680
% App. Total	41	59		8.3	91.7		89.7	10.3		
PHF	.947	.795	.851	.833	.837	.849	.851	.447	.887	.915

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:00 AM

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:15 AM		
+0 mins.	93	99	192	8	115	123	87	6	93
+15 mins.	76	143	219	10	132	142	77	8	85
+30 mins.	94	161	255	12	107	119	66	19	85
+45 mins.	93	109	202	10	88	98	78	7	85
Total Volume	356	512	868	40	442	482	308	40	348
% App. Total	41	59		8.3	91.7		88.5	11.5	
PHF	.947	.795	.851	.833	.837	.849	.885	.526	.935

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

Groups Printed- Passenger Vehicles

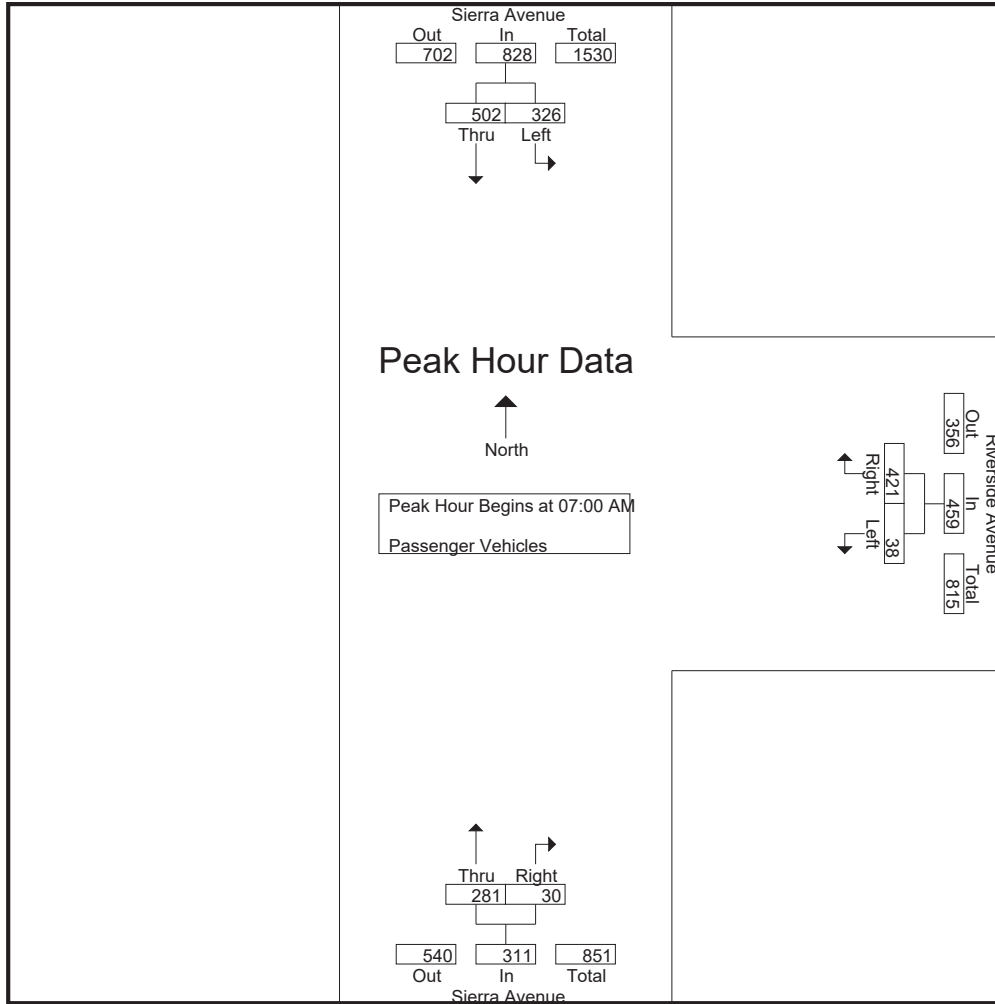
Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	80	99	179	8	112	120	64	1	65	364
07:15 AM	71	142	213	8	131	139	84	5	89	441
07:30 AM	89	160	249	12	99	111	71	6	77	437
07:45 AM	86	101	187	10	79	89	62	18	80	356
Total	326	502	828	38	421	459	281	30	311	1598
08:00 AM	59	119	178	8	78	86	75	6	81	345
08:15 AM	65	100	165	3	68	71	51	1	52	288
08:30 AM	58	99	157	2	58	60	52	4	56	273
08:45 AM	47	107	154	3	41	44	53	0	53	251
Total	229	425	654	16	245	261	231	11	242	1157
Grand Total	555	927	1482	54	666	720	512	41	553	2755
Apprch %	37.4	62.6		7.5	92.5		92.6	7.4		
Total %	20.1	33.6	53.8	2	24.2	26.1	18.6	1.5	20.1	

Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	80	99	179	8	112	120	64	1	65	364
07:15 AM	71	142	213	8	131	139	84	5	89	441
07:30 AM	89	160	249	12	99	111	71	6	77	437
07:45 AM	86	101	187	10	79	89	62	18	80	356
Total Volume	326	502	828	38	421	459	281	30	311	1598
% App. Total	39.4	60.6		8.3	91.7		90.4	9.6		
PHF	.916	.784	.831	.792	.803	.826	.836	.417	.874	.906

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:00 AM

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	80	99	179	8	112	120	64	1	65
+15 mins.	71	142	213	8	131	139	84	5	89
+30 mins.	89	160	249	12	99	111	71	6	77
+45 mins.	86	101	187	10	79	89	62	18	80
Total Volume	326	502	828	38	421	459	281	30	311
% App. Total	39.4	60.6		8.3	91.7		90.4	9.6	
PHF	.916	.784	.831	.792	.803	.826	.836	.417	.874

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

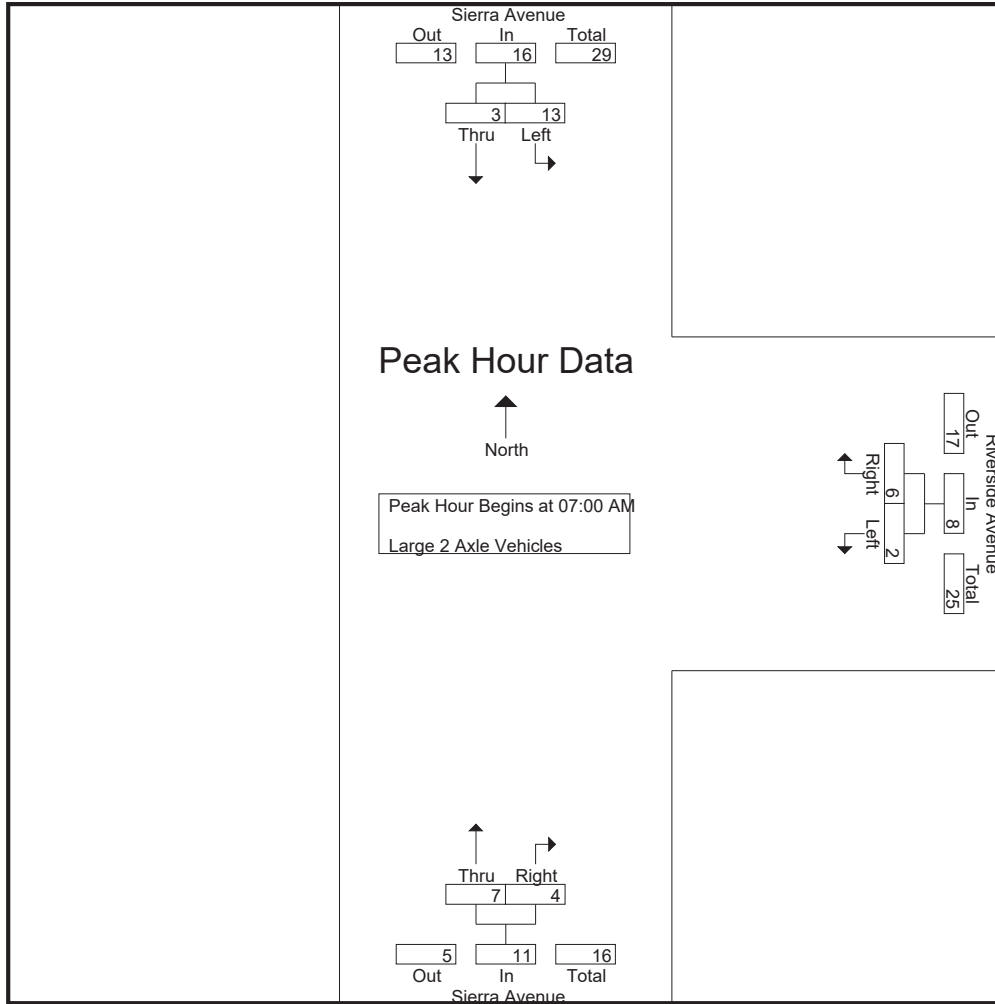
Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	5	0	5	0	1	1	1	0	1	7
07:15 AM	2	1	3	2	1	3	2	1	3	9
07:30 AM	2	1	3	0	3	3	3	2	5	11
07:45 AM	4	1	5	0	1	1	1	1	2	8
Total	13	3	16	2	6	8	7	4	11	35
08:00 AM	1	3	4	0	1	1	1	0	1	6
08:15 AM	1	1	2	0	0	0	1	0	1	3
08:30 AM	0	1	1	0	1	1	1	0	1	3
08:45 AM	0	1	1	0	3	3	3	0	3	7
Total	2	6	8	0	5	5	6	0	6	19
Grand Total	15	9	24	2	11	13	13	4	17	54
Apprch %	62.5	37.5		15.4	84.6		76.5	23.5		
Total %	27.8	16.7	44.4	3.7	20.4	24.1	24.1	7.4	31.5	

Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	5	0	5	0	1	1	1	0	1	7
07:15 AM	2	1	3	2	1	3	2	1	3	9
07:30 AM	2	1	3	0	3	3	3	2	5	11
07:45 AM	4	1	5	0	1	1	1	1	2	8
Total Volume	13	3	16	2	6	8	7	4	11	35
% App. Total	81.2	18.8		25	75		63.6	36.4		
PHF	.650	.750	.800	.250	.500	.667	.583	.500	.550	.795

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:00 AM

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	5	0	5	0	1	1	1	0	1
+15 mins.	2	1	3	2	1	3	2	1	3
+30 mins.	2	1	3	0	3	3	3	2	5
+45 mins.	4	1	5	0	1	1	1	1	2
Total Volume	13	3	16	2	6	8	7	4	11
% App. Total	81.2	18.8		25	75		63.6	36.4	
PHF	.650	.750	.800	.250	.500	.667	.583	.500	.550

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

Groups Printed- 3 Axle Vehicles

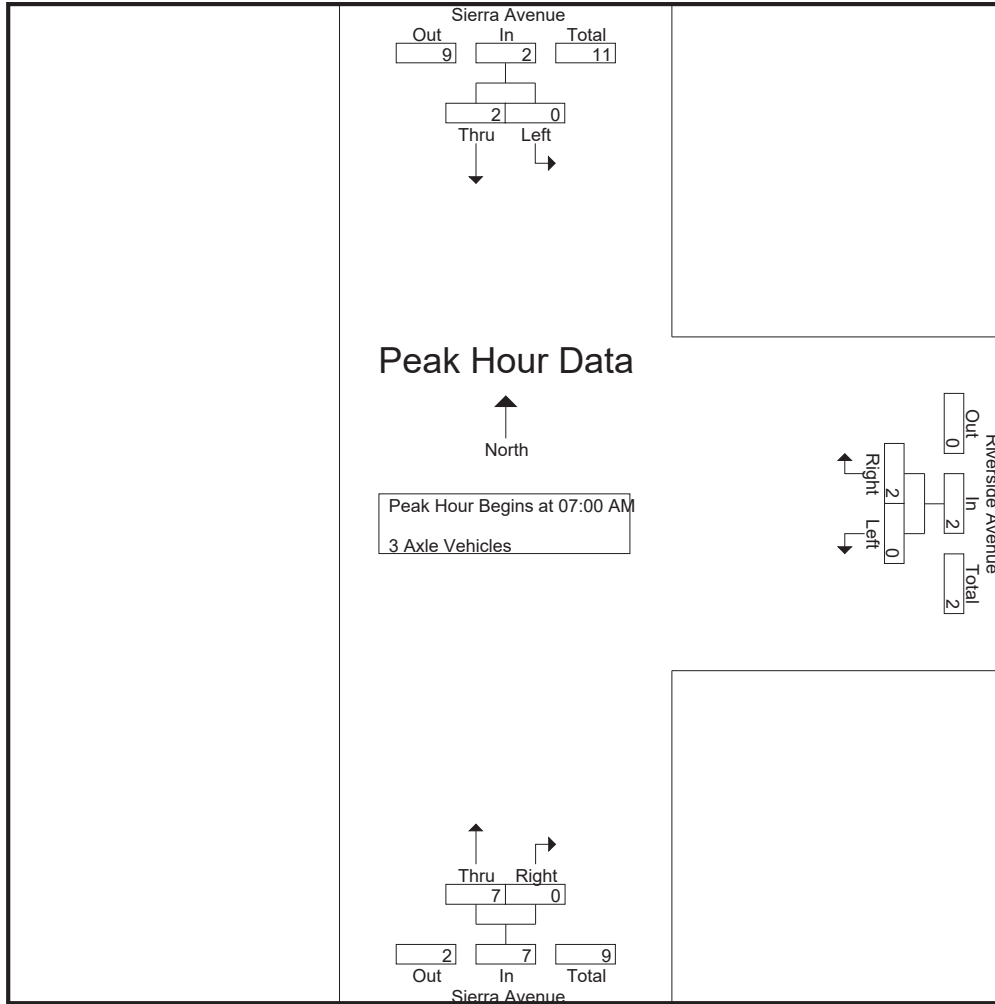
Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	1	0	1	1
07:15 AM	0	0	0	0	0	0	1	0	1	1
07:30 AM	0	0	0	0	1	1	2	0	2	3
07:45 AM	0	2	2	0	1	1	3	0	3	6
Total	0	2	2	0	2	2	7	0	7	11
08:00 AM	0	0	0	0	0	0	1	1	2	2
08:15 AM	2	2	4	0	1	1	1	0	1	6
08:30 AM	1	1	2	0	0	0	1	0	1	3
08:45 AM	0	1	1	0	0	0	0	0	0	1
Total	3	4	7	0	1	1	3	1	4	12
Grand Total	3	6	9	0	3	3	10	1	11	23
Apprch %	33.3	66.7		0	100		90.9	9.1		
Total %	13	26.1	39.1	0	13	13	43.5	4.3	47.8	

Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	1	0	1	1
07:15 AM	0	0	0	0	0	0	1	0	1	1
07:30 AM	0	0	0	0	1	1	2	0	2	3
07:45 AM	0	2	2	0	1	1	3	0	3	6
Total Volume	0	2	2	0	2	2	7	0	7	11
% App. Total	0	100		0	100		100	0		
PHF	.000	.250	.250	.000	.500	.500	.583	.000	.583	.458

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:00 AM

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	0	1	0	1
+30 mins.	0	0	0	0	1	1	2	0	2
+45 mins.	0	2	2	0	1	1	3	0	3
Total Volume	0	2	2	0	2	2	7	0	7
% App. Total	0	100		0	100		100	0	
PHF	.000	.250	.250	.000	.500	.500	.583	.000	.583

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

Groups Printed- 4+ Axle Trucks

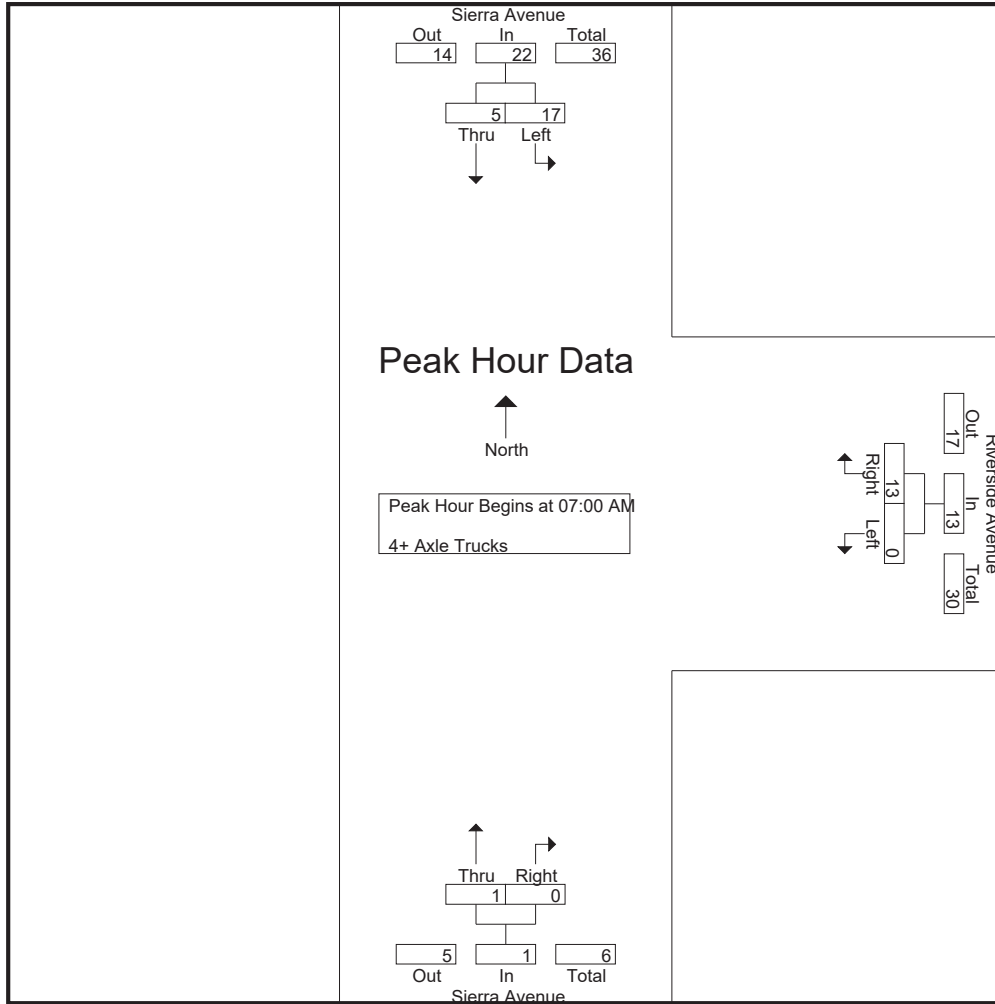
Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	8	0	8	0	2	2	0	0	0	10
07:15 AM	3	0	3	0	0	0	0	0	0	3
07:30 AM	3	0	3	0	4	4	1	0	1	8
07:45 AM	3	5	8	0	7	7	0	0	0	15
Total	17	5	22	0	13	13	1	0	1	36
08:00 AM	5	0	5	0	2	2	1	0	1	8
08:15 AM	4	1	5	0	1	1	2	0	2	8
08:30 AM	4	1	5	0	4	4	2	0	2	11
08:45 AM	2	4	6	0	5	5	0	0	0	11
Total	15	6	21	0	12	12	5	0	5	38
Grand Total	32	11	43	0	25	25	6	0	6	74
Apprch %	74.4	25.6		0	100		100	0		
Total %	43.2	14.9	58.1	0	33.8	33.8	8.1	0	8.1	

Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	8	0	8	0	2	2	0	0	0	10
07:15 AM	3	0	3	0	0	0	0	0	0	3
07:30 AM	3	0	3	0	4	4	1	0	1	8
07:45 AM	3	5	8	0	7	7	0	0	0	15
Total Volume	17	5	22	0	13	13	1	0	1	36
% App. Total	77.3	22.7		0	100		100	0		
PHF	.531	.250	.688	.000	.464	.464	.250	.000	.250	.600

Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:00 AM

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside AM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	8	0	8	0	2	2	0	0	0
+15 mins.	3	0	3	0	0	0	0	0	0
+30 mins.	3	0	3	0	4	4	1	0	1
+45 mins.	3	5	8	0	7	7	0	0	0
Total Volume	17	5	22	0	13	13	1	0	1
% App. Total	77.3	22.7		0	100		100	0	
PHF	.531	.250	.688	.000	.464	.464	.250	.000	.250

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

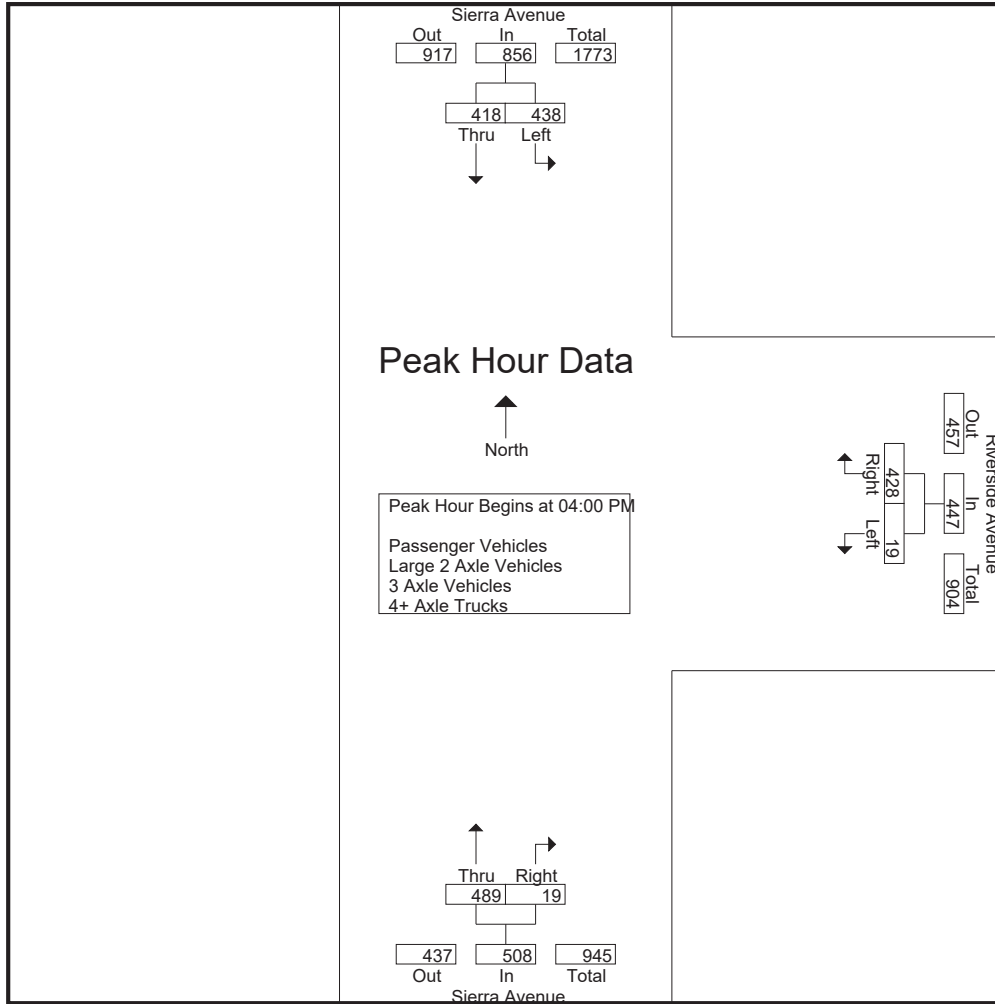
Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	115	141	256	5	84	89	118	7	125	470
04:15 PM	122	95	217	3	95	98	120	4	124	439
04:30 PM	93	84	177	7	119	126	119	0	119	422
04:45 PM	108	98	206	4	130	134	132	8	140	480
Total	438	418	856	19	428	447	489	19	508	1811
05:00 PM	122	93	215	6	90	96	121	6	127	438
05:15 PM	111	88	199	6	99	105	123	3	126	430
05:30 PM	101	85	186	9	80	89	122	1	123	398
05:45 PM	103	78	181	6	97	103	121	4	125	409
Total	437	344	781	27	366	393	487	14	501	1675
Grand Total	875	762	1637	46	794	840	976	33	1009	3486
Apprch %	53.5	46.5		5.5	94.5		96.7	3.3		
Total %	25.1	21.9	47	1.3	22.8	24.1	28	0.9	28.9	
Passenger Vehicles	843	749	1592	45	778	823	940	33	973	3388
% Passenger Vehicles	96.3	98.3	97.3	97.8	98	98	96.3	100	96.4	97.2
Large 2 Axle Vehicles	7	6	13	1	6	7	9	0	9	29
% Large 2 Axle Vehicles	0.8	0.8	0.8	2.2	0.8	0.8	0.9	0	0.9	0.8
3 Axle Vehicles	3	2	5	0	0	0	2	0	2	7
% 3 Axle Vehicles	0.3	0.3	0.3	0	0	0	0.2	0	0.2	0.2
4+ Axle Trucks	22	5	27	0	10	10	25	0	25	62
% 4+ Axle Trucks	2.5	0.7	1.6	0	1.3	1.2	2.6	0	2.5	1.8

Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	115	141	256	5	84	89	118	7	125	470
04:15 PM	122	95	217	3	95	98	120	4	124	439
04:30 PM	93	84	177	7	119	126	119	0	119	422
04:45 PM	108	98	206	4	130	134	132	8	140	480
Total Volume	438	418	856	19	428	447	489	19	508	1811
% App. Total	51.2	48.8		4.3	95.7		96.3	3.7		
PHF	.898	.741	.836	.679	.823	.834	.926	.594	.907	.943

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:00 PM			04:30 PM			04:45 PM		
+0 mins.	115	141	256	7	119	126	132	8	140
+15 mins.	122	95	217	4	130	134	121	6	127
+30 mins.	93	84	177	6	90	96	123	3	126
+45 mins.	108	98	206	6	99	105	122	1	123
Total Volume	438	418	856	23	438	461	498	18	516
% App. Total	51.2	48.8		5	95		96.5	3.5	
PHF	.898	.741	.836	.821	.842	.860	.943	.563	.921

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

Groups Printed- Passenger Vehicles

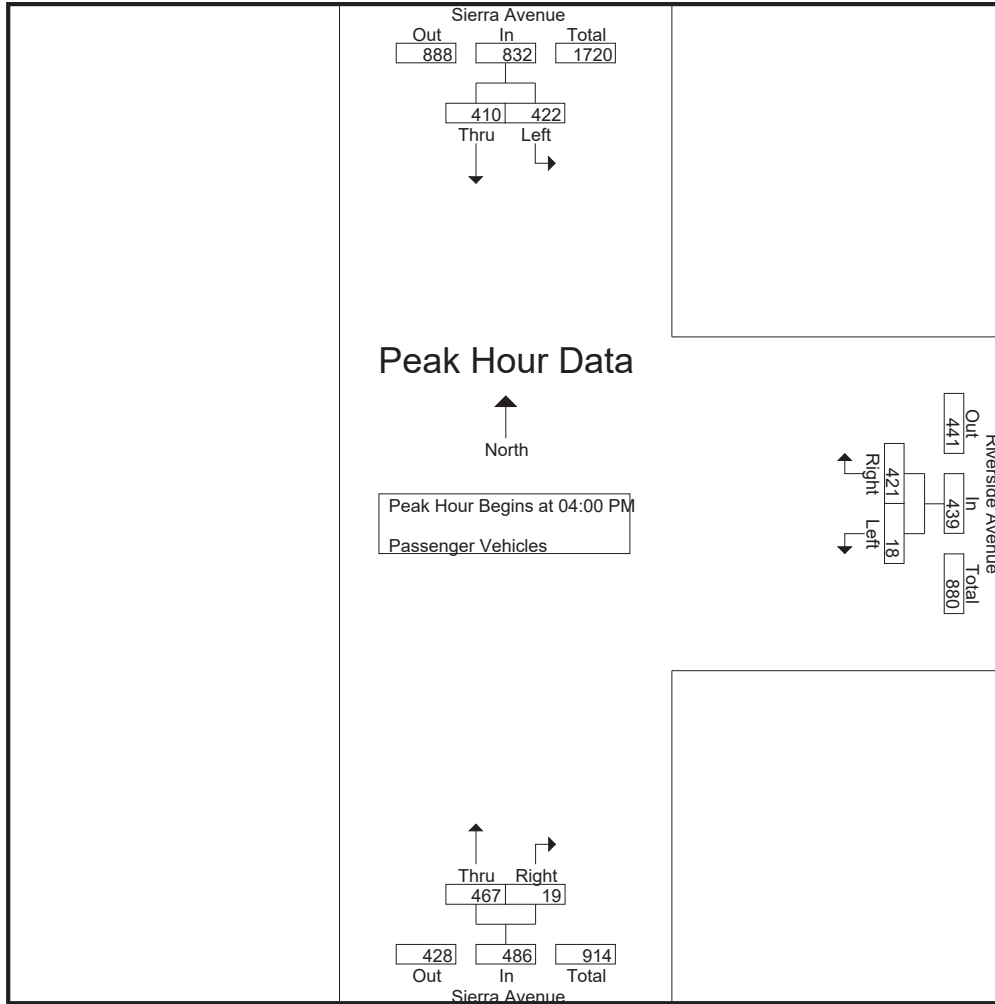
Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	112	138	250	5	81	86	111	7	118	454
04:15 PM	116	93	209	3	94	97	114	4	118	424
04:30 PM	90	81	171	6	118	124	113	0	113	408
04:45 PM	104	98	202	4	128	132	129	8	137	471
Total	422	410	832	18	421	439	467	19	486	1757
05:00 PM	118	93	211	6	87	93	118	6	124	428
05:15 PM	103	85	188	6	96	102	118	3	121	411
05:30 PM	99	84	183	9	78	87	120	1	121	391
05:45 PM	101	77	178	6	96	102	117	4	121	401
Total	421	339	760	27	357	384	473	14	487	1631
Grand Total	843	749	1592	45	778	823	940	33	973	3388
Apprch %	53	47		5.5	94.5		96.6	3.4		
Total %	24.9	22.1	47	1.3	23	24.3	27.7	1	28.7	

Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	112	138	250	5	81	86	111	7	118	454
04:15 PM	116	93	209	3	94	97	114	4	118	424
04:30 PM	90	81	171	6	118	124	113	0	113	408
04:45 PM	104	98	202	4	128	132	129	8	137	471
Total Volume	422	410	832	18	421	439	467	19	486	1757
% App. Total	50.7	49.3		4.1	95.9		96.1	3.9		
PHF	.909	.743	.832	.750	.822	.831	.905	.594	.887	.933

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	112	138	250	5	81	86	111	7	118
+15 mins.	116	93	209	3	94	97	114	4	118
+30 mins.	90	81	171	6	118	124	113	0	113
+45 mins.	104	98	202	4	128	132	129	8	137
Total Volume	422	410	832	18	421	439	467	19	486
% App. Total	50.7	49.3		4.1	95.9		96.1	3.9	
PHF	.909	.743	.832	.750	.822	.831	.905	.594	.887

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

Groups Printed- Large 2 Axle Vehicles

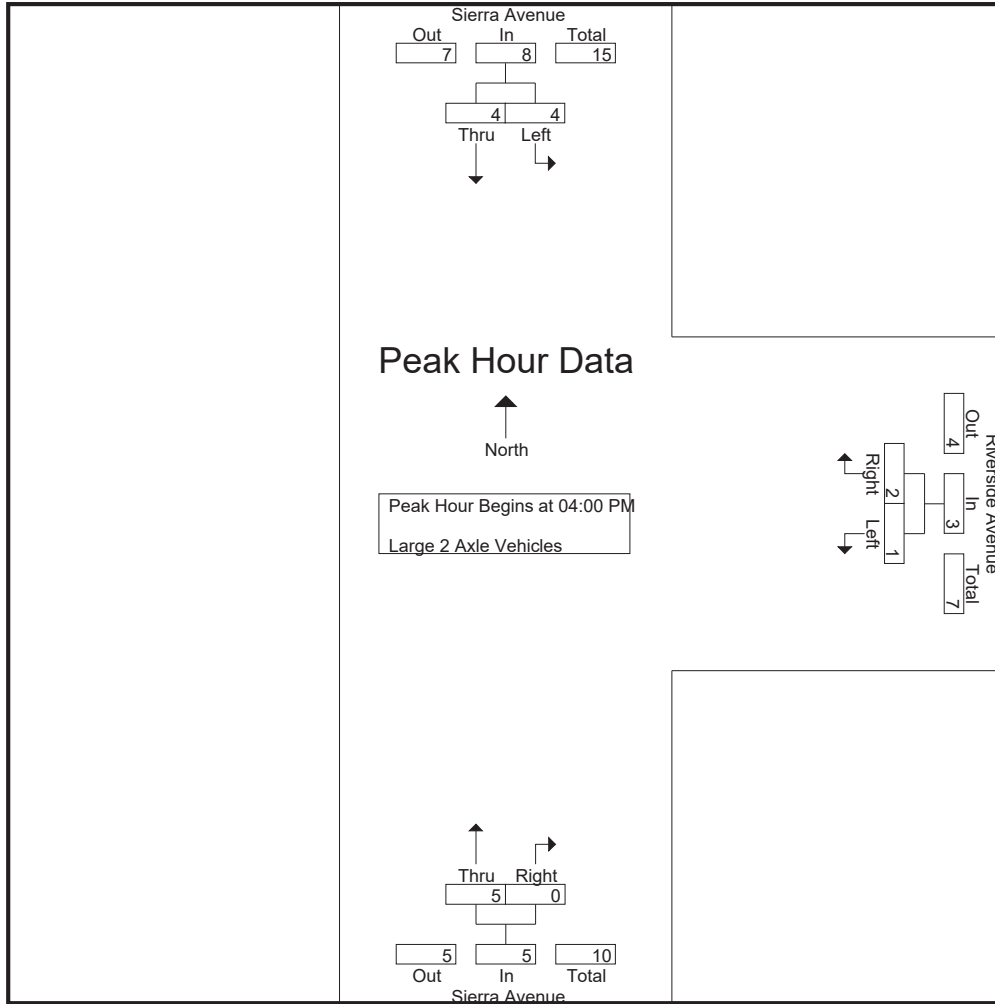
Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	2	2	0	1	1	2	0	2	5
04:15 PM	1	1	2	0	0	0	1	0	1	3
04:30 PM	2	1	3	1	0	1	2	0	2	6
04:45 PM	1	0	1	0	1	1	0	0	0	2
Total	4	4	8	1	2	3	5	0	5	16
05:00 PM	2	0	2	0	1	1	0	0	0	3
05:15 PM	1	2	3	0	2	2	2	0	2	7
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	1	1	2	0	2	3
Total	3	2	5	0	4	4	4	0	4	13
Grand Total	7	6	13	1	6	7	9	0	9	29
Apprch %	53.8	46.2		14.3	85.7		100	0		
Total %	24.1	20.7	44.8	3.4	20.7	24.1	31	0	31	

Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	2	2	0	1	1	2	0	2	5
04:15 PM	1	1	2	0	0	0	1	0	1	3
04:30 PM	2	1	3	1	0	1	2	0	2	6
04:45 PM	1	0	1	0	1	1	0	0	0	2
Total Volume	4	4	8	1	2	3	5	0	5	16
% App. Total	50	50		33.3	66.7		100	0		
PHF	.500	.500	.667	.250	.500	.750	.625	.000	.625	.667

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	2	2	0	1	1	2	0	2
+15 mins.	1	1	2	0	0	0	1	0	1
+30 mins.	2	1	3	1	0	1	2	0	2
+45 mins.	1	0	1	0	1	1	0	0	0
Total Volume	4	4	8	1	2	3	5	0	5
% App. Total	50	50		33.3	66.7		100	0	
PHF	.500	.500	.667	.250	.500	.750	.625	.000	.625

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

Groups Printed- 3 Axle Vehicles

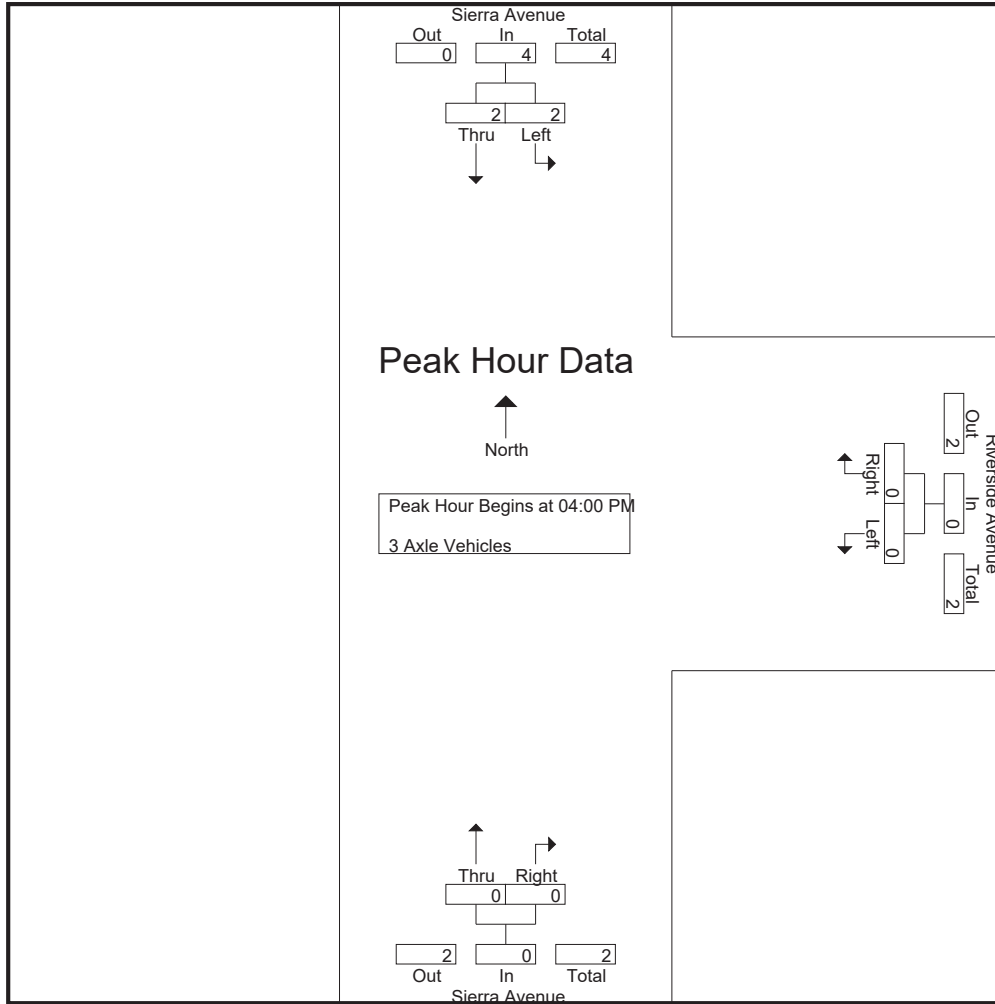
Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	1	1	0	0	0	0	0	0	1
04:15 PM	1	0	1	0	0	0	0	0	0	1
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	1	0	1	0	0	0	0	0	0	1
Total	2	2	4	0	0	0	0	0	0	4
05:00 PM	1	0	1	0	0	0	1	0	1	2
05:15 PM	0	0	0	0	0	0	1	0	1	1
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0
Total	1	0	1	0	0	0	2	0	2	3
Grand Total	3	2	5	0	0	0	2	0	2	7
Apprch %	60	40		0	0		100	0		
Total %	42.9	28.6	71.4	0	0	0	28.6	0	28.6	

Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	0	1	1	0	0	0	0	0	0	1
04:15 PM	1	0	1	0	0	0	0	0	0	1
04:30 PM	0	1	1	0	0	0	0	0	0	1
04:45 PM	1	0	1	0	0	0	0	0	0	1
Total Volume	2	2	4	0	0	0	0	0	0	4
% App. Total	50	50		0	0		0	0		
PHF	.500	.500	1.00	.000	.000	.000	.000	.000	.000	1.00

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	1	1	0	0	0	0	0	0
+15 mins.	1	0	1	0	0	0	0	0	0
+30 mins.	0	1	1	0	0	0	0	0	0
+45 mins.	1	0	1	0	0	0	0	0	0
Total Volume	2	2	4	0	0	0	0	0	0
% App. Total	50	50	1.000	0	0	0	0	0	0
PHF	.500	.500	1.000	.000	.000	.000	.000	.000	.000

City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 1

Groups Printed- 4+ Axle Trucks

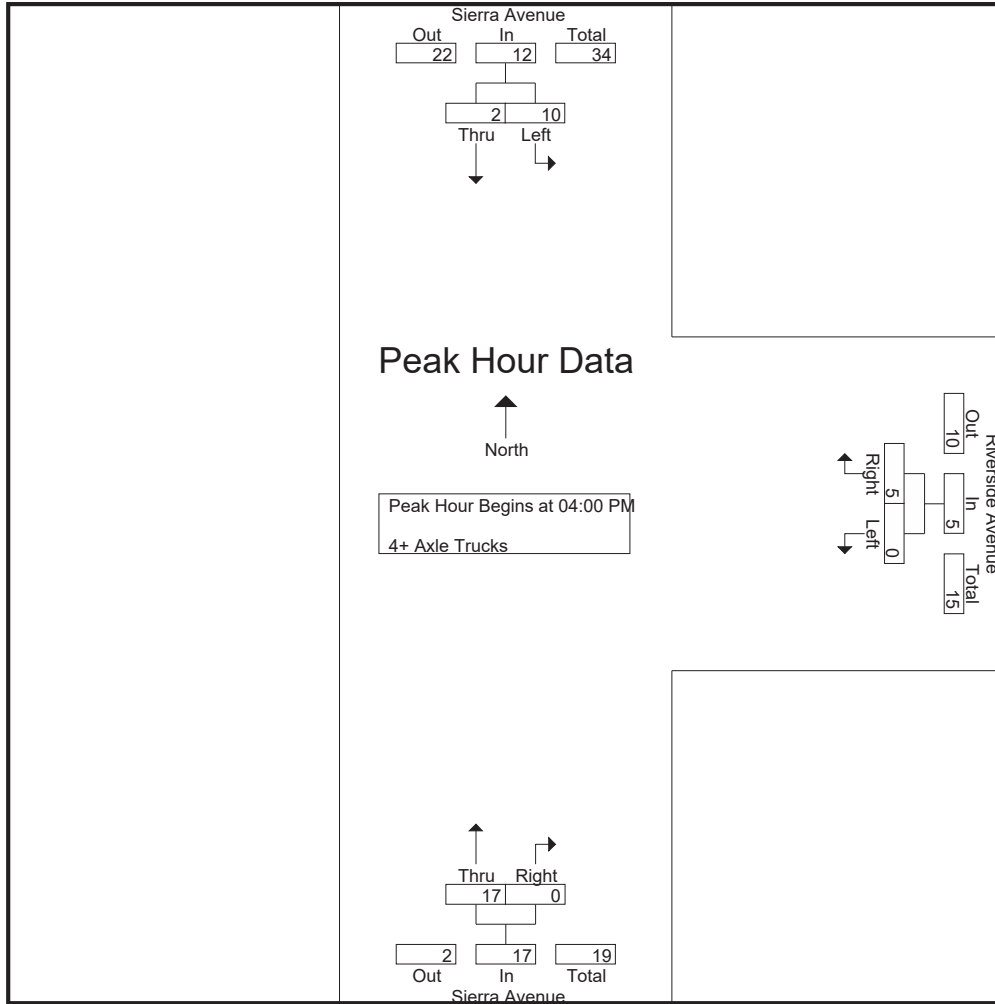
Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	3	0	3	0	2	2	5	0	5	10
04:15 PM	4	1	5	0	1	1	5	0	5	11
04:30 PM	1	1	2	0	1	1	4	0	4	7
04:45 PM	2	0	2	0	1	1	3	0	3	6
Total	10	2	12	0	5	5	17	0	17	34
05:00 PM	1	0	1	0	2	2	2	0	2	5
05:15 PM	7	1	8	0	1	1	2	0	2	11
05:30 PM	2	1	3	0	2	2	2	0	2	7
05:45 PM	2	1	3	0	0	0	2	0	2	5
Total	12	3	15	0	5	5	8	0	8	28
Grand Total	22	5	27	0	10	10	25	0	25	62
Apprch %	81.5	18.5		0	100		100	0		
Total %	35.5	8.1	43.5	0	16.1	16.1	40.3	0	40.3	

Start Time	Sierra Avenue Southbound			Riverside Avenue Westbound			Sierra Avenue Northbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	3	0	3	0	2	2	5	0	5	10
04:15 PM	4	1	5	0	1	1	5	0	5	11
04:30 PM	1	1	2	0	1	1	4	0	4	7
04:45 PM	2	0	2	0	1	1	3	0	3	6
Total Volume	10	2	12	0	5	5	17	0	17	34
% App. Total	83.3	16.7		0	100		100	0		
PHF	.625	.500	.600	.000	.625	.625	.850	.000	.850	.773

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

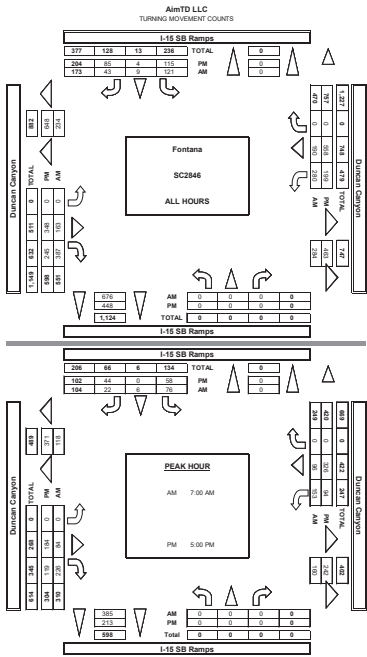
City of Fontana
 N/S: Sierra Avenue
 E/W: Riverside Avenue
 Weather: Clear

File Name : 06_FON_Sierra_Riverside PM
 Site Code : 12218022
 Start Date : 1/24/2018
 Page No : 2



Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	3	0	3	0	2	2	5	0	5
+15 mins.	4	1	5	0	1	1	5	0	5
+30 mins.	1	1	2	0	1	1	4	0	4
+45 mins.	2	0	2	0	1	1	3	0	3
Total Volume	10	2	12	0	5	5	17	0	17
% App. Total	83.3	16.7		0	100		100	0	
PHF	.625	.500	.600	.000	.625	.625	.850	.000	.850



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 SB Ramps Duncan Canyon	PROJECT #: LOCATION #: CONTROL:	SC2846 3 SIGNAL
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CLASS 1: PASSENGER VEHICLES	NOTES:	AM PM MD OTHER OTHER	▲ N ◀ W S ▶ ▼
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	NORTHBOUND I-15 SB Ramps			SOUTHBOUND I-15 SB Ramps			EASTBOUND Duncan Canyon			WESTBOUND Duncan Canyon			TOTAL
	NL X	NT X	NR X	SL 1.5	ST 0.5	SR 1	EL X	ET 2	ER 1	WL 2	WT 2	WR X	
7:00 AM	0	0	0	19	1	2	0	13	43	33	15	0	126
7:15 AM	0	0	0	14	0	6	0	18	58	38	19	0	153
7:30 AM	0	0	0	13	1	8	0	17	64	40	18	0	161
7:45 AM	0	0	0	17	0	4	0	22	56	34	31	0	164
8:00 AM	0	0	0	10	0	10	0	20	35	28	26	0	129
8:15 AM	0	0	0	11	0	4	0	16	36	30	15	0	112
8:30 AM	0	0	0	5	0	5	0	11	42	40	23	0	126
8:45 AM	0	0	0	9	0	1	0	21	44	23	21	0	119
VOLUMES	0	0	0	98	2	40	0	138	378	266	168	0	1,090
APPROACH %	0%	0%	0%	70%	1%	29%	0%	27%	73%	61%	39%	0%	
APP/DEPART	0	/	0	140	/	646	516	/	236	434	/	208	0
BEGIN PEAK HR	7:15 AM												
VOLUMES	0	0	0	54	1	28	0	77	213	140	94	0	607
APPROACH %	0%	0%	0%	65%	1%	34%	0%	27%	73%	60%	40%	0%	
PEAK HR FACTOR	0.000			0.943			0.895			0.900			0.925
APP/DEPART	0	/	0	83	/	354	290	/	131	234	/	122	0
04:00 PM	0	0	0	10	0	7	0	43	26	24	50	0	160
4:15 PM	0	0	0	9	1	7	0	38	26	23	56	0	160
4:30 PM	0	0	0	11	0	13	0	34	33	30	60	0	181
4:45 PM	0	0	0	24	2	12	0	37	37	19	57	0	188
5:00 PM	0	0	0	10	0	14	0	43	27	23	69	0	186
5:15 PM	0	0	0	14	0	9	0	35	31	23	67	0	179
5:30 PM	0	0	0	16	0	9	0	53	26	20	88	0	212
5:45 PM	0	0	0	15	0	11	0	43	27	22	88	0	206
VOLUMES	0	0	0	109	3	82	0	326	233	184	535	0	1,476
APPROACH %	0%	0%	0%	56%	2%	42%	0%	58%	41%	26%	74%	0%	
APP/DEPART	0	/	0	194	/	420	563	/	435	719	/	621	0
BEGIN PEAK HR	5:00 PM												
VOLUMES	0	0	0	55	0	43	0	174	111	88	312	0	784
APPROACH %	0%	0%	0%	56%	0%	44%	0%	61%	39%	22%	78%	0%	
PEAK HR FACTOR	0.000			0.942			0.905			0.909			0.925
APP/DEPART	0	/	0	98	/	199	286	/	229	400	/	356	0

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR			
NRR X	SRR 0	ERR 0	WRR X
0	2	16	0
0	5	15	0
0	4	16	0
0	1	13	0
0	3	7	0
0	1	9	0
0	2	6	0
0	1	8	0
0	19	90	0

0	13	51	0
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0	0	0	0	0
0	0	0	0	0
0	0	2	0	2
0	0	1	0	1
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	0	0	0
0	0	4	0	4

0	7	7	0
0	5	2	0
0	7	5	0
0	7	2	0
0	8	2	0
0	6	4	0
0	3	4	0
0	5	4	0
0	48	30	0

0	22	14	0
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I-15 SB Ramps

NORTH SIDE

Duncan Canyon WEST SIDE

EAST SIDE Duncan Canyon

SOUTH SIDE

I-15 SB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 SB Ramps Duncan Canyon	PROJECT #: LOCATION #: CONTROL:	SC2846 3 SIGNAL
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CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	<table border="1"> <tr> <td>AM</td> <td>▲ N</td> </tr> <tr> <td>PM</td> <td>▼ S</td> </tr> <tr> <td>MD</td> <td>◀ W ▶ E</td> </tr> <tr> <td>OTHER</td> <td></td> </tr> </table>	AM	▲ N	PM	▼ S	MD	◀ W ▶ E	OTHER	
AM	▲ N									
PM	▼ S									
MD	◀ W ▶ E									
OTHER										

LANES:	NORTHBOUND I-15 SB Ramps			SOUTHBOUND I-15 SB Ramps			EASTBOUND Duncan Canyon			WESTBOUND Duncan Canyon			TOTAL
	NL X	NT X	NR X	SL 1.5	ST 0.5	SR 1	EL X	ET 2	ER 1	WL 2	WT 2	WR X	

U-TURNS				
NB	SB	EB	WB	TTL

RTOR			
NRR X	SRR 0	ERR 0	WRR X

AM	7:00 AM	0	0	0	3	1	1	0	6	0	2	1	0	14
	7:15 AM	0	0	0	2	0	0	0	0	1	1	5	0	9
	7:30 AM	0	0	0	1	0	0	0	2	1	1	2	0	7
	7:45 AM	0	0	0	0	1	1	0	3	2	1	3	0	11
	8:00 AM	0	0	0	0	0	1	0	2	0	1	2	0	6
	8:15 AM	0	0	0	0	0	0	0	1	1	0	0	0	2
	8:30 AM	0	0	0	0	1	0	0	2	3	2	1	0	9
	8:45 AM	0	0	0	2	1	0	0	3	0	1	4	0	11
VOLUMES		0	0	0	8	4	3	0	19	8	9	18	0	70
APPROACH %		0%	0%	0%	53%	27%	20%	0%	68%	29%	33%	67%	0%	
APP/DEPART		0	/	0	15	/	21	28	/	27	27	/	22	0
BEGIN PEAK HR		7:00 AM												
VOLUMES		0	0	0	6	2	2	0	11	4	5	11	0	41
APPROACH %		0%	0%	0%	60%	20%	20%	0%	73%	27%	31%	69%	0%	
PEAK HR FACTOR		0.000			0.500			0.625			0.667			0.732
APP/DEPART		0	/	0	10	/	11	15	/	17	16	/	13	0
PM	4:00 PM	0	0	0	0	1	0	0	0	1	0	0	0	2
	4:15 PM	0	0	0	0	0	1	0	3	1	3	0	0	8
	4:30 PM	0	0	0	2	0	1	0	0	1	2	4	0	10
	4:45 PM	0	0	0	0	0	0	0	7	1	1	4	0	13
	5:00 PM	0	0	0	0	0	0	0	3	2	0	4	0	9
	5:15 PM	0	0	0	0	0	0	0	4	3	1	2	0	10
	5:30 PM	0	0	0	0	0	0	0	0	1	4	3	0	8
	5:45 PM	0	0	0	0	0	0	0	0	2	1	1	0	4
VOLUMES		0	0	0	2	1	2	0	17	12	12	18	0	64
APPROACH %		0%	0%	0%	40%	20%	40%	0%	59%	41%	40%	60%	0%	
APP/DEPART		0	/	0	5	/	25	29	/	19	30	/	20	0
BEGIN PEAK HR		4:30 PM												
VOLUMES		0	0	0	2	0	1	0	14	7	4	14	0	42
APPROACH %		0%	0%	0%	67%	0%	33%	0%	67%	33%	22%	78%	0%	
PEAK HR FACTOR		0.000			0.250			0.656			0.750			0.808
APP/DEPART		0	/	0	3	/	11	21	/	16	18	/	15	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
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0	0	0	0	0
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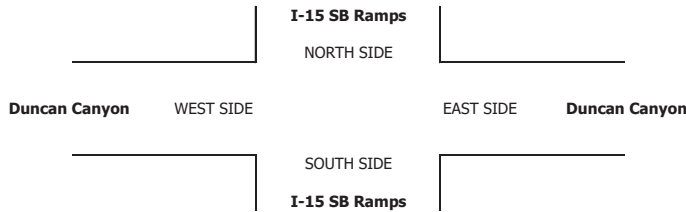
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0	0	1	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	2	0
0	0	0	0
0	2	3	0

0	2	1	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0
0	1	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
0	0	0	0
0	2	1	0

0	1	1	0
---	---	---	---



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 SB Ramps Duncan Canyon	PROJECT #: SC2846 LOCATION #: 3 CONTROL: SIGNAL
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CLASS 3: 3-AXLE TRUCKS	NOTES:	<table style="margin: auto;"> <tr> <td style="border: 1px solid black; padding: 2px;">AM</td> <td style="border: 1px solid black; padding: 2px;">▲</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">PM</td> <td style="border: 1px solid black; padding: 2px;">N</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">MD</td> <td style="border: 1px solid black; padding: 2px;">◀ W E ▶</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">OTHER</td> <td style="border: 1px solid black; padding: 2px;">S</td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;">OTHER</td> <td style="border: 1px solid black; padding: 2px;">▼</td> </tr> </table>	AM	▲	PM	N	MD	◀ W E ▶	OTHER	S	OTHER	▼
AM	▲											
PM	N											
MD	◀ W E ▶											
OTHER	S											
OTHER	▼											

LANES:	NORTHBOUND I-15 SB Ramps			SOUTHBOUND I-15 SB Ramps			EASTBOUND Duncan Canyon			WESTBOUND Duncan Canyon			TOTAL
	NL X	NT X	NR X	SL 1.5	ST 0.5	SR 1	EL X	ET 2	ER 1	WL 2	WT 2	WR X	

U-TURNS				
NB	SB	EB	WB	TTL

RTOR			
NRR X	SRR 0	ERR 0	WRR X

AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	
	7:45 AM	0	0	0	0	0	0	0	1	0	0	0	1	
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 AM	0	0	0	1	0	0	0	0	0	1	0	2	
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	VOLUMES	0	0	0	1	0	0	0	1	0	1	1	0	4
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	50%	50%	0%	
APP/DEPART	0	/	0	1	/	1	1	/	2	2	/	1	0	
BEGIN PEAK HR	7:30 AM													
VOLUMES	0	0	0	1	0	0	0	1	0	1	1	0	4	
APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	50%	50%	0%		
PEAK HR FACTOR	0.000			0.250			0.250			0.500			0.500	
APP/DEPART	0	/	0	1	/	1	1	/	2	2	/	1	0	
PM	4:00 PM	0	0	0	1	0	0	0	0	1	0	0	2	
	4:15 PM	0	0	0	0	0	0	0	0	1	1	0	2	
	4:30 PM	0	0	0	0	0	0	0	0	1	0	0	1	
	4:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	
	5:00 PM	0	0	0	2	0	0	0	0	0	0	0	2	
	5:15 PM	0	0	0	0	0	0	0	1	0	0	1	2	
	5:30 PM	0	0	0	0	0	1	0	0	0	1	0	2	
	5:45 PM	0	0	0	0	0	0	0	0	0	1	1	1	
	VOLUMES	0	0	0	3	0	1	0	2	0	3	4	0	13
	APPROACH %	0%	0%	0%	75%	0%	25%	0%	100%	0%	43%	57%	0%	
APP/DEPART	0	/	0	4	/	3	2	/	5	7	/	5	0	
BEGIN PEAK HR	5:00 PM													
VOLUMES	0	0	0	2	0	1	0	1	0	0	3	0	7	
APPROACH %	0%	0%	0%	67%	0%	33%	0%	100%	0%	0%	100%	0%		
PEAK HR FACTOR	0.000			0.375			0.250			0.750			0.875	
APP/DEPART	0	/	0	3	/	0	1	/	3	3	/	4	0	

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0	0	0	0	0
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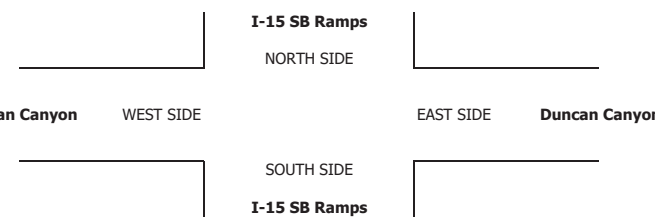
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0	1	0	0
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 SB Ramps Duncan Canyon	PROJECT #: SC2846	LOCATION #: 3	CONTROL: SIGNAL
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CLASS 4: 4 OR MORE AXLE TRUCKS	NOTES:	AM PM MD OTHER	◀ W E ▶	▲ N S ▼	
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LANES:	NORTHBOUND I-15 SB Ramps			SOUTHBOUND I-15 SB Ramps			EASTBOUND Duncan Canyon			WESTBOUND Duncan Canyon			TOTAL
	NL X	NT X	NR X	SL 1.5	ST 0.5	SR 1	EL X	ET 2	ER 1	WL 2	WT 2	WR X	

U-TURNS				
NB	SB	EB	WB	TTL

RTOR			
NRR X	SRR 0	ERR 0	WRR X

AM	7:00 AM	0	0	0	0	0	0	2	0	0	1	0	3	
	7:15 AM	0	0	0	0	1	0	0	0	0	0	0	1	
	7:30 AM	0	0	0	0	0	0	0	0	0	2	0	2	
	7:45 AM	0	0	0	7	1	0	0	0	0	1	0	9	
	8:00 AM	0	0	0	0	0	0	0	1	0	1	0	2	
	8:15 AM	0	0	0	2	1	0	0	0	0	0	0	3	
	8:30 AM	0	0	0	2	0	0	0	1	0	0	0	3	
	8:45 AM	0	0	0	3	0	0	0	0	0	1	0	4	
	VOLUMES	0	0	0	14	3	0	0	4	0	4	2	0	27
	APPROACH %	0%	0%	0%	82%	18%	0%	0%	100%	0%	67%	33%	0%	
APP/DEPART	0	/	0	17	/	7	4	/	18	6	/	2	0	
BEGIN PEAK HR	7:45 AM													
VOLUMES	0	0	0	11	2	0	0	2	0	1	1	0	17	
APPROACH %	0%	0%	0%	85%	15%	0%	0%	100%	0%	50%	50%	0%		
PEAK HR FACTOR	0.000			0.406				0.500		0.500			0.472	
APP/DEPART	0	/	0	13	/	3	2	/	13	2	/	1	0	
PM	04:00 PM	0	0	0	0	0	0	1	0	0	0	0	1	
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	5:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	
	5:15 PM	0	0	0	1	0	0	0	1	0	0	0	2	
	5:30 PM	0	0	0	0	0	0	0	1	0	0	0	1	
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	VOLUMES	0	0	0	1	0	0	0	3	0	0	1	0	5
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	100%	0%	
APP/DEPART	0	/	0	1	/	0	3	/	4	1	/	1	0	
BEGIN PEAK HR	5:00 PM													
VOLUMES	0	0	0	1	0	0	0	2	0	0	1	0	4	
APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	100%	0%		
PEAK HR FACTOR	0.000			0.250				0.500		0.250			0.500	
APP/DEPART	0	/	0	1	/	0	2	/	3	1	/	1	0	

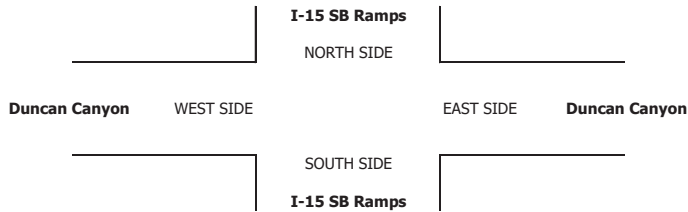
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 SB Ramps Duncan Canyon	PROJECT #: LOCATION #: CONTROL:	SC2846 3 SIGNAL
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CLASS 5: RV	NOTES:	AM PM MD OTHER OTHER	▲ N ◀ W S ▶ E
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LANES:	NORTHBOUND I-15 SB Ramps			SOUTHBOUND I-15 SB Ramps			EASTBOUND Duncan Canyon			WESTBOUND Duncan Canyon			TOTAL
	NL X	NT X	NR X	SL 1.5	ST 0.5	SR 1	EL X	ET 2	ER 1	WL 2	WT 2	WR X	

U-TURNS				
NB	SB	EB	WB	TTL

RTOR			
NRR X	SRR 0	ERR 0	WRR X

AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	1	0	1
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	1	0	1
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	
APP/DEPART	0	/	0	0	/	0	0	/	0	1	/	1	0
BEGIN PEAK HR	7:15 AM												
VOLUMES	0	0	0	0	0	0	0	0	0	1	0	1	
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%		
PEAK HR FACTOR	0.000			0.000			0.000			0.250			0.250
APP/DEPART	0	/	0	0	/	0	0	/	0	1	/	1	0
PM	04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
BEGIN PEAK HR	4:00 PM												
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
PEAK HR FACTOR	0.000			0.000			0.000			0.000			0.000
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

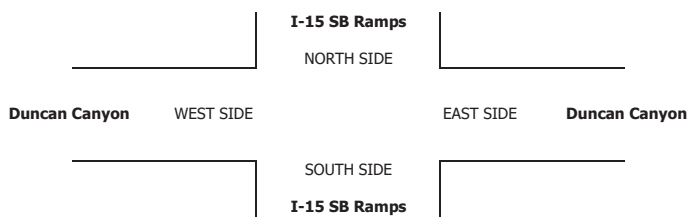
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: Fontana NORTH & SOUTH: I-15 SB Ramps EAST & WEST: Duncan Canyon	PROJECT #: SC2846	LOCATION #: 3	CONTROL: SIGNAL												
CLASS 6:	NOTES:	<table border="1" style="margin: auto;"> <tr> <td style="padding: 2px;">AM</td> <td style="padding: 2px;">▲</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;">PM</td> <td style="padding: 2px;">◀</td> <td style="padding: 2px;">W</td> </tr> <tr> <td style="padding: 2px;">MD</td> <td style="padding: 2px;">▶</td> <td style="padding: 2px;">E</td> </tr> <tr> <td style="padding: 2px;">OTHER</td> <td style="padding: 2px;">S</td> <td style="padding: 2px;">▼</td> </tr> </table>			AM	▲	N	PM	◀	W	MD	▶	E	OTHER	S	▼
AM	▲	N														
PM	◀	W														
MD	▶	E														
OTHER	S	▼														
BUSES																

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	I-15 SB Ramps			I-15 SB Ramps			Duncan Canyon			Duncan Canyon			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	X	X	X	1.5	0.5	1	X	2	1	2	2	X	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0

RTOR			
NRR	SRR	ERR	WRR
X	0	0	X

AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	1	1	0	0	0	2
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	50%	50%	0%	0%	0%	0
APP/DEPART	0	0	0	0	1	2	1	0	0	0	0	0	0	
BEGIN PEAK HR	7:15 AM													
VOLUMES	0	0	0	0	0	0	0	1	1	0	0	0	2	
APPROACH %	0%	0%	0%	0%	0%	0%	0%	50%	50%	0%	0%	0%	0	
PEAK HR FACTOR	0.000			0.000			0.500			0.000			0.500	
APP/DEPART	0	0	0	0	1	2	1	0	0	0	0	0	0	
PM	04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
APP/DEPART	0	0	0	0	0	0	0	0	0	0	0	0	0	
BEGIN PEAK HR	4:00 PM													
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	
PEAK HR FACTOR	0.000			0.000			0.000			0.000			0.000	
APP/DEPART	0	0	0	0	0	0	0	0	0	0	0	0	0	

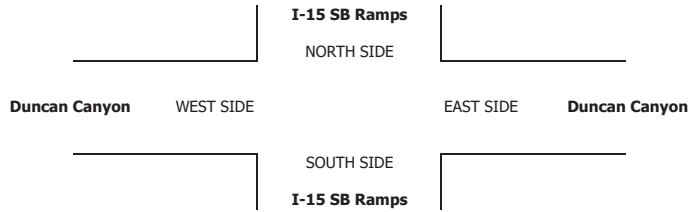
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Mar 23, 21 LOCATION: Fontana NORTH & SOUTH: NORTH & WEST: EAST & WEST: PROJECT #: SC2846 LOCATION #: 4 CONTROL: SIGNAL

NOTES: (Empty box) Directional arrows for N, S, W, E and labels for AM, PM, MD, OTHER, OTHER.

Add U-Turns to Left Turns (checkbox)

Main intersection movement counts table with columns for Northbound, Southbound, Eastbound, Westbound lanes (NL, NT, NR, SL, ST, SR, EL, ET, ER, WL, WT, WR) and volumes, approach %, and peak factors for AM and PM peak hours.

U-TURNS table with columns NB, SB, EB, WB, TTL

RTOR table with columns NRR, SRR, ERR, WRR

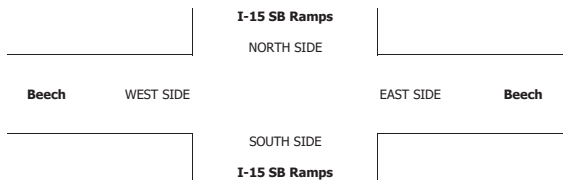
RTOR summary table with columns NRR, SRR, ERR, WRR

RTOR summary table with values 0, 50, 0, 148

RTOR summary table with values 0, 23, 0, 22

RTOR summary table with values 0, 89, 0, 206

RTOR summary table with values 0, 38, 0, 105

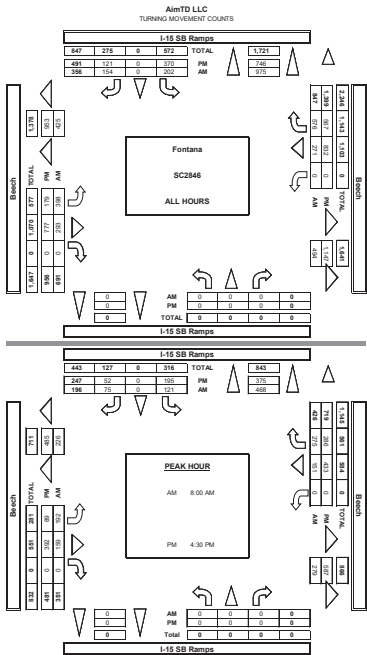


Summary table for I-15 SB Ramps with time slots from 7:00 AM to 5:45 PM and TOTAL.

ALL PED AND BIKE table with columns E SIDE, W SIDE, S SIDE, N SIDE, TOTAL

PEDESTRIAN CROSSINGS table with columns E SIDE, W SIDE, S SIDE, N SIDE, TOTAL

BICYCLE CROSSINGS table with columns ES, WS, SS, NS, TOTAL



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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/23/21 TUESDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 SB Ramps Beech	PROJECT #: LOCATION #: CONTROL:	SC2846 4 SIGNAL
CLASS 1: PASSENGER VEHICLES	NOTES:		AM PM MD OTHER OTHER	▲ N ◀ W E ▶ S ▼

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	I-15 SB Ramps			I-15 SB Ramps			Beech			Beech			
LANES:	X	X	X	1	X	1	1	2	X	X	2	0	
7:00 AM	0	0	0	15	0	15	38	25	0	0	28	61	182
7:15 AM	0	0	0	11	0	16	48	33	0	0	30	69	207
7:30 AM	0	0	0	22	0	23	54	25	0	0	20	79	223
7:45 AM	0	0	0	24	0	15	56	31	0	0	25	77	228
8:00 AM	0	0	0	25	0	16	38	35	0	0	36	66	216
8:15 AM	0	0	0	23	0	13	49	25	0	0	27	45	182
8:30 AM	0	0	0	24	0	20	55	40	0	0	29	79	247
8:45 AM	0	0	0	40	0	10	44	41	0	0	35	69	239
VOLUMES	0	0	0	184	0	128	382	255	0	0	230	545	1,724
APPROACH %	0%	0%	0%	59%	0%	41%	60%	40%	0%	0%	30%	70%	
APP/DEPART	0	/	928	312	/	0	637	/	438	775	/	358	0
BEGIN PEAK HR	8:00 AM												
VOLUMES	0	0	0	111	0	59	186	141	0	0	127	259	884
APPROACH %	0%	0%	0%	65%	0%	35%	57%	43%	0%	0%	33%	67%	
PEAK HR FACTOR	0.000			0.855			0.861			0.894			0.895
APP/DEPART	0	/	446	171	/	20	327	/	252	386	/	186	0
04:00 PM	0	0	0	40	0	20	22	92	0	0	85	59	318
4:15 PM	0	0	0	41	0	21	22	93	0	0	89	63	329
4:30 PM	0	0	0	44	0	15	25	105	0	0	106	75	370
4:45 PM	0	0	0	50	0	13	16	98	0	0	88	52	317
5:00 PM	0	0	0	46	0	9	20	92	0	0	104	82	353
5:15 PM	0	0	0	50	0	11	19	80	0	0	118	65	343
5:30 PM	0	0	0	46	0	8	24	85	0	0	99	72	334
5:45 PM	0	0	0	44	0	11	18	95	0	0	117	70	355
VOLUMES	0	0	0	361	0	108	166	740	0	0	806	538	2,719
APPROACH %	0%	0%	0%	77%	0%	23%	18%	82%	0%	0%	60%	40%	
APP/DEPART	0	/	704	469	/	0	906	/	1,101	1,344	/	914	0
BEGIN PEAK HR	5:00 PM												
VOLUMES	0	0	0	186	0	39	81	352	0	0	438	289	1,385
APPROACH %	0%	0%	0%	83%	0%	17%	19%	81%	0%	0%	60%	40%	
PEAK HR FACTOR	0.000			0.922			0.958			0.972			0.975
APP/DEPART	0	/	370	225	/	0	433	/	538	727	/	477	0

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	1	0	0	1

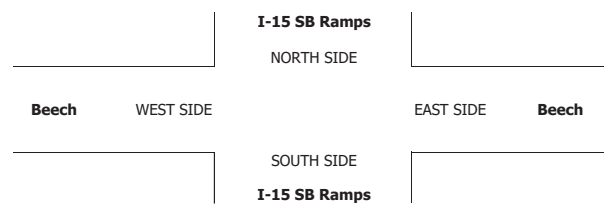
RTOR			
NRR	SRR	ERR	WRR
0	12	0	40
0	14	0	42
0	14	0	32
0	11	0	37
0	15	0	32
0	7	0	17
0	13	0	65
0	3	0	22
0	89	0	287

0	38	0	136
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	18	0	19
0	13	0	16
0	9	0	18
0	9	0	27
0	8	0	30
0	9	0	25
0	7	0	32
0	6	0	27
0	79	0	194

0	30	0	114
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/23/21 TUESDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 SB Ramps Beech	PROJECT #: SC2846	LOCATION #: 4	CONTROL: SIGNAL
CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:		AM PM	▲ N	▶ E
			◀ W	▼ S	
			OTHER		

LANES:	NORTHBOUND I-15 SB Ramps			SOUTHBOUND I-15 SB Ramps			EASTBOUND Beech			WESTBOUND Beech			TOTAL
	NL X	NT X	NR X	SL 1	ST X	SR 1	EL 1	ET 2	ER X	WL X	WT 2	WR 0	

U-TURNS				
NB	SB	EB	WB	TTL

RTOR			
NRR X	SRR 0	ERR X	WRR 0

7:00 AM	0	0	0	1	0	0	2	3	0	0	3	0	9
7:15 AM	0	0	0	2	0	2	4	3	0	0	3	5	19
7:30 AM	0	0	0	4	0	3	2	7	0	0	4	4	24
7:45 AM	0	0	0	1	0	2	2	1	0	0	4	4	14
8:00 AM	0	0	0	5	0	1	0	1	0	0	6	1	14
8:15 AM	0	0	0	0	0	2	3	6	0	0	4	1	16
8:30 AM	0	0	0	0	0	3	0	2	0	0	1	2	8
8:45 AM	0	0	0	2	0	3	1	3	0	0	5	3	17
VOLUMES	0	0	0	15	0	16	14	26	0	0	30	20	121
APPROACH %	0%	0%	0%	48%	0%	52%	35%	65%	0%	0%	60%	40%	
APP/DEPART	0	/	34	31	/	0	40	/	41	50	/	46	0
BEGIN PEAK HR	7:15 AM												
VOLUMES	0	0	0	12	0	8	8	12	0	0	17	14	71
APPROACH %	0%	0%	0%	60%	0%	40%	40%	60%	0%	0%	55%	45%	
PEAK HR FACTOR	0.000			0.714			0.556			0.969			0.740
APP/DEPART	0	/	22	20	/	0	20	/	24	31	/	25	0
4:00 PM	0	0	0	1	0	3	1	5	0	0	1	2	13
4:15 PM	0	0	0	1	0	1	0	6	0	0	2	3	13
4:30 PM	0	0	0	0	0	2	2	2	0	0	7	0	13
4:45 PM	0	0	0	0	0	0	2	4	0	0	4	5	15
5:00 PM	0	0	0	3	0	0	0	2	0	0	2	2	9
5:15 PM	0	0	0	1	0	1	1	3	0	0	3	3	12
5:30 PM	0	0	0	2	0	0	2	1	0	0	2	3	10
5:45 PM	0	0	0	0	0	1	0	3	0	0	2	5	11
VOLUMES	0	0	0	8	0	8	8	26	0	0	23	23	96
APPROACH %	0%	0%	0%	50%	0%	50%	24%	76%	0%	0%	50%	50%	
APP/DEPART	0	/	31	16	/	0	34	/	34	46	/	31	0
BEGIN PEAK HR	4:00 PM												
VOLUMES	0	0	0	2	0	6	5	17	0	0	14	10	54
APPROACH %	0%	0%	0%	25%	0%	75%	23%	77%	0%	0%	58%	42%	
PEAK HR FACTOR	0.000			0.500			0.917			0.667			0.900
APP/DEPART	0	/	15	8	/	0	22	/	19	24	/	20	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

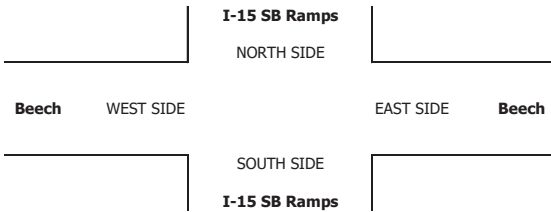
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0	3	0	2
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0	0	0	1
0	2	0	0
0	3	0	2
0	1	0	1
0	13	0	9

0	7	0	6
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	2	0	2
0	1	0	2
0	1	0	0
0	0	0	1
0	0	0	2
0	1	0	1
0	0	0	0
0	1	0	0
0	1	0	1
0	6	0	9

0	4	0	5
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/23/21 TUESDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 SB Ramps Beech	PROJECT #: SC2846 LOCATION #: 4 CONTROL: SIGNAL
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CLASS 3: 3-AXLE TRUCKS	NOTES:
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AM	
PM	
MD	
OTHER	
OTHER	

▲		N	▶
◀		W	E
▼		S	▶

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	I-15 SB Ramps			I-15 SB Ramps			Beech			Beech			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	1	0	0	0	1	0	0	1	0	3
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	3	4
8:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
8:30 AM	0	0	0	0	0	1	0	1	0	0	0	1	3
8:45 AM	0	0	0	1	0	0	0	1	0	0	0	1	3
VOLUMES	0	0	0	2	0	1	1	4	0	0	3	5	16
APPROACH %	0%	0%	0%	67%	0%	33%	20%	80%	0%	0%	38%	63%	
APP/DEPART	0	/	6	3	/	0	5	/	6	8	/	4	0
BEGIN PEAK HR	8:00 AM												
VOLUMES	0	0	0	1	0	1	1	2	0	0	2	5	12
APPROACH %	0%	0%	0%	50%	0%	50%	33%	67%	0%	0%	29%	71%	
PEAK HR FACTOR	0.000			0.500			0.750			0.583			0.750
APP/DEPART	0	/	6	2	/	0	3	/	3	7	/	3	0
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	2	3
4:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	1	2
5:15 PM	0	0	0	1	0	0	1	1	0	0	0	0	3
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	1	0	1	2	6	0	0	1	3	14
APPROACH %	0%	0%	0%	50%	0%	50%	25%	75%	0%	0%	25%	75%	
APP/DEPART	0	/	5	2	/	0	8	/	7	4	/	2	0
BEGIN PEAK HR	4:30 PM												
VOLUMES	0	0	0	1	0	1	2	4	0	0	1	1	10
APPROACH %	0%	0%	0%	50%	0%	50%	33%	67%	0%	0%	50%	50%	
PEAK HR FACTOR	0.000			0.500			0.750			0.500			0.833
APP/DEPART	0	/	3	2	/	0	6	/	5	2	/	2	0

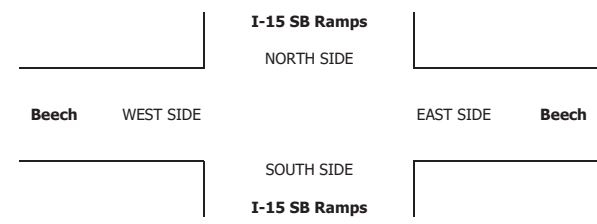
U-TURNS				
NB	SB	EB	WB	TTL
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
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0	0	0	0	0
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0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR			
NRR	SRR	ERR	WRR
X	0	X	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

0	1	0	4
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0	0	0	0
0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

0	1	0	1
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/23/21 TUESDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 SB Ramps Beech	PROJECT #: SC2846	LOCATION #: 4	CONTROL: SIGNAL																
CLASS 4: 4 OR MORE AXLE TRUCKS	NOTES:	<table border="1"> <tr> <td>AM</td> <td></td> <td>▲</td> <td></td> </tr> <tr> <td>PM</td> <td></td> <td>▲</td> <td>N</td> </tr> <tr> <td>MD</td> <td>◀ W</td> <td></td> <td>E ▶</td> </tr> <tr> <td>OTHER</td> <td></td> <td>S</td> <td>▼</td> </tr> </table>				AM		▲		PM		▲	N	MD	◀ W		E ▶	OTHER		S	▼
AM		▲																			
PM		▲	N																		
MD	◀ W		E ▶																		
OTHER		S	▼																		

LANES:	NORTHBOUND I-15 SB Ramps			SOUTHBOUND I-15 SB Ramps			EASTBOUND Beech			WESTBOUND Beech			TOTAL
	NL X	NT X	NR X	SL 1	ST X	SR 1	EL 1	ET 2	ER X	WL X	WT 2	WR 0	

U-TURNS				
NB	SB	EB	WB	TTL

RTOR			
NRR X	SRR 0	ERR X	WRR 0

7:00 AM	0	0	0	0	0	0	0	1	0	0	1	1	3
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	3	0	0	0	0	1	1	5
7:45 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
8:00 AM	0	0	0	0	0	1	0	1	0	0	5	1	8
8:15 AM	0	0	0	0	0	3	0	2	0	0	1	1	7
8:30 AM	0	0	0	0	0	1	0	0	0	0	0	1	2
8:45 AM	0	0	0	1	0	1	1	1	0	0	0	1	5
VOLUMES	0	0	0	1	0	9	1	8	0	0	8	6	33
APPROACH %	0%	0%	0%	10%	0%	90%	11%	89%	0%	0%	57%	43%	
APP/DEPART	0	/	7	10	/	0	9	/	9	14	/	17	0
BEGIN PEAK HR	8:00 AM												
VOLUMES	0	0	0	1	0	6	1	4	0	0	6	4	22
APPROACH %	0%	0%	0%	14%	0%	86%	20%	80%	0%	0%	60%	40%	
PEAK HR FACTOR	0.000			0.583			0.625			0.417			0.688
APP/DEPART	0	/	5	7	/	0	5	/	5	10	/	12	0
4:00 PM	0	0	0	0	0	3	0	2	0	0	1	2	8
4:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	2	0	0	0	0	1	3
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
VOLUMES	0	0	0	0	0	4	3	5	0	0	2	3	17
APPROACH %	0%	0%	0%	0%	0%	100%	38%	63%	0%	0%	40%	60%	
APP/DEPART	0	/	6	4	/	0	8	/	5	5	/	6	0
BEGIN PEAK HR	4:00 PM												
VOLUMES	0	0	0	0	0	3	0	3	0	0	2	2	10
APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	50%	50%	
PEAK HR FACTOR	0.000			0.250			0.375			0.333			0.313
APP/DEPART	0	/	2	3	/	0	3	/	3	4	/	5	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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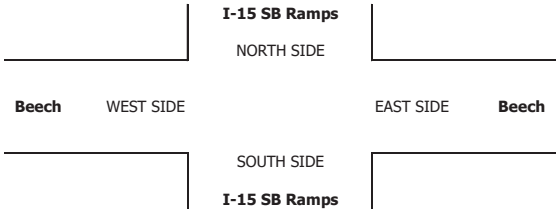
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0	3	0	0	1
0	1	0	0	1
0	1	0	0	1
0	7	0	0	5

0	5	0	4
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0	3	0	1
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0	3	0	1

0	3	0	1
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/23/21 TUESDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 SB Ramps Beech	PROJECT #: SC2846	LOCATION #: 4	CONTROL: SIGNAL
CLASS 5: RV	NOTES:				

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	X	X	X	1	X	1	1	2	X	X	2	0	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0

RTOR			
NRR	SRR	ERR	WRR
X	0	X	0

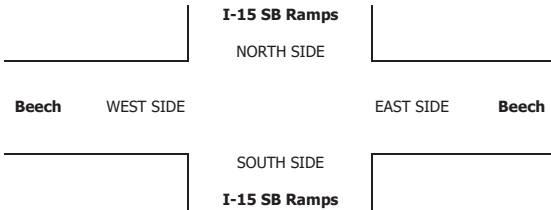
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0	
BEGIN PEAK HR	7:00 AM													
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR	0.000			0.000			0.000			0.000			0.000	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0	
PM	04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0		
BEGIN PEAK HR	4:00 PM													
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0		
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
PEAK HR FACTOR	0.000			0.000			0.000			0.000			0.000	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0		

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

0	0	0	0
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/23/21 TUESDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 SB Ramps Beech	PROJECT #: SC2846 LOCATION #: 4 CONTROL: SIGNAL																									
CLASS 6:	NOTES:		<table border="1" style="text-align: center; margin: auto;"> <tr><td>AM</td><td></td><td></td><td>▲</td><td></td></tr> <tr><td>PM</td><td></td><td></td><td>N</td><td></td></tr> <tr><td>MD</td><td>◀</td><td>W</td><td></td><td>E ▶</td></tr> <tr><td>OTHER</td><td></td><td></td><td>S</td><td></td></tr> <tr><td>OTHER</td><td></td><td></td><td>▼</td><td></td></tr> </table>	AM			▲		PM			N		MD	◀	W		E ▶	OTHER			S		OTHER			▼	
AM			▲																									
PM			N																									
MD	◀	W		E ▶																								
OTHER			S																									
OTHER			▼																									

LANES:	NORTHBOUND I-15 SB Ramps			SOUTHBOUND I-15 SB Ramps			EASTBOUND Beech			WESTBOUND Beech			TOTAL
	NL X	NT X	NR X	SL 1	ST X	SR 1	EL 1	ET 2	ER X	WL X	WT 2	WR 0	

U-TURNS				
NB	SB	EB	WB	TTL

RTOR			
NRR X	SRR 0	ERR X	WRR 0

AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	BEGIN PEAK HR	7:00 AM														
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR	0.000			0.000			0.000			0.000			0.000		
	APP/DEPART	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	BEGIN PEAK HR	4:00 PM														
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR	0.000			0.000			0.000			0.000			0.000		
	APP/DEPART	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

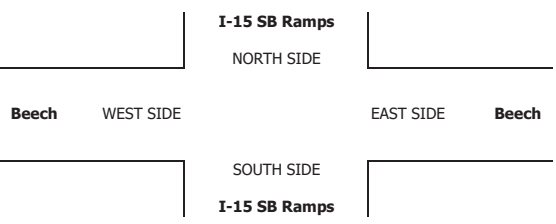
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	0
0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

0	0	0	0
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, Dec 13, 18

LOCATION: Fontana I-15 NB Ramps East & West: Beech

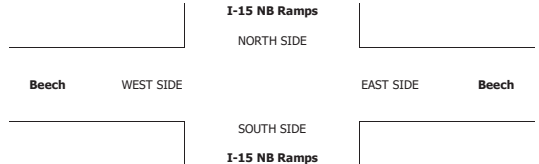
PROJECT #: SC LOCATION #: 5 CONTROL: SIGNAL



Add U-Turns to Left Turns

Main data table with columns for Lanes (NL, NT, NR, SL, ST, SR, EL, ET, ER, WL, WT, WR) and rows for AM and PM time periods (7:00 AM to 5:45 PM) including VOLUMES, APPROACH %, and PEAK HR FACTOR.

U-TURNS table with columns NB, SB, EB, WB, TTL and rows corresponding to the time periods in the main table.



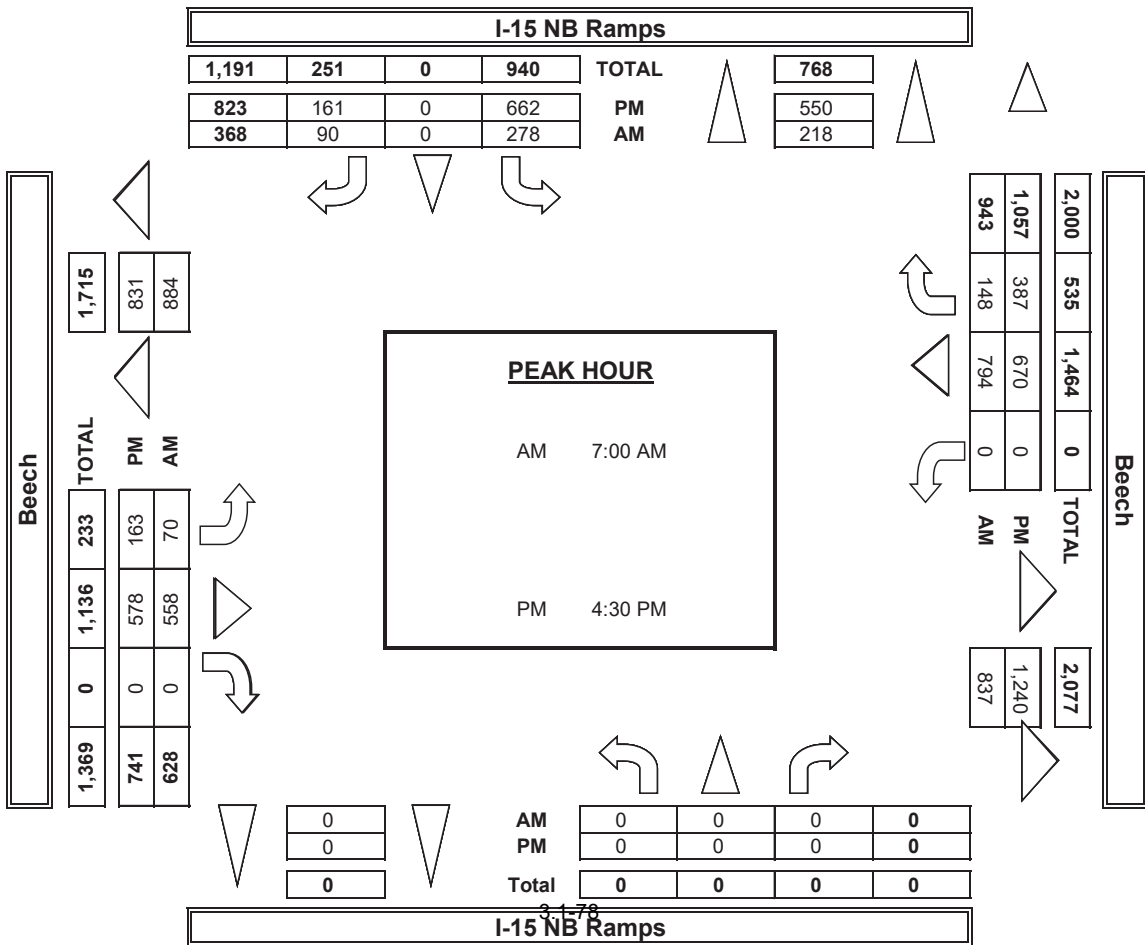
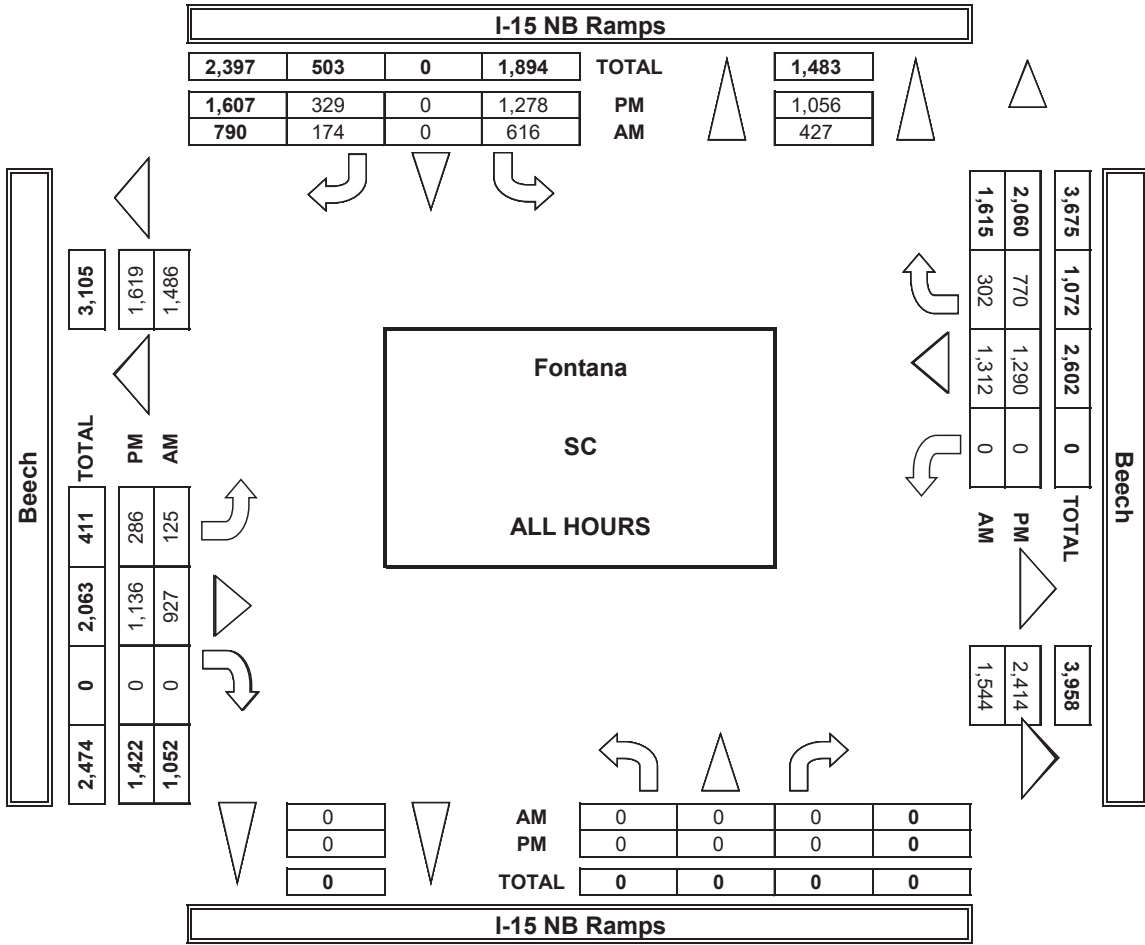
Summary table for AM and PM periods showing counts for various categories.

ALL PED AND BIKE table with columns N SIDE, S SIDE, E SIDE, W SIDE, TOTAL and rows for AM and PM time periods.

PEDESTRIAN CROSSINGS table with columns N SIDE, S SIDE, E SIDE, W SIDE, TOTAL and rows for AM and PM time periods.

BICYCLE CROSSINGS table with columns NS, SS, ES, WS, TOTAL and rows for AM and PM time periods.

AimTD LLC
TURNING MOVEMENT COUNTS



INTERSECTION TUR

PREPARED BY: AimTD LI

DATE: 12/13/18 THURSDAY

LOCATION:
NORTH & SOUTH:
EAST & WEST:

Fontana
I-15 NB Ramps
Beech

PCE Adjusted	NOTES:				
	Class	1	2	3	4
	Factor	1	1.5	2	3

LANES:	NORTHBOUND			SOUTHBOUND	
	I-15 NB Ramps			I-15 NB Ramps	
	NL	NT	NR	SL	ST
	X	X	X	1	X

AM	7:00 AM	0	0	0	88	0
		7:15 AM	0	0	0	68
	7:30 AM	0	0	0	68	0
	7:45 AM	0	0	0	73	0
	8:00 AM	0	0	0	106	0
	8:15 AM	0	0	0	88	0
	8:30 AM	0	0	0	66	0
	8:45 AM	0	0	0	95	0
	9:00 AM	0	0	0	0	0
	9:15 AM	0	0	0	0	0
	9:30 AM	0	0	0	0	0
	9:45 AM	0	0	0	0	0
	VOLUMES	0	0	0	650	0
	APPROACH %	0%	0%	0%	78%	0%
	APP/DEPART	0	/	442	837	/
	BEGIN PEAK HR	7:00 AM				
	VOLUMES	0	0	0	296	0
	APPROACH %	0%	0%	0%	75%	0%
	PEAK HR FACTOR	0.000				0.853
	APP/DEPART	0	/	227	394	/
	03:00 PM	0	0	0	0	0
	3:15 PM	0	0	0	0	0
	3:30 PM	0	0	0	0	0
	3:45 PM	0	0	0	0	0
	4:00 PM	0	0	0	159	0
	4:15 PM	0	0	0	151	0

PM	4:30 PM	0	0	0	180	0
	4:45 PM	0	0	0	160	0
	5:00 PM	0	0	0	171	0
	5:15 PM	0	0	0	164	0
	5:30 PM	0	0	0	167	0
	5:45 PM	0	0	0	146	0
	VOLUMES	0	0	0	1,297	0
	APPROACH %	0%	0%	0%	79%	0%
	APP/DEPART	0	/	1,087	1,634	/
	BEGIN PEAK HR	4:30 PM				
	VOLUMES	0	0	0	674	0
	APPROACH %	0%	0%	0%	80%	0%
	PEAK HR FACTOR	0.000				0.919
APP/DEPART	0	/	566	838	/	

I-

Beech

WEST SIDE

I-

TRAINING MOVEMENT COUNTS

...C. tel: 714 253 7888 cs@aimtd.com

PROJECT #: SC
 LOCATION #: 5
 CONTROL: SIGNAL

				AM		▲	
5	6			PM		N	
2	2			MD	◀ W		E ▶
				OTHER		S	
				OTHER		▼	

SR	EASTBOUND			WESTBOUND			TOTAL
	Beech			Beech			
1	EL 1	ET 2	ER X	WL X	WT 2	WR 1	

28	10	102	0	0	217	43	486
16	22	130	0	0	270	40	544
26	11	175	0	0	180	38	498
28	29	169	0	0	144	36	478
22	18	132	0	0	145	37	459
26	14	86	0	0	147	48	408
22	15	74	0	0	132	45	352
20	10	85	0	0	118	30	358
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
187	127	951	0	0	1,352	315	3,582
22%	12%	88%	0%	0%	81%	19%	
0	1,078	/	1,601	1,667	/	1,539	0
98	71	575	0	0	810	156	2,006
25%	11%	89%	0%	0%	84%	16%	
		0.820			0.782		0.922
0	646	/	871	966	/	908	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
39	38	152	0	0	157	92	635
37	34	150	0	0	161	115	647

33	41	134	0	0	170	100	657
43	48	158	0	0	185	106	699
58	40	131	0	0	163	99	660
32	45	173	0	0	163	88	665
52	32	141	0	0	165	85	640
46	30	122	0	0	145	98	586
337	306	1,159	0	0	1,308	781	5,188
21%	21%	79%	0%	0%	63%	37%	
0	1,465	/	2,456	2,089	/	1,645	0
164	174	596	0	0	681	392	2,680
20%	23%	77%	0%	0%	63%	37%	
		0.882			0.923		0.959
0	770	/	1,270	1,073	/	845	0

15 NB Ramps

NORTH SIDE



EAST SIDE

Beech

SOUTH SIDE

15 NB Ramps



U-TURNS				
NB	SB	EB	WB	TTL

				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
0	0	0	0	0

				0
				0
				0
				0
				0
				0

				0
				0
				0
				0
				0
				0
0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
12/13/18
THURSDAY

LOCATION:
NORTH & SOUTH:
EAST & WEST:

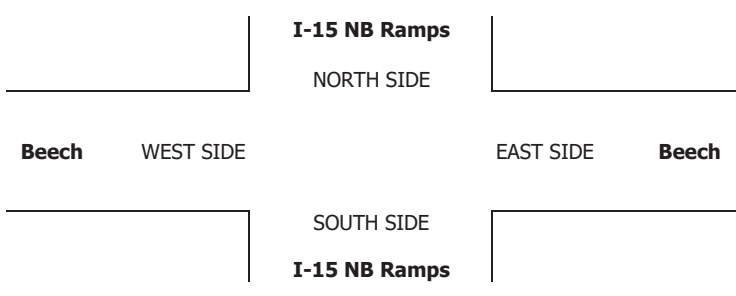
Fontana
I-15 NB Ramps
Beech

PROJECT #: SC
LOCATION #: 5
CONTROL: SIGNAL

CLASS 1:	NOTES:				
PASSENGER VEHICLES		AM		▲	
		PM	◀ W		E ▶
		MD		▼	
		OTHER			
		OTHER			

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS				
	I-15 NB Ramps			I-15 NB Ramps			Beech			Beech				NB	SB	EB	WB	TTL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR						
	X	X	X	1	X	1	1	2	X	X	2	1						

AM	7:00 AM	0	0	0	67	0	19	10	91	0	0	199	38	424	0	0	0	1	1
	7:15 AM	0	0	0	64	0	14	20	121	0	0	260	38	517	0	0	0	0	0
	7:30 AM	0	0	0	65	0	21	11	170	0	0	171	30	468	0	0	0	0	0
	7:45 AM	0	0	0	64	0	25	27	156	0	0	142	34	448	0	0	0	0	0
	8:00 AM	0	0	0	86	0	22	16	124	0	0	132	32	412	0	0	0	0	0
	8:15 AM	0	0	0	85	0	22	14	84	0	0	131	43	379	0	0	0	0	0
	8:30 AM	0	0	0	64	0	16	13	69	0	0	117	43	322	0	0	0	0	0
	8:45 AM	0	0	0	86	0	15	10	80	0	0	107	27	325	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	581	0	154	121	895	0	0	1,259	285	3,296	0	0	0	1	1
APPROACH %	0%	0%	0%	79%	0%	21%	12%	88%	0%	0%	81%	18%							
APP/DEPART	0	/	406	735	/	0	1,016	/	1,477	1,545	/	1,413	0						
BEGIN PEAK HR	7:00 AM																		
VOLUMES	0	0	0	260	0	79	68	538	0	0	772	140	1,858						
APPROACH %	0%	0%	0%	77%	0%	23%	11%	89%	0%	0%	85%	15%							
PEAK HR FACTOR	0.000			0.952			0.828			0.766			0.898						
APP/DEPART	0	/	208	339	/	0	606	/	799	913	/	851	0						
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:00 PM	0	0	0	152	0	37	34	147	0	0	149	87	606	0	0	0	0	0
	4:15 PM	0	0	0	148	0	31	29	140	0	0	158	109	615	0	0	0	0	0
	4:30 PM	0	0	0	175	0	31	32	125	0	0	162	92	617	0	0	0	0	0
	4:45 PM	0	0	0	152	0	41	48	147	0	0	174	101	663	0	0	0	0	0
	5:00 PM	0	0	0	166	0	53	32	125	0	0	157	97	630	0	0	0	0	0
	5:15 PM	0	0	0	155	0	30	40	165	0	0	163	88	641	0	0	0	0	0
	5:30 PM	0	0	0	164	0	50	24	139	0	0	160	82	619	0	0	0	0	0
	5:45 PM	0	0	0	143	0	43	25	122	0	0	142	96	571	0	0	0	0	0
	VOLUMES	0	0	0	1,255	0	316	264	1,110	0	0	1,265	752	4,962	0	0	0	0	0
APPROACH %	0%	0%	0%	80%	0%	20%	19%	81%	0%	0%	63%	37%							
APP/DEPART	0	/	1,016	1,571	/	0	1,374	/	2,365	2,017	/	1,581	0						
BEGIN PEAK HR	4:45 PM																		
VOLUMES	0	0	0	637	0	174	144	576	0	0	654	368	2,553						
APPROACH %	0%	0%	0%	79%	0%	21%	20%	80%	0%	0%	64%	36%							
PEAK HR FACTOR	0.000			0.926			0.878			0.929			0.963						
APP/DEPART	0	/	512	811	/	0	720	/	1,213	1,022	/	828	0						



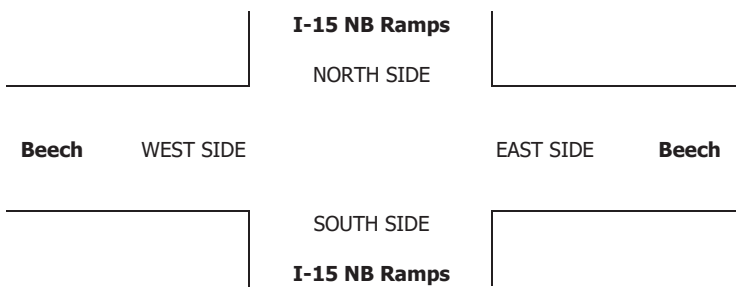
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 12/13/18 THURSDAY	LOCATION: Fontana NORTH & SOUTH: I-15 NB Ramps EAST & WEST: Beech	PROJECT #: SC LOCATION #: 5 CONTROL: SIGNAL															
CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	<table border="1" style="margin: auto;"> <tr> <td style="padding: 2px;">AM</td> <td style="padding: 2px;">▲</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;">PM</td> <td style="padding: 2px;">◀</td> <td style="padding: 2px;">W</td> </tr> <tr> <td style="padding: 2px;">MD</td> <td style="padding: 2px;">▶</td> <td style="padding: 2px;">E</td> </tr> <tr> <td style="padding: 2px;">OTHER</td> <td style="padding: 2px;">▼</td> <td style="padding: 2px;">S</td> </tr> <tr> <td style="padding: 2px;">OTHER</td> <td></td> <td></td> </tr> </table>	AM	▲	N	PM	◀	W	MD	▶	E	OTHER	▼	S	OTHER		
AM	▲	N															
PM	◀	W															
MD	▶	E															
OTHER	▼	S															
OTHER																	

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS				
	I-15 NB Ramps			I-15 NB Ramps			Beech			Beech				NB	SB	EB	WB	TTL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR						

AM	7:00 AM	0	0	0	3	0	2	0	5	0	0	5	1	16	0	0	0	0	0
	7:15 AM	0	0	0	1	0	0	1	2	0	0	5	1	10	0	0	0	0	0
	7:30 AM	0	0	0	0	0	2	0	2	0	0	6	2	12	0	0	0	0	0
	7:45 AM	0	0	0	6	0	2	1	3	0	0	0	0	12	0	0	0	0	0
	8:00 AM	0	0	0	1	0	0	1	4	0	0	4	3	13	0	0	0	0	0
	8:15 AM	0	0	0	2	0	1	0	1	0	0	4	3	11	0	0	0	0	0
	8:30 AM	0	0	0	1	0	4	1	3	0	0	8	1	18	0	0	0	0	0
	8:45 AM	0	0	0	6	0	3	0	2	0	0	4	2	17	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	20	0	14	4	22	0	0	36	13	109	0	0	0	0	0	
APPROACH %	0%	0%	0%	59%	0%	41%	15%	85%	0%	0%	73%	27%		0	0	0	0	0	
APP/DEPART	0	/	17	34	/	0	26	/	42	49	/	50	0	0	0	0	0	0	
BEGIN PEAK HR	8:00 AM																		
VOLUMES	0	0	0	10	0	8	2	10	0	0	20	9	59	0	0	0	0	0	
APPROACH %	0%	0%	0%	56%	0%	44%	17%	83%	0%	0%	69%	31%		0	0	0	0	0	
PEAK HR FACTOR	0.000			0.500			0.600			0.806			0.819						
APP/DEPART	0	/	11	18	/	0	12	/	20	29	/	28	0	0	0	0	0	0	
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:00 PM	0	0	0	1	0	1	1	3	0	0	2	1	9	0	0	0	0	0
	4:15 PM	0	0	0	2	0	2	3	5	0	0	2	4	18	0	0	0	0	0
	4:30 PM	0	0	0	3	0	1	4	4	0	0	4	4	20	0	0	0	0	0
	4:45 PM	0	0	0	0	0	1	0	1	0	0	4	3	9	0	0	0	0	0
	5:00 PM	0	0	0	3	0	3	2	0	0	0	1	1	10	0	0	0	0	0
	5:15 PM	0	0	0	4	0	1	0	2	0	0	0	0	7	0	0	0	0	0
	5:30 PM	0	0	0	2	0	1	3	1	0	0	3	2	12	0	0	0	0	0
	5:45 PM	0	0	0	2	0	2	1	0	0	0	2	1	8	0	0	0	0	0
VOLUMES	0	0	0	17	0	12	14	16	0	0	18	16	93	0	0	0	0	0	
APPROACH %	0%	0%	0%	59%	0%	41%	47%	53%	0%	0%	53%	47%		0	0	0	0	0	
APP/DEPART	0	/	30	29	/	0	30	/	33	34	/	30	0	0	0	0	0	0	
BEGIN PEAK HR	4:15 PM																		
VOLUMES	0	0	0	8	0	7	9	10	0	0	11	12	57	0	0	0	0	0	
APPROACH %	0%	0%	0%	53%	0%	47%	47%	53%	0%	0%	48%	52%		0	0	0	0	0	
PEAK HR FACTOR	0.000			0.625			0.594			0.719			0.713						
APP/DEPART	0	/	21	15	/	0	19	/	18	23	/	18	0	0	0	0	0	0	



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
12/13/18
THURSDAY

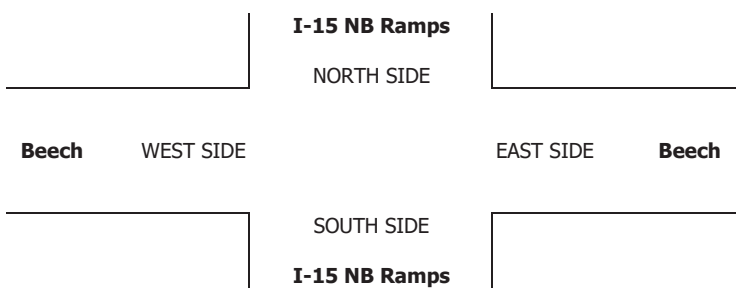
LOCATION: Fontana
NORTH & SOUTH: I-15 NB Ramps
EAST & WEST: Beech

PROJECT #: SC
LOCATION #: 5
CONTROL: SIGNAL

CLASS 3: 3-AXLE TRUCKS	NOTES:	AM PM MD OTHER OTHER	◀ W S ▶ E	▲ N ▼
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LANES:	NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Beech			WESTBOUND Beech			TOTAL	U-TURNS				
	NL X	NT X	NR X	SL 1	ST X	SR 1	EL 1	ET 2	ER X	WL X	WT 2	WR 1		NB	SB	EB	WB	TTL

AM	7:00 AM	0	0	0	1	0	0	0	0	0	0	1	0	2	0	0	0	0	0	
	7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	
	7:30 AM	0	0	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0	
	7:45 AM	0	0	0	0	0	0	0	1	0	0	0	1	1	3	0	0	0	0	0
	8:00 AM	0	0	0	1	0	0	0	0	0	0	0	2	0	3	0	0	0	0	0
	8:15 AM	0	0	0	0	0	1	0	0	0	0	0	1	0	2	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	2	0	3	0	1	0	0	6	2	14	0	0	0	0	0	0	
APPROACH %	0%	0%	0%	40%	0%	60%	0%	100%	0%	0%	75%	25%								
APP/DEPART	0	/	2	5	/	0	1	/	3	8	/	9	0							
BEGIN PEAK HR	7:30 AM																			
VOLUMES	0	0	0	1	0	2	0	1	0	0	4	2	10							
APPROACH %	0%	0%	0%	33%	0%	67%	0%	100%	0%	0%	67%	33%								
PEAK HR FACTOR	0.000			0.750			0.250			0.750			0.833							
APP/DEPART	0	/	2	3	/	0	1	/	2	6	/	6	0							
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	1	0	0	1	0	0	0	1	0	3	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
	4:45 PM	0	0	0	1	0	0	0	2	0	0	0	0	3	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	2	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	2	0	0	3	4	0	0	2	1	12	0	0	0	0	0	0	
APPROACH %	0%	0%	0%	100%	0%	0%	43%	57%	0%	0%	67%	33%								
APP/DEPART	0	/	4	2	/	0	7	/	6	3	/	2	0							
BEGIN PEAK HR	4:00 PM																			
VOLUMES	0	0	0	1	0	0	2	3	0	0	1	1	8							
APPROACH %	0%	0%	0%	100%	0%	0%	40%	60%	0%	0%	50%	50%								
PEAK HR FACTOR	0.000			0.250			0.625			0.500			0.667							
APP/DEPART	0	/	3	1	/	0	5	/	4	2	/	1	0							



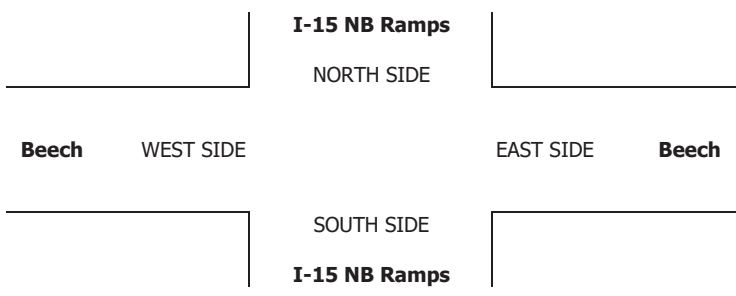
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 12/13/18 THURSDAY	LOCATION: Fontana NORTH & SOUTH: I-15 NB Ramps EAST & WEST: Beech	PROJECT #: SC LOCATION #: 5 CONTROL: SIGNAL															
CLASS 4: 4 OR MORE AXLE TRUCKS	NOTES:	<table style="margin: auto;"> <tr> <td style="border: 1px solid black;">AM</td> <td style="border: 1px solid black;">▲</td> <td style="border: 1px solid black;">N</td> </tr> <tr> <td style="border: 1px solid black;">PM</td> <td style="border: 1px solid black;">◀</td> <td style="border: 1px solid black;">W</td> </tr> <tr> <td style="border: 1px solid black;">MD</td> <td style="border: 1px solid black;">▶</td> <td style="border: 1px solid black;">E</td> </tr> <tr> <td style="border: 1px solid black;">OTHER</td> <td style="border: 1px solid black;">▼</td> <td style="border: 1px solid black;">S</td> </tr> <tr> <td style="border: 1px solid black;">OTHER</td> <td></td> <td></td> </tr> </table>	AM	▲	N	PM	◀	W	MD	▶	E	OTHER	▼	S	OTHER		
AM	▲	N															
PM	◀	W															
MD	▶	E															
OTHER	▼	S															
OTHER																	

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		NB	SB	EB	WB	TTL

AM	7:00 AM	0	0	0	4	0	0	0	1	0	0	2	1	8	0	0	0	0	0	
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 AM	0	0	0	1	0	0	0	0	0	0	0	1	0	2	0	0	0	0	
	7:45 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	
	8:00 AM	0	0	0	4	0	0	0	0	0	0	0	1	0	5	0	0	0	0	
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	VOLUMES	0	0	0	9	0	0	0	3	0	0	0	5	2	19	0	0	0	0	0
APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	0%	71%	29%							
APP/DEPART	0	/	2	9	/	0	3	/	12	7	/	5		0						
BEGIN PEAK HR	7:00 AM																			
VOLUMES	0	0	0	5	0	0	0	3	0	0	2	2	12							
APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	50%	50%								
PEAK HR FACTOR	0.000			0.313			0.375			0.333			0.375							
APP/DEPART	0	/	2	5	/	0	3	/	8	4	/	2		0						
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:00 PM	0	0	0	1	0	0	0	0	0	0	1	1	3	0	0	0	0	0	
	4:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	
	4:30 PM	0	0	0	0	0	0	1	1	0	0	0	0	2	0	0	0	0	0	
	4:45 PM	0	0	0	2	0	0	0	1	0	0	1	0	4	0	0	0	0	0	
	5:00 PM	0	0	0	0	0	0	1	2	0	0	0	0	3	0	0	0	0	0	
	5:15 PM	0	0	0	1	0	0	1	1	0	0	0	0	3	0	0	0	0	0	
	5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	
	5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	
	VOLUMES	0	0	0	4	0	1	5	5	0	0	2	1	18						
APPROACH %	0%	0%	0%	80%	0%	20%	50%	50%	0%	0%	67%	33%								
APP/DEPART	0	/	6	5	/	0	10	/	9	3	/	3		0						
BEGIN PEAK HR	4:30 PM																			
VOLUMES	0	0	0	3	0	0	3	5	0	0	1	0	12							
APPROACH %	0%	0%	0%	100%	0%	0%	38%	63%	0%	0%	100%	0%								
PEAK HR FACTOR	0.000			0.375			0.667			0.250			0.750							
APP/DEPART	0	/	3	3	/	0	8	/	8	1	/	1		0						



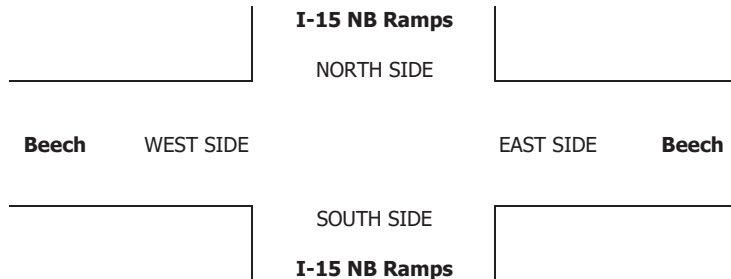
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 12/13/18 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 NB Ramps Beech	PROJECT #: LOCATION #: CONTROL:	SC 5 SIGNAL
CLASS 5: RV	NOTES:			

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		NB	SB	EB	WB	TTL

AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0		0		0	
BEGIN PEAK HR	7:00 AM																	
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR	0.000			0.000			0.000			0.000			0.000					
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0		0		0	
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	
	5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
VOLUMES	0	0	0	0	0	0	0	1	0	0	1	0	2					
APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%					
APP/DEPART	0	/	0	0	/	0	1	/	1	1	/	1	0				0	
BEGIN PEAK HR	4:15 PM																	
VOLUMES	0	0	0	0	0	0	0	1	0	0	1	0	2					
APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%					
PEAK HR FACTOR	0.000			0.000			0.250			0.250			0.500					
APP/DEPART	0	/	0	0	/	0	1	/	1	1	/	1	0				0	



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 12/13/18 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 NB Ramps Beech	PROJECT #: SC LOCATION #: 5 CONTROL: SIGNAL
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CLASS 6:	NOTES:	AM PM MD OTHER OTHER	▲ N ◀ W E ▶ S ▼
BUSES			

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	I-15 NB Ramps			I-15 NB Ramps			Beech			Beech			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	X	X	X	1	X	1	1	2	X	X	2	1	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	0	0	0	1	0	3	0	0	0	0	1	0	5
7:15 AM	0	0	0	1	0	0	0	3	0	0	1	0	5
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	2	0	0	0	1	0	0	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	4
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

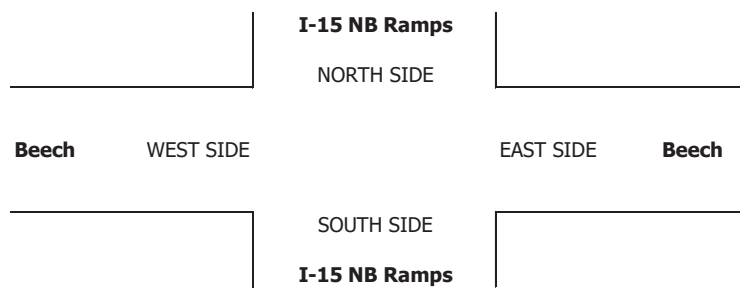
VOLUMES	0	0	0	4	0	3	0	6	0	0	6	0	19
APPROACH %	0%	0%	0%	57%	0%	43%	0%	100%	0%	0%	100%	0%	
APP/DEPART	0	/	0	7	/	0	6	/	10	6	/	9	0
BEGIN PEAK HR	7:00 AM												
VOLUMES	0	0	0	2	0	3	0	4	0	0	2	0	11
APPROACH %	0%	0%	0%	40%	0%	60%	0%	100%	0%	0%	100%	0%	
PEAK HR FACTOR	0.000			0.313			0.333			0.500			0.550
APP/DEPART	0	/	0	5	/	0	4	/	6	2	/	5	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

VOLUMES	0	0	0	0	0	0	0	0	0	0	2	0	2
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	
APP/DEPART	0	/	0	0	/	0	0	/	0	2	/	2	0
BEGIN PEAK HR	4:00 PM												
VOLUMES	0	0	0	0	0	0	0	0	0	0	2	0	2
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	
PEAK HR FACTOR	0.000			0.000			0.000			0.500			0.500
APP/DEPART	0	/	0	0	/	0	0	/	0	2	/	2	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, Mar 18, 21	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 NB Ramps Duncan Canyon	PROJECT #: SC2846	LOCATION #: 5	CONTROL: SIGNAL
NOTES:					



LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	11	0	26	0	0	0	8	35	0	0	41	7	128
7:15 AM	16	0	25	0	0	0	6	28	0	0	47	9	131
7:30 AM	12	0	21	0	0	0	12	21	0	0	52	11	129
7:45 AM	15	1	22	0	0	0	11	39	0	0	55	11	154
8:00 AM	20	1	20	0	0	0	12	22	0	0	39	11	125
8:15 AM	11	1	27	0	0	0	7	24	0	0	35	20	125
8:30 AM	15	0	19	0	0	0	5	16	0	0	51	13	119
8:45 AM	23	0	14	0	0	0	11	27	0	0	30	10	115
VOLUMES	123	3	174	0	0	0	72	212	0	0	350	92	1,026
APPROACH %	41%	1%	58%	0%	0%	0%	25%	75%	0%	0%	79%	21%	
APP/DEPART	300	/	167	0	/	0	284	/	386	442	/	473	0
BEGIN PEAK HR	7:00 AM												
VOLUMES	54	1	94	0	0	0	37	123	0	0	195	38	542
APPROACH %	36%	1%	63%	0%	0%	0%	23%	77%	0%	0%	84%	16%	
PEAK HR FACTOR	0.909			0.000			0.800			0.883			0.880
APP/DEPART	149	/	76	0	/	0	160	/	217	233	/	249	0
PM													
04:00 PM	34	4	27	0	0	0	20	31	0	0	41	31	188
4:15 PM	40	3	34	0	0	0	16	34	0	0	44	24	195
4:30 PM	41	2	18	0	0	0	12	35	0	0	56	23	187
4:45 PM	39	0	30	0	0	0	21	48	0	0	42	31	211
5:00 PM	41	0	32	0	0	0	18	40	0	0	56	26	213
5:15 PM	35	7	33	0	0	0	21	35	0	0	59	35	225
5:30 PM	56	2	46	0	0	0	21	49	0	0	59	22	255
5:45 PM	53	1	50	0	0	0	18	40	0	0	61	15	238
VOLUMES	339	19	270	0	0	0	147	312	0	0	418	207	1,712
APPROACH %	54%	3%	43%	0%	0%	0%	32%	68%	0%	0%	67%	33%	
APP/DEPART	628	/	372	0	/	0	459	/	582	625	/	758	0
BEGIN PEAK HR	5:00 PM												
VOLUMES	185	10	161	0	0	0	78	164	0	0	235	98	931
APPROACH %	52%	3%	45%	0%	0%	0%	32%	68%	0%	0%	71%	29%	
PEAK HR FACTOR	0.856			0.000			0.864			0.886			0.913
APP/DEPART	356	/	185	0	/	0	242	/	325	333	/	421	0

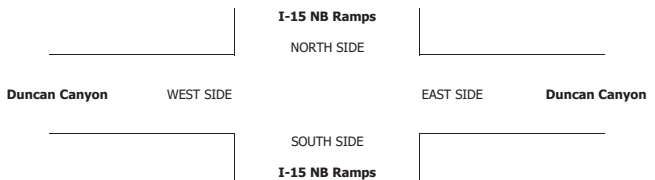
U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0

RTOR			
NRR	SRR	ERR	WRR
7	0	0	2
15	0	0	2
11	0	0	2
11	0	0	0
10	0	0	1
14	0	0	0
5	0	0	1
9	0	0	0
82	0	0	8

44	0	0	6
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15	0	0	10
19	0	0	2
9	0	0	4
20	0	0	8
15	0	0	5
16	0	0	10
24	0	0	6
22	0	0	1
140	0	0	46

77	0	0	22
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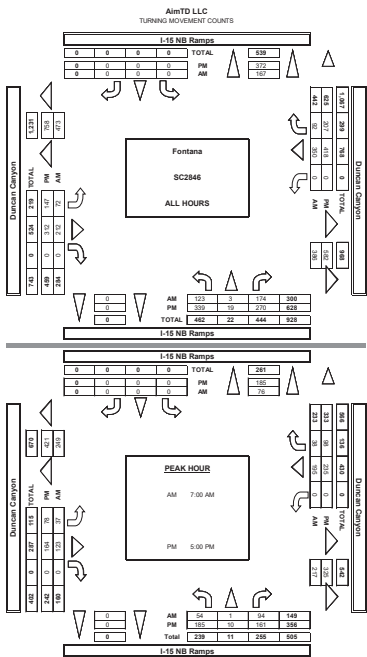


AM	PM
7:00 AM	4:00 PM
7:15 AM	4:15 PM
7:30 AM	4:30 PM
7:45 AM	4:45 PM
8:00 AM	5:00 PM
8:15 AM	5:15 PM
8:30 AM	5:30 PM
8:45 AM	5:45 PM
TOTAL	TOTAL

ALL PED AND BIKE				
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	1	2
0	0	0	1	1
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	1	1	2
0	0	0	0	0
0	0	3	3	6

PEDESTRIAN CROSSINGS				
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

BICYCLE CROSSINGS				
ES	WS	SS	NS	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	1	2
0	0	0	1	1
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	1	1	2
0	0	0	0	0
0	0	3	3	6



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 NB Ramps Duncan Canyon	PROJECT #: LOCATION #: CONTROL:	SC2846 5 SIGNAL
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CLASS 1:	NOTES:						
PASSENGER VEHICLES		AM	PM	MD	OTHER	▲ N	▶ E
				◀ W		S	▼

	NORTHBOUND <small>I-15 NB Ramps</small>			SOUTHBOUND <small>I-15 NB Ramps</small>			EASTBOUND <small>Duncan Canyon</small>			WESTBOUND <small>Duncan Canyon</small>			TOTAL
	NL 0.5	NT 0.5	NR 2	SL X	ST X	SR X	EL 1	ET 2	ER X	WL X	WT 2	WR 1	
AM													
7:00 AM	10	0	15	0	0	0	7	25	0	0	38	3	98
7:15 AM	14	0	19	0	0	0	6	26	0	0	43	8	116
7:30 AM	10	0	15	0	0	0	11	19	0	0	48	10	113
7:45 AM	13	1	17	0	0	0	9	30	0	0	52	11	133
8:00 AM	19	0	17	0	0	0	12	18	0	0	35	7	108
8:15 AM	10	0	19	0	0	0	7	20	0	0	35	14	105
8:30 AM	14	0	16	0	0	0	3	13	0	0	49	8	103
8:45 AM	22	0	12	0	0	0	10	20	0	0	25	7	96
VOLUMES	112	1	130	0	0	0	65	171	0	0	325	68	872
APPROACH %	46%	0%	53%	0%	0%	0%	28%	72%	0%	0%	83%	17%	
APP/DEPART	243	/	134	0	/	0	236	/	301	393	/	437	0
BEGIN PEAK HR	7:15 AM												
VOLUMES	56	1	68	0	0	0	38	93	0	0	178	36	470
APPROACH %	45%	1%	54%	0%	0%	0%	29%	71%	0%	0%	83%	17%	
PEAK HR FACTOR	0.868			0.000			0.840			0.849			0.883
APP/DEPART	125	/	75	0	/	0	131	/	161	214	/	234	0
PM													
04:00 PM	34	3	27	0	0	0	19	30	0	0	40	28	181
4:15 PM	39	3	31	0	0	0	16	31	0	0	40	22	182
4:30 PM	38	2	16	0	0	0	11	34	0	0	52	19	172
4:45 PM	35	0	30	0	0	0	18	43	0	0	41	30	197
5:00 PM	38	0	29	0	0	0	17	36	0	0	54	25	199
5:15 PM	34	6	30	0	0	0	19	30	0	0	56	33	208
5:30 PM	51	2	46	0	0	0	21	48	0	0	56	22	246
5:45 PM	52	1	48	0	0	0	18	40	0	0	59	15	233
VOLUMES	321	17	257	0	0	0	139	292	0	0	398	194	1,618
APPROACH %	54%	3%	43%	0%	0%	0%	32%	68%	0%	0%	67%	33%	
APP/DEPART	595	/	349	0	/	0	431	/	549	592	/	720	0
BEGIN PEAK HR	5:00 PM												
VOLUMES	175	9	153	0	0	0	74	154	0	0	225	95	886
APPROACH %	52%	3%	45%	0%	0%	0%	32%	67%	0%	0%	70%	30%	
PEAK HR FACTOR	0.834			0.000			0.830			0.899			0.900
APP/DEPART	337	/	178	0	/	0	229	/	307	320	/	401	0

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR			
NRR	SRR	ERR	WRR
0	0	0	0
4	0	0	1
11	0	0	2
11	0	0	2
8	0	0	0
9	0	0	1
9	0	0	0
5	0	0	0
7	0	0	0
64	0	0	6

39	0	0	5
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
0	0	1	0	1

15	0	0	10
18	0	0	2
7	0	0	4
20	0	0	7
13	0	0	5
15	0	0	9
24	0	0	6
22	0	0	1
134	0	0	44

74	0	0	21
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I-15 NB Ramps

NORTH SIDE

Duncan Canyon WEST SIDE

EAST SIDE Duncan Canyon

SOUTH SIDE

I-15 NB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 NB Ramps Duncan Canyon	PROJECT #: LOCATION #: CONTROL:	SC2846 5 SIGNAL
CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:			

LANES:	NORTHBOUND <small>I-15 NB Ramps</small>			SOUTHBOUND <small>I-15 NB Ramps</small>			EASTBOUND <small>Duncan Canyon</small>			WESTBOUND <small>Duncan Canyon</small>			TOTAL
	NL 0.5	NT 0.5	NR 2	SL X	ST X	SR X	EL 1	ET 2	ER X	WL X	WT 2	WR 1	

U-TURNS				
NB	SB	EB	WB	TTL

RTOR			
NRR	SRR	ERR	WRR

AM	7:00 AM	1	0	8	0	0	0	1	8	0	0	2	2	22
	7:15 AM	2	0	5	0	0	0	0	2	0	0	4	1	14
	7:30 AM	1	0	5	0	0	0	1	2	0	0	2	1	12
	7:45 AM	1	0	3	0	0	0	1	2	0	0	3	0	10
	8:00 AM	0	1	3	0	0	0	0	2	0	0	3	3	12
	8:15 AM	0	1	6	0	0	0	0	1	0	0	0	4	12
	8:30 AM	1	0	3	0	0	0	2	0	0	0	2	3	11
	8:45 AM	1	0	2	0	0	0	1	4	0	0	4	1	13
	VOLUMES	7	2	35	0	0	0	6	21	0	0	20	15	106
	APPROACH %	16%	5%	80%	0%	0%	0%	22%	78%	0%	0%	57%	43%	
APP/DEPART	44	/	23	0	/	0	27	/	56	35	/	27	0	
BEGIN PEAK HR	7:00 AM													
VOLUMES	5	0	21	0	0	0	3	14	0	0	11	4	58	
APPROACH %	19%	0%	81%	0%	0%	0%	18%	82%	0%	0%	73%	27%		
PEAK HR FACTOR	0.722			0.000			0.472			0.750			0.659	
APP/DEPART	26	/	7	0	/	0	17	/	35	15	/	16	0	
PM	4:00 PM	0	1	0	0	0	0	0	0	0	0	0	3	4
	4:15 PM	1	0	1	0	0	0	0	3	0	0	2	1	8
	4:30 PM	3	0	2	0	0	0	1	1	0	0	3	3	13
	4:45 PM	4	0	0	0	0	0	2	5	0	0	1	1	13
	5:00 PM	3	0	3	0	0	0	1	2	0	0	1	0	10
	5:15 PM	1	1	3	0	0	0	1	3	0	0	2	1	12
	5:30 PM	4	0	0	0	0	0	0	0	0	0	3	0	7
	5:45 PM	1	0	1	0	0	0	0	0	0	0	1	0	3
	VOLUMES	17	2	10	0	0	0	5	14	0	0	13	9	70
	APPROACH %	59%	7%	34%	0%	0%	0%	26%	74%	0%	0%	59%	41%	
APP/DEPART	29	/	16	0	/	0	19	/	24	22	/	30	0	
BEGIN PEAK HR	4:30 PM													
VOLUMES	11	1	8	0	0	0	5	11	0	0	7	5	48	
APPROACH %	55%	5%	40%	0%	0%	0%	31%	69%	0%	0%	58%	42%		
PEAK HR FACTOR	0.833			0.000			0.571			0.500			0.923	
APP/DEPART	20	/	11	0	/	0	16	/	19	12	/	18	0	

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

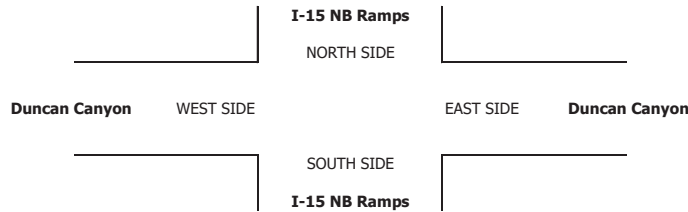
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4	0	0	0
0	0	0	0
2	0	0	0
1	0	0	0
4	0	0	0
0	0	0	1
2	0	0	0
15	0	0	2

8	0	0	1
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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2	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
5	0	0	1

5	0	0	1
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 NB Ramps Duncan Canyon	PROJECT #: SC2846	LOCATION #: 5	CONTROL: SIGNAL
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CLASS 3: 3-AXLE TRUCKS	NOTES:	<table border="1"> <tr> <td>AM</td> <td></td> <td>▲</td> <td></td> </tr> <tr> <td>PM</td> <td></td> <td>N</td> <td></td> </tr> <tr> <td>MD</td> <td>◀ W</td> <td></td> <td>E ▶</td> </tr> <tr> <td>OTHER</td> <td></td> <td>S</td> <td></td> </tr> <tr> <td>OTHER</td> <td></td> <td>▼</td> <td></td> </tr> </table>	AM		▲		PM		N		MD	◀ W		E ▶	OTHER		S		OTHER		▼	
AM		▲																				
PM		N																				
MD	◀ W		E ▶																			
OTHER		S																				
OTHER		▼																				

LANES:	NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Duncan Canyon			WESTBOUND Duncan Canyon			TOTAL
	NL 0.5	NT 0.5	NR 2	SL X	ST X	SR X	EL 1	ET 2	ER X	WL X	WT 2	WR 1	

U-TURNS				
NB	SB	EB	WB	TTL

RTOR			
NRR	SRR	ERR	WRR

AM	7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	7:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	7:30 AM	1	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	8:15 AM	1	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
	VOLUMES	2	0	3	0	0	0	0	2	0	0	0	0	7	14	0	0	0	0
	APPROACH %	40%	0%	60%	0%	0%	0%	0%	100%	0%	0%	0%	100%						
APP/DEPART	5	/	7	0	/	0	2	/	5	7	/	2	0						
BEGIN PEAK HR	8:00 AM																		
VOLUMES	1	0	0	0	0	0	0	1	0	0	0	7	9						
APPROACH %	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%							
PEAK HR FACTOR	0.250			0.000			0.250			0.875			0.563						
APP/DEPART	1	/	7	0	/	0	1	/	1	7	/	1	0						
PM	4:00 PM	0	0	0	0	0	0	1	0	0	1	0	2	0	0	0	0	0	
	4:15 PM	0	0	1	0	0	0	0	0	0	2	0	3	0	0	0	0	0	
	4:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	
	4:45 PM	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	
	5:00 PM	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	0	0	
	5:15 PM	0	0	0	0	0	0	0	1	0	0	1	3	0	0	0	0	0	
	5:30 PM	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	
	5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	
	VOLUMES	1	0	1	0	0	0	1	4	0	0	6	2	15					
	APPROACH %	50%	0%	50%	0%	0%	0%	20%	80%	0%	0%	75%	25%						
APP/DEPART	2	/	3	0	/	0	5	/	5	8	/	7	0						
BEGIN PEAK HR	5:00 PM																		
VOLUMES	1	0	0	0	0	0	0	3	0	0	2	2	8						
APPROACH %	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	50%	50%							
PEAK HR FACTOR	0.250			0.000			0.375			0.500			0.667						
APP/DEPART	1	/	2	0	/	0	3	/	3	4	/	3	0						

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0	0	0	0	0
0	0	0	0	0
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I-15 NB Ramps

NORTH SIDE

Duncan Canyon WEST SIDE

EAST SIDE Duncan Canyon

SOUTH SIDE

I-15 NB Ramps

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 NB Ramps Duncan Canyon	PROJECT #: SC2846	LOCATION #: 5	CONTROL: SIGNAL																
CLASS 4: 4 OR MORE AXLE TRUCKS	NOTES:	<table border="1"> <tr> <td>AM</td> <td></td> <td>▲</td> <td></td> </tr> <tr> <td>PM</td> <td></td> <td>▲</td> <td>N</td> </tr> <tr> <td>MD</td> <td>◀ W</td> <td></td> <td>E ▶</td> </tr> <tr> <td>OTHER</td> <td></td> <td>S</td> <td>▼</td> </tr> </table>				AM		▲		PM		▲	N	MD	◀ W		E ▶	OTHER		S	▼
AM		▲																			
PM		▲	N																		
MD	◀ W		E ▶																		
OTHER		S	▼																		

LANES:	NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Duncan Canyon			WESTBOUND Duncan Canyon			TOTAL
	NL 0.5	NT 0.5	NR 2	SL X	ST X	SR X	EL 1	ET 2	ER X	WL X	WT 2	WR 1	

U-TURNS				
NB	SB	EB	WB	TTL

RTOR			
NRR	SRR	ERR	WRR

7:00 AM	0	0	2	0	0	0	0	2	0	0	1	2	7
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
7:45 AM	1	0	2	0	0	0	1	6	0	0	0	0	10
8:00 AM	1	0	0	0	0	0	0	1	0	0	0	0	2
8:15 AM	0	0	2	0	0	0	0	2	0	0	0	0	4
8:30 AM	0	0	0	0	0	0	0	3	0	0	0	0	3
8:45 AM	0	0	0	0	0	0	0	3	0	0	1	0	4
VOLUMES	2	0	6	0	0	0	1	17	0	0	4	2	32
APPROACH %	25%	0%	75%	0%	0%	0%	6%	94%	0%	0%	67%	33%	
APP/DEPART	8	/	3	0	/	0	18	/	23	6	/	6	0
BEGIN PEAK HR	7:45 AM												
VOLUMES	2	0	4	0	0	0	1	12	0	0	0	0	19
APPROACH %	33%	0%	67%	0%	0%	0%	8%	92%	0%	0%	0%	0%	
PEAK HR FACTOR	0.500			0.000			0.464			0.000			0.475
APP/DEPART	6	/	1	0	/	0	13	/	16	0	/	2	0
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	1	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
VOLUMES	0	0	2	0	0	0	2	2	0	0	1	2	9
APPROACH %	0%	0%	100%	0%	0%	0%	50%	50%	0%	0%	33%	67%	
APP/DEPART	2	/	4	0	/	0	4	/	4	3	/	1	0
BEGIN PEAK HR	5:00 PM												
VOLUMES	0	0	1	0	0	0	1	2	0	0	1	0	5
APPROACH %	0%	0%	100%	0%	0%	0%	33%	67%	0%	0%	100%	0%	
PEAK HR FACTOR	0.250			0.000			0.375			0.250			0.625
APP/DEPART	1	/	1	0	/	0	3	/	3	1	/	1	0

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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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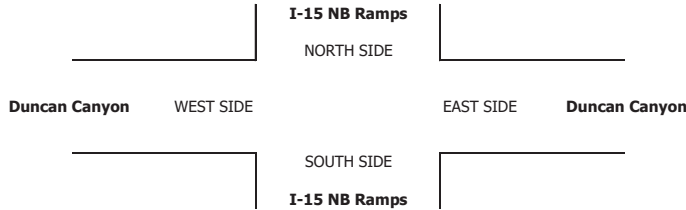
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2	0	0	0
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0	0	0	0
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: NORTH & SOUTH: Fontana EAST & WEST: I-15 NB Ramps Duncan Canyon	PROJECT #: SC2846 LOCATION #: 5 CONTROL: SIGNAL	
CLASS 5: RV	NOTES:		

LANES:	NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Duncan Canyon			WESTBOUND Duncan Canyon			TOTAL
	NL 0.5	NT 0.5	NR 2	SL X	ST X	SR X	EL 1	ET 2	ER X	WL X	WT 2	WR 1	

U-TURNS				
NB	SB	EB	WB	TTL

RTOR			
NRR	SRR	ERR	WRR

AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	1	0	0	1
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%
APP/DEPART	0	/	0	0	/	0	0	/	0	1	/	1	0	
BEGIN PEAK HR	7:15 AM													
VOLUMES	0	0	0	0	0	0	0	0	0	1	0	0	1	
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	
PEAK HR FACTOR	0.000			0.000			0.000			0.250			0.250	
APP/DEPART	0	/	0	0	/	0	0	/	0	1	/	1	0	
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0	
BEGIN PEAK HR	4:00 PM													
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR	0.000			0.000			0.000			0.000			0.000	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0	

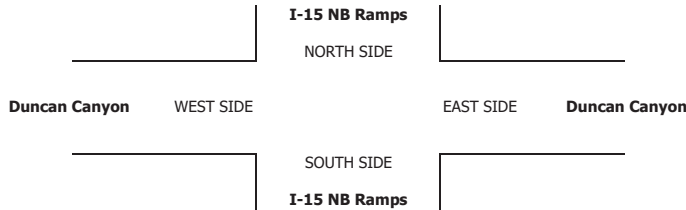
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 NB Ramps Duncan Canyon	PROJECT #: LOCATION #: CONTROL:	SC2846 5 SIGNAL																
CLASS 6: BUSES	NOTES:			<table border="1"> <tr> <td>AM</td> <td></td> <td>▲</td> <td></td> </tr> <tr> <td>PM</td> <td>◀ W</td> <td>N</td> <td>E ▶</td> </tr> <tr> <td>MD</td> <td></td> <td>▼</td> <td></td> </tr> <tr> <td>OTHER</td> <td></td> <td></td> <td></td> </tr> </table>	AM		▲		PM	◀ W	N	E ▶	MD		▼		OTHER			
AM		▲																		
PM	◀ W	N	E ▶																	
MD		▼																		
OTHER																				

LANES:	NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Duncan Canyon			WESTBOUND Duncan Canyon			TOTAL
	NL 0.5	NT 0.5	NR 2	SL X	ST X	SR X	EL 1	ET 2	ER X	WL X	WT 2	WR 1	

U-TURNS				
NB	SB	EB	WB	TTL

RTOR			
NRR	SRR	ERR	WRR

7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	1	0	0	0	0	1
APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0
APP/DEPART	0	/	0	0	/	0	1	/	1	0	/	0	0
BEGIN PEAK HR	7:15 AM												
VOLUMES	0	0	0	0	0	0	0	1	0	0	0	0	1
APPROACH %	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0
PEAK HR FACTOR	0.000			0.000			0.250			0.000			0.250
APP/DEPART	0	/	0	0	/	0	1	/	1	0	/	0	0
AM													
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
BEGIN PEAK HR	4:00 PM												
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
PEAK HR FACTOR	0.000			0.000			0.000			0.000			0.000
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
PM													

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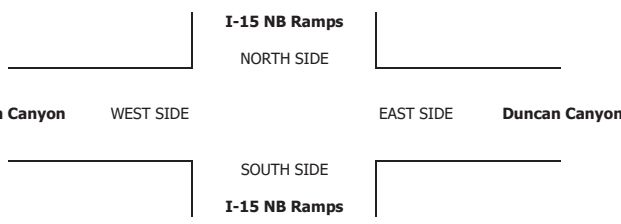
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0	0	0	0
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, Mar 18, 21	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 NB Ramps Beech	PROJECT #: SC2846	LOCATION #: 6	CONTROL: SIGNAL
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NOTES:	AM	▲	N	
	PM	◀	W	▶
	MD		S	
	OTHER			
	OTHER			



LANES:	NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Beech			WESTBOUND Beech			TOTAL
	NL X	NT X	NR X	SL 1	ST X	SR 1	EL 1	ET 2	ER X	WL X	WT 2	WR 1	

U-TURNS				
NB	SB	EB	WB	TTL

RTOR			
NRR X	SRR 0	ERR X	WRR 0

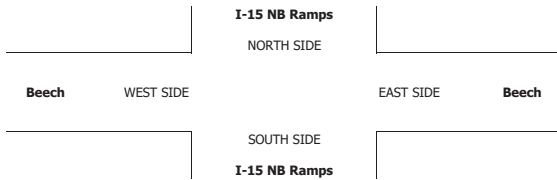
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7:15 AM	0	0	0	53	0	24	13	54	0	0	108	27	279	0	0	0	0	0		
7:30 AM	0	0	0	41	0	14	9	53	0	0	124	28	269	0	0	0	0	0		
7:45 AM	0	0	0	64	0	26	10	68	0	0	106	20	294	0	0	0	0	0		
8:00 AM	0	0	0	61	0	33	11	71	0	0	107	26	309	0	0	0	0	0		
8:15 AM	0	0	0	67	0	17	16	84	0	0	98	22	304	0	0	0	0	0		
8:30 AM	0	0	0	63	0	22	14	64	0	0	117	32	312	0	0	0	0	0		
8:45 AM	0	0	0	67	0	21	12	73	0	0	90	37	300	0	0	0	0	0		
VOLUMES	0	0	0	467	0	172	94	513	0	0	838	212	2,296	0	0	0	0	0		
APPROACH %	0%	0%	0%	73%	0%	27%	15%	85%	0%	0%	80%	20%								
APP/DEPART	0	/	306	639	/	0	607	/	980	1,050	/	1,010	0							
BEGIN PEAK HR	8:00 AM																			
VOLUMES	0	0	0	258	0	93	53	292	0	0	412	117	1,225							
APPROACH %	0%	0%	0%	74%	0%	26%	15%	85%	0%	0%	78%	22%								
PEAK HR FACTOR	0	0.000		0.934			0.863			0.888			0.982							
APP/DEPART	0	/	170	351	/	0	345	/	550	529	/	505	0							
04:00 PM	0	0	0	136	0	30	23	122	0	0	154	89	554	0	0	0	0	0		
4:15 PM	0	0	0	136	0	35	34	107	0	0	166	87	565	0	0	0	0	0		
4:30 PM	0	0	0	130	0	47	34	141	0	0	137	97	586	0	0	0	0	0		
4:45 PM	0	0	0	144	0	30	33	122	0	0	166	81	576	0	0	0	0	0		
5:00 PM	0	0	0	154	0	34	34	142	0	0	152	98	614	0	0	0	0	0		
5:15 PM	0	0	0	164	0	38	38	160	0	0	158	95	653	0	0	0	0	0		
5:30 PM	0	0	0	150	0	46	37	144	0	0	143	84	604	0	0	0	0	0		
5:45 PM	0	0	0	136	0	35	26	140	0	0	142	80	559	0	0	0	0	0		
VOLUMES	0	0	0	1,150	0	295	259	1,078	0	0	1,218	711	4,711	0	0	0	0	0		
APPROACH %	0%	0%	0%	80%	0%	20%	19%	81%	0%	0%	63%	37%								
APP/DEPART	0	/	970	1,445	/	0	1,337	/	2,228	1,929	/	1,513	0							
BEGIN PEAK HR	4:45 PM																			
VOLUMES	0	0	0	612	0	148	142	568	0	0	619	358	2,447							
APPROACH %	0%	0%	0%	81%	0%	19%	20%	80%	0%	0%	63%	37%								
PEAK HR FACTOR	0	0.000		0.941			0.896			0.965			0.937							
APP/DEPART	0	/	500	760	/	0	710	/	1,180	977	/	767	0							

0	7	0	5
0	12	0	6
0	3	0	8
0	9	0	3
0	23	0	10
0	8	0	9
0	12	0	17
0	17	0	15
0	91	0	73

0	60	0	51
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0	13	0	44
0	12	0	39
0	18	0	40
0	10	0	55
0	14	0	71
0	13	0	57
0	21	0	49
0	16	0	50
0	117	0	405

0	58	0	232
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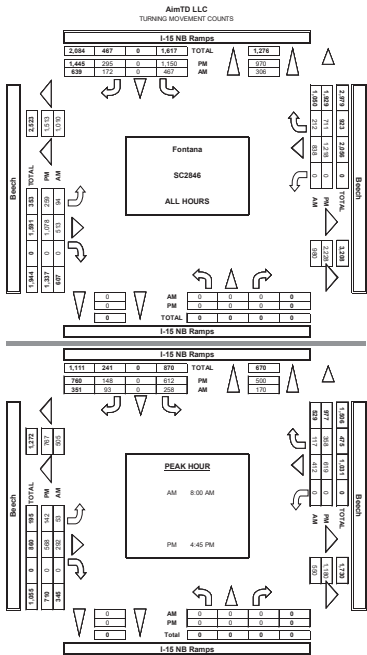


TIME	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	1	1
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	0	0	0	1	1
4:00 PM	0	0	0	0	0
4:15 PM	0	0	3	0	3
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	3	0	3

TIME	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0

TIME	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0

TIME	ES	WS	SS	NS	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	1	1
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	0	0	0	1	1
4:00 PM	0	0	0	0	0
4:15 PM	0	0	3	0	3
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	3	0	3



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 NB Ramps Beech	PROJECT #: SC2846	LOCATION #: 6 SIGNAL
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CLASS 1: PASSENGER VEHICLES	NOTES:	AM PM MD OTHER OTHER	▲ N ◀ W S ▶ E ▼
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	NORTHBOUND <small>I-15 NB Ramps</small>			SOUTHBOUND <small>I-15 NB Ramps</small>			EASTBOUND <small>Beech</small>			WESTBOUND <small>Beech</small>			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
AM													
7:00 AM	0	0	0	37	0	12	8	46	0	0	83	18	204
7:15 AM	0	0	0	47	0	20	12	49	0	0	106	27	261
7:30 AM	0	0	0	37	0	10	7	51	0	0	117	27	249
7:45 AM	0	0	0	63	0	20	9	67	0	0	100	20	279
8:00 AM	0	0	0	56	0	26	9	65	0	0	102	25	283
8:15 AM	0	0	0	64	0	9	13	80	0	0	86	17	269
8:30 AM	0	0	0	54	0	12	7	57	0	0	106	28	264
8:45 AM	0	0	0	59	0	10	9	69	0	0	84	37	268
VOLUMES	0	0	0	417	0	119	74	484	0	0	784	199	2,077
APPROACH %	0%	0%	0%	78%	0%	22%	13%	87%	0%	0%	80%	20%	
APP/DEPART	0	/	273	536	/	0	558	/	901	983	/	903	0
BEGIN PEAK HR	7:45 AM												
VOLUMES	0	0	0	237	0	67	38	269	0	0	394	90	1,095
APPROACH %	0%	0%	0%	78%	0%	22%	12%	88%	0%	0%	81%	19%	
PEAK HR FACTOR	0.000			0.916			0.825			0.903			0.967
APP/DEPART	0	/	128	304	/	0	307	/	506	484	/	461	0
PM													
04:00 PM	0	0	0	132	0	30	21	119	0	0	153	85	540
4:15 PM	0	0	0	135	0	32	31	105	0	0	156	82	541
4:30 PM	0	0	0	126	0	44	33	139	0	0	132	94	568
4:45 PM	0	0	0	140	0	29	32	121	0	0	161	74	557
5:00 PM	0	0	0	147	0	34	28	141	0	0	147	92	589
5:15 PM	0	0	0	161	0	38	34	156	0	0	154	93	636
5:30 PM	0	0	0	147	0	46	34	139	0	0	139	83	588
5:45 PM	0	0	0	135	0	35	26	138	0	0	140	79	553
VOLUMES	0	0	0	1,123	0	288	239	1,058	0	0	1,182	682	4,572
APPROACH %	0%	0%	0%	80%	0%	20%	18%	82%	0%	0%	63%	37%	
APP/DEPART	0	/	921	1,411	/	0	1,297	/	2,181	1,864	/	1,470	0
BEGIN PEAK HR	4:45 PM												
VOLUMES	0	0	0	595	0	147	128	557	0	0	601	342	2,370
APPROACH %	0%	0%	0%	80%	0%	20%	19%	81%	0%	0%	64%	36%	
PEAK HR FACTOR	0.000			0.932			0.901			0.954			0.932
APP/DEPART	0	/	470	742	/	0	685	/	1,152	943	/	748	0

U-TURNS					
NB	SB	EB	WB	TTL	
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0

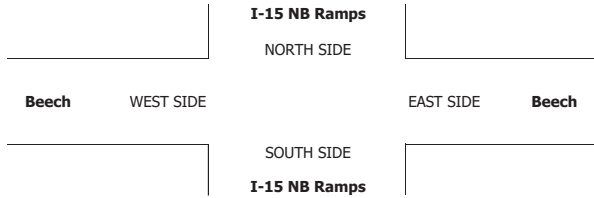
RTOR			
NRR	SRR	ERR	WRR
0	7	0	5
0	10	0	6
0	2	0	8
0	6	0	3
0	19	0	10
0	7	0	8
0	4	0	15
0	8	0	15
0	63	0	70

0	36	0	36
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0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0

0	13	0	42
0	10	0	37
0	15	0	39
0	10	0	50
0	14	0	68
0	13	0	56
0	21	0	48
0	16	0	49
0	112	0	389

0	58	0	222
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 NB Ramps Beech	PROJECT #: SC2846	LOCATION #: 6																													
CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS			CONTROL: SIGNAL																														
NOTES:			<table border="1" style="margin: auto;"> <tr><td>AM</td><td></td><td>▲</td><td></td></tr> <tr><td>PM</td><td></td><td>▲</td><td>N</td></tr> <tr><td></td><td>←</td><td>W</td><td></td></tr> <tr><td></td><td></td><td></td><td>E</td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td>OTHER</td><td></td><td>▼</td><td></td></tr> <tr><td></td><td></td><td>▼</td><td>S</td></tr> </table>	AM		▲		PM		▲	N		←	W					E					OTHER		▼				▼	S		
AM		▲																															
PM		▲	N																														
	←	W																															
			E																														
OTHER		▼																															
		▼	S																														

LANES:	NORTHBOUND <small>I-15 NB Ramps</small>			SOUTHBOUND <small>I-15 NB Ramps</small>			EASTBOUND <small>Beech</small>			WESTBOUND <small>Beech</small>			TOTAL
	NL X	NT X	NR X	SL 1	ST X	SR 1	EL 1	ET 2	ER X	WL X	WT 2	WR 1	

U-TURNS				
NB	SB	EB	WB	TTL

RTOR			
NRR X	SRR 0	ERR X	WRR 0

AM	7:00 AM	0	0	0	11	0	1	0	0	0	0	4	2	18
	7:15 AM	0	0	0	2	0	3	1	3	0	0	2	0	11
	7:30 AM	0	0	0	2	0	3	2	1	0	0	4	0	12
	7:45 AM	0	0	0	1	0	5	1	0	0	0	4	0	11
	8:00 AM	0	0	0	4	0	5	2	3	0	0	5	0	19
	8:15 AM	0	0	0	3	0	6	1	3	0	0	4	3	20
	8:30 AM	0	0	0	8	0	7	4	6	0	0	10	4	39
	8:45 AM	0	0	0	7	0	7	1	3	0	0	4	0	22
	VOLUMES	0	0	0	38	0	37	12	19	0	0	37	9	152
	APPROACH %	0%	0%	0%	51%	0%	49%	39%	61%	0%	0%	80%	20%	
APP/DEPART	0	/	21	75	/	0	31	/	57	46	/	74	0	
BEGIN PEAK HR	8:00 AM													
VOLUMES	0	0	0	22	0	25	8	15	0	0	23	7	100	
APPROACH %	0%	0%	0%	47%	0%	53%	35%	65%	0%	0%	77%	23%		
PEAK HR FACTOR	0.000			0.783			0.575			0.536			0.641	
APP/DEPART	0	/	15	47	/	0	23	/	37	30	/	48	0	
PM	04:00 PM	0	0	0	4	0	0	2	3	0	0	0	3	12
	4:15 PM	0	0	0	1	0	3	2	0	0	0	8	4	18
	4:30 PM	0	0	0	4	0	3	1	2	0	0	3	3	16
	4:45 PM	0	0	0	3	0	1	1	1	0	0	4	4	14
	5:00 PM	0	0	0	5	0	0	4	1	0	0	4	5	19
	5:15 PM	0	0	0	2	0	0	4	3	0	0	3	1	13
	5:30 PM	0	0	0	2	0	0	2	5	0	0	2	1	12
	5:45 PM	0	0	0	1	0	0	0	2	0	0	2	1	6
	VOLUMES	0	0	0	22	0	7	16	17	0	0	26	22	110
	APPROACH %	0%	0%	0%	76%	0%	24%	48%	52%	0%	0%	54%	46%	
APP/DEPART	0	/	38	29	/	0	33	/	39	48	/	33	0	
BEGIN PEAK HR	4:15 PM													
VOLUMES	0	0	0	13	0	7	8	4	0	0	19	16	67	
APPROACH %	0%	0%	0%	65%	0%	35%	67%	33%	0%	0%	54%	46%		
PEAK HR FACTOR	0.000			0.714			0.600			0.729			0.882	
APP/DEPART	0	/	24	20	/	0	12	/	17	35	/	26	0	

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
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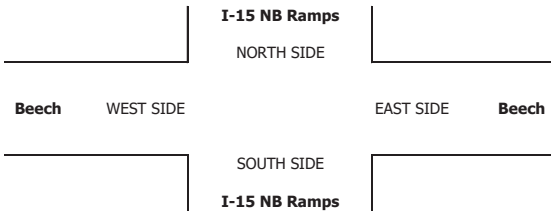
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0	1	0	0
0	1	0	0
0	3	0	0
0	3	0	0
0	1	0	0
0	7	0	2
0	6	0	0
0	22	0	2

0	17	0	2
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

0	0	0	2
0	2	0	2
0	3	0	1
0	0	0	3
0	0	0	3
0	0	0	1
0	0	0	1
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0	5	0	14

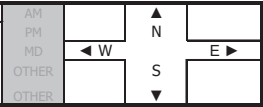
0	5	0	9
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 NB Ramps Beech	PROJECT #: SC2846	LOCATION #: 6
CLASS 3: 3-AXLE TRUCKS	NOTES:		CONTROL: SIGNAL	



LANES:	NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Beech			WESTBOUND Beech			TOTAL
	NL X	NT X	NR X	SL 1	ST X	SR 1	EL 1	ET 2	ER X	WL X	WT 2	WR 1	

U-TURNS				
NB	SB	EB	WB	TTL

RTOR			
NRR X	SRR 0	ERR X	WRR 0

AM	7:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	2
	7:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
	7:30 AM	0	0	0	0	0	1	0	0	0	0	1	0	2
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	2	2	0	0	0	2	2	8
	8:30 AM	0	0	0	0	0	1	2	0	0	0	1	0	4
	8:45 AM	0	0	0	0	0	3	1	0	0	0	1	0	5
	VOLUMES	0	0	0	3	0	7	5	0	0	0	5	2	22
	APPROACH %	0%	0%	0%	30%	0%	70%	100%	0%	0%	0%	71%	29%	
APP/DEPART	0	/	7	10	/	0	5	/	3	7	/	12	0	
BEGIN PEAK HR	8:00 AM													
VOLUMES	0	0	0	0	0	6	5	0	0	0	4	2	17	
APPROACH %	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	67%	33%		
PEAK HR FACTOR	0.000			0.500			0.625			0.375			0.531	
APP/DEPART	0	/	7	6	/	0	5	/	0	6	/	10	0	
PM	04:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	2
	4:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	2
	4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
	5:15 PM	0	0	0	0	0	0	0	1	0	0	1	1	3
	5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	1	0	0	1	1	0	0	4	3	10
	APPROACH %	0%	0%	0%	100%	0%	0%	50%	50%	0%	0%	57%	43%	
APP/DEPART	0	/	4	1	/	0	2	/	2	7	/	4	0	
BEGIN PEAK HR	4:30 PM													
VOLUMES	0	0	0	1	0	0	0	1	0	0	2	1	5	
APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	67%	33%		
PEAK HR FACTOR	0.000			0.250			0.250			0.375			0.417	
APP/DEPART	0	/	1	1	/	0	1	/	2	3	/	2	0	

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

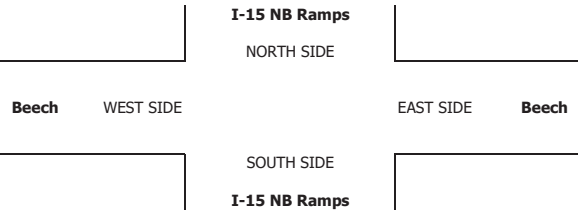
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0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0
0	3	0	0
0	4	0	1

0	4	0	1
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0	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

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0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

0	0	0	0
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 NB Ramps Beech	PROJECT #: SC2846	LOCATION #: 6	CONTROL: SIGNAL																
CLASS 4: 4 OR MORE AXLE TRUCKS	NOTES:	<table border="1"> <tr> <td>AM</td> <td></td> <td>▲</td> <td></td> </tr> <tr> <td>PM</td> <td></td> <td>▲</td> <td>N</td> </tr> <tr> <td>MD</td> <td>◀ W</td> <td></td> <td>E ▶</td> </tr> <tr> <td>OTHER</td> <td></td> <td>S</td> <td>▼</td> </tr> </table>				AM		▲		PM		▲	N	MD	◀ W		E ▶	OTHER		S	▼
AM		▲																			
PM		▲	N																		
MD	◀ W		E ▶																		
OTHER		S	▼																		

LANES:	NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Beech			WESTBOUND Beech			TOTAL
	NL X	NT X	NR X	SL 1	ST X	SR 1	EL 1	ET 2	ER X	WL X	WT 2	WR 1	

U-TURNS				
NB	SB	EB	WB	TTL

RTOR			
NRR X	SRR 0	ERR X	WRR 0

AM	7:00 AM	0	0	0	1	0	2	1	0	0	0	1	0	5
	7:15 AM	0	0	0	3	0	0	0	1	0	0	0	0	4
	7:30 AM	0	0	0	1	0	0	0	0	0	0	2	1	4
	7:45 AM	0	0	0	0	0	1	0	0	0	0	1	0	2
	8:00 AM	0	0	0	1	0	2	0	1	0	0	0	1	5
	8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
	8:30 AM	0	0	0	1	0	2	1	1	0	0	0	0	5
	8:45 AM	0	0	0	1	0	1	1	1	0	0	1	0	5
	VOLUMES	0	0	0	8	0	8	3	5	0	0	5	2	31
	APPROACH %	0%	0%	0%	50%	0%	50%	38%	63%	0%	0%	71%	29%	
	APP/DEPART	0	/	5	16	/	0	8	/	13	7	/	13	0
	BEGIN PEAK HR	8:00 AM												
	VOLUMES	0	0	0	3	0	5	2	4	0	0	1	1	16
	APPROACH %	0%	0%	0%	38%	0%	63%	33%	67%	0%	0%	50%	50%	
	PEAK HR FACTOR	0.000			0.667			0.750			0.500			0.800
	APP/DEPART	0	/	3	8	/	0	6	/	7	2	/	6	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	1	2	0	0	1	0	4
	4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
	4:45 PM	0	0	0	1	0	0	0	0	0	0	1	3	5
	5:00 PM	0	0	0	1	0	0	2	0	0	0	1	1	5
	5:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
	5:30 PM	0	0	0	1	0	0	0	0	0	0	2	0	3
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	4	0	0	3	2	0	0	6	4	19
	APPROACH %	0%	0%	0%	100%	0%	0%	60%	40%	0%	0%	60%	40%	
	APP/DEPART	0	/	7	4	/	0	5	/	6	10	/	6	0
	BEGIN PEAK HR	4:15 PM												
	VOLUMES	0	0	0	2	0	0	3	2	0	0	4	4	15
	APPROACH %	0%	0%	0%	100%	0%	0%	60%	40%	0%	0%	50%	50%	
	PEAK HR FACTOR	0.000			0.500			0.417			0.500			0.750
	APP/DEPART	0	/	7	2	/	0	5	/	4	8	/	4	0

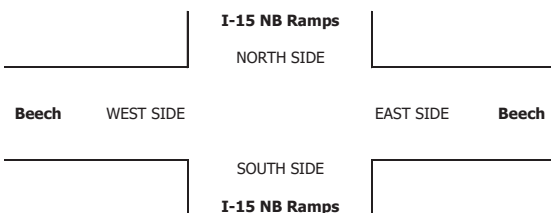
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0

0	1	0	0
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0	0	0	0
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0	0	0	0
0	0	0	0
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0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	2

0	0	0	2
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 NB Ramps Beech	PROJECT #: SC2846	LOCATION #: 6	CONTROL: SIGNAL
CLASS 5: RV	NOTES:		AM PM MD OTHER OTHER	▲ N ◀ W E ▶ S ▼	

LANES:	NORTHBOUND <small>I-15 NB Ramps</small>			SOUTHBOUND <small>I-15 NB Ramps</small>			EASTBOUND <small>Beech</small>			WESTBOUND <small>Beech</small>			TOTAL
	NL X	NT X	NR X	SL 1	ST X	SR 1	EL 1	ET 2	ER X	WL X	WT 2	WR 1	

U-TURNS				
NB	SB	EB	WB	TTL

RTOR			
NRR X	SRR 0	ERR X	WRR 0

AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0	
BEGIN PEAK HR	7:00 AM													
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR	0.000			0.000			0.000			0.000			0.000	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0	
PM	04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0	
BEGIN PEAK HR	4:00 PM													
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR	0.000			0.000			0.000			0.000			0.000	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0	

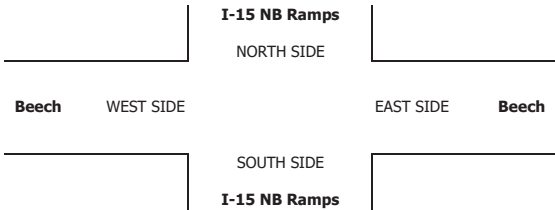
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0	0	0	0	0
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0	0	0	0	0

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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

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0	0	0	0
0	0	0	0
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0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

0	0	0	0
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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 3/18/21 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 NB Ramps Beech	PROJECT #: LOCATION #: CONTROL:	SC2846 6 SIGNAL												
CLASS 6:	NOTES:															
BUSES	<table border="1" style="display: inline-table;"> <tr> <td style="text-align: center;">AM</td> <td style="text-align: center;">▲</td> <td></td> </tr> <tr> <td style="text-align: center;">PM</td> <td style="text-align: center;">◀</td> <td style="text-align: center;">W</td> </tr> <tr> <td style="text-align: center;">MD</td> <td style="text-align: center;">▶</td> <td style="text-align: center;">E</td> </tr> <tr> <td style="text-align: center;">OTHER</td> <td style="text-align: center;">S</td> <td style="text-align: center;">▼</td> </tr> </table>				AM	▲		PM	◀	W	MD	▶	E	OTHER	S	▼
AM	▲															
PM	◀	W														
MD	▶	E														
OTHER	S	▼														

	NORTHBOUND I-15 NB Ramps			SOUTHBOUND I-15 NB Ramps			EASTBOUND Beech			WESTBOUND Beech			TOTAL
	NL X	NT X	NR X	SL 1	ST X	SR 1	EL 1	ET 2	ER X	WL X	WT 2	WR 1	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	2
7:30 AM	0	0	0	1	0	0	0	1	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
8:00 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	6	0	6
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	1	0	1	0	5	0	0	7	0	14
APPROACH %	0%	0%	0%	50%	0%	50%	0%	100%	0%	0%	100%	0%	
APP/DEPART	0	/	0	2	/	0	5	/	6	7	/	8	0
BEGIN PEAK HR	7:30 AM												
VOLUMES	0	0	0	1	0	0	0	4	0	0	7	0	12
APPROACH %	0%	0%	0%	100%	0%	0%	0%	100%	0%	0%	100%	0%	
PEAK HR FACTOR	0.000			0.250			0.500			0.292			0.500
APP/DEPART	0	/	0	1	/	0	4	/	5	7	/	7	0
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0
BEGIN PEAK HR	4:00 PM												
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
PEAK HR FACTOR	0.000			0.000			0.000			0.000			0.000
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

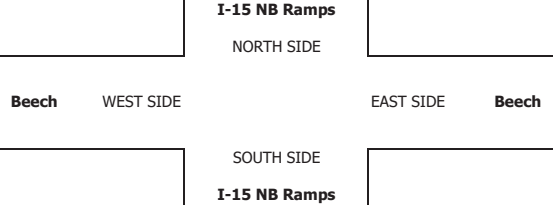
RTOR			
NRR	SRR	ERR	WRR
X	0	X	0
0	0	0	0
0	1	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	1	0	0

0	0	0	0
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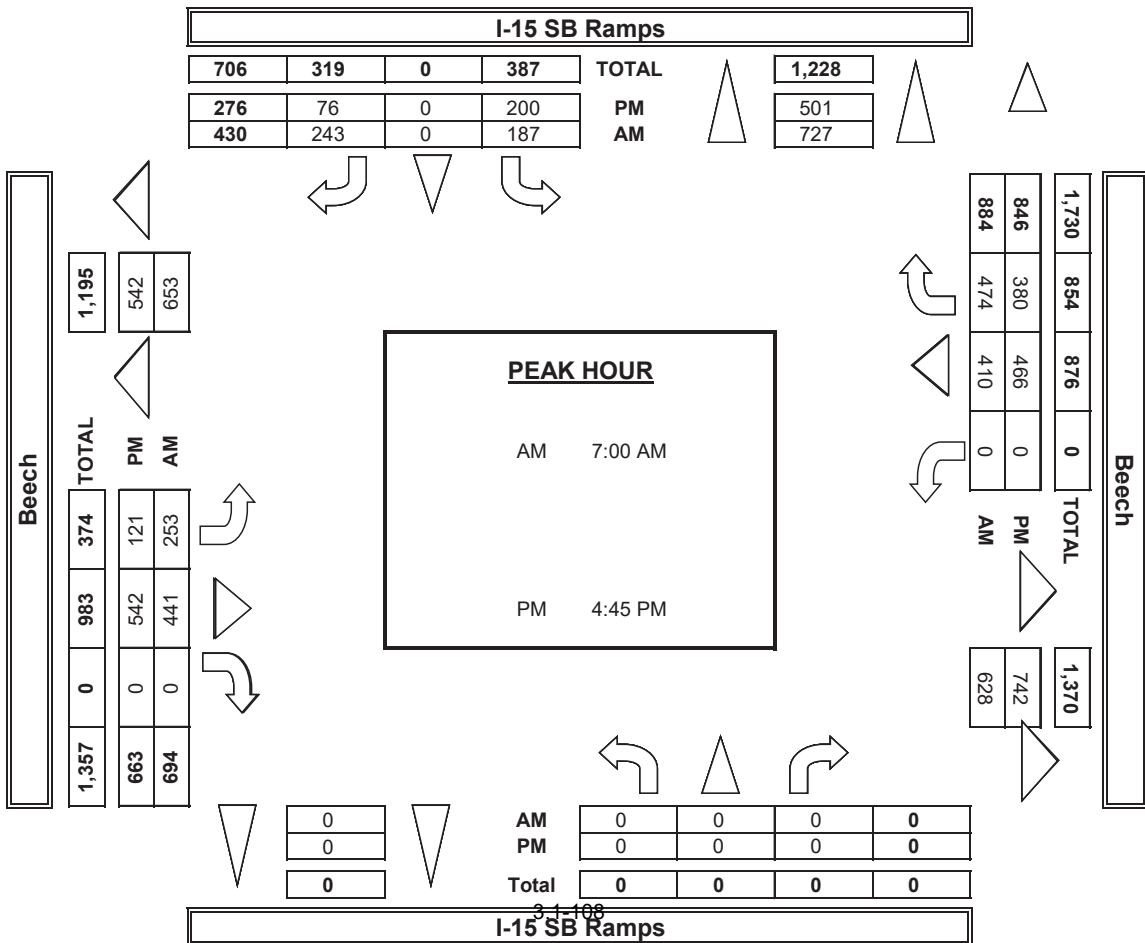
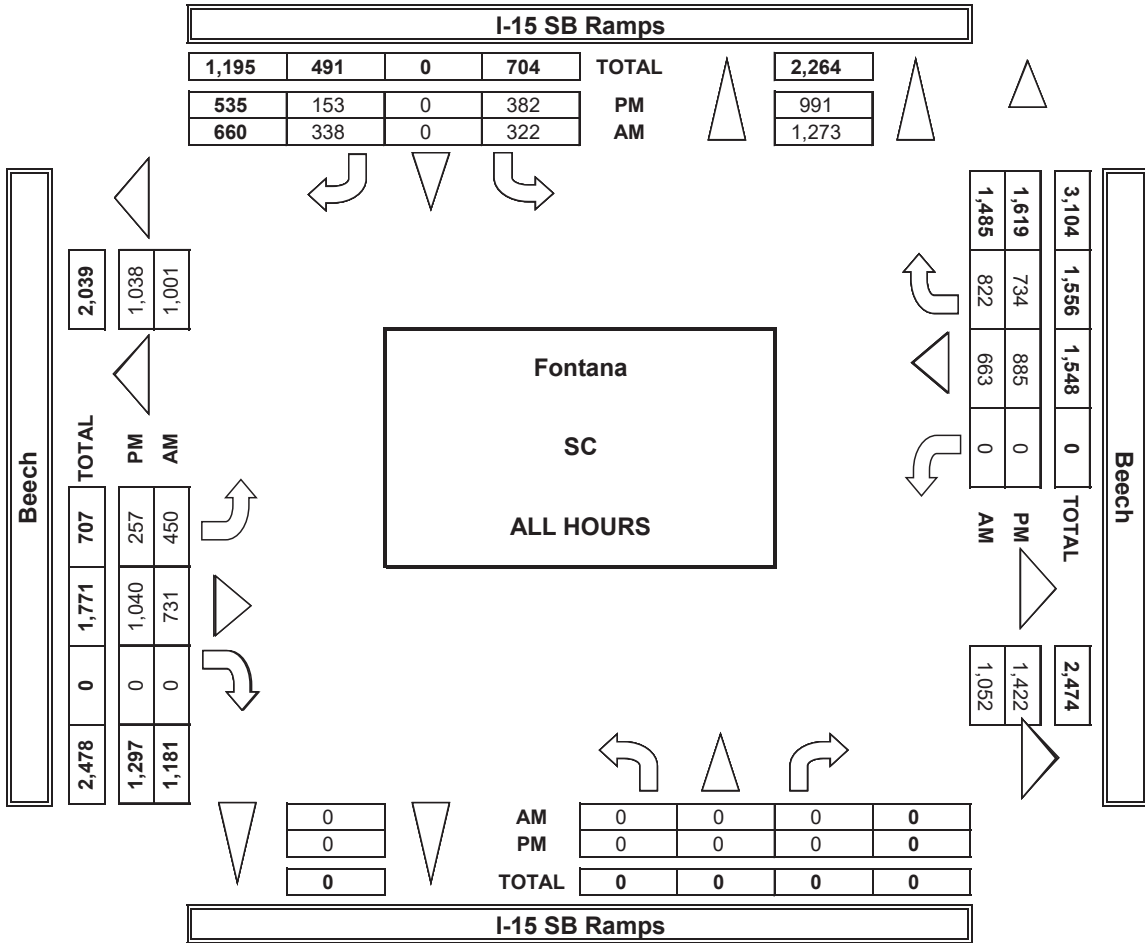
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0	0	0	0	0
0	0	0	0	0
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0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

0	0	0	0
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AimTD LLC
TURNING MOVEMENT COUNTS



INTERSECTION TUR

PREPARED BY: AimTD LI

DATE: 12/13/18 THURSDAY

LOCATION:
 NORTH & SOUTH:
 EAST & WEST:

Fontana
 I-15 SB Ramps
 Beech

	NOTES:				
PCE Adjusted	Class	1	2	3	4
	Factor	1	1.5	2	3

	NORTHBOUND			SOUTHBOUND	
	I-15 SB Ramps			I-15 SB Ramps	
	NL	NT	NR	SL	ST
LANES:	X	X	X	1	X

AM	7:00 AM	0	0	0	57	0
	7:15 AM	0	0	0	53	0
	7:30 AM	0	0	0	39	0
	7:45 AM	0	0	0	47	0
	8:00 AM	0	0	0	36	0
	8:15 AM	0	0	0	27	0
	8:30 AM	0	0	0	29	0
	8:45 AM	0	0	0	47	0
	9:00 AM	0	0	0	0	0
	9:15 AM	0	0	0	0	0
	9:30 AM	0	0	0	0	0
	9:45 AM	0	0	0	0	0
	VOLUMES	0	0	0	334	0
	APPROACH %	0%	0%	0%	48%	0%
APP/DEPART	0	/	1,311	701	/	
BEGIN PEAK HR	7:00 AM					
VOLUMES	0	0	0	196	0	
APPROACH %	0%	0%	0%	43%	0%	
PEAK HR FACTOR	0.000				0.861	
APP/DEPART	0	/	745	451	/	
	03:00 PM	0	0	0	0	
	3:15 PM	0	0	0	0	
	3:30 PM	0	0	0	0	
	3:45 PM	0	0	0	0	
	4:00 PM	0	0	0	45	
	4:15 PM	0	0	0	53	

PM	4:30 PM	0	0	0	44	0
	4:45 PM	0	0	0	50	0
	5:00 PM	0	0	0	40	0
	5:15 PM	0	0	0	62	0
	5:30 PM	0	0	0	53	0
	5:45 PM	0	0	0	47	0
	VOLUMES	0	0	0	392	0
	APPROACH %	0%	0%	0%	69%	0%
	APP/DEPART	0	/	1,024	570	/
	BEGIN PEAK HR	4:45 PM				
	VOLUMES	0	0	0	204	0
	APPROACH %	0%	0%	0%	70%	0%
	PEAK HR FACTOR	0.000				0.802
APP/DEPART	0	/	513	292	/	

I-

Beech

WEST SIDE

I-

TRAINING MOVEMENT COUNTS

...C. tel: 714 253 7888 cs@aimtd.com

PROJECT #: SC
 LOCATION #: 6
 CONTROL: SIGNAL

				AM		▲	
5	6			PM		N	
2	2			MD	◀ W		E ▶
				OTHER		S	
				OTHER		▼	

SR	EASTBOUND			WESTBOUND			TOTAL
	Beech			Beech			
	EL	ET	ER	WL	WT	WR	
1	1	2	X	X	2	0	

64	54	55	0	0	118	127	474
78	75	99	0	0	135	151	590
70	60	147	0	0	86	120	521
44	70	151	0	0	83	89	483
33	55	114	0	0	76	92	405
28	51	73	0	0	83	90	351
28	48	61	0	0	58	97	319
24	50	49	0	0	52	85	305
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
368	461	746	0	0	689	850	3,446
52%	38%	62%	0%	0%	45%	55%	
0	1,207	/	1,079	1,538	/	1,056	0
256	259	451	0	0	421	486	2,067
57%	36%	64%	0%	0%	46%	54%	
		0.804			0.794		0.877
0	709	/	646	907	/	677	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
26	41	145	0	0	101	95	451
24	42	131	0	0	103	96	446

20	34	132	0	0	100	103	431
19	34	156	0	0	122	106	486
19	30	131	0	0	127	93	440
30	32	157	0	0	103	92	474
21	29	120	0	0	118	99	438
22	31	105	0	0	120	71	395
179	271	1,074	0	0	893	753	3,560
31%	20%	80%	0%	0%	54%	46%	
0	1,345	/	1,465	1,645	/	1,071	0
88	125	563	0	0	470	389	1,837
30%	18%	82%	0%	0%	55%	45%	
		0.909			0.943		0.946
0	687	/	767	858	/	558	0

15 SB Ramps

NORTH SIDE



EAST SIDE

Beech

SOUTH SIDE

15 SB Ramps



U-TURNS				
NB	SB	EB	WB	TTL

				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
				0
0	0	0	0	0

				0
				0
				0
				0
				0
				0
				0

				0
				0
				0
				0
				0
				0
0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 12/13/18 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 SB Ramps Beech	PROJECT #: SC LOCATION #: 6 CONTROL: SIGNAL
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CLASS 1: PASSENGER VEHICLES	NOTES:	AM PM MD OTHER OTHER	▲ N ◀ W E ▶ S ▼
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LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	I-15 SB Ramps			I-15 SB Ramps			Beech			Beech			
	NL X	NT X	NR X	SL 1	ST X	SR 1	EL 1	ET 2	ER X	WL X	WT 2	WR 0	

U-TURNS				
NB	SB	EB	WB	TTL

AM		7:00 AM	0	0	0	51	0	58	49	50	0	0	101	117	426	0	0	0	0	0
		7:15 AM	0	0	0	50	0	69	70	91	0	0	129	145	554	0	0	0	0	0
		7:30 AM	0	0	0	39	0	64	60	142	0	0	84	109	498	0	0	0	0	0
		7:45 AM	0	0	0	39	0	39	68	144	0	0	81	86	457	0	0	0	0	0
		8:00 AM	0	0	0	33	0	30	53	107	0	0	71	82	376	0	0	0	0	0
		8:15 AM	0	0	0	27	0	16	49	71	0	0	69	84	316	0	0	0	0	0
		8:30 AM	0	0	0	27	0	15	45	56	0	0	47	86	276	0	1	0	0	1
		8:45 AM	0	0	0	43	0	17	43	47	0	0	44	77	271	0	0	0	0	0
		9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

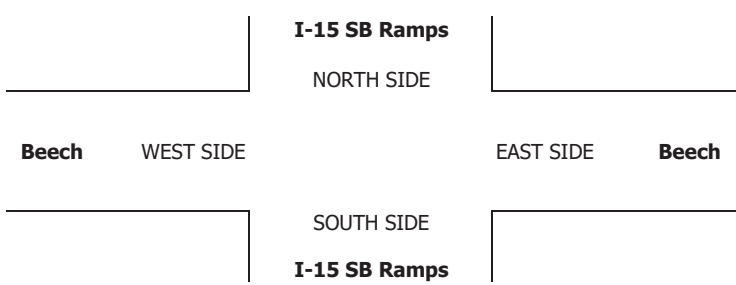
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1

VOLUMES	0	0	0	309	0	308	437	708	0	0	626	786	3,174
APPROACH %	0%	0%	0%	50%	0%	50%	38%	62%	0%	0%	44%	56%	
APP/DEPART	0	/	1,224	617	/	0	1,145	/	1,016	1,412	/	934	0
BEGIN PEAK HR	7:00 AM												
VOLUMES	0	0	0	179	0	230	247	427	0	0	395	457	1,935
APPROACH %	0%	0%	0%	44%	0%	56%	37%	63%	0%	0%	46%	54%	
PEAK HR FACTOR	0.000			0.859			0.795			0.777			0.873
APP/DEPART	0	/	704	409	/	0	674	/	606	852	/	625	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

PM		03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		4:00 PM	0	0	0	43	0	21	31	138	0	0	98	88	419	0	0	0	0	0
		4:15 PM	0	0	0	46	0	13	32	123	0	0	101	88	403	0	0	0	0	0
		4:30 PM	0	0	0	39	0	14	32	118	0	0	95	98	396	0	0	0	0	0
		4:45 PM	0	0	0	48	0	14	30	147	0	0	116	99	454	0	0	0	0	0
		5:00 PM	0	0	0	37	0	14	27	120	0	0	124	86	408	0	0	0	0	0
		5:15 PM	0	0	0	60	0	22	32	145	0	0	103	90	452	0	0	0	0	0
		5:30 PM	0	0	0	51	0	18	29	112	0	0	116	94	420	0	0	0	0	0
		5:45 PM	0	0	0	47	0	20	28	100	0	0	117	68	380	0	0	0	0	0

VOLUMES	0	0	0	371	0	136	241	1,003	0	0	870	711	3,332
APPROACH %	0%	0%	0%	73%	0%	27%	19%	81%	0%	0%	55%	45%	
APP/DEPART	0	/	952	507	/	0	1,244	/	1,374	1,581	/	1,006	0
BEGIN PEAK HR	4:45 PM												
VOLUMES	0	0	0	196	0	68	118	524	0	0	459	369	1,734
APPROACH %	0%	0%	0%	74%	0%	26%	18%	82%	0%	0%	55%	45%	
PEAK HR FACTOR	0.000			0.805			0.907			0.963			0.955
APP/DEPART	0	/	487	264	/	0	642	/	720	828	/	527	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 12/13/18 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 SB Ramps Beech	PROJECT #: LOCATION #: CONTROL:	SC 6 SIGNAL
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CLASS 2: 2-AXLE WORK VEHICLES/ TRUCKS	NOTES:	AM PM MD OTHER OTHER	◀ W E ▶	▲ N S ▼
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LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	I-15 SB Ramps			I-15 SB Ramps			Beech			Beech			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	X	X	X	1	X	1	1	2	X	X	2	0	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0

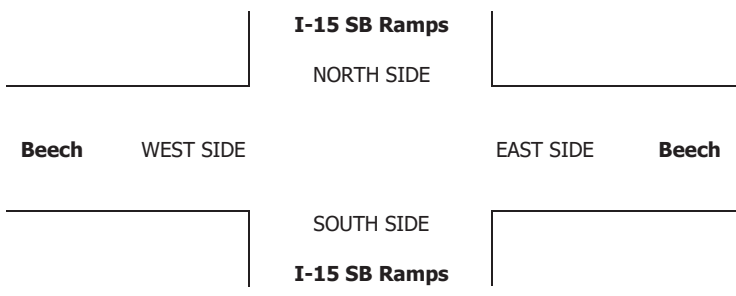
AM	7:00 AM	0	0	0	2	0	0	2	3	0	0	6	1	14	0	0	0	0	0
	7:15 AM	0	0	0	2	0	4	1	1	0	0	1	4	13	0	0	0	0	0
	7:30 AM	0	0	0	0	0	4	0	2	0	0	1	7	14	0	0	0	0	0
	7:45 AM	0	0	0	1	0	1	0	3	0	0	0	2	7	0	0	0	0	0
	8:00 AM	0	0	0	2	0	2	1	3	0	0	2	2	12	0	0	0	0	0
	8:15 AM	0	0	0	0	0	4	1	1	0	0	1	4	11	0	0	0	0	0
	8:30 AM	0	0	0	1	0	3	2	3	0	0	7	5	21	0	0	0	0	0
	8:45 AM	0	0	0	1	0	1	1	1	0	0	5	2	11	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	9	0	19	8	17	0	0	23	27	103	0	0	0	0	0
APPROACH %	0%	0%	0%	32%	0%	68%	32%	68%	0%	0%	46%	54%		0	0	0	0	0	
APP/DEPART	0	/	35	28	/	0	25	/	26	50	/	42	0	0	0	0	0	0	

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

PM	BEGIN PEAK HR	8:00 AM												
	VOLUMES	0	0	0	4	0	10	5	8	0	0	15	13	55
	APPROACH %	0%	0%	0%	29%	0%	71%	38%	62%	0%	0%	54%	46%	
	PEAK HR FACTOR	0.000			0.875			0.650			0.583			0.655
	APP/DEPART	0	/	18	14	/	0	13	/	12	28	/	25	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	1	0	1	3	3	0	0	2	1	11	0	0	0	0	0
	4:15 PM	0	0	0	3	0	1	3	5	0	0	1	3	16	0	0	0	0	0
	4:30 PM	0	0	0	1	0	0	1	7	0	0	3	2	14	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	1	1	0	0	4	1	7	0	0	0	0	0
	5:00 PM	0	0	0	0	0	1	0	2	0	0	2	2	7	0	0	0	0	0
	5:15 PM	0	0	0	1	0	1	0	1	0	0	0	1	4	0	0	0	0	0
	5:30 PM	0	0	0	1	0	0	0	3	0	0	1	3	8	0	0	0	0	0
	5:45 PM	0	0	0	0	0	1	2	1	0	0	2	2	8	0	0	0	0	0
	VOLUMES	0	0	0	7	0	5	10	23	0	0	15	15	75	0	0	0	0	0
APPROACH %	0%	0%	0%	58%	0%	42%	30%	70%	0%	0%	50%	50%		0	0	0	0	0	
APP/DEPART	0	/	25	12	/	0	33	/	30	30	/	20	0	0	0	0	0	0	
BEGIN PEAK HR	4:00 PM																		
VOLUMES	0	0	0	5	0	2	8	16	0	0	10	7	48						
APPROACH %	0%	0%	0%	71%	0%	29%	33%	67%	0%	0%	59%	41%							
PEAK HR FACTOR	0.000			0.438			0.750			0.850			0.750						
APP/DEPART	0	/	15	7	/	0	24	/	21	17	/	12	0						



INTERSECTION TURNING MOVEMENT COUNTS

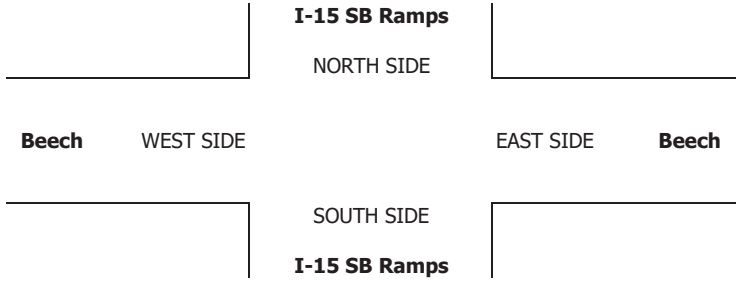
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 12/13/18 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 SB Ramps Beech	PROJECT #: SC LOCATION #: 6 CONTROL: SIGNAL
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CLASS 3: 3-AXLE TRUCKS	NOTES:	AM PM MD OTHER OTHER	◀ W S ▶ E	▲ N ▼
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LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS				
	I-15 SB Ramps			I-15 SB Ramps			Beech			Beech				NB	SB	EB	WB	TTL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR						

AM	7:00 AM	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	1	2	3	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0
	8:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
	8:45 AM	0	0	0	0	0	1	1	0	0	0	0	1	3	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
VOLUMES	0	0	0	0	0	2	2	1	0	0	5	4	14	0	0	0	0	0	
APPROACH %	0%	0%	0%	0%	0%	100%	67%	33%	0%	0%	56%	44%							
APP/DEPART	0	/	6	2	/	0	3	/	1	9	/	7	0						
BEGIN PEAK HR	8:00 AM																		
VOLUMES	0	0	0	0	0	2	1	0	0	0	3	3	9						
APPROACH %	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	50%	50%							
PEAK HR FACTOR	0.000			0.500			0.250			0.500			0.750						
APP/DEPART	0	/	4	2	/	0	1	/	0	6	/	5	0						
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	1	0	0	0	1	2	0	0	0	0	0
	4:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	1	0	2	0	0	0	0	3	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	1	0	0	0	1	2	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
VOLUMES	0	0	0	1	0	1	0	6	0	0	0	2	10	0	0	0	0	0	
APPROACH %	0%	0%	0%	50%	0%	50%	0%	100%	0%	0%	0%	100%							
APP/DEPART	0	/	2	2	/	0	6	/	7	2	/	1	0						
BEGIN PEAK HR	4:30 PM																		
VOLUMES	0	0	0	0	0	1	0	5	0	0	0	1	7						
APPROACH %	0%	0%	0%	0%	0%	100%	0%	100%	0%	0%	0%	100%							
PEAK HR FACTOR	0.000			0.250			0.625			0.250			0.583						
APP/DEPART	0	/	1	1	/	0	5	/	5	1	/	1	0						



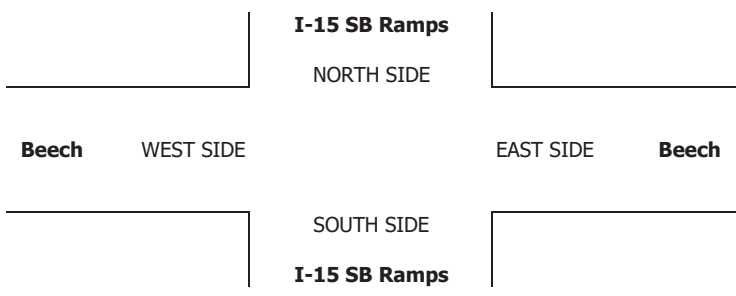
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 12/13/18 THURSDAY	LOCATION: Fontana NORTH & SOUTH: I-15 SB Ramps EAST & WEST: Beech	PROJECT #: SC LOCATION #: 6 CONTROL: SIGNAL																				
CLASS 4: 4 OR MORE AXLE TRUCKS	NOTES:	<table border="1" style="margin: auto;"> <tr> <td>AM</td> <td></td> <td>▲</td> <td></td> </tr> <tr> <td>PM</td> <td></td> <td>N</td> <td></td> </tr> <tr> <td>MD</td> <td>◀ W</td> <td></td> <td>E ▶</td> </tr> <tr> <td>OTHER</td> <td></td> <td>S</td> <td></td> </tr> <tr> <td>OTHER</td> <td></td> <td>▼</td> <td></td> </tr> </table>	AM		▲		PM		N		MD	◀ W		E ▶	OTHER		S		OTHER		▼	
AM		▲																				
PM		N																				
MD	◀ W		E ▶																			
OTHER		S																				
OTHER		▼																				

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		NB	SB	EB	WB	TTL

AM	7:00 AM	0	0	0	1	0	2	0	0	0	0	0	2	5	0	0	0	0	0
	7:15 AM	0	0	0	0	0	1	1	0	0	0	0	0	2	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	2	0	1	0	0	0	0	0	0	3	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
	8:15 AM	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0
	8:30 AM	0	0	0	0	0	2	0	0	0	0	0	1	3	0	0	0	0	0
	8:45 AM	0	0	0	0	0	1	1	0	0	0	0	1	3	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	3	0	9	2	0	0	0	0	5	19	0	0	0	0	0
APPROACH %	0%	0%	0%	25%	0%	75%	100%	0%	0%	0%	0%	100%							
APP/DEPART	0	/	7	12	/	0	2	/	3	5	/	9	0						
BEGIN PEAK HR	7:00 AM																		
VOLUMES	0	0	0	3	0	4	1	0	0	0	0	2	10						
APPROACH %	0%	0%	0%	43%	0%	57%	100%	0%	0%	0%	0%	100%							
PEAK HR FACTOR	0.000			0.583			0.250			0.250			0.500						
APP/DEPART	0	/	3	7	/	0	1	/	3	2	/	4	0						
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:00 PM	0	0	0	0	0	1	1	0	0	0	0	1	3	0	0	0	0	0
	4:15 PM	0	0	0	0	0	3	1	0	0	0	0	1	5	0	0	0	0	0
	4:30 PM	0	0	0	1	0	2	0	1	0	0	0	0	4	0	0	0	0	0
	4:45 PM	0	0	0	0	0	1	0	1	0	0	0	1	3	0	0	0	0	0
	5:00 PM	0	0	0	1	0	1	1	2	0	0	0	0	5	0	0	0	0	0
	5:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	4	0	0	0	0	0
	5:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	2	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0
	VOLUMES	0	0	0	2	0	11	3	8	0	0	0	3	27	0	0	0	0	0
APPROACH %	0%	0%	0%	15%	0%	85%	27%	73%	0%	0%	0%	100%							
APP/DEPART	0	/	6	13	/	0	11	/	10	3	/	11	0						
BEGIN PEAK HR	4:15 PM																		
VOLUMES	0	0	0	2	0	7	2	4	0	0	0	2	17						
APPROACH %	0%	0%	0%	22%	0%	78%	33%	67%	0%	0%	0%	100%							
PEAK HR FACTOR	0.000			0.750			0.500			0.500			0.850						
APP/DEPART	0	/	4	9	/	0	6	/	6	2	/	7	0						



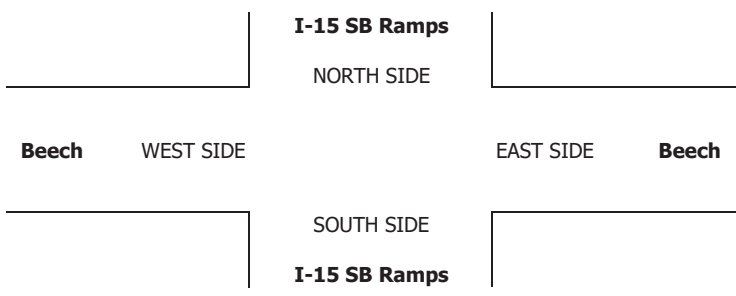
INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 12/13/18 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 SB Ramps Beech	PROJECT #: SC LOCATION #: 6 CONTROL: SIGNAL
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CLASS 5:	NOTES:											
RV		AM		▲				▲				
		PM		▲				▲				
		MD	◀	W				▶				
		OTHER										
		OTHER										

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		NB	SB	EB	WB	TTL
	I-15 SB Ramps																	
LANES:	X	X	X	1	X	1	1	2	X	X	2	0						
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0		0	0	
	BEGIN PEAK HR	7:00 AM																
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR	0.000			0.000			0.000			0.000			0.000				
	APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0		0	0	
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
	5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	VOLUMES	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2	
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	
	APP/DEPART	0	/	1	1	/	0	0	/	1	1	/	0	0		0	0	
	BEGIN PEAK HR	4:15 PM																
	VOLUMES	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2	
	APPROACH %	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	
	PEAK HR FACTOR	0.000			0.250			0.000			0.250			0.500				
	APP/DEPART	0	/	1	1	/	0	0	/	1	1	/	0	0		0	0	



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 12/13/18 THURSDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana I-15 SB Ramps Beech	PROJECT #: SC LOCATION #: 6 CONTROL: SIGNAL
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CLASS 6: BUSES	NOTES:	AM PM MD OTHER OTHER	▲ N ◀ W E ▶ S ▼
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LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	I-15 SB Ramps			I-15 SB Ramps			Beech			Beech			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	X	X	X	1	X	1	1	2	X	X	2	0	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0

AM		7:00 AM	0	0	0	0	0	0	0	0	0	4	0	4
		7:15 AM	0	0	0	0	0	3	0	0	0	1	0	4
		7:30 AM	0	0	0	0	0	1	0	0	0	0	0	1
		7:45 AM	0	0	0	0	0	1	0	0	0	0	0	1
		8:00 AM	0	0	0	0	0	1	0	0	0	0	0	1
		8:15 AM	0	0	0	0	0	0	0	0	0	4	0	4
		8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
		8:45 AM	0	0	0	1	0	0	0	0	0	0	0	1
		9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
		9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
		9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
		9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0

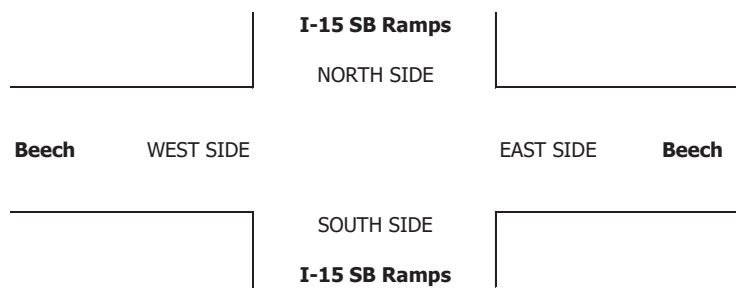
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

VOLUMES	0	0	0	1	0	0	1	5	0	0	9	0	16
APPROACH %	0%	0%	0%	100%	0%	0%	17%	83%	0%	0%	100%	0%	
APP/DEPART	0	/	1	1	/	0	6	/	6	9	/	9	0
BEGIN PEAK HR	7:00 AM						1	4	0	0	5	0	10
VOLUMES	0	0	0	0	0	0	20%	80%	0%	0%	100%	0%	
APPROACH %	0%	0%	0%	0%	0%	0%							
PEAK HR FACTOR	0.000			0.000			0.417			0.313			0.625
APP/DEPART	0	/	1	0	/	0	5	/	4	5	/	5	0

PM		03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
		3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
		3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
		3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
		4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
		4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
		4:30 PM	0	0	0	0	0	0	0	0	0	1	0	1
		4:45 PM	0	0	0	0	0	0	0	0	0	1	0	1
		5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
		5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
		5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
		5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0

0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

VOLUMES	0	0	0	0	0	0	3	0	0	0	0	2	5
APPROACH %	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%	
APP/DEPART	0	/	5	0	/	0	3	/	0	2	/	0	0
BEGIN PEAK HR	4:00 PM												
VOLUMES	0	0	0	0	0	0	3	0	0	0	0	2	5
APPROACH %	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%	
PEAK HR FACTOR	0.000			0.000			0.750			0.500			0.625
APP/DEPART	0	/	5	0	/	0	3	/	0	2	/	0	0



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, Mar 18, 21	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana Beech Summit	PROJECT #: SC2846	LOCATION #: 7	SIGNAL CONTROL:
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NOTES: Queue NB PM

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	4	32	1	30	18	4	8	6	2	7	11	37	160
7:15 AM	4	37	5	41	16	3	11	6	0	6	13	34	176
7:30 AM	5	47	3	37	17	3	14	14	1	10	17	48	216
7:45 AM	7	41	5	27	33	3	6	14	2	8	12	52	210
8:00 AM	4	38	9	30	33	4	12	17	5	8	22	48	230
8:15 AM	4	27	6	33	30	6	8	12	3	9	24	56	218
8:30 AM	4	33	5	25	35	4	10	7	4	5	23	42	197
8:45 AM	5	36	5	31	25	5	9	16	4	9	19	27	191
VOLUMES	37	291	39	254	207	32	78	92	21	62	141	344	1,598
APPROACH %	10%	79%	11%	52%	42%	6%	41%	48%	11%	11%	26%	63%	
APP/DEPART	367	/	714	493	/	290	191	/	384	547	/	210	0
BEGIN PEAK HR	7:30 AM												
VOLUMES	20	153	23	127	113	16	40	57	11	35	75	204	874
APPROACH %	10%	78%	12%	50%	44%	6%	37%	53%	10%	11%	24%	65%	
PEAK HR FACTOR	0.891												
APP/DEPART	196	/	397	256	/	159	108	/	207	314	/	111	0
04:00 PM	10	50	7	64	87	14	21	49	30	19	57	60	468
4:15 PM	28	54	11	85	79	13	27	37	21	19	40	50	464
4:30 PM	19	60	18	87	72	16	24	58	23	18	33	47	475
4:45 PM	19	76	23	96	73	17	27	44	16	17	52	49	509
5:00 PM	22	72	20	88	76	11	35	57	33	19	53	54	540
5:15 PM	16	75	15	85	91	17	23	32	18	23	56	50	501
5:30 PM	20	53	19	85	92	21	14	51	20	27	69	47	518
5:45 PM	19	42	19	89	89	22	19	64	22	19	54	53	511
VOLUMES	133	482	132	679	659	131	190	392	183	161	414	410	3,986
APPROACH %	20%	63%	17%	46%	45%	9%	25%	51%	24%	16%	42%	42%	
APP/DEPART	767	/	1,083	1,469	/	1,002	765	/	1,202	985	/	699	0
BEGIN PEAK HR	5:00 PM												
VOLUMES	77	242	73	347	348	71	91	204	93	88	232	204	2,070
APPROACH %	20%	62%	19%	45%	45%	9%	23%	53%	24%	17%	44%	39%	
PEAK HR FACTOR	0.860												
APP/DEPART	392	/	538	766	/	528	388	/	624	524	/	380	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1

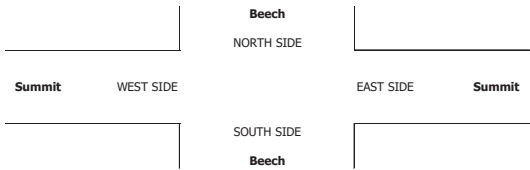
RTOR

NRR	SRR	ERR	WRR
1	0	2	24
2	1	0	23
1	0	0	31
1	1	0	25
5	0	3	24
4	2	2	25
2	2	1	25
4	0	2	18
20	6	10	195

11	3	5	105
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5	3	9	23
8	6	8	31
10	7	10	19
9	7	6	15
11	3	11	16
8	9	5	25
8	8	6	20
11	10	2	27
70	53	57	176

38	30	24	88
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	AM	PM
7:00 AM		
7:15 AM		
7:30 AM		
7:45 AM		
8:00 AM		
8:15 AM		
8:30 AM		
8:45 AM		
TOTAL		
4:00 PM		
4:15 PM		
4:30 PM		
4:45 PM		
5:00 PM		
5:15 PM		
5:30 PM		
5:45 PM		
TOTAL		

ALL PED AND BIKE

E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
3	0	0	0	3
1	0	0	0	1
0	1	0	1	2
0	0	1	2	3
0	0	0	0	0
2	1	0	1	4
1	0	0	0	1
2	0	0	0	2
9	2	1	4	16
0	1	0	1	2
4	1	3	0	8
2	0	0	0	2
2	4	0	0	6
1	3	2	0	6
0	0	0	0	0
4	0	0	0	4
3	0	3	1	7
16	9	8	2	35

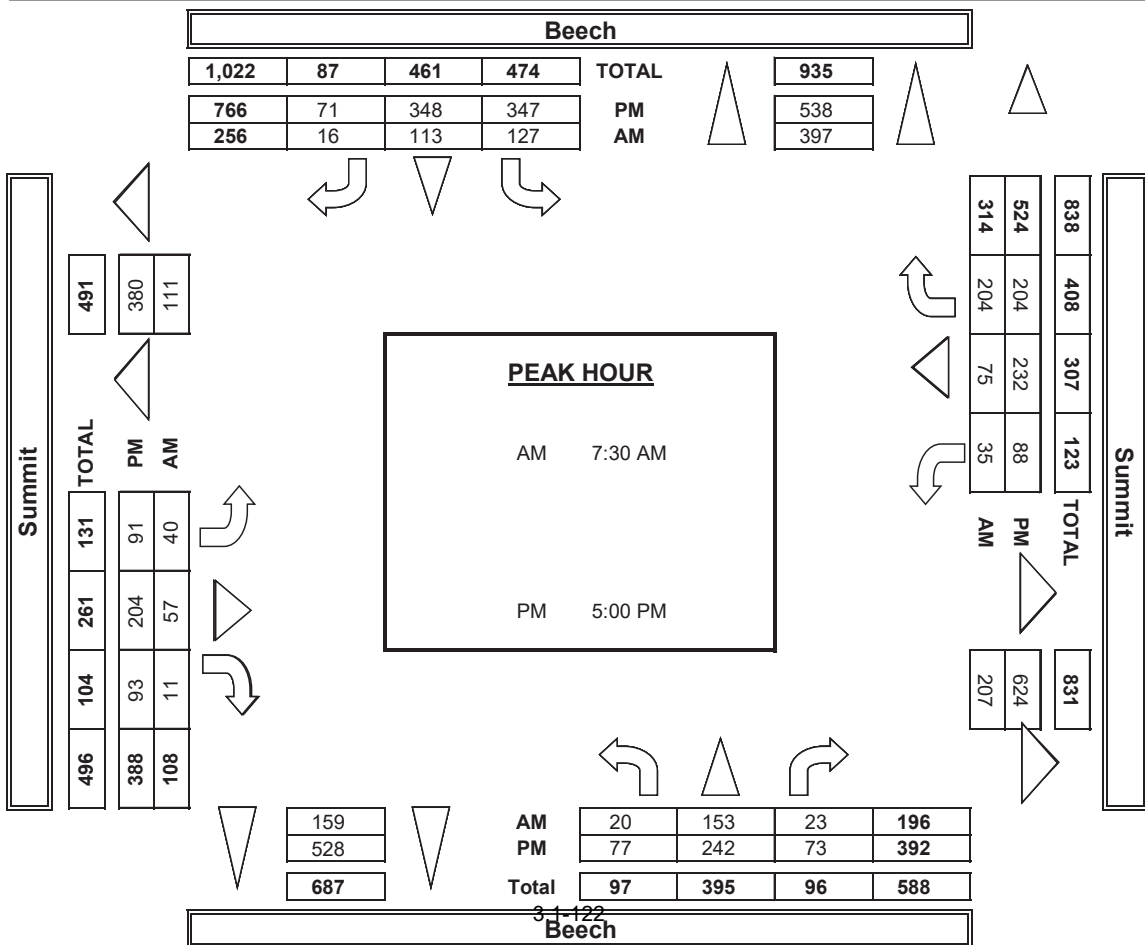
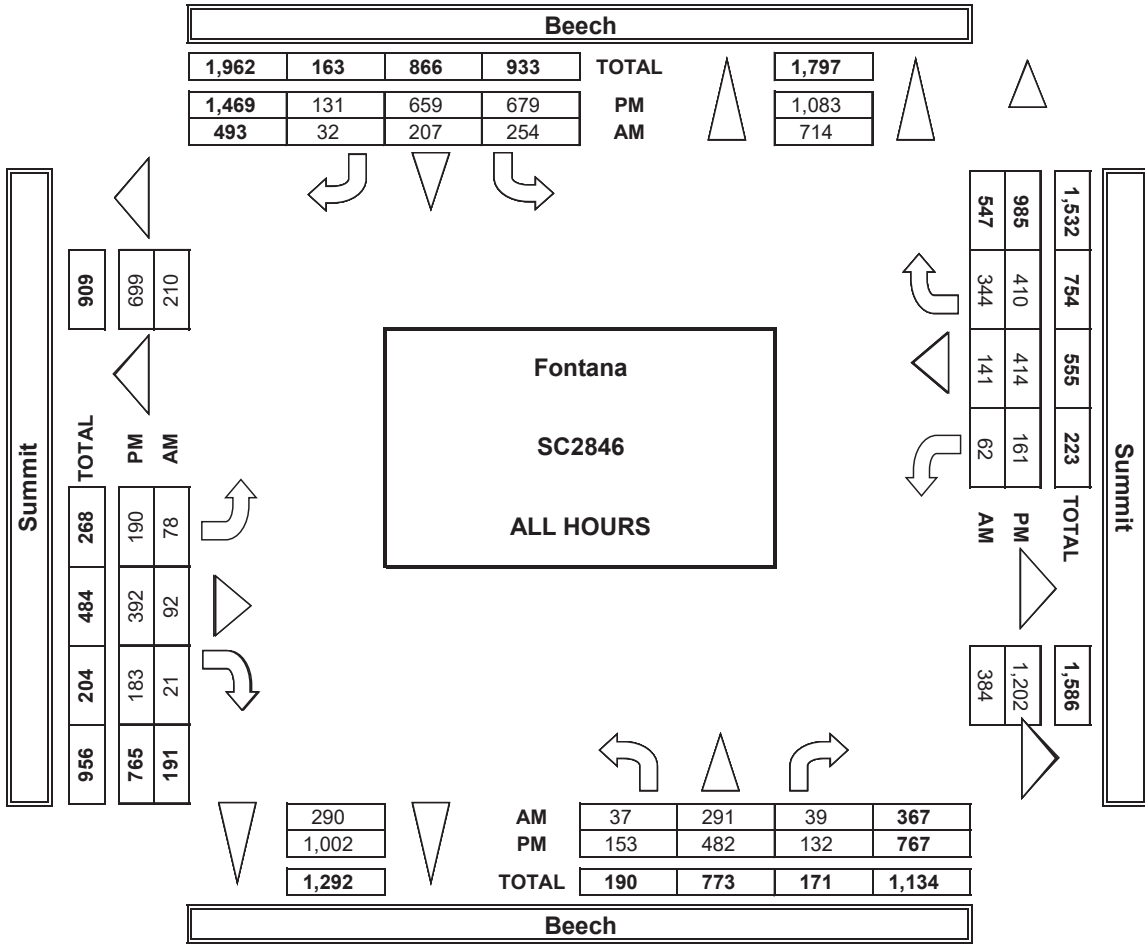
PEDESTRIAN CROSSINGS

E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
3	0	0	0	3
0	0	0	0	0
0	1	0	1	2
0	0	1	0	1
0	0	0	0	0
2	1	0	1	4
1	0	0	0	1
2	0	0	0	2
8	2	1	2	13
0	1	0	1	2
4	0	3	0	7
2	0	0	0	2
2	3	0	0	5
1	3	2	0	6
0	0	0	0	0
4	0	0	0	4
3	0	3	1	7
16	7	8	2	33

BICYCLE CROSSINGS

ES	WS	SS	NS	TOTAL
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	2	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	2	3
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	2	0	0	2

AimTD LLC
TURNING MOVEMENT COUNTS



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, Mar 18, 21	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana Lytle Creek Summit	PROJECT #: SC2846	LOCATION #: 9	SIGNAL
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NOTES:

			AM	▲	N	▶
			PM	◀	W	E
			MD		S	
			OTHER	▼		

Add U-Turns to Left Turns

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	6	2	0	0	1	7	1	41	3	1	46	4	112
7:15 AM	6	0	1	4	0	7	19	34	3	0	48	7	129
7:30 AM	6	6	1	2	0	7	27	30	5	3	54	11	152
7:45 AM	9	12	1	4	5	16	29	27	5	3	57	9	177
8:00 AM	7	39	3	2	1	9	30	27	7	1	82	16	224
8:15 AM	5	5	4	12	31	50	10	49	5	4	57	6	238
8:30 AM	7	2	1	0	2	9	5	41	5	1	78	2	153
8:45 AM	6	1	1	1	2	6	9	47	3	3	81	5	165
VOLUMES	52	67	12	25	42	111	130	296	36	16	503	60	1,350
APPROACH %	40%	51%	9%	14%	24%	62%	28%	64%	8%	3%	87%	10%	
APP/DEPART	131	/	257	178	/	94	462	/	333	579	/	666	0
BEGIN PEAK HR VOLUMES	28	58	9	18	39	94	74	144	22	9	274	33	792
APPROACH %	29%	61%	9%	13%	28%	60%	31%	60%	9%	3%	87%	10%	
PEAK HR FACTOR	0.485			0.379			0.938			0.798			0.832
APP/DEPART	95	/	165	141	/	70	240	/	171	316	/	386	0
04:00 PM	17	1	5	5	1	15	11	170	4	7	143	5	384
4:15 PM	9	3	4	4	0	12	7	157	5	4	147	7	359
4:30 PM	8	3	2	5	2	12	8	192	8	3	148	1	392
4:45 PM	5	2	7	5	1	7	13	201	10	13	166	3	433
5:00 PM	13	4	6	3	4	10	7	211	10	9	169	6	452
5:15 PM	4	1	1	3	0	7	7	131	11	5	131	3	304
5:30 PM	11	2	17	3	1	9	6	210	9	5	167	3	443
5:45 PM	8	0	9	2	1	11	2	188	7	10	158	1	397
VOLUMES	75	16	31	30	10	83	61	1,460	64	56	1,229	29	3,164
APPROACH %	53%	11%	36%	24%	8%	67%	4%	92%	4%	4%	94%	2%	
APP/DEPART	142	/	104	123	/	127	1,585	/	1,544	1,314	/	1,389	0
BEGIN PEAK HR VOLUMES	35	12	19	17	7	41	35	761	33	29	630	17	1,636
APPROACH %	53%	18%	29%	26%	11%	63%	4%	92%	4%	4%	93%	3%	
PEAK HR FACTOR	0.717			0.855			0.909			0.918			0.905
APP/DEPART	66	/	62	65	/	67	829	/	799	676	/	708	0

U-TURNS

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

RTOR

NRR	SRR	ERR	WRR
0	0	0	0
0	5	1	0
0	3	0	1
0	5	0	2
1	8	3	4
0	5	3	4
2	17	0	1
1	4	1	0
1	5	1	0
5	52	9	12

RTOR (PM)

4	34	7	9
2	8	0	1
1	10	1	3
1	7	3	0
2	6	0	2
5	5	2	0
0	6	1	0
9	4	2	1
3	3	1	0
23	49	10	7
9	28	6	5



AM

7:00 AM	6	2	0
7:15 AM	6	0	1
7:30 AM	6	6	1
7:45 AM	9	12	1
8:00 AM	7	39	3
8:15 AM	5	5	4
8:30 AM	7	2	1
8:45 AM	6	1	1
TOTAL	52	67	12
4:00 PM	17	1	5
4:15 PM	9	3	4
4:30 PM	8	3	2
4:45 PM	5	2	7
5:00 PM	13	4	6
5:15 PM	4	1	1
5:30 PM	11	2	17
5:45 PM	8	0	9
TOTAL	75	16	31

ALL PED AND BIKE

E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	0	3	3
0	0	0	1	1
0	0	0	1	1
1	0	1	0	2
0	0	0	1	1
1	0	0	0	1
0	2	1	0	3
0	0	0	0	0
2	2	2	6	12
3	2	0	1	6
1	5	2	4	12
2	1	4	2	9
4	0	2	2	8
0	1	1	2	4
2	3	2	8	15
1	2	0	0	3
0	1	0	0	1
13	15	11	19	58

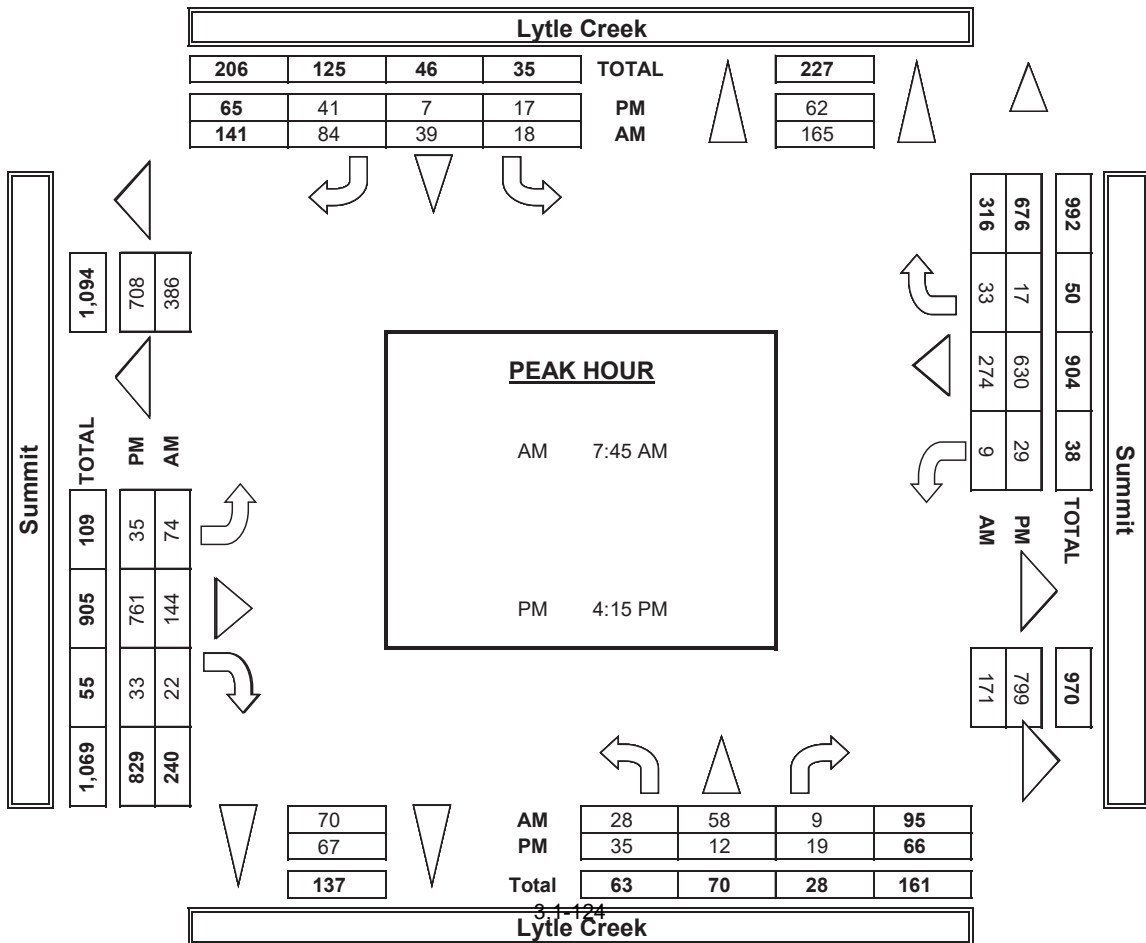
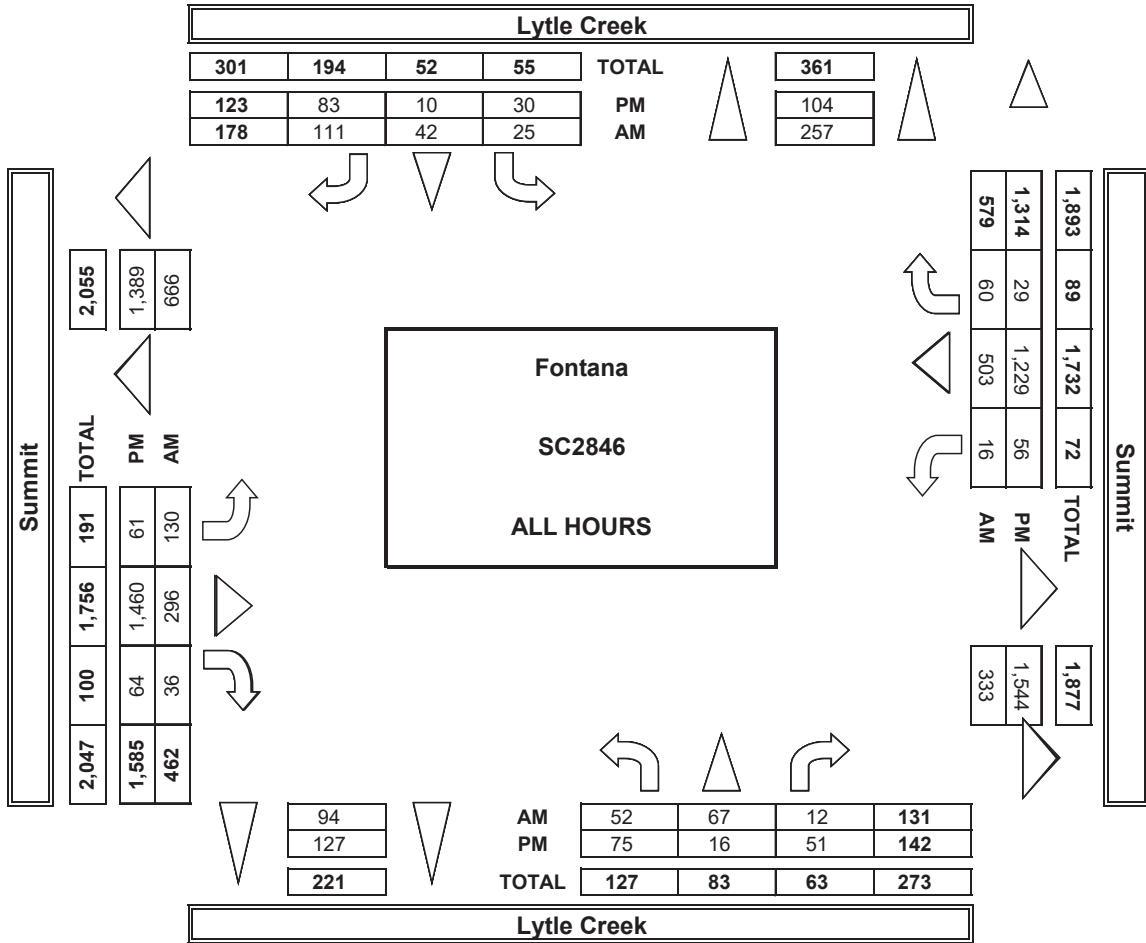
PEDESTRIAN CROSSINGS

E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	0	3	3
0	0	0	1	1
0	0	0	0	0
1	0	1	0	2
0	0	0	0	0
1	0	0	0	1
0	2	1	0	3
0	0	0	0	0
2	2	2	4	10
3	2	0	0	5
1	5	2	3	11
2	1	4	2	9
4	0	2	2	8
0	1	1	2	4
2	3	1	7	13
0	2	0	0	2
0	1	0	0	1
12	15	10	16	53

BICYCLE CROSSINGS

ES	WS	SS	NS	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	1	1
0	0	0	1	1
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	2	2
0	0	0	1	1
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	1	1	2
1	0	0	0	1
0	0	0	0	0
1	0	1	3	5

AimTD LLC
TURNING MOVEMENT COUNTS



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, Mar 18, 21	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana Citrus Duncan Canyon	PROJECT #: SC2846	LOCATION #: 12	CONTROL: STOP ALL
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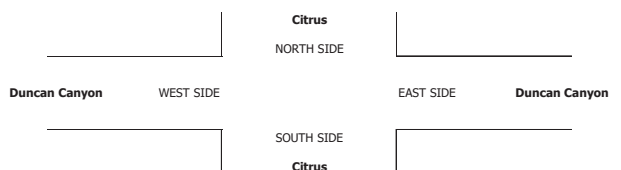
NOTES: N-leg are closed but some vehicles drove through.	AM	
	PM	
	MD	
	OTHER	

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	X	1	X	X	X	X	1	0	0	1	X	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0

RTOR			
NRR	SRR	ERR	WRR
X	X	X	X

	Citrus			Duncan Canyon			Duncan Canyon			TOTAL		
	NL	NT	NR	SL	ST	SR	EL	ET	ER		WL	WT
7:00 AM	29	0	4	0	0	0	1	26	35	2	18	0
7:15 AM	42	0	5	0	0	1	0	17	39	4	13	0
7:30 AM	44	1	2	0	0	0	0	8	33	2	19	0
7:45 AM	49	0	4	0	0	1	0	16	41	4	17	0
8:00 AM	36	0	6	0	0	0	0	7	34	8	13	0
8:15 AM	40	1	1	0	0	0	0	16	32	2	15	0
8:30 AM	52	1	5	0	0	1	0	13	24	2	11	0
8:45 AM	25	0	4	0	0	1	0	6	32	4	14	0
VOLUMES	317	3	31	0	0	4	1	109	270	28	120	0
APPROACH %	89%	1%	9%	0%	0%	100%	0%	29%	71%	19%	81%	0%
APP/DEPART	355	/	4	4	/	302	380	/	140	148	/	441
BEGIN PEAK HR	7:00 AM											
VOLUMES	164	1	15	0	0	2	1	67	148	12	67	0
APPROACH %	90%	1%	8%	0%	0%	100%	0%	31%	69%	15%	85%	0%
PEAK HR FACTOR	0.858											
APP/DEPART	182	/	2	2	/	162	216	/	82	79	/	233
4:00 PM	62	1	6	0	0	0	0	16	45	6	14	0
4:15 PM	52	0	4	0	0	0	0	17	50	3	14	0
4:30 PM	48	0	2	0	0	0	0	16	37	3	32	0
4:45 PM	55	0	3	0	0	1	0	25	54	4	15	0
5:00 PM	78	0	2	0	0	0	0	19	55	1	16	0
5:15 PM	76	0	6	0	0	1	0	22	47	5	17	0
5:30 PM	63	0	6	0	0	0	0	26	66	5	16	0
5:45 PM	56	0	3	0	0	0	0	30	60	4	16	0
VOLUMES	490	1	32	0	0	2	0	171	414	31	140	0
APPROACH %	93%	0%	6%	0%	0%	100%	0%	29%	71%	18%	82%	0%
APP/DEPART	525	/	1	2	/	447	585	/	203	171	/	632
BEGIN PEAK HR	5:00 PM											
VOLUMES	273	0	17	0	0	1	0	97	228	15	65	0
APPROACH %	94%	0%	6%	0%	0%	100%	0%	30%	70%	19%	81%	0%
PEAK HR FACTOR	0.884											
APP/DEPART	290	/	0	1	/	243	325	/	114	80	/	339

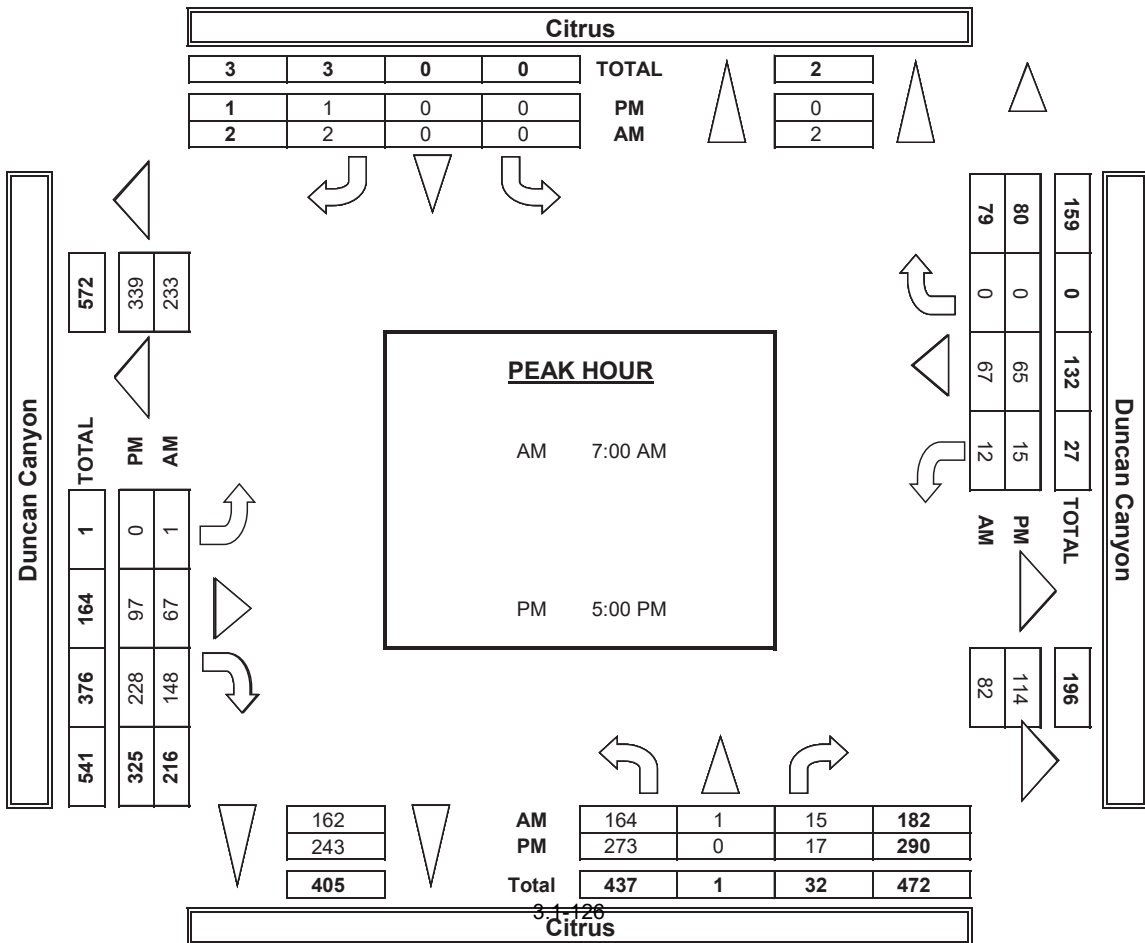
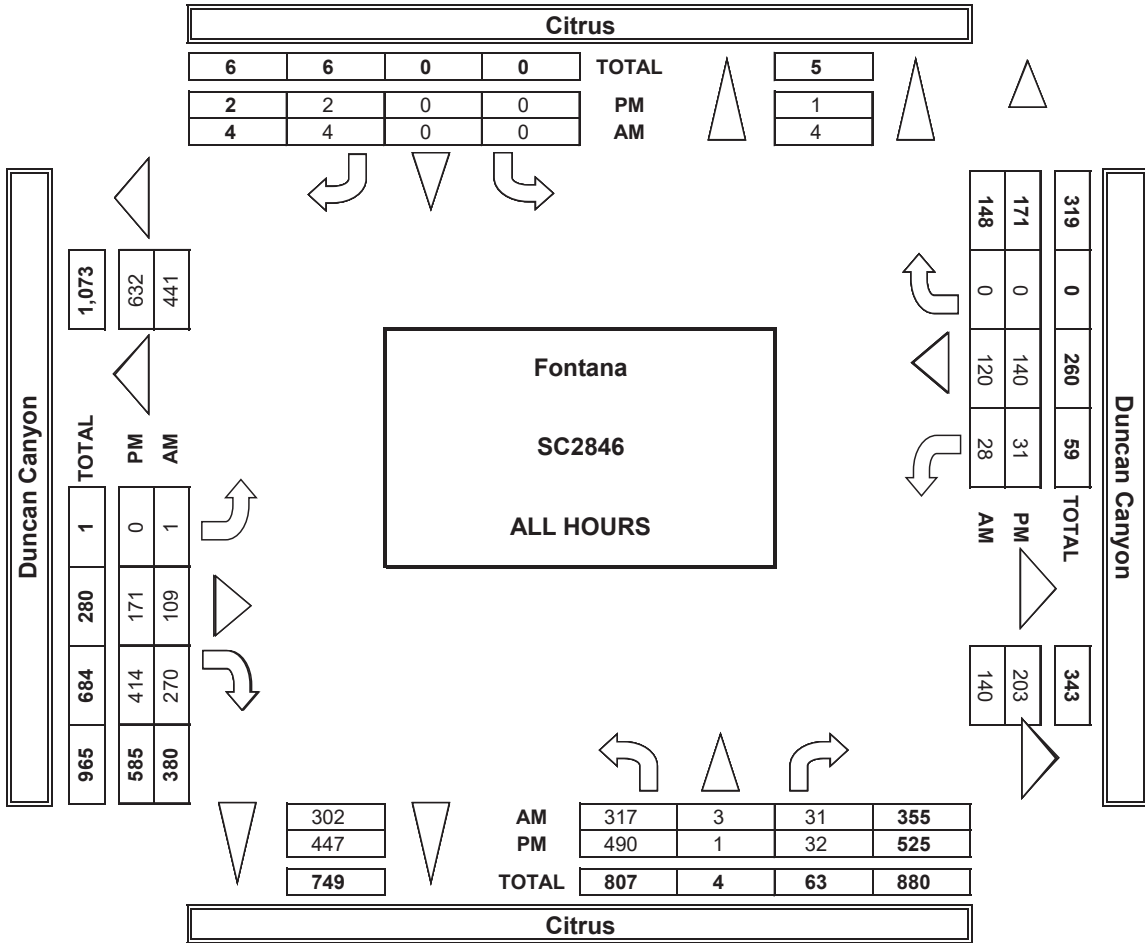


	ALL PED AND BIKE				
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	1	0	0	0	1
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	1	0	0	0	1
4:00 PM	0	0	1	1	2
4:15 PM	1	0	0	1	2
4:30 PM	0	0	0	0	0
4:45 PM	0	0	1	0	1
5:00 PM	0	0	0	0	0
5:15 PM	1	0	0	1	2
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	2	2
TOTAL	2	0	2	5	9

	PEDESTRIAN CROSSINGS				
	E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	1	0	0	0	1
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	1	0	0	0	1
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0

	BICYCLE CROSSINGS				
	ES	WS	SS	NS	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	0	0	0	0	0
4:00 PM	0	0	1	1	2
4:15 PM	1	0	0	1	2
4:30 PM	0	0	0	0	0
4:45 PM	0	0	1	0	1
5:00 PM	0	0	0	0	0
5:15 PM	1	0	0	1	2
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	2	2
TOTAL	2	0	2	5	9

AimTD LLC
TURNING MOVEMENT COUNTS



2021-03-18/06:49:52

3.1-127



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, Mar 18, 21	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana Citrus Casa Grande	PROJECT #: SC2846 LOCATION #: 13 CONTROL: SIGNAL
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NOTES: Minor Construction SB AM 7:45 - 9:00	
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Add U-Turns to Left Turns

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	7	17	5	9	19	10	8	5	4	1	2	9	96
7:15 AM	6	22	1	8	34	7	10	2	7	3	1	16	117
7:30 AM	15	23	7	9	22	4	6	5	9	7	4	14	125
7:45 AM	10	26	7	10	29	13	10	1	1	7	6	13	133
8:00 AM	10	17	4	9	20	13	8	1	2	5	3	8	100
8:15 AM	8	25	5	9	20	8	14	3	5	4	7	12	120
8:30 AM	9	18	3	8	12	6	9	2	3	3	9	20	102
8:45 AM	8	15	8	9	19	11	9	2	7	3	6	6	103
VOLUMES	73	163	40	71	175	72	74	21	38	33	38	98	896
APPROACH %	26%	59%	14%	22%	55%	23%	56%	16%	29%	20%	22%	58%	
APP/DEPART	276	/	342	318	/	270	133	/	125	169	/	159	0
BEGIN PEAK HR	7:30 AM												
VOLUMES	43	91	23	37	91	38	38	10	17	23	20	47	478
APPROACH %	27%	58%	15%	22%	55%	23%	58%	15%	26%	26%	22%	52%	
PEAK HR FACTOR	0.872			0.798			0.739			0.865			0.898
APP/DEPART	157	/	179	166	/	144	65	/	67	90	/	88	0
04:00 PM	9	36	7	12	26	12	12	7	5	5	5	13	149
4:15 PM	8	35	3	13	25	7	10	2	3	7	5	12	130
4:30 PM	9	33	3	3	37	8	6	2	3	5	7	8	124
4:45 PM	17	53	6	9	37	6	7	4	0	2	5	7	153
5:00 PM	10	54	10	12	34	9	12	11	5	11	4	8	180
5:15 PM	12	61	7	15	32	8	7	6	3	12	5	12	180
5:30 PM	7	51	4	12	39	13	13	4	1	8	8	6	166
5:45 PM	11	50	15	19	31	15	7	6	1	5	7	8	175
VOLUMES	83	373	35	95	261	78	74	42	21	35	46	74	1,257
APPROACH %	16%	73%	11%	22%	60%	18%	54%	31%	15%	31%	26%	42%	
APP/DEPART	511	/	530	434	/	361	137	/	183	175	/	183	0
BEGIN PEAK HR	5:00 PM												
VOLUMES	40	216	36	58	136	45	39	27	10	36	24	34	701
APPROACH %	14%	74%	12%	24%	57%	19%	51%	36%	13%	38%	26%	36%	
PEAK HR FACTOR	0.913			0.919			0.679			0.810			0.974
APP/DEPART	292	/	295	239	/	193	76	/	115	94	/	98	0

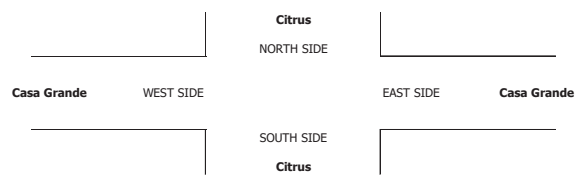
U-TURNS				
NB	SB	EB	WB	TTL
4	1	0	0	5
3	0	0	0	3
6	0	0	0	6
4	2	0	0	6
2	1	0	0	3
1	0	0	0	1
2	2	0	0	4
2	1	0	0	3
24	7	0	0	31

RTOR			
NRR	SRR	ERR	WRR
0	2	2	3
0	1	3	12
2	0	7	9
2	2	0	7
2	0	1	5
0	1	3	6
2	0	2	10
1	1	1	3
9	7	19	55

6	3	11	27
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2	4	2	6
0	0	1	7
0	0	1	3
0	2	0	5
2	2	3	5
2	1	1	8
0	1	0	5
4	6	0	6
10	16	8	45

8	10	4	24
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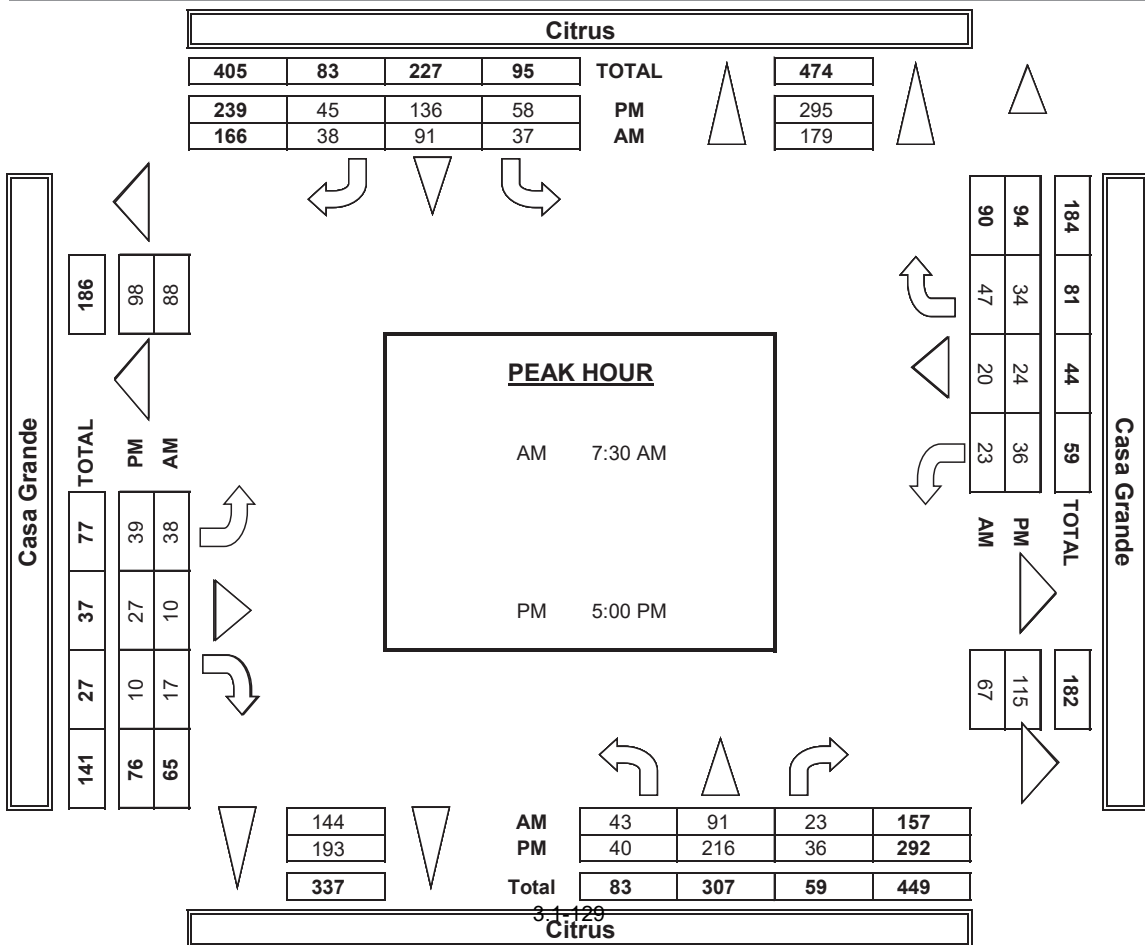
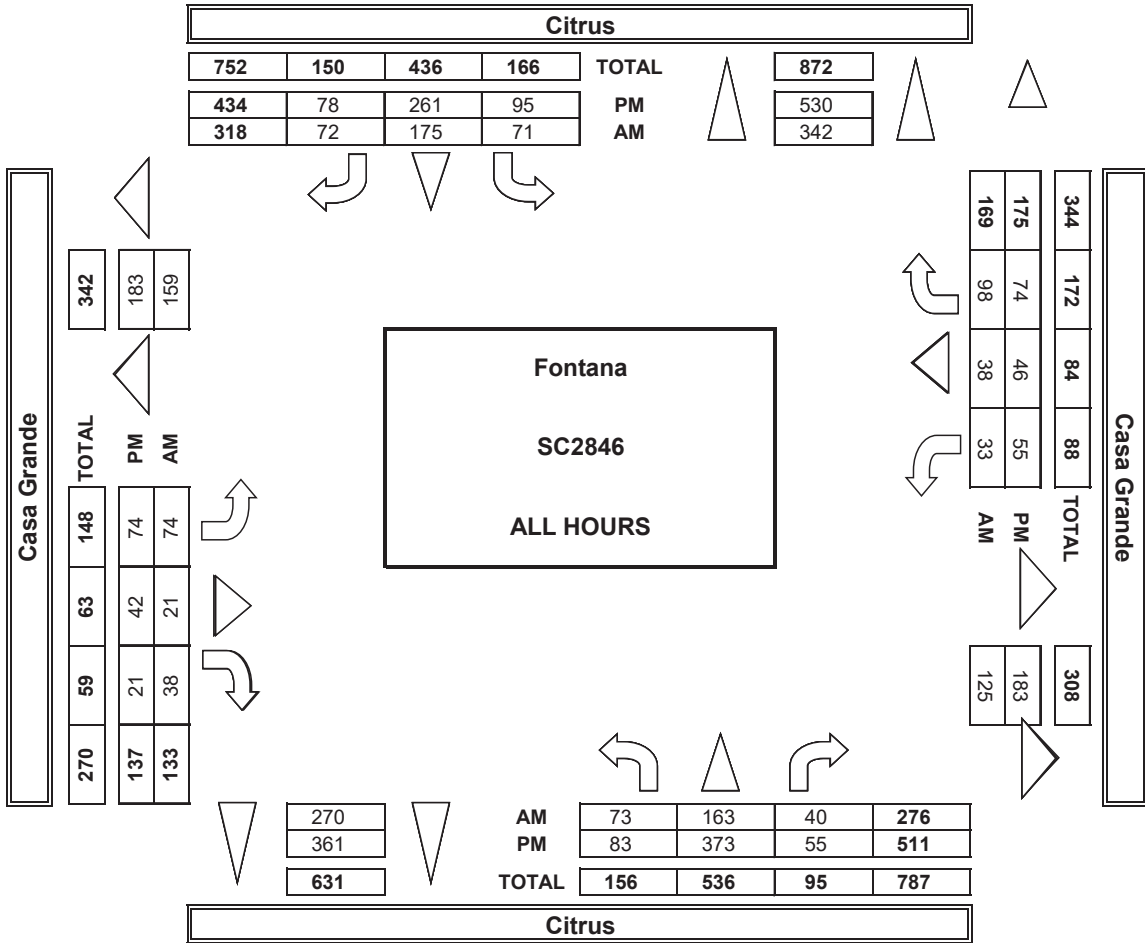
Time	AM	PM
7:00 AM		
7:15 AM		
7:30 AM		
7:45 AM		
8:00 AM		
8:15 AM		
8:30 AM		
8:45 AM		
TOTAL		
4:00 PM		
4:15 PM		
4:30 PM		
4:45 PM		
5:00 PM		
5:15 PM		
5:30 PM		
5:45 PM		
TOTAL		

ALL PED AND BIKE				
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	1	1	2
0	0	0	2	2
0	0	1	0	1
1	1	0	0	2
0	0	4	0	4
1	0	0	1	2
0	0	3	0	3
0	1	0	1	2
2	2	9	5	18
0	0	0	0	0
1	0	2	2	5
0	0	1	4	5
3	0	0	5	8
0	0	2	0	2
1	2	6	0	9
2	1	2	2	7
0	2	0	5	7
7	5	13	18	43

PEDESTRIAN CROSSINGS				
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	1	1	2
0	0	0	2	2
0	0	1	0	1
1	1	0	0	2
0	0	4	0	4
1	0	0	1	2
0	0	3	0	3
0	1	0	1	2
2	2	9	5	18
0	0	0	0	0
0	0	1	2	3
0	0	1	0	1
2	0	0	0	2
0	0	2	0	2
1	1	3	0	5
2	1	2	0	5
0	2	0	4	6
5	4	9	6	24

BICYCLE CROSSINGS				
ES	WS	SS	NS	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	1	0	2
0	0	0	4	4
0	1	3	0	4
0	0	0	2	2
0	0	0	1	1
2	1	4	12	19

AimTD LLC
TURNING MOVEMENT COUNTS



2021-03-18/07:54:24



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, Mar 18, 21	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana Citrus Summit	PROJECT #: SC2846	LOCATION #: 14	CONTROL: SIGNAL
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NOTES:	AM	
	PM	
	MD	
	OTHER	
	OTHER	

Add U-Turns to Left Turns

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	10	18	10	4	20	1	6	19	13	12	14	1	128
7:15 AM	11	24	9	8	36	6	2	19	14	21	15	3	168
7:30 AM	11	29	14	9	29	7	2	18	21	16	27	7	190
7:45 AM	22	29	8	9	30	5	3	13	13	18	28	9	187
8:00 AM	29	21	7	5	19	5	5	13	11	21	23	5	164
8:15 AM	19	23	7	7	20	5	6	24	21	18	30	8	188
8:30 AM	26	18	8	4	18	4	3	16	17	17	29	3	163
8:45 AM	27	23	18	8	24	2	5	15	23	15	33	6	199
VOLUMES	155	185	81	54	196	35	32	137	133	138	199	42	1,387
APPROACH %	37%	44%	19%	19%	69%	12%	11%	45%	44%	36%	53%	11%	
APP/DEPART	421	/	258	285	/	471	302	/	271	379	/	387	0
BEGIN PEAK HR	7:30 AM												
VOLUMES	81	102	36	30	98	22	16	68	66	73	108	29	729
APPROACH %	37%	47%	16%	20%	65%	15%	11%	45%	44%	35%	51%	14%	
PEAK HR FACTOR	0.928												
APP/DEPART	219	/	145	150	/	238	150	/	134	210	/	212	0
4:00 PM	53	40	23	11	27	5	6	79	67	28	58	3	400
4:15 PM	65	33	19	7	27	6	6	92	49	21	69	12	406
4:30 PM	58	27	19	6	37	3	7	96	57	36	79	12	437
4:45 PM	68	59	23	4	36	2	10	96	61	37	78	8	482
5:00 PM	75	64	27	9	44	3	4	106	66	22	72	7	499
5:15 PM	69	64	15	6	43	4	8	67	42	24	58	13	413
5:30 PM	66	46	18	11	39	1	7	96	59	21	78	7	449
5:45 PM	62	75	16	8	27	5	11	75	59	19	81	9	447
VOLUMES	518	408	160	62	280	29	59	707	460	208	573	71	3,533
APPROACH %	48%	38%	15%	17%	75%	8%	5%	58%	38%	24%	67%	8%	
APP/DEPART	1,084	/	538	371	/	949	1,226	/	931	852	/	1,115	0
BEGIN PEAK HR	4:45 PM												
VOLUMES	278	233	83	30	162	10	29	365	228	104	286	35	1,843
APPROACH %	47%	39%	14%	15%	80%	5%	5%	59%	37%	24%	67%	8%	
PEAK HR FACTOR	0.895												
APP/DEPART	594	/	297	202	/	493	622	/	480	425	/	573	0

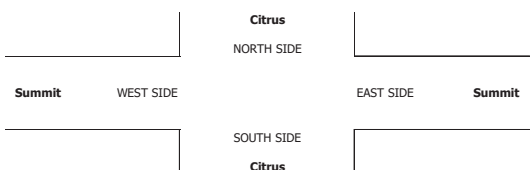
U-TURNS				
NB	SB	EB	WB	TTL
1	0	0	0	1
1	1	0	0	2
0	0	0	0	0
1	1	2	1	5
1	0	1	0	2
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
5	2	3	1	11

RTOR			
NRR	SRR	ERR	WRR
3	1	4	0
2	1	7	1
6	3	9	5
3	1	7	3
2	1	7	0
3	2	9	1
6	1	3	0
8	1	7	3
33	11	53	13

14	7	32	9
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11	2	32	2
7	1	14	4
5	1	25	3
10	1	19	1
8	1	25	3
8	0	19	4
7	0	23	1
6	1	27	2
62	7	184	20

33	2	86	9
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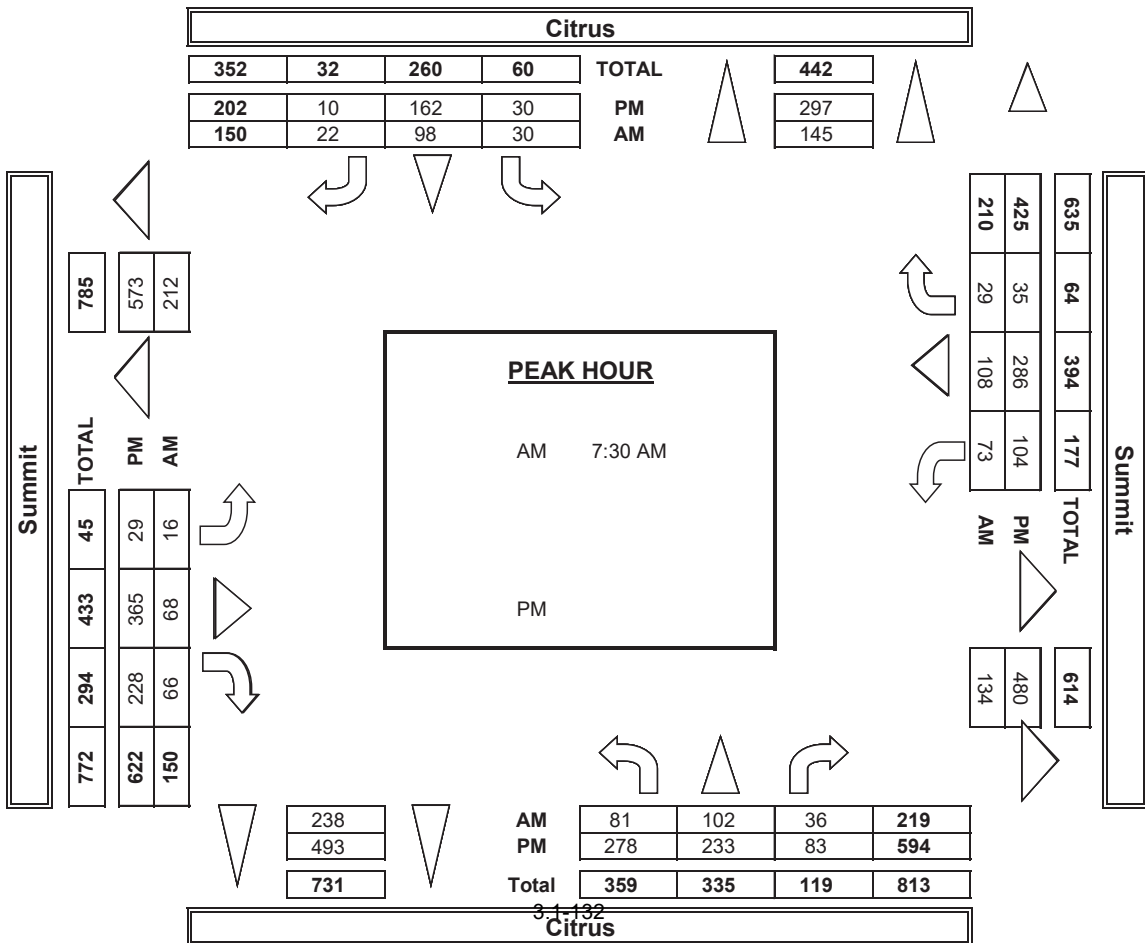
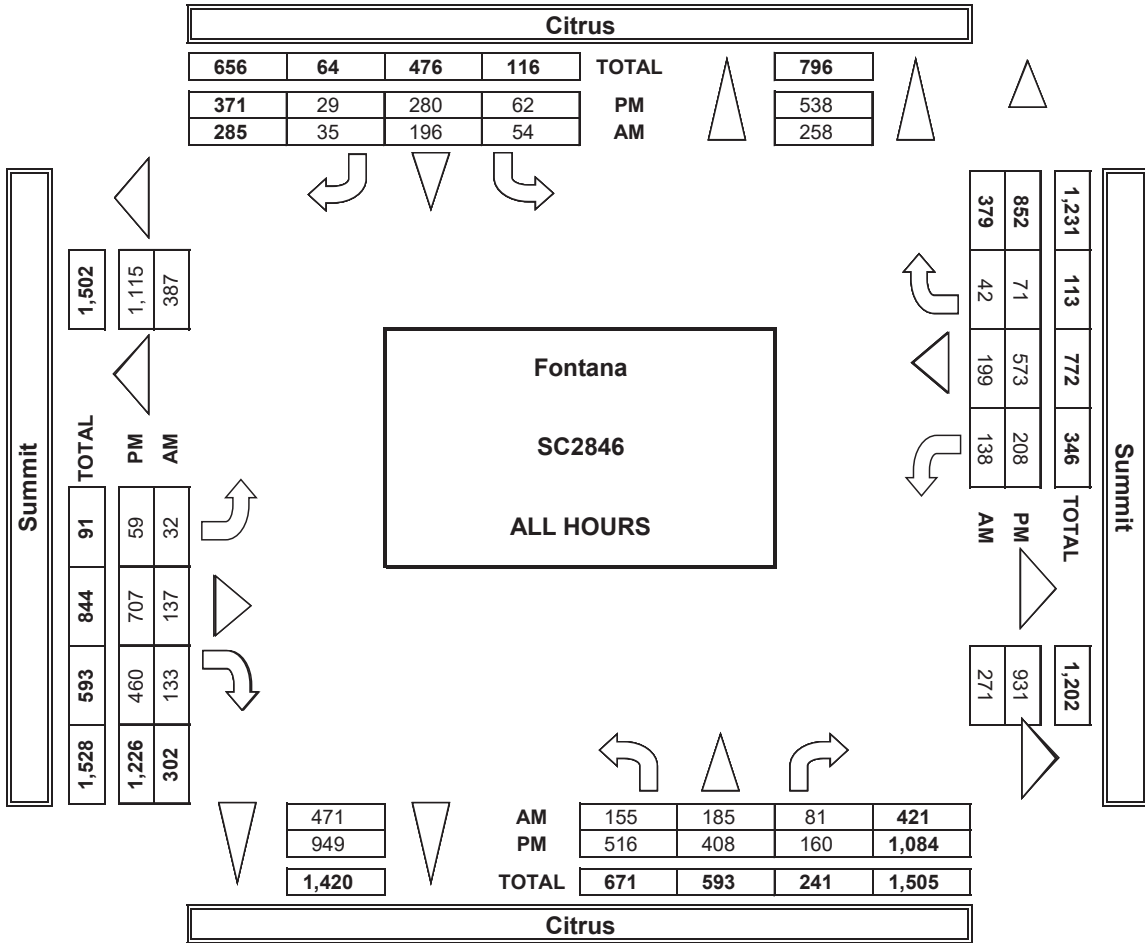
Time	AM	PM
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	0	0
8:00 AM	1	0
8:15 AM	0	0
8:30 AM	1	0
8:45 AM	0	0
TOTAL	2	0
4:00 PM	0	0
4:15 PM	0	0
4:30 PM	1	1
4:45 PM	1	0
5:00 PM	1	0
5:15 PM	2	0
5:30 PM	3	0
5:45 PM	0	0
TOTAL	8	1

ALL PED AND BIKE				
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	1	0	1
0	0	0	0	0
0	0	1	2	3
0	0	1	0	1
1	0	1	0	2
0	0	0	0	0
1	0	0	0	1
0	0	1	0	1
2	0	5	2	9
0	0	0	1	1
0	0	1	0	1
1	1	0	2	4
1	0	0	0	1
1	0	0	0	1
2	0	1	4	7
3	0	2	0	5
0	0	2	1	3
8	1	6	8	23

PEDESTRIAN CROSSINGS				
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	1	1	2
0	0	1	0	1
1	0	1	0	2
0	0	0	0	0
1	0	0	0	1
0	0	1	0	1
2	0	4	1	7
0	0	0	0	0
0	0	1	0	1
1	1	0	2	4
0	0	0	0	0
1	0	0	0	1
1	0	0	2	3
3	0	1	0	4
0	0	2	0	2
6	1	4	4	15

BICYCLE CROSSINGS				
ES	WS	SS	NS	TOTAL
0	0	1	0	1
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	1	2
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
1	0	1	2	4
0	0	1	0	1
0	0	0	1	1
2	0	2	4	8

AimTD LLC
TURNING MOVEMENT COUNTS



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, Mar 18, 21	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana Citrus Sierra Lakes	PROJECT #: SC2846	LOCATION #: 15	CONTROL: SIGNAL
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LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 2	NR 1	SL 2	ST 2	SR 1	EL 2	ET 2	ER 1	WL 2	WT 2	WR 1	
7:00 AM	36	41	32	7	69	5	3	16	36	58	22	8	333
7:15 AM	37	41	48	13	90	10	8	8	34	55	13	7	364
7:30 AM	42	50	48	9	82	7	7	8	41	76	22	9	401
7:45 AM	44	55	67	10	84	4	3	18	32	53	24	14	408
8:00 AM	33	50	59	7	81	5	6	22	42	69	16	14	404
8:15 AM	43	49	81	11	65	11	5	26	34	59	24	10	418
8:30 AM	51	44	74	7	59	5	10	23	37	62	22	15	409
8:45 AM	39	63	92	24	65	8	7	31	54	69	20	6	478
VOLUMES	325	393	501	88	595	55	49	152	310	501	163	83	3,215
APPROACH %	27%	32%	41%	12%	81%	7%	10%	30%	61%	67%	22%	11%	
APP/DEPART	1,219	/	523	738	/	1,408	511	/	742	747	/	542	0
BEGIN PEAK HR	8:00 AM												
VOLUMES	166	206	306	49	270	29	28	102	167	259	82	45	1,709
APPROACH %	24%	30%	45%	14%	78%	8%	9%	34%	56%	67%	21%	12%	
PEAK HR FACTOR	0.874			0.897			0.807			0.975			0.894
APP/DEPART	678	/	277	348	/	697	297	/	458	386	/	277	0
4:00 PM	50	94	162	36	109	17	14	48	53	116	53	43	795
4:15 PM	52	103	178	24	76	16	20	55	60	111	58	36	789
4:30 PM	67	91	150	24	112	11	16	68	72	109	52	27	799
4:45 PM	53	142	154	41	109	8	15	65	64	123	45	42	861
5:00 PM	57	129	166	52	110	11	11	75	62	118	59	48	898
5:15 PM	68	122	154	31	89	16	16	51	46	118	64	42	817
5:30 PM	70	104	146	40	89	11	19	73	66	125	56	47	846
5:45 PM	85	123	155	40	99	20	19	62	64	125	63	46	901
VOLUMES	502	908	1,265	288	793	110	130	497	487	945	450	331	6,706
APPROACH %	19%	34%	47%	24%	67%	9%	12%	45%	44%	55%	26%	19%	
APP/DEPART	2,675	/	1,368	1,191	/	2,220	1,114	/	2,058	1,726	/	1,060	0
BEGIN PEAK HR	5:00 PM												
VOLUMES	280	478	621	163	387	58	65	261	238	486	242	183	3,462
APPROACH %	20%	35%	45%	27%	64%	10%	12%	46%	42%	53%	27%	20%	
PEAK HR FACTOR	0.950			0.879			0.892			0.973			0.961
APP/DEPART	1,379	/	726	608	/	1,108	564	/	1,049	911	/	579	0

Add U-Turns to Left Turns

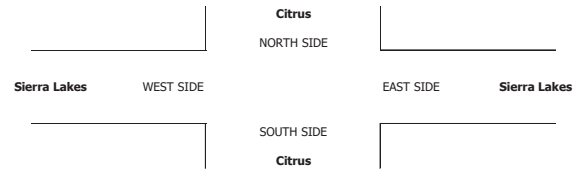
U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
1	0	2	1	4
0	0	0	0	0
3	0	2	1	6

RTOR			
NRR	SRR	ERR	WRR
4	2	25	8
11	1	19	3
7	4	18	4
19	0	24	8
20	1	17	9
19	3	14	4
25	1	16	11
27	5	32	1
132	17	165	48

91	10	79	25
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56	9	15	23
67	8	11	24
44	4	11	13
50	4	20	26
41	7	22	24
45	13	22	22
46	8	14	23
52	8	15	26
401	61	130	181

184	36	73	95
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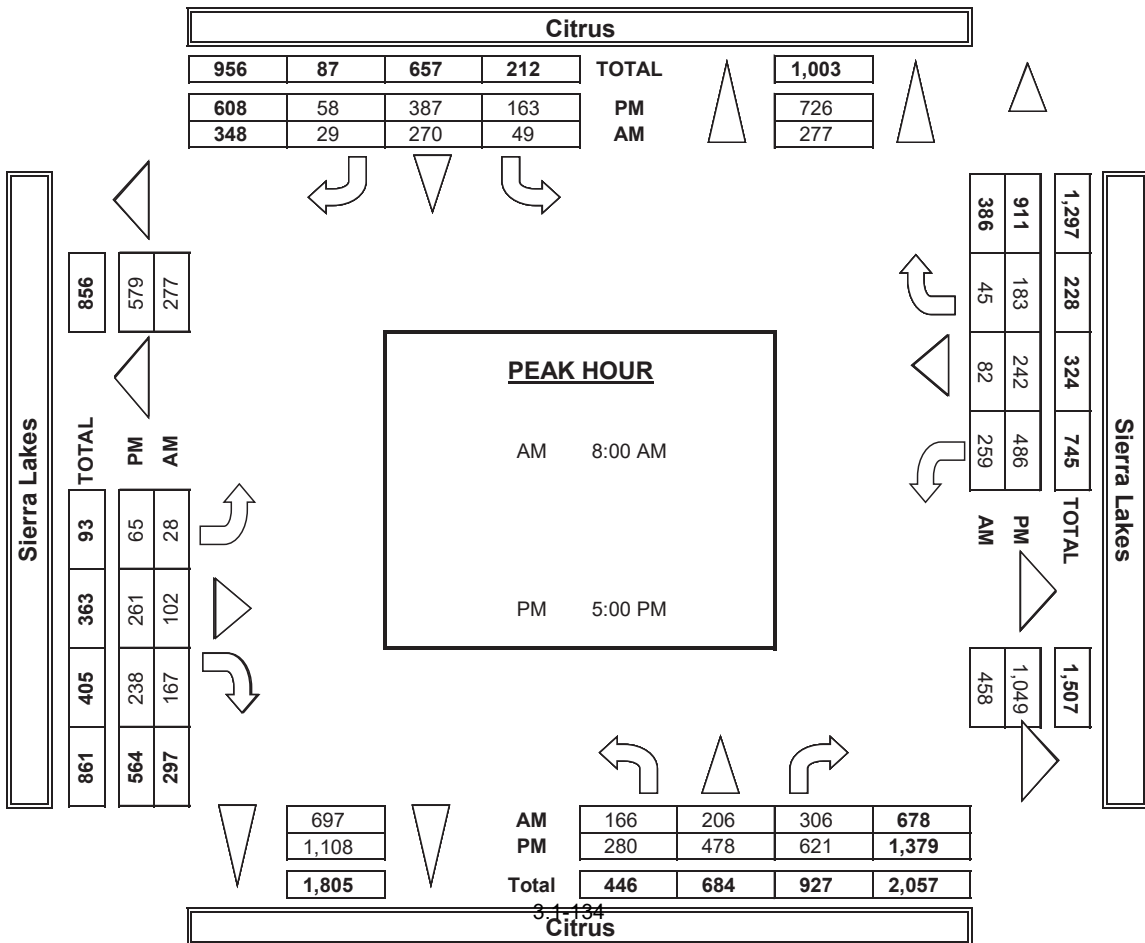
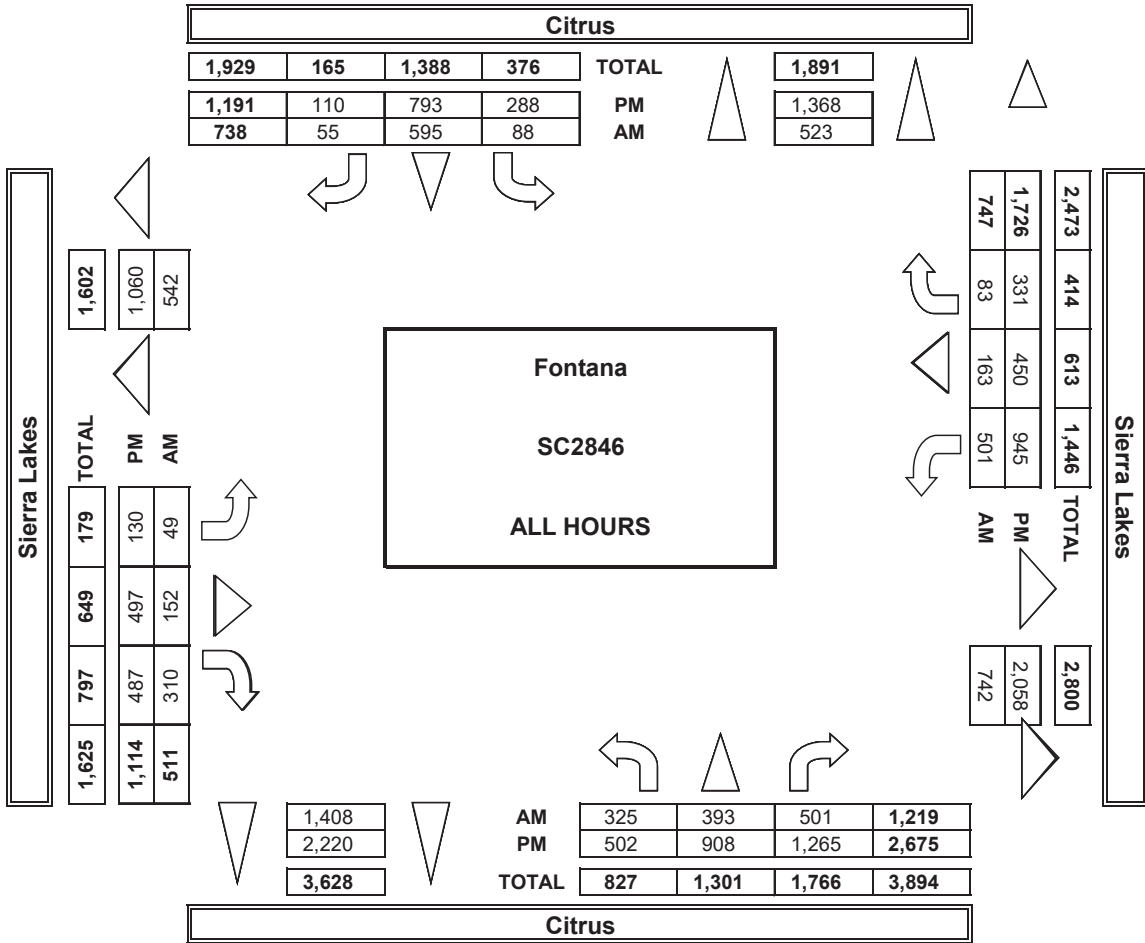


	ALL PED AND BIKE				TOTAL
	E SIDE	W SIDE	S SIDE	N SIDE	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	2	0	2
8:00 AM	0	0	1	0	1
8:15 AM	0	0	0	0	0
8:30 AM	1	0	1	0	2
8:45 AM	1	0	1	0	2
TOTAL	2	0	5	0	7
4:00 PM	2	1	0	1	4
4:15 PM	0	1	0	0	1
4:30 PM	1	0	3	0	4
4:45 PM	0	0	0	2	2
5:00 PM	1	0	0	0	1
5:15 PM	0	1	2	0	3
5:30 PM	0	0	0	0	0
5:45 PM	0	1	3	1	5
TOTAL	4	4	8	4	20

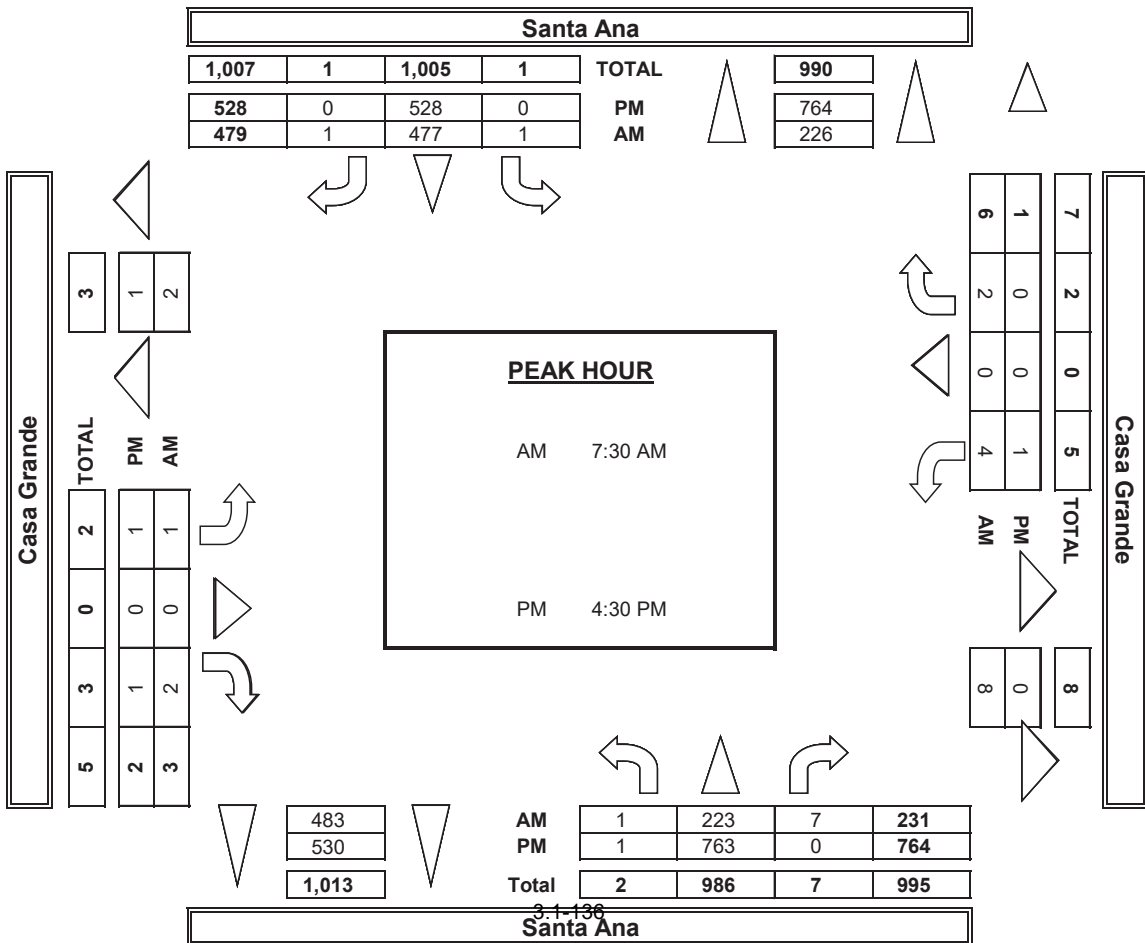
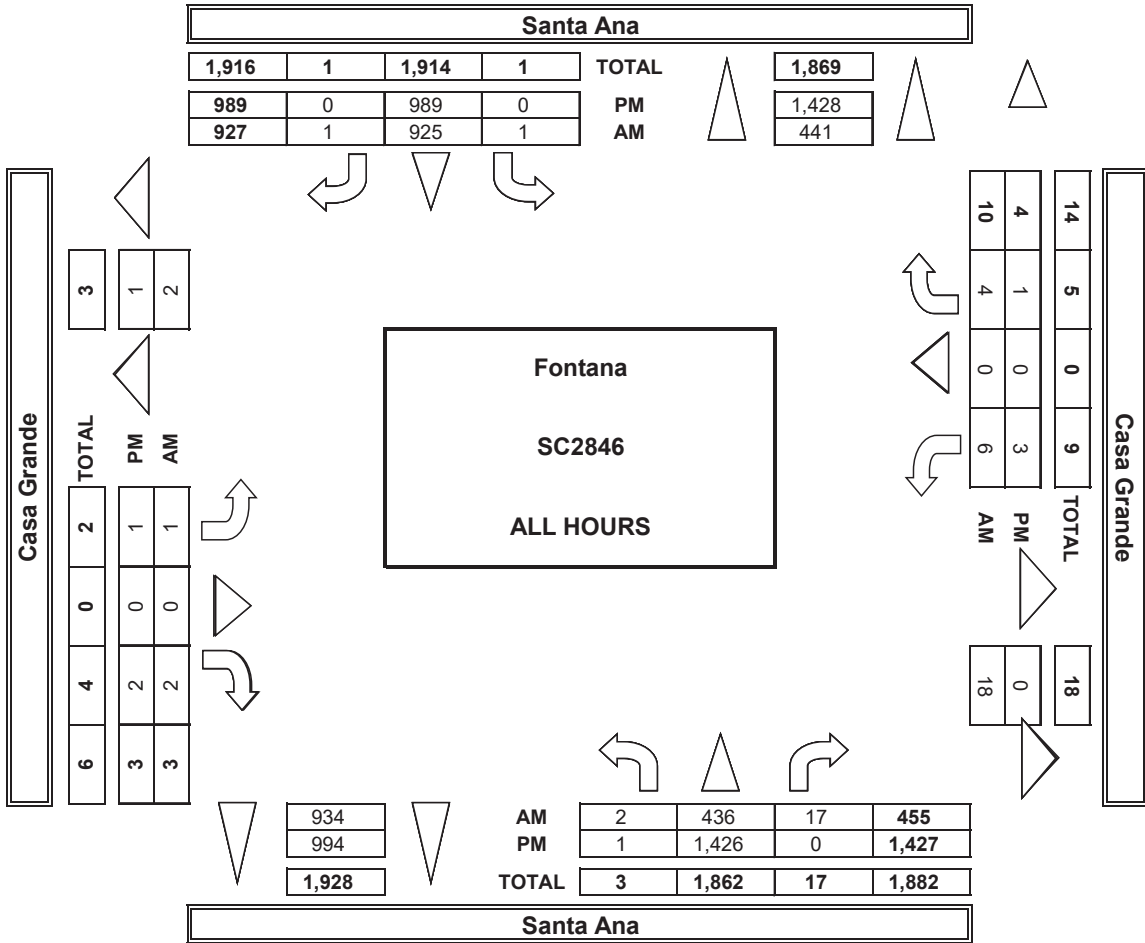
	PEDESTRIAN CROSSINGS				TOTAL
	E SIDE	W SIDE	S SIDE	N SIDE	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	2	0	2
8:00 AM	0	0	1	0	1
8:15 AM	0	0	0	0	0
8:30 AM	1	0	1	0	2
8:45 AM	1	0	1	0	2
TOTAL	2	0	5	0	7
4:00 PM	2	0	0	0	2
4:15 PM	0	0	0	0	0
4:30 PM	0	0	2	0	2
4:45 PM	0	0	0	2	2
5:00 PM	0	0	0	0	0
5:15 PM	0	0	2	0	2
5:30 PM	0	0	0	0	0
5:45 PM	0	0	1	0	1
TOTAL	2	0	5	2	9

	BICYCLE CROSSINGS				TOTAL
	ES	WS	SS	NS	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	0	0	0	0	0
4:00 PM	0	1	0	1	2
4:15 PM	0	1	0	0	1
4:30 PM	1	0	1	0	2
4:45 PM	0	0	0	0	0
5:00 PM	1	0	0	0	1
5:15 PM	0	1	0	0	1
5:30 PM	0	0	0	0	0
5:45 PM	0	1	2	1	4
TOTAL	2	4	3	2	11

AimTD LLC
TURNING MOVEMENT COUNTS



AimTD LLC
TURNING MOVEMENT COUNTS



2021-03-23/18:00:58



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, Mar 18, 21	LOCATION: NORTH & SOUTH: EAST & WEST:	Fontana Sierra Summit	PROJECT #: SC2846	LOCATION #: 18	CONTROL: SIGNAL
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NOTES:	AM		▲	<input type="checkbox"/> Add U-Turns to Left Turns
	PM		▲	
	MD		▲	
	OTHER		▲	
			▲	

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	34	42	0	0	109	12	6	0	32	0	0	0	235
7:15 AM	28	50	0	0	108	8	8	0	33	0	0	0	235
7:30 AM	27	55	0	0	94	22	4	0	36	0	0	0	238
7:45 AM	45	64	0	0	137	11	7	0	29	0	0	0	293
8:00 AM	31	63	0	0	93	8	12	0	30	0	0	0	237
8:15 AM	35	55	0	0	83	15	10	0	31	0	0	0	229
8:30 AM	25	46	0	0	94	16	9	0	25	0	0	0	215
8:45 AM	28	44	0	0	101	10	9	0	28	0	0	0	220
VOLUMES	253	419	0	0	819	102	65	0	244	0	0	0	1,913
APPROACH %	37%	61%	0%	0%	89%	11%	21%	0%	79%	0%	0%	0%	
APP/DEPART	683	/	484	921	/	1,074	309	/	0	0	/	355	0
BEGIN PEAK HR	7:15 AM												
VOLUMES	131	232	0	0	432	49	31	0	128	0	0	0	1,010
APPROACH %	35%	63%	0%	0%	90%	10%	19%	0%	81%	0%	0%	0%	
PEAK HR FACTOR	0.833			0.813			0.946			0.000			0.856
APP/DEPART	370	/	263	481	/	567	159	/	0	0	/	180	0
04:00 PM	53	132	0	0	98	24	38	0	70	0	0	0	415
4:15 PM	85	143	0	0	109	22	46	0	70	0	0	0	475
4:30 PM	80	130	0	0	112	42	46	0	79	0	0	0	489
4:45 PM	60	138	0	0	98	32	41	0	70	0	0	0	439
5:00 PM	81	157	0	0	90	23	53	0	71	0	0	0	475
5:15 PM	79	155	0	0	119	28	40	0	60	0	0	0	481
5:30 PM	78	141	0	0	119	34	37	0	63	0	0	0	472
5:45 PM	81	148	0	0	123	30	37	0	44	0	0	0	463
VOLUMES	597	1,144	0	0	868	235	338	0	527	0	0	0	3,728
APPROACH %	34%	65%	0%	0%	79%	21%	39%	0%	61%	0%	0%	0%	
APP/DEPART	1,758	/	1,484	1,105	/	1,412	865	/	0	0	/	832	0
BEGIN PEAK HR	4:30 PM												
VOLUMES	300	580	0	0	419	125	180	0	280	0	0	0	1,898
APPROACH %	34%	65%	0%	0%	77%	23%	39%	0%	61%	0%	0%	0%	
PEAK HR FACTOR	0.937			0.881			0.920			0.000			0.955
APP/DEPART	892	/	762	546	/	711	460	/	0	0	/	425	0

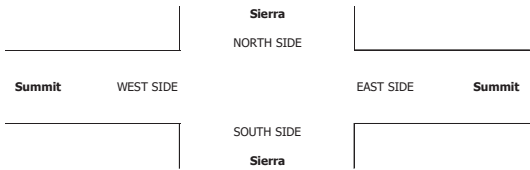
U-TURNS				
NB	SB	EB	WB	TTL
2	0	0	0	2
0	0	0	0	0
0	0	0	0	0
5	0	0	0	5
0	0	0	0	0
0	0	0	0	0
2	0	0	0	2
11	0	0	0	11

RTOR			
NRR	SRR	ERR	WRR
0	4	15	0
0	1	16	0
0	3	19	0
0	3	21	0
0	2	21	0
0	1	16	0
0	3	14	0
0	1	19	0
0	18	141	0

0	9	77	0
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0	10	43	0
0	6	50	0
0	18	41	0
0	13	40	0
0	14	30	0
0	13	25	0
0	12	39	0
0	14	29	0
0	100	297	0

0	58	136	0
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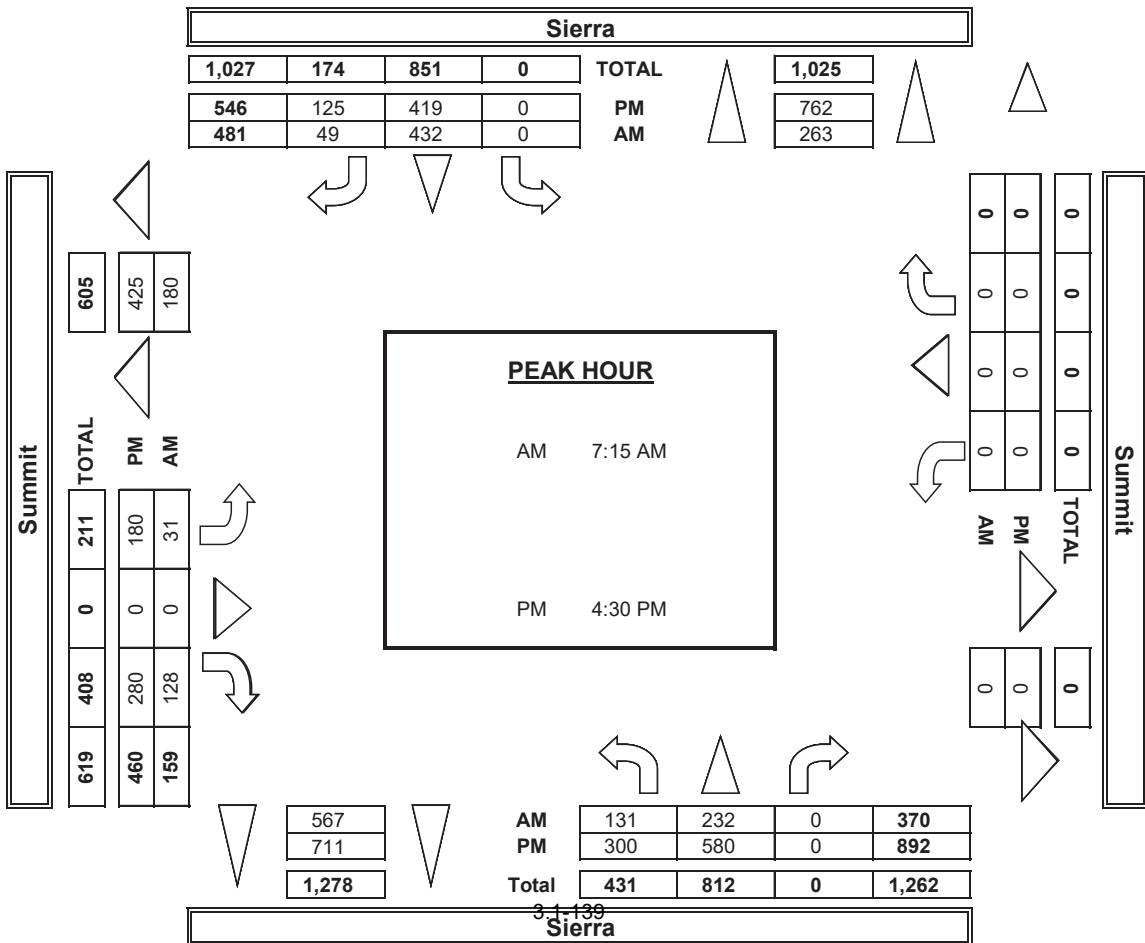
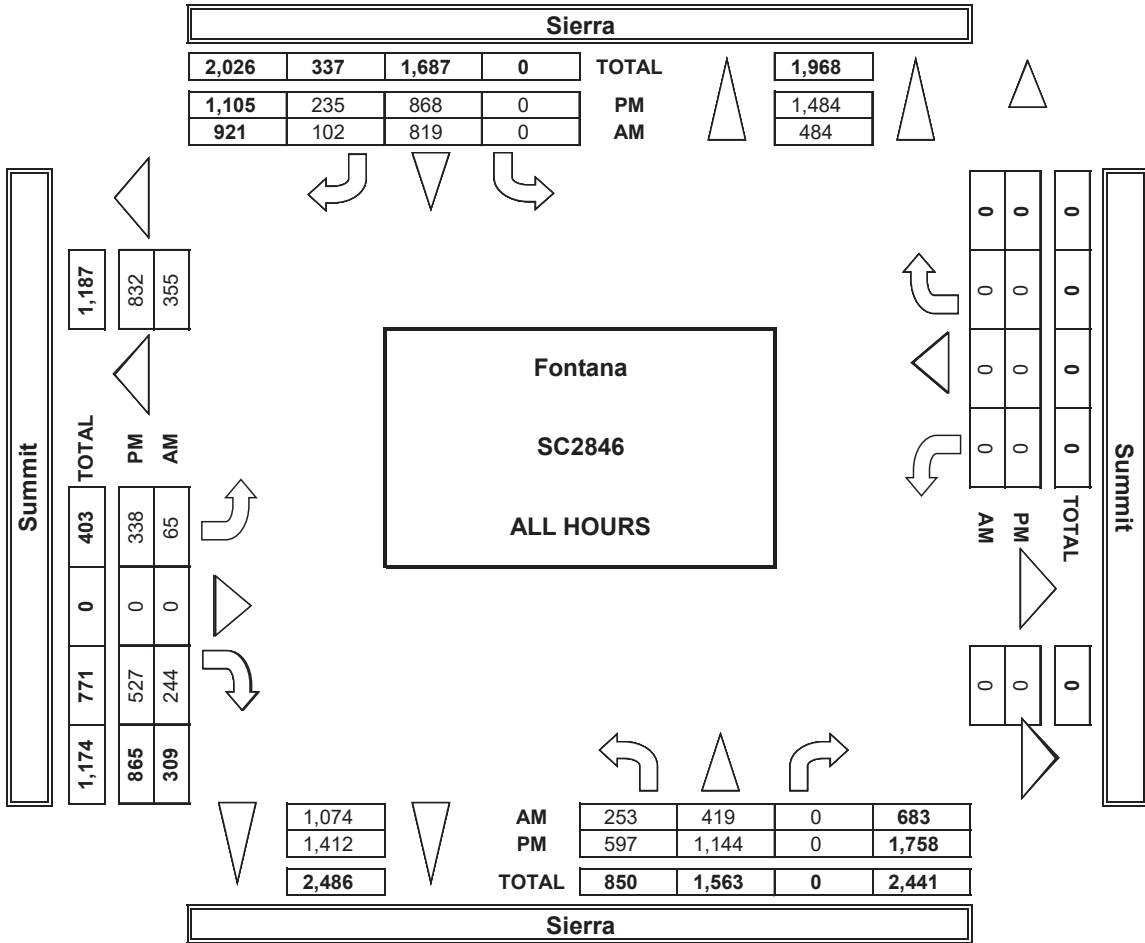


	ALL PED AND BIKE				TOTAL
	E SIDE	W SIDE	S SIDE	N SIDE	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	1	0	0	1
8:30 AM	0	1	0	0	1
8:45 AM	0	0	0	0	0
TOTAL	0	2	0	1	3
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	3	0	0	3
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	3	0	0	3

	PEDESTRIAN CROSSINGS				TOTAL
	E SIDE	W SIDE	S SIDE	N SIDE	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	1	0	0	1
8:30 AM	0	1	0	0	1
8:45 AM	0	0	0	0	0
TOTAL	0	2	0	1	3
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	3	0	0	3
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	3	0	0	3

	BICYCLE CROSSINGS				TOTAL
	ES	WS	SS	NS	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0

AimTD LLC
TURNING MOVEMENT COUNTS



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Mar 23, 21
 LOCATION: NORTH & SOUTH: Fontana, Sierra, Sierra Lakes
 EAST & WEST: Sierra Lakes
 PROJECT #: SC2846
 LOCATION #: 19
 CONTROL: SIGNAL



Add U-Turns to Left Turns

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Sierra NL 2	Sierra NT 3	NR 1	Sierra SL 2	Sierra ST 3	SR 1	Sierra Lakes EL 2	Sierra Lakes ET 2	ER 1	Sierra Lakes WL 2	Sierra Lakes WT 2	WR 1	
7:00 AM	39	92	26	10	126	12	8	11	58	11	15	22	430
7:15 AM	57	84	25	12	140	12	5	16	55	27	14	14	461
7:30 AM	34	87	21	19	130	24	11	12	84	22	21	18	483
7:45 AM	69	85	36	13	124	20	5	12	65	13	20	18	480
8:00 AM	62	88	25	25	129	24	11	13	72	21	14	32	516
8:15 AM	61	66	38	20	123	14	10	12	54	23	28	23	472
8:30 AM	66	67	26	17	126	17	15	18	54	13	19	19	457
8:45 AM	89	91	41	23	104	20	13	21	71	13	28	33	547
VOLUMES	477	660	238	139	1,002	143	78	115	513	143	159	179	3,846
APPROACH %	35%	48%	17%	11%	78%	11%	11%	16%	73%	30%	33%	37%	
APP/DEPART	1,375	/	932	1,284	/	1,661	706	/	477	481	/	776	0
BEGIN PEAK HR	8:00 AM												
VOLUMES	278	312	130	85	482	75	49	64	251	70	89	107	1,992
APPROACH %	39%	43%	18%	13%	75%	12%	13%	18%	69%	26%	33%	40%	
PEAK HR FACTOR	0.814												
APP/DEPART	720	/	479	642	/	804	364	/	268	266	/	441	0
04:00 PM	138	140	54	32	130	20	31	55	163	51	49	32	895
4:15 PM	167	167	47	29	141	34	30	47	163	46	48	42	961
4:30 PM	145	145	47	34	157	30	50	64	183	43	46	34	978
4:45 PM	149	168	46	33	156	36	43	52	160	40	42	26	951
5:00 PM	173	177	46	47	127	29	42	72	171	44	35	33	996
5:15 PM	173	186	55	40	143	36	42	45	189	30	46	37	1,022
5:30 PM	145	174	52	32	130	30	26	64	177	38	33	53	954
5:45 PM	153	147	49	35	108	31	39	49	156	36	54	38	895
VOLUMES	1,243	1,304	396	282	1,092	246	303	448	1,382	328	353	295	7,652
APPROACH %	42%	44%	13%	17%	67%	15%	14%	21%	64%	24%	36%	30%	
APP/DEPART	2,943	/	1,929	1,620	/	2,787	2,113	/	1,100	976	/	1,836	0
BEGIN PEAK HR	4:30 PM												
VOLUMES	640	676	194	154	583	131	177	233	703	157	169	130	3,947
APPROACH %	42%	45%	13%	18%	67%	15%	16%	21%	63%	34%	37%	29%	
PEAK HR FACTOR	0.912												
APP/DEPART	1,510	/	994	868	/	1,447	1,113	/	570	456	/	936	0

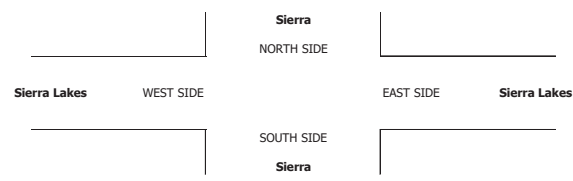
U-TURNS				
NB	SB	EB	WB	TTL
2	0	0	0	2
0	2	0	0	2
0	1	0	0	1
0	1	0	0	1
0	3	0	0	3
0	1	0	0	1
1	2	0	0	3
0	5	0	0	5
3	15	0	0	18

RTOR			
NRR	SRR	ERR	WRR
4	4	25	8
8	5	22	8
5	5	42	10
3	8	27	9
3	13	32	13
11	0	17	9
6	4	15	6
10	8	45	19
50	47	225	82

30	25	109	47
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24	6	84	13
21	12	63	21
16	8	57	17
13	21	79	9
19	11	48	17
14	5	76	13
15	15	77	24
10	11	68	13
132	89	352	127

62	45	260	56
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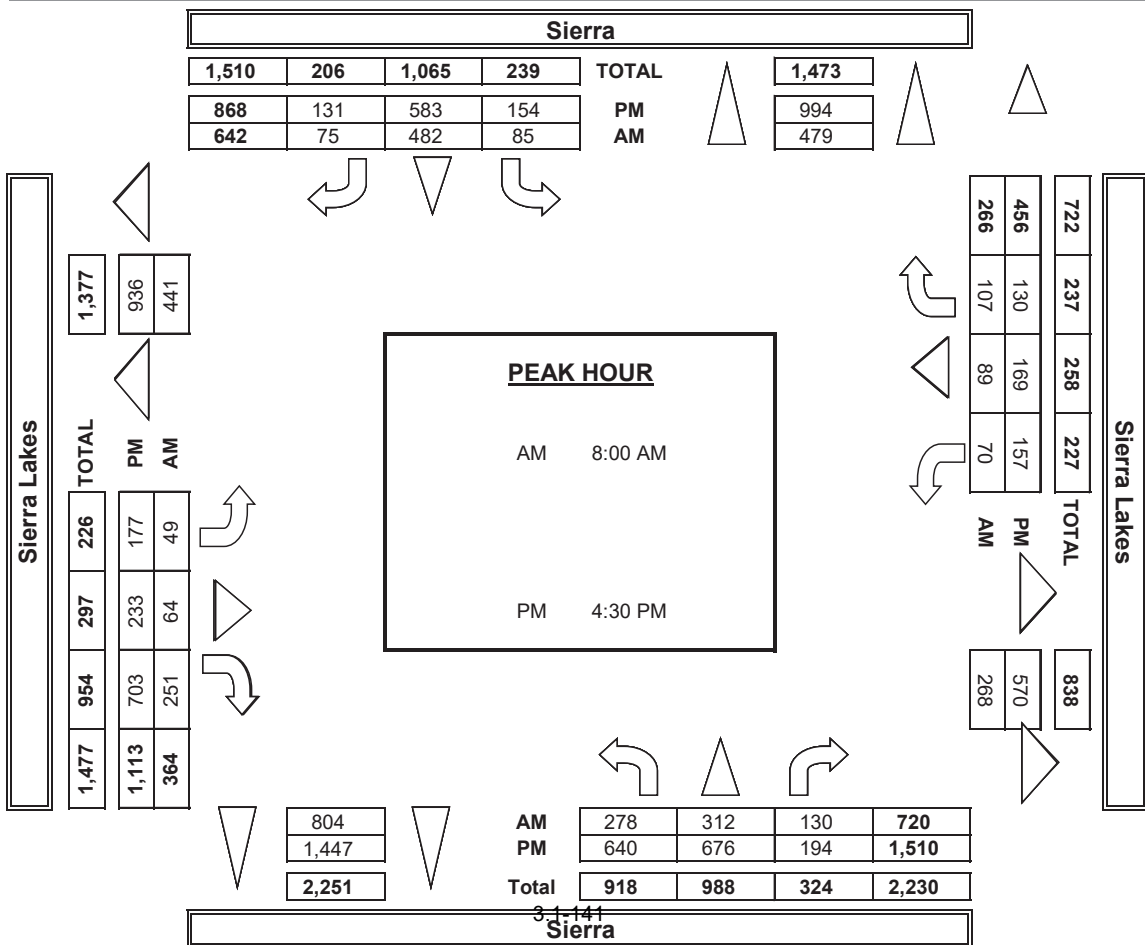
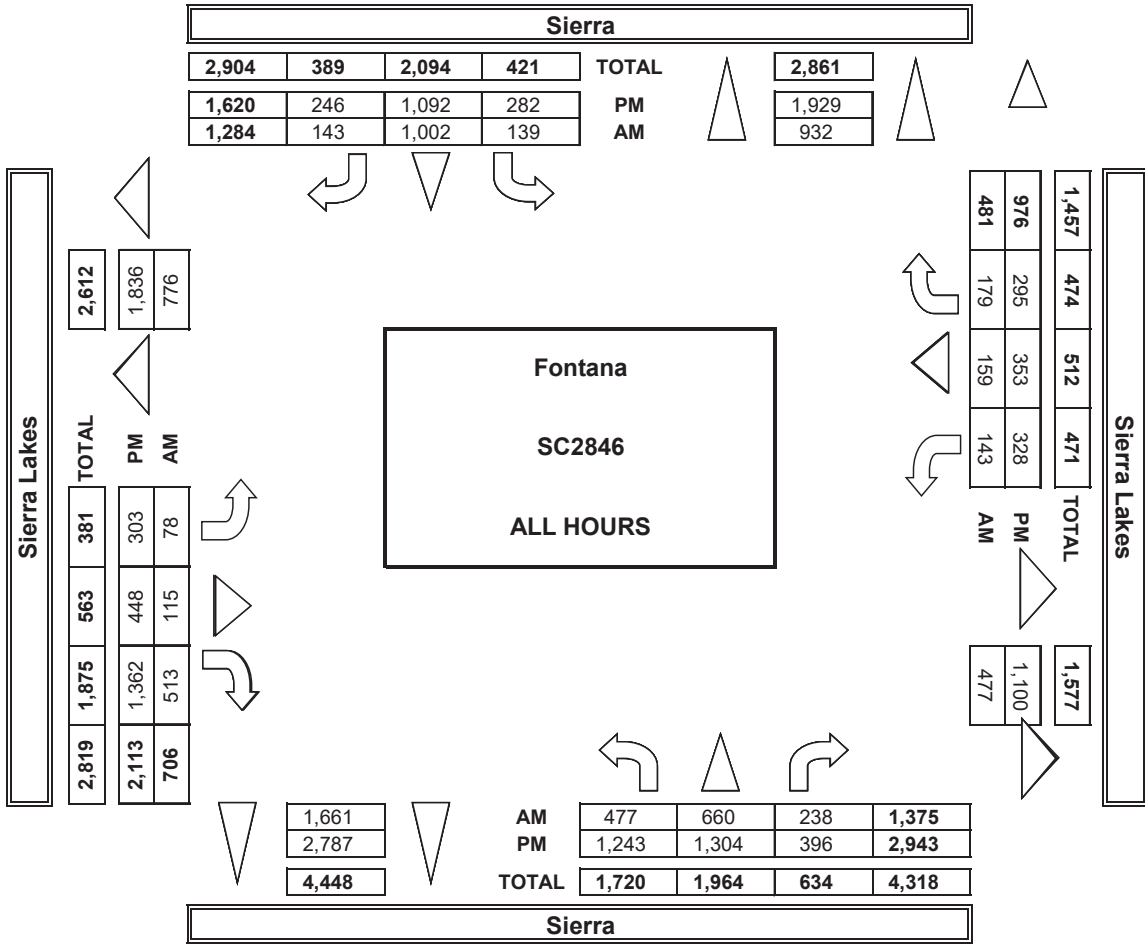
AM	PM
7:00 AM	4:00 PM
7:15 AM	4:15 PM
7:30 AM	4:30 PM
7:45 AM	4:45 PM
8:00 AM	5:00 PM
8:15 AM	5:15 PM
8:30 AM	5:30 PM
8:45 AM	5:45 PM
TOTAL	TOTAL

ALL PED AND BIKE				
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
3	0	0	2	5
0	0	1	1	2
0	0	0	1	1
0	0	1	0	1
0	0	0	0	0
3	0	0	2	5
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
6	0	2	6	14
3	0	1	1	5
0	2	1	3	6
0	0	0	0	0
0	0	0	0	0
2	1	1	2	6
0	2	1	2	5
0	0	1	0	1
0	0	1	0	1
5	5	6	8	24

PEDESTRIAN CROSSINGS				
E SIDE	W SIDE	S SIDE	N SIDE	TOTAL
3	0	0	2	5
0	0	0	1	1
0	0	0	0	0
0	0	1	0	1
0	0	0	0	0
3	0	0	2	5
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
6	0	1	5	12
3	0	1	1	5
0	2	1	2	5
0	0	0	0	0
0	0	0	0	0
0	1	1	0	2
0	2	1	1	4
0	0	0	0	0
0	0	1	0	1
3	5	5	4	17

BICYCLE CROSSINGS				
ES	WS	SS	NS	TOTAL
0	0	0	0	0
0	0	1	0	1
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	1	2
0	0	0	0	0
0	0	0	1	1
0	0	0	0	0
2	0	0	2	4
0	0	0	1	1
0	0	1	0	1
0	0	0	0	0
2	0	1	4	7

AimTD LLC
TURNING MOVEMENT COUNTS



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APPENDIX 3.2:

EXISTING (2021) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↗		↵	↕↗		↵	↕	↗	↵	↕	↗
Traffic Vol, veh/h	9	404	6	47	227	33	5	3	150	92	4	8
Future Vol, veh/h	9	404	6	47	227	33	5	3	150	92	4	8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	430	6	50	241	35	5	3	160	98	4	9
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	13.7	11.3	11.5	12.1
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	96%	0%	100%	70%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	4%	0%	0%	30%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	3	150	9	269	141	47	151	109	92	4
LT Vol	5	0	0	9	0	0	47	0	0	92	0
Through Vol	0	3	0	0	269	135	0	151	76	0	4
RT Vol	0	0	150	0	0	6	0	0	33	0	0
Lane Flow Rate	5	3	160	10	287	150	50	161	116	98	4
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.011	0.006	0.281	0.018	0.499	0.259	0.097	0.291	0.202	0.207	0.008
Departure Headway (Hd)	7.535	7.035	6.335	6.768	6.268	6.239	7.001	6.501	6.289	7.628	7.128
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	473	507	565	528	573	575	511	551	569	469	500
Service Time	5.305	4.805	4.105	4.525	4.025	3.995	4.764	4.264	4.051	5.405	4.905
HCM Lane V/C Ratio	0.011	0.006	0.283	0.019	0.501	0.261	0.098	0.292	0.204	0.209	0.008
HCM Control Delay	10.4	9.8	11.6	9.7	15.2	11.2	10.5	11.9	10.7	12.4	10
HCM Lane LOS	B	A	B	A	C	B	B	B	B	B	A
HCM 95th-tile Q	0	0	1.1	0.1	2.8	1	0.3	1.2	0.7	0.8	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	646	292	2	0	16
Future Vol, veh/h	0	646	292	2	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	687	311	2	0	17

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	- 157
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0 *976
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %		-	-	-	1
Mov Cap-1 Maneuver	-	-	-	-	- *976
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

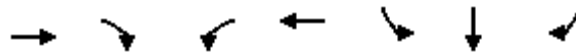
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	976
HCM Lane V/C Ratio	-	-	-	0.017
HCM Control Delay (s)	-	-	-	8.8
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.1

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

Timings

3: I-15 SB Ramp & Duncan Canyon Rd.

04/22/2021

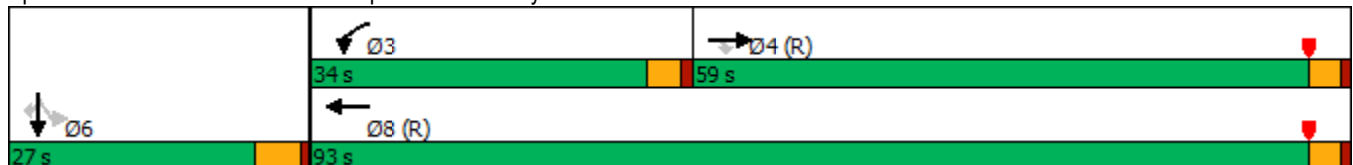


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↗↘	↑↑	↘	↗	↗
Traffic Volume (vph)	222	425	388	252	202	11	41
Future Volume (vph)	222	425	388	252	202	11	41
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8		6	
Permitted Phases		4			6		6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	34.0	34.0	12.0	29.0	13.0	13.0	13.0
Total Split (s)	59.0	59.0	34.0	93.0	27.0	27.0	27.0
Total Split (%)	49.2%	49.2%	28.3%	77.5%	22.5%	22.5%	22.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effct Green (s)	72.9	72.9	20.3	97.2	13.8	13.8	13.8
Actuated g/C Ratio	0.61	0.61	0.17	0.81	0.12	0.12	0.12
v/c Ratio	0.11	0.41	0.74	0.10	0.62	0.60	0.21
Control Delay	11.3	2.4	66.8	2.3	63.7	62.7	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	2.4	66.8	2.3	63.7	62.7	15.1
LOS	B	A	E	A	E	E	B
Approach Delay	5.5			41.4		55.4	
Approach LOS	A			D		E	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 28.6
 Intersection LOS: C
 Intersection Capacity Utilization 54.9%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 3: I-15 SB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 3: I-15 SB Ramp & Duncan Canyon Rd.

04/22/2021

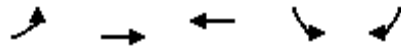


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↘↗	↑↑					↘	↗	↗
Traffic Volume (veh/h)	0	222	425	388	252	0	0	0	0	202	11	41
Future Volume (veh/h)	0	222	425	388	252	0	0	0	0	202	11	41
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	247	404	431	280	0				233	0	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2343	1045	505	2981	0				307	0	136
Arrive On Green	0.00	0.66	0.66	0.24	1.00	0.00				0.09	0.00	0.09
Sat Flow, veh/h	0	3647	1585	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	247	404	431	280	0				233	0	30
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	3.1	14.0	14.3	0.0	0.0				7.7	0.0	2.1
Cycle Q Clear(g_c), s	0.0	3.1	14.0	14.3	0.0	0.0				7.7	0.0	2.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2343	1045	505	2981	0				307	0	136
V/C Ratio(X)	0.00	0.11	0.39	0.85	0.09	0.00				0.76	0.00	0.22
Avail Cap(c_a), veh/h	0	2343	1045	864	2981	0				653	0	291
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.98	0.98	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.5	9.3	44.1	0.0	0.0				53.6	0.0	51.1
Incr Delay (d2), s/veh	0.0	0.1	1.1	4.1	0.1	0.0				3.9	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	4.5	5.6	0.0	0.0				3.5	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.6	10.4	48.2	0.1	0.0				57.5	0.0	51.9
LnGrp LOS	A	A	B	D	A	A				E	A	D
Approach Vol, veh/h		651			711						263	
Approach Delay, s/veh		9.3			29.3						56.8	
Approach LOS		A			C						E	
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			21.6	83.1		15.3		104.7				
Change Period (Y+Rc), s			4.0	4.0		5.0		4.0				
Max Green Setting (Gmax), s			30.0	55.0		22.0		89.0				
Max Q Clear Time (g_c+I1), s			16.3	16.0		9.7		2.0				
Green Ext Time (p_c), s			1.3	3.0		0.7		1.8				
Intersection Summary												
HCM 6th Ctrl Delay			25.7									
HCM 6th LOS			C									
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings

4: Beech Ave. & I-15 SB Ramps

04/22/2021

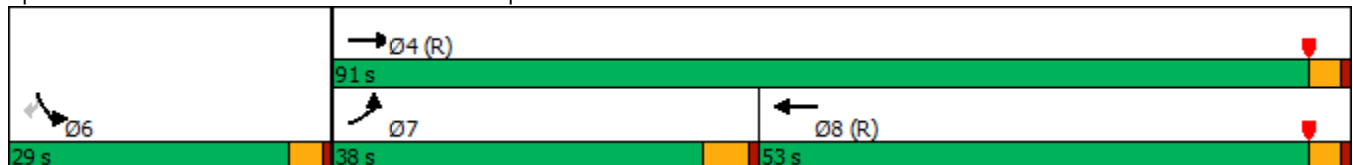


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations	↖	↗↗	↗↗	↖	↗
Traffic Volume (vph)	262	457	424	194	252
Future Volume (vph)	262	457	424	194	252
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	5.0	5.0
Minimum Split (s)	10.0	12.0	12.0	9.0	9.0
Total Split (s)	38.0	91.0	53.0	29.0	29.0
Total Split (%)	31.7%	75.8%	44.2%	24.2%	24.2%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	None	None
Act Effct Green (s)	24.5	92.8	63.3	19.2	19.2
Actuated g/C Ratio	0.20	0.77	0.53	0.16	0.16
v/c Ratio	0.79	0.18	0.54	0.75	0.57
Control Delay	60.6	4.1	5.8	63.6	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	4.1	5.8	63.6	9.7
LOS	E	A	A	E	A
Approach Delay		24.7	5.8	33.2	
Approach LOS		C	A	C	

Intersection Summary

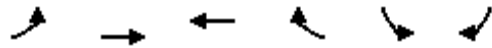
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 18.2
 Intersection LOS: B
 Intersection Capacity Utilization 62.8%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 4: Beech Ave. & I-15 SB Ramps



HCM 6th Signalized Intersection Summary
 4: Beech Ave. & I-15 SB Ramps

04/22/2021

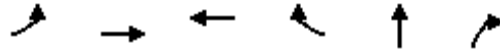


Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↘	↑↑	↑↑		↘	↗	
Traffic Volume (veh/h)	262	457	424	491	194	252	
Future Volume (veh/h)	262	457	424	491	194	252	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	285	497	461	534	211	273	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	318	2644	931	830	337	300	
Arrive On Green	0.18	0.74	0.87	0.87	0.19	0.19	
Sat Flow, veh/h	1781	3647	1870	1585	1781	1585	
Grp Volume(v), veh/h	285	497	461	534	211	273	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	18.8	5.0	6.9	11.6	13.1	20.2	
Cycle Q Clear(g_c), s	18.8	5.0	6.9	11.6	13.1	20.2	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	318	2644	931	830	337	300	
V/C Ratio(X)	0.90	0.19	0.50	0.64	0.63	0.91	
Avail Cap(c_a), veh/h	490	2644	931	830	371	330	
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.86	0.86	1.00	1.00	
Uniform Delay (d), s/veh	48.2	4.6	4.0	4.3	44.7	47.6	
Incr Delay (d2), s/veh	13.2	0.2	1.6	3.3	2.8	26.6	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	9.2	1.5	2.0	2.7	5.9	18.7	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	61.4	4.7	5.6	7.6	47.6	74.2	
LnGrp LOS	E	A	A	A	D	E	
Approach Vol, veh/h		782	995		484		
Approach Delay, s/veh		25.4	6.7		62.6		
Approach LOS		C	A		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				93.3	26.7	26.4	66.9
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				87.0	25.0	33.0	49.0
Max Q Clear Time (g_c+I1), s				7.0	22.2	20.8	13.6
Green Ext Time (p_c), s				3.3	0.5	0.6	7.3
Intersection Summary							
HCM 6th Ctrl Delay			25.1				
HCM 6th LOS			C				

Timings

5: I-15 NB Ramp & Duncan Canyon Rd.

04/22/2021

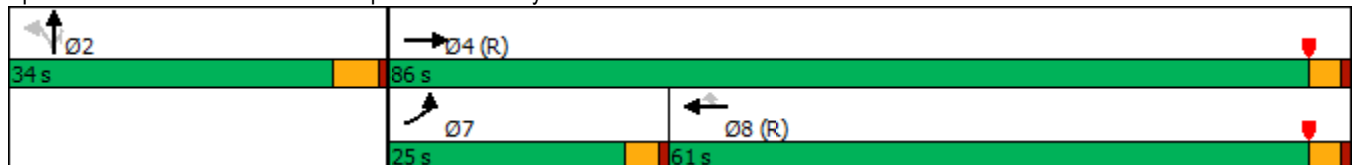


Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations	↶	↷	↶	↷	↷	↷
Traffic Volume (vph)	70	354	538	96	2	257
Future Volume (vph)	70	354	538	96	2	257
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8		2	
Permitted Phases				8		2
Detector Phase	7	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	30.0	36.0	36.0	13.0	13.0
Total Split (s)	25.0	86.0	61.0	61.0	34.0	34.0
Total Split (%)	20.8%	71.7%	50.8%	50.8%	28.3%	28.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	10.9	97.8	85.3	85.3	13.2	13.2
Actuated g/C Ratio	0.09	0.82	0.71	0.71	0.11	0.11
v/c Ratio	0.48	0.13	0.23	0.09	0.58	0.51
Control Delay	43.2	2.8	7.5	1.8	61.9	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.2	2.8	7.5	1.8	61.9	8.6
LOS	D	A	A	A	E	A
Approach Delay		9.5	6.7		23.8	
Approach LOS		A	A		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.58
 Intersection Signal Delay: 11.9
 Intersection LOS: B
 Intersection Capacity Utilization 54.9%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 5: I-15 NB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 5: I-15 NB Ramp & Duncan Canyon Rd.

04/22/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	354	0	0	538	96	101	2	257	0	0	0
Future Volume (veh/h)	70	354	0	0	538	96	101	2	257	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	77	389	0	0	591	105	111	2	234			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	110	2899	0	0	2562	1143	191	3	305			
Arrive On Green	0.12	1.00	0.00	0.00	0.72	0.72	0.11	0.11	0.11			
Sat Flow, veh/h	1781	3647	0	0	3647	1585	1751	32	2790			
Grp Volume(v), veh/h	77	389	0	0	591	105	113	0	234			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1585	1783	0	1395			
Q Serve(g_s), s	5.0	0.0	0.0	0.0	6.7	2.4	7.2	0.0	9.8			
Cycle Q Clear(g_c), s	5.0	0.0	0.0	0.0	6.7	2.4	7.2	0.0	9.8			
Prop In Lane	1.00		0.00	0.00		1.00	0.98		1.00			
Lane Grp Cap(c), veh/h	110	2899	0	0	2562	1143	195	0	305			
V/C Ratio(X)	0.70	0.13	0.00	0.00	0.23	0.09	0.58	0.00	0.77			
Avail Cap(c_a), veh/h	312	2899	0	0	2562	1143	431	0	674			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.97	0.97	0.00	0.00	0.99	0.99	1.00	0.00	1.00			
Uniform Delay (d), s/veh	51.6	0.0	0.0	0.0	5.6	5.0	50.8	0.0	52.0			
Incr Delay (d2), s/veh	7.7	0.1	0.0	0.0	0.2	0.2	2.7	0.0	4.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	0.0	2.1	0.7	3.3	0.0	3.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.2	0.1	0.0	0.0	5.8	5.2	53.6	0.0	56.0			
LnGrp LOS	E	A	A	A	A	A	D	A	E			
Approach Vol, veh/h		466			696			347				
Approach Delay, s/veh		9.9			5.7			55.2				
Approach LOS		A			A			E				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		18.1		101.9			11.4	90.5				
Change Period (Y+Rc), s		5.0		4.0			4.0	4.0				
Max Green Setting (Gmax), s		29.0		82.0			21.0	57.0				
Max Q Clear Time (g_c+I1), s		11.8		2.0			7.0	8.7				
Green Ext Time (p_c), s		1.3		2.5			0.1	4.4				
Intersection Summary												
HCM 6th Ctrl Delay				18.4								
HCM 6th LOS				B								

Timings

6: Beech Ave. & I-15 NB Ramps

04/22/2021

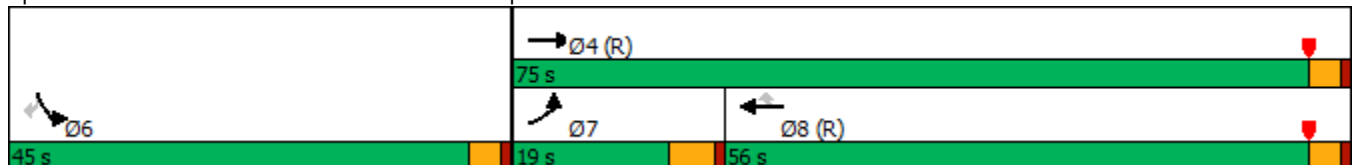


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗↗	↖↖	↖	↖	↖
Traffic Volume (vph)	72	578	822	153	288	93
Future Volume (vph)	72	578	822	153	288	93
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0	12.0
Total Split (s)	19.0	75.0	56.0	56.0	45.0	45.0
Total Split (%)	15.8%	62.5%	46.7%	46.7%	37.5%	37.5%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	11.4	82.1	65.7	65.7	29.9	29.9
Actuated g/C Ratio	0.10	0.68	0.55	0.55	0.25	0.25
v/c Ratio	0.54	0.30	0.53	0.20	0.82	0.25
Control Delay	52.6	9.2	20.3	3.2	57.2	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.6	9.2	20.3	3.2	57.2	9.5
LOS	D	A	C	A	E	A
Approach Delay		14.0	17.6		45.5	
Approach LOS		B	B		D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 21.7
 Intersection LOS: C
 Intersection Capacity Utilization 53.7%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
 6: Beech Ave. & I-15 NB Ramps

04/22/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗↗	↖	↖	↖	
Traffic Volume (veh/h)	72	578	822	153	288	93	
Future Volume (veh/h)	72	578	822	153	288	93	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	90	722	1028	127	360	41	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	112	2524	2152	960	397	353	
Arrive On Green	0.13	1.00	0.61	0.61	0.22	0.22	
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585	
Grp Volume(v), veh/h	90	722	1028	127	360	41	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	5.9	0.0	19.3	4.1	23.6	2.5	
Cycle Q Clear(g_c), s	5.9	0.0	19.3	4.1	23.6	2.5	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	112	2524	2152	960	397	353	
V/C Ratio(X)	0.80	0.29	0.48	0.13	0.91	0.12	
Avail Cap(c_a), veh/h	208	2524	2152	960	609	542	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.95	0.95	0.85	0.85	1.00	1.00	
Uniform Delay (d), s/veh	51.7	0.0	13.1	10.2	45.4	37.2	
Incr Delay (d2), s/veh	11.7	0.3	0.6	0.2	12.2	0.1	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	2.8	0.1	7.1	1.4	11.8	2.4	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	63.3	0.3	13.8	10.4	57.6	37.3	
LnGrp LOS	E	A	B	B	E	D	
Approach Vol, veh/h		812	1155		401		
Approach Delay, s/veh		7.3	13.4		55.5		
Approach LOS		A	B		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				89.2	30.8	12.6	76.7
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				71.0	41.0	14.0	52.0
Max Q Clear Time (g_c+I1), s				2.0	25.6	7.9	21.3
Green Ext Time (p_c), s				5.2	1.1	0.1	8.3
Intersection Summary							
HCM 6th Ctrl Delay			18.4				
HCM 6th LOS			B				

Timings

7: Beech Ave. & Summit Ave.

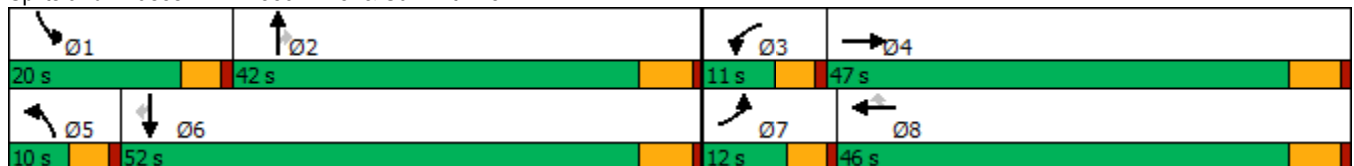
04/22/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	75	107	66	141	383	38	288	43	239	212	30
Future Volume (vph)	75	107	66	141	383	38	288	43	239	212	30
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	43.8	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	47.0	11.0	46.0	46.0	10.0	42.0	42.0	20.0	52.0	52.0
Total Split (%)	10.0%	39.2%	9.2%	38.3%	38.3%	8.3%	35.0%	35.0%	16.7%	43.3%	43.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	6.1	13.6	5.8	11.3	11.3	5.3	11.4	11.4	8.8	21.5	21.5
Actuated g/C Ratio	0.11	0.24	0.10	0.20	0.20	0.09	0.20	0.20	0.16	0.38	0.38
v/c Ratio	0.21	0.16	0.20	0.21	0.64	0.12	0.42	0.10	0.47	0.17	0.05
Control Delay	27.3	17.6	27.7	21.8	8.1	28.0	23.4	0.5	26.2	15.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	17.6	27.7	21.8	8.1	28.0	23.4	0.5	26.2	15.0	0.1
LOS	C	B	C	C	A	C	C	A	C	B	A
Approach Delay		21.2		13.5			21.2			19.6	
Approach LOS		C		B			C			B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 56.4
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.64
 Intersection Signal Delay: 18.0
 Intersection LOS: B
 Intersection Capacity Utilization 51.6%
 ICU Level of Service A
 Analysis Period (min) 15
































Splits and Phases: 7: Beech Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary

7: Beech Ave. & Summit Ave.

04/22/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	75	107	21	66	141	383	38	288	43	239	212	30
Future Volume (veh/h)	75	107	21	66	141	383	38	288	43	239	212	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	79	113	17	69	148	292	40	303	33	252	223	29
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	792	117	205	890	396	144	694	304	379	936	417
Arrive On Green	0.06	0.25	0.25	0.06	0.25	0.25	0.04	0.20	0.20	0.11	0.26	0.26
Sat Flow, veh/h	3456	3106	458	3456	3554	1581	3456	3554	1558	3456	3554	1581
Grp Volume(v), veh/h	79	64	66	69	148	292	40	303	33	252	223	29
Grp Sat Flow(s),veh/h/ln	1728	1777	1787	1728	1777	1581	1728	1777	1558	1728	1777	1581
Q Serve(g_s), s	1.2	1.5	1.6	1.0	1.8	9.3	0.6	4.1	1.0	3.8	2.7	0.8
Cycle Q Clear(g_c), s	1.2	1.5	1.6	1.0	1.8	9.3	0.6	4.1	1.0	3.8	2.7	0.8
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	221	453	456	205	890	396	144	694	304	379	936	417
V/C Ratio(X)	0.36	0.14	0.15	0.34	0.17	0.74	0.28	0.44	0.11	0.66	0.24	0.07
Avail Cap(c_a), veh/h	468	1340	1347	405	2614	1163	341	2354	1032	974	3004	1337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	15.7	15.8	24.7	16.0	18.8	25.4	19.3	18.1	23.4	15.8	15.1
Incr Delay (d2), s/veh	0.4	0.1	0.1	0.4	0.1	2.7	0.4	0.4	0.2	0.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.5	0.6	0.4	0.6	3.1	0.2	1.5	0.3	1.4	0.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.9	15.9	15.9	25.0	16.1	21.5	25.8	19.8	18.2	24.1	15.9	15.2
LnGrp LOS	C	B	B	C	B	C	C	B	B	C	B	B
Approach Vol, veh/h		209			509			376			504	
Approach Delay, s/veh		19.3			20.4			20.3			20.0	
Approach LOS		B			C			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.6	16.5	7.8	19.7	6.9	20.2	8.1	19.5				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	15.4	36.2	6.4	41.2	5.4	46.2	7.4	40.2				
Max Q Clear Time (g_c+I1), s	5.8	6.1	3.0	3.6	2.6	4.7	3.2	11.3				
Green Ext Time (p_c), s	0.3	1.9	0.0	0.6	0.0	1.4	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay			20.1									
HCM 6th LOS			C									

Timings

9: Lytle Creek Rd. & Summit Ave.

04/22/2021

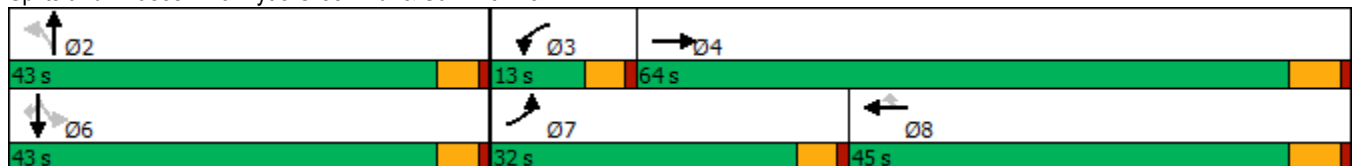


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↖	↕	↖	↕	↖
Traffic Volume (vph)	139	271	17	515	62	53	109	34	73	158
Future Volume (vph)	139	271	17	515	62	53	109	34	73	158
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8			2		6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	9.6	28.8	28.8	33.7	33.7	31.7	31.7	31.7
Total Split (s)	32.0	64.0	13.0	45.0	45.0	43.0	43.0	43.0	43.0	43.0
Total Split (%)	26.7%	53.3%	10.8%	37.5%	37.5%	35.8%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None
Act Effct Green (s)	9.6	27.3	5.5	14.7	14.7	11.2	11.2	11.2	11.2	11.2
Actuated g/C Ratio	0.19	0.54	0.11	0.29	0.29	0.22	0.22	0.22	0.22	0.22
v/c Ratio	0.46	0.18	0.10	0.55	0.13	0.20	0.34	0.14	0.20	0.36
Control Delay	24.6	6.9	25.5	18.0	2.7	20.8	21.0	20.1	20.0	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	6.9	25.5	18.0	2.7	20.8	21.0	20.1	20.0	6.6
LOS	C	A	C	B	A	C	C	C	B	A
Approach Delay		12.3		16.6			20.9		12.0	
Approach LOS		B		B			C		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 51
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 15.0
 Intersection LOS: B
 Intersection Capacity Utilization 56.1%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 9: Lytle Creek Rd. & Summit Ave.



HCM 6th Signalized Intersection Summary
 9: Lytle Creek Rd. & Summit Ave.

04/22/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗		↖	↗	↗
Traffic Volume (veh/h)	139	271	41	17	515	62	53	109	17	34	73	158
Future Volume (veh/h)	139	271	41	17	515	62	53	109	17	34	73	158
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	153	298	37	19	566	58	58	120	15	37	80	137
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	200	1174	144	42	995	444	420	403	50	407	463	392
Arrive On Green	0.11	0.37	0.37	0.02	0.28	0.28	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1781	3184	392	1781	3554	1585	1162	1627	203	1252	1870	1581
Grp Volume(v), veh/h	153	165	170	19	566	58	58	0	135	37	80	137
Grp Sat Flow(s),veh/h/ln	1781	1777	1799	1781	1777	1585	1162	0	1830	1252	1870	1581
Q Serve(g_s), s	3.5	2.7	2.8	0.4	5.7	1.1	1.7	0.0	2.5	1.0	1.4	3.0
Cycle Q Clear(g_c), s	3.5	2.7	2.8	0.4	5.7	1.1	3.1	0.0	2.5	3.6	1.4	3.0
Prop In Lane	1.00		0.22	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	200	655	663	42	995	444	420	0	453	407	463	392
V/C Ratio(X)	0.76	0.25	0.26	0.45	0.57	0.13	0.14	0.00	0.30	0.09	0.17	0.35
Avail Cap(c_a), veh/h	1163	2464	2495	357	3320	1481	1193	0	1670	1240	1707	1443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	9.2	9.2	20.2	12.9	11.3	13.6	0.0	12.8	14.3	12.4	13.0
Incr Delay (d2), s/veh	2.3	0.2	0.2	2.8	0.5	0.1	0.1	0.0	0.4	0.1	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.7	0.7	0.2	1.7	0.3	0.4	0.0	0.9	0.3	0.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.4	9.4	9.4	23.0	13.5	11.4	13.8	0.0	13.2	14.4	12.6	13.5
LnGrp LOS	C	A	A	C	B	B	B	A	B	B	B	B
Approach Vol, veh/h		488			643			193			254	
Approach Delay, s/veh		12.9			13.6			13.4			13.4	
Approach LOS		B			B			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.1	5.6	21.3		15.1	9.3	17.5				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 38	8.4	58.2		* 38	27.4	39.2				
Max Q Clear Time (g_c+I1), s		5.1	2.4	4.8		5.6	5.5	7.7				
Green Ext Time (p_c), s		1.0	0.0	1.9		1.0	0.2	3.9				

Intersection Summary

HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

Notes

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

Intersection

Intersection Delay, s/veh70.3

Intersection LOS F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↻			↻		↻		↻			
Traffic Vol, veh/h	0	182	428	28	122	0	513	0	32	0	0	0
Future Vol, veh/h	0	182	428	28	122	0	513	0	32	0	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	190	446	29	127	0	534	0	33	0	0	0
Number of Lanes	0	1	0	0	1	0	1	0	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	65.8	13.7	90.9
HCM LOS	F	B	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	0%	19%
Vol Thru, %	0%	0%	30%	81%
Vol Right, %	0%	100%	70%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	513	32	610	150
LT Vol	513	0	0	28
Through Vol	0	0	182	122
RT Vol	0	32	428	0
Lane Flow Rate	534	33	635	156
Geometry Grp	7	7	2	2
Degree of Util (X)	1.096	0.057	1.018	0.307
Departure Headway (Hd)	7.384	6.159	6.036	7.45
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	492	580	604	486
Service Time	5.132	3.907	4.036	5.45
HCM Lane V/C Ratio	1.085	0.057	1.051	0.321
HCM Control Delay	96	9.3	65.8	13.7
HCM Lane LOS	F	A	F	B
HCM 95th-tile Q	17.3	0.2	15.8	1.3

Timings

13: Citrus Ave. & Knox Ave./Casa Grande Ave.

04/22/2021

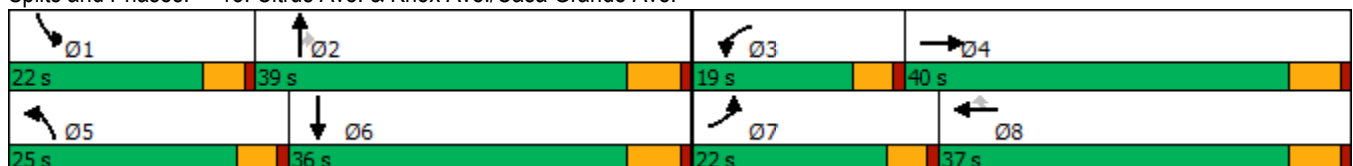


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↗	↖	↑↑	↗	↖	↗↖
Traffic Volume (vph)	71	19	43	38	88	81	171	43	70	171
Future Volume (vph)	71	19	43	38	88	81	171	43	70	171
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	30.8	30.8	9.6	26.8	26.8	9.6	22.8
Total Split (s)	22.0	40.0	19.0	37.0	37.0	25.0	39.0	39.0	22.0	36.0
Total Split (%)	18.3%	33.3%	15.8%	30.8%	30.8%	20.8%	32.5%	32.5%	18.3%	30.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	7.1	13.2	6.3	10.7	10.7	7.4	20.3	20.3	7.1	17.6
Actuated g/C Ratio	0.14	0.27	0.13	0.22	0.22	0.15	0.41	0.41	0.14	0.36
v/c Ratio	0.29	0.11	0.20	0.10	0.22	0.32	0.12	0.06	0.29	0.20
Control Delay	25.5	11.8	25.5	21.4	6.1	25.5	18.4	0.3	25.5	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.5	11.8	25.5	21.4	6.1	25.5	18.4	0.3	25.5	16.3
LOS	C	B	C	C	A	C	B	A	C	B
Approach Delay		19.8		14.5			17.7			18.4
Approach LOS		B		B			B			B

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 49.4
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.32
 Intersection Signal Delay: 17.6
 Intersection LOS: B
 Intersection Capacity Utilization 39.0%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 13: Citrus Ave. & Knox Ave./Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 13: Citrus Ave. & Knox Ave./Casa Grande Ave.

04/22/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	71	19	32	43	38	88	81	171	43	70	171	71
Future Volume (veh/h)	71	19	32	43	38	88	81	171	43	70	171	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	20	22	45	40	64	84	178	39	73	178	71
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	184	202	84	389	329	126	783	348	116	539	207
Arrive On Green	0.07	0.23	0.23	0.05	0.21	0.21	0.07	0.22	0.22	0.07	0.21	0.21
Sat Flow, veh/h	1781	811	892	1781	1870	1583	1781	3554	1578	1781	2508	963
Grp Volume(v), veh/h	74	0	42	45	40	64	84	178	39	73	124	125
Grp Sat Flow(s),veh/h/ln	1781	0	1703	1781	1870	1583	1781	1777	1578	1781	1777	1694
Q Serve(g_s), s	1.9	0.0	0.9	1.2	0.8	1.6	2.2	1.9	0.9	1.9	2.8	2.9
Cycle Q Clear(g_c), s	1.9	0.0	0.9	1.2	0.8	1.6	2.2	1.9	0.9	1.9	2.8	2.9
Prop In Lane	1.00		0.52	1.00		1.00	1.00		1.00	1.00		0.57
Lane Grp Cap(c), veh/h	117	0	385	84	389	329	126	783	348	116	382	364
V/C Ratio(X)	0.63	0.00	0.11	0.54	0.10	0.19	0.67	0.23	0.11	0.63	0.33	0.34
Avail Cap(c_a), veh/h	657	0	1234	544	1237	1047	770	2500	1110	657	1137	1084
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	0.0	14.5	22.0	15.1	15.4	21.4	15.1	14.7	21.5	15.6	15.7
Incr Delay (d2), s/veh	2.1	0.0	0.1	2.0	0.1	0.3	2.3	0.1	0.1	2.1	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.3	0.5	0.3	0.5	0.8	0.6	0.3	0.7	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	0.0	14.6	23.9	15.2	15.7	23.6	15.2	14.8	23.6	16.1	16.3
LnGrp LOS	C	A	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		116			149			301			322	
Approach Delay, s/veh		20.3			18.1			17.5			17.9	
Approach LOS		C			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.7	16.2	6.8	16.5	7.9	15.9	7.7	15.6				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	17.4	33.2	14.4	34.2	20.4	30.2	17.4	31.2				
Max Q Clear Time (g_c+I1), s	3.9	3.9	3.2	2.9	4.2	4.9	3.9	3.6				
Green Ext Time (p_c), s	0.1	1.1	0.0	0.2	0.1	1.3	0.1	0.3				
Intersection Summary												
HCM 6th Ctrl Delay			18.1									
HCM 6th LOS			B									

Timings

14: Citrus Ave. & Summit Ave.

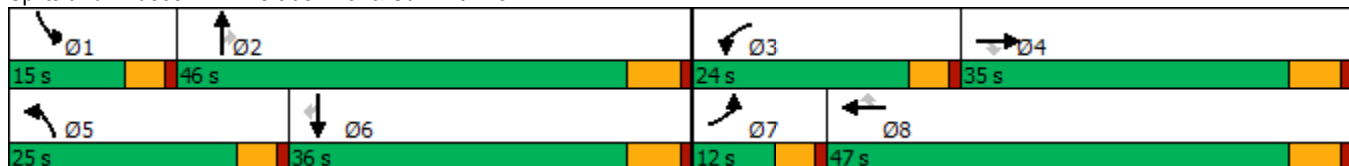
04/22/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	128	124	137	203	54	152	192	68	56	184	41
Future Volume (vph)	30	128	124	137	203	54	152	192	68	56	184	41
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	34.8	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	12.0	35.0	35.0	24.0	47.0	47.0	25.0	46.0	46.0	15.0	36.0	36.0
Total Split (%)	10.0%	29.2%	29.2%	20.0%	39.2%	39.2%	20.8%	38.3%	38.3%	12.5%	30.0%	30.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	6.1	10.4	10.4	11.6	20.1	20.1	12.3	41.0	41.0	7.4	33.9	33.9
Actuated g/C Ratio	0.07	0.12	0.12	0.13	0.23	0.23	0.14	0.46	0.46	0.08	0.38	0.38
v/c Ratio	0.26	0.32	0.37	0.62	0.26	0.12	0.65	0.12	0.09	0.39	0.14	0.06
Control Delay	47.4	40.5	4.4	49.9	31.8	0.5	49.8	15.9	0.2	48.6	20.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.4	40.5	4.4	49.9	31.8	0.5	49.8	15.9	0.2	48.6	20.1	0.1
LOS	D	D	A	D	C	A	D	B	A	D	C	A
Approach Delay		25.3			33.9			25.8			22.8	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 89.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 27.4
 Intersection LOS: C
 Intersection Capacity Utilization 60.6%
 ICU Level of Service B
 Analysis Period (min) 15

























Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary

14: Citrus Ave. & Summit Ave.

04/22/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	128	124	137	203	54	152	192	68	56	184	41
Future Volume (veh/h)	30	128	124	137	203	54	152	192	68	56	184	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	133	96	143	211	47	158	200	56	58	192	36
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	460	204	178	707	315	195	1701	742	79	1469	655
Arrive On Green	0.03	0.13	0.13	0.10	0.20	0.20	0.11	0.48	0.48	0.04	0.41	0.41
Sat Flow, veh/h	1781	3554	1574	1781	3554	1583	1781	3554	1551	1781	3554	1585
Grp Volume(v), veh/h	31	133	96	143	211	47	158	200	56	58	192	36
Grp Sat Flow(s),veh/h/ln	1781	1777	1574	1781	1777	1583	1781	1777	1551	1781	1777	1585
Q Serve(g_s), s	1.4	2.8	4.7	6.6	4.2	2.1	7.3	2.6	1.6	2.7	2.8	1.1
Cycle Q Clear(g_c), s	1.4	2.8	4.7	6.6	4.2	2.1	7.3	2.6	1.6	2.7	2.8	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	55	460	204	178	707	315	195	1701	742	79	1469	655
V/C Ratio(X)	0.57	0.29	0.47	0.80	0.30	0.15	0.81	0.12	0.08	0.74	0.13	0.05
Avail Cap(c_a), veh/h	157	1235	547	411	1743	776	433	1701	742	221	1469	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	33.1	33.9	37.0	28.6	27.8	36.6	12.1	11.8	39.7	15.3	14.8
Incr Delay (d2), s/veh	3.4	0.3	1.7	3.2	0.2	0.2	3.1	0.1	0.2	5.0	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.2	1.8	2.9	1.7	0.8	3.2	0.9	0.5	1.2	1.1	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	33.4	35.6	40.2	28.9	28.0	39.6	12.2	12.0	44.6	15.5	14.9
LnGrp LOS	D	C	D	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		260			401			414			286	
Approach Delay, s/veh		35.4			32.8			22.7			21.3	
Approach LOS		D			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	46.0	13.0	16.7	13.8	40.5	7.2	22.5				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	10.4	40.2	19.4	29.2	20.4	30.2	7.4	41.2				
Max Q Clear Time (g_c+I1), s	4.7	4.6	8.6	6.7	9.3	4.8	3.4	6.2				
Green Ext Time (p_c), s	0.0	1.4	0.1	1.0	0.1	1.2	0.0	1.4				
Intersection Summary												
HCM 6th Ctrl Delay					27.8							
HCM 6th LOS					C							

Timings

15: Citrus Ave. & Sierra Lakes Pkwy.

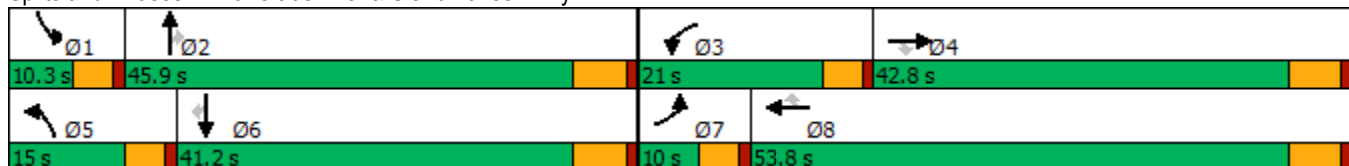
04/22/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	192	314	487	154	85	312	387	575	92	507	54
Future Volume (vph)	53	192	314	487	154	85	312	387	575	92	507	54
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	42.8	42.8	9.6	39.8	39.8	9.6	39.8	39.8	9.6	39.8	39.8
Total Split (s)	10.0	42.8	42.8	21.0	53.8	53.8	15.0	45.9	45.9	10.3	41.2	41.2
Total Split (%)	8.3%	35.7%	35.7%	17.5%	44.8%	44.8%	12.5%	38.3%	38.3%	8.6%	34.3%	34.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	5.4	16.0	16.0	16.8	29.7	29.7	10.6	26.8	26.8	5.7	19.5	19.5
Actuated g/C Ratio	0.06	0.19	0.19	0.20	0.35	0.35	0.13	0.32	0.32	0.07	0.23	0.23
v/c Ratio	0.26	0.31	0.75	0.77	0.13	0.14	0.78	0.37	0.72	0.43	0.67	0.11
Control Delay	45.4	30.8	25.4	43.3	20.6	1.0	52.2	24.8	9.9	47.9	34.2	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	30.8	25.4	43.3	20.6	1.0	52.2	24.8	9.9	47.9	34.2	0.4
LOS	D	C	C	D	C	A	D	C	A	D	C	A
Approach Delay		29.2			33.6			24.8			33.3	
Approach LOS		C			C			C			C	

Intersection Summary

























Cycle Length: 120	
Actuated Cycle Length: 84.3	
Natural Cycle: 125	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 64.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

04/22/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	192	314	487	154	85	312	387	575	92	507	54
Future Volume (veh/h)	53	192	314	487	154	85	312	387	575	92	507	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	58	209	255	529	167	65	339	421	526	100	551	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	141	718	319	586	1175	524	371	1298	578	166	1088	485
Arrive On Green	0.04	0.20	0.20	0.17	0.33	0.33	0.11	0.37	0.37	0.05	0.31	0.31
Sat Flow, veh/h	3456	3554	1578	3456	3554	1585	3456	3554	1582	3456	3554	1585
Grp Volume(v), veh/h	58	209	255	529	167	65	339	421	526	100	551	48
Grp Sat Flow(s),veh/h/ln	1728	1777	1578	1728	1777	1585	1728	1777	1582	1728	1777	1585
Q Serve(g_s), s	1.6	4.8	14.9	14.5	3.2	2.8	9.4	8.3	30.6	2.7	12.3	2.1
Cycle Q Clear(g_c), s	1.6	4.8	14.9	14.5	3.2	2.8	9.4	8.3	30.6	2.7	12.3	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	141	718	319	586	1175	524	371	1298	578	166	1088	485
V/C Ratio(X)	0.41	0.29	0.80	0.90	0.14	0.12	0.91	0.32	0.91	0.60	0.51	0.10
Avail Cap(c_a), veh/h	193	1359	603	586	1763	786	371	1472	656	204	1300	580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	32.7	36.7	39.4	22.7	22.6	42.7	22.1	29.2	45.1	27.6	24.0
Incr Delay (d2), s/veh	0.7	0.2	4.6	17.0	0.1	0.1	25.7	0.1	15.6	1.3	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.0	5.9	7.2	1.3	1.0	5.2	3.3	13.2	1.2	5.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.0	33.0	41.4	56.4	22.8	22.7	68.5	22.3	44.8	46.4	27.9	24.1
LnGrp LOS	D	C	D	E	C	C	E	C	D	D	C	C
Approach Vol, veh/h		522			761			1286			699	
Approach Delay, s/veh		38.5			46.1			43.7			30.3	
Approach LOS		D			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.3	41.2	21.0	25.4	15.0	35.4	8.5	37.8				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	5.7	40.1	16.4	37.0	10.4	35.4	5.4	48.0				
Max Q Clear Time (g_c+I1), s	4.7	32.6	16.5	16.9	11.4	14.3	3.6	5.2				
Green Ext Time (p_c), s	0.0	2.8	0.0	1.9	0.0	3.4	0.0	1.2				
Intersection Summary												
HCM 6th Ctrl Delay			40.6									
HCM 6th LOS			D									

Intersection

Intersection Delay, s/veh	51
Intersection LOS	F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	458	306	35	369	530
Future Vol, veh/h	41	458	306	35	369	530
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	498	333	38	401	576
Number of Lanes	1	1	2	0	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left NB			WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right SB		WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay	97.1	20.9	36.8
HCM LOS	F	C	E

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	74%	0%	0%	0%	100%	100%
Vol Right, %	0%	26%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	204	137	41	458	369	265	265
LT Vol	0	0	41	0	369	0	0
Through Vol	204	102	0	0	0	265	265
RT Vol	0	35	0	458	0	0	0
Lane Flow Rate	222	149	45	498	401	288	288
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.557	0.366	0.115	1.113	0.943	0.636	0.493
Departure Headway (Hd)	9.462	9.275	9.272	8.048	8.805	8.288	6.494
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	384	390	389	453	413	438	559
Service Time	7.162	6.975	6.972	5.748	6.505	5.988	4.194
HCM Lane V/C Ratio	0.578	0.382	0.116	1.099	0.971	0.658	0.515
HCM Control Delay	23.4	17.2	13.2	104.6	61.1	24.4	15.3
HCM Lane LOS	C	C	B	F	F	C	C
HCM 95th-tile Q	3.3	1.6	0.4	17.2	10.7	4.3	2.7

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑	
Traffic Vol, veh/h	2	4	2	419	896	2
Future Vol, veh/h	2	4	2	419	896	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	4	2	428	914	2

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1347	915	916	0	-	0
Stage 1	915	-	-	-	-	-
Stage 2	432	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	167	331	745	-	-	-
Stage 1	390	-	-	-	-	-
Stage 2	655	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	166	331	745	-	-	-
Mov Cap-2 Maneuver	291	-	-	-	-	-
Stage 1	389	-	-	-	-	-
Stage 2	655	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	745	-	316	-	-
HCM Lane V/C Ratio	0.003	-	0.019	-	-
HCM Control Delay (s)	9.8	-	16.6	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Timings

18: Sierra Ave & Summit Ave.

04/22/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	58	241	246	436	812	92
Future Volume (vph)	58	241	246	436	812	92
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	44.8	9.6	16.5	29.5	29.5
Total Split (s)	44.8	44.8	30.0	75.2	45.2	45.2
Total Split (%)	37.3%	37.3%	25.0%	62.7%	37.7%	37.7%
Yellow Time (s)	4.8	4.8	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	6.5	6.5	6.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effct Green (s)	10.7	10.7	19.6	68.7	44.5	44.5
Actuated g/C Ratio	0.12	0.12	0.21	0.75	0.49	0.49
v/c Ratio	0.33	0.65	0.76	0.19	0.55	0.13
Control Delay	41.7	12.5	46.9	3.7	19.1	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.7	12.5	46.9	3.7	19.1	9.1
LOS	D	B	D	A	B	A
Approach Delay	18.1			19.3	18.1	
Approach LOS	B			B	B	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 91.7	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 18.5	Intersection LOS: B
Intersection Capacity Utilization 58.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

04/22/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	58	241	246	436	812	92
Future Volume (veh/h)	58	241	246	436	812	92
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	280	286	507	944	107
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	358	319	322	2407	1603	715
Arrive On Green	0.20	0.20	0.18	0.68	0.45	0.45
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	67	280	286	507	944	107
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	3.2	17.4	15.9	5.4	20.1	4.0
Cycle Q Clear(g_c), s	3.2	17.4	15.9	5.4	20.1	4.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	358	319	322	2407	1603	715
V/C Ratio(X)	0.19	0.88	0.89	0.21	0.59	0.15
Avail Cap(c_a), veh/h	685	610	446	2407	1603	715
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	39.3	40.5	6.2	20.8	16.4
Incr Delay (d2), s/veh	0.2	7.7	14.8	0.2	1.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.7	7.8	1.6	7.7	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.9	47.0	55.4	6.4	22.4	16.8
LnGrp LOS	C	D	E	A	C	B
Approach Vol, veh/h	347			793	1051	
Approach Delay, s/veh	44.4			24.0	21.8	
Approach LOS	D			C	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		75.2		26.2	23.0	52.2
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	25.4	38.7
Max Q Clear Time (g_c+I1), s		7.4		19.4	17.9	22.1
Green Ext Time (p_c), s		3.1		1.0	0.5	5.6
Intersection Summary						
HCM 6th Ctrl Delay			26.2			
HCM 6th LOS			C			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

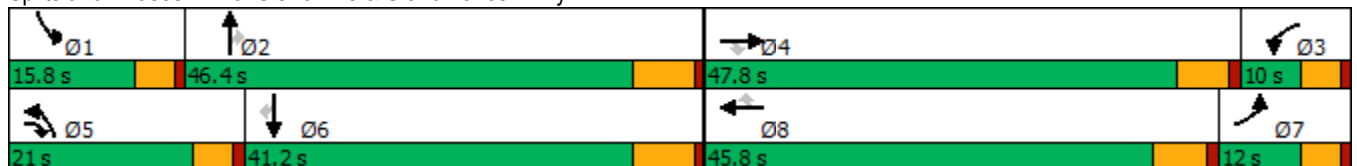
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	120	472	132	167	201	522	586	244	160	906	141
Future Volume (vph)	92	120	472	132	167	201	522	586	244	160	906	141
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	12.0	47.8	21.0	10.0	45.8	45.8	21.0	46.4	46.4	15.8	41.2	41.2
Total Split (%)	10.0%	39.8%	17.5%	8.3%	38.2%	38.2%	17.5%	38.7%	38.7%	13.2%	34.3%	34.3%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.6	10.2	27.9	7.3	13.1	13.1	16.5	31.3	31.3	8.6	23.4	23.4
Actuated g/C Ratio	0.08	0.13	0.35	0.09	0.17	0.17	0.21	0.40	0.40	0.11	0.30	0.30
v/c Ratio	0.36	0.29	0.86	0.46	0.31	0.50	0.80	0.32	0.34	0.47	0.66	0.27
Control Delay	39.5	34.7	31.4	40.0	33.2	9.5	41.1	17.3	3.7	38.3	26.7	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.5	34.7	31.4	40.0	33.2	9.5	41.1	17.3	3.7	38.3	26.7	5.0
LOS	D	C	C	D	C	A	D	B	A	D	C	A
Approach Delay		33.0			25.5			24.0			25.7	
Approach LOS		C			C			C			C	

Intersection Summary



































Cycle Length: 120	
Actuated Cycle Length: 79	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 26.4	Intersection LOS: C
Intersection Capacity Utilization 64.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		 	  	
Traffic Volume (veh/h)	92	120	472	132	167	201	522	586	244	160	906	141
Future Volume (veh/h)	92	120	472	132	167	201	522	586	244	160	906	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	132	399	145	184	169	574	644	235	176	996	128
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	391	659	596	220	483	214	658	2045	633	260	1456	452
Arrive On Green	0.11	0.19	0.19	0.06	0.14	0.14	0.19	0.40	0.40	0.08	0.29	0.29
Sat Flow, veh/h	3456	3554	1585	3456	3554	1578	3456	5106	1581	3456	5106	1585
Grp Volume(v), veh/h	101	132	399	145	184	169	574	644	235	176	996	128
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1578	1728	1702	1581	1728	1702	1585
Q Serve(g_s), s	2.1	2.5	9.7	3.2	3.7	6.1	12.6	6.8	5.4	3.9	13.5	3.2
Cycle Q Clear(g_c), s	2.1	2.5	9.7	3.2	3.7	6.1	12.6	6.8	5.4	3.9	13.5	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	391	659	596	220	483	214	658	2045	633	260	1456	452
V/C Ratio(X)	0.26	0.20	0.67	0.66	0.38	0.79	0.87	0.31	0.37	0.68	0.68	0.28
Avail Cap(c_a), veh/h	391	1911	1154	239	1820	808	726	2608	808	496	2269	704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	26.9	7.9	35.7	30.8	18.8	30.7	16.1	7.1	35.2	24.8	9.0
Incr Delay (d2), s/veh	0.1	0.1	1.3	4.2	0.5	6.3	9.8	0.1	0.4	1.2	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.0	3.7	1.4	1.5	3.2	5.6	2.2	2.5	1.5	4.8	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.8	27.1	9.2	40.0	31.2	25.1	40.5	16.2	7.5	36.4	25.4	9.3
LnGrp LOS	C	C	A	D	C	C	D	B	A	D	C	A
Approach Vol, veh/h		632			498			1453			1300	
Approach Delay, s/veh		16.5			31.7			24.4			25.3	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.5	37.8	9.6	20.3	19.5	28.8	13.4	16.4				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	11.2	39.9	5.4	42.0	16.4	34.7	7.4	40.0				
Max Q Clear Time (g_c+I1), s	5.9	8.8	5.2	11.7	14.6	15.5	4.1	8.1				
Green Ext Time (p_c), s	0.1	4.9	0.0	2.2	0.3	6.3	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			24.3									
HCM 6th LOS			C									

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↕↗		↙	↕↗		↙	↕	↗	↙	↕	↗
Traffic Vol, veh/h	10	244	14	130	263	50	9	1	95	31	0	3
Future Vol, veh/h	10	244	14	130	263	50	9	1	95	31	0	3
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	280	16	149	302	57	10	1	109	36	0	3
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	11.1	11	10.3	10.7
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	85%	0%	100%	64%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	15%	0%	0%	36%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	1	95	10	163	95	130	175	138	31	0
LT Vol	9	0	0	10	0	0	130	0	0	31	0
Through Vol	0	1	0	0	163	81	0	175	88	0	0
RT Vol	0	0	95	0	0	14	0	0	50	0	0
Lane Flow Rate	10	1	109	11	187	110	149	202	158	36	0
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.021	0.002	0.186	0.021	0.321	0.185	0.263	0.326	0.245	0.074	0
Departure Headway (Hd)	7.341	6.84	6.139	6.676	6.174	6.071	6.329	5.827	5.571	7.484	6.984
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	487	523	584	537	583	591	568	617	646	479	0
Service Time	5.087	4.587	3.885	4.412	3.91	3.807	4.06	3.558	3.303	5.233	4.733
HCM Lane V/C Ratio	0.021	0.002	0.187	0.02	0.321	0.186	0.262	0.327	0.245	0.075	0
HCM Control Delay	10.2	9.6	10.3	9.6	11.8	10.2	11.3	11.4	10.1	10.8	9.7
HCM Lane LOS	B	A	B	A	B	B	B	B	B	B	N
HCM 95th-tile Q	0.1	0	0.7	0.1	1.4	0.7	1	1.4	1	0.2	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	370	437	18	0	6
Future Vol, veh/h	0	370	437	18	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	394	465	19	0	6

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	242
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	759
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	759
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

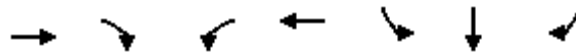
Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	759
HCM Lane V/C Ratio	-	-	-	0.008
HCM Control Delay (s)	-	-	-	9.8
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0

Timings

3: I-15 SB Ramp & Duncan Canyon Rd.

04/22/2021

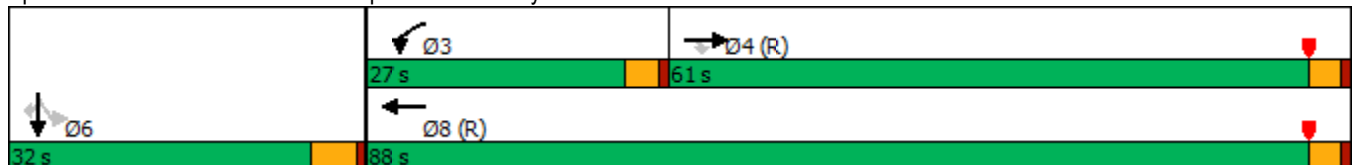


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↖↗	↑↑	↖	↖	↖
Traffic Volume (vph)	224	145	115	402	71	0	54
Future Volume (vph)	224	145	115	402	71	0	54
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8		6	
Permitted Phases		4			6		6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	34.0	34.0	12.0	29.0	13.0	13.0	13.0
Total Split (s)	61.0	61.0	27.0	88.0	32.0	32.0	32.0
Total Split (%)	50.8%	50.8%	22.5%	73.3%	26.7%	26.7%	26.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effct Green (s)	90.6	90.6	10.0	105.4	9.0	9.0	9.0
Actuated g/C Ratio	0.76	0.76	0.08	0.88	0.08	0.08	0.08
v/c Ratio	0.09	0.13	0.45	0.14	0.31	0.32	0.35
Control Delay	4.7	1.1	69.5	0.9	58.7	59.0	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.7	1.1	69.5	0.9	58.7	59.0	18.5
LOS	A	A	E	A	E	E	B
Approach Delay	3.3			16.2		41.4	
Approach LOS	A			B		D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.45
 Intersection Signal Delay: 14.6
 Intersection LOS: B
 Intersection Capacity Utilization 38.7%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 3: I-15 SB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 3: I-15 SB Ramp & Duncan Canyon Rd.

04/22/2021

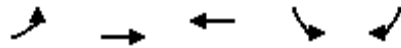


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Traffic Volume (veh/h)	0	224	145	115	402	0	0	0	0	71	0	54
Future Volume (veh/h)	0	224	145	115	402	0	0	0	0	71	0	54
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	249	144	128	447	0				79	0	34
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2704	1206	227	3056	0				232	0	102
Arrive On Green	0.00	0.76	0.76	0.13	1.00	0.00				0.07	0.00	0.07
Sat Flow, veh/h	0	3647	1585	3456	3647	0				3563	0	1561
Grp Volume(v), veh/h	0	249	144	128	447	0				79	0	34
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1561
Q Serve(g_s), s	0.0	2.2	2.9	4.2	0.0	0.0				2.5	0.0	2.5
Cycle Q Clear(g_c), s	0.0	2.2	2.9	4.2	0.0	0.0				2.5	0.0	2.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2704	1206	227	3056	0				232	0	102
V/C Ratio(X)	0.00	0.09	0.12	0.56	0.15	0.00				0.34	0.00	0.33
Avail Cap(c_a), veh/h	0	2704	1206	662	3056	0				802	0	351
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.99	0.99	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	3.7	3.8	50.5	0.0	0.0				53.6	0.0	53.6
Incr Delay (d2), s/veh	0.0	0.1	0.2	2.2	0.1	0.0				0.9	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.9	1.8	0.0	0.0				1.2	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	3.8	4.0	52.7	0.1	0.0				54.5	0.0	55.5
LnGrp LOS	A	A	A	D	A	A				D	A	E
Approach Vol, veh/h		393			575							113
Approach Delay, s/veh		3.8			11.8							54.8
Approach LOS		A			B							D
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			11.9	95.3		12.8		107.2				
Change Period (Y+Rc), s			4.0	4.0		5.0		4.0				
Max Green Setting (Gmax), s			23.0	57.0		27.0		84.0				
Max Q Clear Time (g_c+I1), s			6.2	4.9		4.5		2.0				
Green Ext Time (p_c), s			0.3	2.3		0.3		3.4				
Intersection Summary												
HCM 6th Ctrl Delay			13.4									
HCM 6th LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings

4: Beech Ave. & I-15 SB Ramps

04/22/2021

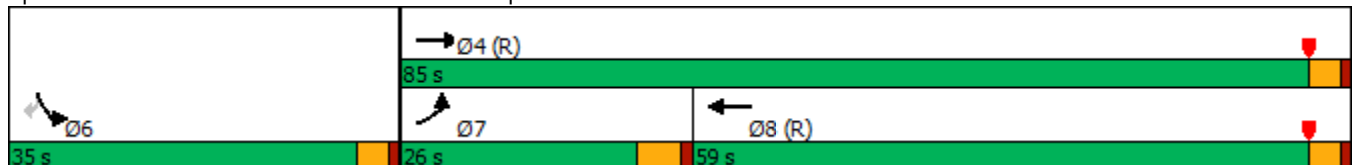


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations	↖	↗↗	↗↗	↖	↗
Traffic Volume (vph)	125	561	482	207	79
Future Volume (vph)	125	561	482	207	79
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	5.0	5.0
Minimum Split (s)	10.0	12.0	12.0	9.0	9.0
Total Split (s)	26.0	85.0	59.0	35.0	35.0
Total Split (%)	21.7%	70.8%	49.2%	29.2%	29.2%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	None	None
Act Effct Green (s)	14.3	91.8	72.5	20.2	20.2
Actuated g/C Ratio	0.12	0.76	0.60	0.17	0.17
v/c Ratio	0.63	0.22	0.45	0.74	0.25
Control Delay	63.2	4.6	29.6	61.9	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	4.6	29.6	61.9	10.0
LOS	E	A	C	E	A
Approach Delay		15.3	29.6	47.6	
Approach LOS		B	C	D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 27.1
 Intersection LOS: C
 Intersection Capacity Utilization 55.2%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 4: Beech Ave. & I-15 SB Ramps



HCM 6th Signalized Intersection Summary

4: Beech Ave. & I-15 SB Ramps

04/22/2021

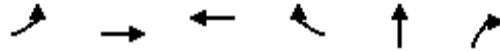


Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↗↗	↗↗		↖	↗	
Traffic Volume (veh/h)	125	561	482	393	207	79	
Future Volume (veh/h)	125	561	482	393	207	79	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	133	597	513	418	220	84	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	162	2806	1222	995	256	228	
Arrive On Green	0.09	0.79	1.00	1.00	0.14	0.14	
Sat Flow, veh/h	1781	3647	1953	1515	1781	1585	
Grp Volume(v), veh/h	133	597	490	441	220	84	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1598	1781	1585	
Q Serve(g_s), s	8.8	5.1	0.0	0.0	14.5	5.7	
Cycle Q Clear(g_c), s	8.8	5.1	0.0	0.0	14.5	5.7	
Prop In Lane	1.00			0.95	1.00	1.00	
Lane Grp Cap(c), veh/h	162	2806	1167	1050	256	228	
V/C Ratio(X)	0.82	0.21	0.42	0.42	0.86	0.37	
Avail Cap(c_a), veh/h	312	2806	1167	1050	460	409	
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.76	0.76	1.00	1.00	
Uniform Delay (d), s/veh	53.6	3.2	0.0	0.0	50.2	46.4	
Incr Delay (d2), s/veh	9.9	0.2	0.8	0.9	8.2	1.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	4.4	1.6	0.3	0.3	7.0	5.3	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	63.5	3.4	0.8	0.9	58.3	47.4	
LnGrp LOS	E	A	A	A	E	D	
Approach Vol, veh/h		730	931		304		
Approach Delay, s/veh		14.3	0.9		55.3		
Approach LOS		B	A		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				98.7	21.3	15.9	82.8
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				81.0	31.0	21.0	55.0
Max Q Clear Time (g_c+I1), s				7.1	16.5	10.8	2.0
Green Ext Time (p_c), s				4.8	0.8	0.2	8.0
Intersection Summary							
HCM 6th Ctrl Delay			14.3				
HCM 6th LOS			B				

Timings

5: I-15 NB Ramp & Duncan Canyon Rd.

04/22/2021

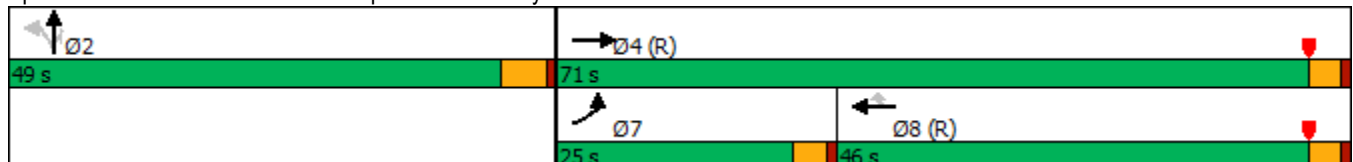


Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations	↶	↷	↶	↷	↷	↷
Traffic Volume (vph)	95	200	292	121	12	196
Future Volume (vph)	95	200	292	121	12	196
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8		2	
Permitted Phases				8		2
Detector Phase	7	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	30.0	36.0	36.0	13.0	13.0
Total Split (s)	25.0	71.0	46.0	46.0	49.0	49.0
Total Split (%)	20.8%	59.2%	38.3%	38.3%	40.8%	40.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	12.4	87.1	70.7	70.7	23.9	23.9
Actuated g/C Ratio	0.10	0.73	0.59	0.59	0.20	0.20
v/c Ratio	0.57	0.09	0.15	0.13	0.74	0.30
Control Delay	70.3	5.6	13.0	3.0	57.2	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.3	5.6	13.0	3.0	57.2	5.7
LOS	E	A	B	A	E	A
Approach Delay		26.4	10.0		33.9	
Approach LOS		C	B		C	

Intersection Summary























Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 23.3
 Intersection LOS: C
 Intersection Capacity Utilization 38.7%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 5: I-15 NB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 5: I-15 NB Ramp & Duncan Canyon Rd.

04/22/2021

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 				 				
Traffic Volume (veh/h)	95	200	0	0	292	121	226	12	196	0	0	0	
Future Volume (veh/h)	95	200	0	0	292	121	226	12	196	0	0	0	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Work Zone On Approach		No			No			No					
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870				
Adj Flow Rate, veh/h	104	220	0	0	321	121	248	13	207				
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91				
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2				
Cap, veh/h	130	2654	0	0	2276	1015	302	16	486				
Arrive On Green	0.10	0.99	0.00	0.00	0.64	0.64	0.18	0.18	0.18				
Sat Flow, veh/h	1781	3647	0	0	3647	1585	1697	89	2728				
Grp Volume(v), veh/h	104	220	0	0	321	121	261	0	207				
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1585	1786	0	1364				
Q Serve(g_s), s	6.9	0.1	0.0	0.0	4.3	3.6	16.9	0.0	8.1				
Cycle Q Clear(g_c), s	6.9	0.1	0.0	0.0	4.3	3.6	16.9	0.0	8.1				
Prop In Lane	1.00		0.00	0.00		1.00	0.95		1.00				
Lane Grp Cap(c), veh/h	130	2654	0	0	2276	1015	318	0	486				
V/C Ratio(X)	0.80	0.08	0.00	0.00	0.14	0.12	0.82	0.00	0.43				
Avail Cap(c_a), veh/h	312	2654	0	0	2276	1015	655	0	1000				
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00				
Uniform Delay (d), s/veh	53.3	0.1	0.0	0.0	8.5	8.4	47.5	0.0	43.9				
Incr Delay (d2), s/veh	10.7	0.1	0.0	0.0	0.1	0.2	5.2	0.0	0.6				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	3.4	0.0	0.0	0.0	1.6	1.3	8.0	0.0	2.8				
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	64.1	0.2	0.0	0.0	8.7	8.6	52.7	0.0	44.4				
LnGrp LOS	E	A	A	A	A	A	D	A	D				
Approach Vol, veh/h		324			442			468					
Approach Delay, s/veh		20.7			8.6			49.1					
Approach LOS		C			A			D					
Timer - Assigned Phs		2		4			7	8					
Phs Duration (G+Y+Rc), s		26.4		93.6			12.8	80.9					
Change Period (Y+Rc), s		5.0		4.0			4.0	4.0					
Max Green Setting (Gmax), s		44.0		67.0			21.0	42.0					
Max Q Clear Time (g_c+I1), s		18.9		2.1			8.9	6.3					
Green Ext Time (p_c), s		2.5		1.6			0.2	2.7					
Intersection Summary													
HCM 6th Ctrl Delay				27.1									
HCM 6th LOS				C									

Timings

6: Beech Ave. & I-15 NB Ramps

04/22/2021

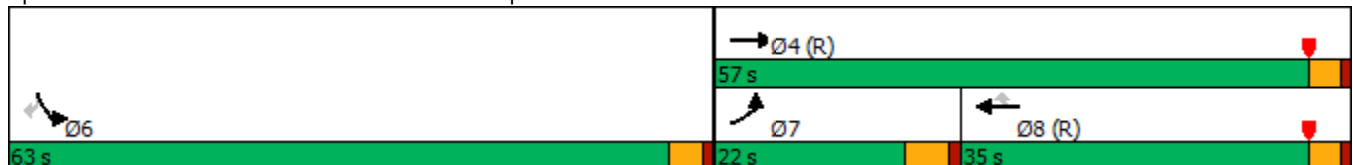


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗↗	↖↖	↗	↖	↗
Traffic Volume (vph)	169	599	710	401	685	167
Future Volume (vph)	169	599	710	401	685	167
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0	12.0
Total Split (s)	22.0	57.0	35.0	35.0	63.0	63.0
Total Split (%)	18.3%	47.5%	29.2%	29.2%	52.5%	52.5%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	15.7	57.4	36.6	36.6	54.6	54.6
Actuated g/C Ratio	0.13	0.48	0.30	0.30	0.46	0.46
v/c Ratio	0.78	0.38	0.70	0.55	0.91	0.23
Control Delay	64.3	22.2	42.4	6.3	45.9	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.3	22.2	42.4	6.3	45.9	8.8
LOS	E	C	D	A	D	A
Approach Delay		31.5	29.4		38.6	
Approach LOS		C	C		D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 32.9
 Intersection LOS: C
 Intersection Capacity Utilization 77.8%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
 6: Beech Ave. & I-15 NB Ramps

04/22/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↗↗	↗↗	↖	↖	↖	
Traffic Volume (veh/h)	169	599	710	401	685	167	
Future Volume (veh/h)	169	599	710	401	685	167	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	180	637	755	180	729	116	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	205	1786	1229	548	767	683	
Arrive On Green	0.23	1.00	0.35	0.35	0.43	0.43	
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585	
Grp Volume(v), veh/h	180	637	755	180	729	116	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	11.7	0.0	21.2	10.1	47.3	5.4	
Cycle Q Clear(g_c), s	11.7	0.0	21.2	10.1	47.3	5.4	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	205	1786	1229	548	767	683	
V/C Ratio(X)	0.88	0.36	0.61	0.33	0.95	0.17	
Avail Cap(c_a), veh/h	252	1786	1229	548	876	779	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.94	0.94	0.90	0.90	1.00	1.00	
Uniform Delay (d), s/veh	45.4	0.0	32.6	29.0	32.9	21.0	
Incr Delay (d2), s/veh	23.0	0.5	2.1	1.4	18.2	0.1	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	5.9	0.1	9.4	4.1	23.7	6.1	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	68.4	0.5	34.7	30.4	51.1	21.1	
LnGrp LOS	E	A	C	C	D	C	
Approach Vol, veh/h		817	935		845		
Approach Delay, s/veh		15.5	33.9		47.0		
Approach LOS		B	C		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				64.3	55.7	18.8	45.5
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				53.0	59.0	17.0	31.0
Max Q Clear Time (g_c+I1), s				2.0	49.3	13.7	23.2
Green Ext Time (p_c), s				5.1	2.4	0.1	3.5
Intersection Summary							
HCM 6th Ctrl Delay			32.3				
HCM 6th LOS			C				

Timings

7: Beech Ave. & Summit Ave.

04/22/2021

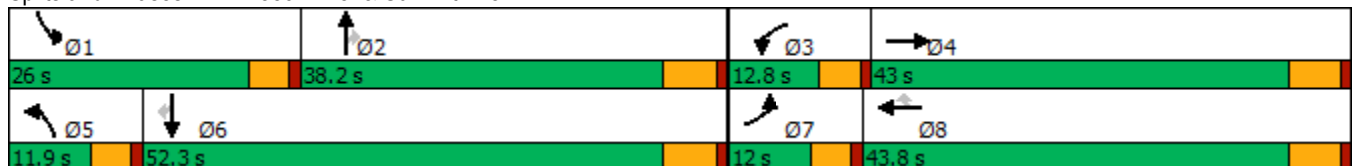


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↕	↖↗	↕	↖	↖↗	↕	↖	↖↗	↕	↖
Traffic Volume (vph)	111	249	107	283	249	94	295	89	423	424	87
Future Volume (vph)	111	249	107	283	249	94	295	89	423	424	87
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	43.8	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	43.0	12.8	43.8	43.8	11.9	38.2	38.2	26.0	52.3	52.3
Total Split (%)	10.0%	35.8%	10.7%	36.5%	36.5%	9.9%	31.8%	31.8%	21.7%	43.6%	43.6%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	6.7	13.0	6.8	13.2	13.2	6.5	12.6	12.6	13.5	22.3	22.3
Actuated g/C Ratio	0.10	0.20	0.10	0.20	0.20	0.10	0.19	0.19	0.21	0.34	0.34
v/c Ratio	0.33	0.52	0.31	0.41	0.50	0.29	0.45	0.22	0.62	0.36	0.15
Control Delay	33.6	23.5	32.9	26.2	7.5	33.3	27.5	2.6	28.9	19.4	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.6	23.5	32.9	26.2	7.5	33.3	27.5	2.6	28.9	19.4	3.9
LOS	C	C	C	C	A	C	C	A	C	B	A
Approach Delay		25.9		20.0			24.0			22.2	
Approach LOS		C		C			C			C	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 64.8	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 22.7	Intersection LOS: C
Intersection Capacity Utilization 59.3%	ICU Level of Service B
Analysis Period (min) 15	
































Splits and Phases: 7: Beech Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary

7: Beech Ave. & Summit Ave.

04/22/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	111	249	113	107	283	249	94	295	89	423	424	87
Future Volume (veh/h)	111	249	113	107	283	249	94	295	89	423	424	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	259	93	111	295	167	98	307	53	441	442	60
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	251	510	178	248	700	312	236	727	320	582	1083	482
Arrive On Green	0.07	0.20	0.20	0.07	0.20	0.20	0.07	0.20	0.20	0.17	0.30	0.30
Sat Flow, veh/h	3456	2576	901	3456	3554	1583	3456	3554	1566	3456	3554	1580
Grp Volume(v), veh/h	116	177	175	111	295	167	98	307	53	441	442	60
Grp Sat Flow(s),veh/h/ln	1728	1777	1700	1728	1777	1583	1728	1777	1566	1728	1777	1580
Q Serve(g_s), s	1.9	5.2	5.4	1.8	4.2	5.5	1.6	4.4	1.6	7.1	5.7	1.6
Cycle Q Clear(g_c), s	1.9	5.2	5.4	1.8	4.2	5.5	1.6	4.4	1.6	7.1	5.7	1.6
Prop In Lane	1.00		0.53	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	251	352	337	248	700	312	236	727	320	582	1083	482
V/C Ratio(X)	0.46	0.50	0.52	0.45	0.42	0.54	0.42	0.42	0.17	0.76	0.41	0.12
Avail Cap(c_a), veh/h	439	1136	1086	487	2320	1033	433	1978	872	1270	2839	1262
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	20.8	20.9	25.9	20.5	21.0	26.0	20.2	19.1	23.1	16.1	14.6
Incr Delay (d2), s/veh	0.5	1.1	1.3	0.5	0.4	1.4	0.4	0.4	0.2	0.8	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.1	2.1	0.7	1.7	2.0	0.6	1.7	0.6	2.7	2.1	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.4	21.9	22.1	26.4	20.9	22.4	26.4	20.5	19.3	23.8	16.3	14.7
LnGrp LOS	C	C	C	C	C	C	C	C	B	C	B	B
Approach Vol, veh/h		468			573			458			943	
Approach Delay, s/veh		23.1			22.4			21.7			19.7	
Approach LOS		C			C			C			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.4	17.7	8.8	17.3	8.6	23.5	8.8	17.3				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	21.4	32.4	8.2	37.2	7.3	46.5	7.4	38.0				
Max Q Clear Time (g_c+I1), s	9.1	6.4	3.8	7.4	3.6	7.7	3.9	7.5				
Green Ext Time (p_c), s	0.7	2.2	0.1	2.2	0.0	3.5	0.1	2.6				
Intersection Summary												
HCM 6th Ctrl Delay			21.4									
HCM 6th LOS			C									

Timings

9: Lytle Creek Rd. & Summit Ave.

04/22/2021

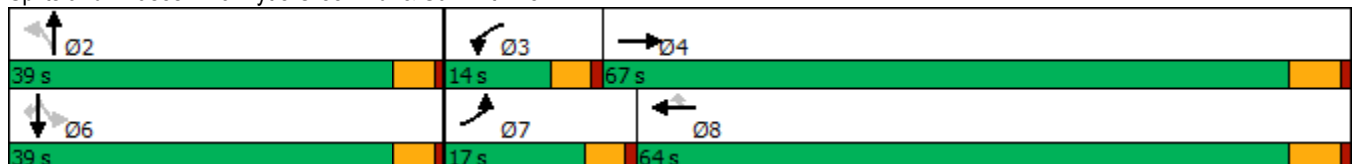


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↖	↕	↖	↕	↖
Traffic Volume (vph)	43	928	35	768	21	43	15	21	9	50
Future Volume (vph)	43	928	35	768	21	43	15	21	9	50
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8			2		6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	9.6	28.8	28.8	33.7	33.7	31.7	31.7	31.7
Total Split (s)	17.0	67.0	14.0	64.0	64.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	14.2%	55.8%	11.7%	53.3%	53.3%	32.5%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None
Act Effct Green (s)	6.8	35.1	6.5	32.8	32.8	11.3	11.3	11.3	11.3	11.3
Actuated g/C Ratio	0.14	0.72	0.13	0.67	0.67	0.23	0.23	0.23	0.23	0.23
v/c Ratio	0.19	0.42	0.16	0.36	0.02	0.14	0.10	0.07	0.02	0.13
Control Delay	26.6	8.2	26.9	9.2	0.7	23.4	15.0	23.5	23.0	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	8.2	26.9	9.2	0.7	23.4	15.0	23.5	23.0	7.2
LOS	C	A	C	A	A	C	B	C	C	A
Approach Delay		9.0		9.7			19.5		13.3	
Approach LOS		A		A			B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 48.9
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.42
 Intersection Signal Delay: 9.9
 Intersection LOS: A
 Intersection Capacity Utilization 55.9%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 9: Lytle Creek Rd. & Summit Ave.



HCM 6th Signalized Intersection Summary
 9: Lytle Creek Rd. & Summit Ave.

04/22/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗		↖	↗	↗
Traffic Volume (veh/h)	43	928	40	35	768	21	43	15	23	21	9	50
Future Volume (veh/h)	43	928	40	35	768	21	43	15	23	21	9	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	1020	37	38	844	18	47	16	15	23	10	24
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	85	1565	57	73	1566	692	422	183	171	409	390	327
Arrive On Green	0.05	0.45	0.45	0.04	0.44	0.44	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	3496	127	1781	3554	1569	1362	877	822	1366	1870	1569
Grp Volume(v), veh/h	47	518	539	38	844	18	47	0	31	23	10	24
Grp Sat Flow(s),veh/h/ln	1781	1777	1846	1781	1777	1569	1362	0	1700	1366	1870	1569
Q Serve(g_s), s	1.3	11.3	11.3	1.0	8.7	0.3	1.4	0.0	0.7	0.7	0.2	0.6
Cycle Q Clear(g_c), s	1.3	11.3	11.3	1.0	8.7	0.3	1.6	0.0	0.7	1.4	0.2	0.6
Prop In Lane	1.00		0.07	1.00		1.00	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	85	796	827	73	1566	692	422	0	354	409	390	327
V/C Ratio(X)	0.55	0.65	0.65	0.52	0.54	0.03	0.11	0.00	0.09	0.06	0.03	0.07
Avail Cap(c_a), veh/h	443	2181	2266	336	4148	1831	1075	0	1169	1064	1287	1079
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	10.7	10.7	23.4	10.2	7.9	16.4	0.0	15.9	16.5	15.7	15.9
Incr Delay (d2), s/veh	2.0	0.9	0.9	2.1	0.3	0.0	0.1	0.0	0.1	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.7	3.8	0.4	2.7	0.1	0.4	0.0	0.3	0.2	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.3	11.6	11.6	25.5	10.5	7.9	16.5	0.0	16.0	16.5	15.7	16.0
LnGrp LOS	C	B	B	C	B	A	B	A	B	B	B	B
Approach Vol, veh/h		1104			900			78			57	
Approach Delay, s/veh		12.2			11.1			16.3			16.2	
Approach LOS		B			B			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.1	6.6	28.1		15.1	7.0	27.8				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 34	9.4	61.2		* 34	12.4	58.2				
Max Q Clear Time (g_c+I1), s		3.6	3.0	13.3		3.4	3.3	10.7				
Green Ext Time (p_c), s		0.3	0.0	9.0		0.2	0.0	7.4				

Intersection Summary

HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B

Notes

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

Intersection												
Intersection Delay, s/veh15.3												
Intersection LOS C												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↻			↻		↻		↻			
Traffic Vol, veh/h	0	118	278	18	79	0	334	0	21	0	0	0
Future Vol, veh/h	0	118	278	18	79	0	334	0	21	0	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	123	290	19	82	0	348	0	22	0	0	0
Number of Lanes	0	1	0	0	1	0	1	0	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	14	9.9	18.2
HCM LOS	B	A	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	0%	19%
Vol Thru, %	0%	0%	30%	81%
Vol Right, %	0%	100%	70%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	334	21	396	97
LT Vol	334	0	0	18
Through Vol	0	0	118	79
RT Vol	0	21	278	0
Lane Flow Rate	348	22	413	101
Geometry Grp	7	7	2	2
Degree of Util (X)	0.616	0.031	0.563	0.162
Departure Headway (Hd)	6.37	5.157	4.912	5.777
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	567	694	738	619
Service Time	4.101	2.887	2.912	3.824
HCM Lane V/C Ratio	0.614	0.032	0.56	0.163
HCM Control Delay	18.8	8.1	14	9.9
HCM Lane LOS	C	A	B	A
HCM 95th-tile Q	4.2	0.1	3.6	0.6

Timings

13: Citrus Ave. & Knox Ave./Casa Grande Ave.

04/22/2021

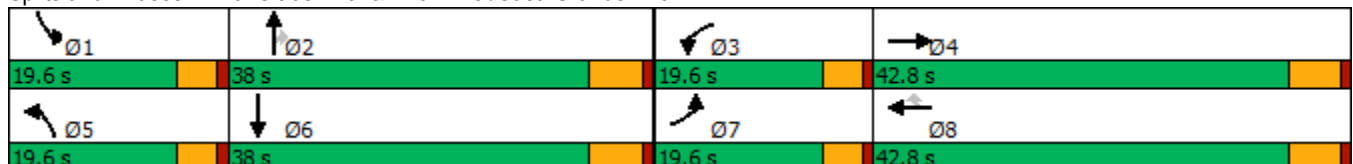


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↗	↖	↕	↗	↖	↕
Traffic Volume (vph)	48	33	44	29	41	49	263	44	71	166
Future Volume (vph)	48	33	44	29	41	49	263	44	71	166
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	30.8	30.8	9.6	26.8	26.8	9.6	22.8
Total Split (s)	19.6	42.8	19.6	42.8	42.8	19.6	38.0	38.0	19.6	38.0
Total Split (%)	16.3%	35.7%	16.3%	35.7%	35.7%	16.3%	31.7%	31.7%	16.3%	31.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	7.3	14.3	7.1	12.5	12.5	7.4	22.8	22.8	8.1	23.3
Actuated g/C Ratio	0.17	0.32	0.16	0.28	0.28	0.17	0.52	0.52	0.18	0.53
v/c Ratio	0.17	0.08	0.16	0.06	0.08	0.17	0.15	0.05	0.23	0.13
Control Delay	23.8	16.0	23.9	20.8	0.3	23.7	16.6	0.3	23.0	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	16.0	23.9	20.8	0.3	23.7	16.6	0.3	23.0	14.0
LOS	C	B	C	C	A	C	B	A	C	B
Approach Delay		20.0		14.6			15.6			16.2
Approach LOS		C		B			B			B

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 44
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.23
 Intersection Signal Delay: 16.1
 Intersection LOS: B
 Intersection Capacity Utilization 35.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 13: Citrus Ave. & Knox Ave./Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 13: Citrus Ave. & Knox Ave./Casa Grande Ave.

04/22/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	33	12	44	29	41	49	263	44	71	166	55
Future Volume (veh/h)	48	33	12	44	29	41	49	263	44	71	166	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	34	12	45	30	42	51	271	45	73	171	57
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	260	92	85	363	308	93	794	354	119	628	203
Arrive On Green	0.05	0.20	0.20	0.05	0.19	0.19	0.05	0.22	0.22	0.07	0.24	0.24
Sat Flow, veh/h	1781	1320	466	1781	1870	1585	1781	3554	1585	1781	2642	852
Grp Volume(v), veh/h	49	0	46	45	30	42	51	271	45	73	113	115
Grp Sat Flow(s),veh/h/ln	1781	0	1786	1781	1870	1585	1781	1777	1585	1781	1777	1717
Q Serve(g_s), s	1.2	0.0	0.9	1.1	0.6	1.0	1.2	2.9	1.0	1.8	2.3	2.4
Cycle Q Clear(g_c), s	1.2	0.0	0.9	1.1	0.6	1.0	1.2	2.9	1.0	1.8	2.3	2.4
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	91	0	352	85	363	308	93	794	354	119	422	408
V/C Ratio(X)	0.54	0.00	0.13	0.53	0.08	0.14	0.55	0.34	0.13	0.61	0.27	0.28
Avail Cap(c_a), veh/h	597	0	1477	597	1547	1311	597	2557	1141	597	1279	1236
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	0.0	14.8	20.8	14.8	14.9	20.7	14.6	13.9	20.3	13.9	13.9
Incr Delay (d2), s/veh	1.8	0.0	0.2	1.9	0.1	0.2	1.8	0.3	0.2	1.9	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.4	0.5	0.2	0.3	0.5	1.0	0.3	0.7	0.8	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.6	0.0	15.0	22.7	14.9	15.1	22.5	14.9	14.0	22.2	14.2	14.3
LnGrp LOS	C	A	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		95			117			367			301	
Approach Delay, s/veh		18.9			18.0			15.8			16.2	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.6	15.8	6.7	14.6	6.9	16.4	6.9	14.5				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	15.0	32.2	15.0	37.0	15.0	32.2	15.0	37.0				
Max Q Clear Time (g_c+I1), s	3.8	4.9	3.1	2.9	3.2	4.4	3.2	3.0				
Green Ext Time (p_c), s	0.1	1.9	0.0	0.2	0.0	1.3	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay			16.6									
HCM 6th LOS			B									

Timings

14: Citrus Ave. & Summit Ave.

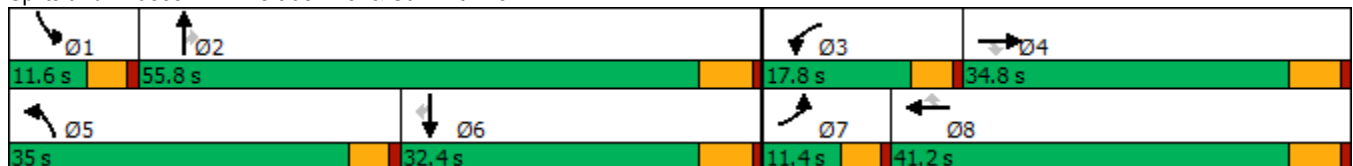
04/22/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	445	278	127	349	43	339	284	101	37	198	12
Future Volume (vph)	35	445	278	127	349	43	339	284	101	37	198	12
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	34.8	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	11.4	34.8	34.8	17.8	41.2	41.2	35.0	55.8	55.8	11.6	32.4	32.4
Total Split (%)	9.5%	29.0%	29.0%	14.8%	34.3%	34.3%	29.2%	46.5%	46.5%	9.7%	27.0%	27.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.2	20.3	20.3	11.1	30.1	30.1	23.3	33.8	33.8	6.3	11.9	11.9
Actuated g/C Ratio	0.07	0.23	0.23	0.13	0.34	0.34	0.26	0.38	0.38	0.07	0.14	0.14
v/c Ratio	0.31	0.59	0.51	0.62	0.31	0.07	0.79	0.23	0.16	0.32	0.45	0.03
Control Delay	51.4	34.4	7.1	52.8	24.5	0.2	44.3	21.3	2.1	51.4	41.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	34.4	7.1	52.8	24.5	0.2	44.3	21.3	2.1	51.4	41.3	0.2
LOS	D	C	A	D	C	A	D	C	A	D	D	A
Approach Delay		25.2			29.4			29.4			40.8	
Approach LOS		C			C			C			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 88	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 29.2	Intersection LOS: C
Intersection Capacity Utilization 64.2%	ICU Level of Service C
Analysis Period (min) 15	

























Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary

14: Citrus Ave. & Summit Ave.

04/22/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	445	278	127	349	43	339	284	101	37	198	12
Future Volume (veh/h)	35	445	278	127	349	43	339	284	101	37	198	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	38	484	209	138	379	37	368	309	74	40	215	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	759	333	175	975	434	418	1247	540	69	550	241
Arrive On Green	0.04	0.21	0.21	0.10	0.27	0.27	0.23	0.35	0.35	0.04	0.15	0.15
Sat Flow, veh/h	1781	3554	1561	1781	3554	1582	1781	3554	1539	1781	3554	1561
Grp Volume(v), veh/h	38	484	209	138	379	37	368	309	74	40	215	11
Grp Sat Flow(s),veh/h/ln	1781	1777	1561	1781	1777	1582	1781	1777	1539	1781	1777	1561
Q Serve(g_s), s	1.5	8.6	8.5	5.3	6.0	1.2	13.9	4.3	2.3	1.5	3.8	0.4
Cycle Q Clear(g_c), s	1.5	8.6	8.5	5.3	6.0	1.2	13.9	4.3	2.3	1.5	3.8	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	67	759	333	175	975	434	418	1247	540	69	550	241
V/C Ratio(X)	0.57	0.64	0.63	0.79	0.39	0.09	0.88	0.25	0.14	0.58	0.39	0.05
Avail Cap(c_a), veh/h	174	1480	650	338	1806	804	778	2551	1105	179	1357	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.0	24.9	24.9	30.7	20.5	18.8	25.7	16.1	15.4	32.9	26.5	25.1
Incr Delay (d2), s/veh	2.8	0.9	1.9	3.0	0.3	0.1	2.4	0.1	0.1	2.9	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	3.5	3.2	2.3	2.4	0.4	5.8	1.7	0.8	0.7	1.6	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	25.8	26.8	33.7	20.8	18.9	28.1	16.2	15.5	35.8	26.9	25.1
LnGrp LOS	D	C	C	C	C	B	C	B	B	D	C	C
Approach Vol, veh/h		731			554			751			266	
Approach Delay, s/veh		26.6			23.9			22.0			28.2	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.3	30.2	11.4	20.7	21.0	16.6	7.2	24.9				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.0	50.0	13.2	29.0	30.4	26.6	6.8	35.4				
Max Q Clear Time (g_c+I1), s	3.5	6.3	7.3	10.6	15.9	5.8	3.5	8.0				
Green Ext Time (p_c), s	0.0	2.5	0.1	3.8	0.5	1.3	0.0	2.7				
Intersection Summary												
HCM 6th Ctrl Delay			24.6									
HCM 6th LOS			C									

Timings

15: Citrus Ave. & Sierra Lakes Pkwy.

04/22/2021

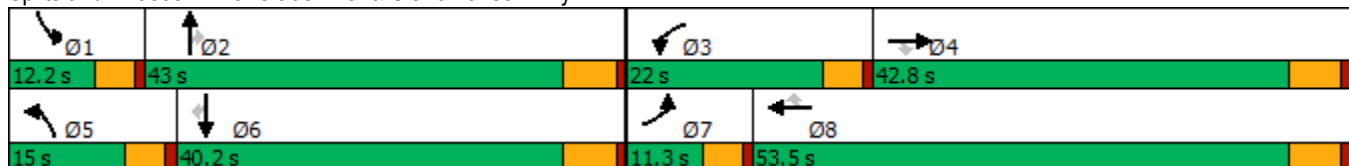


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↕	↗	↖↗	↕	↗	↖↗	↕	↗	↖↗	↕	↗
Traffic Volume (vph)	79	318	290	593	295	223	341	583	757	199	472	71
Future Volume (vph)	79	318	290	593	295	223	341	583	757	199	472	71
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	42.8	42.8	9.6	39.8	39.8	9.6	39.8	39.8	9.6	39.8	39.8
Total Split (s)	11.3	42.8	42.8	22.0	53.5	53.5	15.0	43.0	43.0	12.2	40.2	40.2
Total Split (%)	9.4%	35.7%	35.7%	18.3%	44.6%	44.6%	12.5%	35.8%	35.8%	10.2%	33.5%	33.5%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.2	16.3	16.3	17.4	29.5	29.5	10.4	37.3	37.3	7.6	34.5	34.5
Actuated g/C Ratio	0.06	0.16	0.16	0.18	0.30	0.30	0.10	0.38	0.38	0.08	0.35	0.35
v/c Ratio	0.38	0.57	0.68	1.03	0.29	0.37	0.99	0.46	0.93	0.79	0.40	0.12
Control Delay	51.2	42.2	19.6	85.6	28.4	5.4	90.9	25.5	34.3	67.8	26.5	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.2	42.2	19.6	85.6	28.4	5.4	90.9	25.5	34.3	67.8	26.5	0.4
LOS	D	D	B	F	C	A	F	C	C	E	C	A
Approach Delay		33.6			54.3			42.7			35.1	
Approach LOS		C			D			D			D	

Intersection Summary

































Cycle Length: 120	
Actuated Cycle Length: 99.4	
Natural Cycle: 125	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 43.0	Intersection LOS: D
Intersection Capacity Utilization 76.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

04/22/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	79	318	290	593	295	223	341	583	757	199	472	71
Future Volume (veh/h)	79	318	290	593	295	223	341	583	757	199	472	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	331	226	618	307	133	355	607	597	207	492	37
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	684	300	585	1129	497	350	1286	566	256	1189	523
Arrive On Green	0.04	0.19	0.19	0.17	0.32	0.32	0.10	0.36	0.36	0.07	0.33	0.33
Sat Flow, veh/h	3456	3554	1557	3456	3554	1564	3456	3554	1565	3456	3554	1564
Grp Volume(v), veh/h	82	331	226	618	307	133	355	607	597	207	492	37
Grp Sat Flow(s),veh/h/ln	1728	1777	1557	1728	1777	1564	1728	1777	1565	1728	1777	1564
Q Serve(g_s), s	2.4	8.5	14.1	17.4	6.6	6.5	10.4	13.5	37.2	6.1	11.0	1.7
Cycle Q Clear(g_c), s	2.4	8.5	14.1	17.4	6.6	6.5	10.4	13.5	37.2	6.1	11.0	1.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	684	300	585	1129	497	350	1286	566	256	1189	523
V/C Ratio(X)	0.54	0.48	0.75	1.06	0.27	0.27	1.02	0.47	1.05	0.81	0.41	0.07
Avail Cap(c_a), veh/h	225	1279	561	585	1649	726	350	1286	566	256	1189	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	37.0	39.2	42.7	26.2	26.1	46.2	25.2	32.8	46.9	26.4	23.3
Incr Delay (d2), s/veh	1.1	0.5	3.9	52.9	0.1	0.3	52.0	0.3	52.8	16.4	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.7	5.7	11.6	2.8	2.5	7.0	5.7	21.9	3.2	4.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.2	37.5	43.1	95.6	26.3	26.4	98.2	25.5	85.6	63.3	26.6	23.4
LnGrp LOS	D	D	D	F	C	C	F	C	F	E	C	C
Approach Vol, veh/h		639			1058			1559			736	
Approach Delay, s/veh		41.0			66.8			65.1			36.8	
Approach LOS		D			E			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	43.0	22.0	25.6	15.0	40.2	9.1	38.5				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.6	37.2	17.4	37.0	10.4	34.4	6.7	47.7				
Max Q Clear Time (g_c+I1), s	8.1	39.2	19.4	16.1	12.4	13.0	4.4	8.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.9	0.0	3.4	0.0	2.6				
Intersection Summary												
HCM 6th Ctrl Delay			56.5									
HCM 6th LOS			E									

Intersection

Intersection Delay, s/veh 71.6

Intersection LOS F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	443	506	20	453	433
Future Vol, veh/h	20	443	506	20	453	433
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	471	538	21	482	461
Number of Lanes	1	1	2	0	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left NB			WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right SB		WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay	101.5	39.9	74.9
HCM LOS	F	E	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	89%	0%	0%	0%	100%	100%
Vol Right, %	0%	11%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	337	189	20	443	453	217	217
LT Vol	0	0	20	0	453	0	0
Through Vol	337	169	0	0	0	217	217
RT Vol	0	20	0	443	0	0	0
Lane Flow Rate	359	201	21	471	482	230	230
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.872	0.483	0.057	1.106	1.17	0.527	0.417
Departure Headway (Hd)	9.438	9.36	9.99	8.757	9.236	8.717	6.915
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	388	387	361	419	395	417	525
Service Time	7.138	7.06	7.69	6.457	6.936	6.417	4.615
HCM Lane V/C Ratio	0.925	0.519	0.058	1.124	1.22	0.552	0.438
HCM Control Delay	50.7	20.5	13.3	105.5	129.7	20.7	14.5
HCM Lane LOS	F	C	B	F	F	C	B
HCM 95th-tile Q	8.5	2.5	0.2	16.1	17.9	3	2

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑	
Traffic Vol, veh/h	1	1	1	930	644	0
Future Vol, veh/h	1	1	1	930	644	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	1	1	969	671	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1642	671	671	0	-	0
Stage 1	671	-	-	-	-	-
Stage 2	971	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	110	456	919	-	-	-
Stage 1	508	-	-	-	-	-
Stage 2	367	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	110	456	919	-	-	-
Mov Cap-2 Maneuver	243	-	-	-	-	-
Stage 1	507	-	-	-	-	-
Stage 2	367	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	919	-	317	-	-
HCM Lane V/C Ratio	0.001	-	0.007	-	-
HCM Control Delay (s)	8.9	-	16.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Timings

18: Sierra Ave & Summit Ave.

04/22/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	219	341	366	707	511	152
Future Volume (vph)	219	341	366	707	511	152
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	44.8	9.6	16.5	29.5	29.5
Total Split (s)	44.8	44.8	42.0	75.2	33.2	33.2
Total Split (%)	37.3%	37.3%	35.0%	62.7%	27.7%	27.7%
Yellow Time (s)	4.8	4.8	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	6.5	6.5	6.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	16.8	16.8	23.0	47.0	19.1	19.1
Actuated g/C Ratio	0.22	0.22	0.30	0.61	0.25	0.25
v/c Ratio	0.60	0.57	0.73	0.34	0.61	0.33
Control Delay	36.5	7.6	34.5	7.9	30.6	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	7.6	34.5	7.9	30.6	11.8
LOS	D	A	C	A	C	B
Approach Delay	18.9			17.0	26.3	
Approach LOS	B			B	C	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 76.9	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 20.1	Intersection LOS: C
Intersection Capacity Utilization 60.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

04/22/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	219	341	366	707	511	152
Future Volume (veh/h)	219	341	366	707	511	152
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	231	216	385	744	538	99
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	339	302	465	2078	852	380
Arrive On Green	0.19	0.19	0.26	0.58	0.24	0.24
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	231	216	385	744	538	99
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	6.6	7.0	11.2	6.0	7.4	2.8
Cycle Q Clear(g_c), s	6.6	7.0	11.2	6.0	7.4	2.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	339	302	465	2078	852	380
V/C Ratio(X)	0.68	0.72	0.83	0.36	0.63	0.26
Avail Cap(c_a), veh/h	1268	1129	1216	4458	1732	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.6	20.8	19.1	6.0	18.7	16.9
Incr Delay (d2), s/veh	2.4	3.2	3.8	0.1	0.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	6.2	4.6	1.6	2.8	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.0	23.9	22.9	6.1	19.4	17.2
LnGrp LOS	C	C	C	A	B	B
Approach Vol, veh/h	447			1129	637	
Approach Delay, s/veh	23.5			11.8	19.1	
Approach LOS	C			B	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		38.5		16.2	18.9	19.6
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	37.4	26.7
Max Q Clear Time (g_c+I1), s		8.0		9.0	13.2	9.4
Green Ext Time (p_c), s		6.3		1.5	1.2	3.7
Intersection Summary						
HCM 6th Ctrl Delay			16.3			
HCM 6th LOS			B			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
04/29/2021

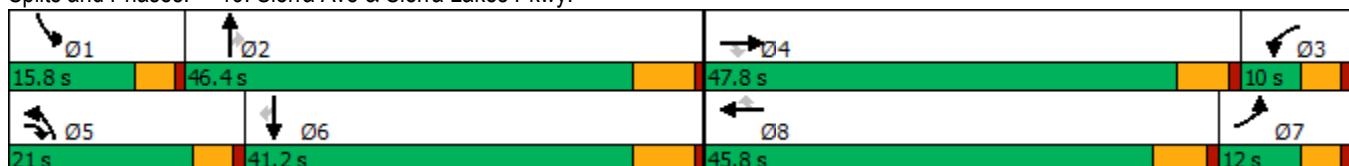


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↑↑	↗	↖↖	↑↑	↗	↖↖	↑↑↑	↗	↖↖	↑↑↑	↗
Traffic Volume (vph)	92	120	472	132	167	201	522	586	244	160	906	141
Future Volume (vph)	92	120	472	132	167	201	522	586	244	160	906	141
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	12.0	47.8	21.0	10.0	45.8	45.8	21.0	46.4	46.4	15.8	41.2	41.2
Total Split (%)	10.0%	39.8%	17.5%	8.3%	38.2%	38.2%	17.5%	38.7%	38.7%	13.2%	34.3%	34.3%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.6	10.2	27.9	7.3	13.1	13.1	16.5	31.3	31.3	8.6	23.4	23.4
Actuated g/C Ratio	0.08	0.13	0.35	0.09	0.17	0.17	0.21	0.40	0.40	0.11	0.30	0.30
v/c Ratio	0.36	0.29	0.86	0.46	0.31	0.50	0.80	0.32	0.34	0.47	0.66	0.27
Control Delay	39.5	34.7	31.4	40.0	33.2	9.5	41.1	17.3	3.7	38.3	26.7	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.5	34.7	31.4	40.0	33.2	9.5	41.1	17.3	3.7	38.3	26.7	5.0
LOS	D	C	C	D	C	A	D	B	A	D	C	A
Approach Delay		33.0			25.5			24.0			25.7	
Approach LOS		C			C			C			C	

Intersection Summary



































Cycle Length: 120
 Actuated Cycle Length: 79
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 26.4
 Intersection LOS: C
 Intersection Capacity Utilization 64.3%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		  	 	
Traffic Volume (veh/h)	92	120	472	132	167	201	522	586	244	160	906	141
Future Volume (veh/h)	92	120	472	132	167	201	522	586	244	160	906	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	132	399	145	184	169	574	644	235	176	996	128
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	391	659	596	220	483	214	658	2045	633	260	1456	452
Arrive On Green	0.11	0.19	0.19	0.06	0.14	0.14	0.19	0.40	0.40	0.08	0.29	0.29
Sat Flow, veh/h	3456	3554	1585	3456	3554	1578	3456	5106	1581	3456	5106	1585
Grp Volume(v), veh/h	101	132	399	145	184	169	574	644	235	176	996	128
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1578	1728	1702	1581	1728	1702	1585
Q Serve(g_s), s	2.1	2.5	9.7	3.2	3.7	6.1	12.6	6.8	5.4	3.9	13.5	3.2
Cycle Q Clear(g_c), s	2.1	2.5	9.7	3.2	3.7	6.1	12.6	6.8	5.4	3.9	13.5	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	391	659	596	220	483	214	658	2045	633	260	1456	452
V/C Ratio(X)	0.26	0.20	0.67	0.66	0.38	0.79	0.87	0.31	0.37	0.68	0.68	0.28
Avail Cap(c_a), veh/h	391	1911	1154	239	1820	808	726	2608	808	496	2269	704
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.6	26.9	7.9	35.7	30.8	18.8	30.7	16.1	7.1	35.2	24.8	9.0
Incr Delay (d2), s/veh	0.1	0.1	1.3	4.2	0.5	6.3	9.8	0.1	0.4	1.2	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.0	3.7	1.4	1.5	3.2	5.6	2.2	2.5	1.5	4.8	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.8	27.1	9.2	40.0	31.2	25.1	40.5	16.2	7.5	36.4	25.4	9.3
LnGrp LOS	C	C	A	D	C	C	D	B	A	D	C	A
Approach Vol, veh/h		632			498			1453			1300	
Approach Delay, s/veh		16.5			31.7			24.4			25.3	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.5	37.8	9.6	20.3	19.5	28.8	13.4	16.4				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	11.2	39.9	5.4	42.0	16.4	34.7	7.4	40.0				
Max Q Clear Time (g_c+I1), s	5.9	8.8	5.2	11.7	14.6	15.5	4.1	8.1				
Green Ext Time (p_c), s	0.1	4.9	0.0	2.2	0.3	6.3	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			24.3									
HCM 6th LOS			C									

APPENDIX 3.3:

EXISTING (2021) CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Conditions - Weekday AM Peak Hour**

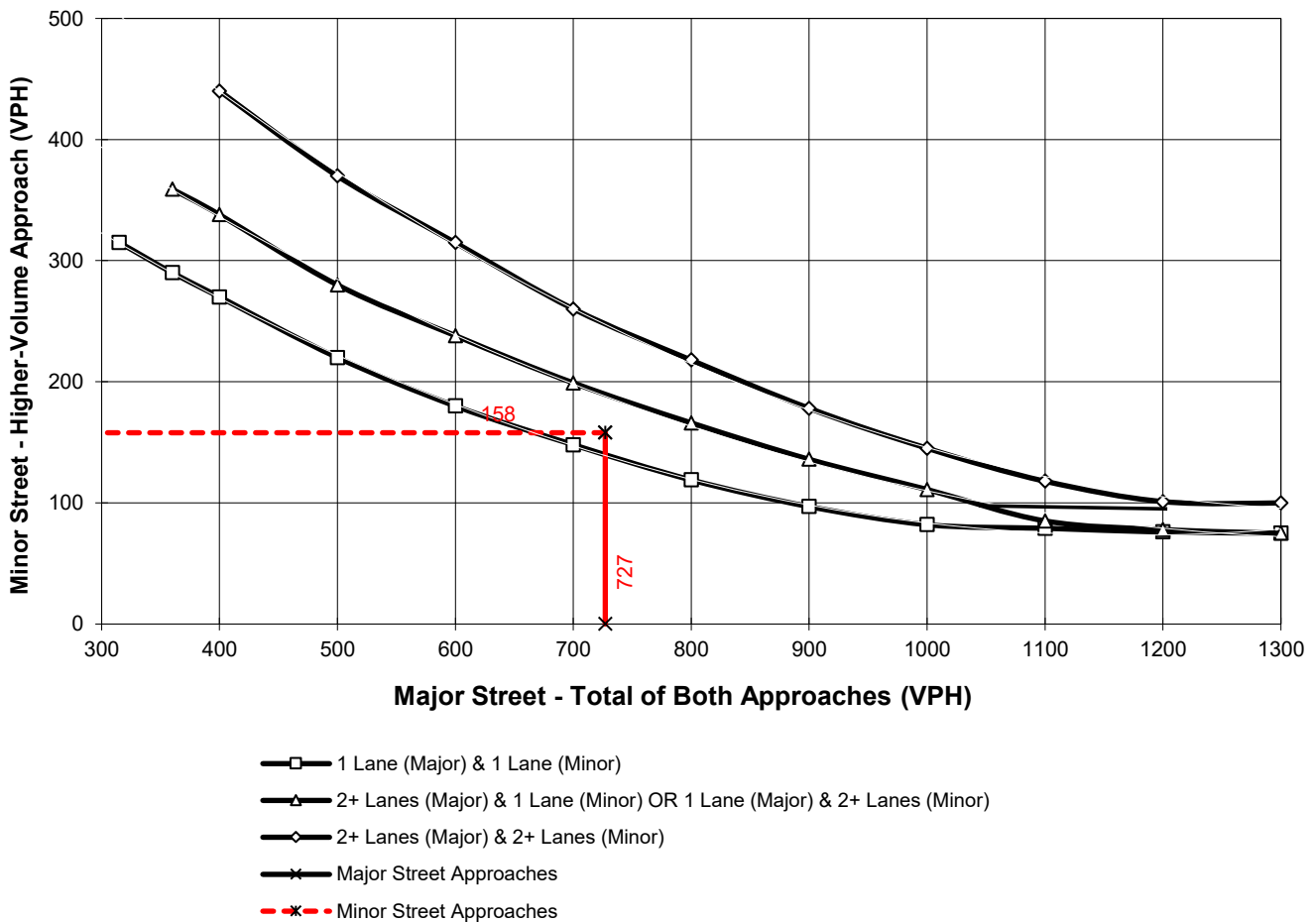
Major Street Name = **Duncan Canyon Rd.**

Total of Both Approaches (VPH) = **727**
 Number of Approach Lanes Major Street = **2**

Minor Street Name = **Coyote Canyon Rd.**

High Volume Approach (VPH) = **158**
 Number of Approach Lanes Minor Street = **2**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Conditions - Weekday AM Peak Hour**

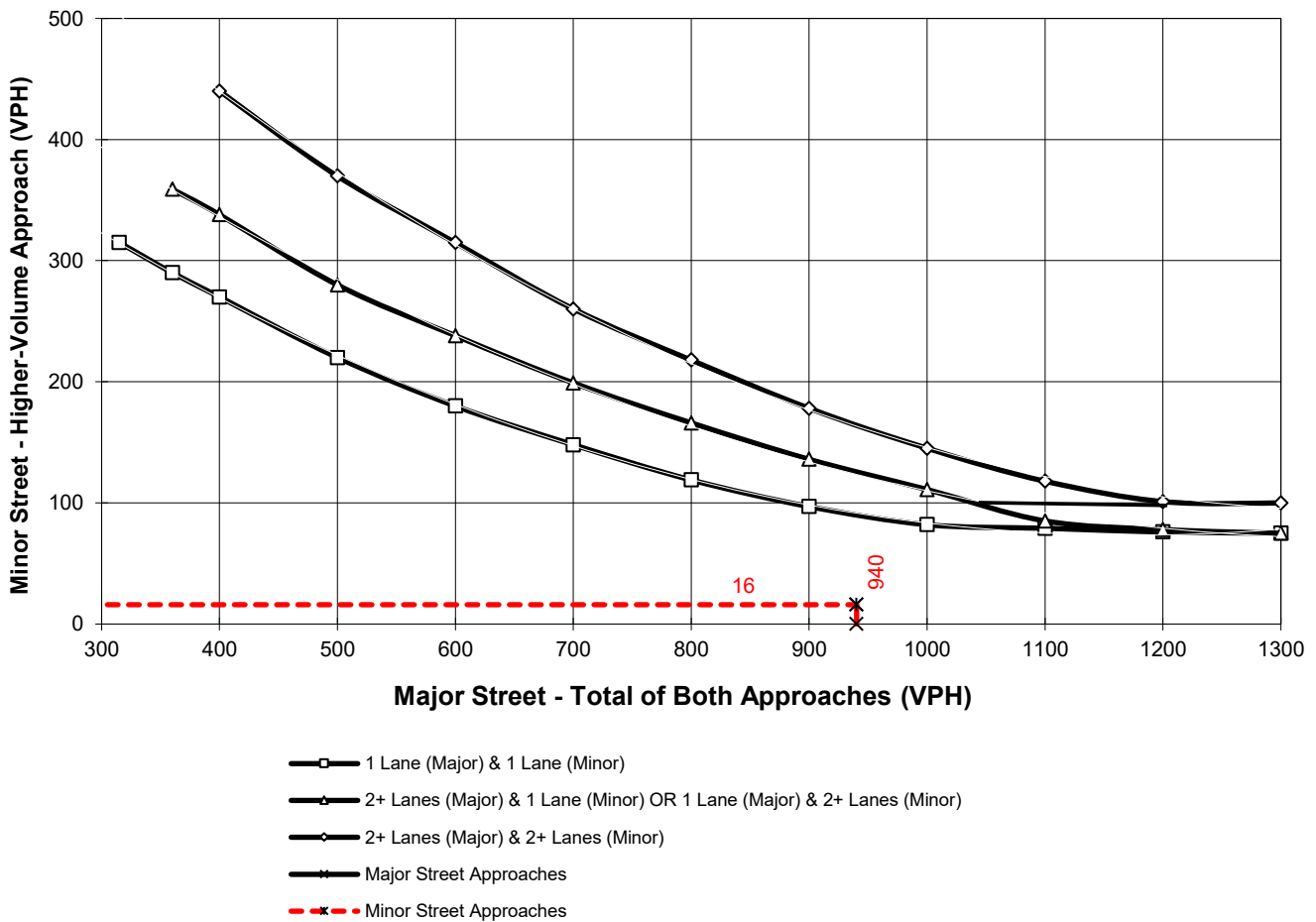
Major Street Name = **Duncan Canyon Rd.**

Total of Both Approaches (VPH) = **940**
 Number of Approach Lanes Major Street = **2**

Minor Street Name = **Lytle Creek Rd.**

High Volume Approach (VPH) = **16**
 Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Conditions - Weekday AM Peak Hour**

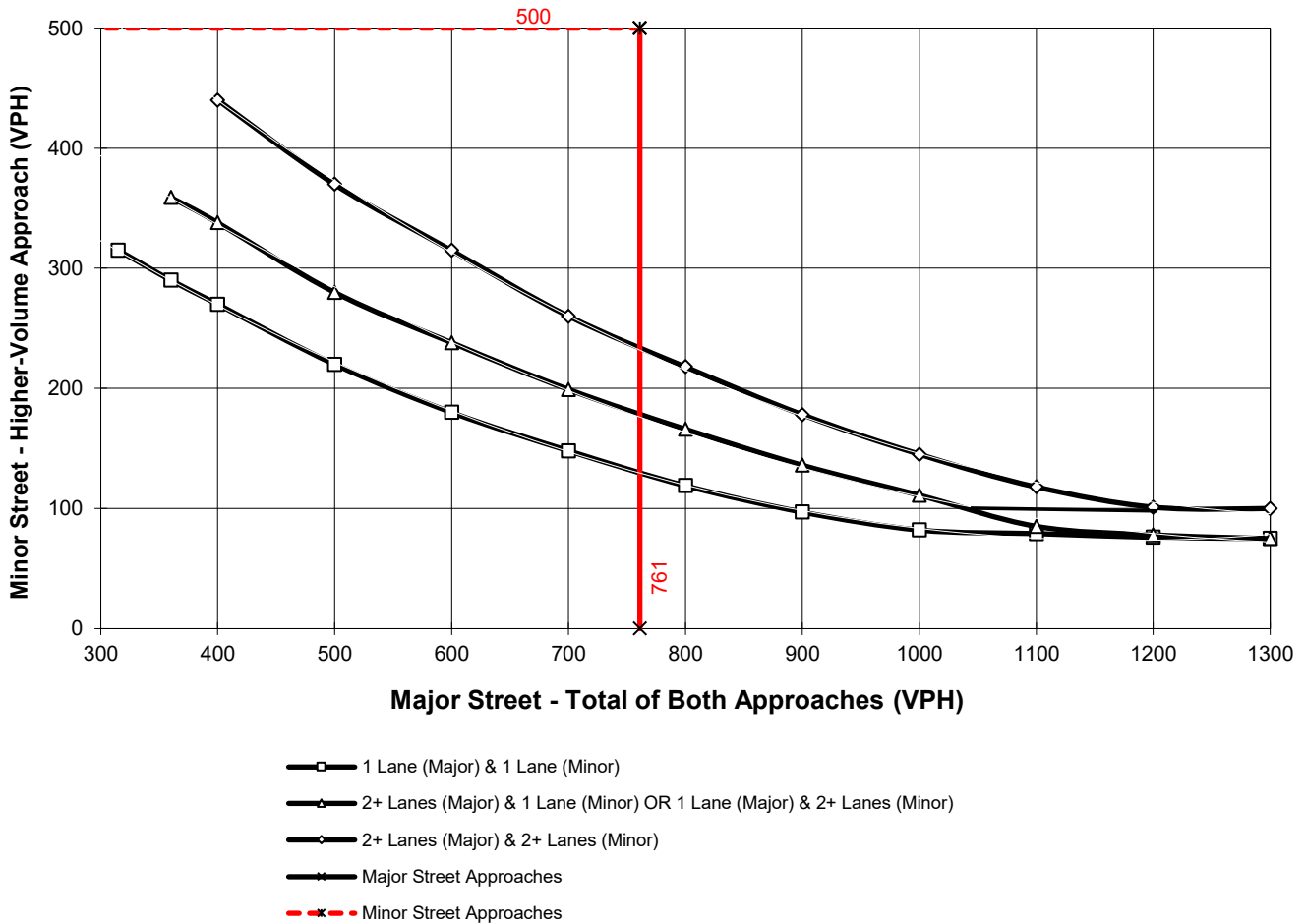
Major Street Name = **Duncan Canyon Rd.**

Total of Both Approaches (VPH) = **761**
 Number of Approach Lanes Major Street = **1**

Minor Street Name = **Citrus Av.**

High Volume Approach (VPH) = **545**
 Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Conditions - Weekday AM Peak Hour**

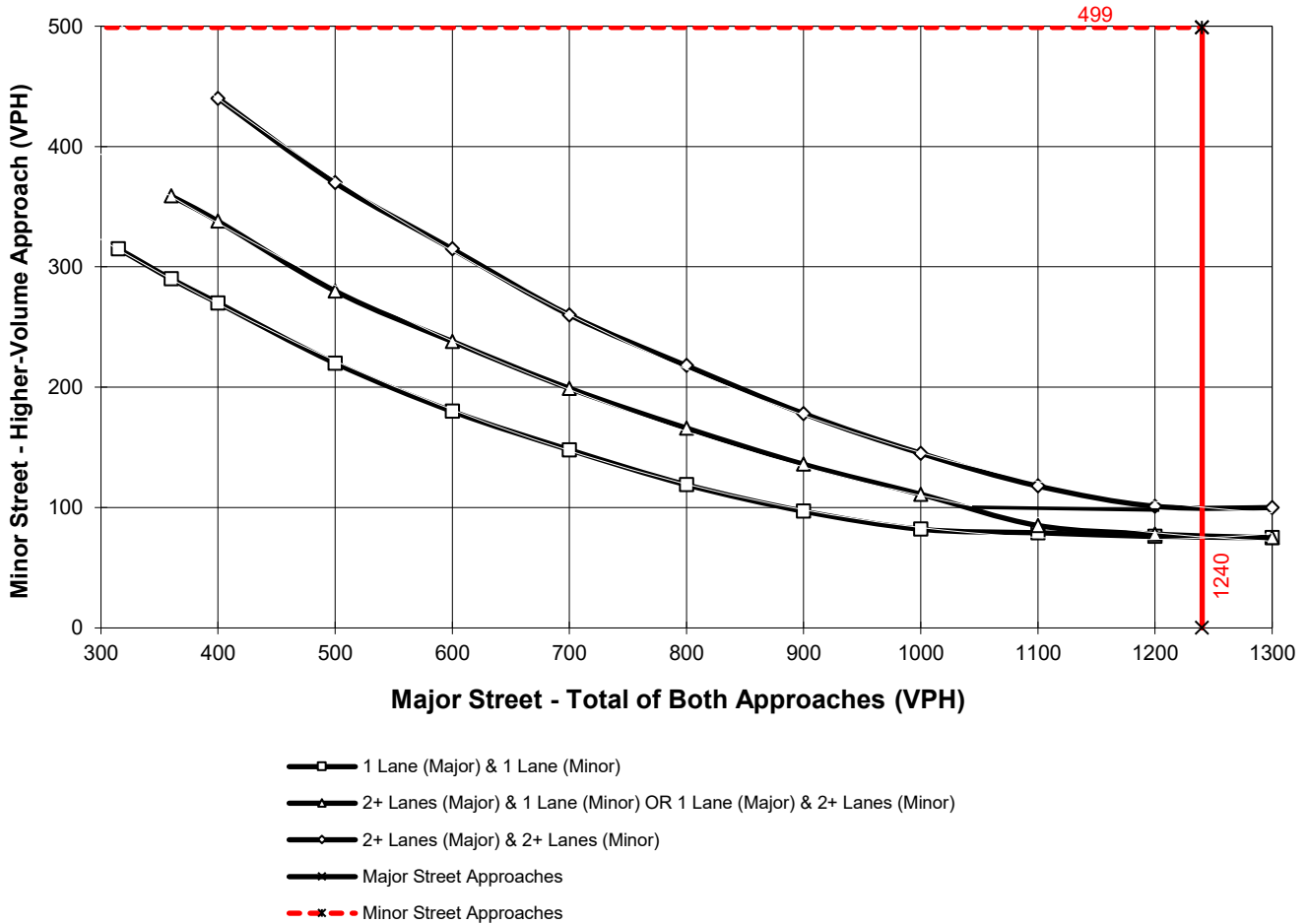
Major Street Name = **Sierra Ave.**

Total of Both Approaches (VPH) = **1240**
 Number of Approach Lanes Major Street = **2**

Minor Street Name = **Riverside Ave.**

High Volume Approach (VPH) = **499**
 Number of Approach Lanes Minor Street = **1**

WARRANTED FOR A SIGNAL



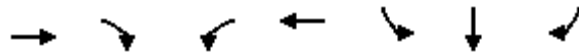
*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

APPENDIX 3.4:

EXISTING (2021) CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS

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3: I-15 SB Ramp & Duncan Canyon Rd.

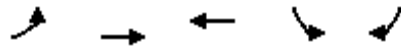


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	247	472	431	280	119	117	46
v/c Ratio	0.11	0.41	0.74	0.10	0.62	0.60	0.21
Control Delay	11.3	2.4	66.8	2.3	63.7	62.7	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	2.4	66.8	2.3	63.7	62.7	15.1
Queue Length 50th (ft)	40	0	185	13	93	91	0
Queue Length 95th (ft)	73	50	239	29	152	150	34
Internal Link Dist (ft)	583			936		3134	
Turn Bay Length (ft)		260	620		650		
Base Capacity (vph)	2148	1146	858	2866	308	310	327
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.41	0.50	0.10	0.39	0.38	0.14

Intersection Summary

4: Beech Ave. & I-15 SB Ramps

04/27/2021

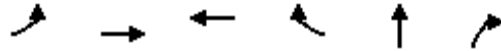


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	285	497	995	211	274
v/c Ratio	0.79	0.18	0.54	0.75	0.57
Control Delay	60.6	4.1	5.8	63.6	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	4.1	5.8	63.6	9.7
Queue Length 50th (ft)	211	45	37	157	0
Queue Length 95th (ft)	287	75	73	231	72
Internal Link Dist (ft)		1839	1079	3017	
Turn Bay Length (ft)	400				290
Base Capacity (vph)	486	2735	1853	368	546
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	0.59	0.18	0.54	0.57	0.50

Intersection Summary

Queues

5: I-15 NB Ramp & Duncan Canyon Rd.



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	77	389	591	105	113	282
v/c Ratio	0.48	0.13	0.23	0.09	0.58	0.51
Control Delay	43.2	2.8	7.5	1.8	61.9	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.2	2.8	7.5	1.8	61.9	8.6
Queue Length 50th (ft)	34	11	79	0	85	0
Queue Length 95th (ft)	105	86	136	21	139	42
Internal Link Dist (ft)		936	871		2645	
Turn Bay Length (ft)	235			260		
Base Capacity (vph)	309	2885	2516	1156	428	887
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	0.25	0.13	0.23	0.09	0.26	0.32

Intersection Summary

Queues
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/27/2021



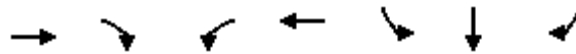
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	90	723	1028	191	360	116
v/c Ratio	0.54	0.30	0.53	0.20	0.82	0.25
Control Delay	52.6	9.2	20.3	3.2	57.2	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.6	9.2	20.3	3.2	57.2	9.5
Queue Length 50th (ft)	62	125	256	0	264	9
Queue Length 95th (ft)	89	157	336	28	293	38
Internal Link Dist (ft)		1079	938		1808	
Turn Bay Length (ft)	145			230		145
Base Capacity (vph)	211	2421	1938	953	604	606
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	0.43	0.30	0.53	0.20	0.60	0.19
Intersection Summary						

Queues

Ventana (JN 13769)

3: I-15 SB Ramp & Duncan Canyon Rd.

04/27/2021



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	249	161	128	447	39	40	60
v/c Ratio	0.09	0.13	0.45	0.14	0.31	0.32	0.35
Control Delay	4.7	1.1	69.5	0.9	58.7	59.0	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.7	1.1	69.5	0.9	58.7	59.0	18.5
Queue Length 50th (ft)	24	0	0	11	30	31	0
Queue Length 95th (ft)	44	20	78	18	68	68	42
Internal Link Dist (ft)	583			936		3134	
Turn Bay Length (ft)	260		620		650		
Base Capacity (vph)	2671	1234	657	3108	378	378	398
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.13	0.19	0.14	0.10	0.11	0.15

Intersection Summary

Queues

4: Beech Ave. & I-15 SB Ramps



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	133	597	931	220	84
v/c Ratio	0.63	0.22	0.45	0.74	0.25
Control Delay	63.2	4.6	29.6	61.9	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	4.6	29.6	61.9	10.0
Queue Length 50th (ft)	100	58	277	164	0
Queue Length 95th (ft)	159	98	360	235	42
Internal Link Dist (ft)		1839	1079	3017	
Turn Bay Length (ft)	400				290
Base Capacity (vph)	309	2707	2085	457	471
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	0.43	0.22	0.45	0.48	0.18

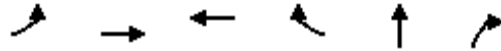
Intersection Summary

Queues

Ventana (JN 13769)

5: I-15 NB Ramp & Duncan Canyon Rd.

04/27/2021



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	104	220	321	133	261	215
v/c Ratio	0.57	0.09	0.15	0.13	0.74	0.30
Control Delay	70.3	5.6	13.0	3.0	57.2	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.3	5.6	13.0	3.0	57.2	5.7
Queue Length 50th (ft)	87	36	56	0	191	0
Queue Length 95th (ft)	147	54	102	33	261	32
Internal Link Dist (ft)		936	871		2645	
Turn Bay Length (ft)	235			260		
Base Capacity (vph)	309	2569	2085	987	652	1136
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	0.34	0.09	0.15	0.13	0.40	0.19

Intersection Summary

Queues
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/27/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	180	637	755	427	729	178
v/c Ratio	0.78	0.38	0.70	0.55	0.91	0.23
Control Delay	64.3	22.2	42.4	6.3	45.9	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.3	22.2	42.4	6.3	45.9	8.8
Queue Length 50th (ft)	139	202	287	0	491	33
Queue Length 95th (ft)	#239	261	367	84	#669	73
Internal Link Dist (ft)		1079	938		1808	
Turn Bay Length (ft)	145			230		145
Base Capacity (vph)	252	1692	1080	779	870	828
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	0.71	0.38	0.70	0.55	0.84	0.21

Intersection Summary

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

APPENDIX 4.1:
POST PROCESS WORKSHEETS

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Project: Ventana SP
 Scenario: Horizon Year (2040)

Job #: 13769
 Analyst: CP
 Date: 4/1/21

LOCATION: Coyote Canyon Rd. & Duncan Canyon
 FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE
NORTH BOUND	Left	5	5	0	-3%	9	7	-2	-25%
	Through	3	6	3	93%	1	3	2	190%
	Right	150	151	1	1%	95	91	-4	-4%
	NB Total	158	162	4	2%	105	101	-4	-4%
SOUTH BOUND	Left	92	297	205	223%	31	112	81	265%
	Through	4	10	6	141%	0	0	0	#DIV/0!
	Right	8	27	19	226%	3	8	5	158%
	SB Total	104	334	230	220%	34	120	86	255%
EAST BOUND	Left	9	19	10	104%	10	41	31	296%
	Through	404	422	18	5%	244	377	133	54%
	Right	6	5	-1	-20%	14	13	-1	-10%
	EB Total	419	446	27	6%	269	431	162	60%
WEST BOUND	Left	47	45	-2	-4%	130	127	-3	-2%
	Through	227	298	71	31%	263	325	62	24%
	Right	33	85	52	154%	50	216	166	328%
	WB Total	308	428	120	39%	443	668	225	51%
TOTAL ENTERING VOLUME		990	1,370	380.158497	38%	851	1,320	469	55%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	334	120			
North Leg	Outbound	110	260			
North Leg	TOTAL	444	380	7%	6%	6,484
South Leg	Inbound	162	101			
South Leg	Outbound	60	140			
South Leg	TOTAL	222	241	600%	651%	37
East Leg	Inbound	428	668			
East Leg	Outbound	870	580			
East Leg	TOTAL	1,298	1,248	12%	12%	10,394
West Leg	Inbound	446	431			
West Leg	Outbound	330	340			
West Leg	TOTAL	776	771	12%	12%	6,292
OVERALL TOTAL		2,740	2,640	12%	11%	23,207

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Project: Ventana SP
 Scenario: Horizon Year (2040)

Job #: 13769
 Analyst: CP
 Date: 4/1/21

LOCATION: Lytle Creek Rd. & Duncan Canyon
 FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	16	38	22	145%	6	9	3	45%
	SB Total	16	38	22	145%	6	9	3	45%
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	646	910	264	41%	370	619	249	67%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	EB Total	646	910	264	41%	370	619	249	67%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	292	382	90	31%	437	671	234	53%
	Right	2	0	-2	-100%	18	41	23	122%
	WB Total	294	382	88	30%	456	712	256	56%
TOTAL ENTERING VOLUME		956	1,330	374.073834	39%	832	1,340	508	61%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	38	9			
North Leg	Outbound	0	41			
North Leg	TOTAL	38	50	3%	3%	1,436
South Leg	Inbound	0	0			
South Leg	Outbound	0	0			
South Leg	TOTAL	0	0	#DIV/0!	#DIV/0!	-
East Leg	Inbound	382	712			
East Leg	Outbound	910	619			
East Leg	TOTAL	1,292	1,331	12%	12%	10,908
West Leg	Inbound	910	619			
West Leg	Outbound	420	680			
West Leg	TOTAL	1,330	1,299	13%	12%	10,393
OVERALL TOTAL		2,660	2,680	12%	12%	22,737

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Project: Ventana SP
 Scenario: Horizon Year (2040)

Job #: 13769
 Analyst: CP
 Date: 4/1/21

LOCATION: I-15 SB Ramps & Duncan Canyon
 FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
SOUTH BOUND	Left	202	330	128	64%	71	115	44	63%
	Through	11	13	2	15%	0	0	0	#DIV/0!
	Right	41	37	-4	-11%	54	86	32	60%
	SB Total	254	380	126	49%	124	201	77	62%
EAST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	222	426	204	92%	224	385	161	72%
	Right	425	585	160	38%	145	278	133	92%
	EB Total	647	1,011	364	56%	369	663	294	79%
WEST BOUND	Left	388	793	405	105%	115	242	127	111%
	Through	252	396	144	57%	402	754	352	87%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	640	1,189	549	86%	517	996	479	93%
TOTAL ENTERING VOLUME		1,541	2,580	1039.02027	67%	1,011	1,860	849	84%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	380	201			
North Leg	Outbound	0	0			
North Leg	TOTAL	380	201	31%	16%	1,227
South Leg	Inbound	0	0			
South Leg	Outbound	1,391	520			
South Leg	TOTAL	1,391	520	21%	8%	6,588
East Leg	Inbound	1,189	996			
East Leg	Outbound	756	500			
East Leg	TOTAL	1,945	1,496	16%	12%	12,121
West Leg	Inbound	1,011	663			
West Leg	Outbound	433	840			
West Leg	TOTAL	1,444	1,503	13%	14%	10,908
OVERALL TOTAL		5,160	3,720	17%	12%	30,844

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Project: Ventana SP
 Scenario: Horizon Year (2040)

Job #: 13769
 Analyst: CP
 Date: 4/1/21

LOCATION: I-15 SB Ramps & Beech
 FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
SOUTH BOUND	Left	194	248	54	28%	207	295	88	42%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	252	302	50	20%	79	86	7	9%
	SB Total	445	550	105	24%	286	381	95	33%
EAST BOUND	Left	262	265	3	1%	125	144	19	15%
	Through	457	465	8	2%	561	819	258	46%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	EB Total	718	730	12	2%	686	963	277	40%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	424	531	107	25%	482	547	65	13%
	Right	491	649	158	32%	393	459	66	17%
	WB Total	915	1,180	265	29%	876	1,006	130	15%
TOTAL ENTERING VOLUME		2,079	2,460	381.307876	18%	1,848	2,350	502	27%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	550	381			
North Leg	Outbound	914	603			
North Leg	TOTAL	1,464	984	11%	8%	12,990
South Leg	Inbound	0	0			
South Leg	Outbound	0	0			
South Leg	TOTAL	0	0	#DIV/0!	#DIV/0!	-
East Leg	Inbound	1,180	1,006			
East Leg	Outbound	713	1,114			
East Leg	TOTAL	1,893	2,120	11%	12%	17,497
West Leg	Inbound	730	963			
West Leg	Outbound	833	633			
West Leg	TOTAL	1,563	1,596	11%	11%	14,731
OVERALL TOTAL		4,920	4,700	11%	10%	45,218

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Project: Ventana SP
 Scenario: Horizon Year (2040)

Job #: 13769
 Analyst: CP
 Date: 4/1/21

LOCATION: I-15 NB Ramps & Duncan Canyon
 FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE
NORTH BOUND	Left	101	153	52	51%	226	338	112	50%
	Through	2	2	0	6%	12	28	16	130%
	Right	257	326	69	27%	196	618	422	215%
	NB Total	360	481	121	34%	434	984	550	127%
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	SB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
EAST BOUND	Left	70	127	57	83%	95	130	35	37%
	Through	354	624	270	76%	200	372	172	86%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	EB Total	424	751	327	77%	295	502	207	70%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	540	1,037	497	92%	292	652	360	124%
	Right	96	161	65	67%	121	421	300	247%
	WB Total	637	1,198	561	88%	413	1,073	660	160%
TOTAL ENTERING VOLUME		1,421	2,430	1009.41627	71%	1,142	2,559	1417	124%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	0	0			
North Leg	Outbound	290	579			
North Leg	TOTAL	290	579	9%	19%	3,060
South Leg	Inbound	481	984			
South Leg	Outbound	0	0			
South Leg	TOTAL	481	984	8%	16%	6,200
East Leg	Inbound	1,198	1,073			
East Leg	Outbound	950	990			
East Leg	TOTAL	2,148	2,063	14%	13%	15,349
West Leg	Inbound	751	502			
West Leg	Outbound	1,190	990			
West Leg	TOTAL	1,941	1,492	16%	12%	12,121
OVERALL TOTAL		4,860	5,118	13%	14%	36,730

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Project: Ventana SP
 Scenario: Horizon Year (2040)

Job #: 13769
 Analyst: CP
 Date: 4/1/21

LOCATION: I-15 NB Ramps & Beech
 FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE
NORTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
SOUTH BOUND	Left	288	374	86	30%	685	849	164	24%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	93	116	23	25%	167	214	47	28%
	SB Total	381	490	109	29%	852	1,063	211	25%
EAST BOUND	Left	72	85	13	17%	169	292	123	73%
	Through	578	626	48	8%	599	821	222	37%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	EB Total	650	711	61	9%	768	1,113	345	45%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	822	1,064	242	29%	710	796	86	12%
	Right	153	225	72	47%	401	548	147	37%
	WB Total	975	1,289	314	32%	1,110	1,344	234	21%
TOTAL ENTERING VOLUME		2,006	2,490	483.772243	24%	2,730	3,520	790	29%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	490	1,063			
North Leg	Outbound	310	840			
North Leg	TOTAL	800	1,903	5%	12%	15,623
South Leg	Inbound	0	0			
South Leg	Outbound	0	0			
South Leg	TOTAL	0	0	#DIV/0!	#DIV/0!	-
East Leg	Inbound	1,289	1,344			
East Leg	Outbound	1,000	1,670			
East Leg	TOTAL	2,289	3,014	10%	13%	22,677
West Leg	Inbound	711	1,113			
West Leg	Outbound	1,180	1,010			
West Leg	TOTAL	1,891	2,123	11%	12%	17,497
OVERALL TOTAL		4,980	7,040	9%	13%	55,797

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Project: Ventana SP
 Scenario: Horizon Year (2040)

Job #: 13769
 Analyst: CP
 Date: 4/1/21

LOCATION: Beech Av. & Summit Av.
 FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE
NORTH BOUND	Left	38	61	23	62%	94	123	29	31%
	Through	288	333	45	16%	295	409	114	39%
	Right	43	37	-6	-14%	89	137	48	54%
	NB Total	368	431	63	17%	478	669	191	40%
SOUTH BOUND	Left	239	300	61	26%	423	648	225	53%
	Through	212	227	15	7%	424	519	95	22%
	Right	30	71	41	136%	87	113	26	31%
	SB Total	481	598	117	24%	934	1,280	346	37%
EAST BOUND	Left	75	116	41	54%	111	132	21	19%
	Through	107	123	16	15%	249	328	79	32%
	Right	21	20	-1	-3%	113	120	7	6%
	EB Total	203	259	56	28%	473	580	107	23%
WEST BOUND	Left	66	63	-3	-4%	107	123	16	15%
	Through	141	298	157	111%	283	346	63	22%
	Right	383	581	198	52%	249	321	72	29%
	WB Total	590	942	352	60%	639	790	151	24%
TOTAL ENTERING VOLUME		1,643	2,230	587.486748	36%	2,524	3,319	795	32%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	598	1,280			
North Leg	Outbound	1,030	862			
North Leg	TOTAL	1,628	2,142	7%	9%	22,677
South Leg	Inbound	431	669			
South Leg	Outbound	310	762			
South Leg	TOTAL	741	1,431	11%	20%	7,037
East Leg	Inbound	942	790			
East Leg	Outbound	460	1,113			
East Leg	TOTAL	1,402	1,903	8%	11%	17,333
West Leg	Inbound	259	580			
West Leg	Outbound	430	582			
West Leg	TOTAL	689	1,162	7%	11%	10,176
OVERALL TOTAL		4,460	6,638	8%	12%	57,223

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Project: Ventana SP
 Scenario: Horizon Year (2040)

Job #: 13769
 Analyst: CP
 Date: 4/1/21

LOCATION: Citrus Av. & Duncan Canyon Rd.
 FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	366	365	36500%	1	562	561	56100%
	Through	2	6	4	200%	2	12	10	500%
	Right	1	0	-1	-100%	1	34	33	3300%
	NB Total	4	372	368	9200%	4	608	604	15100%
SOUTH BOUND	Left	1	0	-1	-100%	1	1	0	0%
	Through	2	64	62	3100%	2	11	9	450%
	Right	1	36	35	3500%	1	9	8	800%
	SB Total	4	100	96	2400%	4	21	17	425%
EAST BOUND	Left	1	3	2	200%	1	8	7	700%
	Through	2	0	-2	-100%	2	195	193	9650%
	Right	1	374	373	37300%	1	418	417	41700%
	EB Total	4	377	373	9325%	4	621	617	15425%
WEST BOUND	Left	1	52	51	5100%	1	1	0	0%
	Through	2	259	257	12850%	2	9	7	350%
	Right	1	0	-1	-100%	1	0	-1	-100%
	WB Total	4	311	307	7675%	4	10	6	150%
TOTAL ENTERING VOLUME		16	1,160	1144	7150%	16	1,260	1244	7775%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	100	21			
North Leg	Outbound	9	20			
North Leg	TOTAL	109	41	17%	7%	623
South Leg	Inbound	372	608			
South Leg	Outbound	490	430			
South Leg	TOTAL	862	1,038	7%	9%	11,524
East Leg	Inbound	311	10			
East Leg	Outbound	0	230			
East Leg	TOTAL	311	240	16%	12%	1,956
West Leg	Inbound	377	621			
West Leg	Outbound	661	580			
West Leg	TOTAL	1,038	1,201	8%	9%	12,805
OVERALL TOTAL		2,320	2,520	9%	9%	26,908

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Project: Ventana SP
 Scenario: Horizon Year (2040)

Job #: 13769
 Analyst: CP
 Date: 4/7/21

LOCATION: Citrus Av. & Casa Grande
 FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	0	-1	-100%	1	0	-1	-100%
	Through	2	536	534	26700%	2	1,243	1,241	62050%
	Right	1	0	-1	-100%	1	0	-1	-100%
	NB Total	4	536	532	13300%	4	1,243	1,239	30975%
SOUTH BOUND	Left	1	40	39	3900%	1	110	109	10900%
	Through	2	830	828	41400%	2	412	410	20500%
	Right	1	40	39	3900%	1	50	49	4900%
	SB Total	4	910	906	22650%	4	572	568	14200%
EAST BOUND	Left	1	74	73	7300%	1	69	68	6800%
	Through	2	0	-2	-100%	2	0	-2	-100%
	Right	1	0	-1	-100%	1	0	-1	-100%
	EB Total	4	74	70	1750%	4	69	65	1625%
WEST BOUND	Left	1	0	-1	-100%	1	0	-1	-100%
	Through	2	0	-2	-100%	2	0	-2	-100%
	Right	1	110	109	10900%	1	55	54	5400%
	WB Total	4	110	106	2650%	4	55	51	1275%
TOTAL ENTERING VOLUME		16	1,630	1614	10088%	16	1,939	1923	12019%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	910	572			
North Leg	Outbound	720	1,367			
North Leg	TOTAL	1,630	1,939	6%	7%	27,574
South Leg	Inbound	536	1,243			
South Leg	Outbound	830	412			
South Leg	TOTAL	1,366	1,655	9%	11%	14,821
East Leg	Inbound	110	55			
East Leg	Outbound	40	110			
East Leg	TOTAL	150	165	11%	13%	1,317
West Leg	Inbound	74	69			
West Leg	Outbound	40	50			
West Leg	TOTAL	114	119	10%	10%	1,180
OVERALL TOTAL		3,260	3,878	7%	9%	44,892

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Project: Ventana SP
 Scenario: Horizon Year (2040)

Job #: 13769
 Analyst: CP
 Date: 4/1/21

LOCATION: Citrus Av. & Summit Av.
 FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFFERENCE	% CHANGE
NORTH BOUND	Left	152	152	0	0%	339	367	28	8%
	Through	192	263	71	37%	284	654	370	130%
	Right	68	57	-11	-16%	101	94	-7	-7%
	NB Total	412	472	60	15%	724	1,115	391	54%
SOUTH BOUND	Left	56	155	99	175%	37	89	52	143%
	Through	184	484	300	163%	198	353	155	79%
	Right	41	134	93	224%	12	34	22	179%
	SB Total	282	773	491	174%	246	476	230	93%
EAST BOUND	Left	30	68	38	126%	35	116	81	228%
	Through	128	178	50	39%	445	589	144	32%
	Right	124	165	41	33%	278	270	-8	-3%
	EB Total	282	411	129	46%	758	975	217	29%
WEST BOUND	Left	137	161	24	17%	127	109	-18	-14%
	Through	203	294	91	45%	349	472	123	35%
	Right	54	108	54	98%	43	123	80	188%
	WB Total	395	563	168	43%	518	704	186	36%
TOTAL ENTERING VOLUME		1,370	2,219	848.986086	62%	2,247	3,270	1023	46%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	773	476			
North Leg	Outbound	439	893			
North Leg	TOTAL	1,212	1,369	8%	9%	14,821
South Leg	Inbound	472	1,115			
South Leg	Outbound	810	732			
South Leg	TOTAL	1,282	1,847	10%	14%	13,045
East Leg	Inbound	563	704			
East Leg	Outbound	390	772			
East Leg	TOTAL	953	1,476	10%	16%	9,508
West Leg	Inbound	411	975			
West Leg	Outbound	580	873			
West Leg	TOTAL	991	1,848	9%	16%	11,291
OVERALL TOTAL		4,438	6,540	9%	13%	48,665

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Project: Ventana SP
 Scenario: Horizon Year (2040)

Job #: 13769
 Analyst: CP
 Date: 4/1/21

LOCATION: Citrus Av. & Summit Av.
 FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	312	291	-21	-7%	341	357	16	5%
	Through	387	458	71	18%	583	840	257	44%
	Right	575	521	-54	-9%	757	713	-44	-6%
	NB Total	1,274	1,270	-4	0%	1,681	1,910	229	14%
SOUTH BOUND	Left	92	124	32	35%	199	216	17	9%
	Through	507	801	294	58%	472	559	87	18%
	Right	54	75	21	38%	71	85	14	20%
	SB Total	654	1,000	346	53%	741	860	119	16%
EAST BOUND	Left	53	59	6	12%	79	112	33	41%
	Through	192	165	-27	-14%	318	294	-24	-8%
	Right	314	316	2	1%	290	293	3	1%
	EB Total	558	540	-18	-3%	688	699	11	2%
WEST BOUND	Left	487	483	-4	-1%	593	511	-82	-14%
	Through	154	134	-20	-13%	295	259	-36	-12%
	Right	85	93	8	10%	223	270	47	21%
	WB Total	725	710	-15	-2%	1,111	1,040	-71	-6%
TOTAL ENTERING VOLUME		3,212	3,520	308.266422	10%	4,221	4,509	288	7%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	1,000	860			
North Leg	Outbound	610	1,222			
North Leg	TOTAL	1,610	2,082	10%	13%	16,054
South Leg	Inbound	1,270	1,910			
South Leg	Outbound	1,600	1,363			
South Leg	TOTAL	2,870	3,273	14%	16%	20,427
East Leg	Inbound	710	1,040			
East Leg	Outbound	810	1,223			
East Leg	TOTAL	1,520	2,263	70%	105%	2,158
West Leg	Inbound	540	699			
West Leg	Outbound	500	701			
West Leg	TOTAL	1,040	1,400	18%	24%	5,896
OVERALL TOTAL		7,040	9,018	16%	20%	44,535

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Project: Ventana SP
 Scenario: Horizon Year (2040)

Job #: 13769
 Analyst: CP
 Date: 4/7/21

LOCATION: Sierra Av. & Riverside Av.
 FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	9	8	800%	1	3	2	200%
	Through	2	518	516	25800%	2	520	518	25900%
	Right	1	204	203	20300%	1	207	206	20600%
	NB Total	4	731	727	18175%	4	730	726	18150%
SOUTH BOUND	Left	1	1,021	1,020	102000%	1	999	998	99800%
	Through	2	463	461	23050%	2	596	594	29700%
	Right	1	44	43	4300%	1	14	13	1300%
	SB Total	4	1,528	1,524	38100%	4	1,609	1,605	40125%
EAST BOUND	Left	1	4	3	300%	1	29	28	2800%
	Through	2	15	13	650%	2	104	102	5100%
	Right	1	1	0	0%	1	7	6	600%
	EB Total	4	20	16	400%	4	140	136	3400%
WEST BOUND	Left	1	127	126	12600%	1	257	256	25600%
	Through	2	108	106	5300%	2	53	51	2550%
	Right	1	708	707	70700%	1	1,081	1,080	108000%
	WB Total	4	943	939	23475%	4	1,391	1,387	34675%
TOTAL ENTERING VOLUME		16	3,222	3206	20038%	16	3,870	3854	24088%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	1,528	1,609			
North Leg	Outbound	1,230	1,630			
North Leg	TOTAL	2,758	3,239	7%	8%	40,327
South Leg	Inbound	731	730			
South Leg	Outbound	591	860			
South Leg	TOTAL	1,322	1,590	6%	8%	20,800
East Leg	Inbound	943	1,391			
East Leg	Outbound	1,240	1,310			
East Leg	TOTAL	2,183	2,701	8%	9%	28,937
West Leg	Inbound	20	140			
West Leg	Outbound	161	70			
West Leg	TOTAL	181	210	10%	12%	1,738
OVERALL TOTAL		6,444	7,740	7%	8%	91,802

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Project: Ventana SP
 Scenario: Horizon Year (2040)

Job #: 13769
 Analyst: CP
 Date: 4/7/21

LOCATION: Sierra Av. & Duncan Canyon Rd.
 FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	1	25	24	2400%	1	15	14	1400%
	Through	2	370	368	18400%	2	714	712	35600%
	Right	1	157	156	15600%	1	143	142	14200%
	NB Total	4	552	548	13700%	4	872	868	21700%
SOUTH BOUND	Left	1	69	68	6800%	1	64	63	6300%
	Through	2	757	755	37750%	2	556	554	27700%
	Right	1	11	10	1000%	1	7	6	600%
	SB Total	4	837	833	20825%	4	627	623	15575%
EAST BOUND	Left	1	4	3	300%	1	24	23	2300%
	Through	2	16	14	700%	2	44	42	2100%
	Right	1	20	19	1900%	1	42	41	4100%
	EB Total	4	40	36	900%	4	110	106	2650%
WEST BOUND	Left	1	179	178	17800%	1	161	160	16000%
	Through	2	24	22	1100%	2	18	16	800%
	Right	1	38	37	3700%	1	92	91	9100%
	WB Total	4	241	237	5925%	4	271	267	6675%
TOTAL ENTERING VOLUME		16	1,670	1654	10338%	16	1,880	1864	11650%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	837	627			
North Leg	Outbound	412	830			
North Leg	TOTAL	1,249	1,457	6%	7%	20,331
South Leg	Inbound	552	872			
South Leg	Outbound	956	759			
South Leg	TOTAL	1,508	1,631	6%	7%	24,026
East Leg	Inbound	241	271			
East Leg	Outbound	242	251			
East Leg	TOTAL	483	522	7%	8%	6,709
West Leg	Inbound	40	110			
West Leg	Outbound	60	40			
West Leg	TOTAL	100	150	8%	11%	1,317
OVERALL TOTAL		3,340	3,760	6%	7%	52,383

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Project: Ventana SP
 Scenario: Horizon Year (2040)

Job #: 13769
 Analyst: CP
 Date: 4/1/21

LOCATION: Sierra Av. & Summit Av.
 FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	246	293	47	19%	366	516	150	41%
	Through	436	584	148	34%	707	992	285	40%
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	NB Total	682	877	195	29%	1,073	1,508	435	41%
SOUTH BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	812	1,193	381	47%	511	747	236	46%
	Right	92	97	5	5%	152	184	32	21%
	SB Total	904	1,290	386	43%	663	931	268	40%
EAST BOUND	Left	58	76	18	30%	219	228	9	4%
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	241	387	146	61%	341	433	92	27%
	EB Total	299	463	164	55%	561	661	100	18%
WEST BOUND	Left	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Through	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	Right	0	0	0	#DIV/0!	0	0	0	#DIV/0!
	WB Total	0	0	0	#DIV/0!	0	0	0	#DIV/0!
TOTAL ENTERING VOLUME		1,885	2,630	745.056302	40%	2,297	3,100	803	35%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	1,290	931			
North Leg	Outbound	660	1,220			
North Leg	TOTAL	1,950	2,151	9%	9%	22,663
South Leg	Inbound	877	1,508			
South Leg	Outbound	1,580	1,180			
South Leg	TOTAL	2,457	2,688	9%	9%	28,790
East Leg	Inbound	0	0			
East Leg	Outbound	0	0			
East Leg	TOTAL	0	0	0%	0%	3,830
West Leg	Inbound	463	661			
West Leg	Outbound	390	700			
West Leg	TOTAL	853	1,361	11%	18%	7,594
OVERALL TOTAL		5,260	6,200	8%	10%	62,877

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Project: Ventana SP
 Scenario: Horizon Year (2040)

Job #: 13769
 Analyst: CP
 Date: 4/1/21

LOCATION: Sierra Av. & Sierra Lakes Pkwy.
 FORECAST YEAR: 2040

INDIVIDUAL TURN VOLUME GROWTH REVIEW									
APPROACH	TURNING MOVEMENT	AM PEAK HOUR INPUT DATA				PM PEAK HOUR INPUT DATA			
		EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE	EXISTING COUNT	FUTURE VOLUME	DIFF-ERENCE	% CHANGE
NORTH BOUND	Left	522	471	-51	-10%	780	750	-30	-4%
	Through	586	697	111	19%	824	1,127	303	37%
	Right	244	232	-12	-5%	237	244	7	3%
	NB Total	1,353	1,400	47	3%	1,841	2,121	280	15%
SOUTH BOUND	Left	160	191	31	20%	188	219	31	17%
	Through	906	1,330	424	47%	711	908	197	28%
	Right	141	160	19	14%	160	173	13	8%
	SB Total	1,207	1,681	474	39%	1,058	1,300	242	23%
EAST BOUND	Left	92	93	1	1%	216	241	25	12%
	Through	120	97	-23	-19%	284	239	-45	-16%
	Right	472	469	-3	-1%	857	790	-67	-8%
	EB Total	684	659	-25	-4%	1,357	1,270	-87	-6%
WEST BOUND	Left	132	141	9	7%	191	195	4	2%
	Through	167	139	-28	-17%	206	179	-27	-13%
	Right	201	220	19	9%	158	196	38	24%
	WB Total	500	500	0	0%	556	570	14	3%
TOTAL ENTERING VOLUME		3,744	4,240	496.422886	13%	4,812	5,261	449	9%

FORECAST PEAK HOUR TO ADT COMPARISON						
		VOLUMES		PERCENT OF ADT		ADT
		AM	PM	AM	PM	
North Leg	Inbound	1,681	1,300			
North Leg	Outbound	1,010	1,564			
North Leg	TOTAL	2,691	2,864	8%	9%	31,984
South Leg	Inbound	1,400	2,121			
South Leg	Outbound	1,940	1,893			
South Leg	TOTAL	3,340	4,014	11%	13%	31,794
East Leg	Inbound	500	570			
East Leg	Outbound	520	702			
East Leg	TOTAL	1,020	1,272	292%	364%	349
West Leg	Inbound	659	1,270			
West Leg	Outbound	770	1,102			
West Leg	TOTAL	1,429	2,372	61%	101%	2,345
OVERALL TOTAL		8,480	10,522	13%	16%	66,472

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APPENDIX 5.1:

**OPENING YEAR CUMULATIVE (2023) WITHOUT PROJECT CONDITIONS INTERSECTION
OPERATIONS ANALYSIS WORKSHEETS**

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Intersection	
Intersection Delay, s/veh	17
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕↘		↘	↕↘		↘	↕	↘	↘	↕	↘
Traffic Vol, veh/h	19	425	6	59	255	80	5	4	157	229	6	37
Future Vol, veh/h	19	425	6	59	255	80	5	4	157	229	6	37
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	452	6	63	271	85	5	4	167	244	6	39
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	18.8	14.2	14.3	19.9
HCM LOS	C	B	B	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	96%	0%	100%	52%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	4%	0%	0%	48%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	4	157	19	283	148	59	170	165	229	6
LT Vol	5	0	0	19	0	0	59	0	0	229	0
Through Vol	0	4	0	0	283	142	0	170	85	0	6
RT Vol	0	0	157	0	0	6	0	0	80	0	0
Lane Flow Rate	5	4	167	20	301	157	63	181	176	244	6
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.013	0.01	0.352	0.045	0.624	0.324	0.141	0.382	0.354	0.568	0.014
Departure Headway (Hd)	8.79	8.29	7.59	7.956	7.456	7.427	8.105	7.605	7.266	8.393	7.893
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	407	431	473	450	485	484	442	472	495	429	453
Service Time	6.556	6.056	5.356	5.709	5.209	5.181	5.863	5.363	5.024	6.152	5.652
HCM Lane V/C Ratio	0.012	0.009	0.353	0.044	0.621	0.324	0.143	0.383	0.356	0.569	0.013
HCM Control Delay	11.7	11.1	14.5	11.1	21.9	13.7	12.2	15	14	21.7	10.8
HCM Lane LOS	B	B	B	B	C	B	B	B	B	C	B
HCM 95th-tile Q	0	0	1.6	0.1	4.2	1.4	0.5	1.8	1.6	3.4	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	811	377	2	0	16
Future Vol, veh/h	0	811	377	2	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	863	401	2	0	17

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	- 202
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0 *950
Stage 1	0	-	-	-	0 -
Stage 2	0	-	-	-	0 -
Platoon blocked, %		-	-	-	1
Mov Cap-1 Maneuver	-	-	-	-	- *950
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

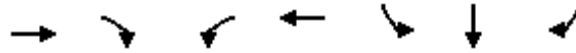
Approach	EB	WB	SB
HCM Control Delay, s	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	950
HCM Lane V/C Ratio	-	-	-	0.018
HCM Control Delay (s)	-	-	-	8.9
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.1

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

Timings
3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/22/2021

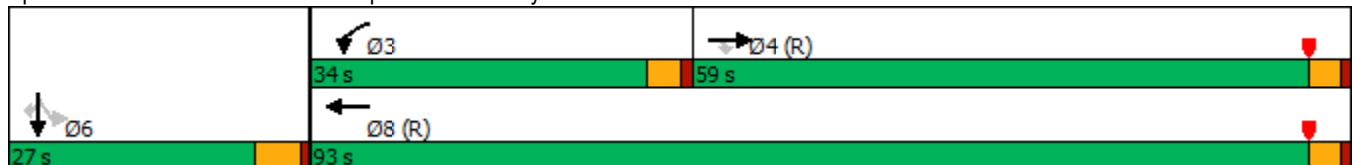


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↔	↑↑	↔	↑	↔
Traffic Volume (vph)	312	499	644	330	236	12	49
Future Volume (vph)	312	499	644	330	236	12	49
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8		6	
Permitted Phases		4			6		6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	34.0	34.0	12.0	29.0	13.0	13.0	13.0
Total Split (s)	59.0	59.0	34.0	93.0	27.0	27.0	27.0
Total Split (%)	49.2%	49.2%	28.3%	77.5%	22.5%	22.5%	22.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effct Green (s)	62.6	62.6	29.3	95.9	15.1	15.1	15.1
Actuated g/C Ratio	0.52	0.52	0.24	0.80	0.13	0.13	0.13
v/c Ratio	0.19	0.54	0.85	0.13	0.64	0.65	0.22
Control Delay	16.8	6.7	74.2	2.5	63.3	63.8	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.8	6.7	74.2	2.5	63.3	63.8	13.7
LOS	B	A	E	A	E	E	B
Approach Delay	10.6			49.9		55.4	
Approach LOS	B			D		E	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 35.4
 Intersection LOS: D
 Intersection Capacity Utilization 67.0%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 3: I-15 SB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 3: I-15 SB Ramp & Duncan Canyon Rd.

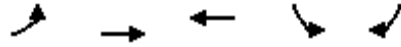
Ventana (JN 13769)

04/22/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↘↗	↑↑					↘	↗	↗
Traffic Volume (veh/h)	0	312	499	644	330	0	0	0	0	236	12	49
Future Volume (veh/h)	0	312	499	644	330	0	0	0	0	236	12	49
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	347	486	716	367	0				271	0	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2025	903	776	2941	0				347	0	154
Arrive On Green	0.00	0.57	0.57	0.37	1.00	0.00				0.10	0.00	0.10
Sat Flow, veh/h	0	3647	1585	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	347	486	716	367	0				271	0	38
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	5.6	22.8	23.8	0.0	0.0				8.9	0.0	2.7
Cycle Q Clear(g_c), s	0.0	5.6	22.8	23.8	0.0	0.0				8.9	0.0	2.7
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2025	903	776	2941	0				347	0	154
V/C Ratio(X)	0.00	0.17	0.54	0.92	0.12	0.00				0.78	0.00	0.25
Avail Cap(c_a), veh/h	0	2025	903	864	2941	0				653	0	291
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.92	0.92	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.3	16.0	36.5	0.0	0.0				52.9	0.0	50.1
Incr Delay (d2), s/veh	0.0	0.2	2.3	13.5	0.1	0.0				3.9	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.1	8.1	9.6	0.0	0.0				4.1	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.5	18.3	50.0	0.1	0.0				56.8	0.0	50.9
LnGrp LOS	A	B	B	D	A	A				E	A	D
Approach Vol, veh/h		833		1083						309		
Approach Delay, s/veh		15.9		33.1						56.0		
Approach LOS		B		C						E		
Timer - Assigned Phs			3	4		6			8			
Phs Duration (G+Y+Rc), s			30.9	72.4		16.7			103.3			
Change Period (Y+Rc), s			4.0	4.0		5.0			4.0			
Max Green Setting (Gmax), s			30.0	55.0		22.0			89.0			
Max Q Clear Time (g_c+I1), s			25.8	24.8		10.9			2.0			
Green Ext Time (p_c), s			1.2	4.0		0.8			2.4			
Intersection Summary												
HCM 6th Ctrl Delay			29.8									
HCM 6th LOS			C									
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings
4: Beech Ave. & I-15 SB Ramps

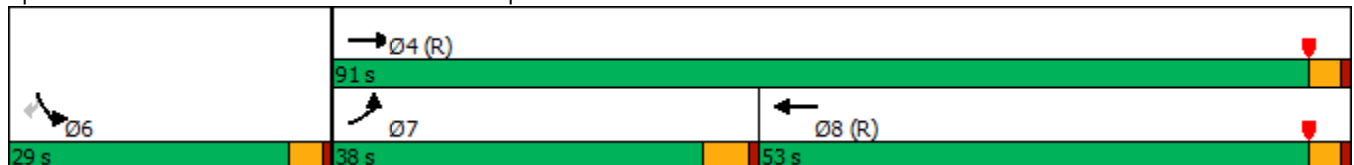


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations	↗	↑↑	↑↑	↖	↗
Traffic Volume (vph)	268	484	466	199	257
Future Volume (vph)	268	484	466	199	257
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	5.0	5.0
Minimum Split (s)	10.0	12.0	12.0	9.0	9.0
Total Split (s)	38.0	91.0	53.0	29.0	29.0
Total Split (%)	31.7%	75.8%	44.2%	24.2%	24.2%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	None	None
Act Effct Green (s)	24.9	92.5	62.6	19.5	19.5
Actuated g/C Ratio	0.21	0.77	0.52	0.16	0.16
v/c Ratio	0.79	0.19	0.65	0.75	0.57
Control Delay	60.4	4.2	8.9	63.9	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	60.4	4.2	8.9	63.9	9.6
LOS	E	A	A	E	A
Approach Delay		24.2	8.9	33.3	
Approach LOS		C	A	C	

Intersection Summary

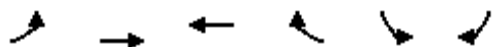
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 18.7
 Intersection LOS: B
 Intersection Capacity Utilization 69.2%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 4: Beech Ave. & I-15 SB Ramps



HCM 6th Signalized Intersection Summary
 4: Beech Ave. & I-15 SB Ramps

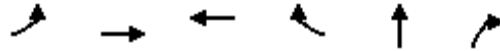
Ventana (JN 13769)
 04/22/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗		↙	↘	
Traffic Volume (veh/h)	268	484	466	634	199	257	
Future Volume (veh/h)	268	484	466	634	199	257	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	291	526	507	689	216	278	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	324	2634	920	821	342	305	
Arrive On Green	0.18	0.74	0.86	0.86	0.19	0.19	
Sat Flow, veh/h	1781	3647	1870	1585	1781	1585	
Grp Volume(v), veh/h	291	526	507	689	216	278	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	19.2	5.4	8.9	25.8	13.4	20.6	
Cycle Q Clear(g_c), s	19.2	5.4	8.9	25.8	13.4	20.6	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	324	2634	920	821	342	305	
V/C Ratio(X)	0.90	0.20	0.55	0.84	0.63	0.91	
Avail Cap(c_a), veh/h	490	2634	920	821	371	330	
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.72	0.72	1.00	1.00	
Uniform Delay (d), s/veh	48.0	4.7	4.5	5.7	44.6	47.5	
Incr Delay (d2), s/veh	13.8	0.2	1.7	7.5	3.0	27.4	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	9.5	1.6	2.4	4.5	6.0	19.1	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	61.8	4.9	6.2	13.1	47.6	74.9	
LnGrp LOS	E	A	A	B	D	E	
Approach Vol, veh/h		817	1196		494		
Approach Delay, s/veh		25.2	10.2		63.0		
Approach LOS		C	B		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				92.9	27.1	26.8	66.1
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				87.0	25.0	33.0	49.0
Max Q Clear Time (g_c+I1), s				7.4	22.6	21.2	27.8
Green Ext Time (p_c), s				3.5	0.4	0.6	8.2
Intersection Summary							
HCM 6th Ctrl Delay			25.5				
HCM 6th LOS			C				

Timings
5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/22/2021

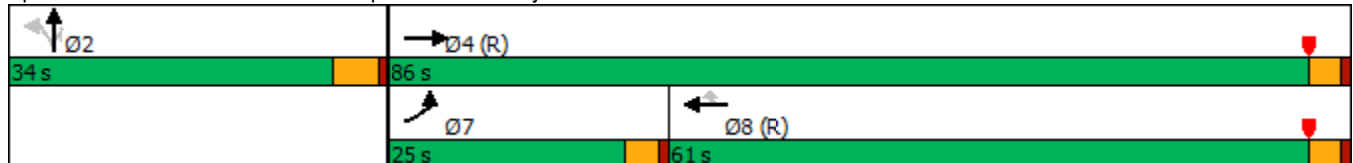


Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations	↶	↷	↶	↷	↷	↷
Traffic Volume (vph)	90	458	849	185	2	347
Future Volume (vph)	90	458	849	185	2	347
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8		2	
Permitted Phases				8		2
Detector Phase	7	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	30.0	36.0	36.0	13.0	13.0
Total Split (s)	25.0	86.0	61.0	61.0	34.0	34.0
Total Split (%)	20.8%	71.7%	50.8%	50.8%	28.3%	28.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	12.2	95.9	79.7	79.7	15.1	15.1
Actuated g/C Ratio	0.10	0.80	0.66	0.66	0.13	0.13
v/c Ratio	0.55	0.18	0.40	0.18	0.63	0.56
Control Delay	46.5	3.8	10.8	1.9	61.4	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.5	3.8	10.8	1.9	61.4	7.7
LOS	D	A	B	A	E	A
Approach Delay		10.8	9.2		22.1	
Approach LOS		B	A		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 12.6
 Intersection LOS: B
 Intersection Capacity Utilization 67.0%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 5: I-15 NB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/22/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	458	0	0	849	185	126	2	347	0	0	0
Future Volume (veh/h)	90	458	0	0	849	185	126	2	347	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	99	503	0	0	933	203	138	2	333			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	123	2767	0	0	2403	1072	257	4	408			
Arrive On Green	0.14	1.00	0.00	0.00	0.68	0.68	0.15	0.15	0.15			
Sat Flow, veh/h	1781	3647	0	0	3647	1585	1757	25	2790			
Grp Volume(v), veh/h	99	503	0	0	933	203	140	0	333			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1585	1783	0	1395			
Q Serve(g_s), s	6.5	0.0	0.0	0.0	13.8	5.7	8.7	0.0	13.9			
Cycle Q Clear(g_c), s	6.5	0.0	0.0	0.0	13.8	5.7	8.7	0.0	13.9			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	123	2767	0	0	2403	1072	261	0	408			
V/C Ratio(X)	0.80	0.18	0.00	0.00	0.39	0.19	0.54	0.00	0.82			
Avail Cap(c_a), veh/h	312	2767	0	0	2403	1072	431	0	674			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.96	0.96	0.00	0.00	0.96	0.96	1.00	0.00	1.00			
Uniform Delay (d), s/veh	50.9	0.0	0.0	0.0	8.5	7.2	47.4	0.0	49.6			
Incr Delay (d2), s/veh	11.0	0.1	0.0	0.0	0.5	0.4	1.7	0.0	4.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.0	0.1	0.0	0.0	4.7	1.8	3.9	0.0	4.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.9	0.1	0.0	0.0	9.0	7.6	49.2	0.0	53.7			
LnGrp LOS	E	A	A	A	A	A	D	A	D			
Approach Vol, veh/h		602			1136			473				
Approach Delay, s/veh		10.3			8.7			52.3				
Approach LOS		B			A			D				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		22.6		97.4			12.3	85.1				
Change Period (Y+Rc), s		5.0		4.0			4.0	4.0				
Max Green Setting (Gmax), s		29.0		82.0			21.0	57.0				
Max Q Clear Time (g_c+I1), s		15.9		2.0			8.5	15.8				
Green Ext Time (p_c), s		1.7		3.4			0.2	8.1				
Intersection Summary												
HCM 6th Ctrl Delay				18.5								
HCM 6th LOS				B								

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/08/2021

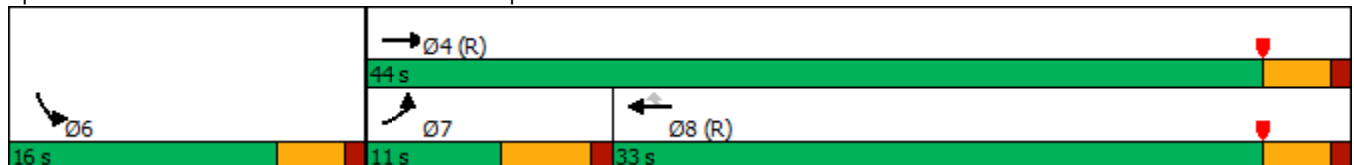


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↗↗	↗↗	↖	↖↖↖
Traffic Volume (vph)	74	609	1004	166	341
Future Volume (vph)	74	609	1004	166	341
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	11.0	44.0	33.0	33.0	16.0
Total Split (%)	18.3%	73.3%	55.0%	55.0%	26.7%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	5.9	40.4	31.6	31.6	11.6
Actuated g/C Ratio	0.10	0.67	0.53	0.53	0.19
v/c Ratio	0.53	0.32	0.67	0.22	0.78
Control Delay	41.0	3.2	13.8	2.3	30.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	3.2	13.8	2.3	30.1
LOS	D	A	B	A	C
Approach Delay		7.3	12.1		30.1
Approach LOS		A	B		C

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 14.1
 Intersection LOS: B
 Intersection Capacity Utilization 55.5%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/08/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	74	609	1004	166	341	95	
Future Volume (veh/h)	74	609	1004	166	341	95	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	92	761	1255	144	467	0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	117	2486	1957	873	595	265	
Arrive On Green	0.13	1.00	0.55	0.55	0.17	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	92	761	1255	144	467	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	3.0	0.0	14.7	2.7	7.5	0.0	
Cycle Q Clear(g_c), s	3.0	0.0	14.7	2.7	7.5	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	117	2486	1957	873	595	265	
V/C Ratio(X)	0.79	0.31	0.64	0.16	0.78	0.00	
Avail Cap(c_a), veh/h	178	2486	1957	873	713	317	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.94	0.94	0.73	0.73	1.00	0.00	
Uniform Delay (d), s/veh	25.7	0.0	9.4	6.7	24.0	0.0	
Incr Delay (d2), s/veh	11.6	0.3	1.2	0.3	4.8	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.5	0.1	4.1	0.7	3.4	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	37.2	0.3	10.6	7.0	28.8	0.0	
LnGrp LOS	D	A	B	A	C	A	
Approach Vol, veh/h		853	1399		467		
Approach Delay, s/veh		4.3	10.2		28.8		
Approach LOS		A	B		C		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				46.0	14.0	8.9	37.0
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				40.0	12.0	6.0	29.0
Max Q Clear Time (g_c+I1), s				2.0	9.5	5.0	16.7
Green Ext Time (p_c), s				5.4	0.5	0.0	6.8

Intersection Summary

HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

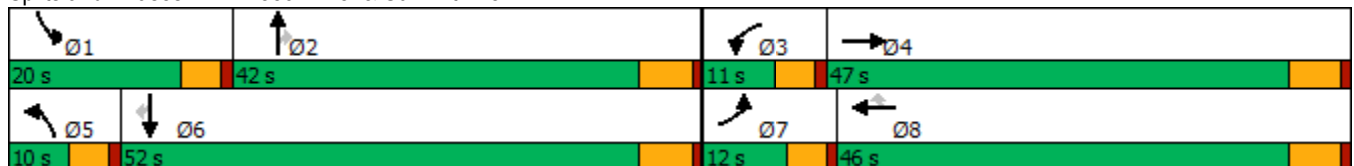
Ventana (JN 13769)
04/22/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	78	117	78	166	522	40	336	50	290	233	34
Future Volume (vph)	78	117	78	166	522	40	336	50	290	233	34
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	43.8	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	47.0	11.0	46.0	46.0	10.0	42.0	42.0	20.0	52.0	52.0
Total Split (%)	10.0%	39.2%	9.2%	38.3%	38.3%	8.3%	35.0%	35.0%	16.7%	43.3%	43.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	6.5	17.6	6.2	17.4	17.4	5.6	13.7	13.7	10.9	24.4	24.4
Actuated g/C Ratio	0.10	0.26	0.09	0.26	0.26	0.08	0.20	0.20	0.16	0.36	0.36
v/c Ratio	0.25	0.16	0.26	0.19	0.79	0.15	0.50	0.12	0.55	0.19	0.06
Control Delay	36.6	18.6	37.3	21.5	16.3	37.7	29.5	0.6	33.4	19.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.6	18.6	37.3	21.5	16.3	37.7	29.5	0.6	33.4	19.8	0.2
LOS	D	B	D	C	B	D	C	A	C	B	A
Approach Delay		25.1		19.6			26.8			25.7	
Approach LOS		C		B			C			C	

Intersection Summary
























Cycle Length: 120	
Actuated Cycle Length: 67.9	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 60.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 7: Beech Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/22/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	117	22	78	166	522	40	336	50	290	233	34
Future Volume (veh/h)	78	117	22	78	166	522	40	336	50	290	233	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	123	18	82	175	438	42	354	41	305	245	33
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	205	1035	149	205	1179	525	141	602	264	417	886	394
Arrive On Green	0.06	0.33	0.33	0.06	0.33	0.33	0.04	0.17	0.17	0.12	0.25	0.25
Sat Flow, veh/h	3456	3118	448	3456	3554	1582	3456	3554	1556	3456	3554	1581
Grp Volume(v), veh/h	82	69	72	82	175	438	42	354	41	305	245	33
Grp Sat Flow(s),veh/h/ln	1728	1777	1789	1728	1777	1582	1728	1777	1556	1728	1777	1581
Q Serve(g_s), s	1.5	1.8	1.8	1.5	2.3	16.7	0.8	6.0	1.5	5.6	3.6	1.0
Cycle Q Clear(g_c), s	1.5	1.8	1.8	1.5	2.3	16.7	0.8	6.0	1.5	5.6	3.6	1.0
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	205	590	594	205	1179	525	141	602	264	417	886	394
V/C Ratio(X)	0.40	0.12	0.12	0.40	0.15	0.83	0.30	0.59	0.16	0.73	0.28	0.08
Avail Cap(c_a), veh/h	392	1122	1130	339	2190	975	286	1972	864	816	2516	1120
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	15.2	15.2	29.6	15.3	20.1	30.4	25.0	23.1	27.7	19.8	18.8
Incr Delay (d2), s/veh	0.5	0.1	0.1	0.5	0.1	3.6	0.4	0.9	0.3	0.9	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.6	0.7	0.6	0.8	5.7	0.3	2.3	0.5	2.1	1.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.0	15.2	15.3	30.0	15.4	23.7	30.8	25.9	23.4	28.6	19.9	18.9
LnGrp LOS	C	B	B	C	B	C	C	C	C	C	B	B
Approach Vol, veh/h		223			695			437			583	
Approach Delay, s/veh		20.7			22.3			26.2			24.4	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.5	16.8	8.5	27.5	7.3	22.1	8.5	27.5				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	15.4	36.2	6.4	41.2	5.4	46.2	7.4	40.2				
Max Q Clear Time (g_c+I1), s	7.6	8.0	3.5	3.8	2.8	5.6	3.5	18.7				
Green Ext Time (p_c), s	0.4	2.3	0.0	0.7	0.0	1.6	0.0	2.5				
Intersection Summary												
HCM 6th Ctrl Delay				23.6								
HCM 6th LOS				C								

Timings
9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
04/22/2021

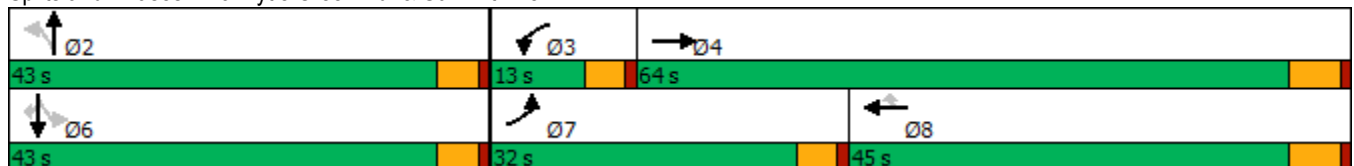


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖	↗	↖	↗	↗
Traffic Volume (vph)	154	321	37	654	71	55	113	57	78	196
Future Volume (vph)	154	321	37	654	71	55	113	57	78	196
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8			2		6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	9.6	28.8	28.8	33.7	33.7	31.7	31.7	31.7
Total Split (s)	32.0	64.0	13.0	45.0	45.0	43.0	43.0	43.0	43.0	43.0
Total Split (%)	26.7%	53.3%	10.8%	37.5%	37.5%	35.8%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None
Act Effct Green (s)	10.9	28.2	6.3	18.8	18.8	11.9	11.9	11.9	11.9	11.9
Actuated g/C Ratio	0.19	0.49	0.11	0.33	0.33	0.21	0.21	0.21	0.21	0.21
v/c Ratio	0.50	0.24	0.21	0.62	0.13	0.22	0.39	0.25	0.22	0.43
Control Delay	28.1	9.7	29.9	19.3	3.3	24.2	24.3	24.8	23.3	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.1	9.7	29.9	19.3	3.3	24.2	24.3	24.8	23.3	7.2
LOS	C	A	C	B	A	C	C	C	C	A
Approach Delay		15.1		18.3			24.3		14.1	
Approach LOS		B		B			C		B	

Intersection Summary























Cycle Length: 120
 Actuated Cycle Length: 57.3
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 17.2
 Intersection LOS: B
 Intersection Capacity Utilization 60.8%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 9: Lytle Creek Rd. & Summit Ave.



HCM 6th Signalized Intersection Summary
 9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
 04/22/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	321	46	37	654	71	55	113	24	57	78	196
Future Volume (veh/h)	154	321	46	37	654	71	55	113	24	57	78	196
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	169	353	43	41	719	68	60	124	22	63	86	178
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	1293	156	79	1159	517	365	348	62	351	422	357
Arrive On Green	0.12	0.41	0.41	0.04	0.33	0.33	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	3191	386	1781	3554	1585	1113	1542	274	1240	1870	1581
Grp Volume(v), veh/h	169	195	201	41	719	68	60	0	146	63	86	178
Grp Sat Flow(s),veh/h/ln	1781	1777	1800	1781	1777	1585	1113	0	1816	1240	1870	1581
Q Serve(g_s), s	4.3	3.4	3.5	1.0	7.9	1.4	2.1	0.0	3.1	2.1	1.7	4.6
Cycle Q Clear(g_c), s	4.3	3.4	3.5	1.0	7.9	1.4	3.9	0.0	3.1	5.2	1.7	4.6
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	220	720	729	79	1159	517	365	0	410	351	422	357
V/C Ratio(X)	0.77	0.27	0.28	0.52	0.62	0.13	0.16	0.00	0.36	0.18	0.20	0.50
Avail Cap(c_a), veh/h	1050	2225	2254	322	2998	1337	1031	0	1497	1093	1541	1303
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.7	9.2	9.2	21.7	13.2	11.0	16.2	0.0	15.2	17.4	14.6	15.7
Incr Delay (d2), s/veh	2.1	0.2	0.2	2.0	0.5	0.1	0.2	0.0	0.5	0.2	0.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.9	1.0	0.4	2.4	0.4	0.5	0.0	1.2	0.6	0.7	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.9	9.4	9.5	23.7	13.8	11.1	16.4	0.0	15.7	17.6	14.8	16.8
LnGrp LOS	C	A	A	C	B	B	B	A	B	B	B	B
Approach Vol, veh/h		565			828			206			327	
Approach Delay, s/veh		13.2			14.1			15.9			16.4	
Approach LOS		B			B			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.2	6.7	24.6		15.2	10.3	21.0				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 38	8.4	58.2		* 38	27.4	39.2				
Max Q Clear Time (g_c+I1), s		5.9	3.0	5.5		7.2	6.3	9.9				
Green Ext Time (p_c), s		1.1	0.0	2.2		1.3	0.2	5.1				
Intersection Summary												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Intersection												
Intersection Delay, s/veh	244.4											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔		↔			
Traffic Vol, veh/h	14	204	589	29	176	3	811	5	32	8	14	41
Future Vol, veh/h	14	204	589	29	176	3	811	5	32	8	14	41
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	213	614	30	183	3	845	5	33	8	15	43
Number of Lanes	0	1	0	0	1	0	1	0	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	198.5	19.2	343.4
HCM LOS	F	C	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	2%	14%
Vol Thru, %	0%	14%	25%	85%
Vol Right, %	0%	86%	73%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	811	37	807	208
LT Vol	811	0	14	29
Through Vol	0	5	204	176
RT Vol	0	32	589	3
Lane Flow Rate	845	39	841	217
Geometry Grp	7	7	2	2
Degree of Util (X)	1.732	0.067	1.364	0.424
Departure Headway (Hd)	8.162	7.026	7.44	9.413
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	456	513	496	386
Service Time	5.862	4.726	5.44	7.413
HCM Lane V/C Ratio	1.853	0.076	1.696	0.562
HCM Control Delay	358.6	10.2	198.5	19.2
HCM Lane LOS	F	B	F	C
HCM 95th-tile Q	46.5	0.2	30.2	2.1

Timings
13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
04/22/2021

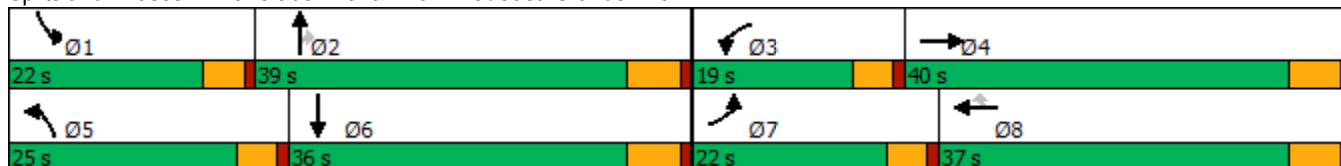


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↗	↖	↑↑	↗	↖	↖↗
Traffic Volume (vph)	73	22	203	40	284	81	218	104	145	258
Future Volume (vph)	73	22	203	40	284	81	218	104	145	258
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	30.8	30.8	9.6	26.8	26.8	9.6	22.8
Total Split (s)	22.0	40.0	19.0	37.0	37.0	25.0	39.0	39.0	22.0	36.0
Total Split (%)	18.3%	33.3%	15.8%	30.8%	30.8%	20.8%	32.5%	32.5%	18.3%	30.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	7.4	10.3	16.4	14.1	14.1	7.6	10.9	10.9	10.0	15.8
Actuated g/C Ratio	0.12	0.17	0.27	0.23	0.23	0.12	0.18	0.18	0.16	0.26
v/c Ratio	0.36	0.18	0.45	0.10	0.50	0.38	0.36	0.30	0.52	0.38
Control Delay	32.0	16.5	26.0	22.4	7.0	32.2	26.4	8.6	32.1	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	16.5	26.0	22.4	7.0	32.2	26.4	8.6	32.1	21.7
LOS	C	B	C	C	A	C	C	A	C	C
Approach Delay		25.4		15.5			23.0			24.9
Approach LOS		C		B			C			C

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 61.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.52
 Intersection Signal Delay: 21.2
 Intersection LOS: C
 Intersection Capacity Utilization 48.5%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 13: Citrus Ave. & Knox Ave./Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
 04/22/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	22	33	203	40	284	81	218	104	145	258	71
Future Volume (veh/h)	73	22	33	203	40	284	81	218	104	145	258	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	23	23	211	42	268	84	227	102	151	269	71
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	164	164	262	518	439	116	648	288	194	632	164
Arrive On Green	0.06	0.19	0.19	0.15	0.28	0.28	0.06	0.18	0.18	0.11	0.23	0.23
Sat Flow, veh/h	1781	854	854	1781	1870	1583	1781	3554	1576	1781	2792	723
Grp Volume(v), veh/h	76	0	46	211	42	268	84	227	102	151	169	171
Grp Sat Flow(s),veh/h/ln	1781	0	1709	1781	1870	1583	1781	1777	1576	1781	1777	1738
Q Serve(g_s), s	2.4	0.0	1.3	6.4	0.9	8.3	2.6	3.1	3.2	4.6	4.6	4.7
Cycle Q Clear(g_c), s	2.4	0.0	1.3	6.4	0.9	8.3	2.6	3.1	3.2	4.6	4.6	4.7
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	110	0	328	262	518	439	116	648	288	194	402	394
V/C Ratio(X)	0.69	0.00	0.14	0.81	0.08	0.61	0.73	0.35	0.35	0.78	0.42	0.43
Avail Cap(c_a), veh/h	551	0	1039	456	1038	878	646	2098	931	551	954	933
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	0.0	18.9	23.2	15.0	17.7	25.8	20.1	20.1	24.4	18.6	18.7
Incr Delay (d2), s/veh	2.9	0.0	0.2	2.2	0.1	1.4	3.2	0.3	0.7	2.5	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.4	2.5	0.3	2.7	1.1	1.1	1.1	1.8	1.7	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.7	0.0	19.1	25.4	15.1	19.1	29.0	20.4	20.8	26.9	19.3	19.4
LnGrp LOS	C	A	B	C	B	B	C	C	C	C	B	B
Approach Vol, veh/h		122			521			413			491	
Approach Delay, s/veh		25.1			21.3			22.3			21.7	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.7	16.1	12.9	16.6	8.3	18.5	8.1	21.4				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	17.4	33.2	14.4	34.2	20.4	30.2	17.4	31.2				
Max Q Clear Time (g_c+I1), s	6.6	5.2	8.4	3.3	4.6	6.7	4.4	10.3				
Green Ext Time (p_c), s	0.1	1.6	0.1	0.2	0.1	1.7	0.1	1.0				
Intersection Summary												
HCM 6th Ctrl Delay				22.0								
HCM 6th LOS				C								

Timings
14: Citrus Ave. & Summit Ave.

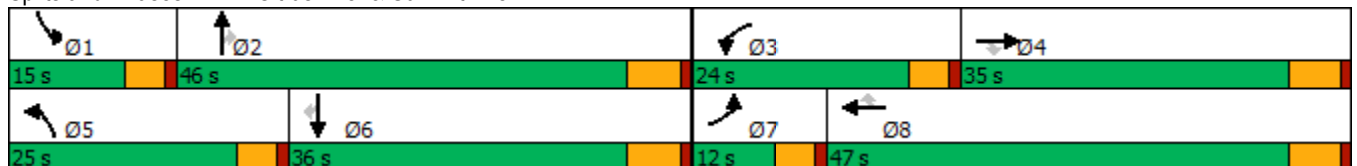
Ventana (JN 13769)
04/22/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	145	160	148	236	60	465	207	87	73	219	103
Future Volume (vph)	50	145	160	148	236	60	465	207	87	73	219	103
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	34.8	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	12.0	35.0	35.0	24.0	47.0	47.0	25.0	46.0	46.0	15.0	36.0	36.0
Total Split (%)	10.0%	29.2%	29.2%	20.0%	39.2%	39.2%	20.8%	38.3%	38.3%	12.5%	30.0%	30.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	6.6	10.5	10.5	12.5	18.5	18.5	20.4	44.6	44.6	8.2	30.3	30.3
Actuated g/C Ratio	0.07	0.11	0.11	0.13	0.20	0.20	0.22	0.47	0.47	0.09	0.32	0.32
v/c Ratio	0.42	0.38	0.49	0.66	0.36	0.15	1.27	0.13	0.11	0.50	0.20	0.17
Control Delay	54.2	42.9	9.2	52.8	35.3	0.7	173.0	16.4	0.8	53.4	24.8	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.2	42.9	9.2	52.8	35.3	0.7	173.0	16.4	0.8	53.4	24.8	0.6
LOS	D	D	A	D	D	A	F	B	A	D	C	A
Approach Delay		29.3			36.4			110.4			23.8	
Approach LOS		C			D			F			C	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 94.6
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.27
 Intersection Signal Delay: 61.3
 Intersection LOS: E
 Intersection Capacity Utilization 69.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/22/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	145	160	148	236	60	465	207	87	73	219	103
Future Volume (veh/h)	50	145	160	148	236	60	465	207	87	73	219	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	52	151	134	154	246	53	484	216	76	76	228	100
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	71	446	198	188	680	303	391	1741	760	98	1156	516
Arrive On Green	0.04	0.13	0.13	0.11	0.19	0.19	0.22	0.49	0.49	0.05	0.33	0.33
Sat Flow, veh/h	1781	3554	1574	1781	3554	1583	1781	3554	1551	1781	3554	1585
Grp Volume(v), veh/h	52	151	134	154	246	53	484	216	76	76	228	100
Grp Sat Flow(s),veh/h/ln	1781	1777	1574	1781	1777	1583	1781	1777	1551	1781	1777	1585
Q Serve(g_s), s	2.7	3.6	7.6	7.9	5.6	2.6	20.4	3.1	2.4	3.9	4.3	4.2
Cycle Q Clear(g_c), s	2.7	3.6	7.6	7.9	5.6	2.6	20.4	3.1	2.4	3.9	4.3	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	71	446	198	188	680	303	391	1741	760	98	1156	516
V/C Ratio(X)	0.73	0.34	0.68	0.82	0.36	0.18	1.24	0.12	0.10	0.78	0.20	0.19
Avail Cap(c_a), veh/h	142	1118	495	372	1577	702	391	1741	760	200	1156	516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	37.1	38.8	40.7	32.6	31.4	36.2	12.9	12.7	43.3	22.6	22.6
Incr Delay (d2), s/veh	5.4	0.4	4.0	3.4	0.3	0.3	126.7	0.1	0.3	4.9	0.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.5	3.0	3.5	2.3	1.0	22.1	1.1	0.8	1.8	1.7	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.5	37.5	42.8	44.0	32.9	31.7	162.9	13.0	13.0	48.2	23.0	23.4
LnGrp LOS	D	D	D	D	C	C	F	B	B	D	C	C
Approach Vol, veh/h		337			453			776			404	
Approach Delay, s/veh		41.5			36.6			106.5			27.8	
Approach LOS		D			D			F			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	51.3	14.4	17.5	25.0	36.0	8.3	23.6				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	10.4	40.2	19.4	29.2	20.4	30.2	7.4	41.2				
Max Q Clear Time (g_c+I1), s	5.9	5.1	9.9	9.6	22.4	6.3	4.7	7.6				
Green Ext Time (p_c), s	0.0	1.5	0.1	1.2	0.0	1.6	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay					63.2							
HCM 6th LOS					E							

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

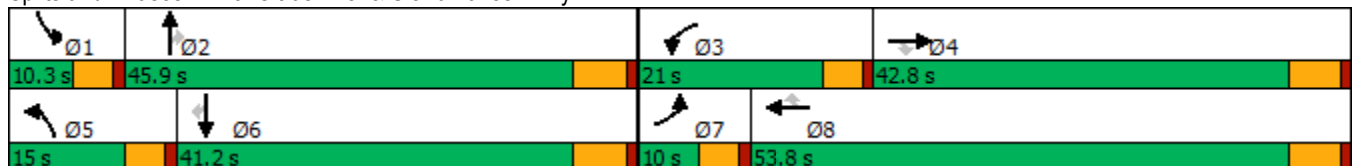
Ventana (JN 13769)
04/22/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	221	346	522	176	91	580	398	630	105	525	59
Future Volume (vph)	55	221	346	522	176	91	580	398	630	105	525	59
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	42.8	42.8	9.6	39.8	39.8	9.6	39.8	39.8	9.6	39.8	39.8
Total Split (s)	10.0	42.8	42.8	21.0	53.8	53.8	15.0	45.9	45.9	10.3	41.2	41.2
Total Split (%)	8.3%	35.7%	35.7%	17.5%	44.8%	44.8%	12.5%	38.3%	38.3%	8.6%	34.3%	34.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	5.5	18.7	18.7	16.9	32.6	32.6	10.7	26.8	26.8	5.8	21.9	21.9
Actuated g/C Ratio	0.06	0.21	0.21	0.19	0.36	0.36	0.12	0.30	0.30	0.06	0.24	0.24
v/c Ratio	0.29	0.33	0.79	0.88	0.15	0.15	1.54	0.41	0.84	0.51	0.66	0.12
Control Delay	49.9	31.5	28.8	54.2	21.4	1.4	283.0	26.8	18.3	54.0	34.8	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.9	31.5	28.8	54.2	21.4	1.4	283.0	26.8	18.3	54.0	34.8	0.5
LOS	D	C	C	D	C	A	F	C	B	D	C	A
Approach Delay		31.6			40.8			115.8			34.8	
Approach LOS		C			D			F			C	

Intersection Summary

































Cycle Length: 120
 Actuated Cycle Length: 89.8
 Natural Cycle: 135
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.54
 Intersection Signal Delay: 70.7
 Intersection LOS: E
 Intersection Capacity Utilization 73.8%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/22/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	55	221	346	522	176	91	580	398	630	105	525	59
Future Volume (veh/h)	55	221	346	522	176	91	580	398	630	105	525	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	240	290	567	191	72	630	433	586	114	571	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	783	348	535	1195	533	339	1346	599	171	1173	523
Arrive On Green	0.04	0.22	0.22	0.15	0.34	0.34	0.10	0.38	0.38	0.05	0.33	0.33
Sat Flow, veh/h	3456	3554	1579	3456	3554	1585	3456	3554	1583	3456	3554	1585
Grp Volume(v), veh/h	60	240	290	567	191	72	630	433	586	114	571	53
Grp Sat Flow(s),veh/h/ln	1728	1777	1579	1728	1777	1585	1728	1777	1583	1728	1777	1585
Q Serve(g_s), s	1.8	6.0	18.6	16.4	4.0	3.3	10.4	9.1	38.7	3.4	13.6	2.5
Cycle Q Clear(g_c), s	1.8	6.0	18.6	16.4	4.0	3.3	10.4	9.1	38.7	3.4	13.6	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	135	783	348	535	1195	533	339	1346	599	171	1173	523
V/C Ratio(X)	0.44	0.31	0.83	1.06	0.16	0.14	1.86	0.32	0.98	0.67	0.49	0.10
Avail Cap(c_a), veh/h	176	1242	552	535	1611	719	339	1346	599	186	1188	530
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.7	34.5	39.4	44.7	24.7	24.4	47.7	23.3	32.5	49.5	28.3	24.6
Incr Delay (d2), s/veh	0.8	0.2	6.1	55.6	0.1	0.1	396.4	0.1	31.1	5.8	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.5	7.5	10.9	1.6	1.2	23.0	3.7	18.9	1.6	5.5	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.6	34.7	45.6	100.3	24.7	24.6	444.2	23.4	63.5	55.3	28.6	24.7
LnGrp LOS	D	C	D	F	C	C	F	C	E	E	C	C
Approach Vol, veh/h		590			830			1649			738	
Approach Delay, s/veh		41.7			76.3			198.4			32.5	
Approach LOS		D			E			F			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.8	45.9	21.0	29.1	15.0	40.7	8.7	41.4				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	5.7	40.1	16.4	37.0	10.4	35.4	5.4	48.0				
Max Q Clear Time (g_c+I1), s	5.4	40.7	18.4	20.6	12.4	15.6	3.8	6.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.1	0.0	3.5	0.0	1.4				
Intersection Summary												
HCM 6th Ctrl Delay				115.3								
HCM 6th LOS				F								

Intersection	
Intersection Delay, s/veh	78
Intersection LOS	F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↔		↘	↕↕
Traffic Vol, veh/h	58	468	466	79	377	596
Future Vol, veh/h	58	468	466	79	377	596
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	509	507	86	410	648
Number of Lanes	1	1	2	0	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay	162.6	44	51.4
HCM LOS	F	E	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	66%	0%	0%	0%	100%	100%
Vol Right, %	0%	34%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	311	234	58	468	377	298	298
LT Vol	0	0	58	0	377	0	0
Through Vol	311	155	0	0	0	298	298
RT Vol	0	79	0	468	0	0	0
Lane Flow Rate	338	255	63	509	410	324	324
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.878	0.646	0.182	1.302	1.029	0.768	0.612
Departure Headway (Hd)	10.312	10.063	10.665	9.432	9.812	9.29	7.48
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	355	362	339	392	373	392	486
Service Time	8.012	7.763	8.365	7.132	7.512	6.99	5.18
HCM Lane V/C Ratio	0.952	0.704	0.186	1.298	1.099	0.827	0.667
HCM Control Delay	55	29.4	15.7	180.8	86.8	36.8	21.3
HCM Lane LOS	F	D	C	F	F	E	C
HCM 95th-tile Q	8.4	4.3	0.7	22.6	12.6	6.3	4

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	57	68	24	501	1012	24
Future Vol, veh/h	57	68	24	501	1012	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	69	24	511	1033	24

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1604	1045	1057	0	-	0
Stage 1	1045	-	-	-	-	-
Stage 2	559	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	116	278	659	-	-	-
Stage 1	339	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	112	278	659	-	-	-
Mov Cap-2 Maneuver	236	-	-	-	-	-
Stage 1	327	-	-	-	-	-
Stage 2	572	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	32.1	0.5	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	659	-	257	-	-
HCM Lane V/C Ratio	0.037	-	0.496	-	-
HCM Control Delay (s)	10.7	-	32.1	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.1	-	2.6	-	-

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	72	282	264	528	971	113
Future Volume (vph)	72	282	264	528	971	113
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	44.8	9.6	16.5	29.5	29.5
Total Split (s)	44.8	44.8	30.0	75.2	45.2	45.2
Total Split (%)	37.3%	37.3%	25.0%	62.7%	37.7%	37.7%
Yellow Time (s)	4.8	4.8	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	6.5	6.5	6.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effct Green (s)	11.1	11.1	20.8	68.7	43.3	43.3
Actuated g/C Ratio	0.12	0.12	0.23	0.75	0.47	0.47
v/c Ratio	0.39	0.68	0.77	0.23	0.68	0.17
Control Delay	43.0	12.4	46.7	4.0	22.7	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.0	12.4	46.7	4.0	22.7	10.5
LOS	D	B	D	A	C	B
Approach Delay	18.7			18.2	21.4	
Approach LOS	B			B	C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 92.2
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 19.9
 Intersection LOS: B
 Intersection Capacity Utilization 63.9%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	72	282	264	528	971	113
Future Volume (veh/h)	72	282	264	528	971	113
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	84	328	307	614	1129	131
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	411	366	341	2318	1482	661
Arrive On Green	0.23	0.23	0.19	0.65	0.42	0.42
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	84	328	307	614	1129	131
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	4.0	21.1	17.7	7.6	28.6	5.5
Cycle Q Clear(g_c), s	4.0	21.1	17.7	7.6	28.6	5.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	411	366	341	2318	1482	661
V/C Ratio(X)	0.20	0.90	0.90	0.26	0.76	0.20
Avail Cap(c_a), veh/h	660	587	430	2318	1482	661
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.7	39.3	41.6	7.7	26.2	19.5
Incr Delay (d2), s/veh	0.2	10.6	18.6	0.3	3.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.1	9.0	2.4	11.5	2.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.9	49.9	60.2	8.0	30.0	20.2
LnGrp LOS	C	D	E	A	C	C
Approach Vol, veh/h	412			921	1260	
Approach Delay, s/veh	46.5			25.4	29.0	
Approach LOS	D			C	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		75.2		30.1	24.8	50.4
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	25.4	38.7
Max Q Clear Time (g_c+I1), s		9.6		23.1	19.7	30.6
Green Ext Time (p_c), s		3.9		1.2	0.4	4.4
Intersection Summary						
HCM 6th Ctrl Delay			30.5			
HCM 6th LOS			C			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

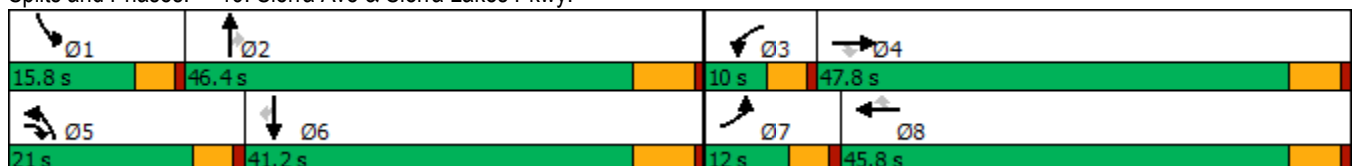
Ventana (JN 13769)
04/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	149	485	138	182	227	535	659	258	224	1016	177
Future Volume (vph)	110	149	485	138	182	227	535	659	258	224	1016	177
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	12.0	47.8	21.0	10.0	45.8	45.8	21.0	46.4	46.4	15.8	41.2	41.2
Total Split (%)	10.0%	39.8%	17.5%	8.3%	38.2%	38.2%	17.5%	38.7%	38.7%	13.2%	34.3%	34.3%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.8	12.6	34.9	5.4	11.2	11.2	16.5	33.1	33.1	10.2	26.7	26.7
Actuated g/C Ratio	0.08	0.15	0.42	0.07	0.14	0.14	0.20	0.40	0.40	0.12	0.32	0.32
v/c Ratio	0.43	0.31	0.75	0.68	0.42	0.59	0.86	0.36	0.36	0.59	0.68	0.30
Control Delay	42.9	33.9	26.3	56.1	37.0	11.1	47.8	18.2	3.6	41.7	26.7	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	33.9	26.3	56.1	37.0	11.1	47.8	18.2	3.6	41.7	26.7	4.5
LOS	D	C	C	E	D	B	D	B	A	D	C	A
Approach Delay		30.3			31.1			26.5			26.3	
Approach LOS		C			C			C			C	

Intersection Summary



































Cycle Length: 120
 Actuated Cycle Length: 82.9
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 27.7
 Intersection LOS: C
 Intersection Capacity Utilization 66.9%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/06/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		 	  	
Traffic Volume (veh/h)	110	149	485	138	182	227	535	659	258	224	1016	177
Future Volume (veh/h)	110	149	485	138	182	227	535	659	258	224	1016	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	121	164	413	152	200	197	588	724	251	246	1116	168
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	185	899	676	197	912	406	600	1892	586	317	1475	458
Arrive On Green	0.05	0.25	0.25	0.06	0.26	0.26	0.17	0.37	0.37	0.09	0.29	0.29
Sat Flow, veh/h	3456	3554	1585	3456	3554	1581	3456	5106	1581	3456	5106	1585
Grp Volume(v), veh/h	121	164	413	152	200	197	588	724	251	246	1116	168
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1581	1728	1702	1581	1728	1702	1585
Q Serve(g_s), s	3.2	3.4	19.1	4.1	4.2	10.0	16.0	9.8	11.2	6.6	18.8	8.0
Cycle Q Clear(g_c), s	3.2	3.4	19.1	4.1	4.2	10.0	16.0	9.8	11.2	6.6	18.8	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	185	899	676	197	912	406	600	1892	586	317	1475	458
V/C Ratio(X)	0.65	0.18	0.61	0.77	0.22	0.49	0.98	0.38	0.43	0.78	0.76	0.37
Avail Cap(c_a), veh/h	271	1579	980	197	1504	669	600	2156	668	410	1875	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	27.6	21.0	43.9	27.7	29.8	38.9	21.8	22.3	42.0	30.6	26.7
Incr Delay (d2), s/veh	1.5	0.1	0.9	15.3	0.1	0.9	31.6	0.1	0.5	4.9	1.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.4	6.6	2.1	1.7	3.7	8.9	3.5	3.9	2.8	7.2	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	27.7	21.9	59.2	27.8	30.7	70.5	21.9	22.7	46.9	31.9	27.2
LnGrp LOS	D	C	C	E	C	C	E	C	C	D	C	C
Approach Vol, veh/h		698			549			1563			1530	
Approach Delay, s/veh		27.3			37.6			40.3			33.8	
Approach LOS		C			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.3	41.5	10.0	29.7	21.0	33.8	9.7	30.0				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	11.2	39.9	5.4	42.0	16.4	34.7	7.4	40.0				
Max Q Clear Time (g_c+I1), s	8.6	13.2	6.1	21.1	18.0	20.8	5.2	12.0				
Green Ext Time (p_c), s	0.1	5.5	0.0	2.3	0.0	6.2	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay			35.6									
HCM 6th LOS			D									

Intersection	
Intersection Delay, s/veh	14.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↔		↵	↕↔		↵	↕	↵	↵	↕	↕
Traffic Vol, veh/h	42	275	15	140	288	200	10	3	108	120	1	22
Future Vol, veh/h	42	275	15	140	288	200	10	3	108	120	1	22
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	316	17	161	331	230	11	3	124	138	1	25
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	14	15.8	12.6	14.5
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	86%	0%	100%	32%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	14%	0%	0%	68%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	3	108	42	183	107	140	192	296	120	1
LT Vol	10	0	0	42	0	0	140	0	0	120	0
Through Vol	0	3	0	0	183	92	0	192	96	0	1
RT Vol	0	0	108	0	0	15	0	0	200	0	0
Lane Flow Rate	11	3	124	48	211	123	161	221	340	138	1
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.028	0.008	0.256	0.105	0.428	0.246	0.326	0.416	0.597	0.326	0.003
Departure Headway (Hd)	8.635	8.135	7.435	7.82	7.32	7.221	7.293	6.793	6.32	8.508	8.008
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	415	440	483	459	491	498	496	534	575	422	447
Service Time	6.387	5.887	5.187	5.564	5.064	4.965	4.993	4.493	4.02	6.258	5.758
HCM Lane V/C Ratio	0.027	0.007	0.257	0.105	0.43	0.247	0.325	0.414	0.591	0.327	0.002
HCM Control Delay	11.6	11	12.7	11.5	15.5	12.3	13.5	14.2	17.9	15.3	10.8
HCM Lane LOS	B	B	B	B	C	B	B	B	C	C	B
HCM 95th-tile Q	0.1	0	1	0.3	2.1	1	1.4	2	3.9	1.4	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	504	622	19	0	6
Future Vol, veh/h	0	504	622	19	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	536	662	20	0	6

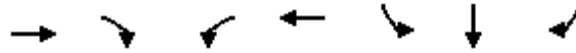
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	341
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	655
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	655
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	655
HCM Lane V/C Ratio	-	-	-	0.01
HCM Control Delay (s)	-	-	-	10.6
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

Timings
3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

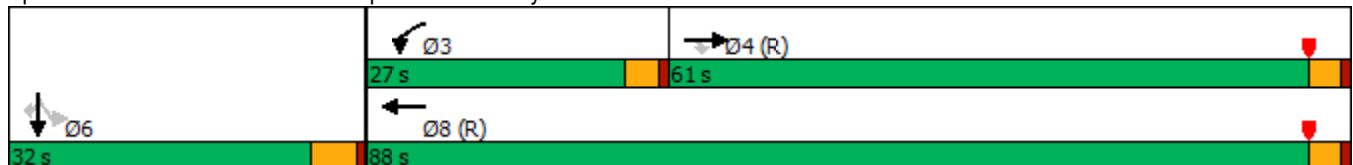


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↖↗	↑↑	↖	↖	↖
Traffic Volume (vph)	313	191	281	565	168	0	76
Future Volume (vph)	313	191	281	565	168	0	76
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8		6	
Permitted Phases		4			6		6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	34.0	34.0	12.0	29.0	13.0	13.0	13.0
Total Split (s)	61.0	61.0	27.0	88.0	32.0	32.0	32.0
Total Split (%)	50.8%	50.8%	22.5%	73.3%	26.7%	26.7%	26.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effct Green (s)	78.5	78.5	16.2	98.6	12.4	12.4	12.4
Actuated g/C Ratio	0.65	0.65	0.14	0.82	0.10	0.10	0.10
v/c Ratio	0.15	0.19	0.68	0.22	0.54	0.54	0.36
Control Delay	9.0	1.9	56.2	1.7	61.8	62.0	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	1.9	56.2	1.7	61.8	62.0	14.1
LOS	A	A	E	A	E	E	B
Approach Delay	6.3			19.8		47.1	
Approach LOS	A			B		D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 19.7
 Intersection LOS: B
 Intersection Capacity Utilization 50.0%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 3: I-15 SB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Traffic Volume (veh/h)	0	313	191	281	565	0	0	0	0	168	0	76
Future Volume (veh/h)	0	313	191	281	565	0	0	0	0	168	0	76
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	348	195	312	628	0				187	0	58
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2516	1122	378	3023	0				264	0	116
Arrive On Green	0.00	0.71	0.71	0.22	1.00	0.00				0.07	0.00	0.07
Sat Flow, veh/h	0	3647	1585	3456	3647	0				3563	0	1561
Grp Volume(v), veh/h	0	348	195	312	628	0				187	0	58
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1561
Q Serve(g_s), s	0.0	3.8	4.9	10.3	0.0	0.0				6.2	0.0	4.3
Cycle Q Clear(g_c), s	0.0	3.8	4.9	10.3	0.0	0.0				6.2	0.0	4.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2516	1122	378	3023	0				264	0	116
V/C Ratio(X)	0.00	0.14	0.17	0.82	0.21	0.00				0.71	0.00	0.50
Avail Cap(c_a), veh/h	0	2516	1122	662	3023	0				802	0	351
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	5.7	5.8	45.8	0.0	0.0				54.3	0.0	53.4
Incr Delay (d2), s/veh	0.0	0.1	0.3	4.4	0.1	0.0				3.5	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.4	1.6	4.2	0.1	0.0				2.9	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	5.8	6.2	50.1	0.1	0.0				57.7	0.0	56.7
LnGrp LOS	A	A	A	D	A	A				E	A	E
Approach Vol, veh/h		543			940						245	
Approach Delay, s/veh		5.9			16.7						57.5	
Approach LOS		A			B						E	
Timer - Assigned Phs			3	4		6			8			
Phs Duration (G+Y+Rc), s			17.1	89.0		13.9			106.1			
Change Period (Y+Rc), s			4.0	4.0		5.0			4.0			
Max Green Setting (Gmax), s			23.0	57.0		27.0			84.0			
Max Q Clear Time (g_c+I1), s			12.3	6.9		8.2			2.0			
Green Ext Time (p_c), s			0.8	3.2		0.8			5.1			
Intersection Summary												
HCM 6th Ctrl Delay			19.1									
HCM 6th LOS			B									
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings
4: Beech Ave. & I-15 SB Ramps

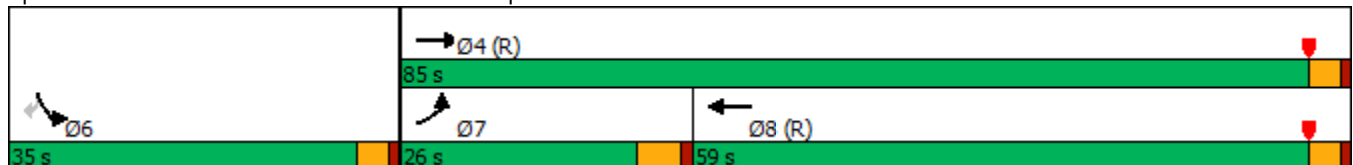


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations	↖	↗↗	↗↗	↖	↗
Traffic Volume (vph)	128	610	520	216	81
Future Volume (vph)	128	610	520	216	81
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	5.0	5.0
Minimum Split (s)	10.0	12.0	12.0	9.0	9.0
Total Split (s)	26.0	85.0	59.0	35.0	35.0
Total Split (%)	21.7%	70.8%	49.2%	29.2%	29.2%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	None	None
Act Effct Green (s)	14.5	91.1	71.7	20.9	20.9
Actuated g/C Ratio	0.12	0.76	0.60	0.17	0.17
v/c Ratio	0.64	0.24	0.52	0.75	0.25
Control Delay	63.3	4.9	36.6	61.6	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.3	4.9	36.6	61.6	9.8
LOS	E	A	D	E	A
Approach Delay		15.1	36.6	47.5	
Approach LOS		B	D	D	

Intersection Summary

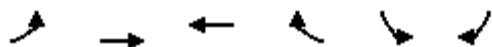
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 30.4
 Intersection LOS: C
 Intersection Capacity Utilization 60.0%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 4: Beech Ave. & I-15 SB Ramps



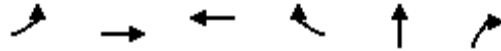
HCM 6th Signalized Intersection Summary
4: Beech Ave. & I-15 SB Ramps

Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↗↗	↗↗		↘	↘	
Traffic Volume (veh/h)	128	610	520	490	216	81	
Future Volume (veh/h)	128	610	520	490	216	81	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	136	649	553	521	230	86	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	165	2785	1154	1030	266	237	
Arrive On Green	0.09	0.78	1.00	1.00	0.15	0.15	
Sat Flow, veh/h	1781	3647	1870	1585	1781	1585	
Grp Volume(v), veh/h	136	649	553	521	230	86	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	9.0	5.8	0.0	0.0	15.1	5.9	
Cycle Q Clear(g_c), s	9.0	5.8	0.0	0.0	15.1	5.9	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	165	2785	1154	1030	266	237	
V/C Ratio(X)	0.83	0.23	0.48	0.51	0.86	0.36	
Avail Cap(c_a), veh/h	312	2785	1154	1030	460	409	
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.47	0.47	1.00	1.00	
Uniform Delay (d), s/veh	53.5	3.4	0.0	0.0	49.8	45.9	
Incr Delay (d2), s/veh	9.9	0.2	0.7	0.8	8.2	0.9	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	4.5	1.8	0.2	0.2	7.3	5.4	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	63.4	3.6	0.7	0.8	58.0	46.8	
LnGrp LOS	E	A	A	A	E	D	
Approach Vol, veh/h		785	1074		316		
Approach Delay, s/veh		14.0	0.8		55.0		
Approach LOS		B	A		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				98.1	21.9	16.1	82.0
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				81.0	31.0	21.0	55.0
Max Q Clear Time (g_c+I1), s				7.8	17.1	11.0	2.0
Green Ext Time (p_c), s				5.3	0.8	0.2	10.0
Intersection Summary							
HCM 6th Ctrl Delay			13.4				
HCM 6th LOS			B				

Timings
5: I-15 NB Ramp & Duncan Canyon Rd.

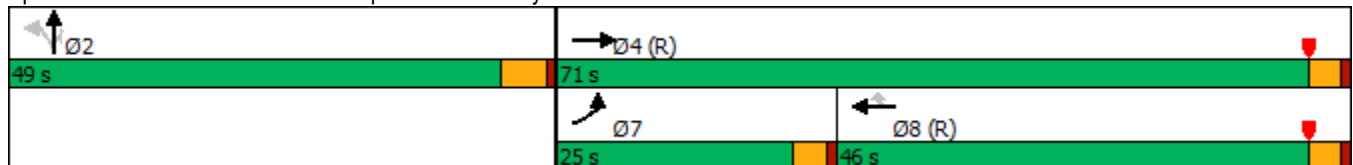


Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations	↶	↷	↶	↷	↷	↷
Traffic Volume (vph)	110	371	544	181	12	475
Future Volume (vph)	110	371	544	181	12	475
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8		2	
Permitted Phases				8		2
Detector Phase	7	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	30.0	36.0	36.0	13.0	13.0
Total Split (s)	25.0	71.0	46.0	46.0	49.0	49.0
Total Split (%)	20.8%	59.2%	38.3%	38.3%	40.8%	40.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	13.5	79.7	62.2	62.2	31.3	31.3
Actuated g/C Ratio	0.11	0.66	0.52	0.52	0.26	0.26
v/c Ratio	0.61	0.17	0.33	0.22	0.75	0.48
Control Delay	68.3	9.5	19.4	3.7	50.1	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	9.5	19.4	3.7	50.1	3.9
LOS	E	A	B	A	D	A
Approach Delay		23.0	15.5		22.4	
Approach LOS		C	B		C	

Intersection Summary






















Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 20.0
 Intersection LOS: C
 Intersection Capacity Utilization 50.0%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 5: I-15 NB Ramp & Duncan Canyon Rd.



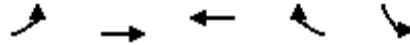
HCM 6th Signalized Intersection Summary
5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 				 			
Traffic Volume (veh/h)	110	371	0	0	544	181	303	12	475	0	0	0
Future Volume (veh/h)	110	371	0	0	544	181	303	12	475	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	121	408	0	0	598	187	333	13	514			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	147	2445	0	0	2033	907	407	16	647			
Arrive On Green	0.17	1.00	0.00	0.00	0.57	0.57	0.24	0.24	0.24			
Sat Flow, veh/h	1781	3647	0	0	3647	1585	1717	67	2730			
Grp Volume(v), veh/h	121	408	0	0	598	187	346	0	514			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1585	1784	0	1365			
Q Serve(g_s), s	7.9	0.0	0.0	0.0	10.4	6.9	22.0	0.0	21.2			
Cycle Q Clear(g_c), s	7.9	0.0	0.0	0.0	10.4	6.9	22.0	0.0	21.2			
Prop In Lane	1.00		0.00	0.00		1.00	0.96		1.00			
Lane Grp Cap(c), veh/h	147	2445	0	0	2033	907	423	0	647			
V/C Ratio(X)	0.82	0.17	0.00	0.00	0.29	0.21	0.82	0.00	0.79			
Avail Cap(c_a), veh/h	312	2445	0	0	2033	907	654	0	1001			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.98	0.98	0.00	0.00	0.98	0.98	1.00	0.00	1.00			
Uniform Delay (d), s/veh	49.3	0.0	0.0	0.0	13.2	12.5	43.3	0.0	43.0			
Incr Delay (d2), s/veh	10.6	0.1	0.0	0.0	0.4	0.5	4.7	0.0	2.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.7	0.0	0.0	0.0	4.2	2.5	10.2	0.0	7.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.9	0.1	0.0	0.0	13.6	13.0	48.1	0.0	45.5			
LnGrp LOS	E	A	A	A	B	B	D	A	D			
Approach Vol, veh/h		529			785			860				
Approach Delay, s/veh		13.8			13.4			46.5				
Approach LOS		B			B			D				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		33.4		86.6			13.9	72.7				
Change Period (Y+Rc), s		5.0		4.0			4.0	4.0				
Max Green Setting (Gmax), s		44.0		67.0			21.0	42.0				
Max Q Clear Time (g_c+I1), s		24.0		2.0			9.9	12.4				
Green Ext Time (p_c), s		4.4		3.1			0.2	5.2				
Intersection Summary												
HCM 6th Ctrl Delay				26.6								
HCM 6th LOS				C								

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/08/2021

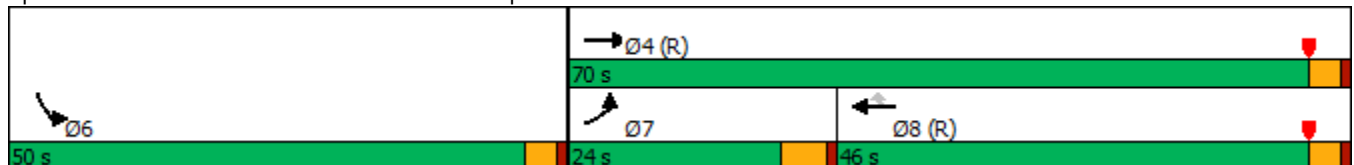


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↗↗	↗↗	↖	↖↖↖
Traffic Volume (vph)	173	654	840	417	853
Future Volume (vph)	173	654	840	417	853
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	24.0	70.0	46.0	46.0	50.0
Total Split (%)	20.0%	58.3%	38.3%	38.3%	41.7%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	16.4	69.1	47.6	47.6	42.9
Actuated g/C Ratio	0.14	0.58	0.40	0.40	0.36
v/c Ratio	0.76	0.34	0.64	0.50	0.89
Control Delay	57.9	13.5	33.0	4.6	45.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	57.9	13.5	33.0	4.6	45.3
LOS	E	B	C	A	D
Approach Delay		22.8	23.6		45.3
Approach LOS		C	C		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 30.5
 Intersection LOS: C
 Intersection Capacity Utilization 73.3%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/08/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↑↑	↖	↙↘		
Traffic Volume (veh/h)	173	654	840	417	853	171	
Future Volume (veh/h)	173	654	840	417	853	171	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	184	696	894	197	1019	0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	210	2187	1621	723	1132	504	
Arrive On Green	0.24	1.00	0.46	0.46	0.32	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	184	696	894	197	1019	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	11.9	0.0	21.9	9.3	32.8	0.0	
Cycle Q Clear(g_c), s	11.9	0.0	21.9	9.3	32.8	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	210	2187	1621	723	1132	504	
V/C Ratio(X)	0.88	0.32	0.55	0.27	0.90	0.00	
Avail Cap(c_a), veh/h	282	2187	1621	723	1366	608	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.93	0.93	0.82	0.82	1.00	0.00	
Uniform Delay (d), s/veh	45.0	0.0	23.7	20.3	39.1	0.0	
Incr Delay (d2), s/veh	19.3	0.4	1.1	0.8	7.4	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	5.8	0.1	9.4	3.6	15.3	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	64.3	0.4	24.8	21.0	46.5	0.0	
LnGrp LOS	E	A	C	C	D	A	
Approach Vol, veh/h		880	1091		1019		
Approach Delay, s/veh		13.7	24.1		46.5		
Approach LOS		B	C		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				77.9	42.1	19.1	58.7
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				66.0	46.0	19.0	42.0
Max Q Clear Time (g_c+I1), s				2.0	34.8	13.9	23.9
Green Ext Time (p_c), s				5.8	3.4	0.2	6.8

Intersection Summary

HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

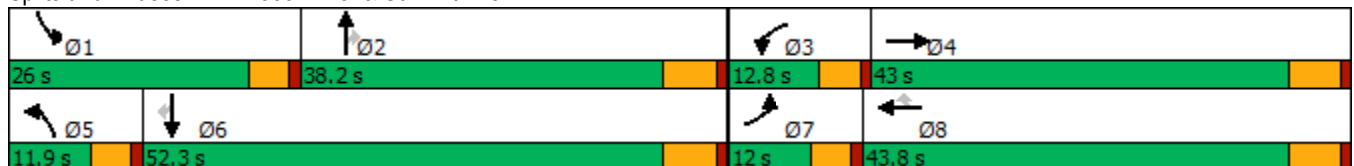
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	117	279	119	304	342	97	331	104	576	480	91
Future Volume (vph)	117	279	119	304	342	97	331	104	576	480	91
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	43.8	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	43.0	12.8	43.8	43.8	11.9	38.2	38.2	26.0	52.3	52.3
Total Split (%)	10.0%	35.8%	10.7%	36.5%	36.5%	9.9%	31.8%	31.8%	21.7%	43.6%	43.6%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	6.8	14.3	7.1	14.6	14.6	6.5	13.6	13.6	20.0	29.5	29.5
Actuated g/C Ratio	0.09	0.19	0.09	0.19	0.19	0.09	0.18	0.18	0.26	0.39	0.39
v/c Ratio	0.40	0.61	0.39	0.47	0.61	0.35	0.55	0.27	0.66	0.36	0.14
Control Delay	39.3	29.2	38.5	30.3	8.3	38.9	32.8	3.9	30.4	19.1	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	29.2	38.5	30.3	8.3	38.9	32.8	3.9	30.4	19.1	3.8
LOS	D	C	D	C	A	D	C	A	C	B	A
Approach Delay		31.5		21.8			28.3			23.5	
Approach LOS		C		C			C			C	

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 76.1
 Natural Cycle: 115
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 25.3
 Intersection LOS: C
 Intersection Capacity Utilization 65.1%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 7: Beech Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	279	118	119	304	342	97	331	104	576	480	91
Future Volume (veh/h)	117	279	118	119	304	342	97	331	104	576	480	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	122	291	98	124	317	264	101	345	68	600	500	64
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	225	636	210	226	864	385	213	655	288	719	1175	522
Arrive On Green	0.07	0.24	0.24	0.07	0.24	0.24	0.06	0.18	0.18	0.21	0.33	0.33
Sat Flow, veh/h	3456	2621	864	3456	3554	1583	3456	3554	1564	3456	3554	1581
Grp Volume(v), veh/h	122	195	194	124	317	264	101	345	68	600	500	64
Grp Sat Flow(s),veh/h/ln	1728	1777	1708	1728	1777	1583	1728	1777	1564	1728	1777	1581
Q Serve(g_s), s	2.4	6.5	6.7	2.4	5.1	10.5	2.0	6.1	2.6	11.6	7.6	2.0
Cycle Q Clear(g_c), s	2.4	6.5	6.7	2.4	5.1	10.5	2.0	6.1	2.6	11.6	7.6	2.0
Prop In Lane	1.00		0.51	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	225	431	415	226	864	385	213	655	288	719	1175	522
V/C Ratio(X)	0.54	0.45	0.47	0.55	0.37	0.69	0.47	0.53	0.24	0.83	0.43	0.12
Avail Cap(c_a), veh/h	368	952	915	408	1945	866	363	1658	730	1065	2380	1058
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.5	22.4	22.5	31.5	21.8	23.9	31.5	25.6	24.2	26.4	18.1	16.2
Incr Delay (d2), s/veh	0.8	0.7	0.8	0.8	0.3	2.2	0.6	0.7	0.4	2.4	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.7	2.7	1.0	2.1	3.9	0.8	2.5	0.9	4.7	3.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.2	23.1	23.3	32.2	22.1	26.1	32.1	26.2	24.6	28.8	18.4	16.3
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	B	B
Approach Vol, veh/h		511			705			514			1164	
Approach Delay, s/veh		25.3			25.4			27.2			23.6	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.0	18.6	9.1	22.7	8.9	28.8	9.1	22.7				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	21.4	32.4	8.2	37.2	7.3	46.5	7.4	38.0				
Max Q Clear Time (g_c+I1), s	13.6	8.1	4.4	8.7	4.0	9.6	4.4	12.5				
Green Ext Time (p_c), s	0.9	2.5	0.1	2.5	0.0	4.0	0.1	3.1				
Intersection Summary												
HCM 6th Ctrl Delay			25.0									
HCM 6th LOS			C									

Timings
9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
04/29/2021

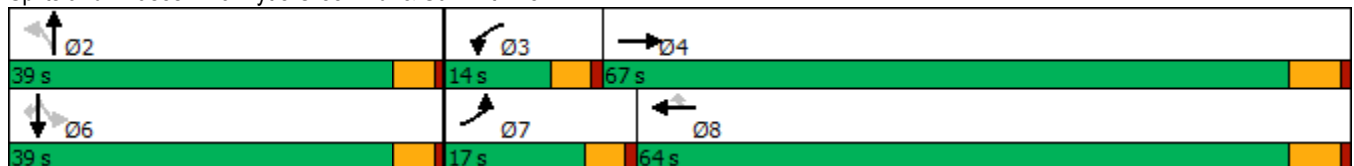


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↖	↕	↖	↕	↖
Traffic Volume (vph)	82	1089	49	871	46	48	19	36	11	74
Future Volume (vph)	82	1089	49	871	46	48	19	36	11	74
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8			2		6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	9.6	28.8	28.8	33.7	33.7	31.7	31.7	31.7
Total Split (s)	17.0	67.0	14.0	64.0	64.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	14.2%	55.8%	11.7%	53.3%	53.3%	32.5%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None
Act Effct Green (s)	8.5	39.3	7.2	35.6	35.6	11.4	11.4	11.4	11.4	11.4
Actuated g/C Ratio	0.14	0.64	0.12	0.58	0.58	0.19	0.19	0.19	0.19	0.19
v/c Ratio	0.37	0.55	0.26	0.46	0.06	0.20	0.20	0.16	0.03	0.23
Control Delay	33.1	11.0	33.7	12.1	2.9	30.1	15.3	29.8	28.5	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	11.0	33.7	12.1	2.9	30.1	15.3	29.8	28.5	9.9
LOS	C	B	C	B	A	C	B	C	C	A
Approach Delay		12.5		12.7			21.7		17.6	
Approach LOS		B		B			C		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 61.2
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 13.3
 Intersection LOS: B
 Intersection Capacity Utilization 60.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 9: Lytle Creek Rd. & Summit Ave.



HCM 6th Signalized Intersection Summary
 9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗		↖	↗	↗
Traffic Volume (veh/h)	82	1089	44	49	871	46	48	19	45	36	11	74
Future Volume (veh/h)	82	1089	44	49	871	46	48	19	45	36	11	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	90	1197	41	54	957	46	53	21	39	40	12	50
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	1725	59	89	1693	748	383	116	215	350	376	315
Arrive On Green	0.07	0.49	0.49	0.05	0.48	0.48	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	3504	120	1781	3554	1570	1328	577	1071	1331	1870	1569
Grp Volume(v), veh/h	90	607	631	54	957	46	53	0	60	40	12	50
Grp Sat Flow(s),veh/h/ln	1781	1777	1847	1781	1777	1570	1328	0	1647	1331	1870	1569
Q Serve(g_s), s	2.9	15.5	15.5	1.7	11.3	0.9	2.0	0.0	1.8	1.5	0.3	1.5
Cycle Q Clear(g_c), s	2.9	15.5	15.5	1.7	11.3	0.9	2.3	0.0	1.8	3.3	0.3	1.5
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.65	1.00		1.00
Lane Grp Cap(c), veh/h	117	875	909	89	1693	748	383	0	331	350	376	315
V/C Ratio(X)	0.77	0.69	0.69	0.61	0.57	0.06	0.14	0.00	0.18	0.11	0.03	0.16
Avail Cap(c_a), veh/h	376	1850	1923	285	3518	1554	890	0	961	859	1091	915
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	11.5	11.5	27.4	11.0	8.3	19.8	0.0	19.5	20.8	18.9	19.4
Incr Delay (d2), s/veh	4.0	1.0	1.0	2.5	0.3	0.0	0.2	0.0	0.3	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	5.2	5.4	0.8	3.8	0.3	0.6	0.0	0.7	0.5	0.1	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.1	12.5	12.5	29.9	11.3	8.3	20.0	0.0	19.7	21.0	18.9	19.6
LnGrp LOS	C	B	B	C	B	A	B	A	B	C	B	B
Approach Vol, veh/h		1328			1057			113			102	
Approach Delay, s/veh		13.8			12.1			19.8			20.1	
Approach LOS		B			B			B			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.5	7.5	34.7		16.5	8.5	33.8				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 34	9.4	61.2		* 34	12.4	58.2				
Max Q Clear Time (g_c+I1), s		4.3	3.7	17.5		5.3	4.9	13.3				
Green Ext Time (p_c), s		0.5	0.0	11.4		0.3	0.1	8.9				

Intersection Summary

HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

Notes

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

Intersection												
Intersection Delay, s/veh	62.2											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↻			↻		↻		↻			
Traffic Vol, veh/h	45	177	630	19	115	10	580	16	21	5	9	27
Future Vol, veh/h	45	177	630	19	115	10	580	16	21	5	9	27
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	184	656	20	120	10	604	17	22	5	9	28
Number of Lanes	0	1	0	0	1	0	1	0	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	208.9	14.5	132.1
HCM LOS	F	B	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	5%	13%
Vol Thru, %	0%	43%	21%	80%
Vol Right, %	0%	57%	74%	7%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	580	37	852	144
LT Vol	580	0	45	19
Through Vol	0	16	177	115
RT Vol	0	21	630	10
Lane Flow Rate	604	39	888	150
Geometry Grp	7	7	2	2
Degree of Util (X)	1.211	0.068	1.4	0.292
Departure Headway (Hd)	8.089	7.168	6.224	8.177
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	453	503	595	443
Service Time	5.789	4.868	4.224	6.177
HCM Lane V/C Ratio	1.333	0.078	1.492	0.339
HCM Control Delay	139.9	10.4	208.9	14.5
HCM Lane LOS	F	B	F	B
HCM 95th-tile Q	21.2	0.2	37.1	1.2

Timings
13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
04/29/2021

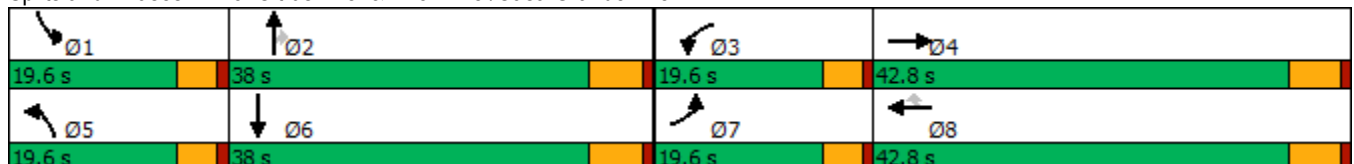


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↗	↖	↑↑	↗	↖	↖↗
Traffic Volume (vph)	49	35	157	33	180	49	365	222	288	241
Future Volume (vph)	49	35	157	33	180	49	365	222	288	241
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	30.8	30.8	9.6	26.8	26.8	9.6	22.8
Total Split (s)	19.6	42.8	19.6	42.8	42.8	19.6	38.0	38.0	19.6	38.0
Total Split (%)	16.3%	35.7%	16.3%	35.7%	35.7%	16.3%	31.7%	31.7%	16.3%	31.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	6.7	10.4	12.7	13.3	13.3	6.7	14.2	14.2	15.5	28.0
Actuated g/C Ratio	0.10	0.16	0.19	0.20	0.20	0.10	0.21	0.21	0.23	0.42
v/c Ratio	0.28	0.17	0.48	0.09	0.40	0.28	0.50	0.44	0.72	0.21
Control Delay	35.5	25.4	32.1	25.3	7.5	35.5	26.7	6.9	39.3	15.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	25.4	32.1	25.3	7.5	35.5	26.7	6.9	39.3	15.8
LOS	D	C	C	C	A	D	C	A	D	B
Approach Delay		30.6		19.6			20.5			27.4
Approach LOS		C		B			C			C

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 66.3
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 23.2
 Intersection LOS: C
 Intersection Capacity Utilization 54.9%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 13: Citrus Ave. & Knox Ave./Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	35	12	157	33	180	49	365	222	288	241	55
Future Volume (veh/h)	49	35	12	157	33	180	49	365	222	288	241	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	36	12	162	34	186	51	376	229	297	248	57
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	83	208	69	204	417	353	83	761	340	345	1041	235
Arrive On Green	0.05	0.15	0.15	0.11	0.22	0.22	0.05	0.21	0.21	0.19	0.36	0.36
Sat Flow, veh/h	1781	1342	447	1781	1870	1585	1781	3554	1585	1781	2880	650
Grp Volume(v), veh/h	51	0	48	162	34	186	51	376	229	297	151	154
Grp Sat Flow(s),veh/h/ln	1781	0	1790	1781	1870	1585	1781	1777	1585	1781	1777	1753
Q Serve(g_s), s	1.8	0.0	1.5	5.7	0.9	6.7	1.8	6.0	8.6	10.4	3.8	4.0
Cycle Q Clear(g_c), s	1.8	0.0	1.5	5.7	0.9	6.7	1.8	6.0	8.6	10.4	3.8	4.0
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		0.37
Lane Grp Cap(c), veh/h	83	0	277	204	417	353	83	761	340	345	642	634
V/C Ratio(X)	0.62	0.00	0.17	0.79	0.08	0.53	0.62	0.49	0.67	0.86	0.24	0.24
Avail Cap(c_a), veh/h	415	0	1028	415	1074	910	415	1776	792	415	888	876
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	0.0	23.7	27.8	19.8	22.0	30.2	22.2	23.3	25.2	14.4	14.4
Incr Delay (d2), s/veh	2.8	0.0	0.3	2.6	0.1	1.2	2.8	0.5	2.3	12.9	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.6	2.5	0.4	0.1	0.8	2.4	3.2	5.3	1.4	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.9	0.0	24.0	30.4	19.9	23.3	32.9	22.7	25.6	38.0	14.6	14.6
LnGrp LOS	C	A	C	C	B	C	C	C	C	D	B	B
Approach Vol, veh/h		99			382			656			602	
Approach Delay, s/veh		28.6			26.0			24.5			26.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.1	19.6	12.0	15.8	7.6	29.1	7.6	20.2				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	15.0	32.2	15.0	37.0	15.0	32.2	15.0	37.0				
Max Q Clear Time (g_c+I1), s	12.4	10.6	7.7	3.5	3.8	6.0	3.8	8.7				
Green Ext Time (p_c), s	0.1	3.3	0.1	0.2	0.0	1.8	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay			25.6									
HCM 6th LOS			C									

Timings
14: Citrus Ave. & Summit Ave.

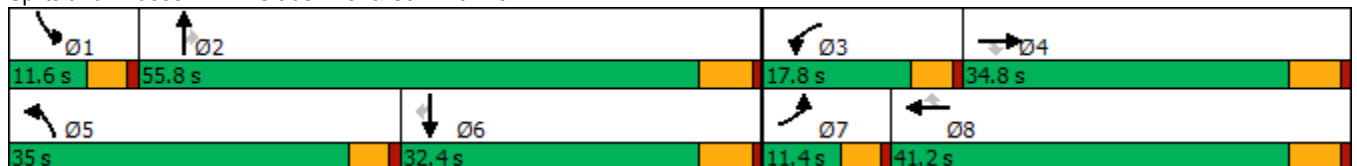
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	483	357	148	376	59	722	324	120	48	223	53
Future Volume (vph)	103	483	357	148	376	59	722	324	120	48	223	53
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	34.8	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	11.4	34.8	34.8	17.8	41.2	41.2	35.0	55.8	55.8	11.6	32.4	32.4
Total Split (%)	9.5%	29.0%	29.0%	14.8%	34.3%	34.3%	29.2%	46.5%	46.5%	9.7%	27.0%	27.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.8	22.5	22.5	12.2	27.9	27.9	30.6	38.9	38.9	6.4	12.5	12.5
Actuated g/C Ratio	0.07	0.23	0.23	0.12	0.28	0.28	0.31	0.39	0.39	0.06	0.13	0.13
v/c Ratio	0.92	0.65	0.60	0.74	0.41	0.12	1.43	0.25	0.19	0.46	0.54	0.16
Control Delay	111.1	38.8	8.1	63.8	29.8	0.4	234.5	22.8	3.4	60.2	46.3	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.1	38.8	8.1	63.8	29.8	0.4	234.5	22.8	3.4	60.2	46.3	0.9
LOS	F	D	A	E	C	A	F	C	A	E	D	A
Approach Delay		35.1			35.5			151.9			40.9	
Approach LOS		D			D			F			D	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 98.8
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.43
 Intersection Signal Delay: 81.0
 Intersection LOS: F
 Intersection Capacity Utilization 87.6%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	483	357	148	376	59	722	324	120	48	223	53
Future Volume (veh/h)	103	483	357	148	376	59	722	324	120	48	223	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	112	525	295	161	409	54	785	352	94	52	242	56
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	842	370	194	974	433	569	1409	611	70	413	181
Arrive On Green	0.07	0.24	0.24	0.11	0.27	0.27	0.32	0.40	0.40	0.04	0.12	0.12
Sat Flow, veh/h	1781	3554	1561	1781	3554	1582	1781	3554	1541	1781	3554	1560
Grp Volume(v), veh/h	112	525	295	161	409	54	785	352	94	52	242	56
Grp Sat Flow(s),veh/h/ln	1781	1777	1561	1781	1777	1582	1781	1777	1541	1781	1777	1560
Q Serve(g_s), s	5.9	12.6	16.9	8.4	9.0	2.4	30.4	6.3	3.7	2.7	6.1	3.1
Cycle Q Clear(g_c), s	5.9	12.6	16.9	8.4	9.0	2.4	30.4	6.3	3.7	2.7	6.1	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	127	842	370	194	974	433	569	1409	611	70	413	181
V/C Ratio(X)	0.88	0.62	0.80	0.83	0.42	0.12	1.38	0.25	0.15	0.74	0.59	0.31
Avail Cap(c_a), veh/h	127	1084	476	247	1323	589	569	1868	810	131	994	436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	32.5	34.1	41.5	28.3	25.9	32.3	19.2	18.4	45.2	39.9	38.5
Incr Delay (d2), s/veh	44.2	0.8	7.2	13.9	0.3	0.1	181.2	0.1	0.1	5.7	1.3	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	5.4	7.0	4.4	3.8	0.9	41.3	2.6	1.3	1.3	2.7	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.9	33.3	41.3	55.5	28.6	26.1	213.5	19.3	18.6	50.9	41.2	39.5
LnGrp LOS	F	C	D	E	C	C	F	B	B	D	D	D
Approach Vol, veh/h		932			624			1231			350	
Approach Delay, s/veh		42.4			35.3			143.1			42.4	
Approach LOS		D			D			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	43.5	14.9	28.3	35.0	16.8	11.4	31.9				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.0	50.0	13.2	29.0	30.4	26.6	6.8	35.4				
Max Q Clear Time (g_c+1), s	4.7	8.3	10.4	18.9	32.4	8.1	7.9	11.0				
Green Ext Time (p_c), s	0.0	2.9	0.1	3.3	0.0	1.6	0.0	2.9				
Intersection Summary												
HCM 6th Ctrl Delay			80.5									
HCM 6th LOS			F									

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

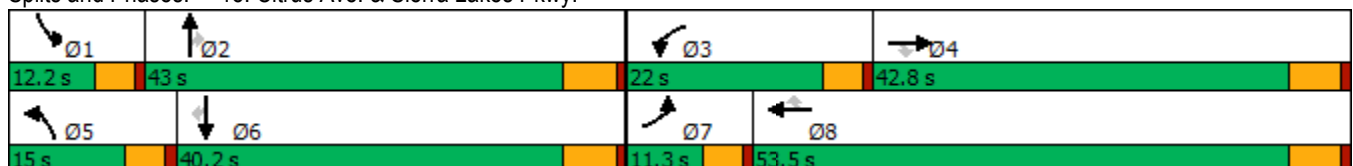
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	351	341	655	333	239	683	602	811	209	486	75
Future Volume (vph)	85	351	341	655	333	239	683	602	811	209	486	75
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	42.8	42.8	9.6	39.8	39.8	9.6	39.8	39.8	9.6	39.8	39.8
Total Split (s)	11.3	42.8	42.8	22.0	53.5	53.5	15.0	43.0	43.0	12.2	40.2	40.2
Total Split (%)	9.4%	35.7%	35.7%	18.3%	44.6%	44.6%	12.5%	35.8%	35.8%	10.2%	33.5%	33.5%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.3	19.0	19.0	17.5	32.3	32.3	10.4	37.4	37.4	7.6	34.5	34.5
Actuated g/C Ratio	0.06	0.19	0.19	0.17	0.32	0.32	0.10	0.37	0.37	0.07	0.34	0.34
v/c Ratio	0.42	0.56	0.76	1.17	0.31	0.38	2.03	0.49	1.03	0.85	0.42	0.12
Control Delay	54.5	40.6	25.8	130.8	27.8	5.6	501.1	27.7	59.6	77.3	28.6	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	40.6	25.8	130.8	27.8	5.6	501.1	27.7	59.6	77.3	28.6	0.4
LOS	D	D	C	F	C	A	F	C	E	E	C	A
Approach Delay		35.7			78.4			194.2			39.1	
Approach LOS		D			E			F			D	

Intersection Summary

































Cycle Length: 120
 Actuated Cycle Length: 102.4
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 2.03
 Intersection Signal Delay: 115.2
 Intersection LOS: F
 Intersection Capacity Utilization 81.4%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	85	351	341	655	333	239	683	602	811	209	486	75
Future Volume (veh/h)	85	351	341	655	333	239	683	602	811	209	486	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	366	279	682	347	150	711	627	653	218	506	41
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	150	794	348	563	1218	536	336	1237	545	246	1144	503
Arrive On Green	0.04	0.22	0.22	0.16	0.34	0.34	0.10	0.35	0.35	0.07	0.32	0.32
Sat Flow, veh/h	3456	3554	1558	3456	3554	1564	3456	3554	1565	3456	3554	1564
Grp Volume(v), veh/h	89	366	279	682	347	150	711	627	653	218	506	41
Grp Sat Flow(s),veh/h/ln	1728	1777	1558	1728	1777	1564	1728	1777	1565	1728	1777	1564
Q Serve(g_s), s	2.7	9.5	18.1	17.4	7.6	7.5	10.4	14.9	37.2	6.7	12.0	2.0
Cycle Q Clear(g_c), s	2.7	9.5	18.1	17.4	7.6	7.5	10.4	14.9	37.2	6.7	12.0	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	150	794	348	563	1218	536	336	1237	545	246	1144	503
V/C Ratio(X)	0.59	0.46	0.80	1.21	0.28	0.28	2.11	0.51	1.20	0.89	0.44	0.08
Avail Cap(c_a), veh/h	217	1230	539	563	1586	698	336	1237	545	246	1144	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.2	35.9	39.3	44.7	25.6	25.5	48.2	27.6	34.8	49.2	28.7	25.2
Incr Delay (d2), s/veh	1.4	0.4	4.8	111.2	0.1	0.3	511.4	0.3	106.2	29.0	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	4.2	7.3	16.1	3.2	2.8	28.3	6.3	29.8	3.9	5.1	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.6	36.3	44.1	155.9	25.7	25.8	559.7	27.9	141.1	78.2	28.9	25.3
LnGrp LOS	D	D	D	F	C	C	F	C	F	E	C	C
Approach Vol, veh/h		734			1179			1991			765	
Approach Delay, s/veh		41.1			101.0			254.9			42.8	
Approach LOS		D			F			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	43.0	22.0	29.7	15.0	40.2	9.2	42.4				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.6	37.2	17.4	37.0	10.4	34.4	6.7	47.7				
Max Q Clear Time (g_c+1), s	8.7	39.2	19.4	20.1	12.4	14.0	4.7	9.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	3.2	0.0	3.5	0.0	3.0				
Intersection Summary												
HCM 6th Ctrl Delay	147.7											
HCM 6th LOS	F											

Intersection	
Intersection Delay, s/veh	107.6
Intersection LOS	F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	67	453	630	48	464	604
Future Vol, veh/h	67	453	630	48	464	604
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	71	482	670	51	494	643
Number of Lanes	1	1	2	0	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay	157.8	97.9	89.4
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	81%	0%	0%	0%	100%	100%
Vol Right, %	0%	19%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	420	258	67	453	464	302	302
LT Vol	0	0	67	0	464	0	0
Through Vol	420	210	0	0	0	302	302
RT Vol	0	48	0	453	0	0	0
Lane Flow Rate	447	274	71	482	494	321	321
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	1.173	0.71	0.214	1.286	1.258	0.774	0.62
Departure Headway (Hd)	10.6	10.463	11.704	10.468	10.113	9.59	7.778
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	349	349	309	352	365	379	469
Service Time	8.3	8.163	9.404	8.168	7.813	7.29	5.478
HCM Lane V/C Ratio	1.281	0.785	0.23	1.369	1.353	0.847	0.684
HCM Control Delay	136.5	35.1	17.6	178.5	166.2	38.4	22.3
HCM Lane LOS	F	E	C	F	F	E	C
HCM 95th-tile Q	16.4	5.2	0.8	20.4	19.9	6.4	4.1

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	41	44	73	1082	741	62
Future Vol, veh/h	41	44	73	1082	741	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	46	76	1127	772	65

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2084	805	837	0	-	0
Stage 1	805	-	-	-	-	-
Stage 2	1279	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	58	382	797	-	-	-
Stage 1	440	-	-	-	-	-
Stage 2	261	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	52	382	797	-	-	-
Mov Cap-2 Maneuver	166	-	-	-	-	-
Stage 1	398	-	-	-	-	-
Stage 2	261	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.3	0.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	797	-	235	-	-
HCM Lane V/C Ratio	0.095	-	0.377	-	-
HCM Control Delay (s)	10	-	29.3	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0.3	-	1.7	-	-

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	247	373	413	902	629	175
Future Volume (vph)	247	373	413	902	629	175
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	44.8	9.6	16.5	29.5	29.5
Total Split (s)	44.8	44.8	42.0	75.2	33.2	33.2
Total Split (%)	37.3%	37.3%	35.0%	62.7%	27.7%	27.7%
Yellow Time (s)	4.8	4.8	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	6.5	6.5	6.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	19.3	19.3	27.2	55.3	23.3	23.3
Actuated g/C Ratio	0.22	0.22	0.31	0.63	0.27	0.27
v/c Ratio	0.66	0.60	0.79	0.42	0.70	0.37
Control Delay	41.8	7.6	40.3	9.1	35.5	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.8	7.6	40.3	9.1	35.5	15.6
LOS	D	A	D	A	D	B
Approach Delay	21.2			18.9	31.2	
Approach LOS	C			B	C	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 87.5	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 23.0	Intersection LOS: C
Intersection Capacity Utilization 68.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	247	373	413	902	629	175
Future Volume (veh/h)	247	373	413	902	629	175
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	260	250	435	949	662	123
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	363	323	502	2174	928	414
Arrive On Green	0.20	0.20	0.28	0.61	0.26	0.26
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	260	250	435	949	662	123
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	9.1	10.0	15.5	9.4	11.3	4.2
Cycle Q Clear(g_c), s	9.1	10.0	15.5	9.4	11.3	4.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	363	323	502	2175	928	414
V/C Ratio(X)	0.72	0.77	0.87	0.44	0.71	0.30
Avail Cap(c_a), veh/h	1040	925	997	3653	1420	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	25.1	22.8	6.9	22.4	19.8
Incr Delay (d2), s/veh	2.6	3.9	4.7	0.1	1.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.4	6.7	2.8	4.5	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.4	29.1	27.5	7.0	23.4	20.2
LnGrp LOS	C	C	C	A	C	C
Approach Vol, veh/h	510			1384	785	
Approach Delay, s/veh	28.2			13.4	22.9	
Approach LOS	C			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		47.4		19.4	23.4	24.0
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	37.4	26.7
Max Q Clear Time (g_c+I1), s		11.4		12.0	17.5	13.3
Green Ext Time (p_c), s		8.8		1.7	1.3	4.2
Intersection Summary						
HCM 6th Ctrl Delay			19.0			
HCM 6th LOS			B			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)

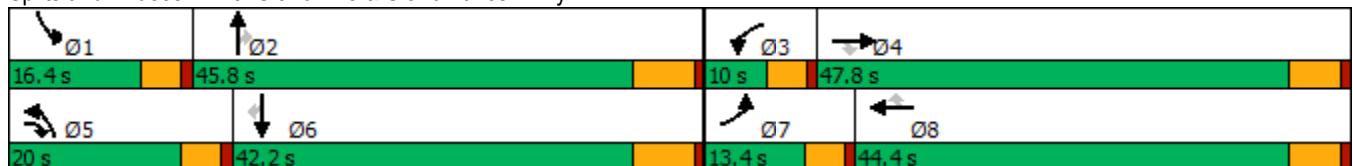
04/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	306	879	204	238	228	801	963	246	231	795	190
Future Volume (vph)	259	306	879	204	238	228	801	963	246	231	795	190
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	13.4	47.8	20.0	10.0	44.4	44.4	20.0	45.8	45.8	16.4	42.2	42.2
Total Split (%)	11.2%	39.8%	16.7%	8.3%	37.0%	37.0%	16.7%	38.2%	38.2%	13.7%	35.2%	35.2%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.9	15.9	32.7	5.5	12.5	12.5	15.6	29.2	29.2	10.0	23.6	23.6
Actuated g/C Ratio	0.11	0.19	0.40	0.07	0.15	0.15	0.19	0.35	0.35	0.12	0.29	0.29
v/c Ratio	0.72	0.46	1.35	0.93	0.46	0.54	1.27	0.55	0.37	0.57	0.56	0.33
Control Delay	49.9	32.8	191.8	85.3	35.9	10.0	165.0	22.7	6.0	41.4	26.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.9	32.8	191.8	85.3	35.9	10.0	165.0	22.7	6.0	41.4	26.3	5.0
LOS	D	C	F	F	D	A	F	C	A	D	C	A
Approach Delay		132.7			42.1			77.4			25.8	
Approach LOS		F			D			E			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 82.3
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.35
 Intersection Signal Delay: 76.2
 Intersection LOS: E
 Intersection Capacity Utilization 90.1%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/06/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	306	879	204	238	228	801	963	246	231	795	190
Future Volume (veh/h)	259	306	879	204	238	228	801	963	246	231	795	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	267	315	638	210	245	177	826	993	190	238	820	150
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	289	1314	817	177	1199	527	506	1466	449	303	1166	361
Arrive On Green	0.08	0.37	0.37	0.05	0.34	0.34	0.15	0.29	0.29	0.09	0.23	0.23
Sat Flow, veh/h	3456	3554	1582	3456	3554	1562	3456	5106	1564	3456	5106	1579
Grp Volume(v), veh/h	267	315	638	210	245	177	826	993	190	238	820	150
Grp Sat Flow(s),veh/h/ln	1728	1777	1582	1728	1777	1562	1728	1702	1564	1728	1702	1579
Q Serve(g_s), s	8.1	6.5	34.4	5.4	5.2	8.9	15.4	18.1	10.4	7.1	15.5	8.5
Cycle Q Clear(g_c), s	8.1	6.5	34.4	5.4	5.2	8.9	15.4	18.1	10.4	7.1	15.5	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	289	1314	817	177	1199	527	506	1466	449	303	1166	361
V/C Ratio(X)	0.92	0.24	0.78	1.18	0.20	0.34	1.63	0.68	0.42	0.79	0.70	0.42
Avail Cap(c_a), veh/h	289	1418	863	177	1303	573	506	1907	584	387	1732	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	22.9	20.7	49.9	24.8	26.1	44.9	33.2	30.4	47.1	37.3	34.6
Incr Delay (d2), s/veh	33.1	0.1	4.4	126.0	0.1	0.4	294.0	0.6	0.6	6.0	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	2.7	13.0	5.4	2.2	3.3	27.2	7.5	4.0	3.3	6.5	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.0	23.0	25.1	175.9	24.9	26.4	339.0	33.8	31.1	53.0	38.1	35.4
LnGrp LOS	F	C	C	F	C	C	F	C	C	D	D	D
Approach Vol, veh/h		1220			632			2009			1208	
Approach Delay, s/veh		36.8			75.5			159.0			40.7	
Approach LOS		D			E			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.8	36.7	10.0	44.7	20.0	30.5	13.4	41.3				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	11.8	39.3	5.4	42.0	15.4	35.7	8.8	38.6				
Max Q Clear Time (g_c+I1), s	9.1	20.1	7.4	36.4	17.4	17.5	10.1	10.9				
Green Ext Time (p_c), s	0.1	7.7	0.0	2.4	0.0	6.1	0.0	2.2				
Intersection Summary												
HCM 6th Ctrl Delay				91.0								
HCM 6th LOS				F								

APPENDIX 5.2:

**OPENING YEAR CUMULATIVE (2023) WITH PROJECT CONDITIONS INTERSECTION
OPERATIONS ANALYSIS WORKSHEETS**

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Intersection	
Intersection Delay, s/veh	17.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕↘		↘	↕↘		↘	↕	↘	↘	↕	↘
Traffic Vol, veh/h	19	435	6	64	264	80	5	4	162	229	6	37
Future Vol, veh/h	19	435	6	64	264	80	5	4	162	229	6	37
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	463	6	68	281	85	5	4	172	244	6	39
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	19.6	14.5	14.7	20.4
HCM LOS	C	B	B	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	96%	0%	100%	52%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	4%	0%	0%	48%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	4	162	19	290	151	64	176	168	229	6
LT Vol	5	0	0	19	0	0	64	0	0	229	0
Through Vol	0	4	0	0	290	145	0	176	88	0	6
RT Vol	0	0	162	0	0	6	0	0	80	0	0
Lane Flow Rate	5	4	172	20	309	161	68	187	179	244	6
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.013	0.01	0.368	0.045	0.646	0.335	0.155	0.399	0.365	0.575	0.014
Departure Headway (Hd)	8.889	8.389	7.689	8.037	7.537	7.509	8.18	7.68	7.346	8.502	8.002
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	402	426	467	445	478	479	438	468	488	424	446
Service Time	6.66	6.16	5.46	5.795	5.295	5.267	5.94	5.44	5.107	6.266	5.766
HCM Lane V/C Ratio	0.012	0.009	0.368	0.045	0.646	0.336	0.155	0.4	0.367	0.575	0.013
HCM Control Delay	11.8	11.2	14.9	11.2	23.1	14	12.4	15.5	14.3	22.2	10.9
HCM Lane LOS	B	B	B	B	C	B	B	C	B	C	B
HCM 95th-tile Q	0	0	1.7	0.1	4.5	1.5	0.5	1.9	1.7	3.5	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	826	391	2	0	16
Future Vol, veh/h	0	826	391	2	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	879	416	2	0	17

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	- 209
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0 *925
Stage 1	0	-	-	-	0 -
Stage 2	0	-	-	-	0 -
Platoon blocked, %		-	-	-	1
Mov Cap-1 Maneuver	-	-	-	-	- *925
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

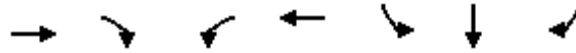
Approach	EB	WB	SB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	925
HCM Lane V/C Ratio	-	-	-	0.018
HCM Control Delay (s)	-	-	-	9
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.1

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

Timings
3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

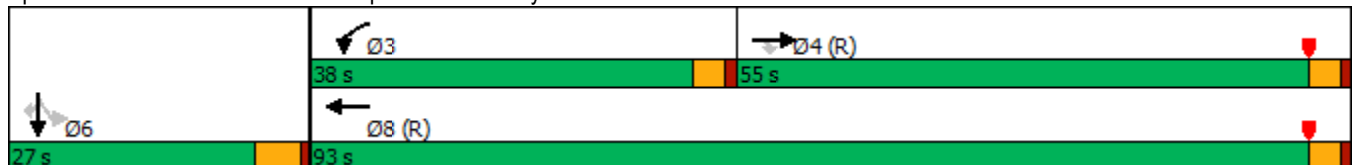


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↖↗	↑↑	↖	↖	↖
Traffic Volume (vph)	327	499	835	344	319	12	49
Future Volume (vph)	327	499	835	344	319	12	49
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8		6	
Permitted Phases		4			6		6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	34.0	34.0	12.0	29.0	13.0	13.0	13.0
Total Split (s)	55.0	55.0	38.0	93.0	27.0	27.0	27.0
Total Split (%)	45.8%	45.8%	31.7%	77.5%	22.5%	22.5%	22.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effct Green (s)	53.9	53.9	35.4	93.3	17.7	17.7	17.7
Actuated g/C Ratio	0.45	0.45	0.30	0.78	0.15	0.15	0.15
v/c Ratio	0.23	0.60	0.92	0.14	0.74	0.73	0.19
Control Delay	21.5	9.8	66.3	3.0	66.6	65.7	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.5	9.8	66.3	3.0	66.6	65.7	12.7
LOS	C	A	E	A	E	E	B
Approach Delay	14.4			47.9		59.3	
Approach LOS	B			D		E	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 38.1
 Intersection LOS: D
 Intersection Capacity Utilization 74.7%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 3: I-15 SB Ramp & Duncan Canyon Rd.



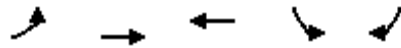
HCM 6th Signalized Intersection Summary
 3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Traffic Volume (veh/h)	0	327	499	835	344	0	0	0	0	319	12	49
Future Volume (veh/h)	0	327	499	835	344	0	0	0	0	319	12	49
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	363	486	928	382	0				363	0	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1737	775	966	2848	0				440	0	196
Arrive On Green	0.00	0.49	0.49	0.47	1.00	0.00				0.12	0.00	0.12
Sat Flow, veh/h	0	3647	1585	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	363	486	928	382	0				363	0	38
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	7.0	27.1	31.2	0.0	0.0				11.9	0.0	2.6
Cycle Q Clear(g_c), s	0.0	7.0	27.1	31.2	0.0	0.0				11.9	0.0	2.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1737	775	966	2848	0				440	0	196
V/C Ratio(X)	0.00	0.21	0.63	0.96	0.13	0.00				0.82	0.00	0.19
Avail Cap(c_a), veh/h	0	1737	775	979	2848	0				653	0	291
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.86	0.86	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	17.5	22.6	31.4	0.0	0.0				51.3	0.0	47.2
Incr Delay (d2), s/veh	0.0	0.3	3.8	17.9	0.1	0.0				5.5	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.8	10.3	12.3	0.0	0.0				5.5	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.7	26.5	49.3	0.1	0.0				56.8	0.0	47.7
LnGrp LOS	A	B	C	D	A	A				E	A	D
Approach Vol, veh/h		849		1310						401		
Approach Delay, s/veh		22.7		34.9						55.9		
Approach LOS		C		C						E		
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			37.5	62.6		19.8		100.2				
Change Period (Y+Rc), s			4.0	4.0		5.0		4.0				
Max Green Setting (Gmax), s			34.0	51.0		22.0		89.0				
Max Q Clear Time (g_c+I1), s			33.2	29.1		13.9		2.0				
Green Ext Time (p_c), s			0.4	3.9		0.9		2.5				
Intersection Summary												
HCM 6th Ctrl Delay			34.2									
HCM 6th LOS			C									
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings
4: Beech Ave. & I-15 SB Ramps

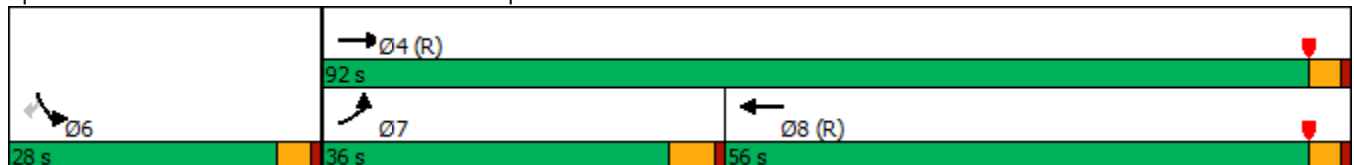


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations	↖	↗↗	↗↗	↖	↗
Traffic Volume (vph)	268	494	475	199	257
Future Volume (vph)	268	494	475	199	257
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	5.0	5.0
Minimum Split (s)	10.0	12.0	12.0	9.0	9.0
Total Split (s)	36.0	92.0	56.0	28.0	28.0
Total Split (%)	30.0%	76.7%	46.7%	23.3%	23.3%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	None	None
Act Effct Green (s)	24.5	92.7	63.2	19.3	19.3
Actuated g/C Ratio	0.20	0.77	0.53	0.16	0.16
v/c Ratio	0.81	0.20	0.64	0.76	0.57
Control Delay	62.1	4.2	8.2	65.1	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	62.1	4.2	8.2	65.1	9.8
LOS	E	A	A	E	A
Approach Delay		24.5	8.2	33.9	
Approach LOS		C	A	C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 18.6
 Intersection LOS: B
 Intersection Capacity Utilization 69.4%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 4: Beech Ave. & I-15 SB Ramps



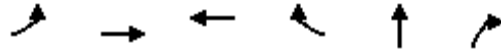
HCM 6th Signalized Intersection Summary
4: Beech Ave. & I-15 SB Ramps

Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗		↙	↘	
Traffic Volume (veh/h)	268	494	475	634	199	257	
Future Volume (veh/h)	268	494	475	634	199	257	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	291	537	516	689	216	278	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	323	2638	923	823	340	303	
Arrive On Green	0.18	0.74	0.87	0.87	0.19	0.19	
Sat Flow, veh/h	1781	3647	1870	1585	1781	1585	
Grp Volume(v), veh/h	291	537	516	689	216	278	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	19.2	5.5	9.0	25.3	13.4	20.6	
Cycle Q Clear(g_c), s	19.2	5.5	9.0	25.3	13.4	20.6	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	323	2638	923	823	340	303	
V/C Ratio(X)	0.90	0.20	0.56	0.84	0.64	0.92	
Avail Cap(c_a), veh/h	460	2638	923	823	356	317	
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.72	0.72	1.00	1.00	
Uniform Delay (d), s/veh	48.1	4.7	4.4	5.5	44.7	47.6	
Incr Delay (d2), s/veh	15.8	0.2	1.8	7.3	3.5	29.8	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	9.7	1.7	2.4	4.4	6.1	19.3	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	63.9	4.9	6.2	12.9	48.1	77.5	
LnGrp LOS	E	A	A	B	D	E	
Approach Vol, veh/h		828	1205		494		
Approach Delay, s/veh		25.6	10.0		64.6		
Approach LOS		C	A		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				93.1	26.9	26.8	66.3
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				88.0	24.0	31.0	52.0
Max Q Clear Time (g_c+I1), s				7.5	22.6	21.2	27.3
Green Ext Time (p_c), s				3.6	0.3	0.6	8.8
Intersection Summary							
HCM 6th Ctrl Delay			25.8				
HCM 6th LOS			C				

Timings
5: I-15 NB Ramp & Duncan Canyon Rd.

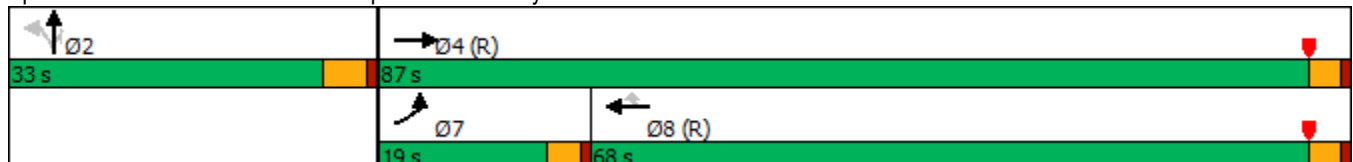


Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations	↖	↗↗	↗↗	↖	↖	↗↗
Traffic Volume (vph)	90	556	1054	262	2	552
Future Volume (vph)	90	556	1054	262	2	552
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8		2	
Permitted Phases				8		2
Detector Phase	7	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	30.0	36.0	36.0	13.0	13.0
Total Split (s)	19.0	87.0	68.0	68.0	33.0	33.0
Total Split (%)	15.8%	72.5%	56.7%	56.7%	27.5%	27.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	12.1	95.0	78.9	78.9	16.0	16.0
Actuated g/C Ratio	0.10	0.79	0.66	0.66	0.13	0.13
v/c Ratio	0.56	0.22	0.50	0.25	0.59	0.68
Control Delay	42.2	4.5	12.6	1.9	58.3	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	4.5	12.6	1.9	58.3	7.5
LOS	D	A	B	A	E	A
Approach Delay		9.7	10.4		17.1	
Approach LOS		A	B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 12.0
 Intersection LOS: B
 Intersection Capacity Utilization 74.7%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 5: I-15 NB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	556	0	0	1054	262	126	2	552	0	0	0
Future Volume (veh/h)	90	556	0	0	1054	262	126	2	552	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	99	611	0	0	1158	288	138	2	559			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	123	2508	0	0	2145	957	385	6	612			
Arrive On Green	0.14	1.00	0.00	0.00	0.60	0.60	0.22	0.22	0.22			
Sat Flow, veh/h	1781	3647	0	0	3647	1585	1757	25	2790			
Grp Volume(v), veh/h	99	611	0	0	1158	288	140	0	559			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1585	1783	0	1395			
Q Serve(g_s), s	6.5	0.0	0.0	0.0	23.0	10.6	8.0	0.0	23.5			
Cycle Q Clear(g_c), s	6.5	0.0	0.0	0.0	23.0	10.6	8.0	0.0	23.5			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	123	2508	0	0	2145	957	391	0	612			
V/C Ratio(X)	0.81	0.24	0.00	0.00	0.54	0.30	0.36	0.00	0.91			
Avail Cap(c_a), veh/h	223	2508	0	0	2145	957	416	0	651			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.92	0.92	0.00	0.00	0.90	0.90	1.00	0.00	1.00			
Uniform Delay (d), s/veh	51.0	0.0	0.0	0.0	14.0	11.5	39.7	0.0	45.7			
Incr Delay (d2), s/veh	10.9	0.2	0.0	0.0	0.9	0.7	0.6	0.0	16.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.0	0.1	0.0	0.0	8.6	3.6	3.5	0.0	9.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.9	0.2	0.0	0.0	14.9	12.3	40.2	0.0	62.6			
LnGrp LOS	E	A	A	A	B	B	D	A	E			
Approach Vol, veh/h		710			1446			699				
Approach Delay, s/veh		8.8			14.3			58.1				
Approach LOS		A			B			E				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		31.3		88.7			12.3	76.4				
Change Period (Y+Rc), s		5.0		4.0			4.0	4.0				
Max Green Setting (Gmax), s		28.0		83.0			15.0	64.0				
Max Q Clear Time (g_c+I1), s		25.5		2.0			8.5	25.0				
Green Ext Time (p_c), s		0.8		4.2			0.1	11.3				
Intersection Summary												
HCM 6th Ctrl Delay				23.7								
HCM 6th LOS				C								

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021

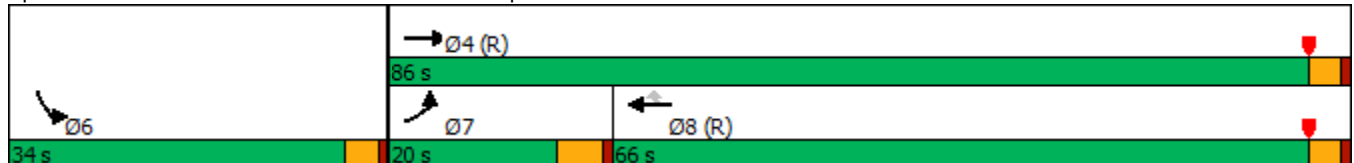


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↗↗	↗↗	↖	↖↖↖
Traffic Volume (vph)	74	619	1013	166	341
Future Volume (vph)	74	619	1013	166	341
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	20.0	86.0	66.0	66.0	34.0
Total Split (%)	16.7%	71.7%	55.0%	55.0%	28.3%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	11.5	88.3	71.7	71.7	23.7
Actuated g/C Ratio	0.10	0.74	0.60	0.60	0.20
v/c Ratio	0.55	0.30	0.60	0.20	0.79
Control Delay	63.8	5.8	17.8	2.8	52.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	5.8	17.8	2.8	52.0
LOS	E	A	B	A	D
Approach Delay		12.0	15.7		52.0
Approach LOS		B	B		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 21.4
 Intersection LOS: C
 Intersection Capacity Utilization 55.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↗	↑↑	↑↑	↗	↘↘		
Traffic Volume (veh/h)	74	619	1013	166	341	95	
Future Volume (veh/h)	74	619	1013	166	341	95	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	92	774	1266	144	467	0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	115	2762	2385	1064	556	247	
Arrive On Green	0.13	1.00	0.67	0.67	0.16	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	92	774	1266	144	467	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	6.0	0.0	21.8	3.9	15.3	0.0	
Cycle Q Clear(g_c), s	6.0	0.0	21.8	3.9	15.3	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	115	2762	2385	1064	556	247	
V/C Ratio(X)	0.80	0.28	0.53	0.14	0.84	0.00	
Avail Cap(c_a), veh/h	223	2762	2385	1064	891	396	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.94	0.94	0.72	0.72	1.00	0.00	
Uniform Delay (d), s/veh	51.5	0.0	10.1	7.1	49.2	0.0	
Incr Delay (d2), s/veh	11.4	0.2	0.6	0.2	4.1	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	2.8	0.1	7.5	1.2	7.2	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	62.9	0.2	10.7	7.3	53.3	0.0	
LnGrp LOS	E	A	B	A	D	A	
Approach Vol, veh/h		866	1410		467		
Approach Delay, s/veh		6.9	10.4		53.3		
Approach LOS		A	B		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				97.3	22.7	12.7	84.5
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				82.0	30.0	15.0	62.0
Max Q Clear Time (g_c+I1), s				2.0	17.3	8.0	23.8
Green Ext Time (p_c), s				5.7	1.5	0.1	11.8

Intersection Summary

HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

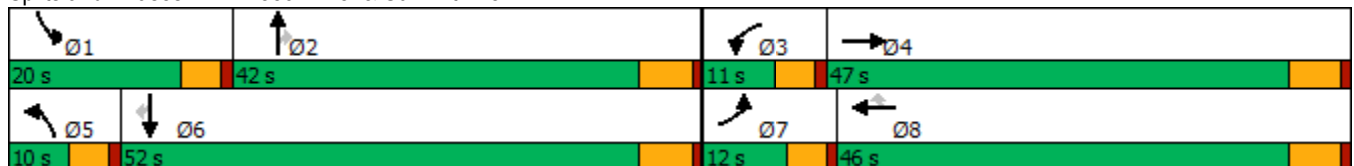
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	78	127	83	175	531	40	336	55	300	233	34
Future Volume (vph)	78	127	83	175	531	40	336	55	300	233	34
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	43.8	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	47.0	11.0	46.0	46.0	10.0	42.0	42.0	20.0	52.0	52.0
Total Split (%)	10.0%	39.2%	9.2%	38.3%	38.3%	8.3%	35.0%	35.0%	16.7%	43.3%	43.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	6.5	18.2	6.3	18.0	18.0	5.6	13.8	13.8	11.3	24.9	24.9
Actuated g/C Ratio	0.09	0.26	0.09	0.26	0.26	0.08	0.20	0.20	0.16	0.36	0.36
v/c Ratio	0.26	0.17	0.28	0.20	0.80	0.15	0.50	0.13	0.56	0.19	0.06
Control Delay	37.3	18.7	38.1	21.5	16.9	38.4	30.1	0.6	33.9	20.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	18.7	38.1	21.5	16.9	38.4	30.1	0.6	33.9	20.1	0.2
LOS	D	B	D	C	B	D	C	A	C	C	A
Approach Delay		25.1		20.2			27.1			26.2	
Approach LOS		C		C			C			C	

Intersection Summary
































Cycle Length: 120
 Actuated Cycle Length: 69
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 23.9
 Intersection LOS: C
 Intersection Capacity Utilization 61.2%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 7: Beech Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	78	127	22	83	175	531	40	336	55	300	233	34
Future Volume (veh/h)	78	127	22	83	175	531	40	336	55	300	233	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	134	18	87	184	448	42	354	46	316	245	33
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	203	1060	140	208	1199	534	140	598	262	426	892	397
Arrive On Green	0.06	0.34	0.34	0.06	0.34	0.34	0.04	0.17	0.17	0.12	0.25	0.25
Sat Flow, veh/h	3456	3155	417	3456	3554	1582	3456	3554	1556	3456	3554	1581
Grp Volume(v), veh/h	82	75	77	87	184	448	42	354	46	316	245	33
Grp Sat Flow(s),veh/h/ln	1728	1777	1795	1728	1777	1582	1728	1777	1556	1728	1777	1581
Q Serve(g_s), s	1.5	1.9	2.0	1.6	2.4	17.4	0.8	6.1	1.7	5.9	3.7	1.1
Cycle Q Clear(g_c), s	1.5	1.9	2.0	1.6	2.4	17.4	0.8	6.1	1.7	5.9	3.7	1.1
Prop In Lane	1.00		0.23	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	203	597	603	208	1199	534	140	598	262	426	892	397
V/C Ratio(X)	0.40	0.12	0.13	0.42	0.15	0.84	0.30	0.59	0.18	0.74	0.27	0.08
Avail Cap(c_a), veh/h	384	1100	1111	332	2146	955	280	1932	846	799	2466	1097
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	15.3	15.3	30.2	15.4	20.4	31.0	25.6	23.7	28.2	20.1	19.1
Incr Delay (d2), s/veh	0.5	0.1	0.1	0.5	0.1	3.6	0.4	0.9	0.3	1.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.7	0.7	0.6	0.9	6.0	0.3	2.4	0.6	2.3	1.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.7	15.4	15.4	30.7	15.5	24.0	31.5	26.5	24.0	29.1	20.2	19.2
LnGrp LOS	C	B	B	C	B	C	C	C	C	C	C	B
Approach Vol, veh/h		234			719			442			594	
Approach Delay, s/veh		20.8			22.6			26.7			24.9	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.8	17.0	8.6	28.2	7.3	22.5	8.5	28.3				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	15.4	36.2	6.4	41.2	5.4	46.2	7.4	40.2				
Max Q Clear Time (g_c+I1), s	7.9	8.1	3.6	4.0	2.8	5.7	3.5	19.4				
Green Ext Time (p_c), s	0.4	2.3	0.0	0.8	0.0	1.6	0.0	2.6				
Intersection Summary												
HCM 6th Ctrl Delay			24.0									
HCM 6th LOS			C									

Timings
8: Duncan Canyon Rd. & Lytle Creek Dr.

Ventana (JN 13769)
06/03/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖↖↖	↖	↖↖	↖
Traffic Volume (vph)	303	804	1057	20	41	259
Future Volume (vph)	303	804	1057	20	41	259
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	23.1	23.1	23.1	23.1	23.1
Total Split (s)	43.0	88.0	45.0	45.0	32.0	32.0
Total Split (%)	35.8%	73.3%	37.5%	37.5%	26.7%	26.7%
Yellow Time (s)	3.5	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.1	5.1	5.1	5.1	5.1
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	None	None	None	Max	Max
Act Effct Green (s)	23.3	57.4	29.5	29.5	27.5	27.5
Actuated g/C Ratio	0.24	0.60	0.31	0.31	0.29	0.29
v/c Ratio	0.76	0.78	0.73	0.04	0.05	0.43
Control Delay	46.1	19.2	32.7	10.7	29.8	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	19.2	32.7	10.7	29.8	6.5
LOS	D	B	C	B	C	A
Approach Delay		26.5	32.2		9.7	
Approach LOS		C	C		A	

Intersection Summary

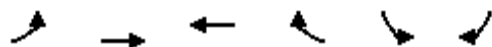
Cycle Length: 120
 Actuated Cycle Length: 95.3
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 27.0
 Intersection LOS: C
 Intersection Capacity Utilization 55.0%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 8: Duncan Canyon Rd. & Lytle Creek Dr.



HCM 6th Signalized Intersection Summary
8: Duncan Canyon Rd. & Lytle Creek Dr.

Ventana (JN 13769)
06/03/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑	↗↗↗	↑	↖↖	↘	
Traffic Volume (veh/h)	303	804	1057	20	41	259	
Future Volume (veh/h)	303	804	1057	20	41	259	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	329	874	1149	22	45	200	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	377	1075	1589	493	1066	489	
Arrive On Green	0.21	0.57	0.31	0.31	0.31	0.31	
Sat Flow, veh/h	1781	1870	5274	1585	3456	1585	
Grp Volume(v), veh/h	329	874	1149	22	45	200	
Grp Sat Flow(s),veh/h/ln	1781	1870	1702	1585	1728	1585	
Q Serve(g_s), s	15.6	32.5	17.4	0.8	0.8	8.7	
Cycle Q Clear(g_c), s	15.6	32.5	17.4	0.8	0.8	8.7	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	377	1075	1589	493	1066	489	
V/C Ratio(X)	0.87	0.81	0.72	0.04	0.04	0.41	
Avail Cap(c_a), veh/h	787	1778	2337	725	1066	489	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	33.2	14.8	26.7	21.0	21.1	23.9	
Incr Delay (d2), s/veh	6.3	1.5	0.6	0.0	0.1	2.5	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	6.9	11.5	6.6	0.3	0.3	8.5	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	39.6	16.4	27.3	21.0	21.2	26.4	
LnGrp LOS	D	B	C	C	C	C	
Approach Vol, veh/h		1203	1171		245		
Approach Delay, s/veh		22.7	27.2		25.4		
Approach LOS		C	C		C		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				55.2	32.0	23.0	32.2
Change Period (Y+Rc), s				5.1	5.1	4.5	5.1
Max Green Setting (Gmax), s				82.9	26.9	38.5	39.9
Max Q Clear Time (g_c+I1), s				34.5	10.7	17.6	19.4
Green Ext Time (p_c), s				7.3	0.7	0.9	7.7

Intersection Summary

HCM 6th Ctrl Delay	25.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
04/29/2021

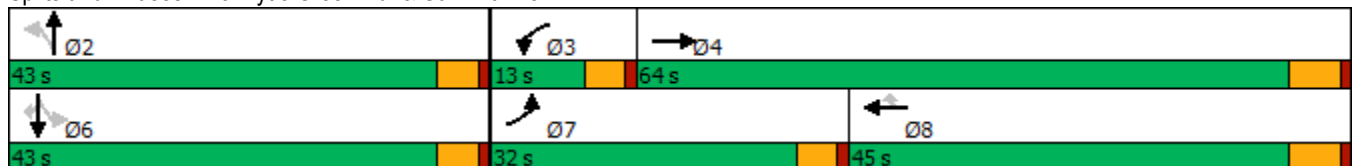


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	154	345	42	677	76	55	113	62	78	196
Future Volume (vph)	154	345	42	677	76	55	113	62	78	196
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8			2		6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	9.6	28.8	28.8	33.7	33.7	31.7	31.7	31.7
Total Split (s)	32.0	64.0	13.0	45.0	45.0	43.0	43.0	43.0	43.0	43.0
Total Split (%)	26.7%	53.3%	10.8%	37.5%	37.5%	35.8%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None
Act Effct Green (s)	11.1	29.5	6.4	20.0	20.0	12.2	12.2	12.2	12.2	12.2
Actuated g/C Ratio	0.19	0.50	0.11	0.34	0.34	0.21	0.21	0.21	0.21	0.21
v/c Ratio	0.51	0.25	0.24	0.62	0.14	0.22	0.41	0.27	0.22	0.44
Control Delay	29.2	9.8	31.4	19.3	3.7	25.0	25.0	25.9	24.0	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	9.8	31.4	19.3	3.7	25.0	25.0	25.9	24.0	7.3
LOS	C	A	C	B	A	C	C	C	C	A
Approach Delay		15.3		18.4			25.0		14.6	
Approach LOS		B		B			C		B	

Intersection Summary























Cycle Length: 120
 Actuated Cycle Length: 59
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 17.5
 Intersection LOS: B
 Intersection Capacity Utilization 61.4%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 9: Lytle Creek Rd. & Summit Ave.



HCM 6th Signalized Intersection Summary
 9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	345	46	42	677	76	55	113	29	62	78	196
Future Volume (veh/h)	154	345	46	42	677	76	55	113	29	62	78	196
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	169	379	43	46	744	74	60	124	28	68	86	178
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	1317	148	85	1186	529	359	328	74	339	416	352
Arrive On Green	0.12	0.41	0.41	0.05	0.33	0.33	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	3218	363	1781	3554	1585	1113	1472	332	1233	1870	1581
Grp Volume(v), veh/h	169	208	214	46	744	74	60	0	152	68	86	178
Grp Sat Flow(s),veh/h/ln	1781	1777	1804	1781	1777	1585	1113	0	1804	1233	1870	1581
Q Serve(g_s), s	4.3	3.7	3.7	1.2	8.3	1.5	2.2	0.0	3.4	2.3	1.8	4.7
Cycle Q Clear(g_c), s	4.3	3.7	3.7	1.2	8.3	1.5	4.0	0.0	3.4	5.7	1.8	4.7
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	220	727	738	85	1186	529	359	0	402	339	416	352
V/C Ratio(X)	0.77	0.29	0.29	0.54	0.63	0.14	0.17	0.00	0.38	0.20	0.21	0.51
Avail Cap(c_a), veh/h	1035	2193	2227	317	2955	1318	1016	0	1466	1066	1519	1284
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.0	9.3	9.3	21.9	13.2	11.0	16.5	0.0	15.6	18.0	14.9	16.1
Incr Delay (d2), s/veh	2.2	0.2	0.2	1.9	0.5	0.1	0.2	0.0	0.6	0.3	0.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.0	1.1	0.5	2.5	0.4	0.5	0.0	1.3	0.6	0.7	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.2	9.5	9.6	23.9	13.8	11.1	16.8	0.0	16.1	18.3	15.2	17.2
LnGrp LOS	C	A	A	C	B	B	B	A	B	B	B	B
Approach Vol, veh/h		591			864			212			332	
Approach Delay, s/veh		13.2			14.1			16.3			16.9	
Approach LOS		B			B			B			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.2	6.9	25.1		15.2	10.4	21.5				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 38	8.4	58.2		* 38	27.4	39.2				
Max Q Clear Time (g_c+I1), s		6.0	3.2	5.7		7.7	6.3	10.3				
Green Ext Time (p_c), s		1.1	0.0	2.4		1.3	0.2	5.3				
Intersection Summary												
HCM 6th Ctrl Delay				14.5								
HCM 6th LOS				B								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑↑	
Traffic Vol, veh/h	0	27	78	22	109	0
Future Vol, veh/h	0	27	78	22	109	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	29	85	24	118	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	312	59	118	0	-	0
Stage 1	118	-	-	-	-	-
Stage 2	194	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	668	995	1469	-	-	-
Stage 1	895	-	-	-	-	-
Stage 2	838	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	629	995	1469	-	-	-
Mov Cap-2 Maneuver	629	-	-	-	-	-
Stage 1	843	-	-	-	-	-
Stage 2	838	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	5.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1469	-	995	-	-
HCM Lane V/C Ratio	0.058	-	0.029	-	-
HCM Control Delay (s)	7.6	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Timings
11: Citrus Ave. & Driveway 1

Ventana (JN 13769)
04/29/2021



Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	0	49	100	136
Future Volume (vph)	0	49	100	136
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	5	2	6
Permitted Phases				
Detector Phase	4	5	2	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	9.5	22.5	22.5
Total Split (s)	44.5	31.5	75.5	44.0
Total Split (%)	37.1%	26.3%	62.9%	36.7%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5
Lead/Lag		Lead		Lag
Lead-Lag Optimize?		Yes		Yes
Recall Mode	None	None	C-Min	C-Min
Act Effct Green (s)	5.5	9.0	108.4	96.9
Actuated g/C Ratio	0.05	0.08	0.90	0.81
v/c Ratio	0.06	0.40	0.06	0.05
Control Delay	0.1	61.0	0.9	3.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.1	61.0	0.9	3.5
LOS	A	E	A	A
Approach Delay	0.1		20.6	3.5
Approach LOS	A		C	A

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.40
 Intersection Signal Delay: 10.7
 Intersection LOS: B
 Intersection Capacity Utilization 23.8%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 11: Citrus Ave. & Driveway 1



HCM 6th Signalized Intersection Summary
 11: Citrus Ave. & Driveway 1

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	46	49	100	136	0
Future Volume (veh/h)	0	46	49	100	136	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	50	53	109	148	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	0	63	69	1654	2872	0
Arrive On Green	0.00	0.04	0.04	0.88	0.81	0.00
Sat Flow, veh/h	0	1559	1781	1870	3741	0
Grp Volume(v), veh/h	0	51	53	109	148	0
Grp Sat Flow(s),veh/h/ln	0	1590	1781	1870	1777	0
Q Serve(g_s), s	0.0	3.8	3.5	0.9	1.0	0.0
Cycle Q Clear(g_c), s	0.0	3.8	3.5	0.9	1.0	0.0
Prop In Lane	0.00	0.98	1.00			0.00
Lane Grp Cap(c), veh/h	0	64	69	1654	2872	0
V/C Ratio(X)	0.00	0.79	0.77	0.07	0.05	0.00
Avail Cap(c_a), veh/h	0	530	401	1654	2872	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	57.1	57.1	0.9	2.3	0.0
Incr Delay (d2), s/veh	0.0	19.0	15.9	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.9	1.9	0.1	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	76.1	73.0	0.9	2.3	0.0
LnGrp LOS	A	E	E	A	A	A
Approach Vol, veh/h	51			162	148	
Approach Delay, s/veh	76.1			24.5	2.3	
Approach LOS	E			C	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		110.6		9.4	9.2	101.5
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		71.0		40.0	27.0	39.5
Max Q Clear Time (g_c+I1), s		2.9		5.8	5.5	3.0
Green Ext Time (p_c), s		0.6		0.1	0.1	0.8
Intersection Summary						
HCM 6th Ctrl Delay			22.7			
HCM 6th LOS			C			

Notes

User approved volume balancing among the lanes for turning movement.

Timings
12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
06/03/2021

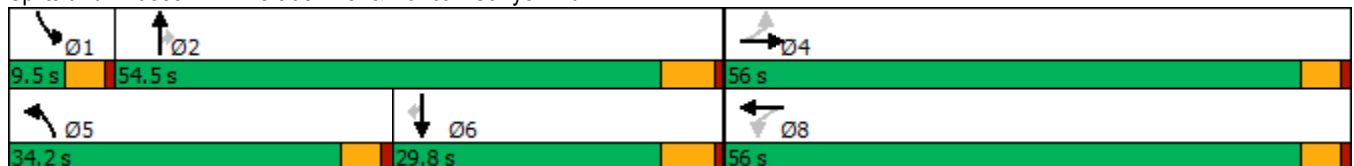


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↖↗	↖	↗	↖	↖	↗
Traffic Volume (vph)	14	218	29	191	855	132	32	8	146	41
Future Volume (vph)	14	218	29	191	855	132	32	8	146	41
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4		8	5	2		1	6	
Permitted Phases	4		8				2			6
Detector Phase	4	4	8	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	26.6	26.6	26.6	26.6	9.5	27.8	27.8	9.5	27.8	27.8
Total Split (s)	56.0	56.0	56.0	56.0	34.2	54.5	54.5	9.5	29.8	29.8
Total Split (%)	46.7%	46.7%	46.7%	46.7%	28.5%	45.4%	45.4%	7.9%	24.8%	24.8%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.5	4.8	4.8	3.5	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.5	5.8	5.8	4.5	5.8	5.8
Lead/Lag					Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	51.4	51.4	51.4	51.4	29.7	46.8	46.8	5.0	14.4	14.4
Actuated g/C Ratio	0.47	0.47	0.47	0.47	0.27	0.42	0.42	0.05	0.13	0.13
v/c Ratio	0.03	1.02	0.45	0.23	0.97	0.17	0.05	0.10	0.63	0.15
Control Delay	17.6	62.5	47.2	19.2	63.1	21.2	2.6	55.1	57.1	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.6	62.5	47.2	19.2	63.1	21.2	2.6	55.1	57.1	1.1
LOS	B	E	D	B	E	C	A	E	E	A
Approach Delay		61.7		22.8		55.7			45.2	
Approach LOS		E		C		E			D	

Intersection Summary























Cycle Length: 120
 Actuated Cycle Length: 110.5
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 53.9
 Intersection LOS: D
 Intersection Capacity Utilization 94.5%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
 06/03/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	218	616	29	191	3	855	132	32	8	146	41
Future Volume (veh/h)	14	218	616	29	191	3	855	132	32	8	146	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	227	382	30	199	3	891	138	33	8	152	43
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	486	256	432	148	752	11	994	747	633	18	228	193
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.29	0.40	0.40	0.01	0.12	0.12
Sat Flow, veh/h	1180	626	1054	812	1838	28	3456	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	15	0	609	30	0	202	891	138	33	8	152	43
Grp Sat Flow(s),veh/h/ln	1180	0	1681	812	0	1865	1728	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.7	0.0	27.6	2.9	0.0	5.9	20.3	3.9	1.0	0.4	6.4	2.0
Cycle Q Clear(g_c), s	6.6	0.0	27.6	30.5	0.0	5.9	20.3	3.9	1.0	0.4	6.4	2.0
Prop In Lane	1.00		0.63	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	486	0	688	148	0	764	994	747	633	18	228	193
V/C Ratio(X)	0.03	0.00	0.89	0.20	0.00	0.26	0.90	0.18	0.05	0.44	0.67	0.22
Avail Cap(c_a), veh/h	741	0	1051	323	0	1167	1249	1108	939	108	546	463
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	0.0	22.5	36.6	0.0	16.1	28.1	16.0	15.2	40.4	34.5	32.6
Incr Delay (d2), s/veh	0.0	0.0	6.1	0.7	0.0	0.2	6.5	0.1	0.0	6.2	3.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	10.7	0.6	0.0	2.3	8.5	1.5	0.3	0.2	2.9	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.3	0.0	28.6	37.3	0.0	16.3	34.6	16.1	15.2	46.6	37.9	33.2
LnGrp LOS	B	A	C	D	A	B	C	B	B	D	D	C
Approach Vol, veh/h		624			232			1062			203	
Approach Delay, s/veh		28.4			19.0			31.6			37.2	
Approach LOS		C			B			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	38.6		38.2	28.1	15.8		38.2				
Change Period (Y+Rc), s	4.5	5.8		4.6	4.5	5.8		4.6				
Max Green Setting (Gmax), s	5.0	48.7		51.4	29.7	24.0		51.4				
Max Q Clear Time (g_c+1), s	2.4	5.9		29.6	22.3	8.4		32.5				
Green Ext Time (p_c), s	0.0	0.8		4.1	1.3	0.7		1.1				
Intersection Summary												
HCM 6th Ctrl Delay				29.8								
HCM 6th LOS				C								

Timings
13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
04/29/2021

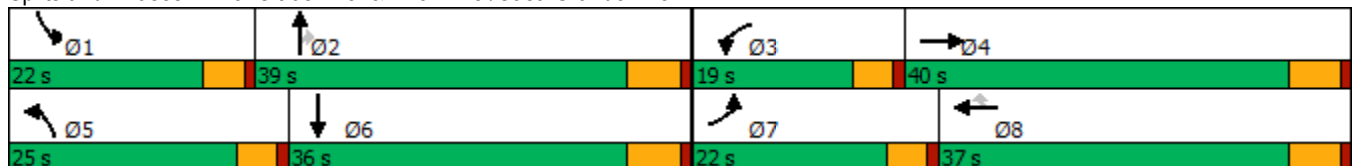


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↗	↖	↑↑	↗	↖	↖↗
Traffic Volume (vph)	73	22	203	40	348	81	326	104	204	358
Future Volume (vph)	73	22	203	40	348	81	326	104	204	358
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	30.8	30.8	9.6	26.8	26.8	9.6	22.8
Total Split (s)	22.0	40.0	19.0	37.0	37.0	25.0	39.0	39.0	22.0	36.0
Total Split (%)	18.3%	33.3%	15.8%	30.8%	30.8%	20.8%	32.5%	32.5%	18.3%	30.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	7.7	10.8	16.7	14.5	14.5	8.0	13.0	13.0	13.8	21.4
Actuated g/C Ratio	0.11	0.16	0.25	0.21	0.21	0.12	0.19	0.19	0.20	0.32
v/c Ratio	0.38	0.19	0.49	0.11	0.59	0.40	0.50	0.28	0.59	0.41
Control Delay	36.8	18.0	31.4	25.9	7.9	36.8	29.3	8.3	34.1	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.8	18.0	31.4	25.9	7.9	36.8	29.3	8.3	34.1	21.7
LOS	D	B	C	C	A	D	C	A	C	C
Approach Delay		28.7		17.2			26.2			25.7
Approach LOS		C		B			C			C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 67.8
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 23.3
 Intersection LOS: C
 Intersection Capacity Utilization 52.4%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 13: Citrus Ave. & Knox Ave./Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
 04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	73	22	33	203	40	348	81	326	104	204	358	71
Future Volume (veh/h)	73	22	33	203	40	348	81	326	104	204	358	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	23	23	211	42	334	84	340	102	212	373	71
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	156	156	260	502	425	113	616	273	262	768	145
Arrive On Green	0.06	0.18	0.18	0.15	0.27	0.27	0.06	0.17	0.17	0.15	0.26	0.26
Sat Flow, veh/h	1781	854	854	1781	1870	1583	1781	3554	1576	1781	2982	562
Grp Volume(v), veh/h	76	0	46	211	42	334	84	340	102	212	221	223
Grp Sat Flow(s),veh/h/ln	1781	0	1708	1781	1870	1583	1781	1777	1576	1781	1777	1768
Q Serve(g_s), s	2.5	0.0	1.3	6.8	1.0	11.6	2.7	5.2	3.4	6.8	6.2	6.4
Cycle Q Clear(g_c), s	2.5	0.0	1.3	6.8	1.0	11.6	2.7	5.2	3.4	6.8	6.2	6.4
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	107	0	312	260	502	425	113	616	273	262	457	455
V/C Ratio(X)	0.71	0.00	0.15	0.81	0.08	0.79	0.75	0.55	0.37	0.81	0.48	0.49
Avail Cap(c_a), veh/h	523	0	985	432	984	833	613	1989	882	523	905	900
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	0.0	20.4	24.5	16.2	20.1	27.3	22.4	21.7	24.5	18.7	18.7
Incr Delay (d2), s/veh	3.2	0.0	0.2	2.3	0.1	3.2	3.7	0.8	0.8	2.3	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.5	2.7	0.4	4.0	1.2	2.0	1.2	2.7	2.3	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.6	0.0	20.6	26.8	16.3	23.3	31.0	23.2	22.5	26.7	19.5	19.5
LnGrp LOS	C	A	C	C	B	C	C	C	C	C	B	B
Approach Vol, veh/h		122			587			526			656	
Approach Delay, s/veh		26.8			24.1			24.3			21.8	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.3	16.1	13.3	16.6	8.3	21.1	8.2	21.7				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	17.4	33.2	14.4	34.2	20.4	30.2	17.4	31.2				
Max Q Clear Time (g_c+I1), s	8.8	7.2	8.8	3.3	4.7	8.4	4.5	13.6				
Green Ext Time (p_c), s	0.2	2.3	0.1	0.2	0.1	2.3	0.1	1.2				
Intersection Summary												
HCM 6th Ctrl Delay			23.5									
HCM 6th LOS			C									

Timings
14: Citrus Ave. & Summit Ave.

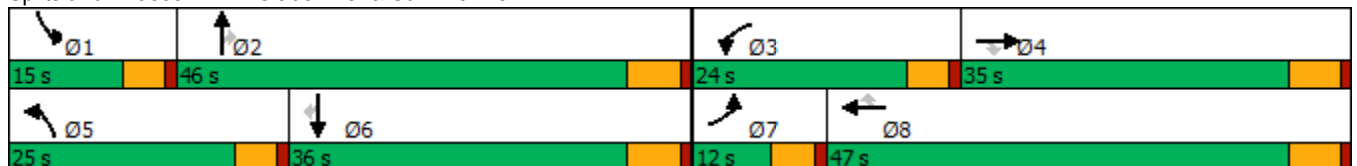
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	145	160	148	236	94	465	241	87	105	251	139
Future Volume (vph)	89	145	160	148	236	94	465	241	87	105	251	139
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	10.8	34.8	34.8	10.8	34.8	34.8	10.8	31.8	31.8	10.8	31.8	31.8
Total Split (s)	12.0	35.0	35.0	24.0	47.0	47.0	25.0	46.0	46.0	15.0	36.0	36.0
Total Split (%)	10.0%	29.2%	29.2%	20.0%	39.2%	39.2%	20.8%	38.3%	38.3%	12.5%	30.0%	30.0%
Yellow Time (s)	3.9	4.8	4.8	3.9	4.8	4.8	3.9	4.8	4.8	3.9	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	5.8	5.8	4.9	5.8	5.8	4.9	5.8	5.8	4.9	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	7.1	10.5	10.5	12.6	16.0	16.0	20.1	41.2	41.2	9.2	30.3	30.3
Actuated g/C Ratio	0.07	0.11	0.11	0.13	0.17	0.17	0.21	0.43	0.43	0.10	0.32	0.32
v/c Ratio	0.70	0.39	0.47	0.66	0.41	0.25	1.29	0.16	0.12	0.64	0.23	0.23
Control Delay	72.5	43.1	7.7	52.9	37.1	2.4	182.8	17.8	0.5	59.5	25.2	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.5	43.1	7.7	52.9	37.1	2.4	182.8	17.8	0.5	59.5	25.2	2.0
LOS	E	D	A	D	D	A	F	B	A	E	C	A
Approach Delay		35.4			35.1			112.6			26.0	
Approach LOS		D			D			F			C	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 94.9
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.29
 Intersection Signal Delay: 61.5
 Intersection LOS: E
 Intersection Capacity Utilization 70.0%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	145	160	148	236	94	465	241	87	105	251	139
Future Volume (veh/h)	89	145	160	148	236	94	465	241	87	105	251	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	93	151	134	154	246	89	484	251	76	109	261	138
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	118	446	197	188	584	260	384	1644	717	137	1151	514
Arrive On Green	0.07	0.13	0.13	0.11	0.16	0.16	0.22	0.46	0.46	0.08	0.32	0.32
Sat Flow, veh/h	1781	3554	1574	1781	3554	1582	1781	3554	1550	1781	3554	1585
Grp Volume(v), veh/h	93	151	134	154	246	89	484	251	76	109	261	138
Grp Sat Flow(s),veh/h/ln	1781	1777	1574	1781	1777	1582	1781	1777	1550	1781	1777	1585
Q Serve(g_s), s	4.8	3.6	7.6	7.9	5.8	4.6	20.1	3.8	2.6	5.6	5.0	6.0
Cycle Q Clear(g_c), s	4.8	3.6	7.6	7.9	5.8	4.6	20.1	3.8	2.6	5.6	5.0	6.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	118	446	197	188	584	260	384	1644	717	137	1151	514
V/C Ratio(X)	0.79	0.34	0.68	0.82	0.42	0.34	1.26	0.15	0.11	0.79	0.23	0.27
Avail Cap(c_a), veh/h	136	1113	493	365	1571	699	384	1644	717	193	1151	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	37.2	39.0	40.8	35.0	34.5	36.6	14.5	14.2	42.3	23.0	23.3
Incr Delay (d2), s/veh	19.7	0.4	4.1	3.4	0.5	0.8	136.5	0.2	0.3	9.2	0.5	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	1.5	3.0	3.5	2.4	1.8	22.8	1.4	0.9	2.7	2.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.5	37.7	43.0	44.2	35.4	35.3	173.0	14.7	14.5	51.5	23.4	24.6
LnGrp LOS	E	D	D	D	D	D	F	B	B	D	C	C
Approach Vol, veh/h		378			489			811			508	
Approach Delay, s/veh		45.7			38.2			109.2			29.8	
Approach LOS		D			D			F			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.1	48.9	14.7	17.5	25.0	36.0	11.1	21.1				
Change Period (Y+Rc), s	4.9	5.8	4.9	5.8	4.9	5.8	4.9	5.8				
Max Green Setting (Gmax), s	10.1	40.2	19.1	29.2	20.1	30.2	7.1	41.2				
Max Q Clear Time (g_c+I1), s	7.6	5.8	9.9	9.6	22.1	8.0	6.8	7.8				
Green Ext Time (p_c), s	0.0	1.7	0.1	1.2	0.0	1.9	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay			63.9									
HCM 6th LOS			E									

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

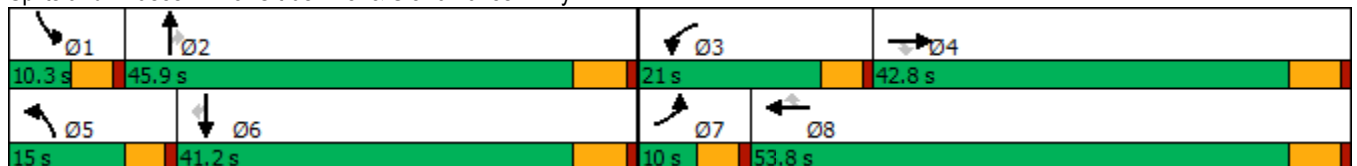
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	221	346	522	176	101	580	413	630	114	539	68
Future Volume (vph)	65	221	346	522	176	101	580	413	630	114	539	68
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.7	42.8	42.8	9.7	39.8	39.8	9.7	39.8	39.8	9.7	39.8	39.8
Total Split (s)	10.0	42.8	42.8	21.0	53.8	53.8	15.0	45.9	45.9	10.3	41.2	41.2
Total Split (%)	8.3%	35.7%	35.7%	17.5%	44.8%	44.8%	12.5%	38.3%	38.3%	8.6%	34.3%	34.3%
Yellow Time (s)	3.7	4.8	4.8	3.7	4.8	4.8	3.7	4.8	4.8	3.7	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.8	5.8	4.7	5.8	5.8	4.7	5.8	5.8	4.7	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	5.4	20.0	20.0	16.9	34.0	34.0	10.6	27.5	27.5	5.8	22.7	22.7
Actuated g/C Ratio	0.06	0.22	0.22	0.18	0.37	0.37	0.12	0.30	0.30	0.06	0.25	0.25
v/c Ratio	0.35	0.31	0.80	0.90	0.15	0.17	1.59	0.42	0.84	0.57	0.67	0.15
Control Delay	52.4	31.2	31.8	58.5	21.4	5.1	305.4	27.6	18.7	57.6	35.7	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	31.2	31.8	58.5	21.4	5.1	305.4	27.6	18.7	57.6	35.7	0.6
LOS	D	C	C	E	C	A	F	C	B	E	D	A
Approach Delay		33.7			43.6			123.4			35.9	
Approach LOS		C			D			F			D	

Intersection Summary


































Cycle Length: 120	
Actuated Cycle Length: 91.9	
Natural Cycle: 135	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.59	
Intersection Signal Delay: 74.8	Intersection LOS: E
Intersection Capacity Utilization 74.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	 
Traffic Volume (veh/h)	65	221	346	522	176	101	580	413	630	114	539	68
Future Volume (veh/h)	65	221	346	522	176	101	580	413	630	114	539	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	240	290	567	191	83	630	449	586	124	586	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	142	782	348	529	1180	526	334	1339	596	182	1182	527
Arrive On Green	0.04	0.22	0.22	0.15	0.33	0.33	0.10	0.38	0.38	0.05	0.33	0.33
Sat Flow, veh/h	3456	3554	1579	3456	3554	1585	3456	3554	1583	3456	3554	1585
Grp Volume(v), veh/h	71	240	290	567	191	83	630	449	586	124	586	63
Grp Sat Flow(s),veh/h/ln	1728	1777	1579	1728	1777	1585	1728	1777	1583	1728	1777	1585
Q Serve(g_s), s	2.1	6.0	18.7	16.3	4.0	3.9	10.3	9.6	39.0	3.8	14.0	2.9
Cycle Q Clear(g_c), s	2.1	6.0	18.7	16.3	4.0	3.9	10.3	9.6	39.0	3.8	14.0	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	142	782	348	529	1180	526	334	1339	596	182	1182	527
V/C Ratio(X)	0.50	0.31	0.83	1.07	0.16	0.16	1.88	0.34	0.98	0.68	0.50	0.12
Avail Cap(c_a), veh/h	172	1235	549	529	1603	715	334	1339	596	182	1182	527
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	34.7	39.6	45.1	25.1	25.1	48.1	23.7	32.8	49.5	28.4	24.7
Incr Delay (d2), s/veh	1.0	0.2	6.3	59.6	0.1	0.1	408.9	0.1	32.4	8.3	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.5	7.5	11.1	1.6	1.4	23.3	3.8	19.2	1.8	5.7	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.0	34.9	45.9	104.7	25.2	25.2	457.0	23.8	65.2	57.9	28.7	24.8
LnGrp LOS	D	C	D	F	C	C	F	C	E	E	C	C
Approach Vol, veh/h		601			841			1665			773	
Approach Delay, s/veh		42.1			78.8			202.3			33.1	
Approach LOS		D			E			F			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.3	45.9	21.0	29.2	15.0	41.2	9.1	41.1				
Change Period (Y+Rc), s	* 4.7	5.8	* 4.7	5.8	* 4.7	5.8	* 4.7	5.8				
Max Green Setting (Gmax), s	* 5.6	40.1	* 16	37.0	* 10	35.4	* 5.3	48.0				
Max Q Clear Time (g_c+I1), s	5.8	41.0	18.3	20.7	12.3	16.0	4.1	6.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.1	0.0	3.6	0.0	1.4				

Intersection Summary

HCM 6th Ctrl Delay	117.0
HCM 6th LOS	F

Notes

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

Intersection	
Intersection Delay, s/veh	87.7
Intersection LOS	F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↔		↘	↕↕
Traffic Vol, veh/h	82	468	489	102	377	620
Future Vol, veh/h	82	468	489	102	377	620
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	509	532	111	410	674
Number of Lanes	1	1	2	0	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay	179	55.8	56.3
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	62%	0%	0%	0%	100%	100%
Vol Right, %	0%	38%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	326	265	82	468	377	310	310
LT Vol	0	0	82	0	377	0	0
Through Vol	326	163	0	0	0	310	310
RT Vol	0	102	0	468	0	0	0
Lane Flow Rate	354	288	89	509	410	337	337
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.946	0.747	0.268	1.363	1.049	0.816	0.654
Departure Headway (Hd)	10.726	10.442	11.154	9.92	10.09	9.568	7.756
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	340	349	324	371	365	381	468
Service Time	8.426	8.142	8.854	7.62	7.79	7.268	5.456
HCM Lane V/C Ratio	1.041	0.825	0.275	1.372	1.123	0.885	0.72
HCM Control Delay	69.9	38.4	17.9	207.2	93.7	43.2	23.9
HCM Lane LOS	F	E	C	F	F	E	C
HCM 95th-tile Q	9.8	5.8	1.1	24.1	13	7.2	4.6

Intersection						
Int Delay, s/veh	4.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	103	68	24	501	1012	73
Future Vol, veh/h	103	68	24	501	1012	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	69	24	511	1033	74

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1629	1070	1107	0	-	0
Stage 1	1070	-	-	-	-	-
Stage 2	559	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	112	269	631	-	-	-
Stage 1	329	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	108	269	631	-	-	-
Mov Cap-2 Maneuver	230	-	-	-	-	-
Stage 1	316	-	-	-	-	-
Stage 2	572	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	49.8	0.5	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	631	-	244	-	-
HCM Lane V/C Ratio	0.039	-	0.715	-	-
HCM Control Delay (s)	10.9	-	49.8	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.1	-	4.8	-	-

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	72	309	293	528	971	113
Future Volume (vph)	72	309	293	528	971	113
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	44.8	9.6	16.5	29.5	29.5
Total Split (s)	44.8	44.8	30.0	75.2	45.2	45.2
Total Split (%)	37.3%	37.3%	25.0%	62.7%	37.7%	37.7%
Yellow Time (s)	4.8	4.8	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	6.5	6.5	6.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effct Green (s)	11.3	11.3	23.2	68.7	40.9	40.9
Actuated g/C Ratio	0.12	0.12	0.25	0.74	0.44	0.44
v/c Ratio	0.39	0.71	0.77	0.23	0.72	0.18
Control Delay	42.8	12.5	44.4	4.0	25.1	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.8	12.5	44.4	4.0	25.1	11.2
LOS	D	B	D	A	C	B
Approach Delay	18.3			18.5	23.7	
Approach LOS	B			B	C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 92.3
 Natural Cycle: 115
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 20.9
 Intersection LOS: C
 Intersection Capacity Utilization 65.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	72	309	293	528	971	113
Future Volume (veh/h)	72	309	293	528	971	113
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	84	359	341	614	1129	131
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	445	396	372	2262	1368	610
Arrive On Green	0.25	0.25	0.21	0.64	0.38	0.38
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	84	359	341	614	1129	131
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	4.0	23.7	20.2	8.2	30.9	6.0
Cycle Q Clear(g_c), s	4.0	23.7	20.2	8.2	30.9	6.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	445	396	372	2262	1368	610
V/C Ratio(X)	0.19	0.91	0.92	0.27	0.83	0.21
Avail Cap(c_a), veh/h	644	573	419	2262	1368	610
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.9	39.3	41.8	8.6	29.9	22.3
Incr Delay (d2), s/veh	0.2	13.9	23.2	0.3	5.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.5	10.7	2.7	13.0	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.1	53.2	65.0	8.9	35.7	23.1
LnGrp LOS	C	D	E	A	D	C
Approach Vol, veh/h	443			955	1260	
Approach Delay, s/veh	49.2			29.0	34.4	
Approach LOS	D			C	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		75.2		32.7	27.1	48.1
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	25.4	38.7
Max Q Clear Time (g_c+1), s		10.2		25.7	22.2	32.9
Green Ext Time (p_c), s		3.9		1.2	0.3	3.4
Intersection Summary						
HCM 6th Ctrl Delay			34.9			
HCM 6th LOS			C			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

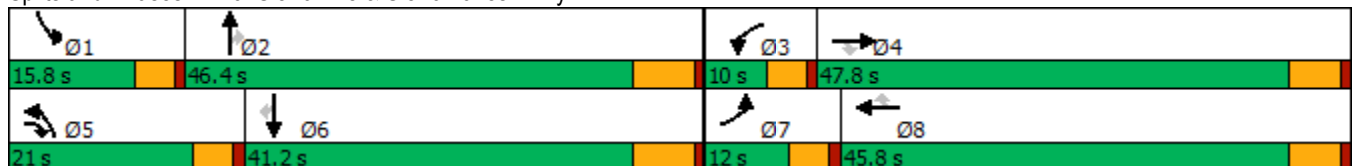
Ventana (JN 13769)
04/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	149	485	138	182	237	535	664	258	233	1021	186
Future Volume (vph)	120	149	485	138	182	237	535	664	258	233	1021	186
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	12.0	47.8	21.0	10.0	45.8	45.8	21.0	46.4	46.4	15.8	41.2	41.2
Total Split (%)	10.0%	39.8%	17.5%	8.3%	38.2%	38.2%	17.5%	38.7%	38.7%	13.2%	34.3%	34.3%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.9	12.7	35.1	5.4	11.2	11.2	16.5	33.0	33.0	10.3	26.8	26.8
Actuated g/C Ratio	0.08	0.15	0.42	0.06	0.13	0.13	0.20	0.40	0.40	0.12	0.32	0.32
v/c Ratio	0.46	0.30	0.75	0.68	0.42	0.60	0.86	0.36	0.36	0.60	0.68	0.31
Control Delay	43.6	33.9	26.3	56.4	37.0	11.2	48.2	18.4	3.6	42.0	26.8	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	33.9	26.3	56.4	37.0	11.2	48.2	18.4	3.6	42.0	26.8	4.5
LOS	D	C	C	E	D	B	D	B	A	D	C	A
Approach Delay		30.5			30.9			26.7			26.4	
Approach LOS		C			C			C			C	

Intersection Summary































Cycle Length: 120
 Actuated Cycle Length: 83.1
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 27.8
 Intersection LOS: C
 Intersection Capacity Utilization 67.0%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/06/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		 		
Traffic Volume (veh/h)	120	149	485	138	182	237	535	664	258	233	1021	186
Future Volume (veh/h)	120	149	485	138	182	237	535	664	258	233	1021	186
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	132	164	413	152	200	208	588	730	251	256	1122	177
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	899	675	197	899	400	598	1881	583	327	1480	460
Arrive On Green	0.06	0.25	0.25	0.06	0.25	0.25	0.17	0.37	0.37	0.09	0.29	0.29
Sat Flow, veh/h	3456	3554	1585	3456	3554	1581	3456	5106	1581	3456	5106	1585
Grp Volume(v), veh/h	132	164	413	152	200	208	588	730	251	256	1122	177
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1581	1728	1702	1581	1728	1702	1585
Q Serve(g_s), s	3.5	3.4	19.2	4.1	4.2	10.7	16.1	10.0	11.3	6.9	18.9	8.5
Cycle Q Clear(g_c), s	3.5	3.4	19.2	4.1	4.2	10.7	16.1	10.0	11.3	6.9	18.9	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	197	899	675	197	899	400	598	1881	583	327	1480	460
V/C Ratio(X)	0.67	0.18	0.61	0.77	0.22	0.52	0.98	0.39	0.43	0.78	0.76	0.39
Avail Cap(c_a), veh/h	270	1576	977	197	1501	668	598	2151	666	409	1871	581
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	27.7	21.1	44.0	28.0	30.4	39.0	22.0	22.5	41.9	30.6	26.9
Incr Delay (d2), s/veh	1.5	0.1	0.9	15.5	0.1	1.0	32.2	0.1	0.5	5.9	1.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.4	6.6	2.1	1.7	4.0	9.0	3.6	4.0	3.0	7.2	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.2	27.8	22.0	59.6	28.1	31.5	71.2	22.2	23.0	47.8	32.0	27.4
LnGrp LOS	D	C	C	E	C	C	E	C	C	D	C	C
Approach Vol, veh/h		709			560			1569			1555	
Approach Delay, s/veh		27.7			37.9			40.7			34.1	
Approach LOS		C			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.6	41.4	10.0	29.8	21.0	34.0	10.0	29.7				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	11.2	39.9	5.4	42.0	16.4	34.7	7.4	40.0				
Max Q Clear Time (g_c+I1), s	8.9	13.3	6.1	21.2	18.1	20.9	5.5	12.7				
Green Ext Time (p_c), s	0.1	5.5	0.0	2.3	0.0	6.2	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay			35.9									
HCM 6th LOS			D									

Intersection	
Intersection Delay, s/veh	15.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↔		↵	↕↔		↵	↕	↵	↵	↕	↵
Traffic Vol, veh/h	42	282	15	143	293	200	10	3	112	120	1	22
Future Vol, veh/h	42	282	15	143	293	200	10	3	112	120	1	22
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	324	17	164	337	230	11	3	129	138	1	25
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	14.3	16.1	12.8	14.7
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	86%	0%	100%	33%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	14%	0%	0%	67%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	3	112	42	188	109	143	195	298	120	1
LT Vol	10	0	0	42	0	0	143	0	0	120	0
Through Vol	0	3	0	0	188	94	0	195	98	0	1
RT Vol	0	0	112	0	0	15	0	0	200	0	0
Lane Flow Rate	11	3	129	48	216	125	164	225	342	138	1
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.028	0.008	0.268	0.106	0.442	0.253	0.334	0.425	0.602	0.329	0.003
Departure Headway (Hd)	8.695	8.195	7.495	7.87	7.37	7.274	7.309	6.809	6.339	8.579	8.079
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	412	437	479	456	488	494	493	530	571	419	443
Service Time	6.444	5.944	5.244	5.612	5.112	5.016	5.046	4.546	4.076	6.327	5.827
HCM Lane V/C Ratio	0.027	0.007	0.269	0.105	0.443	0.253	0.333	0.425	0.599	0.329	0.002
HCM Control Delay	11.7	11	13	11.5	15.9	12.5	13.7	14.5	18.3	15.5	10.9
HCM Lane LOS	B	B	B	B	C	B	B	B	C	C	B
HCM 95th-tile Q	0.1	0	1.1	0.4	2.2	1	1.5	2.1	4	1.4	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	515	630	19	0	6
Future Vol, veh/h	0	515	630	19	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	548	670	20	0	6

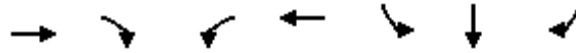
Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	-	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver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

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	651
HCM Lane V/C Ratio	-	-	-	0.01
HCM Control Delay (s)	-	-	-	10.6
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

Timings
3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

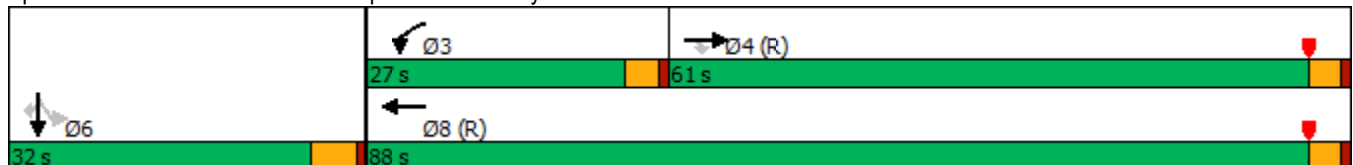


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↖↗	↑↑	↖	↖	↖
Traffic Volume (vph)	324	191	396	573	228	0	76
Future Volume (vph)	324	191	396	573	228	0	76
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8		6	
Permitted Phases		4			6		6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	34.0	34.0	12.0	29.0	13.0	13.0	13.0
Total Split (s)	61.0	61.0	27.0	88.0	32.0	32.0	32.0
Total Split (%)	50.8%	50.8%	22.5%	73.3%	26.7%	26.7%	26.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effct Green (s)	72.0	72.0	20.5	96.5	14.5	14.5	14.5
Actuated g/C Ratio	0.60	0.60	0.17	0.80	0.12	0.12	0.12
v/c Ratio	0.17	0.21	0.75	0.22	0.62	0.63	0.32
Control Delay	12.1	2.4	49.8	2.8	62.6	62.9	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	2.4	49.8	2.8	62.6	62.9	12.5
LOS	B	A	D	A	E	E	B
Approach Delay	8.5			22.0		50.2	
Approach LOS	A			C		D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 22.9
 Intersection LOS: C
 Intersection Capacity Utilization 53.4%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 3: I-15 SB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↘↗	↑↑					↘	↗	↗
Traffic Volume (veh/h)	0	324	191	396	573	0	0	0	0	228	0	76
Future Volume (veh/h)	0	324	191	396	573	0	0	0	0	228	0	76
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	360	195	440	637	0				253	0	58
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2318	1034	503	2953	0				335	0	147
Arrive On Green	0.00	0.65	0.65	0.29	1.00	0.00				0.09	0.00	0.09
Sat Flow, veh/h	0	3647	1585	3456	3647	0				3563	0	1562
Grp Volume(v), veh/h	0	360	195	440	637	0				253	0	58
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1562
Q Serve(g_s), s	0.0	4.7	5.9	14.5	0.0	0.0				8.3	0.0	4.2
Cycle Q Clear(g_c), s	0.0	4.7	5.9	14.5	0.0	0.0				8.3	0.0	4.2
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2318	1034	503	2953	0				335	0	147
V/C Ratio(X)	0.00	0.16	0.19	0.88	0.22	0.00				0.76	0.00	0.40
Avail Cap(c_a), veh/h	0	2318	1034	662	2953	0				802	0	352
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.92	0.92	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	8.1	8.3	41.5	0.0	0.0				53.0	0.0	51.2
Incr Delay (d2), s/veh	0.0	0.1	0.4	9.4	0.2	0.0				3.5	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	2.1	5.9	0.1	0.0				3.9	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.2	8.7	50.9	0.2	0.0				56.5	0.0	52.9
LnGrp LOS	A	A	A	D	A	A				E	A	D
Approach Vol, veh/h		555			1077							311
Approach Delay, s/veh		8.4			20.9							55.8
Approach LOS		A			C							E
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			21.5	82.3		16.3		103.7				
Change Period (Y+Rc), s			4.0	4.0		5.0		4.0				
Max Green Setting (Gmax), s			23.0	57.0		27.0		84.0				
Max Q Clear Time (g_c+I1), s			16.5	7.9		10.3		2.0				
Green Ext Time (p_c), s			0.9	3.3		1.0		5.2				
Intersection Summary												
HCM 6th Ctrl Delay			22.9									
HCM 6th LOS			C									
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings
4: Beech Ave. & I-15 SB Ramps

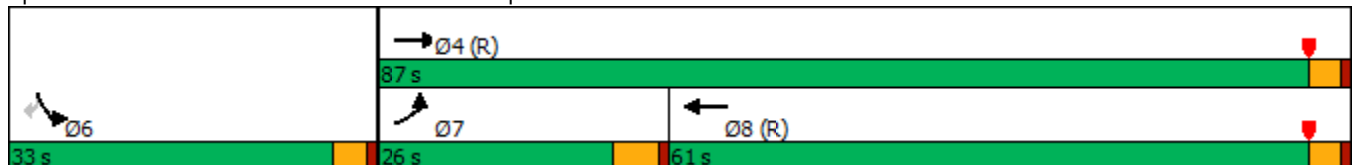


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations	↗	↑↑	↑↑	↖	↗
Traffic Volume (vph)	128	617	525	216	81
Future Volume (vph)	128	617	525	216	81
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	10.0	14.0	14.0	9.0	9.0
Total Split (s)	26.0	87.0	61.0	33.0	33.0
Total Split (%)	21.7%	72.5%	50.8%	27.5%	27.5%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	None	None
Act Effct Green (s)	14.5	91.2	71.8	20.8	20.8
Actuated g/C Ratio	0.12	0.76	0.60	0.17	0.17
v/c Ratio	0.64	0.24	0.52	0.75	0.25
Control Delay	63.3	4.9	12.4	62.1	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.3	4.9	12.4	62.1	9.8
LOS	E	A	B	E	A
Approach Delay		15.0	12.4	47.8	
Approach LOS		B	B	D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 18.4
 Intersection LOS: B
 Intersection Capacity Utilization 60.1%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 4: Beech Ave. & I-15 SB Ramps



HCM 6th Signalized Intersection Summary
4: Beech Ave. & I-15 SB Ramps

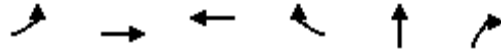
Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗		↙	↘	
Traffic Volume (veh/h)	128	617	525	490	216	81	
Future Volume (veh/h)	128	617	525	490	216	81	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	136	656	559	521	230	86	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	165	2787	1155	1030	266	236	
Arrive On Green	0.09	0.78	0.65	0.65	0.15	0.15	
Sat Flow, veh/h	1781	3647	1870	1585	1781	1585	
Grp Volume(v), veh/h	136	656	559	521	230	86	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	9.0	5.9	19.3	20.6	15.1	5.9	
Cycle Q Clear(g_c), s	9.0	5.9	19.3	20.6	15.1	5.9	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	165	2787	1155	1030	266	236	
V/C Ratio(X)	0.83	0.24	0.48	0.51	0.87	0.36	
Avail Cap(c_a), veh/h	312	2787	1155	1030	430	383	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.54	0.54	1.00	1.00	
Uniform Delay (d), s/veh	53.5	3.4	10.7	10.9	49.9	45.9	
Incr Delay (d2), s/veh	9.9	0.2	0.8	1.0	10.1	0.9	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	4.5	1.8	7.4	7.1	7.5	5.4	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	63.4	3.6	11.5	11.9	60.0	46.9	
LnGrp LOS	E	A	B	B	E	D	
Approach Vol, veh/h		792	1080		316		
Approach Delay, s/veh		13.9	11.7		56.4		
Approach LOS		B	B		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				98.1	21.9	16.1	82.0
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				83.0	29.0	21.0	57.0
Max Q Clear Time (g_c+I1), s				7.9	17.1	11.0	22.6
Green Ext Time (p_c), s				5.4	0.8	0.2	9.4
Intersection Summary							
HCM 6th Ctrl Delay			19.0				
HCM 6th LOS			B				

Timings
5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

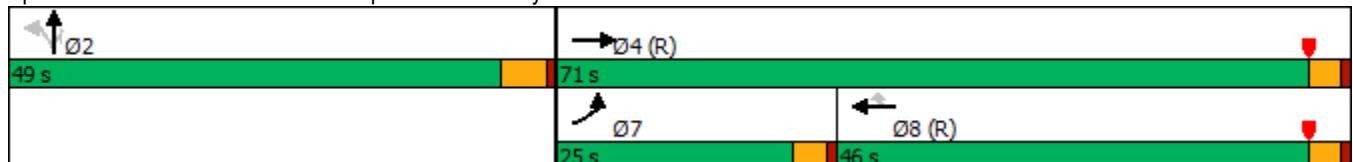


Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations	↖	↗↗	↗↗	↖	↖	↗↗
Traffic Volume (vph)	110	441	667	228	12	622
Future Volume (vph)	110	441	667	228	12	622
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8		2	
Permitted Phases				8		2
Detector Phase	7	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	30.0	36.0	36.0	13.0	13.0
Total Split (s)	25.0	71.0	46.0	46.0	49.0	49.0
Total Split (%)	20.8%	59.2%	38.3%	38.3%	40.8%	40.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	13.5	78.2	60.7	60.7	32.8	32.8
Actuated g/C Ratio	0.11	0.65	0.51	0.51	0.27	0.27
v/c Ratio	0.61	0.21	0.41	0.27	0.71	0.57
Control Delay	63.6	10.9	17.1	4.1	46.9	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.6	10.9	17.1	4.1	46.9	5.7
LOS	E	B	B	A	D	A
Approach Delay		21.4	13.8		19.6	
Approach LOS		C	B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 17.8
 Intersection LOS: B
 Intersection Capacity Utilization 53.4%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 5: I-15 NB Ramp & Duncan Canyon Rd.



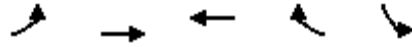
HCM 6th Signalized Intersection Summary
 5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	441	0	0	667	228	303	12	622	0	0	0
Future Volume (veh/h)	110	441	0	0	667	228	303	12	622	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	121	485	0	0	733	239	333	13	676			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	147	2261	0	0	1850	825	496	19	788			
Arrive On Green	0.17	1.00	0.00	0.00	0.52	0.52	0.29	0.29	0.29			
Sat Flow, veh/h	1781	3647	0	0	3647	1585	1717	67	2730			
Grp Volume(v), veh/h	121	485	0	0	733	239	346	0	676			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1585	1784	0	1365			
Q Serve(g_s), s	7.9	0.0	0.0	0.0	15.0	10.2	20.5	0.0	28.1			
Cycle Q Clear(g_c), s	7.9	0.0	0.0	0.0	15.0	10.2	20.5	0.0	28.1			
Prop In Lane	1.00		0.00	0.00		1.00	0.96		1.00			
Lane Grp Cap(c), veh/h	147	2261	0	0	1850	825	515	0	788			
V/C Ratio(X)	0.82	0.21	0.00	0.00	0.40	0.29	0.67	0.00	0.86			
Avail Cap(c_a), veh/h	312	2261	0	0	1850	825	654	0	1001			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.97	0.97	0.00	0.00	0.95	0.95	1.00	0.00	1.00			
Uniform Delay (d), s/veh	49.3	0.0	0.0	0.0	17.4	16.2	37.7	0.0	40.3			
Incr Delay (d2), s/veh	10.6	0.2	0.0	0.0	0.6	0.8	1.8	0.0	6.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.7	0.1	0.0	0.0	6.2	3.9	9.2	0.0	10.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.8	0.2	0.0	0.0	18.0	17.1	39.5	0.0	46.5			
LnGrp LOS	E	A	A	A	B	B	D	A	D			
Approach Vol, veh/h		606			972			1022				
Approach Delay, s/veh		12.1			17.8			44.1				
Approach LOS		B			B			D				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		39.6		80.4			13.9	66.5				
Change Period (Y+Rc), s		5.0		4.0			4.0	4.0				
Max Green Setting (Gmax), s		44.0		67.0			21.0	42.0				
Max Q Clear Time (g_c+I1), s		30.1		2.0			9.9	17.0				
Green Ext Time (p_c), s		4.6		3.7			0.2	6.4				
Intersection Summary												
HCM 6th Ctrl Delay				26.8								
HCM 6th LOS				C								

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021

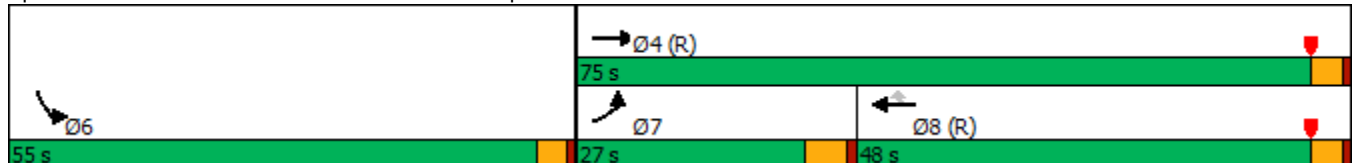


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↗	↑↑	↑↑	↖	↖↖
Traffic Volume (vph)	173	661	845	417	853
Future Volume (vph)	173	661	845	417	853
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	14.0	14.0	14.0	14.0
Total Split (s)	27.0	75.0	48.0	48.0	55.0
Total Split (%)	20.8%	57.7%	36.9%	36.9%	42.3%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	18.0	75.1	52.1	52.1	46.9
Actuated g/C Ratio	0.14	0.58	0.40	0.40	0.36
v/c Ratio	0.75	0.34	0.63	0.51	0.88
Control Delay	72.4	15.6	35.3	6.8	47.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	72.4	15.6	35.3	6.8	47.4
LOS	E	B	D	A	D
Approach Delay		27.3	25.9		47.4
Approach LOS		C	C		D

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 33.3
 Intersection LOS: C
 Intersection Capacity Utilization 73.5%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗↗	↑	↙↙	↘	
Traffic Volume (veh/h)	173	661	845	417	853	171	
Future Volume (veh/h)	173	661	845	417	853	171	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	184	703	899	197	1019	0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	212	2208	1650	736	1129	502	
Arrive On Green	0.12	0.62	0.46	0.46	0.32	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	184	703	899	197	1019	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	13.2	12.1	23.6	9.9	35.6	0.0	
Cycle Q Clear(g_c), s	13.2	12.1	23.6	9.9	35.6	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	212	2208	1650	736	1129	502	
V/C Ratio(X)	0.87	0.32	0.54	0.27	0.90	0.00	
Avail Cap(c_a), veh/h	301	2208	1650	736	1398	622	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.93	0.93	0.81	0.81	1.00	0.00	
Uniform Delay (d), s/veh	56.3	11.6	25.0	21.3	42.5	0.0	
Incr Delay (d2), s/veh	16.1	0.4	1.1	0.7	7.3	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	6.9	4.8	10.1	3.9	16.7	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	72.4	12.0	26.0	22.0	49.7	0.0	
LnGrp LOS	E	B	C	C	D	A	
Approach Vol, veh/h		887	1096		1019		
Approach Delay, s/veh		24.5	25.3		49.7		
Approach LOS		C	C		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				84.8	45.2	20.4	64.3
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				71.0	51.0	22.0	44.0
Max Q Clear Time (g_c+I1), s				14.1	37.6	15.2	25.6
Green Ext Time (p_c), s				5.8	3.6	0.3	6.9

Intersection Summary

HCM 6th Ctrl Delay	33.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

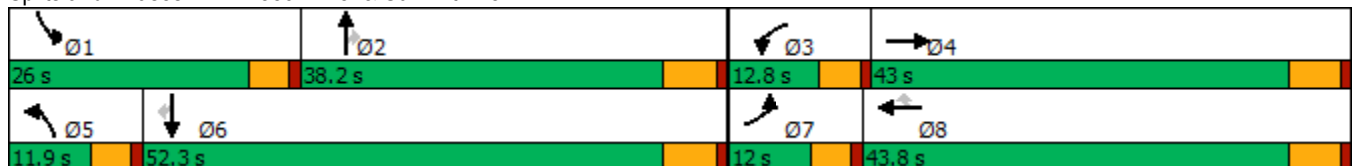
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	117	286	122	309	347	97	331	108	583	480	91
Future Volume (vph)	117	286	122	309	347	97	331	108	583	480	91
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	43.8	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	43.0	12.8	43.8	43.8	11.9	38.2	38.2	26.0	52.3	52.3
Total Split (%)	10.0%	35.8%	10.7%	36.5%	36.5%	9.9%	31.8%	31.8%	21.7%	43.6%	43.6%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	6.8	14.4	7.1	14.8	14.8	6.5	13.6	13.6	20.6	30.0	30.0
Actuated g/C Ratio	0.09	0.19	0.09	0.19	0.19	0.08	0.18	0.18	0.27	0.39	0.39
v/c Ratio	0.41	0.62	0.40	0.47	0.61	0.35	0.55	0.28	0.66	0.36	0.14
Control Delay	39.7	29.8	38.9	30.5	8.3	39.2	33.1	4.3	30.3	19.1	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.7	29.8	38.9	30.5	8.3	39.2	33.1	4.3	30.3	19.1	3.8
LOS	D	C	D	C	A	D	C	A	C	B	A
Approach Delay		32.0		21.9			28.4			23.6	
Approach LOS		C		C			C			C	

Intersection Summary
































Cycle Length: 120
 Actuated Cycle Length: 76.8
 Natural Cycle: 115
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 25.5
 Intersection LOS: C
 Intersection Capacity Utilization 65.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 7: Beech Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	117	286	118	122	309	347	97	331	108	583	480	91
Future Volume (veh/h)	117	286	118	122	309	347	97	331	108	583	480	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	122	298	98	127	322	269	101	345	72	607	500	64
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	646	208	226	873	389	212	653	287	724	1180	525
Arrive On Green	0.06	0.25	0.25	0.07	0.25	0.25	0.06	0.18	0.18	0.21	0.33	0.33
Sat Flow, veh/h	3456	2638	850	3456	3554	1583	3456	3554	1564	3456	3554	1581
Grp Volume(v), veh/h	122	199	197	127	322	269	101	345	72	607	500	64
Grp Sat Flow(s),veh/h/ln	1728	1777	1711	1728	1777	1583	1728	1777	1564	1728	1777	1581
Q Serve(g_s), s	2.4	6.7	6.9	2.5	5.3	10.8	2.0	6.2	2.8	11.8	7.7	2.0
Cycle Q Clear(g_c), s	2.4	6.7	6.9	2.5	5.3	10.8	2.0	6.2	2.8	11.8	7.7	2.0
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	223	435	419	226	873	389	212	653	287	724	1180	525
V/C Ratio(X)	0.55	0.46	0.47	0.56	0.37	0.69	0.48	0.53	0.25	0.84	0.42	0.12
Avail Cap(c_a), veh/h	364	942	907	404	1925	857	360	1641	722	1054	2355	1048
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.8	22.5	22.6	31.8	22.0	24.1	31.8	25.9	24.5	26.6	18.2	16.3
Incr Delay (d2), s/veh	0.8	0.7	0.8	0.8	0.3	2.2	0.6	0.7	0.5	2.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	2.7	2.7	1.0	2.1	4.1	0.8	2.5	1.0	4.9	3.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	23.3	23.4	32.6	22.2	26.3	32.5	26.6	25.0	29.3	18.5	16.4
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	B	B
Approach Vol, veh/h		518			718			518			1171	
Approach Delay, s/veh		25.5			25.6			27.5			24.0	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.3	18.7	9.2	23.0	8.9	29.1	9.1	23.0				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	21.4	32.4	8.2	37.2	7.3	46.5	7.4	38.0				
Max Q Clear Time (g_c+I1), s	13.8	8.2	4.5	8.9	4.0	9.7	4.4	12.8				
Green Ext Time (p_c), s	0.9	2.5	0.1	2.5	0.0	4.0	0.1	3.1				
Intersection Summary												
HCM 6th Ctrl Delay				25.3								
HCM 6th LOS				C								

Timings
8: Duncan Canyon Rd. & Lytle Creek Dr.

Ventana (JN 13769)
06/03/2021

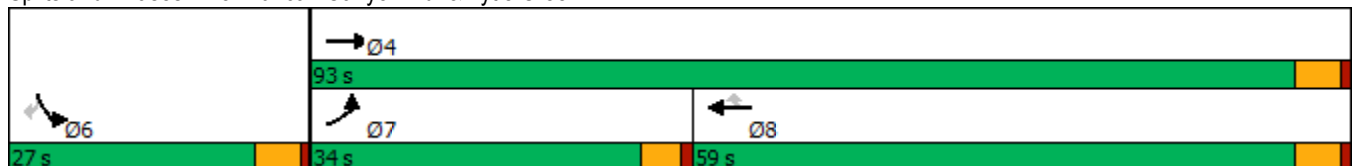


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖↖↖	↖	↖↖	↖
Traffic Volume (vph)	217	846	739	14	25	156
Future Volume (vph)	217	846	739	14	25	156
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases				8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	23.1	23.1	23.1	23.1	23.1
Total Split (s)	34.0	93.0	59.0	59.0	27.0	27.0
Total Split (%)	28.3%	77.5%	49.2%	49.2%	22.5%	22.5%
Yellow Time (s)	3.5	4.1	4.1	4.1	4.1	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	5.1	5.1	5.1	5.1	5.1
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	None	None	None	Max	Max
Act Effct Green (s)	15.1	44.1	24.4	24.4	22.5	22.5
Actuated g/C Ratio	0.20	0.57	0.32	0.32	0.29	0.29
v/c Ratio	0.68	0.86	0.50	0.03	0.03	0.29
Control Delay	40.8	22.8	22.3	9.0	25.1	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	22.8	22.3	9.0	25.1	6.5
LOS	D	C	C	A	C	A
Approach Delay		26.5	22.0		9.0	
Approach LOS		C	C		A	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 77
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 23.2
 Intersection LOS: C
 Intersection Capacity Utilization 57.2%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 8: Duncan Canyon Rd. & Lytle Creek Dr.



HCM 6th Signalized Intersection Summary
 8: Duncan Canyon Rd. & Lytle Creek Dr.

Ventana (JN 13769)
 06/03/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑	↗↗↗	↖	↗↗	↖	
Traffic Volume (veh/h)	217	846	739	14	25	156	
Future Volume (veh/h)	217	846	739	14	25	156	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	236	920	803	15	27	143	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	288	1069	1785	554	1011	464	
Arrive On Green	0.16	0.57	0.35	0.35	0.29	0.29	
Sat Flow, veh/h	1781	1870	5274	1585	3456	1585	
Grp Volume(v), veh/h	236	920	803	15	27	143	
Grp Sat Flow(s),veh/h/ln	1781	1870	1702	1585	1728	1585	
Q Serve(g_s), s	9.6	31.1	9.1	0.5	0.4	5.3	
Cycle Q Clear(g_c), s	9.6	31.1	9.1	0.5	0.4	5.3	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	288	1069	1785	554	1011	464	
V/C Ratio(X)	0.82	0.86	0.45	0.03	0.03	0.31	
Avail Cap(c_a), veh/h	702	2195	3675	1141	1011	464	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	30.3	13.5	18.8	16.0	18.9	20.6	
Incr Delay (d2), s/veh	5.7	2.2	0.2	0.0	0.0	1.7	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	4.4	11.6	3.4	0.2	0.2	5.3	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	36.0	15.7	19.0	16.0	18.9	22.3	
LnGrp LOS	D	B	B	B	B	C	
Approach Vol, veh/h		1156	818		170		
Approach Delay, s/veh		19.9	18.9		21.8		
Approach LOS		B	B		C		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				47.9	27.0	16.6	31.3
Change Period (Y+Rc), s				5.1	5.1	4.5	5.1
Max Green Setting (Gmax), s				87.9	21.9	29.5	53.9
Max Q Clear Time (g_c+11), s				33.1	7.3	11.6	11.1
Green Ext Time (p_c), s				9.7	0.4	0.6	6.8
Intersection Summary							
HCM 6th Ctrl Delay			19.7				
HCM 6th LOS			B				

Timings
9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
04/29/2021

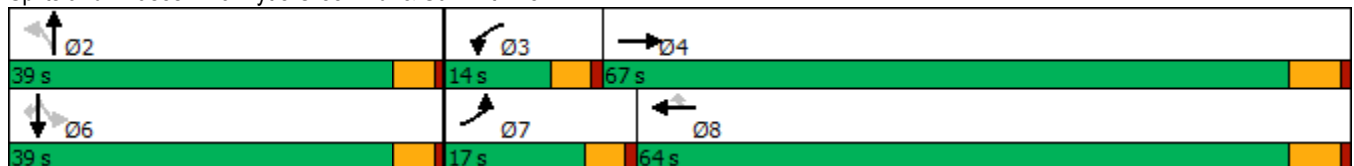


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↖	↕	↖	↕	↖
Traffic Volume (vph)	82	1107	52	885	49	48	19	40	11	74
Future Volume (vph)	82	1107	52	885	49	48	19	40	11	74
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8			2		6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	9.6	28.8	28.8	33.7	33.7	31.7	31.7	31.7
Total Split (s)	17.0	67.0	14.0	64.0	64.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	14.2%	55.8%	11.7%	53.3%	53.3%	32.5%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None
Act Effct Green (s)	8.6	40.0	7.2	36.3	36.3	11.3	11.3	11.3	11.3	11.3
Actuated g/C Ratio	0.14	0.65	0.12	0.59	0.59	0.18	0.18	0.18	0.18	0.18
v/c Ratio	0.37	0.56	0.28	0.47	0.06	0.21	0.22	0.18	0.04	0.23
Control Delay	33.5	11.1	34.2	12.1	3.0	30.6	15.1	30.5	28.8	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	11.1	34.2	12.1	3.0	30.6	15.1	30.5	28.8	10.0
LOS	C	B	C	B	A	C	B	C	C	B
Approach Delay		12.6		12.8			21.5		18.2	
Approach LOS		B		B			C		B	

Intersection Summary























Cycle Length: 120
 Actuated Cycle Length: 62
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 13.4
 Intersection LOS: B
 Intersection Capacity Utilization 61.2%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 9: Lytle Creek Rd. & Summit Ave.



HCM 6th Signalized Intersection Summary
 9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	1107	44	52	885	49	48	19	49	40	11	74
Future Volume (veh/h)	82	1107	44	52	885	49	48	19	49	40	11	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	90	1216	41	57	973	49	53	21	44	44	12	50
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	1742	59	91	1716	758	378	106	221	341	373	313
Arrive On Green	0.07	0.50	0.50	0.05	0.48	0.48	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	3506	118	1781	3554	1570	1327	530	1110	1325	1870	1568
Grp Volume(v), veh/h	90	616	641	57	973	49	53	0	65	44	12	50
Grp Sat Flow(s),veh/h/ln	1781	1777	1848	1781	1777	1570	1327	0	1639	1325	1870	1568
Q Serve(g_s), s	3.0	15.9	16.0	1.9	11.7	1.0	2.0	0.0	2.0	1.7	0.3	1.6
Cycle Q Clear(g_c), s	3.0	15.9	16.0	1.9	11.7	1.0	2.3	0.0	2.0	3.7	0.3	1.6
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.68	1.00		1.00
Lane Grp Cap(c), veh/h	116	883	918	91	1716	758	378	0	327	341	373	313
V/C Ratio(X)	0.77	0.70	0.70	0.63	0.57	0.06	0.14	0.00	0.20	0.13	0.03	0.16
Avail Cap(c_a), veh/h	370	1820	1893	280	3462	1530	876	0	941	837	1074	900
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	11.6	11.6	27.8	11.0	8.2	20.2	0.0	19.9	21.5	19.3	19.8
Incr Delay (d2), s/veh	4.1	1.0	1.0	2.6	0.3	0.0	0.2	0.0	0.3	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	5.4	5.6	0.8	3.9	0.3	0.6	0.0	0.7	0.5	0.1	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.6	12.6	12.6	30.4	11.3	8.3	20.4	0.0	20.2	21.6	19.3	20.0
LnGrp LOS	C	B	B	C	B	A	C	A	C	C	B	C
Approach Vol, veh/h		1347			1079			118			106	
Approach Delay, s/veh		13.8			12.2			20.3			20.6	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.6	7.7	35.5		16.6	8.5	34.6				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 34	9.4	61.2		* 34	12.4	58.2				
Max Q Clear Time (g_c+I1), s		4.3	3.9	18.0		5.7	5.0	13.7				
Green Ext Time (p_c), s		0.5	0.0	11.7		0.3	0.1	9.1				
Intersection Summary												
HCM 6th Ctrl Delay				13.7								
HCM 6th LOS				B								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	16	56	70	68	0
Future Vol, veh/h	0	16	56	70	68	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	17	61	76	74	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	272	37	74	0	0
Stage 1	74	-	-	-	-
Stage 2	198	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-
Pot Cap-1 Maneuver	706	1027	1525	-	-
Stage 1	941	-	-	-	-
Stage 2	835	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	678	1027	1525	-	-
Mov Cap-2 Maneuver	703	-	-	-	-
Stage 1	903	-	-	-	-
Stage 2	835	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	3.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1525	-	1027	-	-
HCM Lane V/C Ratio	0.04	-	0.017	-	-
HCM Control Delay (s)	7.5	-	8.6	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Timings
11: Citrus Ave. & Driveway 1

Ventana (JN 13769)
04/29/2021

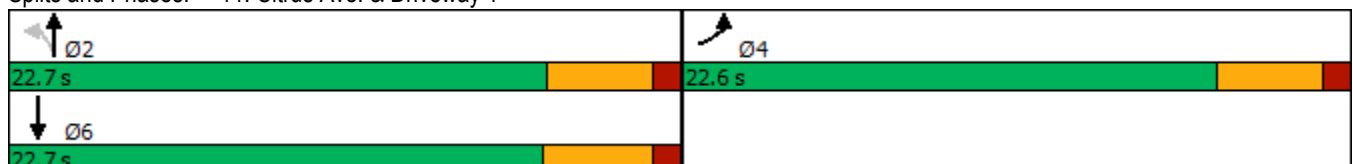


Lane Group	EBL	NBL	NBT	SBT
Lane Configurations	Y	Y	↑	↑↑
Traffic Volume (vph)	0	35	126	85
Future Volume (vph)	0	35	126	85
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	10.0
Minimum Split (s)	22.6	22.6	22.6	22.7
Total Split (s)	22.6	22.7	22.7	22.7
Total Split (%)	49.9%	50.1%	50.1%	50.1%
Yellow Time (s)	3.6	3.6	3.6	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.7
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Min	Min	Min
Act Effct Green (s)	5.5	28.6	28.6	28.6
Actuated g/C Ratio	0.18	0.92	0.92	0.92
v/c Ratio	0.03	0.03	0.08	0.03
Control Delay	0.1	1.7	1.5	1.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.1	1.7	1.5	1.4
LOS	A	A	A	A
Approach Delay	0.1		1.5	1.4
Approach LOS	A		A	A

Intersection Summary

Cycle Length: 45.3
 Actuated Cycle Length: 31.1
 Natural Cycle: 50
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.08
 Intersection Signal Delay: 1.3
 Intersection LOS: A
 Intersection Capacity Utilization 20.4%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 11: Citrus Ave. & Driveway 1



HCM 6th Signalized Intersection Summary
 11: Citrus Ave. & Driveway 1

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	27	35	126	85	0
Future Volume (veh/h)	0	27	35	126	85	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	29	38	137	92	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	0	59	991	932	1771	0
Arrive On Green	0.00	0.04	0.50	0.50	0.50	0.00
Sat Flow, veh/h	0	1540	1304	1870	3741	0
Grp Volume(v), veh/h	0	30	38	137	92	0
Grp Sat Flow(s),veh/h/ln	0	1593	1304	1870	1777	0
Q Serve(g_s), s	0.0	0.4	0.3	0.8	0.3	0.0
Cycle Q Clear(g_c), s	0.0	0.4	0.6	0.8	0.3	0.0
Prop In Lane	0.00	0.97	1.00			0.00
Lane Grp Cap(c), veh/h	0	61	991	932	1771	0
V/C Ratio(X)	0.00	0.49	0.04	0.15	0.05	0.00
Avail Cap(c_a), veh/h	0	1429	1518	1687	3187	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	9.5	2.7	2.7	2.6	0.0
Incr Delay (d2), s/veh	0.0	6.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	15.4	2.8	2.8	2.6	0.0
LnGrp LOS	A	B	A	A	A	A
Approach Vol, veh/h	30			175	92	
Approach Delay, s/veh	15.4			2.8	2.6	
Approach LOS	B			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		14.7		5.4		14.7
Change Period (Y+Rc), s		* 4.7		4.6		* 4.7
Max Green Setting (Gmax), s		* 18		18.0		* 18
Max Q Clear Time (g_c+I1), s		2.8		2.4		2.3
Green Ext Time (p_c), s		0.7		0.0		0.4

Intersection Summary

HCM 6th Ctrl Delay	4.0
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings
12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
06/03/2021

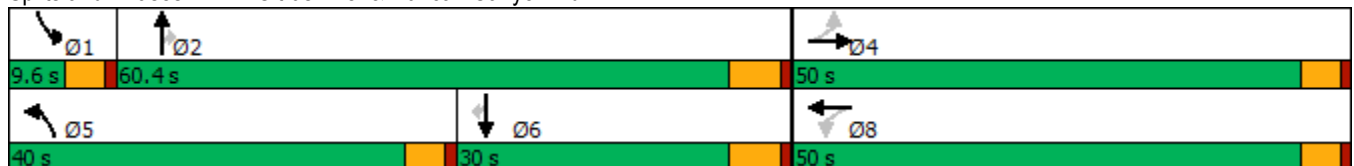


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↖↗	↖	↗	↖	↗	↖
Traffic Volume (vph)	45	185	19	126	612	107	21	5	88	27
Future Volume (vph)	45	185	19	126	612	107	21	5	88	27
Turn Type	Perm	NA	Perm	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4		8	5	2		1	6	
Permitted Phases	4		8				2			6
Detector Phase	4	4	8	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	26.6	26.6	26.6	26.6	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	50.0	50.0	50.0	50.0	40.0	60.4	60.4	9.6	30.0	30.0
Total Split (%)	41.7%	41.7%	41.7%	41.7%	33.3%	50.3%	50.3%	8.0%	25.0%	25.0%
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.6	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag					Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	45.6	45.6	45.6	45.6	21.5	35.5	35.5	5.0	11.1	11.1
Actuated g/C Ratio	0.49	0.49	0.49	0.49	0.23	0.38	0.38	0.05	0.12	0.12
v/c Ratio	0.08	0.97	0.25	0.16	0.81	0.16	0.03	0.05	0.41	0.10
Control Delay	15.1	45.6	26.8	14.8	42.6	20.2	0.3	46.4	45.3	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	45.6	26.8	14.8	42.6	20.2	0.3	46.4	45.3	0.7
LOS	B	D	C	B	D	C	A	D	D	A
Approach Delay		44.1		16.3		38.2			35.3	
Approach LOS		D		B		D			D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 93.3
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 38.9
 Intersection LOS: D
 Intersection Capacity Utilization 82.3%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
 06/03/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	185	646	19	126	10	612	107	21	5	88	27
Future Volume (veh/h)	45	185	646	19	126	10	612	107	21	5	88	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	193	413	20	131	10	638	111	22	5	92	28
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	571	225	481	178	726	55	768	669	567	12	265	225
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.22	0.36	0.36	0.01	0.14	0.14
Sat Flow, veh/h	1248	531	1135	814	1716	131	3456	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	47	0	606	20	0	141	638	111	22	5	92	28
Grp Sat Flow(s),veh/h/ln	1248	0	1666	814	0	1847	1728	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.7	0.0	23.3	1.6	0.0	3.4	12.4	2.9	0.6	0.2	3.1	1.1
Cycle Q Clear(g_c), s	5.1	0.0	23.3	24.9	0.0	3.4	12.4	2.9	0.6	0.2	3.1	1.1
Prop In Lane	1.00		0.68	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	571	0	705	178	0	782	768	669	567	12	265	225
V/C Ratio(X)	0.08	0.00	0.86	0.11	0.00	0.18	0.83	0.17	0.04	0.42	0.35	0.12
Avail Cap(c_a), veh/h	846	0	1072	358	0	1189	1735	1448	1227	126	642	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.3	0.0	18.4	29.7	0.0	12.7	26.2	15.5	14.8	34.9	27.3	26.4
Incr Delay (d2), s/veh	0.1	0.0	4.6	0.3	0.0	0.1	0.9	0.1	0.0	8.7	0.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	8.9	0.3	0.0	1.3	4.9	1.2	0.2	0.1	1.4	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	0.0	23.1	30.0	0.0	12.8	27.1	15.6	14.8	43.6	28.1	26.7
LnGrp LOS	B	A	C	C	A	B	C	B	B	D	C	C
Approach Vol, veh/h		653			161			771			125	
Approach Delay, s/veh		22.4			14.9			25.1			28.4	
Approach LOS		C			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	31.0		34.4	20.3	15.8		34.4				
Change Period (Y+Rc), s	4.6	5.8		4.6	4.6	5.8		4.6				
Max Green Setting (Gmax), s	5.0	54.6		45.4	35.4	24.2		45.4				
Max Q Clear Time (g_c+1), s	2.2	4.9		25.3	14.4	5.1		26.9				
Green Ext Time (p_c), s	0.0	0.7		4.6	1.3	0.5		0.8				
Intersection Summary												
HCM 6th Ctrl Delay			23.4									
HCM 6th LOS			C									

Timings

Ventana (JN 13769)

13: Citrus Ave. & Knox Ave./Casa Grande Ave.

04/29/2021

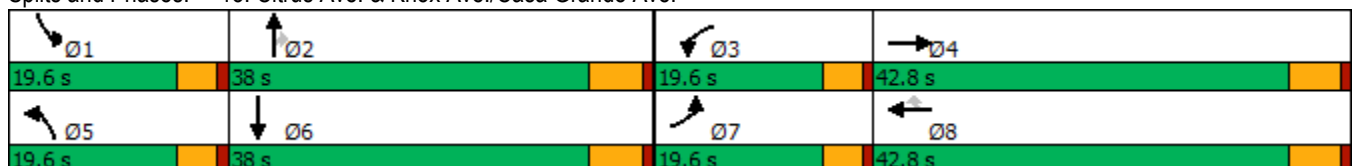


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↗	↖	↑↑	↗	↖	↗↖
Traffic Volume (vph)	49	35	157	33	226	49	442	222	324	301
Future Volume (vph)	49	35	157	33	226	49	442	222	324	301
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	30.8	30.8	9.6	26.8	26.8	9.6	22.8
Total Split (s)	19.6	42.8	19.6	42.8	42.8	19.6	38.0	38.0	19.6	38.0
Total Split (%)	16.3%	35.7%	16.3%	35.7%	35.7%	16.3%	31.7%	31.7%	16.3%	31.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	6.9	10.4	13.0	13.4	13.4	6.9	16.2	16.2	15.6	30.1
Actuated g/C Ratio	0.10	0.15	0.19	0.20	0.20	0.10	0.24	0.24	0.23	0.44
v/c Ratio	0.29	0.17	0.49	0.09	0.47	0.29	0.55	0.42	0.83	0.24
Control Delay	37.1	26.8	33.8	26.9	7.9	37.1	26.7	6.4	49.7	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.1	26.8	33.8	26.9	7.9	37.1	26.7	6.4	49.7	15.9
LOS	D	C	C	C	A	D	C	A	D	B
Approach Delay		32.1		19.2			21.1			32.0
Approach LOS		C		B			C			C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 68.6
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 25.1
 Intersection LOS: C
 Intersection Capacity Utilization 59.0%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 13: Citrus Ave. & Knox Ave./Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
 04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	35	12	157	33	226	49	442	222	324	301	55
Future Volume (veh/h)	49	35	12	157	33	226	49	442	222	324	301	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	51	36	12	162	34	233	51	456	229	334	310	57
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	198	66	203	405	343	81	776	346	377	1155	210
Arrive On Green	0.05	0.15	0.15	0.11	0.22	0.22	0.05	0.22	0.22	0.21	0.38	0.38
Sat Flow, veh/h	1781	1342	447	1781	1870	1585	1781	3554	1585	1781	3003	546
Grp Volume(v), veh/h	51	0	48	162	34	233	51	456	229	334	182	185
Grp Sat Flow(s),veh/h/ln	1781	0	1790	1781	1870	1585	1781	1777	1585	1781	1777	1772
Q Serve(g_s), s	1.9	0.0	1.6	6.0	1.0	9.1	1.9	7.8	8.9	12.3	4.7	4.9
Cycle Q Clear(g_c), s	1.9	0.0	1.6	6.0	1.0	9.1	1.9	7.8	8.9	12.3	4.7	4.9
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	81	0	265	203	405	343	81	776	346	377	683	682
V/C Ratio(X)	0.63	0.00	0.18	0.80	0.08	0.68	0.63	0.59	0.66	0.89	0.27	0.27
Avail Cap(c_a), veh/h	395	0	980	395	1024	868	395	1693	755	395	846	844
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	0.0	25.2	29.2	21.1	24.3	31.7	23.7	24.1	25.8	14.3	14.3
Incr Delay (d2), s/veh	3.0	0.0	0.3	2.7	0.1	2.4	3.0	0.7	2.2	19.2	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.7	2.6	0.4	3.5	0.9	3.2	3.4	6.9	1.8	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	0.0	25.5	31.9	21.2	26.7	34.6	24.4	26.3	45.0	14.5	14.5
LnGrp LOS	C	A	C	C	C	C	C	C	C	D	B	B
Approach Vol, veh/h		99			429			736			701	
Approach Delay, s/veh		30.2			28.2			25.7			29.0	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.9	20.6	12.3	15.8	7.7	31.8	7.7	20.4				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	15.0	32.2	15.0	37.0	15.0	32.2	15.0	37.0				
Max Q Clear Time (g_c+I1), s	14.3	10.9	8.0	3.6	3.9	6.9	3.9	11.1				
Green Ext Time (p_c), s	0.1	3.8	0.1	0.2	0.0	2.2	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay				27.7								
HCM 6th LOS				C								

Timings
14: Citrus Ave. & Summit Ave.

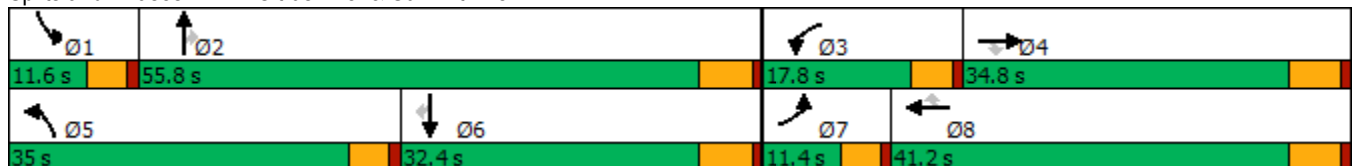
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	483	357	148	376	84	722	349	120	67	242	75
Future Volume (vph)	131	483	357	148	376	84	722	349	120	67	242	75
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	34.8	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	11.4	34.8	34.8	17.8	41.2	41.2	35.0	55.8	55.8	11.6	32.4	32.4
Total Split (%)	9.5%	29.0%	29.0%	14.8%	34.3%	34.3%	29.2%	46.5%	46.5%	9.7%	27.0%	27.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.9	22.6	22.6	12.3	28.0	28.0	30.6	39.5	39.5	6.8	13.2	13.2
Actuated g/C Ratio	0.07	0.23	0.23	0.12	0.28	0.28	0.31	0.40	0.40	0.07	0.13	0.13
v/c Ratio	1.17	0.65	0.60	0.74	0.41	0.17	1.44	0.27	0.19	0.61	0.56	0.22
Control Delay	178.7	39.4	8.2	64.9	30.3	1.2	239.4	22.9	3.3	70.0	46.3	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	178.7	39.4	8.2	64.9	30.3	1.2	239.4	22.9	3.3	70.0	46.3	1.3
LOS	F	D	A	E	C	A	F	C	A	E	D	A
Approach Delay		46.7			34.7			152.3			41.6	
Approach LOS		D			C			F			D	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 99.7
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.44
 Intersection Signal Delay: 83.6
 Intersection LOS: F
 Intersection Capacity Utilization 87.6%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	483	357	148	376	84	722	349	120	67	242	75
Future Volume (veh/h)	131	483	357	148	376	84	722	349	120	67	242	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	142	525	295	161	409	81	785	379	94	73	263	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	840	369	193	973	433	566	1369	593	94	428	188
Arrive On Green	0.07	0.24	0.24	0.11	0.27	0.27	0.32	0.39	0.39	0.05	0.12	0.12
Sat Flow, veh/h	1781	3554	1561	1781	3554	1582	1781	3554	1540	1781	3554	1560
Grp Volume(v), veh/h	142	525	295	161	409	81	785	379	94	73	263	80
Grp Sat Flow(s),veh/h/ln	1781	1777	1561	1781	1777	1582	1781	1777	1540	1781	1777	1560
Q Serve(g_s), s	6.8	12.7	17.0	8.5	9.0	3.8	30.4	7.0	3.8	3.9	6.7	4.6
Cycle Q Clear(g_c), s	6.8	12.7	17.0	8.5	9.0	3.8	30.4	7.0	3.8	3.9	6.7	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	127	840	369	193	973	433	566	1369	593	94	428	188
V/C Ratio(X)	1.12	0.63	0.80	0.83	0.42	0.19	1.39	0.28	0.16	0.78	0.61	0.43
Avail Cap(c_a), veh/h	127	1076	473	246	1314	585	566	1856	804	130	987	433
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	32.8	34.4	41.8	28.5	26.6	32.7	20.2	19.3	44.8	40.0	39.0
Incr Delay (d2), s/veh	116.6	0.8	7.4	14.3	0.3	0.2	185.3	0.1	0.1	11.6	1.4	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	5.5	7.1	4.5	3.8	1.4	41.8	2.9	1.4	2.0	3.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	161.1	33.5	41.8	56.1	28.8	26.8	217.9	20.4	19.4	56.4	41.4	40.6
LnGrp LOS	F	C	D	E	C	C	F	C	B	E	D	D
Approach Vol, veh/h		962			651			1258			416	
Approach Delay, s/veh		54.9			35.3			143.6			43.9	
Approach LOS		D			D			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.6	42.7	15.0	28.4	35.0	17.3	11.4	32.0				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.0	50.0	13.2	29.0	30.4	26.6	6.8	35.4				
Max Q Clear Time (g_c+I1), s	5.9	9.0	10.5	19.0	32.4	8.7	8.8	11.0				
Green Ext Time (p_c), s	0.0	3.1	0.1	3.3	0.0	1.8	0.0	3.0				
Intersection Summary												
HCM 6th Ctrl Delay			83.6									
HCM 6th LOS			F									

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

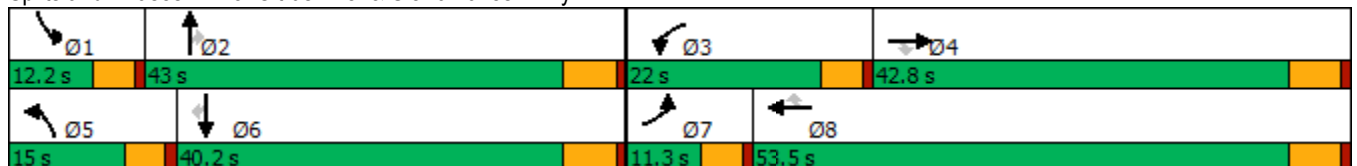
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	351	341	655	333	246	683	613	811	214	494	80
Future Volume (vph)	92	351	341	655	333	246	683	613	811	214	494	80
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.7	42.8	42.8	9.7	39.8	39.8	9.7	39.8	39.8	9.7	39.8	39.8
Total Split (s)	11.3	42.8	42.8	22.0	53.5	53.5	15.0	43.0	43.0	12.2	40.2	40.2
Total Split (%)	9.4%	35.7%	35.7%	18.3%	44.6%	44.6%	12.5%	35.8%	35.8%	10.2%	33.5%	33.5%
Yellow Time (s)	3.7	4.8	4.8	3.7	4.8	4.8	3.7	4.8	4.8	3.7	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.8	5.8	4.7	5.8	5.8	4.7	5.8	5.8	4.7	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.3	19.2	19.2	17.4	32.4	32.4	10.3	37.4	37.4	7.5	34.5	34.5
Actuated g/C Ratio	0.06	0.19	0.19	0.17	0.32	0.32	0.10	0.36	0.36	0.07	0.34	0.34
v/c Ratio	0.46	0.55	0.76	1.17	0.31	0.39	2.05	0.50	1.04	0.88	0.43	0.13
Control Delay	55.6	40.5	26.4	134.1	27.7	6.5	511.5	27.9	60.4	82.6	28.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.6	40.5	26.4	134.1	27.7	6.5	511.5	27.9	60.4	82.6	28.8	0.4
LOS	E	D	C	F	C	A	F	C	E	F	C	A
Approach Delay		36.1			79.9			197.1			40.6	
Approach LOS		D			E			F			D	

Intersection Summary

































Cycle Length: 120
 Actuated Cycle Length: 102.5
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 2.05
 Intersection Signal Delay: 116.9
 Intersection LOS: F
 Intersection Capacity Utilization 81.6%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	92	351	341	655	333	246	683	613	811	214	494	80
Future Volume (veh/h)	92	351	341	655	333	246	683	613	811	214	494	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	96	366	279	682	347	157	711	639	653	223	515	46
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	794	348	559	1212	534	333	1237	545	243	1144	503
Arrive On Green	0.04	0.22	0.22	0.16	0.34	0.34	0.10	0.35	0.35	0.07	0.32	0.32
Sat Flow, veh/h	3456	3554	1558	3456	3554	1564	3456	3554	1565	3456	3554	1564
Grp Volume(v), veh/h	96	366	279	682	347	157	711	639	653	223	515	46
Grp Sat Flow(s),veh/h/ln	1728	1777	1558	1728	1777	1564	1728	1777	1565	1728	1777	1564
Q Serve(g_s), s	2.9	9.5	18.1	17.3	7.6	7.9	10.3	15.3	37.2	6.9	12.3	2.2
Cycle Q Clear(g_c), s	2.9	9.5	18.1	17.3	7.6	7.9	10.3	15.3	37.2	6.9	12.3	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	794	348	559	1212	534	333	1237	545	243	1144	503
V/C Ratio(X)	0.63	0.46	0.80	1.22	0.29	0.29	2.13	0.52	1.20	0.92	0.45	0.09
Avail Cap(c_a), veh/h	213	1230	539	559	1586	698	333	1237	545	243	1144	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.2	35.9	39.3	44.8	25.7	25.8	48.3	27.7	34.8	49.4	28.7	25.3
Incr Delay (d2), s/veh	1.6	0.4	4.8	114.1	0.1	0.3	520.7	0.4	106.2	36.2	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	4.2	7.3	16.2	3.2	3.0	28.5	6.5	29.8	4.2	5.2	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.8	36.3	44.1	158.9	25.8	26.1	569.0	28.1	141.1	85.6	29.0	25.4
LnGrp LOS	D	D	D	F	C	C	F	C	F	F	C	C
Approach Vol, veh/h		741			1186			2003			784	
Approach Delay, s/veh		41.3			102.4			256.9			44.9	
Approach LOS		D			F			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	43.0	22.0	29.7	15.0	40.2	9.4	42.3				
Change Period (Y+Rc), s	* 4.7	5.8	* 4.7	5.8	* 4.7	5.8	* 4.7	5.8				
Max Green Setting (Gmax), s	* 7.5	37.2	* 17	37.0	* 10	34.4	* 6.6	47.7				
Max Q Clear Time (g_c+I1), s	8.9	39.2	19.3	20.1	12.3	14.3	4.9	9.9				
Green Ext Time (p_c), s	0.0	0.0	0.0	3.2	0.0	3.5	0.0	3.0				

Intersection Summary

HCM 6th Ctrl Delay	148.9
HCM 6th LOS	F

Notes

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

Intersection	
Intersection Delay, s/veh	114.4
Intersection LOS	F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↔		↘	↕↕
Traffic Vol, veh/h	85	453	644	62	464	622
Future Vol, veh/h	85	453	644	62	464	622
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	90	482	685	66	494	662
Number of Lanes	1	1	2	0	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay	164.2	110.8	92.1
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	78%	0%	0%	0%	100%	100%
Vol Right, %	0%	22%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	429	277	85	453	464	311	311
LT Vol	0	0	85	0	464	0	0
Through Vol	429	215	0	0	0	311	311
RT Vol	0	62	0	453	0	0	0
Lane Flow Rate	457	294	90	482	494	331	331
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	1.221	0.774	0.277	1.315	1.269	0.805	0.646
Departure Headway (Hd)	10.88	10.715	12.083	10.846	10.268	9.746	7.933
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	338	341	299	337	360	374	460
Service Time	8.58	8.415	9.783	8.546	7.968	7.446	5.633
HCM Lane V/C Ratio	1.352	0.862	0.301	1.43	1.372	0.885	0.72
HCM Control Delay	155.2	42	19.3	191.4	171.1	42.4	24
HCM Lane LOS	F	E	C	F	F	E	C
HCM 95th-tile Q	17.7	6.2	1.1	20.9	20.1	7	4.5

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	68	44	73	1082	741	97
Future Vol, veh/h	68	44	73	1082	741	97
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	71	46	76	1127	772	101

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2102	823	873	0	-	0
Stage 1	823	-	-	-	-	-
Stage 2	1279	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 57	373	773	-	-	-
Stage 1	431	-	-	-	-	-
Stage 2	261	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 51	373	773	-	-	-
Mov Cap-2 Maneuver	165	-	-	-	-	-
Stage 1	389	-	-	-	-	-
Stage 2	261	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	41.3	0.6	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	773	-	211	-	-
HCM Lane V/C Ratio	0.098	-	0.553	-	-
HCM Control Delay (s)	10.2	-	41.3	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.3	-	3	-	-

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

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	247	389	434	902	629	175
Future Volume (vph)	247	389	434	902	629	175
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	44.8	9.6	16.5	29.5	29.5
Total Split (s)	44.8	44.8	42.0	75.2	33.2	33.2
Total Split (%)	37.3%	37.3%	35.0%	62.7%	27.7%	27.7%
Yellow Time (s)	4.8	4.8	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	6.5	6.5	6.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	19.5	19.5	28.8	57.1	23.5	23.5
Actuated g/C Ratio	0.22	0.22	0.32	0.64	0.26	0.26
v/c Ratio	0.67	0.62	0.80	0.42	0.71	0.37
Control Delay	43.1	7.8	40.9	9.0	36.6	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	7.8	40.9	9.0	36.6	15.9
LOS	D	A	D	A	D	B
Approach Delay	21.5			19.3	32.1	
Approach LOS	C			B	C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 89.4
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 23.5
 Intersection LOS: C
 Intersection Capacity Utilization 69.2%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	247	389	434	902	629	175
Future Volume (veh/h)	247	389	434	902	629	175
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	260	266	457	949	662	123
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	377	336	521	2180	910	406
Arrive On Green	0.21	0.21	0.29	0.61	0.26	0.26
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	260	266	457	949	662	123
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	9.5	11.2	17.2	9.9	12.0	4.4
Cycle Q Clear(g_c), s	9.5	11.2	17.2	9.9	12.0	4.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	377	336	521	2180	910	406
V/C Ratio(X)	0.69	0.79	0.88	0.44	0.73	0.30
Avail Cap(c_a), veh/h	986	877	945	3465	1346	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	26.3	23.7	7.2	24.0	21.1
Incr Delay (d2), s/veh	2.2	4.2	4.9	0.1	1.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	9.7	7.5	3.1	4.9	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.9	30.5	28.7	7.3	25.1	21.6
LnGrp LOS	C	C	C	A	C	C
Approach Vol, veh/h	526			1406	785	
Approach Delay, s/veh	29.2			14.3	24.5	
Approach LOS	C			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		49.7		20.7	25.2	24.5
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	37.4	26.7
Max Q Clear Time (g_c+I1), s		11.9		13.2	19.2	14.0
Green Ext Time (p_c), s		8.8		1.7	1.4	4.0
Intersection Summary						
HCM 6th Ctrl Delay			20.1			
HCM 6th LOS			C			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

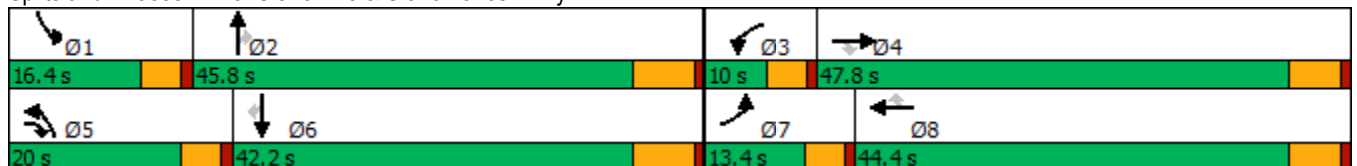
Ventana (JN 13769)
04/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	266	306	879	204	238	235	801	967	246	236	798	195
Future Volume (vph)	266	306	879	204	238	235	801	967	246	236	798	195
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	13.4	47.8	20.0	10.0	44.4	44.4	20.0	45.8	45.8	16.4	42.2	42.2
Total Split (%)	11.2%	39.8%	16.7%	8.3%	37.0%	37.0%	16.7%	38.2%	38.2%	13.7%	35.2%	35.2%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.9	15.9	32.7	5.5	12.5	12.5	15.6	29.2	29.2	10.1	23.7	23.7
Actuated g/C Ratio	0.11	0.19	0.40	0.07	0.15	0.15	0.19	0.35	0.35	0.12	0.29	0.29
v/c Ratio	0.74	0.46	1.36	0.93	0.46	0.55	1.27	0.55	0.37	0.58	0.56	0.34
Control Delay	51.1	32.9	192.7	85.3	35.9	10.0	165.7	22.8	6.0	41.5	26.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.1	32.9	192.7	85.3	35.9	10.0	165.7	22.8	6.0	41.5	26.3	5.0
LOS	D	C	F	F	D	B	F	C	A	D	C	A
Approach Delay		133.1			41.8			77.6			25.8	
Approach LOS		F			D			E			C	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 82.4
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.36
 Intersection Signal Delay: 76.2
 Intersection LOS: E
 Intersection Capacity Utilization 90.2%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/06/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	266	306	879	204	238	235	801	967	246	236	798	195
Future Volume (veh/h)	266	306	879	204	238	235	801	967	246	236	798	195
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	274	315	638	210	245	184	826	997	190	243	823	155
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	289	1313	816	177	1199	527	505	1461	448	307	1170	362
Arrive On Green	0.08	0.37	0.37	0.05	0.34	0.34	0.15	0.29	0.29	0.09	0.23	0.23
Sat Flow, veh/h	3456	3554	1582	3456	3554	1562	3456	5106	1564	3456	5106	1579
Grp Volume(v), veh/h	274	315	638	210	245	184	826	997	190	243	823	155
Grp Sat Flow(s),veh/h/ln	1728	1777	1582	1728	1777	1562	1728	1702	1564	1728	1702	1579
Q Serve(g_s), s	8.3	6.5	34.5	5.4	5.2	9.3	15.4	18.3	10.4	7.3	15.6	8.8
Cycle Q Clear(g_c), s	8.3	6.5	34.5	5.4	5.2	9.3	15.4	18.3	10.4	7.3	15.6	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	289	1313	816	177	1199	527	505	1461	448	307	1170	362
V/C Ratio(X)	0.95	0.24	0.78	1.19	0.20	0.35	1.64	0.68	0.42	0.79	0.70	0.43
Avail Cap(c_a), veh/h	289	1416	862	177	1301	572	505	1904	583	387	1729	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	23.0	20.7	50.0	24.9	26.2	45.0	33.4	30.6	47.0	37.3	34.7
Incr Delay (d2), s/veh	39.2	0.1	4.5	126.6	0.1	0.4	295.1	0.7	0.6	6.5	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	2.7	13.1	5.4	2.2	3.5	27.2	7.5	4.0	3.4	6.5	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.2	23.1	25.2	176.6	24.9	26.6	340.1	34.0	31.2	53.6	38.1	35.5
LnGrp LOS	F	C	C	F	C	C	F	C	C	D	D	D
Approach Vol, veh/h		1227			639			2013			1221	
Approach Delay, s/veh		38.5			75.3			159.3			40.9	
Approach LOS		D			E			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	36.7	10.0	44.8	20.0	30.6	13.4	41.4				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	11.8	39.3	5.4	42.0	15.4	35.7	8.8	38.6				
Max Q Clear Time (g_c+I1), s	9.3	20.3	7.4	36.5	17.4	17.6	10.3	11.3				
Green Ext Time (p_c), s	0.1	7.7	0.0	2.3	0.0	6.1	0.0	2.3				
Intersection Summary												
HCM 6th Ctrl Delay			91.4									
HCM 6th LOS			F									

APPENDIX 5.3:

**OPENING YEAR CUMULATIVE (2023) WITHOUT PROJECT CONDITIONS TRAFFIC
SIGNAL WARRANT ANALYSIS WORKSHEETS**

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **2023 Without Project Conditions - Weekday AM Peak Hour**

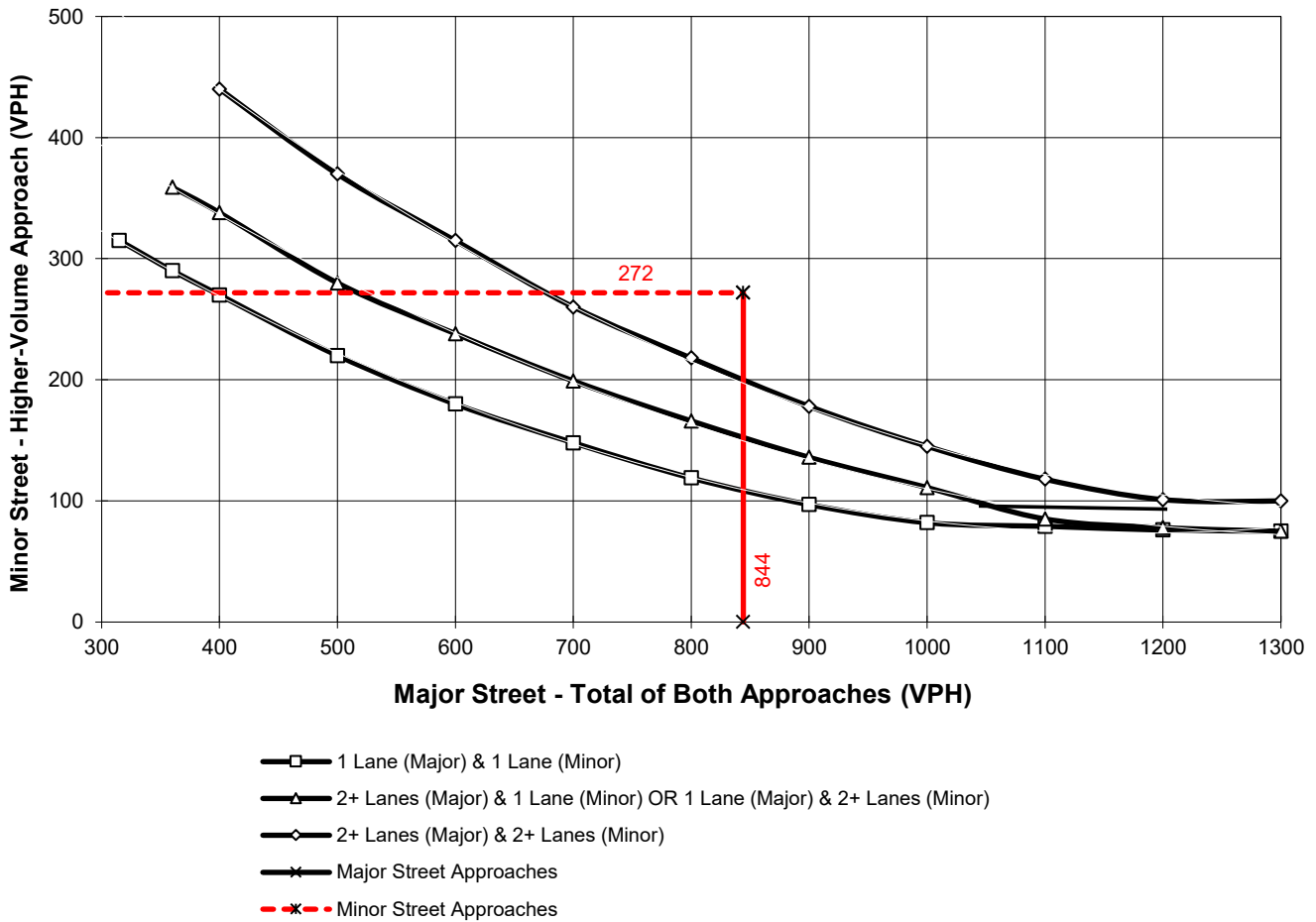
Major Street Name = **Duncan Canyon Rd.**

Total of Both Approaches (VPH) = **844**
 Number of Approach Lanes Major Street = **2**

Minor Street Name = **Coyote Canyon Rd.**

High Volume Approach (VPH) = **272**
 Number of Approach Lanes Minor Street = **2**

WARRANTED FOR A SIGNAL



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane



Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **2023 Without Project Conditions - Weekday AM Peak Hour**

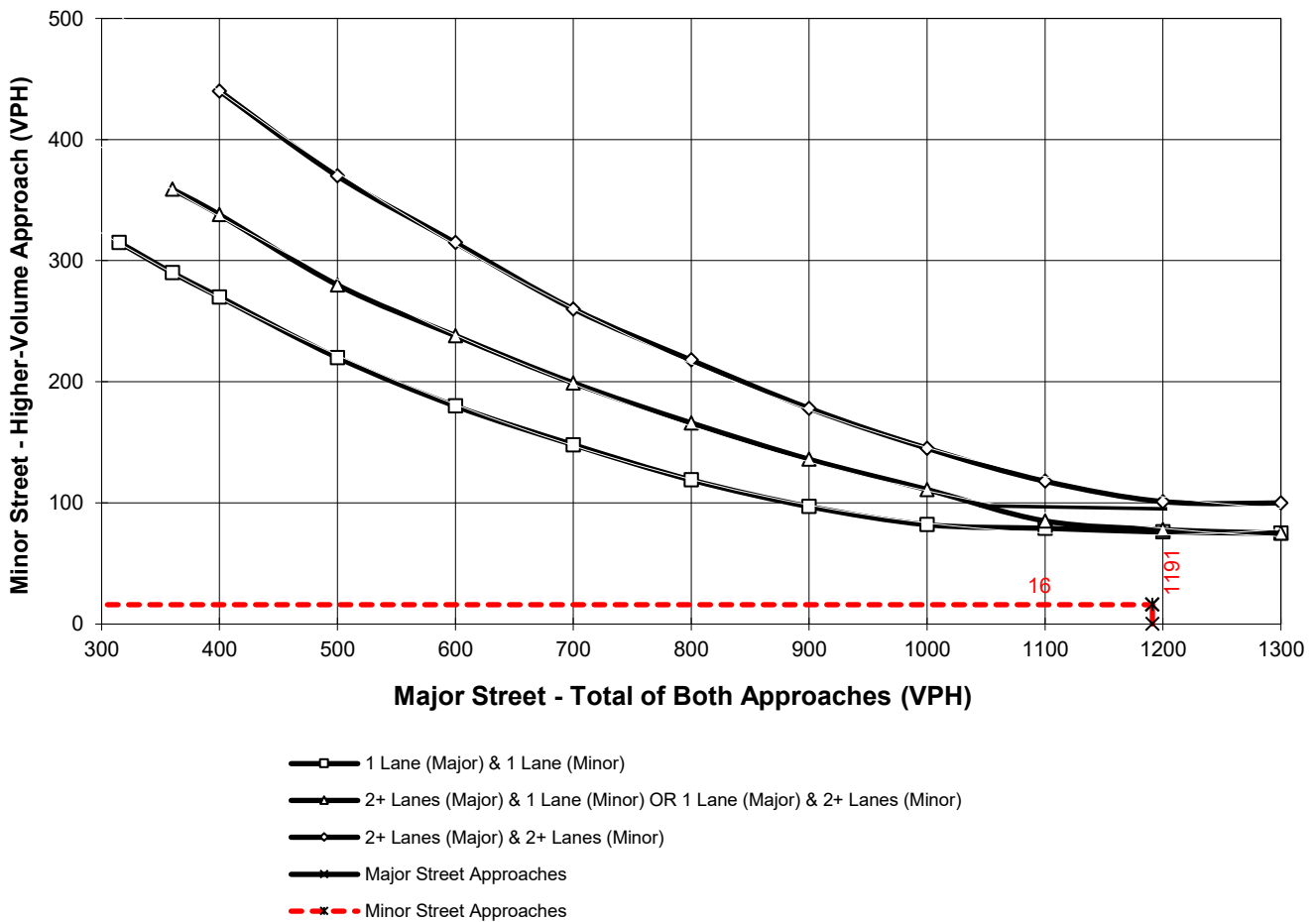
Major Street Name = **Duncan Canyon Rd.**

Total of Both Approaches (VPH) = **1191**
 Number of Approach Lanes Major Street = **2**

Minor Street Name = **Lytle Creek Rd.**

High Volume Approach (VPH) = **16**
 Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

APPENDIX 5.4:

**OPENING YEAR CUMULATIVE (2023) WITH PROJECT CONDITIONS TRAFFIC SIGNAL
WARRANT ANALYSIS WORKSHEETS**

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **2023 With Project Conditions - Weekday AM Peak Hour**

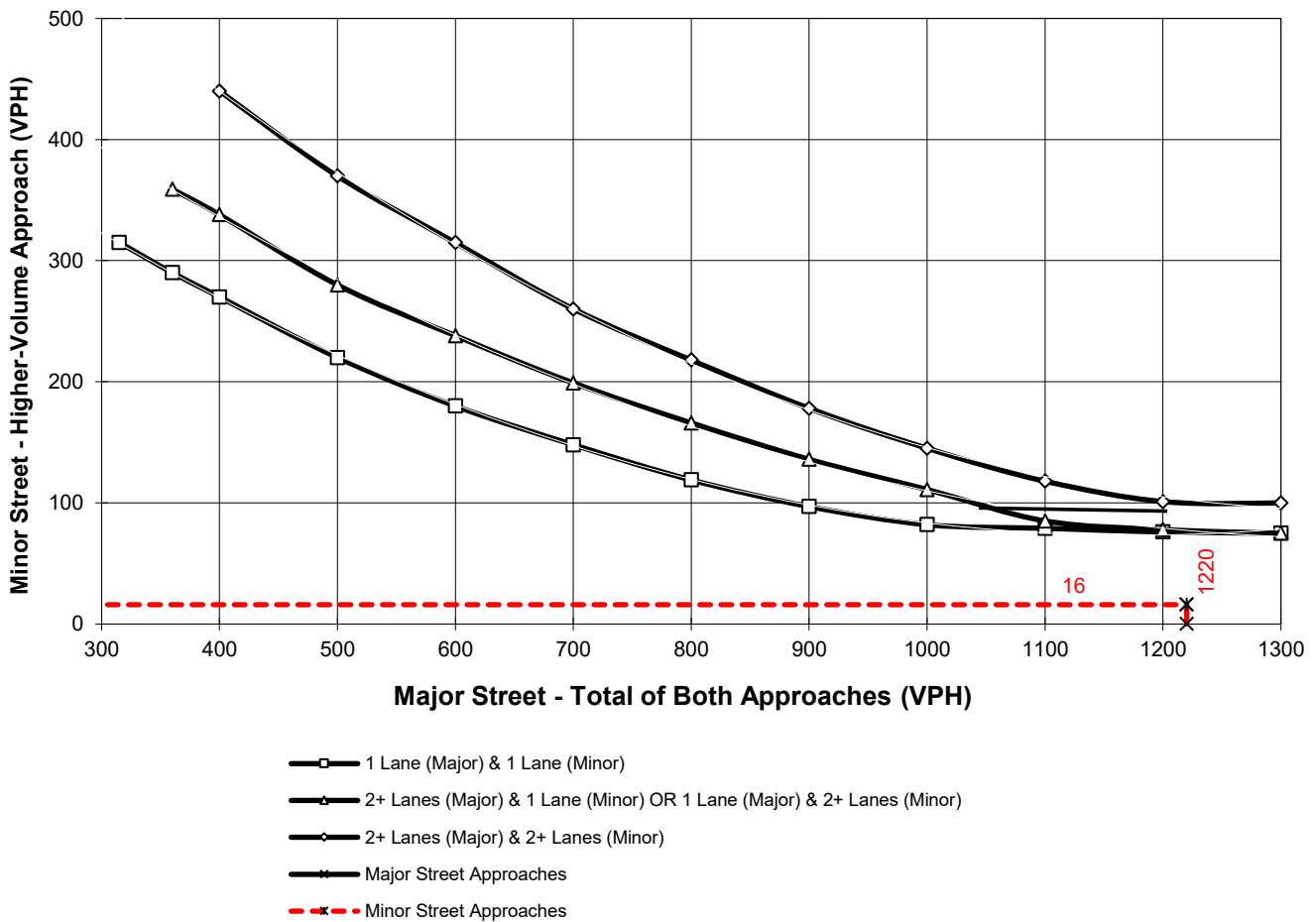
Major Street Name = **Duncan Canyon Rd.**

Total of Both Approaches (VPH) = **1220**
 Number of Approach Lanes Major Street = **2**

Minor Street Name = **Lytle Creek Rd.**

High Volume Approach (VPH) = **16**
 Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

<u>DIST</u>	<u>CO</u>	<u>RTE</u>	<u>PM</u>	TRAFFIC CONDITIONS	2023 WP
Jurisdiction: <u>City of Fontana</u>				CALC <u>CS</u>	DATE <u>07/08/20</u>
Major Street: <u>Duncan Canyon Rd.</u>				CHK <u>CS</u>	DATE <u>07/08/20</u>
Minor Street: <u>Lytle Creek Dr.</u>				Critical Approach Speed (Major) <u>25</u> mph	
				Critical Approach Speed (Minor) <u>25</u> mph	
Major Street Approach Lanes =	<u>1</u>	lane	Minor Street Approach Lanes:	<u>1</u>	lane
Major Street Future ADT =	<u>20,240</u>	vpd	Minor Street Future ADT =	<u>2,521</u>	vpd
Speed limit or critical speed on major street traffic > 64 km/h (40 mph);					<input type="checkbox"/>
					or
In built up area of isolated community of < 10,000 population					<input type="checkbox"/>

URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

<u>URBAN</u>	<u>RURAL</u>	Minimum Requirements EADT			
XX					
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street		Vehicles Per Day on Higher-Volume Minor Street Approach	
<u>Satisfied</u>	<u>Not Satisfied</u>	(Total of Both Approaches)		(One Direction Only)	
XX		<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
Number of lanes for moving traffic on each approach					
<u>Major Street</u>	<u>Minor Street</u>				
1 20,240	1 2,521	8,000 *	5,600	2,400 *	1,680
2 +	1	9,600	6,720	2,400	1,680
2 +	2 +	9,600	6,720	3,200	2,240
1	2 +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street		Vehicles Per Day on Higher-Volume Minor Street Approach	
<u>Satisfied</u>	<u>Not Satisfied</u>	(Total of Both Approaches)		(One Direction Only)	
XX		<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
Number of lanes for moving traffic on each approach					
<u>Major Street</u>	<u>Minor Street</u>				
1 20,240	1 2,521	12,000 *	8,400	1,200 *	850
2 +	1	14,400	10,080	1,200	850
2 +	2 +	14,400	10,080	1,600	1,120
1	2 +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
<u>Satisfied</u>	<u>Not Satisfied</u>				
XX		2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more					
	<u>A</u>				
	100%				
	<u>B</u>				
	100%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

<u>DIST</u>	<u>CO</u>	<u>RTE</u>	<u>PM</u>	TRAFFIC CONDITIONS	2023 WP
Jurisdiction: <u>City of Fontana</u>				CALC <u>CS</u>	DATE <u>07/08/20</u>
Major Street: <u>Citrus Av.</u>				CHK <u>CS</u>	DATE <u>07/08/20</u>
Minor Street: <u>Lytle Creek Rd.</u>				Critical Approach Speed (Major) <u>25</u> mph	
				Critical Approach Speed (Minor) <u>25</u> mph	
Major Street Approach Lanes =	<u>1</u>	lane	Minor Street Approach Lanes:	<u>1</u>	lane
Major Street Future ADT =	<u>1,852</u>	vpd	Minor Street Future ADT =	<u>412</u>	vpd
Speed limit or critical speed on major street traffic > 64 km/h (40 mph);					<input type="checkbox"/>
					or
In built up area of isolated community of < 10,000 population					<input type="checkbox"/>

URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

<u>URBAN</u>	<u>RURAL</u>	Minimum Requirements			
XX		EADT			
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street		Vehicles Per Day on Higher-Volume Minor Street Approach	
<u>Satisfied</u>	<u>Not Satisfied</u>	(Total of Both Approaches)		(One Direction Only)	
	XX	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
Number of lanes for moving traffic on each approach	Number of lanes for moving traffic on each approach				
<u>Major Street</u>	<u>Minor Street</u>				
1 1,852	1 412	8,000	5,600	2,400	1,680
2 +	1	9,600	6,720	2,400	1,680
2 +	2 +	9,600	6,720	3,200	2,240
1	2 +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street		Vehicles Per Day on Higher-Volume Minor Street Approach	
<u>Satisfied</u>	<u>Not Satisfied</u>	(Total of Both Approaches)		(One Direction Only)	
	XX	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
Number of lanes for moving traffic on each approach	Number of lanes for moving traffic on each approach				
<u>Major Street</u>	<u>Minor Street</u>				
1 1,852	1 412	12,000	8,400	1,200	850
2 +	1	14,400	10,080	1,200	850
2 +	2 +	14,400	10,080	1,600	1,120
1	2 +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B		2 CONDITIONS		2 CONDITIONS	
<u>Satisfied</u>	<u>Not Satisfied</u>	80%		80%	
No one condition satisfied, but following conditions fulfilled 80% of more	XX				
	A				
	17%				
	B				
	15%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

<u>DIST</u>	<u>CO</u>	<u>RTE</u>	<u>PM</u>	TRAFFIC CONDITIONS	2023 WP
Jurisdiction: <u>City of Fontana</u>				CALC <u>CS</u>	DATE <u>07/08/20</u>
Major Street: <u>Citrus Ave.</u>				CHK <u>CS</u>	DATE <u>07/08/20</u>
Minor Street: <u>Driveway 1</u>				Critical Approach Speed (Major) <u>25</u> mph	
				Critical Approach Speed (Minor) <u>25</u> mph	
Major Street Approach Lanes =	<u>1</u>	lane	Minor Street Approach Lanes:	<u>1</u>	lane
Major Street Future ADT =	<u>2,638</u>	vpd	Minor Street Future ADT =	<u>374</u>	vpd
Speed limit or critical speed on major street traffic > 64 km/h (40 mph);	<input type="checkbox"/>				or
In built up area of isolated community of < 10,000 population	<input type="checkbox"/>				URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

<u>URBAN</u>	<u>RURAL</u>	Minimum Requirements			
XX		EADT			
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street		Vehicles Per Day on Higher-Volume Minor Street Approach	
<u>Satisfied</u>	<u>Not Satisfied</u>	(Total of Both Approaches)		(One Direction Only)	
	XX	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
Number of lanes for moving traffic on each approach					
<u>Major Street</u>	<u>Minor Street</u>				
<u>1 2,638</u>	<u>1 374</u>	8,000	5,600	2,400	1,680
<u>2+</u>	<u>1</u>	9,600	6,720	2,400	1,680
<u>2+</u>	<u>2+</u>	9,600	6,720	3,200	2,240
<u>1</u>	<u>2+</u>	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street		Vehicles Per Day on Higher-Volume Minor Street Approach	
<u>Satisfied</u>	<u>Not Satisfied</u>	(Total of Both Approaches)		(One Direction Only)	
	XX	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
Number of lanes for moving traffic on each approach					
<u>Major Street</u>	<u>Minor Street</u>				
<u>1 2,638</u>	<u>1 374</u>	12,000	8,400	1,200	850
<u>2+</u>	<u>1</u>	14,400	10,080	1,200	850
<u>2+</u>	<u>2+</u>	14,400	10,080	1,600	1,120
<u>1</u>	<u>2+</u>	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B		2 CONDITIONS		2 CONDITIONS	
<u>Satisfied</u>	<u>Not Satisfied</u>	80%		80%	
No one condition satisfied, but following conditions fulfilled 80% of more	XX				
	A				
	16%				
	B				
	22%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

APPENDIX 5.5:

**OPENING YEAR CUMULATIVE (2023) WITHOUT PROJECT CONDITIONS OFF-RAMP
QUEUING ANALYSIS WORKSHEETS**

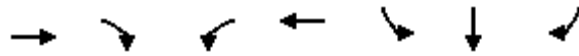
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Queues

3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)

04/27/2021

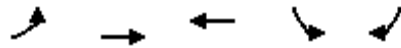


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	347	554	716	367	136	139	54
v/c Ratio	0.19	0.54	0.85	0.13	0.64	0.65	0.22
Control Delay	16.8	6.7	74.2	2.5	63.3	63.8	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.8	6.7	74.2	2.5	63.3	63.8	13.7
Queue Length 50th (ft)	73	47	307	18	107	109	0
Queue Length 95th (ft)	115	153	370	37	169	172	36
Internal Link Dist (ft)	583			936		3134	
Turn Bay Length (ft)		260	620		650		
Base Capacity (vph)	1845	1033	885	2829	308	310	334
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.54	0.81	0.13	0.44	0.45	0.16

Intersection Summary

Queues

4: Beech Ave. & I-15 SB Ramps



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	291	526	1196	216	279
v/c Ratio	0.79	0.19	0.65	0.75	0.57
Control Delay	60.4	4.2	8.9	63.9	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	60.4	4.2	8.9	63.9	9.6
Queue Length 50th (ft)	215	49	46	161	0
Queue Length 95th (ft)	293	80	175	235	72
Internal Link Dist (ft)		1839	1079	3017	
Turn Bay Length (ft)	400				290
Base Capacity (vph)	486	2727	1853	368	550
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	0.60	0.19	0.65	0.59	0.51

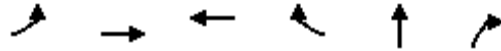
Intersection Summary

Queues

Ventana (JN 13769)

5: I-15 NB Ramp & Duncan Canyon Rd.

04/27/2021

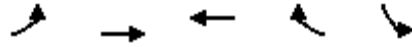


Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	99	503	933	203	140	381
v/c Ratio	0.55	0.18	0.40	0.18	0.63	0.56
Control Delay	46.5	3.8	10.8	1.9	61.4	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.5	3.8	10.8	1.9	61.4	7.7
Queue Length 50th (ft)	59	16	156	0	105	0
Queue Length 95th (ft)	139	134	257	32	164	46
Internal Link Dist (ft)		936	871		2645	
Turn Bay Length (ft)	235			260		
Base Capacity (vph)	309	2827	2350	1119	428	962
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	0.32	0.18	0.40	0.18	0.33	0.40

Intersection Summary

Queues
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	93	761	1255	208	545
v/c Ratio	0.53	0.32	0.67	0.22	0.78
Control Delay	41.0	3.2	13.8	2.3	30.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	3.2	13.8	2.3	30.1
Queue Length 50th (ft)	42	34	177	0	86
Queue Length 95th (ft)	70	37	203	20	114
Internal Link Dist (ft)		1079	938		1808
Turn Bay Length (ft)	145			230	
Base Capacity (vph)	177	2380	1861	931	716
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	0.53	0.32	0.67	0.22	0.76

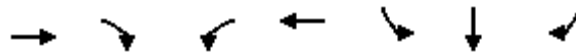
Intersection Summary

Queues

Ventana (JN 13769)

3: I-15 SB Ramp & Duncan Canyon Rd.

04/29/2021

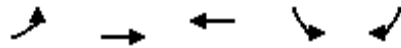


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	348	212	312	628	93	94	84
v/c Ratio	0.15	0.19	0.68	0.22	0.54	0.54	0.36
Control Delay	9.0	1.9	56.2	1.7	61.8	62.0	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	1.9	56.2	1.7	61.8	62.0	14.1
Queue Length 50th (ft)	49	0	113	25	73	74	0
Queue Length 95th (ft)	87	32	154	42	126	127	46
Internal Link Dist (ft)	583			936		3134	
Turn Bay Length (ft)	260		620		650		
Base Capacity (vph)	2314	1108	657	2908	378	378	416
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.19	0.47	0.22	0.25	0.25	0.20

Intersection Summary

Queues

4: Beech Ave. & I-15 SB Ramps



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	136	649	1074	230	86
v/c Ratio	0.64	0.24	0.52	0.75	0.25
Control Delay	63.3	4.9	36.6	61.6	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.3	4.9	36.6	61.6	9.8
Queue Length 50th (ft)	102	66	355	171	0
Queue Length 95th (ft)	162	111	m396	243	42
Internal Link Dist (ft)		1839	1079	3017	
Turn Bay Length (ft)	400				290
Base Capacity (vph)	309	2688	2065	457	472
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	0.44	0.24	0.52	0.50	0.18

Intersection Summary

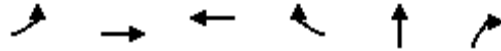
m Volume for 95th percentile queue is metered by upstream signal.

Queues

Ventana (JN 13769)

5: I-15 NB Ramp & Duncan Canyon Rd.

04/29/2021



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	121	408	598	199	346	522
v/c Ratio	0.61	0.17	0.33	0.22	0.75	0.48
Control Delay	68.3	9.5	19.4	3.7	50.1	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	9.5	19.4	3.7	50.1	3.9
Queue Length 50th (ft)	101	85	136	0	247	0
Queue Length 95th (ft)	166	111	228	47	315	39
Internal Link Dist (ft)		936	871		2645	
Turn Bay Length (ft)	235			260		
Base Capacity (vph)	309	2349	1833	916	651	1330
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	0.39	0.17	0.33	0.22	0.53	0.39

Intersection Summary

Queues
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	184	696	894	444	1089
v/c Ratio	0.76	0.34	0.64	0.50	0.89
Control Delay	57.9	13.5	33.0	4.6	45.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	57.9	13.5	33.0	4.6	45.3
Queue Length 50th (ft)	116	195	302	0	390
Queue Length 95th (ft)	164	156	391	71	471
Internal Link Dist (ft)		1079	938		1808
Turn Bay Length (ft)	145			230	
Base Capacity (vph)	280	2036	1404	896	1310
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	0.66	0.34	0.64	0.50	0.83

Intersection Summary

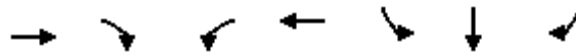
APPENDIX 5.6:

**OPENING YEAR CUMULATIVE (2023) WITH PROJECT CONDITIONS OFF-RAMP
QUEUING ANALYSIS WORKSHEETS**

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Queues

3: I-15 SB Ramp & Duncan Canyon Rd.



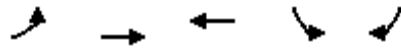
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	363	554	928	382	184	183	54
v/c Ratio	0.22	0.58	0.95	0.14	0.74	0.73	0.19
Control Delay	20.1	7.9	72.0	3.0	66.6	65.7	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.1	7.9	72.0	3.0	66.6	65.7	12.7
Queue Length 50th (ft)	87	57	354	26	144	143	0
Queue Length 95th (ft)	120	160	#561	38	221	221	36
Internal Link Dist (ft)	583			936		3134	
Turn Bay Length (ft)		260	620		650		
Base Capacity (vph)	1622	956	980	2750	308	310	334
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.58	0.95	0.14	0.60	0.59	0.16

Intersection Summary

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

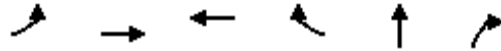
4: Beech Ave. & I-15 SB Ramps

04/27/2021



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	291	537	1205	216	279
v/c Ratio	0.79	0.20	0.65	0.75	0.57
Control Delay	60.4	4.3	9.2	63.9	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	60.4	4.3	9.2	63.9	9.6
Queue Length 50th (ft)	215	50	48	161	0
Queue Length 95th (ft)	293	81	182	235	72
Internal Link Dist (ft)		1839	1079	3017	
Turn Bay Length (ft)	400				290
Base Capacity (vph)	486	2727	1849	368	550
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	0.60	0.20	0.65	0.59	0.51

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	99	611	1158	288	140	607
v/c Ratio	0.55	0.22	0.50	0.25	0.59	0.68
Control Delay	42.1	4.5	12.6	1.9	58.2	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.1	4.5	12.6	1.9	58.2	7.8
Queue Length 50th (ft)	54	49	218	0	104	1
Queue Length 95th (ft)	m132	182	358	38	161	53
Internal Link Dist (ft)		936	871		2645	
Turn Bay Length (ft)	235			260		
Base Capacity (vph)	309	2801	2324	1138	428	1130
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	0.32	0.22	0.50	0.25	0.33	0.54

Intersection Summary

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

Queues
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021

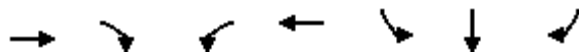


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	93	774	1266	208	545
v/c Ratio	0.55	0.30	0.60	0.20	0.79
Control Delay	63.8	5.8	17.8	2.8	52.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	5.8	17.8	2.8	52.0
Queue Length 50th (ft)	70	123	305	3	198
Queue Length 95th (ft)	103	132	376	27	211
Internal Link Dist (ft)		1079	938		1808
Turn Bay Length (ft)	145			230	
Base Capacity (vph)	223	2603	2115	1025	862
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	0.42	0.30	0.60	0.20	0.63

Intersection Summary

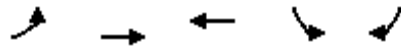
Queues
3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/27/2021



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	360	212	440	637	126	127	84
v/c Ratio	0.17	0.21	0.75	0.22	0.62	0.63	0.32
Control Delay	12.1	2.4	49.6	2.8	62.6	62.9	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	2.4	49.6	2.8	62.6	62.9	12.5
Queue Length 50th (ft)	61	0	153	32	98	100	0
Queue Length 95th (ft)	107	38	209	81	157	160	45
Internal Link Dist (ft)	583			936		3134	
Turn Bay Length (ft)		260	620		650		
Base Capacity (vph)	2122	1034	671	2844	378	378	416
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.21	0.66	0.22	0.33	0.34	0.20
Intersection Summary							

4: Beech Ave. & I-15 SB Ramps



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	136	656	1080	230	86
v/c Ratio	0.64	0.24	0.52	0.75	0.25
Control Delay	63.3	5.0	36.7	61.6	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.3	5.0	36.7	61.6	9.8
Queue Length 50th (ft)	102	67	358	171	0
Queue Length 95th (ft)	162	112	m396	243	42
Internal Link Dist (ft)		1839	1079	3017	
Turn Bay Length (ft)	400				290
Base Capacity (vph)	309	2688	2066	457	472
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	0.44	0.24	0.52	0.50	0.18

Intersection Summary

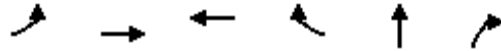
m Volume for 95th percentile queue is metered by upstream signal.

Queues

Ventana (JN 13769)

5: I-15 NB Ramp & Duncan Canyon Rd.

04/27/2021



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	121	485	733	251	346	684
v/c Ratio	0.61	0.21	0.41	0.27	0.71	0.57
Control Delay	63.6	10.9	21.5	3.7	46.9	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.6	10.9	21.5	3.7	46.9	5.7
Queue Length 50th (ft)	101	112	180	0	242	19
Queue Length 95th (ft)	165	142	295	53	307	61
Internal Link Dist (ft)		936	871		2645	
Turn Bay Length (ft)	235			260		
Base Capacity (vph)	309	2306	1790	924	651	1395
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	0.39	0.21	0.41	0.27	0.53	0.49

Intersection Summary

Queues
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	184	703	899	444	1089
v/c Ratio	0.75	0.34	0.63	0.51	0.88
Control Delay	72.4	15.6	35.3	6.8	47.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	72.4	15.6	35.3	6.8	47.4
Queue Length 50th (ft)	150	160	324	23	427
Queue Length 95th (ft)	227	213	432	114	501
Internal Link Dist (ft)		1079	938		1808
Turn Bay Length (ft)	145			230	
Base Capacity (vph)	299	2045	1418	875	1340
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	0.62	0.34	0.63	0.51	0.81

Intersection Summary

APPENDIX 5.7:

**OPENING YEAR CUMULATIVE (2023) WITHOUT PROJECT CONDITIONS INTERSECTION
OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS**

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Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021

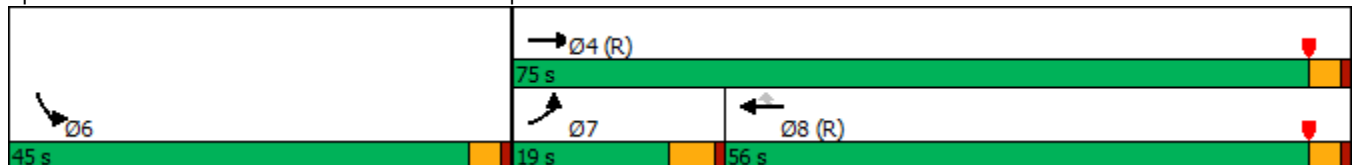


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↗↗	↗↗	↖	↖↖↖
Traffic Volume (vph)	74	609	1004	166	341
Future Volume (vph)	74	609	1004	166	341
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	19.0	75.0	56.0	56.0	45.0
Total Split (%)	15.8%	62.5%	46.7%	46.7%	37.5%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	11.6	88.0	71.4	71.4	24.0
Actuated g/C Ratio	0.10	0.73	0.60	0.60	0.20
v/c Ratio	0.54	0.29	0.60	0.21	0.78
Control Delay	63.6	5.9	18.1	3.9	50.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.6	5.9	18.1	3.9	50.6
LOS	E	A	B	A	D
Approach Delay		12.2	16.1		50.6
Approach LOS		B	B		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 21.5
 Intersection LOS: C
 Intersection Capacity Utilization 55.5%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↗↗	↗↗	↖	↘↘↘		
Traffic Volume (veh/h)	74	609	1004	166	341	95	
Future Volume (veh/h)	74	609	1004	166	341	95	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	92	761	1255	144	467	0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	115	2755	2378	1061	563	251	
Arrive On Green	0.13	1.00	0.67	0.67	0.16	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	92	761	1255	144	467	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	6.0	0.0	21.7	4.0	15.2	0.0	
Cycle Q Clear(g_c), s	6.0	0.0	21.7	4.0	15.2	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	115	2755	2378	1061	563	251	
V/C Ratio(X)	0.80	0.28	0.53	0.14	0.83	0.00	
Avail Cap(c_a), veh/h	208	2755	2378	1061	1217	542	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.94	0.94	0.76	0.76	1.00	0.00	
Uniform Delay (d), s/veh	51.5	0.0	10.2	7.2	48.9	0.0	
Incr Delay (d2), s/veh	11.5	0.2	0.6	0.2	3.2	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	2.8	0.1	7.5	1.2	7.1	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	63.0	0.2	10.8	7.4	52.1	0.0	
LnGrp LOS	E	A	B	A	D	A	
Approach Vol, veh/h		853	1399		467		
Approach Delay, s/veh		7.0	10.4		52.1		
Approach LOS		A	B		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				97.0	23.0	12.7	84.3
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				71.0	41.0	14.0	52.0
Max Q Clear Time (g_c+I1), s				2.0	17.2	8.0	23.7
Green Ext Time (p_c), s				5.6	1.7	0.1	10.6

Intersection Summary

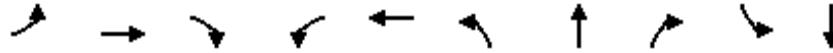
HCM 6th Ctrl Delay	16.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

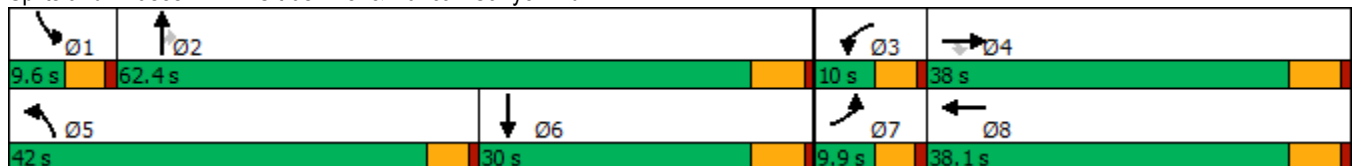


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	14	204	589	29	176	811	5	32	8	14
Future Volume (vph)	14	204	589	29	176	811	5	32	8	14
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	27.8	9.6	27.8	9.6	27.8	27.8	9.6	27.8
Total Split (s)	9.9	38.0	38.0	10.0	38.1	42.0	62.4	62.4	9.6	30.0
Total Split (%)	8.3%	31.7%	31.7%	8.3%	31.8%	35.0%	52.0%	52.0%	8.0%	25.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	None	None	None	None	None
Act Effct Green (s)	6.1	17.7	17.7	6.2	19.2	23.1	27.9	27.9	6.0	12.0
Actuated g/C Ratio	0.10	0.28	0.28	0.10	0.30	0.36	0.44	0.44	0.09	0.19
v/c Ratio	0.09	0.41	0.70	0.17	0.33	0.68	0.01	0.04	0.05	0.09
Control Delay	40.4	26.7	7.4	41.0	23.4	23.0	13.6	0.1	40.2	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.4	26.7	7.4	41.0	23.4	23.0	13.6	0.1	40.2	17.0
LOS	D	C	A	D	C	C	B	A	D	B
Approach Delay		12.9			25.8		22.1			19.8
Approach LOS		B			C		C			B

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 63.6
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 18.5
 Intersection LOS: B
 Intersection Capacity Utilization 62.5%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	204	589	29	176	3	811	5	32	8	14	41
Future Volume (veh/h)	14	204	589	29	176	3	811	5	32	8	14	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	212	432	30	183	3	845	5	33	8	15	43
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	32	579	491	55	592	10	964	717	608	18	204	182
Arrive On Green	0.02	0.31	0.31	0.03	0.32	0.32	0.28	0.38	0.38	0.01	0.11	0.11
Sat Flow, veh/h	1781	1870	1585	1781	1835	30	3456	1870	1585	1781	1777	1585
Grp Volume(v), veh/h	15	212	432	30	0	186	845	5	33	8	15	43
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1865	1728	1870	1585	1781	1777	1585
Q Serve(g_s), s	0.7	6.9	20.2	1.3	0.0	5.9	18.2	0.1	1.0	0.3	0.6	1.9
Cycle Q Clear(g_c), s	0.7	6.9	20.2	1.3	0.0	5.9	18.2	0.1	1.0	0.3	0.6	1.9
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	32	579	491	55	0	601	964	717	608	18	204	182
V/C Ratio(X)	0.47	0.37	0.88	0.55	0.00	0.31	0.88	0.01	0.05	0.44	0.07	0.24
Avail Cap(c_a), veh/h	121	771	653	123	0	771	1654	1355	1148	114	550	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	21.0	25.6	37.3	0.0	19.9	26.9	14.9	15.2	38.4	30.9	31.5
Incr Delay (d2), s/veh	4.0	0.4	10.6	3.2	0.0	0.3	1.3	0.0	0.0	6.1	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.8	8.2	0.6	0.0	2.3	6.9	0.0	0.3	0.2	0.2	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.0	21.4	36.2	40.5	0.0	20.2	28.2	14.9	15.2	44.6	31.0	32.1
LnGrp LOS	D	C	D	D	A	C	C	B	B	D	C	C
Approach Vol, veh/h		659			216			883				66
Approach Delay, s/veh		31.6			23.0			27.6				33.4
Approach LOS		C			C			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.4	35.8	7.0	30.0	26.4	14.8	6.0	31.0				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	5.0	56.6	5.4	32.2	37.4	24.2	5.3	32.3				
Max Q Clear Time (g_c+I1), s	2.3	3.0	3.3	22.2	20.2	3.9	2.7	7.9				
Green Ext Time (p_c), s	0.0	0.1	0.0	2.0	1.6	0.2	0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay			28.7									
HCM 6th LOS			C									

Timings
14: Citrus Ave. & Summit Ave.

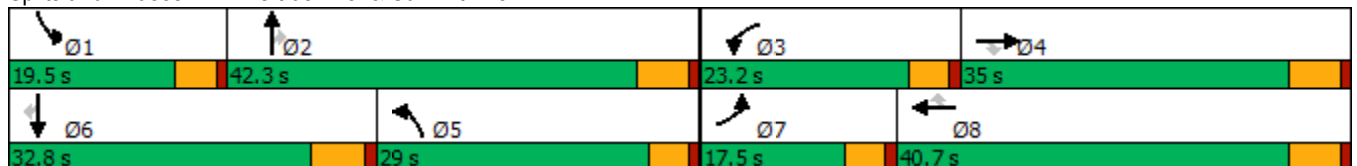
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	145	160	148	236	60	465	207	87	73	219	103
Future Volume (vph)	50	145	160	148	236	60	465	207	87	73	219	103
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	34.8	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	17.5	35.0	35.0	23.2	40.7	40.7	29.0	42.3	42.3	19.5	32.8	32.8
Total Split (%)	14.6%	29.2%	29.2%	19.3%	33.9%	33.9%	24.2%	35.3%	35.3%	16.3%	27.3%	27.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.8	10.3	10.3	10.8	18.8	18.8	14.1	19.7	19.7	7.7	11.0	11.0
Actuated g/C Ratio	0.10	0.15	0.15	0.16	0.28	0.28	0.21	0.29	0.29	0.11	0.16	0.16
v/c Ratio	0.29	0.27	0.41	0.54	0.24	0.11	0.65	0.20	0.16	0.38	0.39	0.27
Control Delay	34.7	28.9	6.2	34.5	22.6	0.4	29.5	20.8	1.7	35.0	28.9	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	28.9	6.2	34.5	22.6	0.4	29.5	20.8	1.7	35.0	28.9	3.5
LOS	C	C	A	C	C	A	C	C	A	D	C	A
Approach Delay		19.5			23.5			23.9			23.4	
Approach LOS		B			C			C			C	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 67.4
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 22.9
 Intersection LOS: C
 Intersection Capacity Utilization 57.0%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	145	160	148	236	60	465	207	87	73	219	103
Future Volume (veh/h)	50	145	160	148	236	60	465	207	87	73	219	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	52	151	78	154	246	20	484	216	76	76	228	65
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	663	280	197	896	379	627	1142	473	107	601	268
Arrive On Green	0.05	0.18	0.18	0.11	0.24	0.24	0.18	0.31	0.31	0.06	0.17	0.17
Sat Flow, veh/h	1781	3741	1577	1781	3741	1583	3563	3741	1549	1781	3554	1585
Grp Volume(v), veh/h	52	151	78	154	246	20	484	216	76	76	228	65
Grp Sat Flow(s),veh/h/ln	1781	1870	1577	1781	1870	1583	1781	1870	1549	1781	1777	1585
Q Serve(g_s), s	1.7	2.1	1.4	5.0	3.2	0.6	7.8	2.6	2.1	2.5	3.4	1.6
Cycle Q Clear(g_c), s	1.7	2.1	1.4	5.0	3.2	0.6	7.8	2.6	2.1	2.5	3.4	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	86	663	280	197	896	379	627	1142	473	107	601	268
V/C Ratio(X)	0.60	0.23	0.28	0.78	0.27	0.05	0.77	0.19	0.16	0.71	0.38	0.24
Avail Cap(c_a), veh/h	383	1822	768	553	2177	921	1450	2277	943	443	1600	714
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	21.1	6.5	26.0	18.6	17.6	23.5	15.4	15.2	27.7	22.1	11.6
Incr Delay (d2), s/veh	2.5	0.2	0.5	2.6	0.2	0.1	0.8	0.1	0.2	3.3	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.8	0.8	2.0	1.2	0.2	2.9	0.9	0.7	1.1	1.3	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	21.3	7.0	28.5	18.7	17.6	24.3	15.4	15.4	31.0	22.5	12.1
LnGrp LOS	C	C	A	C	B	B	C	B	B	C	C	B
Approach Vol, veh/h		281			420			776			369	
Approach Delay, s/veh		19.0			22.3			21.0			22.4	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.2	24.1	11.2	16.4	16.4	15.9	7.5	20.2				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	5.8	* 5.8	4.6	5.8				
Max Green Setting (Gmax), s	14.9	36.5	18.6	29.2	24.4	* 27	12.9	34.9				
Max Q Clear Time (g_c+I1), s	4.5	4.6	7.0	4.1	9.8	5.4	3.7	5.2				
Green Ext Time (p_c), s	0.0	1.5	0.1	1.0	0.8	1.4	0.0	1.5				
Intersection Summary												
HCM 6th Ctrl Delay			21.3									
HCM 6th LOS			C									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

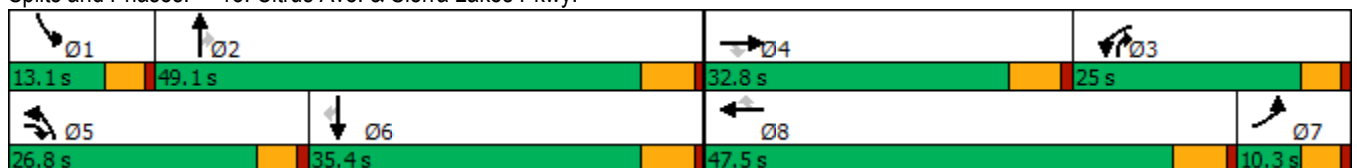
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	221	346	522	176	91	580	398	630	105	525	59
Future Volume (vph)	55	221	346	522	176	91	580	398	630	105	525	59
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	32.8	9.6	9.6	34.8	34.8	9.6	34.8	9.6	9.6	34.8	34.8
Total Split (s)	10.3	32.8	26.8	25.0	47.5	47.5	26.8	49.1	25.0	13.1	35.4	35.4
Total Split (%)	8.6%	27.3%	22.3%	20.8%	39.6%	39.6%	22.3%	40.9%	20.8%	10.9%	29.5%	29.5%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	4.6	4.6	5.8	5.8
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	Min
Act Effct Green (s)	17.8	12.0	34.6	19.6	16.1	16.1	21.4	34.5	55.3	7.3	20.4	20.4
Actuated g/C Ratio	0.19	0.13	0.37	0.21	0.17	0.17	0.23	0.37	0.59	0.08	0.22	0.22
v/c Ratio	0.09	0.51	0.58	0.77	0.30	0.25	0.79	0.32	0.67	0.42	0.71	0.13
Control Delay	31.9	43.7	12.2	44.5	40.4	3.4	43.5	22.5	8.3	48.4	39.9	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	43.7	12.2	44.5	40.4	3.4	43.5	22.5	8.3	48.4	39.9	0.5
LOS	C	D	B	D	D	A	D	C	A	D	D	A
Approach Delay		25.1			38.8			24.5			37.8	
Approach LOS		C			D			C			D	

Intersection Summary
































Cycle Length: 120
 Actuated Cycle Length: 94.3
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 30.1
 Intersection LOS: C
 Intersection Capacity Utilization 73.0%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 			 	 		 	 		 	 	
Traffic Volume (veh/h)	55	221	346	522	176	91	580	398	630	105	525	59
Future Volume (veh/h)	55	221	346	522	176	91	580	398	630	105	525	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	60	240	137	567	191	72	630	433	359	114	571	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	665	497	536	668	500	212	734	1347	867	206	793	336
Arrive On Green	0.19	0.13	0.13	0.19	0.13	0.13	0.21	0.36	0.36	0.06	0.21	0.21
Sat Flow, veh/h	3563	3741	1574	3563	3741	1585	3563	3741	1582	3563	3741	1585
Grp Volume(v), veh/h	60	240	137	567	191	72	630	433	359	114	571	53
Grp Sat Flow(s),veh/h/ln	1781	1870	1574	1781	1870	1585	1781	1870	1582	1781	1870	1585
Q Serve(g_s), s	1.1	4.7	2.2	12.2	3.7	2.6	13.6	6.7	2.7	2.5	11.3	1.3
Cycle Q Clear(g_c), s	1.1	4.7	2.2	12.2	3.7	2.6	13.6	6.7	2.7	2.5	11.3	1.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	665	497	536	668	500	212	734	1347	867	206	793	336
V/C Ratio(X)	0.09	0.48	0.26	0.85	0.38	0.34	0.86	0.32	0.41	0.55	0.72	0.16
Avail Cap(c_a), veh/h	665	1270	861	914	1962	831	995	2037	1159	381	1393	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	31.9	6.2	31.2	31.4	19.1	30.4	18.4	2.9	36.5	29.1	9.1
Incr Delay (d2), s/veh	0.0	0.7	0.2	4.3	0.5	0.9	4.5	0.1	0.3	0.9	1.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.0	0.8	5.2	1.6	1.2	5.8	2.6	0.7	1.0	4.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.8	32.7	6.4	35.5	31.9	20.1	35.0	18.5	3.2	37.3	30.4	9.3
LnGrp LOS	C	C	A	D	C	C	C	B	A	D	C	A
Approach Vol, veh/h		437			830			1422			738	
Approach Delay, s/veh		23.6			33.3			21.9			29.9	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.2	34.4	19.5	16.4	21.0	22.7	19.4	16.4				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	8.5	43.3	20.4	27.0	22.2	29.6	5.7	41.7				
Max Q Clear Time (g_c+I1), s	4.5	8.7	14.2	6.7	15.6	13.3	3.1	5.7				
Green Ext Time (p_c), s	0.1	4.1	0.7	1.7	0.8	3.3	0.0	1.3				
Intersection Summary												
HCM 6th Ctrl Delay			26.6									
HCM 6th LOS			C									

Timings
16: Sierra Ave/Sierra Ave. & Riverside Ave.

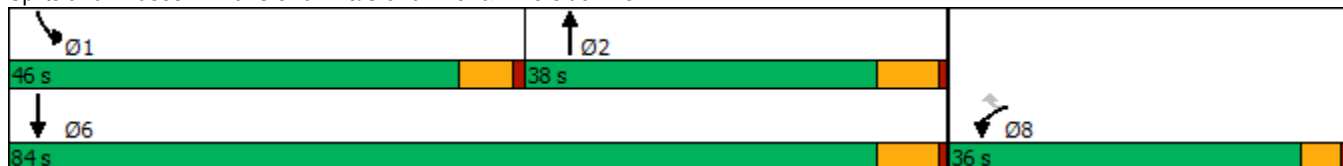
Ventana (JN 13769)
04/06/2022

	↙	↖	↑	↘	↓
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↖	↑↔	↘	↑↑
Traffic Volume (vph)	58	468	466	377	596
Future Volume (vph)	58	468	466	377	596
Turn Type	Prot	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	26.6	26.6	28.5	15.8	16.5
Total Split (s)	36.0	36.0	38.0	46.0	84.0
Total Split (%)	30.0%	30.0%	31.7%	38.3%	70.0%
Yellow Time (s)	3.6	3.6	5.5	4.8	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	6.5	5.8	6.5
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	9.0	9.0	18.5	21.4	46.1
Actuated g/C Ratio	0.13	0.13	0.28	0.32	0.69
v/c Ratio	0.27	0.78	0.62	0.73	0.27
Control Delay	32.7	12.7	25.4	30.0	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	12.7	25.4	30.0	4.4
LOS	C	B	C	C	A
Approach Delay	14.9		25.4		14.3
Approach LOS	B		C		B

Intersection Summary














Cycle Length: 120
 Actuated Cycle Length: 67.1
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 17.4
 Intersection LOS: B
 Intersection Capacity Utilization 54.5%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 16: Sierra Ave/Sierra Ave. & Riverside Ave.



HCM 6th Signalized Intersection Summary
 16: Sierra Ave/Sierra Ave. & Riverside Ave.

Ventana (JN 13769)
 04/06/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (veh/h)	58	468	466	79	377	596
Future Volume (veh/h)	58	468	466	79	377	596
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	63	237	507	26	410	648
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	333	297	767	39	475	2134
Arrive On Green	0.19	0.19	0.22	0.22	0.27	0.60
Sat Flow, veh/h	1781	1585	3533	176	1781	3647
Grp Volume(v), veh/h	63	237	261	272	410	648
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1839	1781	1777
Q Serve(g_s), s	1.6	7.5	7.0	7.0	11.5	4.7
Cycle Q Clear(g_c), s	1.6	7.5	7.0	7.0	11.5	4.7
Prop In Lane	1.00	1.00		0.10	1.00	
Lane Grp Cap(c), veh/h	333	297	396	410	475	2134
V/C Ratio(X)	0.19	0.80	0.66	0.66	0.86	0.30
Avail Cap(c_a), veh/h	1069	952	1070	1107	1369	5266
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	20.3	18.5	18.5	18.3	5.1
Incr Delay (d2), s/veh	0.1	1.9	1.9	1.8	1.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.5	2.4	2.5	3.8	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.0	22.2	20.4	20.4	20.1	5.2
LnGrp LOS	B	C	C	C	C	A
Approach Vol, veh/h	300		533			1058
Approach Delay, s/veh	21.3		20.4			11.0
Approach LOS	C		C			B
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	19.8	18.2			37.9	14.4
Change Period (Y+Rc), s	5.8	6.5			6.5	4.6
Max Green Setting (Gmax), s	40.2	31.5			77.5	31.4
Max Q Clear Time (g_c+I1), s	13.5	9.0			6.7	9.5
Green Ext Time (p_c), s	0.5	2.6			4.2	0.4
Intersection Summary						
HCM 6th Ctrl Delay			15.3			
HCM 6th LOS			B			

Timings
17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	NBL	NBT	SBT
Lane Configurations	Y	Y	↑	↑
Traffic Volume (vph)	57	24	501	1012
Future Volume (vph)	57	24	501	1012
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	5	2	6
Permitted Phases				
Detector Phase	4	5	2	6
Switch Phase				
Minimum Initial (s)	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	9.6	15.8	27.8
Total Split (s)	28.0	9.8	92.0	82.2
Total Split (%)	23.3%	8.2%	76.7%	68.5%
Yellow Time (s)	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	5.8	5.8
Lead/Lag		Lead		Lag
Lead-Lag Optimize?		Yes		Yes
Recall Mode	None	None	Min	Min
Act Effct Green (s)	12.1	5.4	62.8	59.7
Actuated g/C Ratio	0.14	0.06	0.72	0.69
v/c Ratio	0.47	0.22	0.38	0.83
Control Delay	33.1	52.8	5.4	18.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	33.1	52.8	5.4	18.3
LOS	C	D	A	B
Approach Delay	33.1		7.5	18.3
Approach LOS	C		A	B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 87.1
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 16.0
 Intersection LOS: B
 Intersection Capacity Utilization 72.7%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 17: Sierra Ave & Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	57	68	24	501	1012	24
Future Volume (veh/h)	57	68	24	501	1012	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	58	69	24	511	1033	24
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	94	112	47	1349	1154	27
Arrive On Green	0.12	0.12	0.03	0.72	0.63	0.63
Sat Flow, veh/h	757	900	1781	1870	1820	42
Grp Volume(v), veh/h	128	0	24	511	0	1057
Grp Sat Flow(s),veh/h/ln	1670	0	1781	1870	0	1863
Q Serve(g_s), s	5.5	0.0	1.0	7.9	0.0	36.0
Cycle Q Clear(g_c), s	5.5	0.0	1.0	7.9	0.0	36.0
Prop In Lane	0.45	0.54	1.00			0.02
Lane Grp Cap(c), veh/h	207	0	47	1349	0	1181
V/C Ratio(X)	0.62	0.00	0.51	0.38	0.00	0.90
Avail Cap(c_a), veh/h	494	0	123	2149	0	1897
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.2	0.0	36.1	4.0	0.0	11.6
Incr Delay (d2), s/veh	3.0	0.0	3.2	0.2	0.0	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.4	1.3	0.0	10.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.1	0.0	39.3	4.2	0.0	15.3
LnGrp LOS	C	A	D	A	A	B
Approach Vol, veh/h	128			535	1057	
Approach Delay, s/veh	34.1			5.8	15.3	
Approach LOS	C			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		59.9		15.1	6.6	53.3
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		86.2		22.2	5.2	76.4
Max Q Clear Time (g_c+I1), s		9.9		7.5	3.0	38.0
Green Ext Time (p_c), s		3.0		0.3	0.0	9.5

Intersection Summary

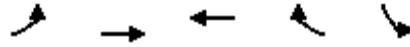
HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021

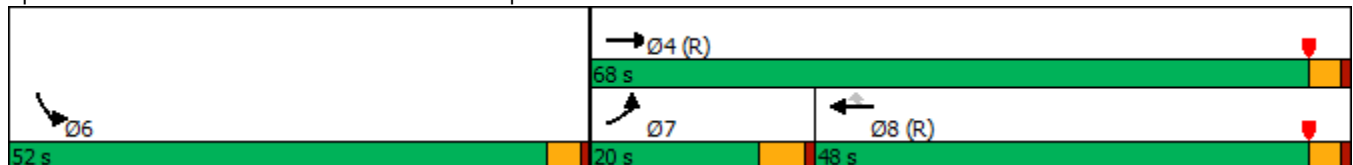


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↗	↑↑	↑↑	↖	↖↖
Traffic Volume (vph)	173	654	840	417	853
Future Volume (vph)	173	654	840	417	853
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	20.0	68.0	48.0	48.0	52.0
Total Split (%)	16.7%	56.7%	40.0%	40.0%	43.3%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	15.6	68.3	47.7	47.7	43.7
Actuated g/C Ratio	0.13	0.57	0.40	0.40	0.36
v/c Ratio	0.80	0.35	0.64	0.50	0.87
Control Delay	65.9	14.1	32.6	4.5	43.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	65.9	14.1	32.6	4.5	43.1
LOS	E	B	C	A	D
Approach Delay		25.0	23.3		43.1
Approach LOS		C	C		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 30.3
 Intersection LOS: C
 Intersection Capacity Utilization 73.3%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↑↑	↖	↗↗		
Traffic Volume (veh/h)	173	654	840	417	853	171	
Future Volume (veh/h)	173	654	840	417	853	171	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	184	696	894	125	1019	0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	208	2181	1619	722	1138	506	
Arrive On Green	0.23	1.00	0.46	0.46	0.32	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	184	696	894	125	1019	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	12.0	0.0	22.0	5.6	32.7	0.0	
Cycle Q Clear(g_c), s	12.0	0.0	22.0	5.6	32.7	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	208	2181	1619	722	1138	506	
V/C Ratio(X)	0.89	0.32	0.55	0.17	0.90	0.00	
Avail Cap(c_a), veh/h	223	2181	1619	722	1425	634	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.93	0.93	0.87	0.87	1.00	0.00	
Uniform Delay (d), s/veh	45.2	0.0	23.8	19.3	38.9	0.0	
Incr Delay (d2), s/veh	29.0	0.4	1.2	0.5	6.6	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	6.3	0.1	9.4	2.2	15.2	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	74.2	0.4	25.0	19.8	45.5	0.0	
LnGrp LOS	E	A	C	B	D	A	
Approach Vol, veh/h		880	1019		1019		
Approach Delay, s/veh		15.8	24.3		45.5		
Approach LOS		B	C		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				77.7	42.3	19.0	58.7
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				64.0	48.0	15.0	44.0
Max Q Clear Time (g_c+I1), s				2.0	34.7	14.0	24.0
Green Ext Time (p_c), s				5.8	3.6	0.1	6.9

Intersection Summary

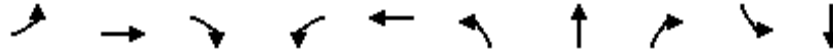
HCM 6th Ctrl Delay	29.1
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

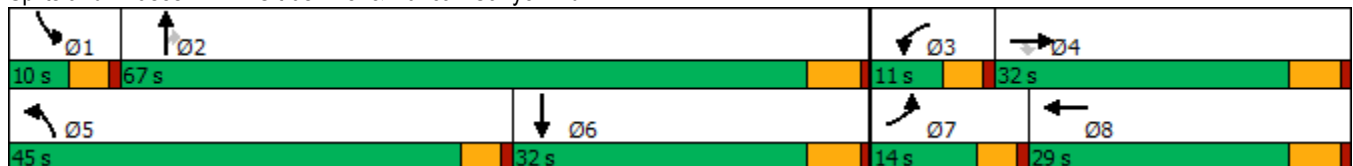


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↘	↑	↗	↘	↗	↘↗	↑	↗	↘	↗↘
Traffic Volume (vph)	45	177	630	19	115	580	16	21	5	9
Future Volume (vph)	45	177	630	19	115	580	16	21	5	9
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	27.8	9.6	27.8	9.6	27.8	27.8	9.6	27.8
Total Split (s)	14.0	32.0	32.0	11.0	29.0	45.0	67.0	67.0	10.0	32.0
Total Split (%)	11.7%	26.7%	26.7%	9.2%	24.2%	37.5%	55.8%	55.8%	8.3%	26.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	None	None	None	None	None
Act Effct Green (s)	7.2	17.7	17.7	6.3	14.6	17.2	18.8	18.8	6.0	11.9
Actuated g/C Ratio	0.13	0.32	0.32	0.12	0.27	0.32	0.34	0.34	0.11	0.22
v/c Ratio	0.20	0.30	0.69	0.10	0.26	0.56	0.03	0.04	0.03	0.05
Control Delay	32.0	19.8	6.5	34.1	22.3	21.3	15.9	0.1	34.8	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	19.8	6.5	34.1	22.3	21.3	15.9	0.1	34.8	16.2
LOS	C	B	A	C	C	C	B	A	C	B
Approach Delay		10.6			23.9		20.4			18.5
Approach LOS		B			C		C			B

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 54.5
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 15.6
 Intersection LOS: B
 Intersection Capacity Utilization 65.0%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	177	630	19	115	10	580	16	21	5	9	27
Future Volume (veh/h)	45	177	630	19	115	10	580	16	21	5	9	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	184	396	20	120	10	604	17	22	5	9	28
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	556	471	42	470	39	753	623	528	12	217	193
Arrive On Green	0.04	0.30	0.30	0.02	0.28	0.28	0.22	0.33	0.33	0.01	0.12	0.12
Sat Flow, veh/h	1781	1870	1585	1781	1703	142	3456	1870	1585	1781	1777	1585
Grp Volume(v), veh/h	47	184	396	20	0	130	604	17	22	5	9	28
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1845	1728	1870	1585	1781	1777	1585
Q Serve(g_s), s	1.6	4.7	14.3	0.7	0.0	3.4	10.2	0.4	0.6	0.2	0.3	1.0
Cycle Q Clear(g_c), s	1.6	4.7	14.3	0.7	0.0	3.4	10.2	0.4	0.6	0.2	0.3	1.0
Prop In Lane	1.00		1.00	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	80	556	471	42	0	509	753	623	528	12	217	193
V/C Ratio(X)	0.59	0.33	0.84	0.48	0.00	0.26	0.80	0.03	0.04	0.42	0.04	0.14
Avail Cap(c_a), veh/h	273	800	678	186	0	698	2278	1868	1583	157	760	678
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.7	16.8	20.2	29.6	0.0	17.3	22.7	13.7	13.8	30.3	23.7	24.0
Incr Delay (d2), s/veh	2.5	0.3	6.5	3.1	0.0	0.3	0.8	0.0	0.0	8.6	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.9	5.6	0.3	0.0	1.4	3.9	0.1	0.2	0.1	0.1	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.2	17.1	26.6	32.7	0.0	17.6	23.5	13.8	13.8	38.9	23.8	24.4
LnGrp LOS	C	B	C	C	A	B	C	B	B	D	C	C
Approach Vol, veh/h		627			150			643				42
Approach Delay, s/veh		24.2			19.6			22.9				26.0
Approach LOS		C			B			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.0	26.2	6.0	24.0	18.0	13.3	7.4	22.7				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	5.4	61.2	6.4	26.2	40.4	26.2	9.4	23.2				
Max Q Clear Time (g_c+I1), s	2.2	2.6	2.7	16.3	12.2	3.0	3.6	5.4				
Green Ext Time (p_c), s	0.0	0.1	0.0	1.9	1.2	0.1	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay				23.2								
HCM 6th LOS				C								

Timings
14: Citrus Ave. & Summit Ave.

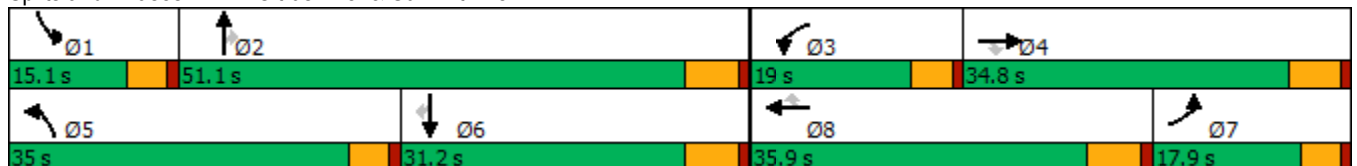
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	483	357	148	376	59	722	324	120	48	223	53
Future Volume (vph)	103	483	357	148	376	59	722	324	120	48	223	53
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	34.8	9.6	34.8	34.8	9.6	31.8	31.8	9.6	30.8	30.8
Total Split (s)	17.9	34.8	34.8	19.0	35.9	35.9	35.0	51.1	51.1	15.1	31.2	31.2
Total Split (%)	14.9%	29.0%	29.0%	15.8%	29.9%	29.9%	29.2%	42.6%	42.6%	12.6%	26.0%	26.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	17.6	21.8	21.8	12.5	16.7	16.7	25.3	33.0	33.0	7.5	12.6	12.6
Actuated g/C Ratio	0.19	0.23	0.23	0.13	0.18	0.18	0.27	0.35	0.35	0.08	0.13	0.13
v/c Ratio	0.34	0.61	0.59	0.68	0.62	0.16	0.82	0.27	0.20	0.37	0.51	0.15
Control Delay	38.8	36.1	7.4	57.1	41.0	0.8	41.0	24.6	3.0	52.7	44.0	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	36.1	7.4	57.1	41.0	0.8	41.0	24.6	3.0	52.7	44.0	0.8
LOS	D	D	A	E	D	A	D	C	A	D	D	A
Approach Delay		25.5			41.0			32.5			38.2	
Approach LOS		C			D			C			D	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 93.5
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 32.6
 Intersection LOS: C
 Intersection Capacity Utilization 68.2%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	483	357	148	376	59	722	324	120	48	223	53
Future Volume (veh/h)	103	483	357	148	376	59	722	324	120	48	223	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	112	525	241	161	409	48	785	352	94	52	242	56
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	840	350	199	637	269	909	1314	541	77	496	218
Arrive On Green	0.15	0.22	0.22	0.11	0.17	0.17	0.26	0.35	0.35	0.04	0.14	0.14
Sat Flow, veh/h	1781	3741	1561	1781	3741	1579	3563	3741	1539	1781	3554	1561
Grp Volume(v), veh/h	112	525	241	161	409	48	785	352	94	52	242	56
Grp Sat Flow(s),veh/h/ln	1781	1870	1561	1781	1870	1579	1781	1870	1539	1781	1777	1561
Q Serve(g_s), s	4.4	9.8	11.0	6.8	7.9	1.6	16.3	5.2	3.3	2.2	4.9	1.6
Cycle Q Clear(g_c), s	4.4	9.8	11.0	6.8	7.9	1.6	16.3	5.2	3.3	2.2	4.9	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	840	350	199	637	269	909	1314	541	77	496	218
V/C Ratio(X)	0.42	0.63	0.69	0.81	0.64	0.18	0.86	0.27	0.17	0.67	0.49	0.26
Avail Cap(c_a), veh/h	306	1403	585	332	1456	615	1401	2191	902	242	1167	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	27.1	27.5	33.5	29.9	16.9	27.5	18.0	17.3	36.4	30.7	12.6
Incr Delay (d2), s/veh	0.4	0.8	2.4	3.0	1.1	0.3	2.3	0.1	0.2	3.7	0.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.3	4.2	3.0	3.5	0.8	6.9	2.2	1.1	1.0	2.1	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.2	27.8	29.9	36.5	31.0	17.2	29.8	18.1	17.5	40.1	31.5	13.2
LnGrp LOS	C	C	C	D	C	B	C	B	B	D	C	B
Approach Vol, veh/h		878			618			1231			350	
Approach Delay, s/veh		28.7			31.3			25.5			29.8	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.0	33.0	13.2	23.2	24.3	16.6	17.4	19.0				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	5.8	* 5.8				
Max Green Setting (Gmax), s	10.5	45.3	14.4	29.0	30.4	25.4	13.3	* 30				
Max Q Clear Time (g_c+I1), s	4.2	7.2	8.8	13.0	18.3	6.9	6.4	9.9				
Green Ext Time (p_c), s	0.0	2.9	0.1	4.0	1.4	1.6	0.1	2.8				
Intersection Summary												
HCM 6th Ctrl Delay			28.1									
HCM 6th LOS			C									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

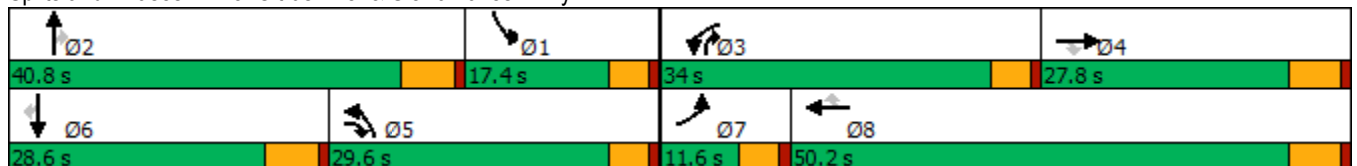
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	351	341	655	333	239	683	602	811	209	486	75
Future Volume (vph)	85	351	341	655	333	239	683	602	811	209	486	75
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	27.8	9.6	27.8	9.6	9.6	27.8	27.8
Total Split (s)	11.6	27.8	29.6	34.0	50.2	50.2	29.6	40.8	34.0	17.4	28.6	28.6
Total Split (%)	9.7%	23.2%	24.7%	28.3%	41.8%	41.8%	24.7%	34.0%	28.3%	14.5%	23.8%	23.8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	4.6	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	Min
Act Effct Green (s)	6.5	16.3	41.7	29.6	41.6	41.6	24.3	24.9	55.7	19.2	19.8	19.8
Actuated g/C Ratio	0.06	0.15	0.38	0.27	0.38	0.38	0.22	0.22	0.50	0.17	0.18	0.18
v/c Ratio	0.43	0.67	0.54	0.72	0.25	0.34	0.92	0.75	1.02	0.36	0.76	0.17
Control Delay	59.1	51.6	12.5	43.3	25.8	4.5	61.0	46.1	52.8	44.4	51.9	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.1	51.6	12.5	43.3	25.8	4.5	61.0	46.1	52.8	44.4	51.9	0.9
LOS	E	D	B	D	C	A	E	D	D	D	D	A
Approach Delay		35.3			31.0			53.6			44.9	
Approach LOS		D			C			D			D	

Intersection Summary

































Cycle Length: 120
 Actuated Cycle Length: 110.8
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 43.6
 Intersection LOS: D
 Intersection Capacity Utilization 79.5%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	85	351	341	655	333	239	683	602	811	209	486	75
Future Volume (veh/h)	85	351	341	655	333	239	683	602	811	209	486	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	366	321	682	347	223	711	627	454	218	506	59
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	558	589	783	1196	500	802	902	725	574	663	277
Arrive On Green	0.05	0.15	0.15	0.22	0.32	0.32	0.23	0.24	0.24	0.16	0.18	0.18
Sat Flow, veh/h	3563	3741	1554	3563	3741	1564	3563	3741	1565	3563	3741	1562
Grp Volume(v), veh/h	89	366	321	682	347	223	711	627	454	218	506	59
Grp Sat Flow(s),veh/h/ln	1781	1870	1554	1781	1870	1564	1781	1870	1565	1781	1870	1562
Q Serve(g_s), s	2.2	8.4	6.4	16.8	6.3	6.1	17.6	13.9	7.9	5.0	11.7	2.4
Cycle Q Clear(g_c), s	2.2	8.4	6.4	16.8	6.3	6.1	17.6	13.9	7.9	5.0	11.7	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	558	589	783	1196	500	802	902	725	574	663	277
V/C Ratio(X)	0.51	0.66	0.55	0.87	0.29	0.45	0.89	0.70	0.63	0.38	0.76	0.21
Avail Cap(c_a), veh/h	274	906	733	1153	1828	764	980	1441	951	574	939	392
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.1	36.5	7.5	34.2	23.2	8.7	34.1	31.4	5.8	34.1	35.6	20.5
Incr Delay (d2), s/veh	0.8	1.3	0.8	3.7	0.1	0.6	7.6	1.0	0.9	0.2	2.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.9	2.6	7.5	2.8	3.5	8.2	6.3	3.1	2.1	5.4	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	37.8	8.3	37.9	23.3	9.3	41.6	32.4	6.7	34.2	38.0	20.9
LnGrp LOS	D	D	A	D	C	A	D	C	A	C	D	C
Approach Vol, veh/h		776			1252			1792			783	
Approach Delay, s/veh		26.2			28.7			29.6			35.6	
Approach LOS		C			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.2	27.7	24.6	19.4	25.1	21.9	9.1	34.8				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	12.8	35.0	29.4	22.0	25.0	22.8	7.0	44.4				
Max Q Clear Time (g_c+I1), s	7.0	15.9	18.8	10.4	19.6	13.7	4.2	8.3				
Green Ext Time (p_c), s	0.2	6.0	1.2	2.8	0.9	2.4	0.0	3.3				
Intersection Summary												
HCM 6th Ctrl Delay				29.8								
HCM 6th LOS				C								

Timings
16: Sierra Ave/Sierra Ave. & Riverside Ave.

Ventana (JN 13769)
04/06/2022

	↙	↖	↑	↘	↓
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↖	↑↔	↘	↑↑
Traffic Volume (vph)	67	453	630	464	604
Future Volume (vph)	67	453	630	464	604
Turn Type	Prot	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	27.8	27.8	27.8	9.6	15.8
Total Split (s)	42.3	42.3	45.9	31.8	77.7
Total Split (%)	35.3%	35.3%	38.3%	26.5%	64.8%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	11.5	11.5	22.7	27.5	54.8
Actuated g/C Ratio	0.15	0.15	0.29	0.35	0.70
v/c Ratio	0.27	0.75	0.71	0.79	0.26
Control Delay	33.8	11.5	28.6	35.9	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	11.5	28.6	35.9	4.7
LOS	C	B	C	D	A
Approach Delay	14.4		28.6		18.2
Approach LOS	B		C		B

Intersection Summary














Cycle Length: 120
 Actuated Cycle Length: 78
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 20.4
 Intersection LOS: C
 Intersection Capacity Utilization 66.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 16: Sierra Ave/Sierra Ave. & Riverside Ave.



HCM 6th Signalized Intersection Summary
 16: Sierra Ave/Sierra Ave. & Riverside Ave.

Ventana (JN 13769)
 04/06/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (veh/h)	67	453	630	48	464	604
Future Volume (veh/h)	67	453	630	48	464	604
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	83	670	-82	494	643
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	309	275	1467	0	561	2132
Arrive On Green	0.17	0.17	0.20	0.00	0.31	0.60
Sat Flow, veh/h	1781	1585	3741	0	1781	3647
Grp Volume(v), veh/h	71	83	588	0	494	643
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	0	1781	1777
Q Serve(g_s), s	1.8	2.3	0.0	0.0	13.5	4.5
Cycle Q Clear(g_c), s	1.8	2.3	0.0	0.0	13.5	4.5
Prop In Lane	1.00	1.00		0.00	1.00	
Lane Grp Cap(c), veh/h	309	275	0	0	561	2132
V/C Ratio(X)	0.23	0.30	0.00	0.00	0.88	0.30
Avail Cap(c_a), veh/h	1270	1130	0	0	946	4990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.2	18.5	0.0	0.0	16.6	5.0
Incr Delay (d2), s/veh	0.1	0.2	0.0	0.0	2.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.8	0.0	0.0	5.1	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.4	18.7	0.0	0.0	19.4	5.1
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	154		588			1137
Approach Delay, s/veh	18.5		0.0			11.3
Approach LOS	B		A			B
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	20.7	15.8			36.5	14.7
Change Period (Y+Rc), s	4.6	5.8			5.8	5.8
Max Green Setting (Gmax), s	27.2	40.1			71.9	36.5
Max Q Clear Time (g_c+I1), s	15.5	2.0			6.5	4.3
Green Ext Time (p_c), s	0.7	4.6			5.2	0.2
Intersection Summary						
HCM 6th Ctrl Delay			8.3			
HCM 6th LOS			A			

Timings
17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	41	73	1082	741
Future Volume (vph)	41	73	1082	741
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	5	2	6
Permitted Phases				
Detector Phase	4	5	2	6
Switch Phase				
Minimum Initial (s)	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	9.6	15.8	27.8
Total Split (s)	27.8	15.0	92.2	77.2
Total Split (%)	23.2%	12.5%	76.8%	64.3%
Yellow Time (s)	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	5.8	5.8
Lead/Lag		Lead		Lag
Lead-Lag Optimize?		Yes		Yes
Recall Mode	None	None	Min	Min
Act Effct Green (s)	11.7	8.3	58.4	48.7
Actuated g/C Ratio	0.16	0.11	0.78	0.65
v/c Ratio	0.30	0.39	0.78	0.70
Control Delay	26.7	44.5	11.7	16.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	26.7	44.5	11.7	16.7
LOS	C	D	B	B
Approach Delay	26.7		13.7	16.7
Approach LOS	C		B	B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 74.9
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 15.4
 Intersection LOS: B
 Intersection Capacity Utilization 74.9%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 17: Sierra Ave & Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	41	44	73	1082	741	62
Future Volume (veh/h)	41	44	73	1082	741	62
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	46	76	1127	772	65
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	97	104	101	1319	987	83
Arrive On Green	0.12	0.12	0.06	0.71	0.58	0.58
Sat Flow, veh/h	801	857	1781	1870	1701	143
Grp Volume(v), veh/h	90	0	76	1127	0	837
Grp Sat Flow(s),veh/h/ln	1676	0	1781	1870	0	1845
Q Serve(g_s), s	3.3	0.0	2.8	29.9	0.0	23.3
Cycle Q Clear(g_c), s	3.3	0.0	2.8	29.9	0.0	23.3
Prop In Lane	0.48	0.51	1.00			0.08
Lane Grp Cap(c), veh/h	204	0	101	1319	0	1070
V/C Ratio(X)	0.44	0.00	0.75	0.85	0.00	0.78
Avail Cap(c_a), veh/h	551	0	277	2416	0	1969
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.3	0.0	31.1	7.3	0.0	10.8
Incr Delay (d2), s/veh	1.5	0.0	4.2	1.7	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	1.3	8.0	0.0	7.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.8	0.0	35.3	9.0	0.0	12.1
LnGrp LOS	C	A	D	A	A	B
Approach Vol, veh/h	90			1203	837	
Approach Delay, s/veh	28.8			10.7	12.1	
Approach LOS	C			B	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		53.0		13.9	8.4	44.6
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		86.4		22.0	10.4	71.4
Max Q Clear Time (g_c+I1), s		31.9		5.3	4.8	25.3
Green Ext Time (p_c), s		15.3		0.2	0.0	8.1

Intersection Summary

HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX 5.8:

**OPENING YEAR CUMULATIVE (2023) WITH PROJECT CONDITIONS INTERSECTION
OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS**

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Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021

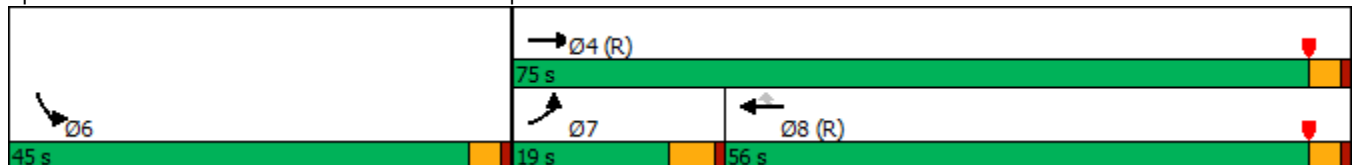


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↗↗	↗↗	↖	↖↖↖
Traffic Volume (vph)	74	619	1013	166	341
Future Volume (vph)	74	619	1013	166	341
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	19.0	75.0	56.0	56.0	45.0
Total Split (%)	15.8%	62.5%	46.7%	46.7%	37.5%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	11.6	88.0	71.4	71.4	24.0
Actuated g/C Ratio	0.10	0.73	0.60	0.60	0.20
v/c Ratio	0.54	0.30	0.60	0.21	0.78
Control Delay	63.6	5.9	18.2	4.0	50.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.6	5.9	18.2	4.0	50.6
LOS	E	A	B	A	D
Approach Delay		12.1	16.2		50.6
Approach LOS		B	B		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 21.4
 Intersection LOS: C
 Intersection Capacity Utilization 55.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↑↑	↗	↙↘		
Traffic Volume (veh/h)	74	619	1013	166	341	95	
Future Volume (veh/h)	74	619	1013	166	341	95	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	92	774	1266	144	467	0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	115	2755	2378	1061	563	251	
Arrive On Green	0.13	1.00	0.67	0.67	0.16	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	92	774	1266	144	467	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	6.0	0.0	22.0	4.0	15.2	0.0	
Cycle Q Clear(g_c), s	6.0	0.0	22.0	4.0	15.2	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	115	2755	2378	1061	563	251	
V/C Ratio(X)	0.80	0.28	0.53	0.14	0.83	0.00	
Avail Cap(c_a), veh/h	208	2755	2378	1061	1217	542	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.94	0.94	0.75	0.75	1.00	0.00	
Uniform Delay (d), s/veh	51.5	0.0	10.2	7.2	48.9	0.0	
Incr Delay (d2), s/veh	11.5	0.2	0.6	0.2	3.2	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	2.8	0.1	7.6	1.2	7.1	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	63.0	0.2	10.8	7.4	52.1	0.0	
LnGrp LOS	E	A	B	A	D	A	
Approach Vol, veh/h		866	1410		467		
Approach Delay, s/veh		6.9	10.5		52.1		
Approach LOS		A	B		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				97.0	23.0	12.7	84.3
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				71.0	41.0	14.0	52.0
Max Q Clear Time (g_c+I1), s				2.0	17.2	8.0	24.0
Green Ext Time (p_c), s				5.7	1.7	0.1	10.7

Intersection Summary

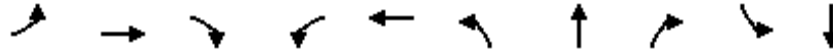
HCM 6th Ctrl Delay	16.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

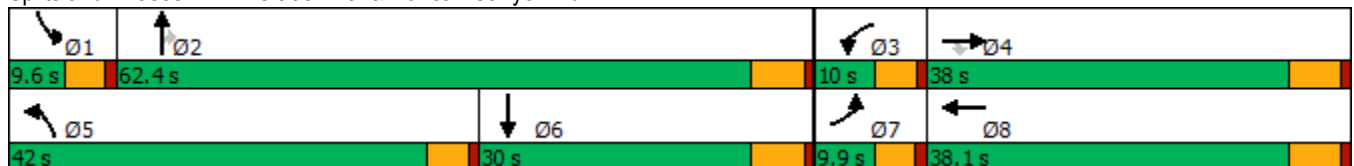


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	14	218	616	29	191	855	132	32	8	146
Future Volume (vph)	14	218	616	29	191	855	132	32	8	146
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	27.8	9.6	27.8	9.6	27.8	27.8	9.6	27.8
Total Split (s)	9.9	38.0	38.0	10.0	38.1	42.0	62.4	62.4	9.6	30.0
Total Split (%)	8.3%	31.7%	31.7%	8.3%	31.8%	35.0%	52.0%	52.0%	8.0%	25.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	None	None	None	None	None
Act Effct Green (s)	5.5	18.0	18.0	5.6	21.6	25.1	40.1	40.1	5.4	11.5
Actuated g/C Ratio	0.07	0.23	0.23	0.07	0.28	0.33	0.52	0.52	0.07	0.15
v/c Ratio	0.12	0.52	0.75	0.24	0.39	0.80	0.14	0.04	0.07	0.37
Control Delay	45.6	32.9	8.8	47.0	26.3	30.8	13.3	0.1	45.0	32.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	32.9	8.8	47.0	26.3	30.8	13.3	0.1	45.0	32.0
LOS	D	C	A	D	C	C	B	A	D	C
Approach Delay		15.6			29.0		27.6			32.6
Approach LOS		B			C		C			C

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 77
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 23.7
 Intersection LOS: C
 Intersection Capacity Utilization 65.7%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	218	616	29	191	3	855	132	32	8	146	41
Future Volume (veh/h)	14	218	616	29	191	3	855	132	32	8	146	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	227	460	30	199	3	891	138	33	8	152	43
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	31	600	508	53	612	9	1000	741	628	18	322	88
Arrive On Green	0.02	0.32	0.32	0.03	0.33	0.33	0.29	0.40	0.40	0.01	0.12	0.12
Sat Flow, veh/h	1781	1870	1585	1781	1838	28	3456	1870	1585	1781	2755	756
Grp Volume(v), veh/h	15	227	460	30	0	202	891	138	33	8	96	99
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1865	1728	1870	1585	1781	1777	1734
Q Serve(g_s), s	0.7	8.0	23.7	1.4	0.0	6.9	21.1	4.1	1.1	0.4	4.3	4.6
Cycle Q Clear(g_c), s	0.7	8.0	23.7	1.4	0.0	6.9	21.1	4.1	1.1	0.4	4.3	4.6
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	31	600	508	53	0	621	1000	741	628	18	208	203
V/C Ratio(X)	0.48	0.38	0.91	0.57	0.00	0.33	0.89	0.19	0.05	0.44	0.46	0.49
Avail Cap(c_a), veh/h	110	705	597	113	0	705	1512	1239	1050	104	503	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.6	22.5	27.8	40.9	0.0	21.3	29.1	16.8	15.9	42.1	35.2	35.3
Incr Delay (d2), s/veh	4.2	0.4	15.8	3.5	0.0	0.3	3.4	0.1	0.0	6.2	1.6	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.3	10.4	0.6	0.0	2.8	8.5	1.6	0.4	0.2	1.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.8	22.8	43.6	44.4	0.0	21.6	32.5	16.9	15.9	48.3	36.8	37.1
LnGrp LOS	D	C	D	D	A	C	C	B	B	D	D	D
Approach Vol, veh/h		702			232			1062			203	
Approach Delay, s/veh		36.9			24.6			29.9			37.4	
Approach LOS		D			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.5	39.7	7.1	33.2	29.3	15.8	6.1	34.2				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	5.0	56.6	5.4	32.2	37.4	24.2	5.3	32.3				
Max Q Clear Time (g_c+I1), s	2.4	6.1	3.4	25.7	23.1	6.6	2.7	8.9				
Green Ext Time (p_c), s	0.0	0.8	0.0	1.7	1.6	0.8	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay			32.3									
HCM 6th LOS			C									

Timings
14: Citrus Ave. & Summit Ave.

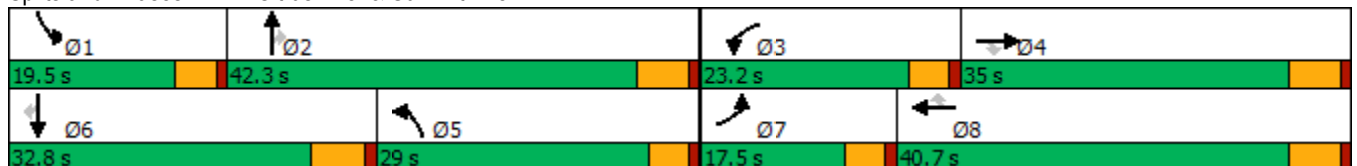
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	145	160	148	236	94	465	241	87	105	251	139
Future Volume (vph)	89	145	160	148	236	94	465	241	87	105	251	139
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	34.8	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	17.5	35.0	35.0	23.2	40.7	40.7	29.0	42.3	42.3	19.5	32.8	32.8
Total Split (%)	14.6%	29.2%	29.2%	19.3%	33.9%	33.9%	24.2%	35.3%	35.3%	16.3%	27.3%	27.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.5	10.4	10.4	10.9	15.2	15.2	14.3	19.4	19.4	9.1	11.7	11.7
Actuated g/C Ratio	0.12	0.15	0.15	0.16	0.22	0.22	0.21	0.28	0.28	0.13	0.17	0.17
v/c Ratio	0.42	0.27	0.41	0.55	0.30	0.21	0.65	0.24	0.17	0.46	0.43	0.36
Control Delay	35.9	29.7	6.3	35.4	26.6	2.2	30.1	22.1	1.7	35.9	29.2	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	29.7	6.3	35.4	26.6	2.2	30.1	22.1	1.7	35.9	29.2	7.0
LOS	D	C	A	D	C	A	C	C	A	D	C	A
Approach Delay		21.6			24.5			24.5			24.4	
Approach LOS		C			C			C			C	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 68.5
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 24.0
 Intersection LOS: C
 Intersection Capacity Utilization 57.0%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	145	160	148	236	94	465	241	87	105	251	139
Future Volume (veh/h)	89	145	160	148	236	94	465	241	87	105	251	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	93	151	78	154	246	56	484	251	76	109	261	103
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	120	663	280	197	825	349	627	1070	443	141	601	268
Arrive On Green	0.07	0.18	0.18	0.11	0.22	0.22	0.18	0.29	0.29	0.08	0.17	0.17
Sat Flow, veh/h	1781	3741	1577	1781	3741	1583	3563	3741	1549	1781	3554	1585
Grp Volume(v), veh/h	93	151	78	154	246	56	484	251	76	109	261	103
Grp Sat Flow(s),veh/h/ln	1781	1870	1577	1781	1870	1583	1781	1870	1549	1781	1777	1585
Q Serve(g_s), s	3.1	2.1	1.4	5.0	3.3	1.7	7.8	3.1	2.2	3.6	3.9	2.5
Cycle Q Clear(g_c), s	3.1	2.1	1.4	5.0	3.3	1.7	7.8	3.1	2.2	3.6	3.9	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	120	663	280	197	825	349	627	1070	443	141	601	268
V/C Ratio(X)	0.77	0.23	0.28	0.78	0.30	0.16	0.77	0.23	0.17	0.77	0.43	0.38
Avail Cap(c_a), veh/h	383	1822	768	553	2177	921	1450	2277	943	443	1600	714
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	21.1	6.5	26.0	19.5	18.9	23.6	16.4	16.1	27.1	22.3	11.2
Incr Delay (d2), s/veh	4.0	0.2	0.5	2.6	0.2	0.2	0.8	0.1	0.2	3.4	0.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.8	0.8	2.0	1.3	0.6	2.9	1.1	0.7	1.5	1.5	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.5	21.3	7.0	28.5	19.7	19.1	24.3	16.5	16.3	30.4	22.8	12.1
LnGrp LOS	C	C	A	C	B	B	C	B	B	C	C	B
Approach Vol, veh/h		322			456			811			473	
Approach Delay, s/veh		20.8			22.6			21.1			22.2	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.3	22.9	11.2	16.4	16.4	15.9	8.6	19.0				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	5.8	* 5.8	4.6	5.8				
Max Green Setting (Gmax), s	14.9	36.5	18.6	29.2	24.4	* 27	12.9	34.9				
Max Q Clear Time (g_c+I1), s	5.6	5.1	7.0	4.1	9.8	5.9	5.1	5.3				
Green Ext Time (p_c), s	0.1	1.7	0.1	1.0	0.8	1.7	0.1	1.6				

Intersection Summary

HCM 6th Ctrl Delay	21.7
HCM 6th LOS	C

Notes

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

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

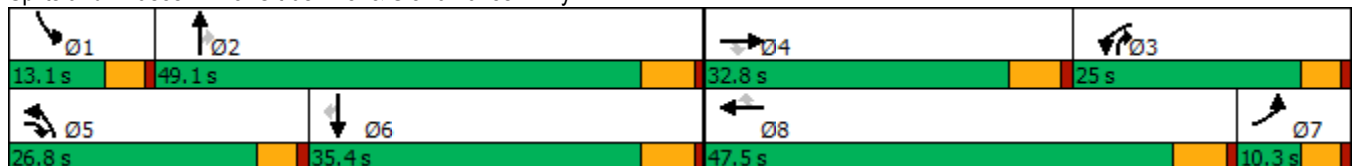
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	221	346	522	176	101	580	413	630	114	539	68
Future Volume (vph)	65	221	346	522	176	101	580	413	630	114	539	68
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	32.8	9.6	9.6	34.8	34.8	9.6	34.8	9.6	9.6	34.8	34.8
Total Split (s)	10.3	32.8	26.8	25.0	47.5	47.5	26.8	49.1	25.0	13.1	35.4	35.4
Total Split (%)	8.6%	27.3%	22.3%	20.8%	39.6%	39.6%	22.3%	40.9%	20.8%	10.9%	29.5%	29.5%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	4.6	4.6	5.8	5.8
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	Min
Act Effct Green (s)	17.8	12.0	34.7	19.6	16.1	16.1	21.5	35.2	56.1	7.4	21.2	21.2
Actuated g/C Ratio	0.19	0.13	0.36	0.21	0.17	0.17	0.23	0.37	0.59	0.08	0.22	0.22
v/c Ratio	0.11	0.51	0.58	0.78	0.30	0.28	0.79	0.33	0.67	0.45	0.71	0.15
Control Delay	32.4	44.2	12.4	45.5	40.9	4.6	44.3	22.5	8.4	49.4	39.6	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	44.2	12.4	45.5	40.9	4.6	44.3	22.5	8.4	49.4	39.6	0.6
LOS	C	D	B	D	D	A	D	C	A	D	D	A
Approach Delay		25.6			39.3			24.8			37.5	
Approach LOS		C			D			C			D	

Intersection Summary

































Cycle Length: 120
 Actuated Cycle Length: 95.3
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 30.4
 Intersection LOS: C
 Intersection Capacity Utilization 73.4%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	65	221	346	522	176	101	580	413	630	114	539	68
Future Volume (veh/h)	65	221	346	522	176	101	580	413	630	114	539	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	240	137	567	191	83	630	449	359	124	586	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	664	493	533	667	496	210	732	1359	872	208	808	343
Arrive On Green	0.19	0.13	0.13	0.19	0.13	0.13	0.21	0.36	0.36	0.06	0.22	0.22
Sat Flow, veh/h	3563	3741	1574	3563	3741	1585	3563	3741	1582	3563	3741	1585
Grp Volume(v), veh/h	71	240	137	567	191	83	630	449	359	124	586	63
Grp Sat Flow(s),veh/h/ln	1781	1870	1574	1781	1870	1585	1781	1870	1582	1781	1870	1585
Q Serve(g_s), s	1.3	4.8	2.2	12.3	3.7	3.0	13.7	7.0	2.7	2.7	11.7	1.6
Cycle Q Clear(g_c), s	1.3	4.8	2.2	12.3	3.7	3.0	13.7	7.0	2.7	2.7	11.7	1.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	664	493	533	667	496	210	732	1359	872	208	808	343
V/C Ratio(X)	0.11	0.49	0.26	0.85	0.39	0.39	0.86	0.33	0.41	0.60	0.72	0.18
Avail Cap(c_a), veh/h	664	1259	856	906	1945	824	986	2019	1151	378	1380	585
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	32.3	6.3	31.5	31.8	19.5	30.7	18.5	2.9	36.8	29.2	9.1
Incr Delay (d2), s/veh	0.0	0.7	0.3	4.5	0.5	1.2	4.7	0.1	0.3	1.0	1.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.1	0.9	5.3	1.6	1.4	5.9	2.7	0.7	1.1	5.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.1	33.0	6.5	36.0	32.3	20.7	35.5	18.6	3.2	37.9	30.5	9.4
LnGrp LOS	C	C	A	D	C	C	D	B	A	D	C	A
Approach Vol, veh/h		448			841			1438			773	
Approach Delay, s/veh		24.0			33.6			22.1			29.9	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.3	34.9	19.6	16.4	21.1	23.1	19.5	16.4				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	8.5	43.3	20.4	27.0	22.2	29.6	5.7	41.7				
Max Q Clear Time (g_c+1), s	4.7	9.0	14.3	6.8	15.7	13.7	3.3	5.7				
Green Ext Time (p_c), s	0.1	4.2	0.7	1.7	0.8	3.4	0.0	1.4				
Intersection Summary												
HCM 6th Ctrl Delay			26.9									
HCM 6th LOS			C									

Timings
16: Sierra Ave/Sierra Ave. & Riverside Ave.

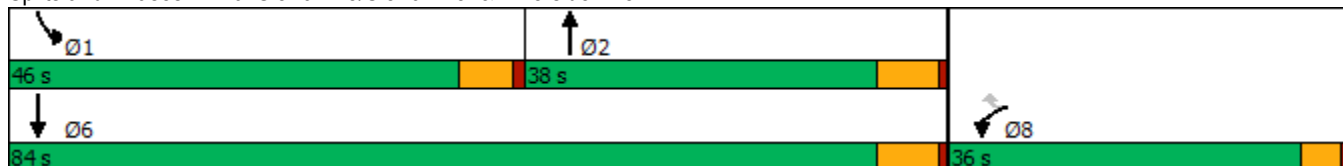
Ventana (JN 13769)
04/06/2022

	↙	↖	↑	↘	↓
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↖	↑↔	↘	↑↑
Traffic Volume (vph)	82	468	489	377	620
Future Volume (vph)	82	468	489	377	620
Turn Type	Prot	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	26.6	26.6	28.5	15.8	16.5
Total Split (s)	36.0	36.0	38.0	46.0	84.0
Total Split (%)	30.0%	30.0%	31.7%	38.3%	70.0%
Yellow Time (s)	3.6	3.6	5.5	4.8	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	6.5	5.8	6.5
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	9.6	9.6	19.9	22.1	48.3
Actuated g/C Ratio	0.14	0.14	0.28	0.32	0.69
v/c Ratio	0.36	0.77	0.64	0.73	0.28
Control Delay	35.6	12.5	25.9	31.5	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.6	12.5	25.9	31.5	4.5
LOS	D	B	C	C	A
Approach Delay	16.0		25.9		14.7
Approach LOS	B		C		B

Intersection Summary














Cycle Length: 120
 Actuated Cycle Length: 69.9
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 18.1
 Intersection LOS: B
 Intersection Capacity Utilization 56.3%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 16: Sierra Ave/Sierra Ave. & Riverside Ave.



HCM 6th Signalized Intersection Summary
 16: Sierra Ave/Sierra Ave. & Riverside Ave.

Ventana (JN 13769)
 04/06/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (veh/h)	82	468	489	102	377	620
Future Volume (veh/h)	82	468	489	102	377	620
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	237	532	51	410	674
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	333	296	779	75	473	2166
Arrive On Green	0.19	0.19	0.24	0.24	0.27	0.61
Sat Flow, veh/h	1781	1585	3371	313	1781	3647
Grp Volume(v), veh/h	89	237	288	295	410	674
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1814	1781	1777
Q Serve(g_s), s	2.3	7.8	8.0	8.1	12.0	5.0
Cycle Q Clear(g_c), s	2.3	7.8	8.0	8.1	12.0	5.0
Prop In Lane	1.00	1.00		0.17	1.00	
Lane Grp Cap(c), veh/h	333	296	423	431	473	2166
V/C Ratio(X)	0.27	0.80	0.68	0.68	0.87	0.31
Avail Cap(c_a), veh/h	1025	912	1026	1048	1313	5049
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.0	21.2	18.9	18.9	19.1	5.1
Incr Delay (d2), s/veh	0.2	1.9	1.9	1.9	1.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.6	2.8	2.9	4.0	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.1	23.1	20.8	20.9	21.1	5.2
LnGrp LOS	B	C	C	C	C	A
Approach Vol, veh/h	326		583			1084
Approach Delay, s/veh	22.0		20.8			11.2
Approach LOS	C		C			B
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	20.3	19.5			39.7	14.8
Change Period (Y+Rc), s	5.8	6.5			6.5	4.6
Max Green Setting (Gmax), s	40.2	31.5			77.5	31.4
Max Q Clear Time (g_c+I1), s	14.0	10.1			7.0	9.8
Green Ext Time (p_c), s	0.5	2.9			4.4	0.5
Intersection Summary						
HCM 6th Ctrl Delay			15.8			
HCM 6th LOS			B			

Timings
17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	103	24	501	1012
Future Volume (vph)	103	24	501	1012
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	5	2	6
Permitted Phases				
Detector Phase	4	5	2	6
Switch Phase				
Minimum Initial (s)	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	9.6	15.8	27.8
Total Split (s)	28.0	9.8	92.0	82.2
Total Split (%)	23.3%	8.2%	76.7%	68.5%
Yellow Time (s)	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	5.8	5.8
Lead/Lag		Lead		Lag
Lead-Lag Optimize?		Yes		Yes
Recall Mode	None	None	Min	Min
Act Effct Green (s)	15.3	5.4	71.7	66.7
Actuated g/C Ratio	0.15	0.05	0.72	0.67
v/c Ratio	0.61	0.25	0.38	0.89
Control Delay	46.5	60.1	6.3	25.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	46.5	60.1	6.3	25.8
LOS	D	E	A	C
Approach Delay	46.5		8.7	25.8
Approach LOS	D		A	C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 99.2
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 22.7
 Intersection LOS: C
 Intersection Capacity Utilization 77.2%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 17: Sierra Ave & Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	103	68	24	501	1012	73
Future Volume (veh/h)	103	68	24	501	1012	73
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	105	69	24	511	1033	74
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	129	84	45	1377	1131	81
Arrive On Green	0.13	0.13	0.03	0.74	0.66	0.66
Sat Flow, veh/h	1019	670	1781	1870	1725	124
Grp Volume(v), veh/h	175	0	24	511	0	1107
Grp Sat Flow(s),veh/h/ln	1699	0	1781	1870	0	1848
Q Serve(g_s), s	8.5	0.0	1.1	8.4	0.0	43.3
Cycle Q Clear(g_c), s	8.5	0.0	1.1	8.4	0.0	43.3
Prop In Lane	0.60	0.39	1.00			0.07
Lane Grp Cap(c), veh/h	214	0	45	1377	0	1213
V/C Ratio(X)	0.82	0.00	0.53	0.37	0.00	0.91
Avail Cap(c_a), veh/h	448	0	110	1914	0	1676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.9	0.0	40.5	4.0	0.0	12.4
Incr Delay (d2), s/veh	7.4	0.0	3.5	0.2	0.0	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	0.5	1.6	0.0	13.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.3	0.0	44.0	4.2	0.0	18.7
LnGrp LOS	D	A	D	A	A	B
Approach Vol, veh/h	175			535	1107	
Approach Delay, s/veh	43.3			6.0	18.7	
Approach LOS	D			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		67.8		16.4	6.7	61.1
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		86.2		22.2	5.2	76.4
Max Q Clear Time (g_c+I1), s		10.4		10.5	3.1	45.3
Green Ext Time (p_c), s		3.0		0.3	0.0	10.0

Intersection Summary

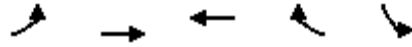
HCM 6th Ctrl Delay	17.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021

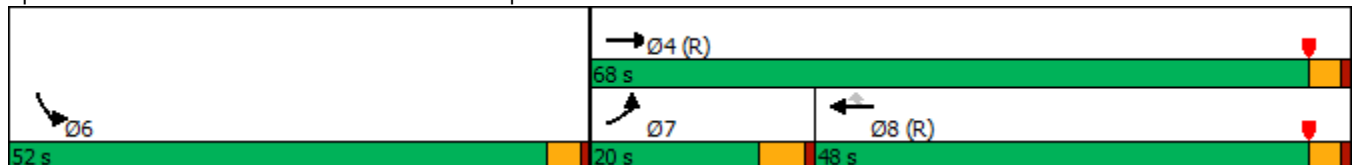


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↗	↑↑	↑↑	↖	↘↘
Traffic Volume (vph)	173	661	845	417	853
Future Volume (vph)	173	661	845	417	853
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	20.0	68.0	48.0	48.0	52.0
Total Split (%)	16.7%	56.7%	40.0%	40.0%	43.3%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	15.6	68.3	47.7	47.7	43.7
Actuated g/C Ratio	0.13	0.57	0.40	0.40	0.36
v/c Ratio	0.80	0.35	0.64	0.50	0.87
Control Delay	66.0	14.2	32.7	4.5	43.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	66.0	14.2	32.7	4.5	43.1
LOS	E	B	C	A	D
Approach Delay		24.9	23.4		43.1
Approach LOS		C	C		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 30.3
 Intersection LOS: C
 Intersection Capacity Utilization 73.5%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

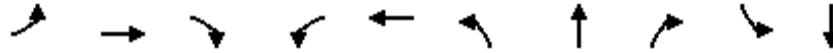
Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	173	661	845	417	853	171	
Future Volume (veh/h)	173	661	845	417	853	171	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	184	703	899	125	1019	0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	208	2181	1619	722	1138	506	
Arrive On Green	0.23	1.00	0.46	0.46	0.32	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	184	703	899	125	1019	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	12.0	0.0	22.1	5.6	32.7	0.0	
Cycle Q Clear(g_c), s	12.0	0.0	22.1	5.6	32.7	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	208	2181	1619	722	1138	506	
V/C Ratio(X)	0.89	0.32	0.56	0.17	0.90	0.00	
Avail Cap(c_a), veh/h	223	2181	1619	722	1425	634	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.93	0.93	0.87	0.87	1.00	0.00	
Uniform Delay (d), s/veh	45.2	0.0	23.8	19.3	38.9	0.0	
Incr Delay (d2), s/veh	29.0	0.4	1.2	0.5	6.6	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	6.3	0.1	9.5	2.2	15.2	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	74.2	0.4	25.0	19.8	45.5	0.0	
LnGrp LOS	E	A	C	B	D	A	
Approach Vol, veh/h		887	1024		1019		
Approach Delay, s/veh		15.7	24.4		45.5		
Approach LOS		B	C		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				77.7	42.3	19.0	58.7
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				64.0	48.0	15.0	44.0
Max Q Clear Time (g_c+I1), s				2.0	34.7	14.0	24.1
Green Ext Time (p_c), s				5.9	3.6	0.1	6.9
Intersection Summary							
HCM 6th Ctrl Delay			29.1				
HCM 6th LOS			C				
Notes							
User approved volume balancing among the lanes for turning movement.							

Timings
12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

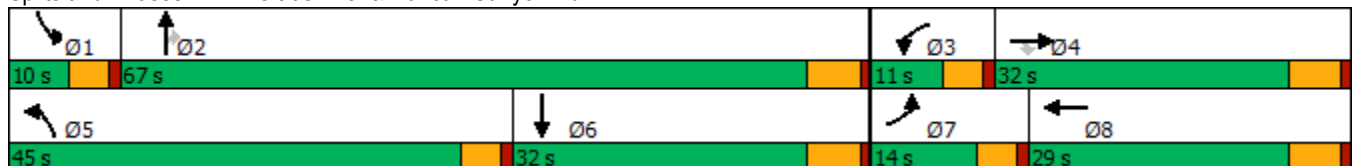


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↘	↑	↗	↘	↗	↘↗	↑	↗	↘	↗↘
Traffic Volume (vph)	45	185	646	19	126	612	107	21	5	88
Future Volume (vph)	45	185	646	19	126	612	107	21	5	88
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	27.8	9.6	27.8	9.6	27.8	27.8	9.6	27.8
Total Split (s)	14.0	32.0	32.0	11.0	29.0	45.0	67.0	67.0	10.0	32.0
Total Split (%)	11.7%	26.7%	26.7%	9.2%	24.2%	37.5%	55.8%	55.8%	8.3%	26.7%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	Min	None	Min	None	None	None	None	None
Act Effct Green (s)	7.1	17.8	17.8	6.1	15.0	18.2	27.1	27.1	5.7	11.4
Actuated g/C Ratio	0.11	0.28	0.28	0.10	0.24	0.29	0.43	0.43	0.09	0.18
v/c Ratio	0.23	0.37	0.72	0.12	0.32	0.64	0.14	0.03	0.03	0.19
Control Delay	35.4	23.8	7.4	36.5	26.2	25.7	14.6	0.1	36.6	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.4	23.8	7.4	36.5	26.2	25.7	14.6	0.1	36.6	24.8
LOS	D	C	A	D	C	C	B	A	D	C
Approach Delay		12.3			27.5		23.3			25.3
Approach LOS		B			C		C			C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 62.8
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 18.7
 Intersection LOS: B
 Intersection Capacity Utilization 66.0%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	185	646	19	126	10	612	107	21	5	88	27
Future Volume (veh/h)	45	185	646	19	126	10	612	107	21	5	88	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	47	193	413	20	131	10	638	111	22	5	92	28
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	77	562	476	41	481	37	774	680	576	12	396	116
Arrive On Green	0.04	0.30	0.30	0.02	0.28	0.28	0.22	0.36	0.36	0.01	0.15	0.15
Sat Flow, veh/h	1781	1870	1585	1781	1716	131	3456	1870	1585	1781	2711	793
Grp Volume(v), veh/h	47	193	413	20	0	141	638	111	22	5	59	61
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1847	1728	1870	1585	1781	1777	1728
Q Serve(g_s), s	1.8	5.5	16.7	0.8	0.0	4.0	11.9	2.7	0.6	0.2	2.0	2.1
Cycle Q Clear(g_c), s	1.8	5.5	16.7	0.8	0.0	4.0	11.9	2.7	0.6	0.2	2.0	2.1
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		0.46
Lane Grp Cap(c), veh/h	77	562	476	41	0	518	774	680	576	12	260	252
V/C Ratio(X)	0.61	0.34	0.87	0.49	0.00	0.27	0.82	0.16	0.04	0.42	0.23	0.24
Avail Cap(c_a), veh/h	247	721	611	168	0	631	2056	1685	1428	142	685	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.9	18.5	22.5	32.8	0.0	19.0	25.1	14.6	14.0	33.6	25.6	25.7
Incr Delay (d2), s/veh	2.9	0.4	10.3	3.3	0.0	0.3	0.9	0.1	0.0	8.7	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.3	7.1	0.4	0.0	1.7	4.7	1.1	0.2	0.1	0.8	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.8	18.9	32.8	36.0	0.0	19.3	25.9	14.7	14.0	42.3	26.1	26.2
LnGrp LOS	C	B	C	D	A	B	C	B	B	D	C	C
Approach Vol, veh/h		653			161			771			125	
Approach Delay, s/veh		28.8			21.4			24.0			26.8	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.1	30.5	6.2	26.2	19.8	15.7	7.5	24.8				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	5.4	61.2	6.4	26.2	40.4	26.2	9.4	23.2				
Max Q Clear Time (g_c+I1), s	2.2	4.7	2.8	18.7	13.9	4.1	3.8	6.0				
Green Ext Time (p_c), s	0.0	0.7	0.0	1.7	1.3	0.6	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay			25.8									
HCM 6th LOS			C									

Timings
14: Citrus Ave. & Summit Ave.

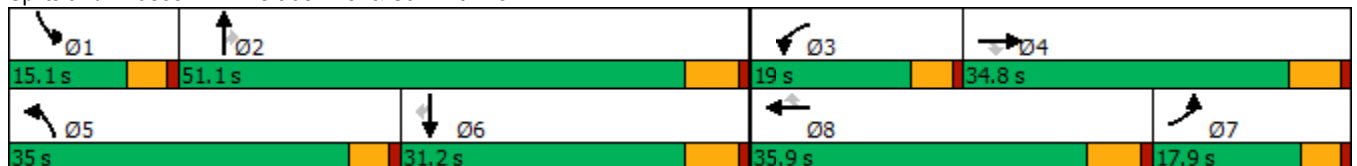
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	483	357	148	376	84	722	349	120	67	242	75
Future Volume (vph)	131	483	357	148	376	84	722	349	120	67	242	75
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	34.8	9.6	34.8	34.8	9.6	31.8	31.8	9.6	30.8	30.8
Total Split (s)	17.9	34.8	34.8	19.0	35.9	35.9	35.0	51.1	51.1	15.1	31.2	31.2
Total Split (%)	14.9%	29.0%	29.0%	15.8%	29.9%	29.9%	29.2%	42.6%	42.6%	12.6%	26.0%	26.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	17.6	21.8	21.8	12.5	16.8	16.8	25.4	33.1	33.1	8.1	13.3	13.3
Actuated g/C Ratio	0.19	0.23	0.23	0.13	0.18	0.18	0.27	0.35	0.35	0.09	0.14	0.14
v/c Ratio	0.43	0.61	0.59	0.69	0.62	0.22	0.83	0.29	0.20	0.48	0.53	0.21
Control Delay	41.3	36.7	7.5	58.1	41.5	1.2	41.9	25.2	2.9	56.1	44.0	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.3	36.7	7.5	58.1	41.5	1.2	41.9	25.2	2.9	56.1	44.0	1.2
LOS	D	D	A	E	D	A	D	C	A	E	D	A
Approach Delay		26.6			40.0			33.1			37.7	
Approach LOS		C			D			C			D	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 94.4
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 33.0
 Intersection LOS: C
 Intersection Capacity Utilization 68.2%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	131	483	357	148	376	84	722	349	120	67	242	75
Future Volume (veh/h)	131	483	357	148	376	84	722	349	120	67	242	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	142	525	241	161	409	75	785	379	94	73	263	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	266	840	350	199	641	271	909	1279	526	94	496	218
Arrive On Green	0.15	0.22	0.22	0.11	0.17	0.17	0.26	0.34	0.34	0.05	0.14	0.14
Sat Flow, veh/h	1781	3741	1561	1781	3741	1580	3563	3741	1539	1781	3554	1561
Grp Volume(v), veh/h	142	525	241	161	409	75	785	379	94	73	263	80
Grp Sat Flow(s),veh/h/ln	1781	1870	1561	1781	1870	1580	1781	1870	1539	1781	1777	1561
Q Serve(g_s), s	5.7	9.8	11.0	6.8	7.9	2.5	16.3	5.7	3.3	3.1	5.3	2.3
Cycle Q Clear(g_c), s	5.7	9.8	11.0	6.8	7.9	2.5	16.3	5.7	3.3	3.1	5.3	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	266	840	350	199	641	271	909	1279	526	94	496	218
V/C Ratio(X)	0.53	0.63	0.69	0.81	0.64	0.28	0.86	0.30	0.18	0.78	0.53	0.37
Avail Cap(c_a), veh/h	306	1403	585	332	1456	615	1401	2191	901	242	1167	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	27.1	27.5	33.5	29.8	16.7	27.5	18.6	17.8	36.2	30.9	12.8
Incr Delay (d2), s/veh	0.6	0.8	2.4	3.0	1.1	0.5	2.3	0.1	0.2	5.1	0.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	4.3	4.2	3.0	3.5	1.2	6.9	2.4	1.1	1.5	2.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.0	27.8	29.9	36.5	30.9	17.2	29.8	18.8	18.0	41.2	31.8	13.9
LnGrp LOS	C	C	C	D	C	B	C	B	B	D	C	B
Approach Vol, veh/h		908			645			1258			416	
Approach Delay, s/veh		28.9			30.7			25.6			30.0	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.7	32.2	13.2	23.2	24.3	16.6	17.3	19.1				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	5.8	* 5.8				
Max Green Setting (Gmax), s	10.5	45.3	14.4	29.0	30.4	25.4	13.3	* 30				
Max Q Clear Time (g_c+I1), s	5.1	7.7	8.8	13.0	18.3	7.3	7.7	9.9				
Green Ext Time (p_c), s	0.0	3.1	0.1	4.0	1.4	1.8	0.1	2.9				
Intersection Summary												
HCM 6th Ctrl Delay				28.1								
HCM 6th LOS				C								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

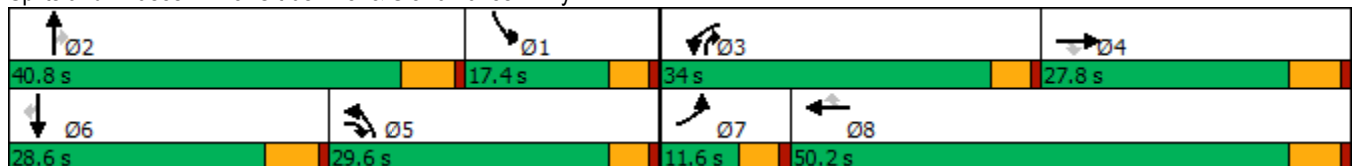
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	351	341	655	333	246	683	613	811	214	494	80
Future Volume (vph)	92	351	341	655	333	246	683	613	811	214	494	80
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	27.8	9.6	27.8	9.6	9.6	27.8	27.8
Total Split (s)	11.6	27.8	29.6	34.0	50.2	50.2	29.6	40.8	34.0	17.4	28.6	28.6
Total Split (%)	9.7%	23.2%	24.7%	28.3%	41.8%	41.8%	24.7%	34.0%	28.3%	14.5%	23.8%	23.8%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	4.6	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	Min
Act Effct Green (s)	6.5	16.3	41.8	29.6	39.4	39.4	24.3	25.4	56.2	18.9	20.0	20.0
Actuated g/C Ratio	0.06	0.15	0.38	0.27	0.35	0.35	0.22	0.23	0.51	0.17	0.18	0.18
v/c Ratio	0.46	0.67	0.54	0.72	0.26	0.36	0.92	0.75	1.02	0.37	0.77	0.19
Control Delay	59.9	51.6	12.5	43.4	26.7	4.6	61.3	45.8	50.8	45.1	52.2	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.9	51.6	12.5	43.4	26.7	4.6	61.3	45.8	50.8	45.1	52.2	0.9
LOS	E	D	B	D	C	A	E	D	D	D	D	A
Approach Delay		35.6			31.2			52.8			45.1	
Approach LOS		D			C			D			D	

Intersection Summary

































Cycle Length: 120
 Actuated Cycle Length: 111.1
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 43.4
 Intersection LOS: D
 Intersection Capacity Utilization 79.7%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	92	351	341	655	333	246	683	613	811	214	494	80
Future Volume (veh/h)	92	351	341	655	333	246	683	613	811	214	494	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	96	366	321	682	347	230	711	639	454	223	515	64
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	557	588	782	1191	498	801	913	730	570	671	280
Arrive On Green	0.05	0.15	0.15	0.22	0.32	0.32	0.22	0.24	0.24	0.16	0.18	0.18
Sat Flow, veh/h	3563	3741	1554	3563	3741	1564	3563	3741	1565	3563	3741	1562
Grp Volume(v), veh/h	96	366	321	682	347	230	711	639	454	223	515	64
Grp Sat Flow(s),veh/h/ln	1781	1870	1554	1781	1870	1564	1781	1870	1565	1781	1870	1562
Q Serve(g_s), s	2.4	8.4	6.4	16.9	6.4	6.4	17.7	14.2	7.9	5.1	12.0	2.6
Cycle Q Clear(g_c), s	2.4	8.4	6.4	16.9	6.4	6.4	17.7	14.2	7.9	5.1	12.0	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	178	557	588	782	1191	498	801	913	730	570	671	280
V/C Ratio(X)	0.54	0.66	0.55	0.87	0.29	0.46	0.89	0.70	0.62	0.39	0.77	0.23
Avail Cap(c_a), veh/h	273	900	731	1146	1817	760	974	1432	947	570	933	390
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.4	36.7	7.6	34.4	23.4	8.9	34.3	31.5	5.7	34.4	35.7	20.6
Incr Delay (d2), s/veh	0.9	1.3	0.8	3.8	0.1	0.7	7.7	1.0	0.9	0.2	2.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.9	2.7	7.6	2.8	3.7	8.3	6.4	3.1	2.2	5.6	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	38.0	8.4	38.2	23.5	9.6	42.0	32.5	6.6	34.6	38.3	21.0
LnGrp LOS	D	D	A	D	C	A	D	C	A	C	D	C
Approach Vol, veh/h		783			1259			1804			802	
Approach Delay, s/veh		26.5			28.9			29.7			35.9	
Approach LOS		C			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.2	28.1	24.7	19.4	25.2	22.2	9.2	34.9				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	12.8	35.0	29.4	22.0	25.0	22.8	7.0	44.4				
Max Q Clear Time (g_c+I1), s	7.1	16.2	18.9	10.4	19.7	14.0	4.4	8.4				
Green Ext Time (p_c), s	0.2	6.1	1.2	2.8	0.9	2.4	0.0	3.3				
Intersection Summary												
HCM 6th Ctrl Delay			30.0									
HCM 6th LOS			C									

Timings
16: Sierra Ave/Sierra Ave. & Riverside Ave.

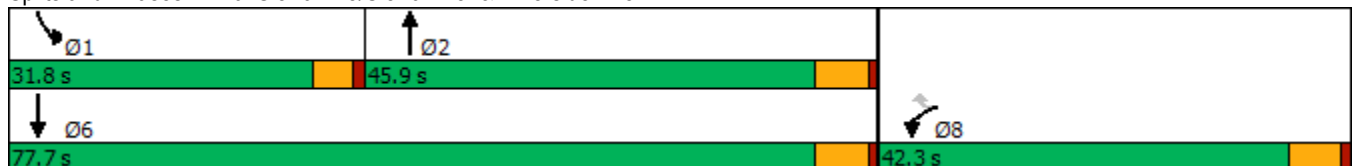
Ventana (JN 13769)
04/06/2022

	↙	↖	↑	↘	↓
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↖	↑↔	↘	↑↑
Traffic Volume (vph)	85	453	644	464	622
Future Volume (vph)	85	453	644	464	622
Turn Type	Prot	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	27.8	27.8	27.8	9.6	15.8
Total Split (s)	42.3	42.3	45.9	31.8	77.7
Total Split (%)	35.3%	35.3%	38.3%	26.5%	64.8%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	11.5	11.5	23.5	27.5	55.6
Actuated g/C Ratio	0.15	0.15	0.30	0.35	0.70
v/c Ratio	0.35	0.75	0.72	0.80	0.27
Control Delay	35.7	11.6	28.7	37.1	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.7	11.6	28.7	37.1	4.7
LOS	D	B	C	D	A
Approach Delay	15.4		28.7		18.5
Approach LOS	B		C		B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 78.9
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 20.9
 Intersection LOS: C
 Intersection Capacity Utilization 67.3%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 16: Sierra Ave/Sierra Ave. & Riverside Ave.



HCM 6th Signalized Intersection Summary
 16: Sierra Ave/Sierra Ave. & Riverside Ave.

Ventana (JN 13769)
 04/06/2022



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	85	453	644	62	464	622
Future Volume (veh/h)	85	453	644	62	464	622
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	90	83	685	-67	494	662
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	316	281	1416	0	560	2123
Arrive On Green	0.18	0.18	0.19	0.00	0.31	0.60
Sat Flow, veh/h	1781	1585	3741	0	1781	3647
Grp Volume(v), veh/h	90	83	618	0	494	662
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	0	1781	1777
Q Serve(g_s), s	2.3	2.3	0.0	0.0	13.6	4.8
Cycle Q Clear(g_c), s	2.3	2.3	0.0	0.0	13.6	4.8
Prop In Lane	1.00	1.00		0.00	1.00	
Lane Grp Cap(c), veh/h	316	281	0	0	560	2123
V/C Ratio(X)	0.28	0.29	0.00	0.00	0.88	0.31
Avail Cap(c_a), veh/h	1260	1121	0	0	939	4953
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	18.4	0.0	0.0	16.8	5.1
Incr Delay (d2), s/veh	0.2	0.2	0.0	0.0	2.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.8	0.0	0.0	5.2	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.6	18.6	0.0	0.0	19.7	5.2
LnGrp LOS	B	B	A	A	B	A
Approach Vol, veh/h	173		618			1156
Approach Delay, s/veh	18.6		0.0			11.4
Approach LOS	B		A			B
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	20.8	15.8			36.6	15.0
Change Period (Y+Rc), s	4.6	5.8			5.8	5.8
Max Green Setting (Gmax), s	27.2	40.1			71.9	36.5
Max Q Clear Time (g_c+I1), s	15.6	2.0			6.8	4.3
Green Ext Time (p_c), s	0.7	4.9			5.4	0.3

Intersection Summary

HCM 6th Ctrl Delay	8.4
HCM 6th LOS	A

Timings
17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	NBL	NBT	SBT
Lane Configurations	W	W	↑	↑
Traffic Volume (vph)	68	73	1082	741
Future Volume (vph)	68	73	1082	741
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	5	2	6
Permitted Phases				
Detector Phase	4	5	2	6
Switch Phase				
Minimum Initial (s)	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	9.6	15.8	27.8
Total Split (s)	27.8	15.0	92.2	77.2
Total Split (%)	23.2%	12.5%	76.8%	64.3%
Yellow Time (s)	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	5.8	5.8
Lead/Lag		Lead		Lag
Lead-Lag Optimize?		Yes		Yes
Recall Mode	None	None	Min	Min
Act Effct Green (s)	12.0	8.1	60.9	50.4
Actuated g/C Ratio	0.14	0.10	0.72	0.59
v/c Ratio	0.45	0.45	0.84	0.80
Control Delay	36.2	50.0	15.8	21.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	36.2	50.0	15.8	21.0
LOS	D	D	B	C
Approach Delay	36.2		18.0	21.0
Approach LOS	D		B	C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 85
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 20.2
 Intersection LOS: C
 Intersection Capacity Utilization 74.9%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 17: Sierra Ave & Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	68	44	73	1082	741	97
Future Volume (veh/h)	68	44	73	1082	741	97
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	46	76	1127	772	101
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	133	86	99	1312	939	123
Arrive On Green	0.13	0.13	0.06	0.70	0.58	0.58
Sat Flow, veh/h	1023	663	1781	1870	1620	212
Grp Volume(v), veh/h	118	0	76	1127	0	873
Grp Sat Flow(s),veh/h/ln	1700	0	1781	1870	0	1832
Q Serve(g_s), s	4.5	0.0	2.9	31.2	0.0	26.4
Cycle Q Clear(g_c), s	4.5	0.0	2.9	31.2	0.0	26.4
Prop In Lane	0.60	0.39	1.00			0.12
Lane Grp Cap(c), veh/h	221	0	99	1312	0	1061
V/C Ratio(X)	0.53	0.00	0.77	0.86	0.00	0.82
Avail Cap(c_a), veh/h	543	0	269	2345	0	1898
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.0	0.0	32.1	7.7	0.0	11.6
Incr Delay (d2), s/veh	2.0	0.0	4.6	1.8	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	1.3	8.7	0.0	9.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.0	0.0	36.7	9.5	0.0	13.3
LnGrp LOS	C	A	D	A	A	B
Approach Vol, veh/h	118			1203	873	
Approach Delay, s/veh	30.0			11.2	13.3	
Approach LOS	C			B	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		54.2		14.8	8.4	45.7
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		86.4		22.0	10.4	71.4
Max Q Clear Time (g_c+I1), s		33.2		6.5	4.9	28.4
Green Ext Time (p_c), s		15.2		0.3	0.0	8.7

Intersection Summary

HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX 6.1:

**OPENING YEAR CUMULATIVE (2030) WITHOUT PROJECT CONDITIONS INTERSECTION
OPERATIONS ANALYSIS WORKSHEETS**

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Intersection	
Intersection Delay, s/veh	29.3
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕		↘	↕		↘	↕	↘	↘	↕	↘
Traffic Vol, veh/h	26	467	7	70	289	113	6	4	172	327	8	56
Future Vol, veh/h	26	467	7	70	289	113	6	4	172	327	8	56
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	497	7	74	307	120	6	4	183	348	9	60
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	29.2	18.8	18.5	47.1
HCM LOS	D	C	C	E

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	96%	0%	100%	46%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	4%	0%	0%	54%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	6	4	172	26	311	163	70	193	209	327	8
LT Vol	6	0	0	26	0	0	70	0	0	327	0
Through Vol	0	4	0	0	311	156	0	193	96	0	8
RT Vol	0	0	172	0	0	7	0	0	113	0	0
Lane Flow Rate	6	4	183	28	331	173	74	205	223	348	9
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.018	0.011	0.451	0.07	0.79	0.411	0.19	0.495	0.514	0.895	0.021
Departure Headway (Hd)	10.069	9.569	8.869	9.082	8.582	8.552	9.192	8.692	8.314	9.263	8.763
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	356	374	406	395	421	421	391	414	434	393	409
Service Time	7.828	7.328	6.628	6.831	6.331	6.301	6.942	6.442	6.064	7.011	6.511
HCM Lane V/C Ratio	0.017	0.011	0.451	0.071	0.786	0.411	0.189	0.495	0.514	0.885	0.022
HCM Control Delay	13	12.4	18.8	12.5	36.9	17.2	14.1	19.7	19.6	54	11.7
HCM Lane LOS	B	B	C	B	E	C	B	C	C	F	B
HCM 95th-tile Q	0.1	0	2.3	0.2	6.9	2	0.7	2.7	2.9	9.1	0.1

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	967	455	2	0	17
Future Vol, veh/h	0	967	455	2	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1029	484	2	0	18

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	- 243
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0 *899
Stage 1	0	-	-	-	0 -
Stage 2	0	-	-	-	0 -
Platoon blocked, %		-	-	-	1
Mov Cap-1 Maneuver	-	-	-	-	- *899
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

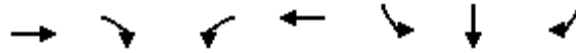
Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	899
HCM Lane V/C Ratio	-	-	-	0.02
HCM Control Delay (s)	-	-	-	9.1
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.1

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

Timings
3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/27/2021

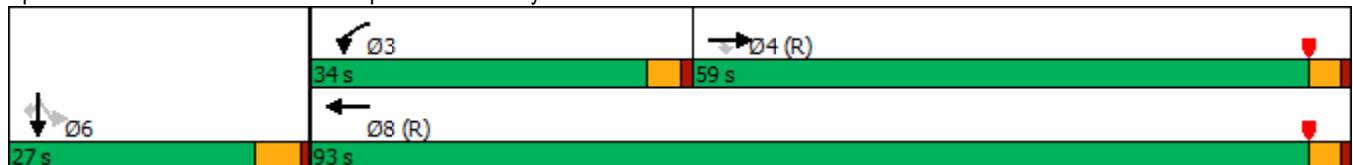


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↔	↑↑	↔	↑	↑
Traffic Volume (vph)	388	579	843	400	273	13	57
Future Volume (vph)	388	579	843	400	273	13	57
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8		6	
Permitted Phases		4			6		6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	34.0	34.0	12.0	29.0	13.0	13.0	13.0
Total Split (s)	59.0	59.0	34.0	93.0	27.0	27.0	27.0
Total Split (%)	49.2%	49.2%	28.3%	77.5%	22.5%	22.5%	22.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effct Green (s)	55.0	55.0	35.6	94.6	16.4	16.4	16.4
Actuated g/C Ratio	0.46	0.46	0.30	0.79	0.14	0.14	0.14
v/c Ratio	0.27	0.67	0.92	0.16	0.69	0.69	0.23
Control Delay	20.6	11.9	68.0	2.8	64.4	64.4	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	11.9	68.0	2.8	64.4	64.4	12.6
LOS	C	B	E	A	E	E	B
Approach Delay	15.4			47.0		55.8	
Approach LOS	B			D		E	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 36.2
 Intersection LOS: D
 Intersection Capacity Utilization 78.6%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 3: I-15 SB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 3: I-15 SB Ramp & Duncan Canyon Rd.

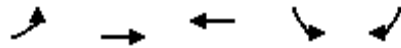
Ventana (JN 13769)

04/27/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↘↗	↑↑					↘	↗	↗
Traffic Volume (veh/h)	0	388	579	843	400	0	0	0	0	273	13	57
Future Volume (veh/h)	0	388	579	843	400	0	0	0	0	273	13	57
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	431	575	937	444	0				313	0	47
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1891	843	864	2898	0				390	0	174
Arrive On Green	0.00	0.53	0.53	0.42	1.00	0.00				0.11	0.00	0.11
Sat Flow, veh/h	0	3647	1585	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	431	575	937	444	0				313	0	47
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	7.8	32.0	30.0	0.0	0.0				10.3	0.0	3.3
Cycle Q Clear(g_c), s	0.0	7.8	32.0	30.0	0.0	0.0				10.3	0.0	3.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1891	843	864	2898	0				390	0	174
V/C Ratio(X)	0.00	0.23	0.68	1.08	0.15	0.00				0.80	0.00	0.27
Avail Cap(c_a), veh/h	0	1891	843	864	2898	0				653	0	291
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.83	0.83	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	15.0	20.6	34.9	0.0	0.0				52.2	0.0	49.0
Incr Delay (d2), s/veh	0.0	0.3	4.4	53.8	0.1	0.0				3.9	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.0	11.9	16.4	0.0	0.0				4.7	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.2	25.1	88.7	0.1	0.0				56.0	0.0	49.9
LnGrp LOS	A	B	C	F	A	A				E	A	D
Approach Vol, veh/h		1006			1381						360	
Approach Delay, s/veh		20.8			60.2						55.2	
Approach LOS		C			E						E	
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			34.0	67.8		18.2		101.8				
Change Period (Y+Rc), s			4.0	4.0		5.0		4.0				
Max Green Setting (Gmax), s			30.0	55.0		22.0		89.0				
Max Q Clear Time (g_c+I1), s			32.0	34.0		12.3		2.0				
Green Ext Time (p_c), s			0.0	4.8		0.9		2.9				
Intersection Summary												
HCM 6th Ctrl Delay			45.1									
HCM 6th LOS			D									
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings
4: Beech Ave. & I-15 SB Ramps

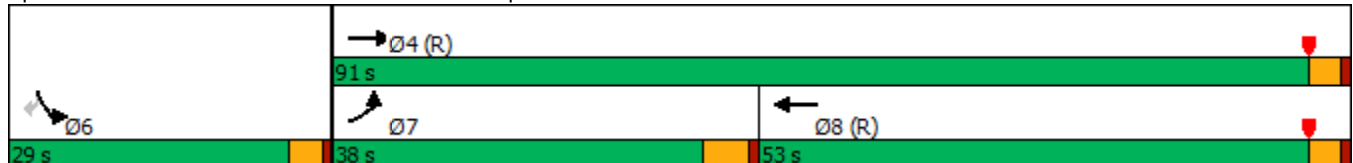


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations	↖	↗↗	↗↗	↖	↗
Traffic Volume (vph)	291	534	523	217	279
Future Volume (vph)	291	534	523	217	279
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	5.0	5.0
Minimum Split (s)	10.0	12.0	12.0	9.0	9.0
Total Split (s)	38.0	91.0	53.0	29.0	29.0
Total Split (%)	31.7%	75.8%	44.2%	24.2%	24.2%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	None	None
Act Effct Green (s)	26.2	91.5	60.3	20.5	20.5
Actuated g/C Ratio	0.22	0.76	0.50	0.17	0.17
v/c Ratio	0.82	0.21	0.77	0.78	0.58
Control Delay	61.2	4.6	14.4	65.3	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	61.2	4.6	14.4	65.3	9.3
LOS	E	A	B	E	A
Approach Delay		24.6	14.4	33.8	
Approach LOS		C	B	C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 21.3
 Intersection LOS: C
 Intersection Capacity Utilization 77.2%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 4: Beech Ave. & I-15 SB Ramps



HCM 6th Signalized Intersection Summary
4: Beech Ave. & I-15 SB Ramps

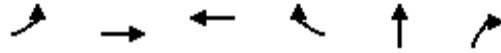
Ventana (JN 13769)
04/27/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗		↙	↘	
Traffic Volume (veh/h)	291	534	523	763	217	279	
Future Volume (veh/h)	291	534	523	763	217	279	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	316	580	568	829	236	302	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	348	2589	873	779	365	325	
Arrive On Green	0.20	0.73	0.82	0.82	0.20	0.20	
Sat Flow, veh/h	1781	3647	1870	1585	1781	1585	
Grp Volume(v), veh/h	316	580	568	829	236	302	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	20.8	6.4	14.8	58.9	14.6	22.5	
Cycle Q Clear(g_c), s	20.8	6.4	14.8	58.9	14.6	22.5	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	348	2589	873	779	365	325	
V/C Ratio(X)	0.91	0.22	0.65	1.06	0.65	0.93	
Avail Cap(c_a), veh/h	490	2589	873	779	371	330	
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.48	0.48	1.00	1.00	
Uniform Delay (d), s/veh	47.2	5.3	6.8	10.8	43.7	46.9	
Incr Delay (d2), s/veh	16.1	0.2	1.8	41.9	3.8	31.8	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	10.5	2.0	3.5	13.5	6.6	20.9	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	63.3	5.5	8.6	52.7	47.5	78.6	
LnGrp LOS	E	A	A	F	D	E	
Approach Vol, veh/h		896	1397		538		
Approach Delay, s/veh		25.9	34.8		65.0		
Approach LOS		C	C		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				91.4	28.6	28.5	62.9
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				87.0	25.0	33.0	49.0
Max Q Clear Time (g_c+I1), s				8.4	24.5	22.8	60.9
Green Ext Time (p_c), s				4.0	0.1	0.7	0.0
Intersection Summary							
HCM 6th Ctrl Delay			37.7				
HCM 6th LOS			D				

Timings
5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/27/2021

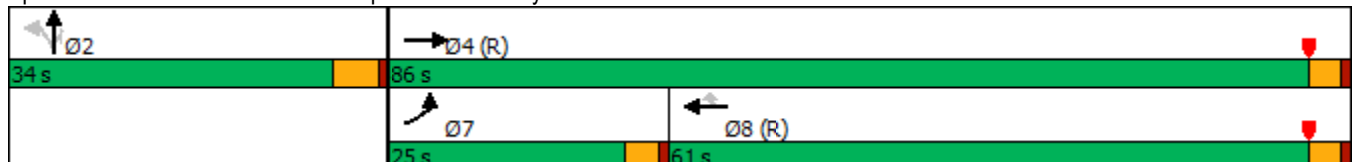


Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations	↶	↷	↶	↷	↷	↷
Traffic Volume (vph)	108	552	1093	251	2	425
Future Volume (vph)	108	552	1093	251	2	425
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8		2	
Permitted Phases				8		2
Detector Phase	7	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	30.0	36.0	36.0	13.0	13.0
Total Split (s)	25.0	86.0	61.0	61.0	34.0	34.0
Total Split (%)	20.8%	71.7%	50.8%	50.8%	28.3%	28.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	13.4	93.7	76.4	76.4	17.3	17.3
Actuated g/C Ratio	0.11	0.78	0.64	0.64	0.14	0.14
v/c Ratio	0.61	0.22	0.53	0.25	0.65	0.58
Control Delay	49.3	4.9	14.5	2.1	60.0	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	4.9	14.5	2.1	60.0	6.9
LOS	D	A	B	A	E	A
Approach Delay		12.2	12.2		20.9	
Approach LOS		B	B		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 14.1
 Intersection Capacity Utilization 78.6%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 5: I-15 NB Ramp & Duncan Canyon Rd.



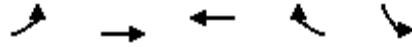
HCM 6th Signalized Intersection Summary
5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/27/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	552	0	0	1093	251	150	2	425	0	0	0
Future Volume (veh/h)	108	552	0	0	1093	251	150	2	425	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	119	607	0	0	1201	276	165	2	419			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	145	2657	0	0	2249	1003	312	4	495			
Arrive On Green	0.16	1.00	0.00	0.00	0.63	0.63	0.18	0.18	0.18			
Sat Flow, veh/h	1781	3647	0	0	3647	1585	1761	21	2790			
Grp Volume(v), veh/h	119	607	0	0	1201	276	167	0	419			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1585	1782	0	1395			
Q Serve(g_s), s	7.7	0.0	0.0	0.0	22.5	9.3	10.2	0.0	17.4			
Cycle Q Clear(g_c), s	7.7	0.0	0.0	0.0	22.5	9.3	10.2	0.0	17.4			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	145	2657	0	0	2249	1003	316	0	495			
V/C Ratio(X)	0.82	0.23	0.00	0.00	0.53	0.28	0.53	0.00	0.85			
Avail Cap(c_a), veh/h	312	2657	0	0	2249	1003	431	0	674			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.93	0.93	0.00	0.00	0.92	0.92	1.00	0.00	1.00			
Uniform Delay (d), s/veh	49.4	0.0	0.0	0.0	12.2	9.8	44.8	0.0	47.8			
Incr Delay (d2), s/veh	10.2	0.2	0.0	0.0	0.8	0.6	1.4	0.0	7.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.5	0.1	0.0	0.0	8.1	3.1	4.5	0.0	6.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.7	0.2	0.0	0.0	13.0	10.4	46.2	0.0	55.1			
LnGrp LOS	E	A	A	A	B	B	D	A	E			
Approach Vol, veh/h		726			1477			586				
Approach Delay, s/veh		9.9			12.6			52.6				
Approach LOS		A			B			D				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		26.3		93.7			13.8	80.0				
Change Period (Y+Rc), s		5.0		4.0			4.0	4.0				
Max Green Setting (Gmax), s		29.0		82.0			21.0	57.0				
Max Q Clear Time (g_c+I1), s		19.4		2.0			9.7	24.5				
Green Ext Time (p_c), s		1.8		4.2			0.2	11.2				
Intersection Summary												
HCM 6th Ctrl Delay				20.3								
HCM 6th LOS				C								

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021

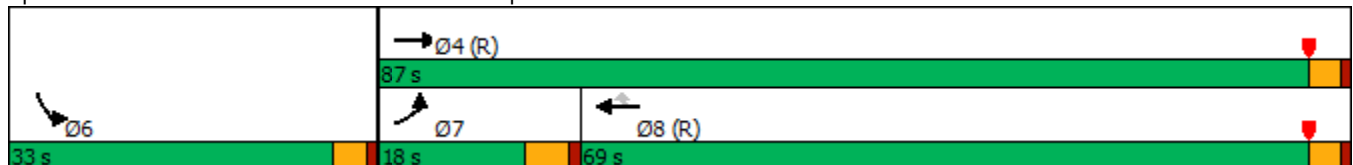


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↘	↑↑	↑↑	↗	↘↘
Traffic Volume (vph)	80	671	1183	186	396
Future Volume (vph)	80	671	1183	186	396
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	18.0	87.0	69.0	69.0	33.0
Total Split (%)	15.0%	72.5%	57.5%	57.5%	27.5%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	11.2	86.2	70.1	70.1	25.8
Actuated g/C Ratio	0.09	0.72	0.58	0.58	0.22
v/c Ratio	0.61	0.33	0.72	0.23	0.84
Control Delay	71.7	6.5	21.3	3.4	54.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	71.7	6.5	21.3	3.4	54.0
LOS	E	A	C	A	D
Approach Delay		13.5	18.9		54.0
Approach LOS		B	B		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 24.0
 Intersection LOS: C
 Intersection Capacity Utilization 62.5%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗	↑	↙	↘	
Traffic Volume (veh/h)	80	671	1183	186	396	103	
Future Volume (veh/h)	80	671	1183	186	396	103	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	100	839	1479	168	545	0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	123	2685	2291	1022	633	282	
Arrive On Green	0.14	1.00	0.64	0.64	0.18	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	100	839	1479	168	545	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	6.5	0.0	30.4	5.1	17.8	0.0	
Cycle Q Clear(g_c), s	6.5	0.0	30.4	5.1	17.8	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	123	2685	2291	1022	633	282	
V/C Ratio(X)	0.81	0.31	0.65	0.16	0.86	0.00	
Avail Cap(c_a), veh/h	193	2685	2291	1022	861	383	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.93	0.93	0.60	0.60	1.00	0.00	
Uniform Delay (d), s/veh	50.9	0.0	13.0	8.5	47.9	0.0	
Incr Delay (d2), s/veh	12.5	0.3	0.9	0.2	6.8	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	3.1	0.1	10.8	1.6	8.5	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	63.4	0.3	13.8	8.7	54.7	0.0	
LnGrp LOS	E	A	B	A	D	A	
Approach Vol, veh/h		939	1647		545		
Approach Delay, s/veh		7.0	13.3		54.7		
Approach LOS		A	B		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				94.7	25.3	13.3	81.4
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				83.0	29.0	13.0	65.0
Max Q Clear Time (g_c+I1), s				2.0	19.8	8.5	32.4
Green Ext Time (p_c), s				6.4	1.5	0.1	14.2

Intersection Summary

HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

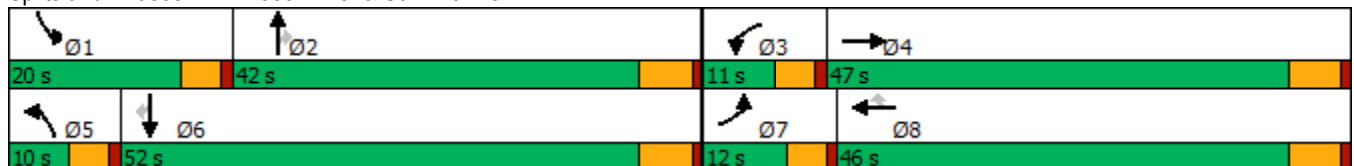
Ventana (JN 13769)
04/27/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	85	132	91	193	641	45	388	58	341	262	39
Future Volume (vph)	85	132	91	193	641	45	388	58	341	262	39
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	43.8	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	47.0	11.0	46.0	46.0	10.0	42.0	42.0	20.0	52.0	52.0
Total Split (%)	10.0%	39.2%	9.2%	38.3%	38.3%	8.3%	35.0%	35.0%	16.7%	43.3%	43.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	6.7	30.8	6.3	30.4	30.4	5.6	16.4	16.4	13.7	29.8	29.8
Actuated g/C Ratio	0.08	0.36	0.07	0.35	0.35	0.06	0.19	0.19	0.16	0.35	0.35
v/c Ratio	0.33	0.13	0.38	0.16	0.86	0.21	0.61	0.15	0.66	0.23	0.07
Control Delay	47.3	17.7	49.1	20.6	24.8	47.7	38.8	0.7	43.8	25.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	17.7	49.1	20.6	24.8	47.7	38.8	0.7	43.8	25.0	0.2
LOS	D	B	D	C	C	D	D	A	D	C	A
Approach Delay		28.1		26.3			35.1			33.5	
Approach LOS		C		C			D			C	

Intersection Summary





























Cycle Length: 120	
Actuated Cycle Length: 86.3	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 30.4	Intersection LOS: C
Intersection Capacity Utilization 69.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 7: Beech Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/27/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 		
Traffic Volume (veh/h)	85	132	24	91	193	641	45	388	58	341	262	39
Future Volume (veh/h)	85	132	24	91	193	641	45	388	58	341	262	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	139	20	96	203	564	47	408	49	359	276	38
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	1225	173	186	1397	622	138	616	270	446	933	415
Arrive On Green	0.05	0.39	0.39	0.05	0.39	0.39	0.04	0.17	0.17	0.13	0.26	0.26
Sat Flow, veh/h	3456	3125	442	3456	3554	1583	3456	3554	1557	3456	3554	1581
Grp Volume(v), veh/h	89	78	81	96	203	564	47	408	49	359	276	38
Grp Sat Flow(s),veh/h/ln	1728	1777	1790	1728	1777	1583	1728	1777	1557	1728	1777	1581
Q Serve(g_s), s	2.1	2.3	2.4	2.2	3.0	27.8	1.1	8.9	2.2	8.3	5.1	1.5
Cycle Q Clear(g_c), s	2.1	2.3	2.4	2.2	3.0	27.8	1.1	8.9	2.2	8.3	5.1	1.5
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	697	702	186	1397	622	138	616	270	446	933	415
V/C Ratio(X)	0.49	0.11	0.12	0.52	0.15	0.91	0.34	0.66	0.18	0.80	0.30	0.09
Avail Cap(c_a), veh/h	310	886	893	268	1729	770	226	1557	682	644	1987	884
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	16.0	16.0	38.0	16.1	23.6	38.6	31.9	29.2	35.0	24.4	23.0
Incr Delay (d2), s/veh	0.8	0.1	0.1	0.8	0.0	12.5	0.5	1.2	0.3	3.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.9	0.9	0.9	1.1	11.2	0.5	3.7	0.8	3.5	2.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.8	16.0	16.1	38.9	16.2	36.2	39.1	33.1	29.5	37.9	24.5	23.1
LnGrp LOS	D	B	B	D	B	D	D	C	C	D	C	C
Approach Vol, veh/h		248			863			504			673	
Approach Delay, s/veh		24.2			31.8			33.3			31.6	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.3	20.1	9.0	38.2	7.9	27.5	9.0	38.3				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	15.4	36.2	6.4	41.2	5.4	46.2	7.4	40.2				
Max Q Clear Time (g_c+11), s	10.3	10.9	4.2	4.4	3.1	7.1	4.1	29.8				
Green Ext Time (p_c), s	0.3	2.6	0.0	0.8	0.0	1.8	0.0	2.5				
Intersection Summary												
HCM 6th Ctrl Delay				31.2								
HCM 6th LOS				C								

Timings
9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
04/27/2021

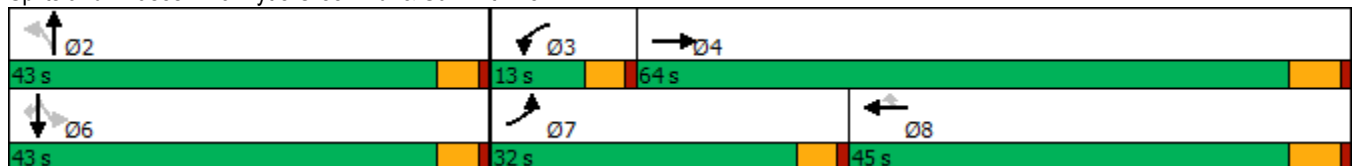


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↖	↖	↖	↕	↖
Traffic Volume (vph)	173	373	51	782	81	60	123	75	86	233
Future Volume (vph)	173	373	51	782	81	60	123	75	86	233
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8			2		6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	9.6	28.8	28.8	33.7	33.7	31.7	31.7	31.7
Total Split (s)	32.0	64.0	13.0	45.0	45.0	43.0	43.0	43.0	43.0	43.0
Total Split (%)	26.7%	53.3%	10.8%	37.5%	37.5%	35.8%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None
Act Effct Green (s)	12.6	34.8	6.9	23.9	23.9	13.2	13.2	13.2	13.2	13.2
Actuated g/C Ratio	0.19	0.53	0.11	0.36	0.36	0.20	0.20	0.20	0.20	0.20
v/c Ratio	0.56	0.25	0.30	0.67	0.14	0.25	0.45	0.36	0.25	0.49
Control Delay	33.2	9.8	36.7	20.8	3.9	28.4	28.6	31.1	27.3	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.2	9.8	36.7	20.8	3.9	28.4	28.6	31.1	27.3	7.8
LOS	C	A	D	C	A	C	C	C	C	A
Approach Delay		16.5		20.2			28.5		16.5	
Approach LOS		B		C			C		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 65.6
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 19.3
 Intersection LOS: B
 Intersection Capacity Utilization 65.4%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 9: Lytle Creek Rd. & Summit Ave.



HCM 6th Signalized Intersection Summary
 9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
 04/27/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗		↖	↗	↗
Traffic Volume (veh/h)	173	373	52	51	782	81	60	123	30	75	86	233
Future Volume (veh/h)	173	373	52	51	782	81	60	123	30	75	86	233
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	190	410	49	56	859	79	66	135	29	82	95	219
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	243	1419	169	94	1282	572	323	323	69	306	406	343
Arrive On Green	0.14	0.44	0.44	0.05	0.36	0.36	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	3198	380	1781	3554	1585	1064	1487	319	1220	1870	1581
Grp Volume(v), veh/h	190	227	232	56	859	79	66	0	164	82	95	219
Grp Sat Flow(s),veh/h/ln	1781	1777	1801	1781	1777	1585	1064	0	1807	1220	1870	1581
Q Serve(g_s), s	5.4	4.3	4.3	1.6	10.8	1.8	2.9	0.0	4.1	3.3	2.2	6.6
Cycle Q Clear(g_c), s	5.4	4.3	4.3	1.6	10.8	1.8	5.1	0.0	4.1	7.4	2.2	6.6
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	243	789	799	94	1282	572	323	0	392	306	406	343
V/C Ratio(X)	0.78	0.29	0.29	0.59	0.67	0.14	0.20	0.00	0.42	0.27	0.23	0.64
Avail Cap(c_a), veh/h	924	1958	1985	283	2638	1177	863	0	1310	925	1356	1146
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	9.4	9.4	24.4	14.2	11.4	19.1	0.0	17.8	21.0	17.0	18.8
Incr Delay (d2), s/veh	2.1	0.2	0.2	2.2	0.6	0.1	0.3	0.0	0.7	0.5	0.3	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	1.2	1.3	0.7	3.4	0.5	0.7	0.0	1.6	0.9	0.9	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.2	9.6	9.6	26.6	14.8	11.5	19.5	0.0	18.5	21.4	17.3	20.8
LnGrp LOS	C	A	A	C	B	B	B	A	B	C	B	C
Approach Vol, veh/h		649			994			230			396	
Approach Delay, s/veh		13.8			15.2			18.8			20.1	
Approach LOS		B			B			B			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.2	7.4	29.2		16.2	11.8	24.8				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 38	8.4	58.2		* 38	27.4	39.2				
Max Q Clear Time (g_c+I1), s		7.1	3.6	6.3		9.4	7.4	12.8				
Green Ext Time (p_c), s		1.3	0.0	2.6		1.6	0.2	6.2				

Intersection Summary

HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Notes

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

Intersection												
Intersection Delay, s/veh	403.2											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔		↔			
Traffic Vol, veh/h	23	231	726	31	221	5	1010	8	32	14	23	68
Future Vol, veh/h	23	231	726	31	221	5	1010	8	32	14	23	68
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	241	756	32	230	5	1052	8	33	15	24	71
Number of Lanes	0	1	0	0	1	0	1	0	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	346.9	25.7	548.1
HCM LOS	F	D	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	2%	12%
Vol Thru, %	0%	20%	24%	86%
Vol Right, %	0%	80%	74%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1010	40	980	257
LT Vol	1010	0	23	31
Through Vol	0	8	231	221
RT Vol	0	32	726	5
Lane Flow Rate	1052	42	1021	268
Geometry Grp	7	7	2	2
Degree of Util (X)	2.205	0.075	1.702	0.524
Departure Headway (Hd)	8.811	7.714	8.533	11.121
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	421	468	439	327
Service Time	6.511	5.414	6.533	9.121
HCM Lane V/C Ratio	2.499	0.09	2.326	0.82
HCM Control Delay	569.4	11	346.9	25.7
HCM Lane LOS	F	B	F	D
HCM 95th-tile Q	66.6	0.2	43.2	2.9

Timings
13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
04/27/2021

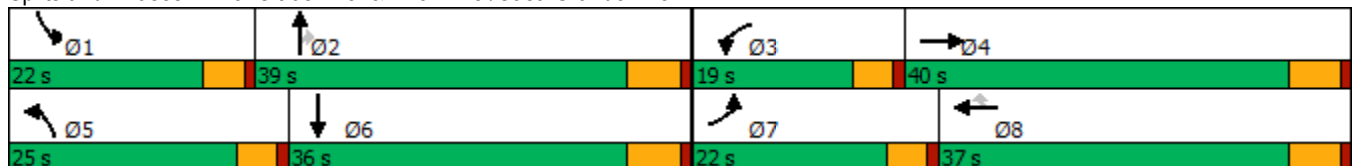


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↗	↖	↑↑	↗	↖	↖↗
Traffic Volume (vph)	79	26	313	44	420	81	249	144	196	316
Future Volume (vph)	79	26	313	44	420	81	249	144	196	316
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	30.8	30.8	9.6	26.8	26.8	9.6	22.8
Total Split (s)	22.0	40.0	19.0	37.0	37.0	25.0	39.0	39.0	22.0	36.0
Total Split (%)	18.3%	33.3%	15.8%	30.8%	30.8%	20.8%	32.5%	32.5%	18.3%	30.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	7.8	11.1	14.9	16.4	16.4	7.9	11.6	11.6	12.9	19.3
Actuated g/C Ratio	0.12	0.16	0.22	0.24	0.24	0.12	0.17	0.17	0.19	0.29
v/c Ratio	0.40	0.21	0.84	0.10	0.62	0.41	0.43	0.39	0.61	0.41
Control Delay	36.4	17.3	50.2	24.3	7.4	36.5	29.5	8.8	35.0	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.4	17.3	50.2	24.3	7.4	36.5	29.5	8.8	35.0	22.9
LOS	D	B	D	C	A	D	C	A	D	C
Approach Delay		28.1		25.6			24.4			27.0
Approach LOS		C		C			C			C

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 67.5
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 25.9
 Intersection LOS: C
 Intersection Capacity Utilization 57.3%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 13: Citrus Ave. & Knox Ave./Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
 04/27/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	26	35	313	44	420	81	249	144	196	316	71
Future Volume (veh/h)	79	26	35	313	44	420	81	249	144	196	316	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	27	25	326	46	410	84	259	144	204	329	71
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	150	139	372	594	503	109	567	251	251	697	149
Arrive On Green	0.06	0.17	0.17	0.21	0.32	0.32	0.06	0.16	0.16	0.14	0.24	0.24
Sat Flow, veh/h	1781	890	824	1781	1870	1584	1781	3554	1575	1781	2913	621
Grp Volume(v), veh/h	82	0	52	326	46	410	84	259	144	204	199	201
Grp Sat Flow(s),veh/h/ln	1781	0	1713	1781	1870	1584	1781	1777	1575	1781	1777	1757
Q Serve(g_s), s	2.9	0.0	1.7	11.4	1.1	15.4	3.0	4.3	5.5	7.2	6.2	6.3
Cycle Q Clear(g_c), s	2.9	0.0	1.7	11.4	1.1	15.4	3.0	4.3	5.5	7.2	6.2	6.3
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	106	0	289	372	594	503	109	567	251	251	425	420
V/C Ratio(X)	0.77	0.00	0.18	0.88	0.08	0.81	0.77	0.46	0.57	0.81	0.47	0.48
Avail Cap(c_a), veh/h	480	0	907	397	904	765	563	1827	810	480	831	822
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	0.0	23.0	24.8	15.4	20.3	29.9	24.6	25.1	26.9	21.0	21.1
Incr Delay (d2), s/veh	4.4	0.0	0.3	17.6	0.1	4.1	4.3	0.6	2.1	2.4	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.6	6.1	0.4	5.4	1.3	1.7	2.0	2.9	2.4	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	0.0	23.3	42.4	15.5	24.4	34.2	25.2	27.2	29.3	21.8	21.9
LnGrp LOS	C	A	C	D	B	C	C	C	C	C	C	C
Approach Vol, veh/h		134			782			487			604	
Approach Delay, s/veh		30.1			31.3			27.3			24.4	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	16.1	18.1	16.7	8.5	21.3	8.5	26.3				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	17.4	33.2	14.4	34.2	20.4	30.2	17.4	31.2				
Max Q Clear Time (g_c+I1), s	9.2	7.5	13.4	3.7	5.0	8.3	4.9	17.4				
Green Ext Time (p_c), s	0.2	1.9	0.1	0.2	0.1	2.1	0.1	1.4				
Intersection Summary												
HCM 6th Ctrl Delay				28.2								
HCM 6th LOS				C								

Timings
14: Citrus Ave. & Summit Ave.

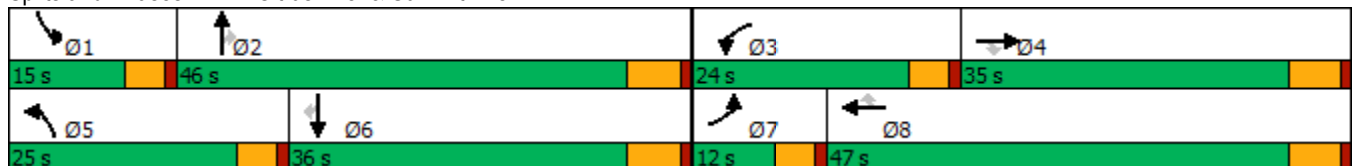
Ventana (JN 13769)
04/27/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	156	184	155	258	64	684	231	104	88	255	147
Future Volume (vph)	64	156	184	155	258	64	684	231	104	88	255	147
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	34.8	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	12.0	35.0	35.0	24.0	47.0	47.0	25.0	46.0	46.0	15.0	36.0	36.0
Total Split (%)	10.0%	29.2%	29.2%	20.0%	39.2%	39.2%	20.8%	38.3%	38.3%	12.5%	30.0%	30.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	6.8	10.7	10.7	12.9	18.9	18.9	20.5	44.2	44.2	8.7	30.3	30.3
Actuated g/C Ratio	0.07	0.11	0.11	0.14	0.20	0.20	0.22	0.46	0.46	0.09	0.32	0.32
v/c Ratio	0.53	0.41	0.55	0.67	0.38	0.16	1.88	0.15	0.14	0.57	0.24	0.24
Control Delay	59.4	43.4	12.8	53.2	35.6	0.8	430.6	17.1	1.7	56.4	25.5	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	43.4	12.8	53.2	35.6	0.8	430.6	17.1	1.7	56.4	25.5	2.8
LOS	E	D	B	D	D	A	F	B	A	E	C	A
Approach Delay		32.0			36.6			293.1			24.3	
Approach LOS		C			D			F			C	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 95.2
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.88
 Intersection Signal Delay: 142.6
 Intersection LOS: F
 Intersection Capacity Utilization 82.0%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/27/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	156	184	155	258	64	684	231	104	88	255	147
Future Volume (veh/h)	64	156	184	155	258	64	684	231	104	88	255	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	162	159	161	269	58	712	241	93	92	266	146
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	498	221	195	714	318	382	1656	723	117	1128	503
Arrive On Green	0.05	0.14	0.14	0.11	0.20	0.20	0.21	0.47	0.47	0.07	0.32	0.32
Sat Flow, veh/h	1781	3554	1575	1781	3554	1583	1781	3554	1550	1781	3554	1585
Grp Volume(v), veh/h	67	162	159	161	269	58	712	241	93	92	266	146
Grp Sat Flow(s),veh/h/ln	1781	1777	1575	1781	1777	1583	1781	1777	1550	1781	1777	1585
Q Serve(g_s), s	3.5	3.9	9.2	8.4	6.2	2.9	20.4	3.7	3.2	4.8	5.3	6.6
Cycle Q Clear(g_c), s	3.5	3.9	9.2	8.4	6.2	2.9	20.4	3.7	3.2	4.8	5.3	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	86	498	221	195	714	318	382	1656	723	117	1128	503
V/C Ratio(X)	0.78	0.33	0.72	0.83	0.38	0.18	1.86	0.15	0.13	0.78	0.24	0.29
Avail Cap(c_a), veh/h	139	1091	483	363	1539	685	382	1656	723	195	1128	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.8	36.8	39.1	41.5	32.8	31.5	37.4	14.5	14.4	43.8	23.9	24.4
Incr Delay (d2), s/veh	5.5	0.4	4.4	3.4	0.3	0.3	398.6	0.2	0.4	4.3	0.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.6	3.7	3.7	2.6	1.1	50.7	1.4	1.1	2.2	2.2	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.3	37.2	43.5	44.9	33.2	31.8	436.0	14.7	14.8	48.1	24.4	25.9
LnGrp LOS	D	D	D	D	C	C	F	B	B	D	C	C
Approach Vol, veh/h		388			488			1046			504	
Approach Delay, s/veh		42.1			36.9			301.5			29.2	
Approach LOS		D			D			F			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.9	50.1	15.0	19.1	25.0	36.0	9.2	24.9				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	10.4	40.2	19.4	29.2	20.4	30.2	7.4	41.2				
Max Q Clear Time (g_c+I1), s	6.8	5.7	10.4	11.2	22.4	8.6	5.5	8.2				
Green Ext Time (p_c), s	0.0	1.7	0.1	1.3	0.0	1.9	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay			150.2									
HCM 6th LOS			F									

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

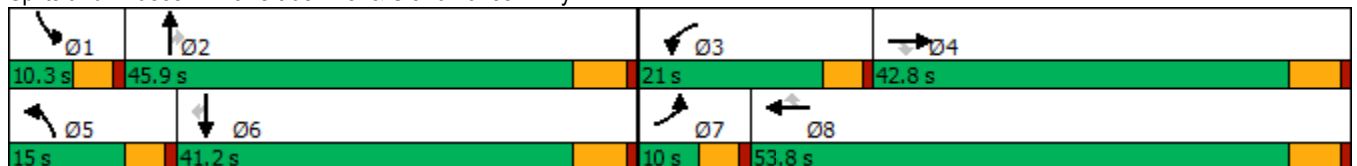
Ventana (JN 13769)
04/27/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	255	389	580	202	101	781	432	708	120	572	66
Future Volume (vph)	60	255	389	580	202	101	781	432	708	120	572	66
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	42.8	42.8	9.6	39.8	39.8	9.6	39.8	39.8	9.6	39.8	39.8
Total Split (s)	10.0	42.8	42.8	21.0	53.8	53.8	15.0	45.9	45.9	10.3	41.2	41.2
Total Split (%)	8.3%	35.7%	35.7%	17.5%	44.8%	44.8%	12.5%	38.3%	38.3%	8.6%	34.3%	34.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	5.5	22.9	22.9	16.9	37.1	37.1	10.7	34.3	34.3	5.9	29.5	29.5
Actuated g/C Ratio	0.05	0.23	0.23	0.17	0.37	0.37	0.11	0.34	0.34	0.06	0.29	0.29
v/c Ratio	0.35	0.35	0.84	1.10	0.17	0.16	2.35	0.39	0.92	0.65	0.61	0.12
Control Delay	57.5	34.0	36.0	110.4	23.8	1.9	636.0	27.4	31.0	67.2	34.3	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.5	34.0	36.0	110.4	23.8	1.9	636.0	27.4	31.0	67.2	34.3	0.4
LOS	E	C	D	F	C	A	F	C	C	E	C	A
Approach Delay		37.1			78.1			276.1			36.6	
Approach LOS		D			E			F			D	

Intersection Summary

































Cycle Length: 120
 Actuated Cycle Length: 101.5
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 2.35
 Intersection Signal Delay: 153.1
 Intersection LOS: F
 Intersection Capacity Utilization 82.4%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/27/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	60	255	389	580	202	101	781	432	708	120	572	66
Future Volume (veh/h)	60	255	389	580	202	101	781	432	708	120	572	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	277	337	630	220	83	849	470	671	130	622	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	878	390	514	1268	566	326	1292	576	179	1141	509
Arrive On Green	0.04	0.25	0.25	0.15	0.36	0.36	0.09	0.36	0.36	0.05	0.32	0.32
Sat Flow, veh/h	3456	3554	1579	3456	3554	1585	3456	3554	1582	3456	3554	1585
Grp Volume(v), veh/h	65	277	337	630	220	83	849	470	671	130	622	61
Grp Sat Flow(s),veh/h/ln	1728	1777	1579	1728	1777	1585	1728	1777	1582	1728	1777	1585
Q Serve(g_s), s	2.0	7.0	22.5	16.4	4.7	3.9	10.4	10.7	40.1	4.1	15.9	3.0
Cycle Q Clear(g_c), s	2.0	7.0	22.5	16.4	4.7	3.9	10.4	10.7	40.1	4.1	15.9	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	135	878	390	514	1268	566	326	1292	576	179	1141	509
V/C Ratio(X)	0.48	0.32	0.86	1.23	0.17	0.15	2.60	0.36	1.17	0.73	0.55	0.12
Avail Cap(c_a), veh/h	169	1193	530	514	1547	690	326	1292	576	179	1141	509
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	33.9	39.7	46.9	24.3	24.1	49.9	25.7	35.1	51.5	30.8	26.4
Incr Delay (d2), s/veh	1.0	0.2	10.6	117.9	0.1	0.1	730.9	0.2	92.4	12.2	0.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.9	9.5	15.2	1.9	1.4	37.4	4.3	29.2	2.0	6.6	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.9	34.1	50.4	164.8	24.4	24.2	780.8	25.9	127.5	63.7	31.3	26.5
LnGrp LOS	D	C	D	F	C	C	F	C	F	E	C	C
Approach Vol, veh/h		679			933			1990			813	
Approach Delay, s/veh		44.0			119.2			382.2			36.2	
Approach LOS		D			F			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.3	45.9	21.0	33.1	15.0	41.2	8.9	45.1				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	5.7	40.1	16.4	37.0	10.4	35.4	5.4	48.0				
Max Q Clear Time (g_c+I1), s	6.1	42.1	18.4	24.5	12.4	17.9	4.0	6.7				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.3	0.0	3.7	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay				210.9								
HCM 6th LOS				F								

Intersection	
Intersection Delay, s/veh	132.3
Intersection LOS	F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↔		↘	↕↕
Traffic Vol, veh/h	72	508	594	110	409	677
Future Vol, veh/h	72	508	594	110	409	677
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	78	552	646	120	445	736
Number of Lanes	1	1	2	0	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay	271.4	104.6	75.9
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	64%	0%	0%	0%	100%	100%
Vol Right, %	0%	36%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	396	308	72	508	409	339	339
LT Vol	0	0	72	0	409	0	0
Through Vol	396	198	0	0	0	339	339
RT Vol	0	110	0	508	0	0	0
Lane Flow Rate	430	335	78	552	445	368	368
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	1.169	0.886	0.252	1.591	1.148	0.899	0.722
Departure Headway (Hd)	11.567	11.301	12.411	11.175	10.756	10.23	8.407
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	319	325	291	331	342	357	434
Service Time	9.267	9.001	10.111	8.875	8.456	7.93	6.107
HCM Lane V/C Ratio	1.348	1.031	0.268	1.668	1.301	1.031	0.848
HCM Control Delay	139.1	60.2	19.2	307.1	128.4	58.4	30.1
HCM Lane LOS	F	F	C	F	F	F	D
HCM 95th-tile Q	15.4	8.3	1	30.2	15.5	8.9	5.6

Intersection						
Int Delay, s/veh	11.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑	
Traffic Vol, veh/h	93	111	38	586	1152	39
Future Vol, veh/h	93	111	38	586	1152	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	95	113	39	598	1176	40

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1872	1196	1216	0	-	0
Stage 1	1196	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 79	227	573	-	-	-
Stage 1	287	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 74	227	573	-	-	-
Mov Cap-2 Maneuver	189	-	-	-	-	-
Stage 1	267	-	-	-	-	-
Stage 2	505	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	110.8	0.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	573	-	208	-	-
HCM Lane V/C Ratio	0.068	-	1.001	-	-
HCM Control Delay (s)	11.7	-	110.8	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.2	-	8.8	-	-

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

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	86	326	293	620	1135	133
Future Volume (vph)	86	326	293	620	1135	133
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	44.8	9.6	16.5	29.5	29.5
Total Split (s)	44.8	44.8	30.0	75.2	45.2	45.2
Total Split (%)	37.3%	37.3%	25.0%	62.7%	37.7%	37.7%
Yellow Time (s)	4.8	4.8	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	6.5	6.5	6.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effct Green (s)	11.7	11.7	23.2	68.7	40.9	40.9
Actuated g/C Ratio	0.13	0.13	0.25	0.74	0.44	0.44
v/c Ratio	0.45	0.72	0.77	0.27	0.85	0.21
Control Delay	44.1	12.4	45.0	4.4	30.6	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	12.4	45.0	4.4	30.6	12.4
LOS	D	B	D	A	C	B
Approach Delay	19.0			17.4	28.7	
Approach LOS	B			B	C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 92.7
 Natural Cycle: 125
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 23.2
 Intersection LOS: C
 Intersection Capacity Utilization 70.0%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	86	326	293	620	1135	133
Future Volume (veh/h)	86	326	293	620	1135	133
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	100	379	341	721	1320	155
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	466	415	371	2225	1336	596
Arrive On Green	0.26	0.26	0.21	0.63	0.38	0.38
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	100	379	341	721	1320	155
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	4.8	25.5	20.6	10.4	40.5	7.4
Cycle Q Clear(g_c), s	4.8	25.5	20.6	10.4	40.5	7.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	466	415	371	2225	1336	596
V/C Ratio(X)	0.21	0.91	0.92	0.32	0.99	0.26
Avail Cap(c_a), veh/h	633	563	412	2225	1336	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	39.3	42.5	9.6	34.0	23.7
Incr Delay (d2), s/veh	0.2	15.8	24.1	0.4	22.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.8	11.0	3.5	19.8	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.9	55.1	66.6	10.0	56.0	24.7
LnGrp LOS	C	E	E	B	E	C
Approach Vol, veh/h	479			1062	1475	
Approach Delay, s/veh	50.3			28.2	52.7	
Approach LOS	D			C	D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		75.2		34.5	27.5	47.7
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	25.4	38.7
Max Q Clear Time (g_c+1), s		12.4		27.5	22.6	42.5
Green Ext Time (p_c), s		4.8		1.3	0.3	0.0
Intersection Summary						
HCM 6th Ctrl Delay			43.7			
HCM 6th LOS			D			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

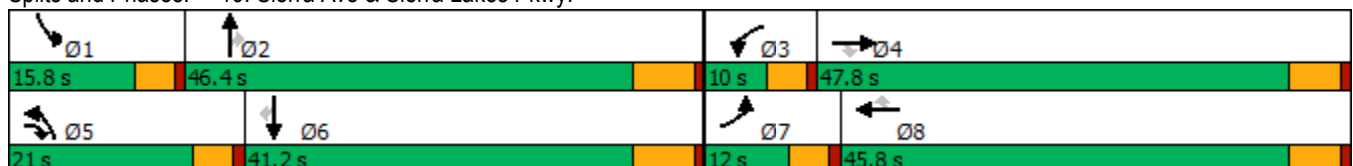
Ventana (JN 13769)
04/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	177	527	151	204	258	581	748	284	278	1153	211
Future Volume (vph)	129	177	527	151	204	258	581	748	284	278	1153	211
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	12.0	47.8	21.0	10.0	45.8	45.8	21.0	46.4	46.4	15.8	41.2	41.2
Total Split (%)	10.0%	39.8%	17.5%	8.3%	38.2%	38.2%	17.5%	38.7%	38.7%	13.2%	34.3%	34.3%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.1	13.6	36.0	5.4	12.0	12.0	16.5	35.4	35.4	11.2	30.2	30.2
Actuated g/C Ratio	0.08	0.16	0.41	0.06	0.14	0.14	0.19	0.41	0.41	0.13	0.35	0.35
v/c Ratio	0.51	0.35	0.83	0.78	0.46	0.64	0.98	0.40	0.38	0.69	0.72	0.33
Control Delay	46.9	35.4	32.9	67.7	38.8	13.3	69.8	19.2	3.6	47.0	27.7	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.9	35.4	32.9	67.7	38.8	13.3	69.8	19.2	3.6	47.0	27.7	4.4
LOS	D	D	C	E	D	B	E	B	A	D	C	A
Approach Delay		35.6			35.2			34.7			28.0	
Approach LOS		D			D			C			C	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 87.4
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 32.6
 Intersection LOS: C
 Intersection Capacity Utilization 72.3%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/06/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	177	527	151	204	258	581	748	284	278	1153	211
Future Volume (veh/h)	129	177	527	151	204	258	581	748	284	278	1153	211
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	142	195	459	166	224	232	638	822	279	305	1267	205
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	986	692	181	963	428	550	1815	562	367	1544	479
Arrive On Green	0.06	0.28	0.28	0.05	0.27	0.27	0.16	0.36	0.36	0.11	0.30	0.30
Sat Flow, veh/h	3456	3554	1585	3456	3554	1582	3456	5106	1581	3456	5106	1585
Grp Volume(v), veh/h	142	195	459	166	224	232	638	822	279	305	1267	205
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1582	1728	1702	1581	1728	1702	1585
Q Serve(g_s), s	4.2	4.3	23.7	4.9	5.1	12.9	16.4	12.7	14.2	8.9	23.7	10.7
Cycle Q Clear(g_c), s	4.2	4.3	23.7	4.9	5.1	12.9	16.4	12.7	14.2	8.9	23.7	10.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	204	986	692	181	963	428	550	1815	562	367	1544	479
V/C Ratio(X)	0.70	0.20	0.66	0.92	0.23	0.54	1.16	0.45	0.50	0.83	0.82	0.43
Avail Cap(c_a), veh/h	248	1448	898	181	1379	614	550	1977	612	376	1719	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.6	28.5	23.0	48.6	29.2	32.1	43.3	25.5	26.0	45.2	33.4	28.8
Incr Delay (d2), s/veh	4.2	0.1	1.2	43.1	0.1	1.1	90.9	0.2	0.7	13.5	3.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.8	8.3	3.1	2.1	4.8	13.5	4.7	5.1	4.3	9.4	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.8	28.6	24.2	91.7	29.4	33.2	134.2	25.7	26.7	58.6	36.4	29.4
LnGrp LOS	D	C	C	F	C	C	F	C	C	E	D	C
Approach Vol, veh/h		796			622			1739			1777	
Approach Delay, s/veh		30.2			47.4			65.7			39.4	
Approach LOS		C			D			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.5	43.1	10.0	34.4	21.0	37.7	10.7	33.7				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	11.2	39.9	5.4	42.0	16.4	34.7	7.4	40.0				
Max Q Clear Time (g_c+I1), s	10.9	16.2	6.9	25.7	18.4	25.7	6.2	14.9				
Green Ext Time (p_c), s	0.0	6.1	0.0	2.5	0.0	5.3	0.0	2.0				
Intersection Summary												
HCM 6th Ctrl Delay			48.2									
HCM 6th LOS			D									

Intersection	
Intersection Delay, s/veh	27.6
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↔		↵	↕↔		↵	↕	↵	↵	↕	↕
Traffic Vol, veh/h	63	313	16	156	323	304	10	4	124	182	2	34
Future Vol, veh/h	63	313	16	156	323	304	10	4	124	182	2	34
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	72	360	18	179	371	349	11	5	143	209	2	39
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	18.4	35.8	15.8	21.9
HCM LOS	C	E	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	87%	0%	100%	26%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	13%	0%	0%	74%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	4	124	63	209	120	156	215	412	182	2
LT Vol	10	0	0	63	0	0	156	0	0	182	0
Through Vol	0	4	0	0	209	104	0	215	108	0	2
RT Vol	0	0	124	0	0	16	0	0	304	0	0
Lane Flow Rate	11	5	143	72	240	138	179	248	473	209	2
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.032	0.012	0.348	0.181	0.566	0.323	0.404	0.524	0.934	0.558	0.006
Departure Headway (Hd)	9.98	9.48	8.78	8.989	8.489	8.396	8.234	7.734	7.217	9.596	9.096
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	360	379	410	402	427	432	439	470	506	377	395
Service Time	7.71	7.21	6.51	6.689	6.189	6.096	5.934	5.434	4.917	7.323	6.823
HCM Lane V/C Ratio	0.031	0.013	0.349	0.179	0.562	0.319	0.408	0.528	0.935	0.554	0.005
HCM Control Delay	13	12.3	16.1	13.7	21.7	15.1	16.4	18.6	52.1	23.8	11.9
HCM Lane LOS	B	B	C	B	C	C	C	C	F	C	B
HCM 95th-tile Q	0.1	0	1.5	0.7	3.4	1.4	1.9	3	11.3	3.3	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	620	776	20	0	7
Future Vol, veh/h	0	620	776	20	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	660	826	21	0	7

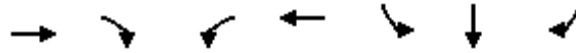
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	424
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	579
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	579
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	579
HCM Lane V/C Ratio	-	-	-	0.013
HCM Control Delay (s)	-	-	-	11.3
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

Timings
3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

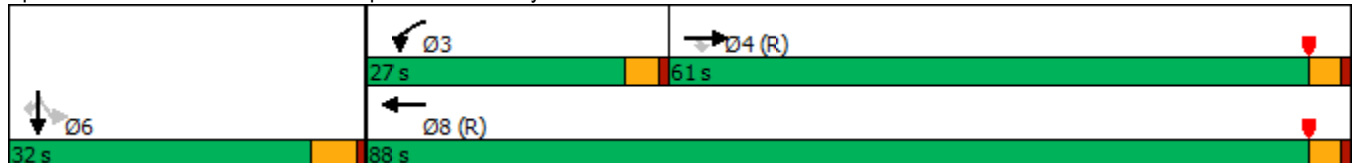


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↖↗	↑↑	↖	↖	↖
Traffic Volume (vph)	388	232	400	702	237	0	95
Future Volume (vph)	388	232	400	702	237	0	95
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8		6	
Permitted Phases		4			6		6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	34.0	34.0	12.0	29.0	13.0	13.0	13.0
Total Split (s)	61.0	61.0	27.0	88.0	32.0	32.0	32.0
Total Split (%)	50.8%	50.8%	22.5%	73.3%	26.7%	26.7%	26.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effct Green (s)	71.5	71.5	20.6	96.1	14.9	14.9	14.9
Actuated g/C Ratio	0.60	0.60	0.17	0.80	0.12	0.12	0.12
v/c Ratio	0.20	0.25	0.75	0.28	0.63	0.63	0.37
Control Delay	12.7	2.4	49.8	3.6	62.5	62.8	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	2.4	49.8	3.6	62.5	62.8	12.0
LOS	B	A	D	A	E	E	B
Approach Delay	8.8			20.3		48.1	
Approach LOS	A			C		D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 21.3
 Intersection LOS: C
 Intersection Capacity Utilization 59.3%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 3: I-15 SB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↘↗	↑↑					↘	↗	↗
Traffic Volume (veh/h)	0	388	232	400	702	0	0	0	0	237	0	95
Future Volume (veh/h)	0	388	232	400	702	0	0	0	0	237	0	95
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	431	241	444	780	0				263	0	80
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2301	1027	507	2941	0				347	0	152
Arrive On Green	0.00	0.65	0.65	0.29	1.00	0.00				0.10	0.00	0.10
Sat Flow, veh/h	0	3647	1585	3456	3647	0				3563	0	1562
Grp Volume(v), veh/h	0	431	241	444	780	0				263	0	80
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1562
Q Serve(g_s), s	0.0	5.8	7.6	14.7	0.0	0.0				8.6	0.0	5.8
Cycle Q Clear(g_c), s	0.0	5.8	7.6	14.7	0.0	0.0				8.6	0.0	5.8
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2301	1027	507	2941	0				347	0	152
V/C Ratio(X)	0.00	0.19	0.23	0.88	0.27	0.00				0.76	0.00	0.53
Avail Cap(c_a), veh/h	0	2301	1027	662	2941	0				802	0	352
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.86	0.86	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	8.5	8.8	41.4	0.0	0.0				52.8	0.0	51.5
Incr Delay (d2), s/veh	0.0	0.2	0.5	9.0	0.2	0.0				3.4	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.2	2.7	5.9	0.1	0.0				4.0	0.0	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.7	9.3	50.4	0.2	0.0				56.2	0.0	54.3
LnGrp LOS	A	A	A	D	A	A				E	A	D
Approach Vol, veh/h		672			1224						343	
Approach Delay, s/veh		8.9			18.4						55.7	
Approach LOS		A			B						E	
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			21.6	81.7		16.7		103.3				
Change Period (Y+Rc), s			4.0	4.0		5.0		4.0				
Max Green Setting (Gmax), s			23.0	57.0		27.0		84.0				
Max Q Clear Time (g_c+I1), s			16.7	9.6		10.6		2.0				
Green Ext Time (p_c), s			0.9	4.1		1.1		6.7				
Intersection Summary												
HCM 6th Ctrl Delay			21.3									
HCM 6th LOS			C									
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings
4: Beech Ave. & I-15 SB Ramps

Ventana (JN 13769)
04/29/2021

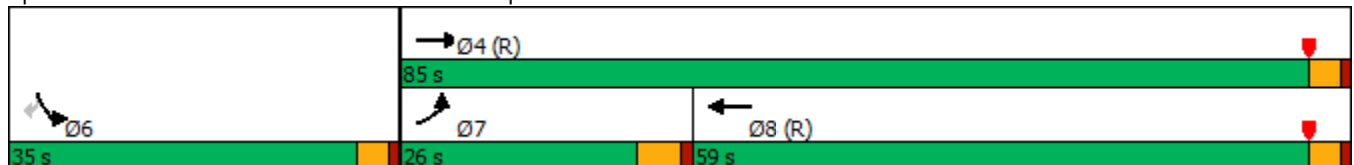


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations	↖	↗↗	↗↗	↖	↖
Traffic Volume (vph)	139	682	579	237	87
Future Volume (vph)	139	682	579	237	87
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	5.0	5.0
Minimum Split (s)	10.0	12.0	12.0	9.0	9.0
Total Split (s)	26.0	85.0	59.0	35.0	35.0
Total Split (%)	21.7%	70.8%	49.2%	29.2%	29.2%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	None	None
Act Effct Green (s)	15.3	89.7	69.4	22.3	22.3
Actuated g/C Ratio	0.13	0.75	0.58	0.19	0.19
v/c Ratio	0.66	0.27	0.61	0.77	0.25
Control Delay	63.2	5.6	41.9	61.3	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	5.6	41.9	61.3	9.1
LOS	E	A	D	E	A
Approach Delay		15.4	41.9	47.3	
Approach LOS		B	D	D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 33.2
 Intersection LOS: C
 Intersection Capacity Utilization 66.3%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 4: Beech Ave. & I-15 SB Ramps



HCM 6th Signalized Intersection Summary
 4: Beech Ave. & I-15 SB Ramps

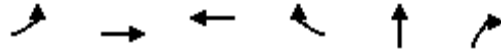
Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗		↙	↘	
Traffic Volume (veh/h)	139	682	579	581	237	87	
Future Volume (veh/h)	139	682	579	581	237	87	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	148	726	616	618	252	93	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	177	2741	1120	999	288	257	
Arrive On Green	0.10	0.77	1.00	1.00	0.16	0.16	
Sat Flow, veh/h	1781	3647	1870	1585	1781	1585	
Grp Volume(v), veh/h	148	726	616	618	252	93	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	9.8	7.0	0.0	0.0	16.6	6.3	
Cycle Q Clear(g_c), s	9.8	7.0	0.0	0.0	16.6	6.3	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	177	2741	1120	999	288	257	
V/C Ratio(X)	0.83	0.26	0.55	0.62	0.87	0.36	
Avail Cap(c_a), veh/h	312	2741	1120	999	460	409	
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.16	0.16	1.00	1.00	
Uniform Delay (d), s/veh	53.1	3.9	0.0	0.0	49.1	44.8	
Incr Delay (d2), s/veh	9.8	0.2	0.3	0.5	10.6	0.9	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	4.9	2.2	0.1	0.1	8.2	5.8	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	62.8	4.2	0.3	0.5	59.7	45.6	
LnGrp LOS	E	A	A	A	E	D	
Approach Vol, veh/h		874	1234		345		
Approach Delay, s/veh		14.1	0.4		55.9		
Approach LOS		B	A		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				96.6	23.4	16.9	79.6
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				81.0	31.0	21.0	55.0
Max Q Clear Time (g_c+I1), s				9.0	18.6	11.8	2.0
Green Ext Time (p_c), s				6.1	0.9	0.2	12.7
Intersection Summary							
HCM 6th Ctrl Delay			13.1				
HCM 6th LOS			B				

Timings
5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

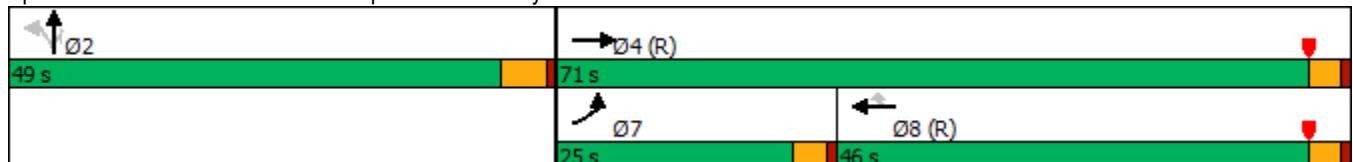


Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations	↖	↗↗	↗↗	↖	↖	↗↗
Traffic Volume (vph)	126	499	732	230	14	675
Future Volume (vph)	126	499	732	230	14	675
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8		2	
Permitted Phases				8		2
Detector Phase	7	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	30.0	36.0	36.0	13.0	13.0
Total Split (s)	25.0	71.0	46.0	46.0	49.0	49.0
Total Split (%)	20.8%	59.2%	38.3%	38.3%	40.8%	40.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	14.6	73.7	55.1	55.1	37.3	37.3
Actuated g/C Ratio	0.12	0.61	0.46	0.46	0.31	0.31
v/c Ratio	0.64	0.25	0.49	0.29	0.76	0.61
Control Delay	70.2	12.8	26.0	4.1	46.5	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.2	12.8	26.0	4.1	46.5	10.5
LOS	E	B	C	A	D	B
Approach Delay		24.3	20.8		23.6	
Approach LOS		C	C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 22.7
 Intersection LOS: C
 Intersection Capacity Utilization 59.3%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 5: I-15 NB Ramp & Duncan Canyon Rd.



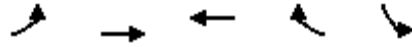
HCM 6th Signalized Intersection Summary
 5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	499	0	0	732	230	370	14	675	0	0	0
Future Volume (veh/h)	126	499	0	0	732	230	370	14	675	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	138	548	0	0	804	241	407	15	734			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	165	2185	0	0	1738	775	534	20	847			
Arrive On Green	0.18	1.00	0.00	0.00	0.49	0.49	0.31	0.31	0.31			
Sat Flow, veh/h	1781	3647	0	0	3647	1585	1721	63	2731			
Grp Volume(v), veh/h	138	548	0	0	804	241	422	0	734			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1585	1784	0	1365			
Q Serve(g_s), s	9.0	0.0	0.0	0.0	17.9	11.0	25.6	0.0	30.4			
Cycle Q Clear(g_c), s	9.0	0.0	0.0	0.0	17.9	11.0	25.6	0.0	30.4			
Prop In Lane	1.00		0.00	0.00		1.00	0.96		1.00			
Lane Grp Cap(c), veh/h	165	2185	0	0	1738	775	553	0	847			
V/C Ratio(X)	0.84	0.25	0.00	0.00	0.46	0.31	0.76	0.00	0.87			
Avail Cap(c_a), veh/h	312	2185	0	0	1738	775	654	0	1001			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.96	0.96	0.00	0.00	0.97	0.97	1.00	0.00	1.00			
Uniform Delay (d), s/veh	48.1	0.0	0.0	0.0	20.2	18.5	37.4	0.0	39.1			
Incr Delay (d2), s/veh	10.3	0.3	0.0	0.0	0.9	1.0	4.5	0.0	7.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.1	0.1	0.0	0.0	7.5	4.2	11.8	0.0	10.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.4	0.3	0.0	0.0	21.1	19.5	41.9	0.0	46.2			
LnGrp LOS	E	A	A	A	C	B	D	A	D			
Approach Vol, veh/h		686			1045			1156				
Approach Delay, s/veh		12.0			20.7			44.6				
Approach LOS		B			C			D				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		42.2		77.8			15.1	62.7				
Change Period (Y+Rc), s		5.0		4.0			4.0	4.0				
Max Green Setting (Gmax), s		44.0		67.0			21.0	42.0				
Max Q Clear Time (g_c+I1), s		32.4		2.0			11.0	19.9				
Green Ext Time (p_c), s		4.8		4.3			0.2	6.8				
Intersection Summary												
HCM 6th Ctrl Delay				28.2								
HCM 6th LOS				C								

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021

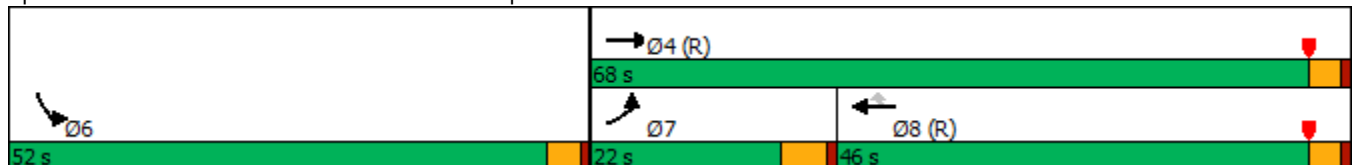


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↗↗	↗↗	↖	↖↖↖
Traffic Volume (vph)	187	732	977	455	1013
Future Volume (vph)	187	732	977	455	1013
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	22.0	68.0	46.0	46.0	52.0
Total Split (%)	18.3%	56.7%	38.3%	38.3%	43.3%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	16.1	64.7	43.6	43.6	47.3
Actuated g/C Ratio	0.13	0.54	0.36	0.36	0.39
v/c Ratio	0.84	0.41	0.81	0.58	0.95
Control Delay	69.7	16.3	40.9	8.0	49.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	69.7	16.3	40.9	8.0	49.5
LOS	E	B	D	A	D
Approach Delay		27.2	30.5		49.5
Approach LOS		C	C		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 36.0
 Intersection LOS: D
 Intersection Capacity Utilization 82.9%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗↗	↗	↘↘	↘	
Traffic Volume (veh/h)	187	732	977	455	1013	185	
Future Volume (veh/h)	187	732	977	455	1013	185	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	199	779	1039	237	1204	0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	223	2015	1422	634	1305	580	
Arrive On Green	0.25	1.00	0.40	0.40	0.37	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	199	779	1039	237	1204	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	12.9	0.0	29.7	12.7	38.8	0.0	
Cycle Q Clear(g_c), s	12.9	0.0	29.7	12.7	38.8	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	223	2015	1422	634	1305	580	
V/C Ratio(X)	0.89	0.39	0.73	0.37	0.92	0.00	
Avail Cap(c_a), veh/h	252	2015	1422	634	1425	634	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.92	0.92	0.75	0.75	1.00	0.00	
Uniform Delay (d), s/veh	44.2	0.0	30.5	25.4	36.4	0.0	
Incr Delay (d2), s/veh	26.5	0.5	2.5	1.3	9.8	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	6.6	0.1	13.1	5.0	18.4	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	70.7	0.5	33.0	26.6	46.2	0.0	
LnGrp LOS	E	A	C	C	D	A	
Approach Vol, veh/h		978	1276		1204		
Approach Delay, s/veh		14.8	31.8		46.2		
Approach LOS		B	C		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				72.1	47.9	20.0	52.0
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				64.0	48.0	17.0	42.0
Max Q Clear Time (g_c+I1), s				2.0	40.8	14.9	31.7
Green Ext Time (p_c), s				6.7	3.1	0.1	5.7

Intersection Summary

HCM 6th Ctrl Delay	32.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

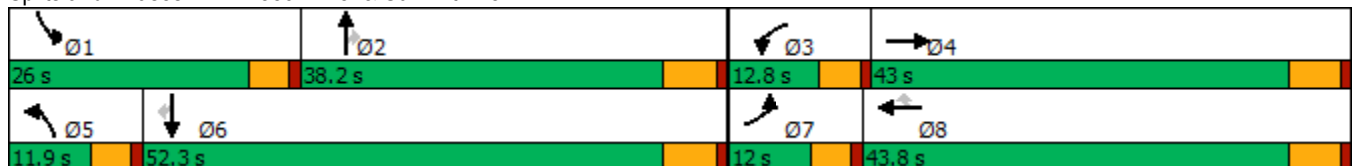
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	129	317	135	338	421	106	376	121	708	548	100
Future Volume (vph)	129	317	135	338	421	106	376	121	708	548	100
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	43.8	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	43.0	12.8	43.8	43.8	11.9	38.2	38.2	26.0	52.3	52.3
Total Split (%)	10.0%	35.8%	10.7%	36.5%	36.5%	9.9%	31.8%	31.8%	21.7%	43.6%	43.6%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	6.9	16.0	7.3	16.4	16.4	6.6	15.1	15.1	21.6	32.4	32.4
Actuated g/C Ratio	0.09	0.20	0.09	0.20	0.20	0.08	0.19	0.19	0.27	0.40	0.40
v/c Ratio	0.46	0.66	0.45	0.49	0.68	0.39	0.60	0.31	0.81	0.40	0.15
Control Delay	42.8	31.6	41.9	31.4	9.8	41.9	34.8	5.6	37.8	20.2	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.8	31.6	41.9	31.4	9.8	41.9	34.8	5.6	37.8	20.2	4.5
LOS	D	C	D	C	A	D	C	A	D	C	A
Approach Delay		34.1		22.8			30.2			28.2	
Approach LOS		C		C			C			C	

Intersection Summary
































Cycle Length: 120
 Actuated Cycle Length: 81.1
 Natural Cycle: 115
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 28.1
 Intersection LOS: C
 Intersection Capacity Utilization 71.1%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 7: Beech Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	129	317	130	135	338	421	106	376	121	708	548	100
Future Volume (veh/h)	129	317	130	135	338	421	106	376	121	708	548	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	330	110	141	352	347	110	392	86	738	571	73
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	205	725	237	213	989	441	187	656	289	813	1300	578
Arrive On Green	0.06	0.28	0.28	0.06	0.28	0.28	0.05	0.18	0.18	0.24	0.37	0.37
Sat Flow, veh/h	3456	2627	860	3456	3554	1583	3456	3554	1564	3456	3554	1581
Grp Volume(v), veh/h	134	221	219	141	352	347	110	392	86	738	571	73
Grp Sat Flow(s),veh/h/ln	1728	1777	1710	1728	1777	1583	1728	1777	1564	1728	1777	1581
Q Serve(g_s), s	3.3	8.8	9.1	3.4	6.8	17.4	2.7	8.7	4.1	17.8	10.4	2.6
Cycle Q Clear(g_c), s	3.3	8.8	9.1	3.4	6.8	17.4	2.7	8.7	4.1	17.8	10.4	2.6
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	205	490	472	213	989	441	187	656	289	813	1300	578
V/C Ratio(X)	0.65	0.45	0.46	0.66	0.36	0.79	0.59	0.60	0.30	0.91	0.44	0.13
Avail Cap(c_a), veh/h	298	771	742	330	1575	702	294	1343	591	862	1927	857
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.5	25.7	25.8	39.4	24.8	28.6	39.6	32.0	30.2	31.9	20.5	18.1
Incr Delay (d2), s/veh	1.3	0.7	0.7	1.3	0.2	3.2	1.1	0.9	0.6	12.3	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.7	3.7	1.5	2.8	6.7	1.1	3.7	1.5	8.6	4.2	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.8	26.3	26.5	40.7	25.0	31.8	40.7	32.9	30.7	44.2	20.8	18.2
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	C	B
Approach Vol, veh/h		574			840			588			1382	
Approach Delay, s/veh		29.8			30.4			34.1			33.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	24.8	21.6	9.9	29.5	9.2	37.2	9.7	29.7				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	21.4	32.4	8.2	37.2	7.3	46.5	7.4	38.0				
Max Q Clear Time (g_c+I1), s	19.8	10.7	5.4	11.1	4.7	12.4	5.3	19.4				
Green Ext Time (p_c), s	0.4	2.8	0.1	2.8	0.0	4.6	0.0	3.4				
Intersection Summary												
HCM 6th Ctrl Delay				32.1								
HCM 6th LOS				C								

Timings
9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
04/29/2021

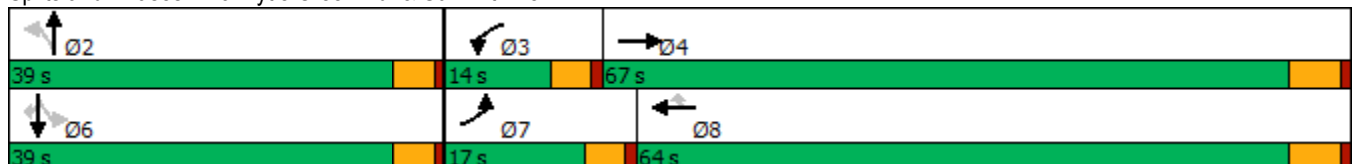


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↖	↕	↖	↕	↖
Traffic Volume (vph)	111	1262	60	993	64	54	22	47	12	93
Future Volume (vph)	111	1262	60	993	64	54	22	47	12	93
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8			2		6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	9.6	28.8	28.8	33.7	33.7	31.7	31.7	31.7
Total Split (s)	17.0	67.0	14.0	64.0	64.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	14.2%	55.8%	11.7%	53.3%	53.3%	32.5%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None
Act Effct Green (s)	10.3	47.6	7.7	39.2	39.2	11.7	11.7	11.7	11.7	11.7
Actuated g/C Ratio	0.14	0.66	0.11	0.54	0.54	0.16	0.16	0.16	0.16	0.16
v/c Ratio	0.48	0.62	0.35	0.57	0.08	0.26	0.29	0.25	0.04	0.30
Control Delay	41.3	12.5	41.7	13.0	3.7	37.4	17.0	37.4	34.5	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.3	12.5	41.7	13.0	3.7	37.4	17.0	37.4	34.5	11.0
LOS	D	B	D	B	A	D	B	D	C	B
Approach Delay		14.7		14.1			25.0		21.0	
Approach LOS		B		B			C		C	

Intersection Summary























Cycle Length: 120
 Actuated Cycle Length: 72.4
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 15.3
 Intersection LOS: B
 Intersection Capacity Utilization 65.9%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 9: Lytle Creek Rd. & Summit Ave.



HCM 6th Signalized Intersection Summary
 9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	1262	49	60	993	64	54	22	61	47	12	93
Future Volume (veh/h)	111	1262	49	60	993	64	54	22	61	47	12	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	122	1387	47	66	1091	65	59	24	57	52	13	71
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	1898	64	94	1798	795	337	88	209	289	342	286
Arrive On Green	0.09	0.54	0.54	0.05	0.51	0.51	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1781	3506	119	1781	3554	1571	1301	483	1147	1305	1870	1567
Grp Volume(v), veh/h	122	702	732	66	1091	65	59	0	81	52	13	71
Grp Sat Flow(s),veh/h/ln	1781	1777	1848	1781	1777	1571	1301	0	1630	1305	1870	1567
Q Serve(g_s), s	4.5	20.2	20.3	2.5	14.8	1.4	2.6	0.0	2.9	2.4	0.4	2.6
Cycle Q Clear(g_c), s	4.5	20.2	20.3	2.5	14.8	1.4	3.0	0.0	2.9	5.3	0.4	2.6
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.70	1.00		1.00
Lane Grp Cap(c), veh/h	156	962	1000	94	1798	795	337	0	298	289	342	286
V/C Ratio(X)	0.78	0.73	0.73	0.70	0.61	0.08	0.18	0.00	0.27	0.18	0.04	0.25
Avail Cap(c_a), veh/h	327	1610	1675	248	3063	1354	760	0	828	714	950	796
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.2	11.7	11.8	31.5	11.9	8.6	24.0	0.0	23.7	26.0	22.7	23.6
Incr Delay (d2), s/veh	3.2	1.1	1.1	3.6	0.3	0.0	0.2	0.0	0.5	0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	6.9	7.2	1.1	5.1	0.4	0.8	0.0	1.1	0.7	0.2	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	12.8	12.8	35.1	12.2	8.6	24.2	0.0	24.2	26.3	22.8	24.1
LnGrp LOS	C	B	B	D	B	A	C	A	C	C	C	C
Approach Vol, veh/h		1556			1222			140			136	
Approach Delay, s/veh		14.4			13.3			24.2			24.8	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.0	8.2	42.4		17.0	10.5	40.0				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 34	9.4	61.2		* 34	12.4	58.2				
Max Q Clear Time (g_c+I1), s		5.0	4.5	22.3		7.3	6.5	16.8				
Green Ext Time (p_c), s		0.6	0.0	14.2		0.4	0.1	10.7				
Intersection Summary												
HCM 6th Ctrl Delay			14.9									
HCM 6th LOS			B									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Intersection												
Intersection Delay, s/veh	58.6											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↻			↻		↻		↻			
Traffic Vol, veh/h	75	225	884	20	144	16	744	26	21	9	15	45
Future Vol, veh/h	75	225	884	20	144	16	744	26	21	9	15	45
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	78	234	921	21	150	17	775	27	22	9	16	47
Number of Lanes	0	1	0	0	1	0	1	0	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	464.7	18.4	277.3
HCM LOS	F	C	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	6%	11%
Vol Thru, %	0%	55%	19%	80%
Vol Right, %	0%	45%	75%	9%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	744	47	1184	180
LT Vol	744	0	75	20
Through Vol	0	26	225	144
RT Vol	0	21	884	16
Lane Flow Rate	775	49	1233	188
Geometry Grp	7	7	2	2
Degree of Util (X)	1.576	0.089	1.98	0.364
Departure Headway (Hd)	9.161	8.318	7.011	9.893
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	403	434	530	368
Service Time	6.861	6.018	5.011	7.893
HCM Lane V/C Ratio	1.923	0.113	2.326	0.511
HCM Control Delay	294.1	11.8	464.7	18.4
HCM Lane LOS	F	B	F	C
HCM 95th-tile Q	34.9	0.3	68.5	1.6

Timings
13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
04/29/2021

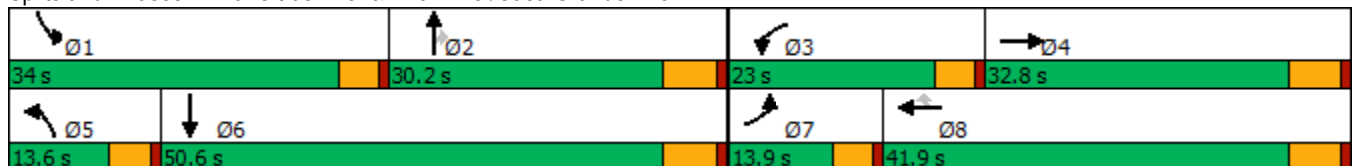


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↗	↖	↑↑	↗	↖	↗↖
Traffic Volume (vph)	53	40	236	37	275	49	433	341	433	291
Future Volume (vph)	53	40	236	37	275	49	433	341	433	291
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	30.8	30.8	9.6	26.8	26.8	9.6	22.8
Total Split (s)	13.9	32.8	23.0	41.9	41.9	13.6	30.2	30.2	34.0	50.6
Total Split (%)	11.6%	27.3%	19.2%	34.9%	34.9%	11.3%	25.2%	25.2%	28.3%	42.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	7.3	10.4	16.9	18.3	18.3	7.1	19.2	19.2	30.1	44.8
Actuated g/C Ratio	0.08	0.11	0.18	0.20	0.20	0.08	0.21	0.21	0.32	0.48
v/c Ratio	0.40	0.26	0.76	0.10	0.53	0.38	0.62	0.58	0.78	0.21
Control Delay	52.9	37.6	54.8	34.3	8.4	52.6	38.6	8.0	43.2	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.9	37.6	54.8	34.3	8.4	52.6	38.6	8.0	43.2	16.2
LOS	D	D	D	C	A	D	D	A	D	B
Approach Delay		45.2		30.1			26.7			31.2
Approach LOS		D		C			C			C

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 93.6
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 30.0
 Intersection LOS: C
 Intersection Capacity Utilization 69.2%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 13: Citrus Ave. & Knox Ave./Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	40	14	236	37	275	49	433	341	433	291	55
Future Volume (veh/h)	53	40	14	236	37	275	49	433	341	433	291	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	55	41	14	243	38	165	51	446	223	446	300	57
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	163	55	283	444	376	75	684	305	487	1265	237
Arrive On Green	0.04	0.12	0.12	0.16	0.24	0.24	0.04	0.19	0.19	0.27	0.42	0.42
Sat Flow, veh/h	1781	1333	455	1781	1870	1585	1781	3554	1585	1781	2986	560
Grp Volume(v), veh/h	55	0	55	243	38	165	51	446	223	446	177	180
Grp Sat Flow(s),veh/h/ln	1781	0	1788	1781	1870	1585	1781	1777	1585	1781	1777	1770
Q Serve(g_s), s	2.5	0.0	2.3	10.9	1.3	7.3	2.3	9.5	10.8	19.9	5.2	5.4
Cycle Q Clear(g_c), s	2.5	0.0	2.3	10.9	1.3	7.3	2.3	9.5	10.8	19.9	5.2	5.4
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	78	0	218	283	444	376	75	684	305	487	753	750
V/C Ratio(X)	0.71	0.00	0.25	0.86	0.09	0.44	0.68	0.65	0.73	0.92	0.24	0.24
Avail Cap(c_a), veh/h	202	0	589	400	824	698	196	1058	472	639	971	967
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	0.0	32.6	33.6	24.3	26.6	38.7	30.6	31.1	28.9	15.1	15.2
Incr Delay (d2), s/veh	4.4	0.0	0.6	9.4	0.1	0.8	4.1	1.1	3.4	13.3	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.0	5.3	0.6	2.7	1.1	4.1	4.3	9.9	2.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.1	0.0	33.2	43.0	24.4	27.4	42.8	31.6	34.5	42.2	15.3	15.3
LnGrp LOS	D	A	C	D	C	C	D	C	C	D	B	B
Approach Vol, veh/h		110			446			720			803	
Approach Delay, s/veh		38.1			35.6			33.3			30.3	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.0	21.6	17.6	15.8	8.0	40.5	8.2	25.2				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	29.4	24.4	18.4	27.0	9.0	44.8	9.3	36.1				
Max Q Clear Time (g_c+I1), s	21.9	12.8	12.9	4.3	4.3	7.4	4.5	9.3				
Green Ext Time (p_c), s	0.5	2.9	0.2	0.2	0.0	2.3	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay				32.9								
HCM 6th LOS				C								

Timings
14: Citrus Ave. & Summit Ave.

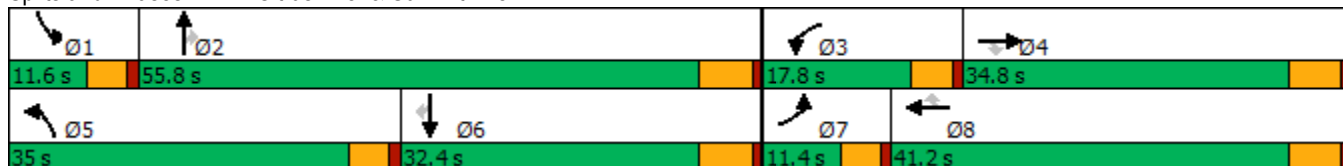
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	509	410	162	395	71	1002	371	140	59	253	81
Future Volume (vph)	147	509	410	162	395	71	1002	371	140	59	253	81
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	34.8	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	11.4	34.8	34.8	17.8	41.2	41.2	35.0	55.8	55.8	11.6	32.4	32.4
Total Split (%)	9.5%	29.0%	29.0%	14.8%	34.3%	34.3%	29.2%	46.5%	46.5%	9.7%	27.0%	27.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.8	24.0	24.0	12.8	30.0	30.0	30.6	39.8	39.8	6.6	13.6	13.6
Actuated g/C Ratio	0.07	0.24	0.24	0.13	0.29	0.29	0.30	0.39	0.39	0.06	0.13	0.13
v/c Ratio	1.36	0.66	0.65	0.79	0.41	0.14	2.05	0.29	0.22	0.56	0.59	0.23
Control Delay	242.1	39.7	9.9	70.2	30.2	0.5	503.1	23.7	4.7	67.9	47.5	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	242.1	39.7	9.9	70.2	30.2	0.5	503.1	23.7	4.7	67.9	47.5	1.5
LOS	F	D	A	E	C	A	F	C	A	E	D	A
Approach Delay		56.2			37.2			339.5			41.1	
Approach LOS		E			D			F			D	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 101.9
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 2.05
 Intersection Signal Delay: 170.3
 Intersection LOS: F
 Intersection Capacity Utilization 104.6%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	509	410	162	395	71	1002	371	140	59	253	81
Future Volume (veh/h)	147	509	410	162	395	71	1002	371	140	59	253	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	553	353	176	429	67	1089	403	116	64	275	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	921	405	207	1096	488	532	1329	576	82	432	190
Arrive On Green	0.07	0.26	0.26	0.12	0.31	0.31	0.30	0.37	0.37	0.05	0.12	0.12
Sat Flow, veh/h	1781	3554	1562	1781	3554	1582	1781	3554	1540	1781	3554	1560
Grp Volume(v), veh/h	160	553	353	176	429	67	1089	403	116	64	275	86
Grp Sat Flow(s),veh/h/ln	1781	1777	1562	1781	1777	1582	1781	1777	1540	1781	1777	1560
Q Serve(g_s), s	6.8	13.9	22.0	9.9	9.7	3.1	30.4	8.1	5.2	3.6	7.5	5.2
Cycle Q Clear(g_c), s	6.8	13.9	22.0	9.9	9.7	3.1	30.4	8.1	5.2	3.6	7.5	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	119	921	405	207	1096	488	532	1329	576	82	432	190
V/C Ratio(X)	1.34	0.60	0.87	0.85	0.39	0.14	2.05	0.30	0.20	0.78	0.64	0.45
Avail Cap(c_a), veh/h	119	1013	445	231	1236	550	532	1746	757	123	929	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	33.1	36.1	44.1	27.7	25.4	35.7	22.5	21.6	48.0	42.6	41.6
Incr Delay (d2), s/veh	200.4	0.8	16.0	21.2	0.2	0.1	477.3	0.1	0.2	8.5	1.6	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	6.0	10.0	5.5	4.1	1.2	83.4	3.4	1.9	1.8	3.4	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	247.9	33.9	52.1	65.3	27.9	25.5	513.0	22.6	21.7	56.5	44.1	43.2
LnGrp LOS	F	C	D	E	C	C	F	C	C	E	D	D
Approach Vol, veh/h		1066			672			1608			425	
Approach Delay, s/veh		72.1			37.5			354.7			45.8	
Approach LOS		E			D			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.3	43.9	16.4	32.2	35.0	18.2	11.4	37.2				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.0	50.0	13.2	29.0	30.4	26.6	6.8	35.4				
Max Q Clear Time (g_c+I1), s	5.6	10.1	11.9	24.0	32.4	9.5	8.8	11.7				
Green Ext Time (p_c), s	0.0	3.4	0.0	2.2	0.0	1.8	0.0	3.1				
Intersection Summary												
HCM 6th Ctrl Delay			183.4									
HCM 6th LOS			F									

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

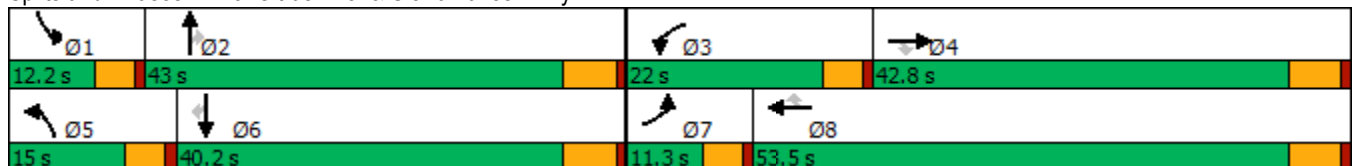
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	395	395	738	378	266	935	657	900	230	529	82
Future Volume (vph)	95	395	395	738	378	266	935	657	900	230	529	82
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	42.8	42.8	9.6	39.8	39.8	9.6	39.8	39.8	9.6	39.8	39.8
Total Split (s)	11.3	42.8	42.8	22.0	53.5	53.5	15.0	43.0	43.0	12.2	40.2	40.2
Total Split (%)	9.4%	35.7%	35.7%	18.3%	44.6%	44.6%	12.5%	35.8%	35.8%	10.2%	33.5%	33.5%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.4	24.0	24.0	17.5	35.1	35.1	10.5	37.4	37.4	7.6	34.6	34.6
Actuated g/C Ratio	0.06	0.22	0.22	0.16	0.33	0.33	0.10	0.35	0.35	0.07	0.32	0.32
v/c Ratio	0.49	0.52	0.81	1.38	0.34	0.42	2.92	0.56	1.20	0.98	0.48	0.14
Control Delay	59.5	38.4	32.1	215.9	27.8	7.8	891.1	31.7	124.5	105.5	32.3	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	38.4	32.1	215.9	27.8	7.8	891.1	31.7	124.5	105.5	32.3	0.5
LOS	E	D	C	F	C	A	F	C	F	F	C	A
Approach Delay		37.9			124.4			387.7			49.3	
Approach LOS		D			F			F			D	

Intersection Summary

































Cycle Length: 120
 Actuated Cycle Length: 107.5
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 2.92
 Intersection Signal Delay: 216.6
 Intersection LOS: F
 Intersection Capacity Utilization 92.5%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	95	395	395	738	378	266	935	657	900	230	529	82
Future Volume (veh/h)	95	395	395	738	378	266	935	657	900	230	529	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	99	411	335	769	394	178	974	684	746	240	551	48
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	905	397	540	1303	574	323	1187	523	236	1098	483
Arrive On Green	0.04	0.25	0.25	0.16	0.37	0.37	0.09	0.33	0.33	0.07	0.31	0.31
Sat Flow, veh/h	3456	3554	1559	3456	3554	1564	3456	3554	1565	3456	3554	1564
Grp Volume(v), veh/h	99	411	335	769	394	178	974	684	746	240	551	48
Grp Sat Flow(s),veh/h/ln	1728	1777	1559	1728	1777	1564	1728	1777	1565	1728	1777	1564
Q Serve(g_s), s	3.1	10.9	22.7	17.4	8.8	9.1	10.4	17.7	37.2	7.6	14.1	2.4
Cycle Q Clear(g_c), s	3.1	10.9	22.7	17.4	8.8	9.1	10.4	17.7	37.2	7.6	14.1	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	153	905	397	540	1303	574	323	1187	523	236	1098	483
V/C Ratio(X)	0.65	0.45	0.84	1.42	0.30	0.31	3.02	0.58	1.43	1.02	0.50	0.10
Avail Cap(c_a), veh/h	208	1181	518	540	1522	670	323	1187	523	236	1098	483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	35.0	39.4	47.0	25.1	25.2	50.5	30.6	37.1	51.9	31.5	27.4
Incr Delay (d2), s/veh	1.7	0.4	9.6	201.5	0.1	0.3	916.3	0.7	203.0	63.2	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.7	9.7	22.5	3.7	3.4	45.6	7.6	43.4	5.4	6.1	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.1	35.3	49.0	248.4	25.2	25.5	966.8	31.3	240.1	115.1	31.8	27.5
LnGrp LOS	D	D	D	F	C	C	F	C	F	F	C	C
Approach Vol, veh/h		845			1341			2404			839	
Approach Delay, s/veh		43.0			153.3			475.1			55.4	
Approach LOS		D			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	43.0	22.0	34.2	15.0	40.2	9.5	46.6				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.6	37.2	17.4	37.0	10.4	34.4	6.7	47.7				
Max Q Clear Time (g_c+I1), s	9.6	39.2	19.4	24.7	12.4	16.1	5.1	11.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	3.2	0.0	3.7	0.0	3.5				
Intersection Summary												
HCM 6th Ctrl Delay			263.5									
HCM 6th LOS				F								

Intersection	
Intersection Delay, s/veh	177.6
Intersection LOS	F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↔		↘	↕↕
Traffic Vol, veh/h	100	492	748	68	503	749
Future Vol, veh/h	100	492	748	68	503	749
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	106	523	796	72	535	797
Number of Lanes	1	1	2	0	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay	260.6	197.7	125.3
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	79%	0%	0%	0%	100%	100%
Vol Right, %	0%	21%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	499	317	100	492	503	375	375
LT Vol	0	0	100	0	503	0	0
Through Vol	499	249	0	0	0	375	375
RT Vol	0	68	0	492	0	0	0
Lane Flow Rate	530	338	106	523	535	398	398
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	1.505	0.944	0.356	1.578	1.398	0.986	0.794
Departure Headway (Hd)	12.509	12.351	14.564	13.328	11.039	10.514	8.695
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	297	297	249	277	332	347	418
Service Time	10.209	10.051	12.264	11.028	8.739	8.214	6.395
HCM Lane V/C Ratio	1.785	1.138	0.426	1.888	1.611	1.147	0.952
HCM Control Delay	275.1	76	25.1	308.5	225.6	78.4	37.5
HCM Lane LOS	F	F	D	F	F	F	E
HCM 95th-tile Q	24.7	9.2	1.5	25.7	23.5	11	7

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	68	72	120	1249	851	103
Future Vol, veh/h	68	72	120	1249	851	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	71	75	125	1301	886	107

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2491	940	993	0	-	0
Stage 1	940	-	-	-	-	-
Stage 2	1551	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 32	320	696	-	-	-
Stage 1	380	-	-	-	-	-
Stage 2	192	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 26	320	696	-	-	-
Mov Cap-2 Maneuver	120	-	-	-	-	-
Stage 1	312	-	-	-	-	-
Stage 2	192	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	81.2	1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	696	-	177	-	-
HCM Lane V/C Ratio	0.18	-	0.824	-	-
HCM Control Delay (s)	11.3	-	81.2	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.7	-	5.7	-	-

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

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	281	418	471	1081	744	200
Future Volume (vph)	281	418	471	1081	744	200
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	44.8	9.6	16.5	29.5	29.5
Total Split (s)	44.8	44.8	42.0	75.2	33.2	33.2
Total Split (%)	37.3%	37.3%	35.0%	62.7%	27.7%	27.7%
Yellow Time (s)	4.8	4.8	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	6.5	6.5	6.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	22.6	22.6	32.5	64.3	27.1	27.1
Actuated g/C Ratio	0.23	0.23	0.33	0.65	0.27	0.27
v/c Ratio	0.74	0.63	0.86	0.50	0.81	0.41
Control Delay	47.5	7.5	48.0	10.8	43.6	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	7.5	48.0	10.8	43.6	19.6
LOS	D	A	D	B	D	B
Approach Delay	23.6			22.1	38.5	
Approach LOS	C			C	D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 99.4
 Natural Cycle: 115
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 27.3
 Intersection LOS: C
 Intersection Capacity Utilization 76.3%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	281	418	471	1081	744	200
Future Volume (veh/h)	281	418	471	1081	744	200
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	296	297	496	1138	783	150
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	401	357	547	2240	956	427
Arrive On Green	0.23	0.23	0.31	0.63	0.27	0.27
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	296	297	496	1138	783	150
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	13.1	15.2	22.7	14.8	17.6	6.5
Cycle Q Clear(g_c), s	13.1	15.2	22.7	14.8	17.6	6.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	401	357	547	2240	956	427
V/C Ratio(X)	0.74	0.83	0.91	0.51	0.82	0.35
Avail Cap(c_a), veh/h	817	727	783	2871	1116	498
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.6	31.4	28.3	8.5	29.1	25.1
Incr Delay (d2), s/veh	2.7	5.1	10.8	0.2	4.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.5	10.9	5.0	7.8	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.3	36.5	39.1	8.7	33.4	25.6
LnGrp LOS	C	D	D	A	C	C
Approach Vol, veh/h	593			1634	933	
Approach Delay, s/veh	34.9			17.9	32.2	
Approach LOS	C			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		60.1		24.9	30.7	29.4
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	37.4	26.7
Max Q Clear Time (g_c+I1), s		16.8		17.2	24.7	19.6
Green Ext Time (p_c), s		11.5		1.9	1.4	3.3
Intersection Summary						
HCM 6th Ctrl Delay			25.3			
HCM 6th LOS			C			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

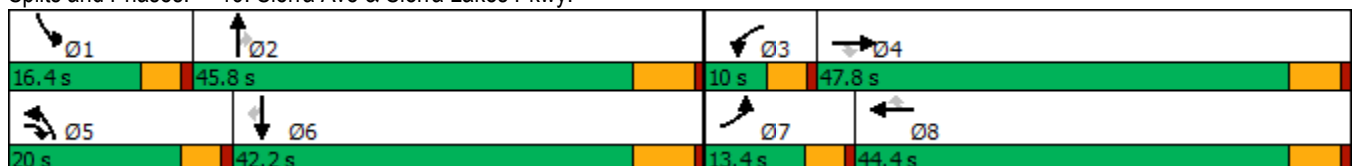
Ventana (JN 13769)
04/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	303	340	954	225	274	286	871	1113	269	273	901	222
Future Volume (vph)	303	340	954	225	274	286	871	1113	269	273	901	222
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	13.4	47.8	20.0	10.0	44.4	44.4	20.0	45.8	45.8	16.4	42.2	42.2
Total Split (%)	11.2%	39.8%	16.7%	8.3%	37.0%	37.0%	16.7%	38.2%	38.2%	13.7%	35.2%	35.2%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.9	17.7	34.6	5.5	14.3	14.3	15.6	32.7	32.7	11.0	28.2	28.2
Actuated g/C Ratio	0.10	0.20	0.39	0.06	0.16	0.16	0.18	0.37	0.37	0.12	0.32	0.32
v/c Ratio	0.91	0.50	1.50	1.10	0.50	0.64	1.49	0.61	0.39	0.66	0.58	0.35
Control Delay	72.6	35.0	255.2	133.5	37.9	14.8	258.2	24.6	7.8	46.9	26.7	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.6	35.0	255.2	133.5	37.9	14.8	258.2	24.6	7.8	46.9	26.7	4.8
LOS	E	C	F	F	D	B	F	C	A	D	C	A
Approach Delay		173.7			56.9			112.9			27.2	
Approach LOS		F			E			F			C	

Intersection Summary



































Cycle Length: 120
 Actuated Cycle Length: 88.8
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.50
 Intersection Signal Delay: 101.9
 Intersection LOS: F
 Intersection Capacity Utilization 97.2%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/06/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		 	  	
Traffic Volume (veh/h)	303	340	954	225	274	286	871	1113	269	273	901	222
Future Volume (veh/h)	303	340	954	225	274	286	871	1113	269	273	901	222
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	312	351	716	232	282	237	898	1147	213	281	929	183
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	270	1324	806	166	1217	535	472	1484	454	339	1286	398
Arrive On Green	0.08	0.37	0.37	0.05	0.34	0.34	0.14	0.29	0.29	0.10	0.25	0.25
Sat Flow, veh/h	3456	3554	1582	3456	3554	1562	3456	5106	1564	3456	5106	1579
Grp Volume(v), veh/h	312	351	716	232	282	237	898	1147	213	281	929	183
Grp Sat Flow(s),veh/h/ln	1728	1777	1582	1728	1777	1562	1728	1702	1564	1728	1702	1579
Q Serve(g_s), s	8.8	7.7	42.0	5.4	6.4	13.3	15.4	23.2	12.6	9.0	18.7	11.0
Cycle Q Clear(g_c), s	8.8	7.7	42.0	5.4	6.4	13.3	15.4	23.2	12.6	9.0	18.7	11.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	270	1324	806	166	1217	535	472	1484	454	339	1286	398
V/C Ratio(X)	1.16	0.27	0.89	1.40	0.23	0.44	1.90	0.77	0.47	0.83	0.72	0.46
Avail Cap(c_a), veh/h	270	1324	806	166	1217	535	472	1781	545	362	1618	500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	24.6	24.8	53.6	26.5	28.7	48.6	36.6	32.8	49.9	38.5	35.7
Incr Delay (d2), s/veh	103.7	0.1	11.8	212.7	0.1	0.6	413.6	1.8	0.8	13.0	1.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.7	3.3	18.9	7.2	2.7	5.0	33.7	9.8	4.9	4.5	7.9	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	155.7	24.7	36.6	266.3	26.6	29.3	462.2	38.4	33.6	62.9	39.7	36.5
LnGrp LOS	F	C	D	F	C	C	F	D	C	E	D	D
Approach Vol, veh/h		1379			751			2258			1393	
Approach Delay, s/veh		60.5			101.5			206.5			44.0	
Approach LOS		E			F			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.6	39.2	10.0	47.8	20.0	34.9	13.4	44.4				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	11.8	39.3	5.4	42.0	15.4	35.7	8.8	38.6				
Max Q Clear Time (g_c+I1), s	11.0	25.2	7.4	44.0	17.4	20.7	10.8	15.3				
Green Ext Time (p_c), s	0.1	7.5	0.0	0.0	0.0	6.3	0.0	2.7				
Intersection Summary												
HCM 6th Ctrl Delay			118.9									
HCM 6th LOS			F									

APPENDIX 6.2:

**OPENING YEAR CUMULATIVE (2030) WITH PROJECT CONDITIONS INTERSECTION
OPERATIONS ANALYSIS WORKSHEETS**

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Intersection	
Intersection Delay, s/veh	32.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕		↘	↕		↘	↕	↘	↘	↕	↘
Traffic Vol, veh/h	26	489	7	79	311	113	6	4	181	327	8	56
Future Vol, veh/h	26	489	7	79	311	113	6	4	181	327	8	56
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	520	7	84	331	120	6	4	193	348	9	60
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	34.5	20.4	20	52.2
HCM LOS	D	C	C	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	96%	0%	100%	48%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	4%	0%	0%	52%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	6	4	181	26	326	170	79	207	217	327	8
LT Vol	6	0	0	26	0	0	79	0	0	327	0
Through Vol	0	4	0	0	326	163	0	207	104	0	8
RT Vol	0	0	181	0	0	7	0	0	113	0	0
Lane Flow Rate	6	4	193	28	347	181	84	221	230	348	9
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.018	0.012	0.489	0.071	0.847	0.441	0.219	0.545	0.546	0.921	0.021
Departure Headway (Hd)	10.336	9.836	9.136	9.297	8.797	8.769	9.389	8.889	8.524	9.535	9.035
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	346	364	395	385	413	411	382	406	422	379	396
Service Time	8.103	7.603	6.903	7.057	6.557	6.528	7.148	6.648	6.283	7.297	6.797
HCM Lane V/C Ratio	0.017	0.011	0.489	0.073	0.84	0.44	0.22	0.544	0.545	0.918	0.023
HCM Control Delay	13.3	12.7	20.4	12.8	44.7	18.3	14.8	21.9	21.1	60	12
HCM Lane LOS	B	B	C	B	E	C	B	C	C	F	B
HCM 95th-tile Q	0.1	0	2.6	0.2	8.1	2.2	0.8	3.2	3.2	9.7	0.1

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	999	486	2	0	17
Future Vol, veh/h	0	999	486	2	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1063	517	2	0	18

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	- 260
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0 *899
Stage 1	0	-	-	-	0 -
Stage 2	0	-	-	-	0 -
Platoon blocked, %		-	-	-	1
Mov Cap-1 Maneuver	-	-	-	-	- *899
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

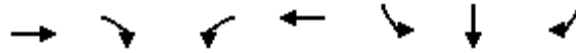
Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	899
HCM Lane V/C Ratio	-	-	-	0.02
HCM Control Delay (s)	-	-	-	9.1
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.1

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

Timings
3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

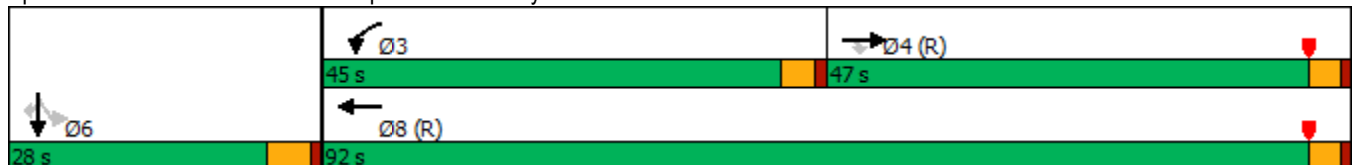


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↖↗	↑↑	↖	↖	↖
Traffic Volume (vph)	420	579	1149	431	360	13	57
Future Volume (vph)	420	579	1149	431	360	13	57
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8		6	
Permitted Phases		4			6		6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	34.0	34.0	12.0	29.0	13.0	13.0	13.0
Total Split (s)	47.0	47.0	45.0	92.0	28.0	28.0	28.0
Total Split (%)	39.2%	39.2%	37.5%	76.7%	23.3%	23.3%	23.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effct Green (s)	43.0	43.0	44.8	91.8	19.2	19.2	19.2
Actuated g/C Ratio	0.36	0.36	0.37	0.76	0.16	0.16	0.16
v/c Ratio	0.37	0.81	1.00	0.18	0.77	0.76	0.21
Control Delay	29.5	23.6	73.5	4.3	67.1	66.1	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.5	23.6	73.5	4.3	67.1	66.1	11.7
LOS	C	C	E	A	E	E	B
Approach Delay	26.1			54.7		59.4	
Approach LOS	C			D		E	

Intersection Summary













Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.00
 Intersection Signal Delay: 45.9
 Intersection LOS: D
 Intersection Capacity Utilization 89.8%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 3: I-15 SB Ramp & Duncan Canyon Rd.

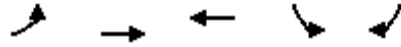


HCM 6th Signalized Intersection Summary
 3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Traffic Volume (veh/h)	0	420	579	1149	431	0	0	0	0	360	13	57
Future Volume (veh/h)	0	420	579	1149	431	0	0	0	0	360	13	57
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	467	575	1277	479	0				410	0	47
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1467	654	1181	2800	0				489	0	217
Arrive On Green	0.00	0.41	0.41	0.57	1.00	0.00				0.14	0.00	0.14
Sat Flow, veh/h	0	3647	1585	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	467	575	1277	479	0				410	0	47
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	10.7	40.1	41.0	0.0	0.0				13.5	0.0	3.2
Cycle Q Clear(g_c), s	0.0	10.7	40.1	41.0	0.0	0.0				13.5	0.0	3.2
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1467	654	1181	2800	0				489	0	217
V/C Ratio(X)	0.00	0.32	0.88	1.08	0.17	0.00				0.84	0.00	0.22
Avail Cap(c_a), veh/h	0	1467	654	1181	2800	0				683	0	304
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.57	0.57	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	23.8	32.5	25.8	0.0	0.0				50.5	0.0	46.0
Incr Delay (d2), s/veh	0.0	0.6	15.5	45.9	0.1	0.0				6.6	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.4	17.3	19.0	0.0	0.0				6.3	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	24.4	48.0	71.7	0.1	0.0				57.0	0.0	46.5
LnGrp LOS	A	C	D	F	A	A				E	A	D
Approach Vol, veh/h		1042			1756						457	
Approach Delay, s/veh		37.4			52.1						56.0	
Approach LOS		D			D						E	
Timer - Assigned Phs			3	4		6			8			
Phs Duration (G+Y+Rc), s			45.0	53.5		21.5			98.5			
Change Period (Y+Rc), s			4.0	4.0		5.0			4.0			
Max Green Setting (Gmax), s			41.0	43.0		23.0			88.0			
Max Q Clear Time (g_c+I1), s			43.0	42.1		15.5			2.0			
Green Ext Time (p_c), s			0.0	0.5		1.0			3.2			
Intersection Summary												
HCM 6th Ctrl Delay			48.0									
HCM 6th LOS			D									
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings
4: Beech Ave. & I-15 SB Ramps

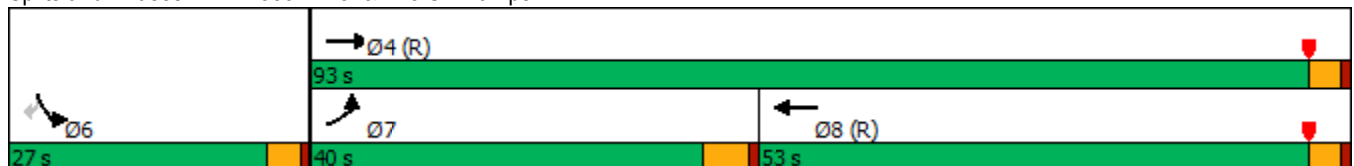


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations	↖	↗↗	↗↗	↖	↗
Traffic Volume (vph)	291	552	541	217	279
Future Volume (vph)	291	552	541	217	279
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	5.0	5.0
Minimum Split (s)	10.0	12.0	12.0	9.0	9.0
Total Split (s)	40.0	93.0	53.0	27.0	27.0
Total Split (%)	33.3%	77.5%	44.2%	22.5%	22.5%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	None	None
Act Effct Green (s)	26.6	92.1	60.5	19.9	19.9
Actuated g/C Ratio	0.22	0.77	0.50	0.17	0.17
v/c Ratio	0.81	0.22	0.88dr	0.81	0.59
Control Delay	59.6	4.4	16.9	68.5	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	59.6	4.4	16.9	68.5	9.7
LOS	E	A	B	E	A
Approach Delay		23.4	16.9	35.4	
Approach LOS		C	B	D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 22.4
 Intersection LOS: C
 Intersection Capacity Utilization 79.2%
 ICU Level of Service D
 Analysis Period (min) 15
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 4: Beech Ave. & I-15 SB Ramps



HCM 6th Signalized Intersection Summary
 4: Beech Ave. & I-15 SB Ramps

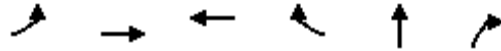
Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗		↙	↘	
Traffic Volume (veh/h)	291	552	541	810	217	279	
Future Volume (veh/h)	291	552	541	810	217	279	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	316	600	588	880	236	302	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	349	2636	895	799	341	304	
Arrive On Green	0.20	0.74	0.84	0.84	0.19	0.19	
Sat Flow, veh/h	1781	3647	1870	1585	1781	1585	
Grp Volume(v), veh/h	316	600	588	880	236	302	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	20.8	6.3	14.1	60.5	14.8	22.8	
Cycle Q Clear(g_c), s	20.8	6.3	14.1	60.5	14.8	22.8	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	349	2636	895	799	341	304	
V/C Ratio(X)	0.90	0.23	0.66	1.10	0.69	0.99	
Avail Cap(c_a), veh/h	520	2636	895	799	341	304	
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.33	0.33	1.00	1.00	
Uniform Delay (d), s/veh	47.1	4.8	5.8	9.5	45.2	48.4	
Incr Delay (d2), s/veh	14.2	0.2	1.3	52.7	5.8	49.9	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	10.3	1.9	3.0	15.6	6.9	22.4	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	61.3	5.0	7.1	62.2	51.0	98.4	
LnGrp LOS	E	A	A	F	D	F	
Approach Vol, veh/h		916	1468		538		
Approach Delay, s/veh		24.5	40.1		77.6		
Approach LOS		C	D		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				93.0	27.0	28.5	64.5
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				89.0	23.0	35.0	49.0
Max Q Clear Time (g_c+11), s				8.3	24.8	22.8	62.5
Green Ext Time (p_c), s				4.1	0.0	0.7	0.0
Intersection Summary							
HCM 6th Ctrl Delay			42.1				
HCM 6th LOS			D				

Timings
5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

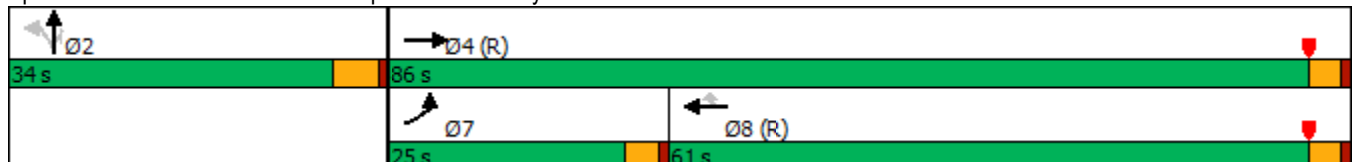


Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations	↖	↗↗	↗↗	↖	↖	↗↗
Traffic Volume (vph)	108	670	1430	335	2	739
Future Volume (vph)	108	670	1430	335	2	739
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8		2	
Permitted Phases				8		2
Detector Phase	7	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	30.0	36.0	36.0	13.0	13.0
Total Split (s)	25.0	86.0	61.0	61.0	34.0	34.0
Total Split (%)	20.8%	71.7%	50.8%	50.8%	28.3%	28.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	13.4	87.6	70.2	70.2	23.4	23.4
Actuated g/C Ratio	0.11	0.73	0.58	0.58	0.20	0.20
v/c Ratio	0.61	0.29	0.76	0.35	0.48	0.88
Control Delay	47.1	8.5	19.7	1.8	46.4	30.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.1	8.5	19.7	1.8	46.4	30.2
LOS	D	A	B	A	D	C
Approach Delay		13.9	16.3		33.0	
Approach LOS		B	B		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 20.1
 Intersection LOS: C
 Intersection Capacity Utilization 89.8%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 5: I-15 NB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	670	0	0	1430	335	150	2	739	0	0	0
Future Volume (veh/h)	108	670	0	0	1430	335	150	2	739	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	119	736	0	0	1571	368	165	2	735			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	145	2428	0	0	2021	901	426	5	674			
Arrive On Green	0.16	1.00	0.00	0.00	1.00	1.00	0.24	0.24	0.24			
Sat Flow, veh/h	1781	3647	0	0	3647	1585	1761	21	2790			
Grp Volume(v), veh/h	119	736	0	0	1571	368	167	0	735			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1585	1782	0	1395			
Q Serve(g_s), s	7.7	0.0	0.0	0.0	0.0	0.0	9.4	0.0	29.0			
Cycle Q Clear(g_c), s	7.7	0.0	0.0	0.0	0.0	0.0	9.4	0.0	29.0			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	145	2428	0	0	2021	901	431	0	674			
V/C Ratio(X)	0.82	0.30	0.00	0.00	0.78	0.41	0.39	0.00	1.09			
Avail Cap(c_a), veh/h	312	2428	0	0	2021	901	431	0	674			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.86	0.86	0.00	0.00	0.73	0.73	1.00	0.00	1.00			
Uniform Delay (d), s/veh	49.4	0.0	0.0	0.0	0.0	0.0	38.1	0.0	45.5			
Incr Delay (d2), s/veh	9.5	0.3	0.0	0.0	2.2	1.0	0.6	0.0	61.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.5	0.1	0.0	0.0	0.6	0.3	4.1	0.0	15.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.0	0.3	0.0	0.0	2.2	1.0	38.6	0.0	107.3			
LnGrp LOS	E	A	A	A	A	A	D	A	F			
Approach Vol, veh/h		855			1939			902				
Approach Delay, s/veh		8.4			2.0			94.6				
Approach LOS		A			A			F				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		34.0		86.0			13.8	72.2				
Change Period (Y+Rc), s		5.0		4.0			4.0	4.0				
Max Green Setting (Gmax), s		29.0		82.0			21.0	57.0				
Max Q Clear Time (g_c+I1), s		31.0		2.0			9.7	2.0				
Green Ext Time (p_c), s		0.0		5.4			0.2	20.5				
Intersection Summary												
HCM 6th Ctrl Delay				26.1								
HCM 6th LOS				C								

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021

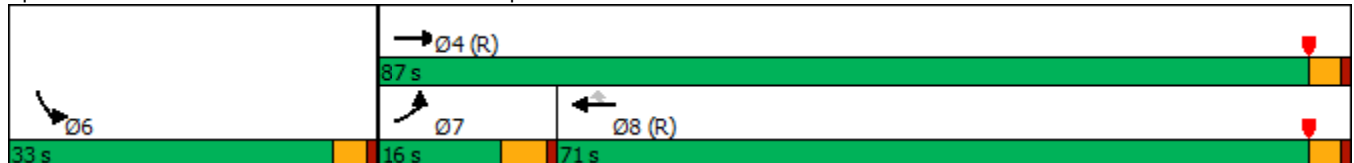


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↘	↑↑	↑↑	↗	↘↘
Traffic Volume (vph)	80	689	1248	186	442
Future Volume (vph)	80	689	1248	186	442
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	16.0	87.0	71.0	71.0	33.0
Total Split (%)	13.3%	72.5%	59.2%	59.2%	27.5%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	10.2	84.9	69.7	69.7	27.1
Actuated g/C Ratio	0.08	0.71	0.58	0.58	0.23
v/c Ratio	0.67	0.34	0.76	0.23	0.87
Control Delay	77.3	7.2	22.6	3.4	56.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	77.3	7.2	22.6	3.4	56.3
LOS	E	A	C	A	E
Approach Delay		14.5	20.1		56.3
Approach LOS		B	C		E

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 25.7
 Intersection LOS: C
 Intersection Capacity Utilization 65.6%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	80	689	1248	186	442	103	
Future Volume (veh/h)	80	689	1248	186	442	103	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	100	861	1560	168	602	0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	123	2631	2237	998	688	306	
Arrive On Green	0.14	1.00	0.63	0.63	0.19	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	100	861	1560	168	602	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	6.5	0.0	34.8	5.3	19.7	0.0	
Cycle Q Clear(g_c), s	6.5	0.0	34.8	5.3	19.7	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	123	2631	2237	998	688	306	
V/C Ratio(X)	0.81	0.33	0.70	0.17	0.88	0.00	
Avail Cap(c_a), veh/h	163	2631	2237	998	861	383	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.93	0.93	0.54	0.54	1.00	0.00	
Uniform Delay (d), s/veh	51.0	0.0	14.7	9.2	47.0	0.0	
Incr Delay (d2), s/veh	19.0	0.3	1.0	0.2	8.4	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	3.3	0.1	12.5	1.7	9.6	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	70.0	0.3	15.7	9.4	55.4	0.0	
LnGrp LOS	E	A	B	A	E	A	
Approach Vol, veh/h		961	1728		602		
Approach Delay, s/veh		7.6	15.1		55.4		
Approach LOS		A	B		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				92.8	27.2	13.3	79.6
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				83.0	29.0	11.0	67.0
Max Q Clear Time (g_c+I1), s				2.0	21.7	8.5	36.8
Green Ext Time (p_c), s				6.6	1.5	0.0	14.7

Intersection Summary

HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

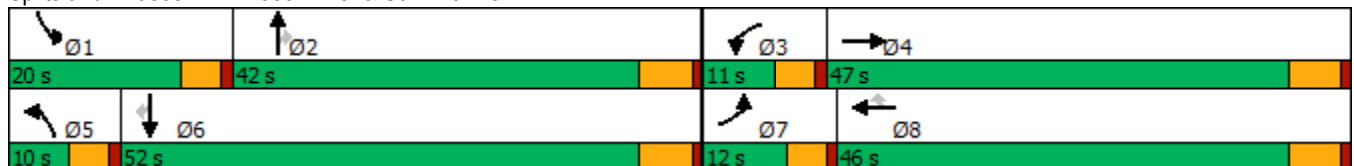
Ventana (JN 13769)
04/27/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	85	150	100	211	706	45	388	67	405	262	39
Future Volume (vph)	85	150	100	211	706	45	388	67	405	262	39
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	43.8	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	47.0	11.0	46.0	46.0	10.0	42.0	42.0	20.0	52.0	52.0
Total Split (%)	10.0%	39.2%	9.2%	38.3%	38.3%	8.3%	35.0%	35.0%	16.7%	43.3%	43.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	6.6	36.0	6.2	38.2	38.2	5.4	16.9	16.9	15.5	29.5	29.5
Actuated g/C Ratio	0.07	0.38	0.06	0.40	0.40	0.06	0.18	0.18	0.16	0.31	0.31
v/c Ratio	0.38	0.14	0.47	0.16	0.88	0.24	0.65	0.18	0.77	0.25	0.07
Control Delay	50.5	18.2	53.7	20.1	28.3	50.4	43.1	1.0	50.9	28.0	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	18.2	53.7	20.1	28.3	50.4	43.1	1.0	50.9	28.0	0.3
LOS	D	B	D	C	C	D	D	A	D	C	A
Approach Delay		28.8		29.1			38.1			39.6	
Approach LOS		C		C			D			D	

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 95.8
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 33.8
 Intersection LOS: C
 Intersection Capacity Utilization 73.4%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 7: Beech Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/27/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	150	24	100	211	706	45	388	67	405	262	39
Future Volume (veh/h)	85	150	24	100	211	706	45	388	67	405	262	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	158	20	105	222	632	47	408	59	426	276	38
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	167	1322	165	173	1485	661	130	593	260	498	972	432
Arrive On Green	0.05	0.42	0.42	0.05	0.42	0.42	0.04	0.17	0.17	0.14	0.27	0.27
Sat Flow, veh/h	3456	3179	397	3456	3554	1583	3456	3554	1556	3456	3554	1582
Grp Volume(v), veh/h	89	87	91	105	222	632	47	408	59	426	276	38
Grp Sat Flow(s),veh/h/ln	1728	1777	1799	1728	1777	1583	1728	1777	1556	1728	1777	1582
Q Serve(g_s), s	2.3	2.8	2.9	2.8	3.6	36.1	1.2	10.1	3.1	11.2	5.7	1.7
Cycle Q Clear(g_c), s	2.3	2.8	2.9	2.8	3.6	36.1	1.2	10.1	3.1	11.2	5.7	1.7
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	167	739	748	173	1485	661	130	593	260	498	972	432
V/C Ratio(X)	0.53	0.12	0.12	0.61	0.15	0.96	0.36	0.69	0.23	0.86	0.28	0.09
Avail Cap(c_a), veh/h	274	784	794	237	1530	682	200	1378	604	570	1759	783
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	16.7	16.8	43.4	16.9	26.3	43.8	36.6	33.7	39.0	26.7	25.2
Incr Delay (d2), s/veh	1.0	0.1	0.1	1.3	0.0	23.7	0.6	1.4	0.4	9.9	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.1	1.1	1.2	1.4	16.5	0.5	4.3	1.1	5.2	2.3	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.4	16.8	16.8	44.7	16.9	50.1	44.4	38.0	34.1	48.9	26.9	25.3
LnGrp LOS	D	B	B	D	B	D	D	D	C	D	C	C
Approach Vol, veh/h		267			959			514			740	
Approach Delay, s/veh		26.0			41.8			38.2			39.5	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.1	21.4	9.3	44.6	8.1	31.3	9.1	44.8				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	15.4	36.2	6.4	41.2	5.4	46.2	7.4	40.2				
Max Q Clear Time (g_c+I1), s	13.2	12.1	4.8	4.9	3.2	7.7	4.3	38.1				
Green Ext Time (p_c), s	0.2	2.6	0.0	0.9	0.0	1.8	0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay				38.7								
HCM 6th LOS				D								

Timings
8: Lytle Creek Dr. & Duncan Canyon Rd.

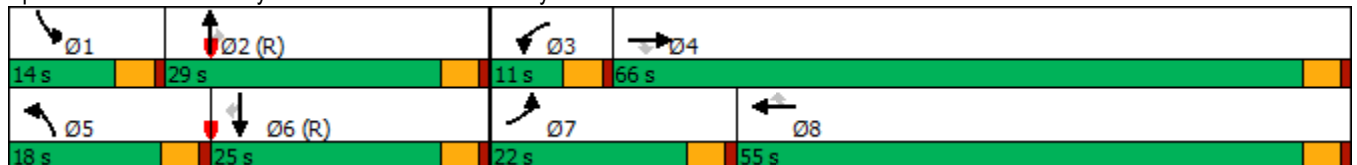
Ventana (JN 13769)
06/08/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	254	1015	141	68	1436	24	184	65	7	114	45	96
Future Volume (vph)	254	1015	141	68	1436	24	184	65	7	114	45	96
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	22.0	66.0	66.0	11.0	55.0	55.0	18.0	29.0	29.0	14.0	25.0	25.0
Total Split (%)	18.3%	55.0%	55.0%	9.2%	45.8%	45.8%	15.0%	24.2%	24.2%	11.7%	20.8%	20.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	14.6	57.3	57.3	6.4	47.0	47.0	11.9	31.5	31.5	8.9	28.6	28.6
Actuated g/C Ratio	0.12	0.48	0.48	0.05	0.39	0.39	0.10	0.26	0.26	0.07	0.24	0.24
v/c Ratio	0.66	0.45	0.18	0.41	0.78	0.04	0.59	0.15	0.02	0.49	0.06	0.22
Control Delay	55.9	21.4	5.3	61.9	35.0	0.1	58.9	38.3	0.0	59.9	40.1	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	21.4	5.3	61.9	35.0	0.1	58.9	38.3	0.0	59.9	40.1	4.3
LOS	E	C	A	E	D	A	E	D	A	E	D	A
Approach Delay		26.0			35.7			52.0			35.5	
Approach LOS		C			D			D			D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 32.9
 Intersection LOS: C
 Intersection Capacity Utilization 58.2%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 8: Lytle Creek Dr. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 8: Lytle Creek Dr. & Duncan Canyon Rd.

Ventana (JN 13769)
 06/08/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	254	1015	141	68	1436	24	184	65	7	114	45	96
Future Volume (veh/h)	254	1015	141	68	1436	24	184	65	7	114	45	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	276	1103	153	74	1561	26	200	71	8	124	49	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	336	2189	679	132	1887	586	261	620	525	179	1093	488
Arrive On Green	0.19	0.86	0.86	0.04	0.37	0.37	0.08	0.33	0.33	0.05	0.31	0.31
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	1870	1585	3456	3554	1585
Grp Volume(v), veh/h	276	1103	153	74	1561	26	200	71	8	124	49	104
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1870	1585	1728	1777	1585
Q Serve(g_s), s	9.2	6.5	2.0	2.5	33.3	1.3	6.8	3.2	0.4	4.2	1.2	5.8
Cycle Q Clear(g_c), s	9.2	6.5	2.0	2.5	33.3	1.3	6.8	3.2	0.4	4.2	1.2	5.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	336	2189	679	132	1887	586	261	620	525	179	1093	488
V/C Ratio(X)	0.82	0.50	0.23	0.56	0.83	0.04	0.77	0.11	0.02	0.69	0.04	0.21
Avail Cap(c_a), veh/h	504	2617	812	187	2149	667	389	620	525	274	1093	488
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.77	0.70	0.70	0.70	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.3	5.4	5.0	56.7	34.3	24.2	54.4	27.9	27.0	55.9	29.2	30.8
Incr Delay (d2), s/veh	5.2	0.1	0.1	2.6	1.8	0.0	5.1	0.4	0.1	4.7	0.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	1.5	0.6	1.1	13.4	0.5	3.2	1.5	0.2	2.0	0.5	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.5	5.5	5.2	59.3	36.1	24.3	59.6	28.3	27.0	60.6	29.2	31.8
LnGrp LOS	D	A	A	E	D	C	E	C	C	E	C	C
Approach Vol, veh/h		1532			1661			279			277	
Approach Delay, s/veh		13.9			37.0			50.7			44.2	
Approach LOS		B			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.7	44.3	9.1	55.9	13.6	41.4	16.2	48.9				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	9.5	24.5	6.5	61.5	13.5	20.5	17.5	50.5				
Max Q Clear Time (g_c+I1), s	6.2	5.2	4.5	8.5	8.8	7.8	11.2	35.3				
Green Ext Time (p_c), s	0.1	0.3	0.0	9.9	0.3	0.4	0.5	9.0				
Intersection Summary												
HCM 6th Ctrl Delay				29.1								
HCM 6th LOS				C								

Timings
9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
04/27/2021

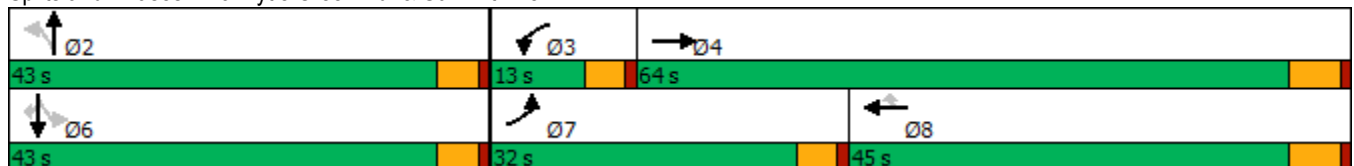


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖	↗	↖	↗	↗
Traffic Volume (vph)	263	373	51	782	165	60	141	161	104	324
Future Volume (vph)	263	373	51	782	165	60	141	161	104	324
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8			2		6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	9.6	28.8	28.8	33.7	33.7	31.7	31.7	31.7
Total Split (s)	32.0	64.0	13.0	45.0	45.0	43.0	43.0	43.0	43.0	43.0
Total Split (%)	26.7%	53.3%	10.8%	37.5%	37.5%	35.8%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None
Act Effct Green (s)	19.2	44.0	7.3	28.8	28.8	22.7	22.7	22.7	22.7	22.7
Actuated g/C Ratio	0.22	0.50	0.08	0.33	0.33	0.26	0.26	0.26	0.26	0.26
v/c Ratio	0.74	0.27	0.38	0.73	0.29	0.20	0.39	0.66	0.24	0.53
Control Delay	47.4	14.2	54.0	31.8	9.4	29.4	29.7	43.6	29.1	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.4	14.2	54.0	31.8	9.4	29.4	29.7	43.6	29.1	6.4
LOS	D	B	D	C	A	C	C	D	C	A
Approach Delay		26.9		29.2			29.6		20.6	
Approach LOS		C		C			C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 87.2
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 26.6
 Intersection LOS: C
 Intersection Capacity Utilization 71.8%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 9: Lytle Creek Rd. & Summit Ave.



HCM 6th Signalized Intersection Summary
 9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
 04/27/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	263	373	52	51	782	165	60	141	30	161	104	324
Future Volume (veh/h)	263	373	52	51	782	165	60	141	30	161	104	324
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	289	410	49	56	859	171	66	155	29	177	114	319
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	335	1495	178	82	1157	516	322	431	81	338	528	447
Arrive On Green	0.19	0.47	0.47	0.05	0.33	0.33	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1781	3198	380	1781	3554	1585	954	1528	286	1198	1870	1582
Grp Volume(v), veh/h	289	227	232	56	859	171	66	0	184	177	114	319
Grp Sat Flow(s),veh/h/ln	1781	1777	1801	1781	1777	1585	954	0	1814	1198	1870	1582
Q Serve(g_s), s	11.6	5.8	5.8	2.3	15.9	6.0	4.2	0.0	6.0	10.2	3.4	13.4
Cycle Q Clear(g_c), s	11.6	5.8	5.8	2.3	15.9	6.0	7.7	0.0	6.0	16.2	3.4	13.4
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	335	831	842	82	1157	516	322	0	512	338	528	447
V/C Ratio(X)	0.86	0.27	0.28	0.68	0.74	0.33	0.20	0.00	0.36	0.52	0.22	0.71
Avail Cap(c_a), veh/h	659	1397	1416	202	1882	839	547	0	938	620	968	818
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	12.0	12.0	34.8	22.2	18.9	23.2	0.0	21.2	27.7	20.3	23.9
Incr Delay (d2), s/veh	2.6	0.2	0.2	3.6	1.0	0.4	0.3	0.0	0.4	1.3	0.2	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	2.0	2.0	1.0	6.0	2.0	0.9	0.0	2.5	2.9	1.5	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.7	12.2	12.2	38.4	23.2	19.2	23.5	0.0	21.6	29.0	20.5	26.0
LnGrp LOS	C	B	B	D	C	B	C	A	C	C	C	C
Approach Vol, veh/h		748			1086			250			610	
Approach Delay, s/veh		19.7			23.3			22.1			25.8	
Approach LOS		B			C			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		25.6	8.0	40.4		25.6	18.5	29.9				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 38	8.4	58.2		* 38	27.4	39.2				
Max Q Clear Time (g_c+I1), s		9.7	4.3	7.8		18.2	13.6	17.9				
Green Ext Time (p_c), s		1.4	0.0	2.6		2.4	0.3	6.2				
Intersection Summary												
HCM 6th Ctrl Delay				22.8								
HCM 6th LOS				C								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑↑	
Traffic Vol, veh/h	18	5	29	41	145	0
Future Vol, veh/h	18	5	29	41	145	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	5	32	45	158	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	267	79	158	0	-	0
Stage 1	158	-	-	-	-	-
Stage 2	109	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	711	966	1420	-	-	-
Stage 1	855	-	-	-	-	-
Stage 2	915	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	695	966	1420	-	-	-
Mov Cap-2 Maneuver	695	-	-	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	915	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	3.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1420	-	740	-	-
HCM Lane V/C Ratio	0.022	-	0.034	-	-
HCM Control Delay (s)	7.6	-	10	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Timings
11: Citrus Ave. & Driveway 1

Ventana (JN 13769)
04/27/2021



Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	5	15	65	145
Future Volume (vph)	5	15	65	145
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	5	2	6
Permitted Phases				
Detector Phase	4	5	2	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	9.5	22.5	22.5
Total Split (s)	44.5	31.5	75.5	44.0
Total Split (%)	37.1%	26.3%	62.9%	36.7%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5
Lead/Lag		Lead		Lag
Lead-Lag Optimize?		Yes		Yes
Recall Mode	None	None	C-Min	C-Min
Act Effct Green (s)	6.3	6.7	113.5	108.5
Actuated g/C Ratio	0.05	0.06	0.95	0.90
v/c Ratio	0.20	0.16	0.04	0.05
Control Delay	32.9	57.1	0.8	2.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	32.9	57.1	0.8	2.1
LOS	C	E	A	A
Approach Delay	32.9		11.2	2.1
Approach LOS	C		B	A

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.20
 Intersection Signal Delay: 7.3
 Intersection LOS: A
 Intersection Capacity Utilization 23.8%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 11: Citrus Ave. & Driveway 1



HCM 6th Signalized Intersection Summary
 11: Citrus Ave. & Driveway 1

Ventana (JN 13769)
 04/27/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	14	15	65	145	5
Future Volume (veh/h)	5	14	15	65	145	5
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	15	16	71	158	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	8	25	31	1691	2986	94
Arrive On Green	0.02	0.02	0.02	0.90	0.85	0.85
Sat Flow, veh/h	390	1171	1781	1870	3610	111
Grp Volume(v), veh/h	21	0	16	71	80	83
Grp Sat Flow(s),veh/h/ln	1640	0	1781	1870	1777	1850
Q Serve(g_s), s	1.5	0.0	1.1	0.5	0.8	0.9
Cycle Q Clear(g_c), s	1.5	0.0	1.1	0.5	0.8	0.9
Prop In Lane	0.24	0.71	1.00			0.06
Lane Grp Cap(c), veh/h	34	0	31	1691	1509	1572
V/C Ratio(X)	0.61	0.00	0.52	0.04	0.05	0.05
Avail Cap(c_a), veh/h	547	0	401	1691	1509	1572
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.3	0.0	58.5	0.6	1.4	1.4
Incr Delay (d2), s/veh	16.2	0.0	13.0	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.6	0.0	0.1	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	74.5	0.0	71.5	0.6	1.5	1.5
LnGrp LOS	E	A	E	A	A	A
Approach Vol, veh/h	21			87	163	
Approach Delay, s/veh	74.5			13.7	1.5	
Approach LOS	E			B	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		113.0		7.0	6.6	106.4
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		71.0		40.0	27.0	39.5
Max Q Clear Time (g_c+I1), s		2.5		3.5	3.1	2.9
Green Ext Time (p_c), s		0.4		0.0	0.0	0.8

Intersection Summary

HCM 6th Ctrl Delay	11.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
12: Citrus Ave. & Duncan Canyon Rd.

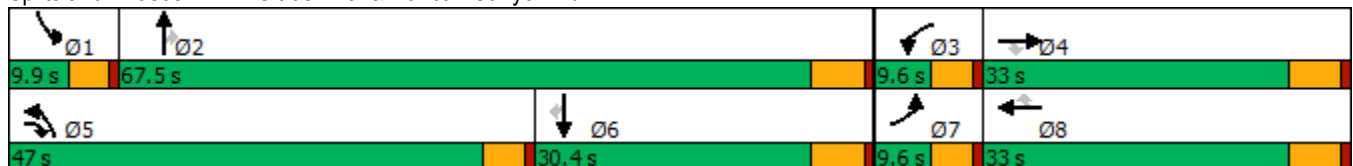
Ventana (JN 13769)
06/03/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	275	838	31	266	5	1145	52	32	14	81	68
Future Volume (vph)	23	275	838	31	266	5	1145	52	32	14	81	68
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	27.8	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	9.6	33.0	47.0	9.6	33.0	33.0	47.0	67.5	67.5	9.9	30.4	30.4
Total Split (%)	8.0%	27.5%	39.2%	8.0%	27.5%	27.5%	39.2%	56.3%	56.3%	8.3%	25.3%	25.3%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	5.2	12.6	53.4	5.2	14.4	14.4	34.8	48.2	48.2	5.3	10.3	10.3
Actuated g/C Ratio	0.07	0.16	0.67	0.07	0.18	0.18	0.44	0.61	0.61	0.07	0.13	0.13
v/c Ratio	0.11	0.51	0.69	0.14	0.30	0.01	0.77	0.03	0.03	0.13	0.18	0.21
Control Delay	41.9	36.1	5.5	42.1	31.0	0.0	23.5	8.8	0.1	43.7	36.7	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	36.1	5.5	42.1	31.0	0.0	23.5	8.8	0.1	43.7	36.7	1.4
LOS	D	D	A	D	C	A	C	A	A	D	D	A
Approach Delay		13.7			31.6			22.3			22.6	
Approach LOS		B			C			C			C	

Intersection Summary


































Cycle Length: 120
 Actuated Cycle Length: 79.5
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 19.8
 Intersection LOS: B
 Intersection Capacity Utilization 76.9%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
 06/03/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	  		 	 		 	 	
Traffic Volume (veh/h)	23	275	838	31	266	5	1145	52	32	14	81	68
Future Volume (veh/h)	23	275	838	31	266	5	1145	52	32	14	81	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	286	378	32	277	5	1193	54	23	15	84	55
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	694	900	111	1029	319	1328	1722	768	32	461	206
Arrive On Green	0.03	0.20	0.20	0.03	0.20	0.20	0.37	0.48	0.48	0.02	0.13	0.13
Sat Flow, veh/h	3456	3554	1585	3456	5106	1585	3563	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	24	286	378	32	277	5	1193	54	23	15	84	55
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1702	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.5	5.4	10.4	0.7	3.5	0.2	24.3	0.6	0.6	0.6	1.6	2.4
Cycle Q Clear(g_c), s	0.5	5.4	10.4	0.7	3.5	0.2	24.3	0.6	0.6	0.6	1.6	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	90	694	900	111	1029	319	1328	1722	768	32	461	206
V/C Ratio(X)	0.27	0.41	0.42	0.29	0.27	0.02	0.90	0.03	0.03	0.47	0.18	0.27
Avail Cap(c_a), veh/h	224	1255	1150	224	1803	560	1960	2846	1269	123	1135	506
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	27.1	9.4	36.4	26.0	24.6	22.8	10.4	10.4	37.5	29.9	30.2
Incr Delay (d2), s/veh	0.6	0.4	0.3	0.5	0.1	0.0	3.1	0.0	0.0	4.0	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.2	2.9	0.3	1.3	0.1	9.4	0.2	0.2	0.3	0.7	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.4	27.5	9.7	36.9	26.1	24.7	25.9	10.4	10.4	41.5	30.1	30.9
LnGrp LOS	D	C	A	D	C	C	C	B	B	D	C	C
Approach Vol, veh/h		688			314			1270			154	
Approach Delay, s/veh		18.1			27.2			25.0			31.5	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.0	43.1	7.1	20.9	33.3	15.8	6.6	21.3				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	5.3	61.7	5.0	27.2	42.4	24.6	5.0	27.2				
Max Q Clear Time (g_c+I1), s	2.6	2.6	2.7	12.4	26.3	4.4	2.5	5.5				
Green Ext Time (p_c), s	0.0	0.4	0.0	2.6	2.4	0.5	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			23.7									
HCM 6th LOS			C									

Timings
13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
04/29/2021

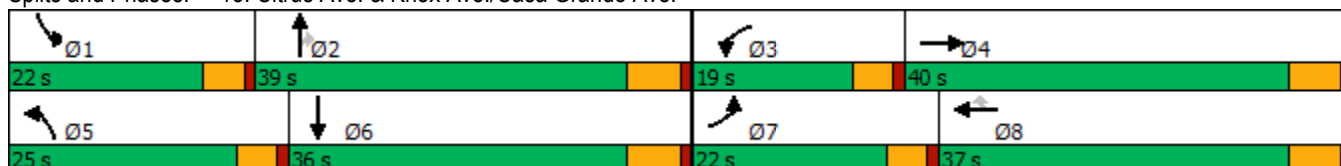


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↗	↖	↑↑	↗	↖	↖↗
Traffic Volume (vph)	79	26	313	44	501	81	347	144	276	407
Future Volume (vph)	79	26	313	44	501	81	347	144	276	407
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	30.8	30.8	9.6	26.8	26.8	9.6	22.8
Total Split (s)	22.0	40.0	19.0	37.0	37.0	25.0	39.0	39.0	22.0	36.0
Total Split (%)	18.3%	33.3%	15.8%	30.8%	30.8%	20.8%	32.5%	32.5%	18.3%	30.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	8.1	11.8	14.7	16.9	16.9	8.2	13.6	13.6	17.8	25.8
Actuated g/C Ratio	0.11	0.16	0.20	0.23	0.23	0.11	0.18	0.18	0.24	0.34
v/c Ratio	0.43	0.21	0.94	0.11	0.69	0.44	0.56	0.37	0.69	0.42
Control Delay	41.1	18.0	70.4	26.6	8.4	41.1	32.9	8.4	39.4	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.1	18.0	70.4	26.6	8.4	41.1	32.9	8.4	39.4	23.0
LOS	D	B	E	C	A	D	C	A	D	C
Approach Delay		31.1		31.9			27.9			29.0
Approach LOS		C		C			C			C

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 75.1
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 29.9
 Intersection LOS: C
 Intersection Capacity Utilization 62.9%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 13: Citrus Ave. & Knox Ave./Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	26	35	313	44	501	81	347	144	276	407	71
Future Volume (veh/h)	79	26	35	313	44	501	81	347	144	276	407	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	27	25	326	46	314	84	361	144	288	424	71
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	138	127	361	557	471	109	580	257	333	881	146
Arrive On Green	0.06	0.15	0.15	0.20	0.30	0.30	0.06	0.16	0.16	0.19	0.29	0.29
Sat Flow, veh/h	1781	889	823	1781	1870	1583	1781	3554	1575	1781	3048	507
Grp Volume(v), veh/h	82	0	52	326	46	314	84	361	144	288	246	249
Grp Sat Flow(s),veh/h/ln	1781	0	1713	1781	1870	1583	1781	1777	1575	1781	1777	1778
Q Serve(g_s), s	3.2	0.0	1.9	12.7	1.3	12.3	3.3	6.7	6.0	11.1	8.1	8.2
Cycle Q Clear(g_c), s	3.2	0.0	1.9	12.7	1.3	12.3	3.3	6.7	6.0	11.1	8.1	8.2
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	106	0	265	361	557	471	109	580	257	333	513	514
V/C Ratio(X)	0.77	0.00	0.20	0.90	0.08	0.67	0.77	0.62	0.56	0.87	0.48	0.48
Avail Cap(c_a), veh/h	436	0	824	361	821	695	511	1660	736	436	755	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.9	0.0	26.2	27.7	18.0	21.9	32.9	27.7	27.4	28.0	20.9	20.9
Incr Delay (d2), s/veh	4.4	0.0	0.4	24.5	0.1	1.6	4.3	1.1	1.9	11.1	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.7	7.3	0.5	4.2	1.4	2.7	2.2	5.3	3.1	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.4	0.0	26.5	52.2	18.0	23.5	37.2	28.8	29.3	39.1	21.6	21.6
LnGrp LOS	D	A	C	D	B	C	D	C	C	D	C	C
Approach Vol, veh/h		134			686			589			783	
Approach Delay, s/veh		33.2			36.8			30.1			28.0	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.9	17.4	19.0	16.8	8.9	26.3	8.8	27.0				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	17.4	33.2	14.4	34.2	20.4	30.2	17.4	31.2				
Max Q Clear Time (g_c+I1), s	13.1	8.7	14.7	3.9	5.3	10.2	5.2	14.3				
Green Ext Time (p_c), s	0.2	2.6	0.0	0.2	0.1	2.5	0.1	1.1				
Intersection Summary												
HCM 6th Ctrl Delay			31.6									
HCM 6th LOS			C									

Timings
14: Citrus Ave. & Summit Ave.

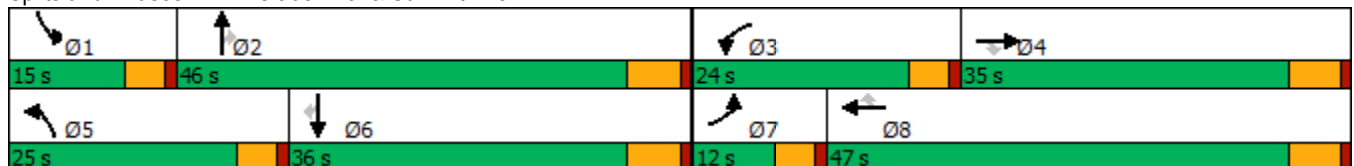
Ventana (JN 13769)
04/27/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	190	227	155	291	108	753	270	104	129	291	147
Future Volume (vph)	64	190	227	155	291	108	753	270	104	129	291	147
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	34.8	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	12.0	35.0	35.0	24.0	47.0	47.0	25.0	46.0	46.0	15.0	36.0	36.0
Total Split (%)	10.0%	29.2%	29.2%	20.0%	39.2%	39.2%	20.8%	38.3%	38.3%	12.5%	30.0%	30.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	6.8	11.5	11.5	13.0	19.8	19.8	20.5	40.6	40.6	10.1	30.3	30.3
Actuated g/C Ratio	0.07	0.12	0.12	0.14	0.21	0.21	0.21	0.42	0.42	0.11	0.32	0.32
v/c Ratio	0.54	0.47	0.60	0.67	0.42	0.26	2.09	0.19	0.15	0.72	0.27	0.24
Control Delay	60.7	44.0	12.4	53.9	35.6	3.7	520.0	18.9	1.8	65.4	26.5	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.7	44.0	12.4	53.9	35.6	3.7	520.0	18.9	1.8	65.4	26.5	2.9
LOS	E	D	B	D	D	A	F	B	A	E	C	A
Approach Delay		31.4			34.5			352.2			29.2	
Approach LOS		C			C			F			C	

Intersection Summary

























Cycle Length: 120	
Actuated Cycle Length: 96.1	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.09	
Intersection Signal Delay: 164.0	Intersection LOS: F
Intersection Capacity Utilization 85.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/27/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	190	227	155	291	108	753	270	104	129	291	147
Future Volume (veh/h)	64	190	227	155	291	108	753	270	104	129	291	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	198	203	161	303	103	784	281	93	134	303	146
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	591	262	194	806	359	369	1499	654	164	1089	486
Arrive On Green	0.05	0.17	0.17	0.11	0.23	0.23	0.21	0.42	0.42	0.09	0.31	0.31
Sat Flow, veh/h	1781	3554	1576	1781	3554	1583	1781	3554	1550	1781	3554	1585
Grp Volume(v), veh/h	67	198	203	161	303	103	784	281	93	134	303	146
Grp Sat Flow(s),veh/h/ln	1781	1777	1576	1781	1777	1583	1781	1777	1550	1781	1777	1585
Q Serve(g_s), s	3.7	4.8	12.1	8.7	7.1	5.3	20.4	4.9	3.6	7.3	6.4	6.9
Cycle Q Clear(g_c), s	3.7	4.8	12.1	8.7	7.1	5.3	20.4	4.9	3.6	7.3	6.4	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	86	591	262	194	806	359	369	1499	654	164	1089	486
V/C Ratio(X)	0.78	0.33	0.77	0.83	0.38	0.29	2.13	0.19	0.14	0.82	0.28	0.30
Avail Cap(c_a), veh/h	134	1053	467	351	1486	662	369	1499	654	188	1089	486
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.3	36.2	39.3	43.0	32.2	31.5	39.1	17.9	17.5	43.9	25.9	26.1
Incr Delay (d2), s/veh	5.6	0.3	4.8	3.5	0.3	0.4	515.5	0.3	0.5	18.9	0.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.0	4.8	3.9	2.9	2.0	61.3	1.9	1.3	3.9	2.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.0	36.6	44.1	46.5	32.5	31.9	554.5	18.2	18.0	62.9	26.5	27.7
LnGrp LOS	D	D	D	D	C	C	F	B	B	E	C	C
Approach Vol, veh/h		468			567			1158			583	
Approach Delay, s/veh		42.1			36.4			381.3			35.2	
Approach LOS		D			D			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	47.3	15.3	22.2	25.0	36.0	9.4	28.1				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	10.4	40.2	19.4	29.2	20.4	30.2	7.4	41.2				
Max Q Clear Time (g_c+I1), s	9.3	6.9	10.7	14.1	22.4	8.9	5.7	9.1				
Green Ext Time (p_c), s	0.0	2.0	0.1	1.5	0.0	2.1	0.0	2.2				
Intersection Summary												
HCM 6th Ctrl Delay			181.0									
HCM 6th LOS			F									

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

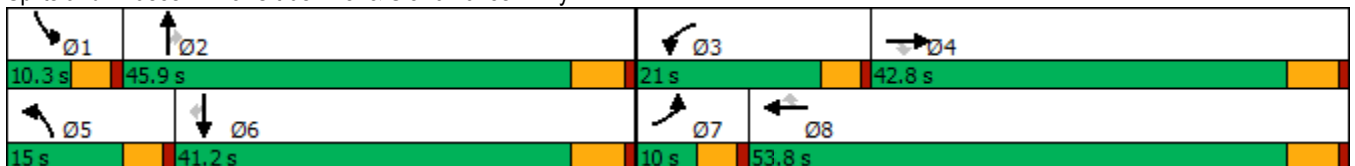
Ventana (JN 13769)
04/27/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	255	401	607	202	101	828	456	735	120	595	80
Future Volume (vph)	75	255	401	607	202	101	828	456	735	120	595	80
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	42.8	42.8	9.6	39.8	39.8	9.6	39.8	39.8	9.6	39.8	39.8
Total Split (s)	10.0	42.8	42.8	21.0	53.8	53.8	15.0	45.9	45.9	10.3	41.2	41.2
Total Split (%)	8.3%	35.7%	35.7%	17.5%	44.8%	44.8%	12.5%	38.3%	38.3%	8.6%	34.3%	34.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	5.4	24.2	24.2	16.7	37.9	37.9	10.6	37.8	37.8	5.8	33.0	33.0
Actuated g/C Ratio	0.05	0.23	0.23	0.16	0.36	0.36	0.10	0.36	0.36	0.05	0.31	0.31
v/c Ratio	0.47	0.34	0.86	1.22	0.17	0.17	2.62	0.39	0.93	0.69	0.59	0.14
Control Delay	61.8	34.6	38.8	153.4	24.3	1.9	758.7	27.5	33.3	71.4	34.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.8	34.6	38.8	153.4	24.3	1.9	758.7	27.5	33.3	71.4	34.0	0.5
LOS	E	C	D	F	C	A	F	C	C	E	C	A
Approach Delay		39.7			107.9			329.4			36.3	
Approach LOS		D			F			F			D	

Intersection Summary

























Cycle Length: 120	
Actuated Cycle Length: 105.6	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.62	
Intersection Signal Delay: 184.3	Intersection LOS: F
Intersection Capacity Utilization 85.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/27/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	255	401	607	202	101	828	456	735	120	595	80
Future Volume (veh/h)	75	255	401	607	202	101	828	456	735	120	595	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	277	350	660	220	83	900	496	700	130	647	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	903	401	509	1280	571	323	1281	570	177	1131	504
Arrive On Green	0.04	0.25	0.25	0.15	0.36	0.36	0.09	0.36	0.36	0.05	0.32	0.32
Sat Flow, veh/h	3456	3554	1579	3456	3554	1585	3456	3554	1582	3456	3554	1585
Grp Volume(v), veh/h	82	277	350	660	220	83	900	496	700	130	647	76
Grp Sat Flow(s),veh/h/ln	1728	1777	1579	1728	1777	1585	1728	1777	1582	1728	1777	1585
Q Serve(g_s), s	2.6	7.0	23.6	16.4	4.7	3.9	10.4	11.5	40.1	4.1	16.9	3.8
Cycle Q Clear(g_c), s	2.6	7.0	23.6	16.4	4.7	3.9	10.4	11.5	40.1	4.1	16.9	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	143	903	401	509	1280	571	323	1281	570	177	1131	504
V/C Ratio(X)	0.57	0.31	0.87	1.30	0.17	0.15	2.79	0.39	1.23	0.73	0.57	0.15
Avail Cap(c_a), veh/h	168	1182	525	509	1533	684	323	1281	570	177	1131	504
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	33.6	39.8	47.4	24.3	24.0	50.4	26.5	35.6	52.0	31.6	27.2
Incr Delay (d2), s/veh	1.3	0.2	12.1	147.1	0.1	0.1	812.5	0.2	117.2	13.0	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	3.0	10.1	17.2	1.9	1.4	40.8	4.7	33.0	2.1	7.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	33.8	51.8	194.6	24.3	24.2	862.9	26.6	152.8	65.0	32.3	27.3
LnGrp LOS	D	C	D	F	C	C	F	C	F	E	C	C
Approach Vol, veh/h		709			963			2096			853	
Approach Delay, s/veh		45.0			141.0			427.9			36.9	
Approach LOS		D			F			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.3	45.9	21.0	34.1	15.0	41.2	9.2	45.9				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	5.7	40.1	16.4	37.0	10.4	35.4	5.4	48.0				
Max Q Clear Time (g_c+I1), s	6.1	42.1	18.4	25.6	12.4	18.9	4.6	6.7				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.2	0.0	3.9	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			237.2									
HCM 6th LOS			F									

Intersection	
Intersection Delay, s/veh	152.5
Intersection LOS	F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕↔		↘	↕↕
Traffic Vol, veh/h	99	508	621	137	409	704
Future Vol, veh/h	99	508	621	137	409	704
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	552	675	149	445	765
Number of Lanes	1	1	2	0	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay	291	139.8	85.6
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	60%	0%	0%	0%	100%	100%
Vol Right, %	0%	40%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	414	344	99	508	409	352	352
LT Vol	0	0	99	0	409	0	0
Through Vol	414	207	0	0	0	352	352
RT Vol	0	137	0	508	0	0	0
Lane Flow Rate	450	374	108	552	445	383	383
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	1.266	1.023	0.361	1.668	1.179	0.962	0.767
Departure Headway (Hd)	12.254	11.958	13.361	12.127	11.047	10.522	8.701
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	302	307	271	304	333	348	421
Service Time	9.954	9.658	11.061	9.827	8.747	8.222	6.401
HCM Lane V/C Ratio	1.49	1.218	0.399	1.816	1.336	1.101	0.91
HCM Control Delay	177.6	94.2	23.4	343.2	140.5	72.7	34.8
HCM Lane LOS	F	F	C	F	F	F	D
HCM 95th-tile Q	17.7	11.2	1.6	30.8	16.2	10.3	6.4

Intersection						
Int Delay, s/veh	27.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑	
Traffic Vol, veh/h	146	111	38	586	1152	93
Future Vol, veh/h	146	111	38	586	1152	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	149	113	39	598	1176	95

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1900	1224	1271	0	-	0
Stage 1	1224	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 76	218	547	-	-	-
Stage 1	278	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 71	218	547	-	-	-
Mov Cap-2 Maneuver	184	-	-	-	-	-
Stage 1	258	-	-	-	-	-
Stage 2	505	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	226.2	0.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	547	-	197	-	-
HCM Lane V/C Ratio	0.071	-	1.331	-	-
HCM Control Delay (s)	12.1	-	226.2	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.2	-	14.8	-	-

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

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	86	388	356	620	1135	133
Future Volume (vph)	86	388	356	620	1135	133
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	44.8	9.6	16.5	29.5	29.5
Total Split (s)	44.8	44.8	30.0	75.2	45.2	45.2
Total Split (%)	37.3%	37.3%	25.0%	62.7%	37.7%	37.7%
Yellow Time (s)	4.8	4.8	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	6.5	6.5	6.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effct Green (s)	12.5	12.5	25.4	68.8	38.8	38.8
Actuated g/C Ratio	0.13	0.13	0.27	0.74	0.41	0.41
v/c Ratio	0.43	0.77	0.86	0.28	0.90	0.23
Control Delay	42.7	14.1	52.3	4.8	36.1	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.7	14.1	52.3	4.8	36.1	13.2
LOS	D	B	D	A	D	B
Approach Delay	19.3			22.1	33.7	
Approach LOS	B			C	C	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 93.6	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 27.0	Intersection LOS: C
Intersection Capacity Utilization 73.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	86	388	356	620	1135	133
Future Volume (veh/h)	86	388	356	620	1135	133
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	100	451	414	721	1320	155
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	539	479	390	2102	1184	528
Arrive On Green	0.30	0.30	0.22	0.59	0.33	0.33
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	100	451	414	721	1320	155
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	4.8	32.2	25.4	12.1	38.7	8.4
Cycle Q Clear(g_c), s	4.8	32.2	25.4	12.1	38.7	8.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	539	479	390	2102	1184	528
V/C Ratio(X)	0.19	0.94	1.06	0.34	1.11	0.29
Avail Cap(c_a), veh/h	598	532	390	2102	1184	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.9	39.5	45.4	12.2	38.7	28.6
Incr Delay (d2), s/veh	0.2	23.9	63.2	0.4	63.6	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	3.2	17.4	4.3	26.0	3.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.1	63.4	108.5	12.6	102.3	30.0
LnGrp LOS	C	E	F	B	F	C
Approach Vol, veh/h	551			1135	1475	
Approach Delay, s/veh	57.3			47.6	94.7	
Approach LOS	E			D	F	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		75.2		40.9	30.0	45.2
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	25.4	38.7
Max Q Clear Time (g_c+11), s		14.1		34.2	27.4	40.7
Green Ext Time (p_c), s		4.8		0.9	0.0	0.0
Intersection Summary						
HCM 6th Ctrl Delay			71.3			
HCM 6th LOS			E			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

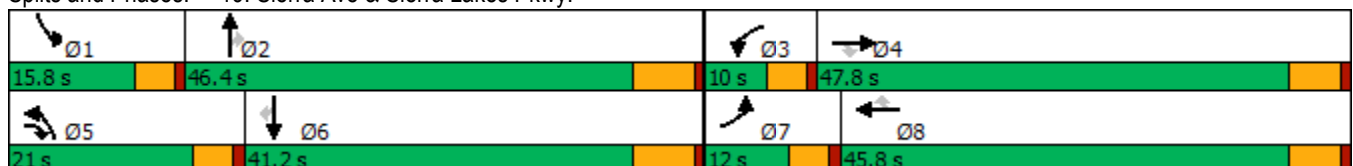
Ventana (JN 13769)
04/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	177	527	151	204	285	581	766	284	305	1171	220
Future Volume (vph)	138	177	527	151	204	285	581	766	284	305	1171	220
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	12.0	47.8	21.0	10.0	45.8	45.8	21.0	46.4	46.4	15.8	41.2	41.2
Total Split (%)	10.0%	39.8%	17.5%	8.3%	38.2%	38.2%	17.5%	38.7%	38.7%	13.2%	34.3%	34.3%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.2	14.5	36.9	5.4	12.7	12.7	16.5	36.2	36.2	11.3	31.0	31.0
Actuated g/C Ratio	0.08	0.16	0.41	0.06	0.14	0.14	0.19	0.41	0.41	0.13	0.35	0.35
v/c Ratio	0.55	0.34	0.83	0.79	0.44	0.70	1.00	0.41	0.38	0.77	0.73	0.34
Control Delay	49.0	35.0	32.5	70.3	38.2	17.0	75.3	19.7	3.8	52.4	28.4	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	35.0	32.5	70.3	38.2	17.0	75.3	19.7	3.8	52.4	28.4	4.5
LOS	D	D	C	E	D	B	E	B	A	D	C	A
Approach Delay		35.8			36.4			36.7			29.6	
Approach LOS		D			D			D			C	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 89.1
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.00
 Intersection Signal Delay: 34.0
 Intersection LOS: C
 Intersection Capacity Utilization 72.6%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
04/06/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	177	527	151	204	285	581	766	284	305	1171	220
Future Volume (veh/h)	138	177	527	151	204	285	581	766	284	305	1171	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	195	459	166	224	261	638	842	279	335	1287	215
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	986	691	180	951	423	547	1811	561	374	1555	483
Arrive On Green	0.06	0.28	0.28	0.05	0.27	0.27	0.16	0.35	0.35	0.11	0.30	0.30
Sat Flow, veh/h	3456	3554	1585	3456	3554	1581	3456	5106	1581	3456	5106	1585
Grp Volume(v), veh/h	152	195	459	166	224	261	638	842	279	335	1287	215
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1581	1728	1702	1581	1728	1702	1585
Q Serve(g_s), s	4.5	4.3	23.8	5.0	5.1	15.0	16.4	13.2	14.3	9.9	24.3	11.3
Cycle Q Clear(g_c), s	4.5	4.3	23.8	5.0	5.1	15.0	16.4	13.2	14.3	9.9	24.3	11.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	986	691	180	951	423	547	1811	561	374	1555	483
V/C Ratio(X)	0.71	0.20	0.66	0.92	0.24	0.62	1.17	0.46	0.50	0.90	0.83	0.45
Avail Cap(c_a), veh/h	247	1441	894	180	1373	611	547	1967	609	374	1711	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.7	28.6	23.2	48.9	29.6	33.3	43.6	25.8	26.2	45.6	33.5	29.0
Incr Delay (d2), s/veh	5.8	0.1	1.2	44.4	0.1	1.5	93.2	0.2	0.7	22.7	3.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.8	8.4	3.2	2.1	5.6	13.6	4.9	5.2	5.2	9.6	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.5	28.7	24.4	93.2	29.8	34.7	136.7	26.0	26.9	68.3	36.8	29.6
LnGrp LOS	D	C	C	F	C	C	F	C	C	E	D	C
Approach Vol, veh/h		806			651			1759			1837	
Approach Delay, s/veh		30.9			47.9			66.3			41.7	
Approach LOS		C			D			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.8	43.2	10.0	34.5	21.0	38.0	11.0	33.5				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	11.2	39.9	5.4	42.0	16.4	34.7	7.4	40.0				
Max Q Clear Time (g_c+1), s	11.9	16.3	7.0	25.8	18.4	26.3	6.5	17.0				
Green Ext Time (p_c), s	0.0	6.3	0.0	2.5	0.0	5.1	0.0	2.1				
Intersection Summary												
HCM 6th Ctrl Delay			49.3									
HCM 6th LOS			D									

Intersection	
Intersection Delay, s/veh	31.7
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕↗		↘	↕↗		↘	↕	↗	↘	↕	↗
Traffic Vol, veh/h	63	334	16	163	341	304	10	4	133	182	2	34
Future Vol, veh/h	63	334	16	163	341	304	10	4	133	182	2	34
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	72	384	18	187	392	349	11	5	153	209	2	39
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	20.1	42.6	16.9	22.9
HCM LOS	C	E	C	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	87%	0%	100%	27%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	13%	0%	0%	73%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	4	133	63	223	127	163	227	418	182	2
LT Vol	10	0	0	63	0	0	163	0	0	182	0
Through Vol	0	4	0	0	223	111	0	227	114	0	2
RT Vol	0	0	133	0	0	16	0	0	304	0	0
Lane Flow Rate	11	5	153	72	256	146	187	261	480	209	2
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.033	0.012	0.382	0.184	0.614	0.348	0.437	0.574	0.986	0.572	0.006
Departure Headway (Hd)	10.203	9.703	9.003	9.14	8.64	8.553	8.402	7.902	7.392	9.849	9.349
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	351	369	399	392	417	420	431	460	494	366	383
Service Time	7.966	7.466	6.766	6.893	6.393	6.305	6.102	5.602	5.092	7.609	7.109
HCM Lane V/C Ratio	0.031	0.014	0.383	0.184	0.614	0.348	0.434	0.567	0.972	0.571	0.005
HCM Control Delay	13.3	12.6	17.3	14	24.3	15.8	17.5	20.7	64.3	25	12.2
HCM Lane LOS	B	B	C	B	C	C	C	C	F	C	B
HCM 95th-tile Q	0.1	0	1.8	0.7	4	1.5	2.2	3.5	13	3.4	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	650	801	20	0	7
Future Vol, veh/h	0	650	801	20	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	691	852	21	0	7

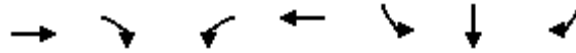
Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 437
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.32
Pot Cap-1 Maneuver	0	-	- 0 567
Stage 1	0	-	- 0 -
Stage 2	0	-	- 0 -
Platoon blocked, %	-	-	- - -
Mov Cap-1 Maneuver	-	-	- - 567
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	567
HCM Lane V/C Ratio	-	-	-	0.013
HCM Control Delay (s)	-	-	-	11.4
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

Timings
3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

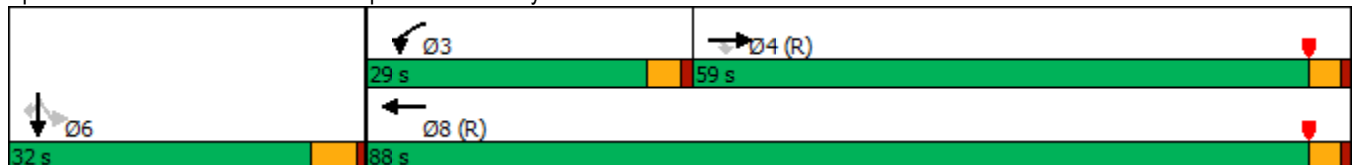


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↖↗	↑↑	↖	↖	↖
Traffic Volume (vph)	418	232	636	727	314	0	95
Future Volume (vph)	418	232	636	727	314	0	95
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8		6	
Permitted Phases		4			6		6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	34.0	34.0	12.0	29.0	13.0	13.0	13.0
Total Split (s)	59.0	59.0	29.0	88.0	32.0	32.0	32.0
Total Split (%)	49.2%	49.2%	24.2%	73.3%	26.7%	26.7%	26.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effct Green (s)	59.1	59.1	29.6	92.8	18.2	18.2	18.2
Actuated g/C Ratio	0.49	0.49	0.25	0.77	0.15	0.15	0.15
v/c Ratio	0.27	0.28	0.83	0.30	0.68	0.69	0.32
Control Delay	19.0	3.1	44.9	7.1	60.9	61.2	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.0	3.1	44.9	7.1	60.9	61.2	10.2
LOS	B	A	D	A	E	E	B
Approach Delay	13.3			24.7		49.2	
Approach LOS	B			C		D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 25.8
 Intersection LOS: C
 Intersection Capacity Utilization 66.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 3: I-15 SB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 3: I-15 SB Ramp & Duncan Canyon Rd.

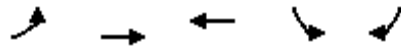
Ventana (JN 13769)

04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↗↘	↑↑					↘	↖	↗
Traffic Volume (veh/h)	0	418	232	636	727	0	0	0	0	314	0	95
Future Volume (veh/h)	0	418	232	636	727	0	0	0	0	314	0	95
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	464	241	707	808	0				349	0	80
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1992	889	720	2851	0				437	0	192
Arrive On Green	0.00	0.56	0.56	0.42	1.00	0.00				0.12	0.00	0.12
Sat Flow, veh/h	0	3647	1585	3456	3647	0				3563	0	1563
Grp Volume(v), veh/h	0	464	241	707	808	0				349	0	80
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1563
Q Serve(g_s), s	0.0	7.9	9.5	24.2	0.0	0.0				11.4	0.0	5.7
Cycle Q Clear(g_c), s	0.0	7.9	9.5	24.2	0.0	0.0				11.4	0.0	5.7
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1992	889	720	2851	0				437	0	192
V/C Ratio(X)	0.00	0.23	0.27	0.98	0.28	0.00				0.80	0.00	0.42
Avail Cap(c_a), veh/h	0	1992	889	720	2851	0				802	0	352
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.62	0.62	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.3	13.7	34.8	0.0	0.0				51.2	0.0	48.7
Incr Delay (d2), s/veh	0.0	0.3	0.8	22.1	0.2	0.0				3.4	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.2	3.5	10.4	0.1	0.0				5.3	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	13.6	14.4	56.9	0.2	0.0				54.6	0.0	50.1
LnGrp LOS	A	B	B	E	A	A				D	A	D
Approach Vol, veh/h		705			1515						429	
Approach Delay, s/veh		13.9			26.6						53.7	
Approach LOS		B			C						D	
Timer - Assigned Phs			3	4		6			8			
Phs Duration (G+Y+Rc), s			29.0	71.3		19.7			100.3			
Change Period (Y+Rc), s			4.0	4.0		5.0			4.0			
Max Green Setting (Gmax), s			25.0	55.0		27.0			84.0			
Max Q Clear Time (g_c+I1), s			26.2	11.5		13.4			2.0			
Green Ext Time (p_c), s			0.0	4.4		1.3			7.1			
Intersection Summary												
HCM 6th Ctrl Delay			27.6									
HCM 6th LOS			C									
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings
4: Beech Ave. & I-15 SB Ramps

Ventana (JN 13769)
04/29/2021

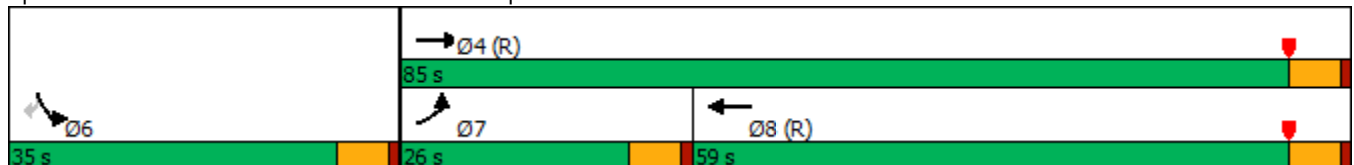


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations	↖	↗	↗	↖	↗
Traffic Volume (vph)	139	699	593	237	87
Future Volume (vph)	139	699	593	237	87
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	5.0	5.0
Minimum Split (s)	10.7	13.7	13.7	10.7	10.7
Total Split (s)	26.0	85.0	59.0	35.0	35.0
Total Split (%)	21.7%	70.8%	49.2%	29.2%	29.2%
Yellow Time (s)	4.7	4.7	4.7	4.7	4.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7	5.7	5.7	5.7
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	None	None
Act Effct Green (s)	15.2	86.4	65.5	22.2	22.2
Actuated g/C Ratio	0.13	0.72	0.55	0.18	0.18
v/c Ratio	0.66	0.29	0.68	0.77	0.25
Control Delay	63.8	6.8	47.7	61.7	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	6.8	47.7	61.7	9.2
LOS	E	A	D	E	A
Approach Delay		16.3	47.7	47.5	
Approach LOS		B	D	D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 118.3 (99%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 36.6
 Intersection LOS: D
 Intersection Capacity Utilization 71.7%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 4: Beech Ave. & I-15 SB Ramps



HCM 6th Signalized Intersection Summary
4: Beech Ave. & I-15 SB Ramps

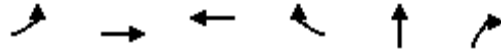
Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗		↙	↘	
Traffic Volume (veh/h)	139	699	593	628	237	87	
Future Volume (veh/h)	139	699	593	628	237	87	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	148	744	631	668	252	93	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	177	2642	1060	946	288	256	
Arrive On Green	0.10	0.74	1.00	1.00	0.16	0.16	
Sat Flow, veh/h	1781	3647	1870	1585	1781	1585	
Grp Volume(v), veh/h	148	744	631	668	252	93	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	9.8	8.2	0.4	0.7	16.6	6.3	
Cycle Q Clear(g_c), s	9.8	8.2	0.4	0.7	16.6	6.3	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	177	2642	1060	946	288	256	
V/C Ratio(X)	0.84	0.28	0.60	0.71	0.88	0.36	
Avail Cap(c_a), veh/h	301	2642	1060	946	435	387	
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.09	0.09	1.00	1.00	
Uniform Delay (d), s/veh	53.1	5.0	0.1	0.1	49.1	44.8	
Incr Delay (d2), s/veh	9.8	0.3	0.2	0.4	12.3	0.9	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	4.9	2.8	0.1	0.2	8.3	5.8	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	62.9	5.3	0.3	0.5	61.4	45.7	
LnGrp LOS	E	A	A	A	E	D	
Approach Vol, veh/h		892	1299		345		
Approach Delay, s/veh		14.8	0.4		57.2		
Approach LOS		B	A		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				94.9	25.1	17.6	77.3
Change Period (Y+Rc), s				5.7	5.7	5.7	5.7
Max Green Setting (Gmax), s				79.3	29.3	20.3	53.3
Max Q Clear Time (g_c+I1), s				10.2	18.6	11.8	2.7
Green Ext Time (p_c), s				6.3	0.8	0.2	13.8
Intersection Summary							
HCM 6th Ctrl Delay			13.2				
HCM 6th LOS			B				

Timings
5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

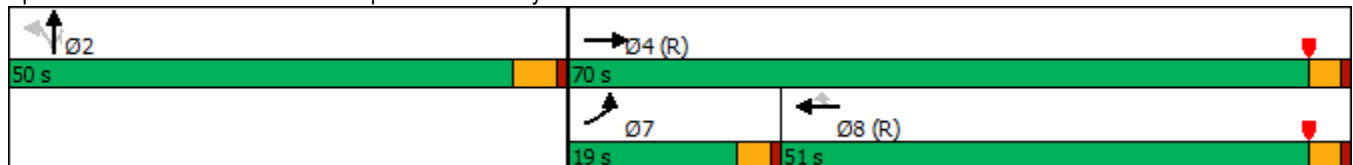


Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations	↖	↗↗	↗↗	↖	↖	↗↗
Traffic Volume (vph)	126	606	993	294	14	957
Future Volume (vph)	126	606	993	294	14	957
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8		2	
Permitted Phases				8		2
Detector Phase	7	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	30.0	36.0	36.0	13.0	13.0
Total Split (s)	19.0	70.0	51.0	51.0	50.0	50.0
Total Split (%)	15.8%	58.3%	42.5%	42.5%	41.7%	41.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	13.2	69.2	52.0	52.0	41.8	41.8
Actuated g/C Ratio	0.11	0.58	0.43	0.43	0.35	0.35
v/c Ratio	0.71	0.33	0.71	0.37	0.68	0.87
Control Delay	72.1	15.8	26.4	2.6	39.2	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.1	15.8	26.4	2.6	39.2	31.0
LOS	E	B	C	A	D	C
Approach Delay		25.5	21.0		33.4	
Approach LOS		C	C		C	

Intersection Summary






















Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 26.9
 Intersection LOS: C
 Intersection Capacity Utilization 66.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 5: I-15 NB Ramp & Duncan Canyon Rd.



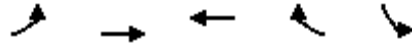
HCM 6th Signalized Intersection Summary
 5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 				 			
Traffic Volume (veh/h)	126	606	0	0	993	294	370	14	957	0	0	0
Future Volume (veh/h)	126	606	0	0	993	294	370	14	957	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	138	666	0	0	1091	311	407	15	1044			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	163	1955	0	0	1511	674	645	24	1024			
Arrive On Green	0.18	1.00	0.00	0.00	0.85	0.85	0.38	0.38	0.38			
Sat Flow, veh/h	1781	3647	0	0	3647	1585	1721	63	2731			
Grp Volume(v), veh/h	138	666	0	0	1091	311	422	0	1044			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1585	1784	0	1366			
Q Serve(g_s), s	9.0	0.0	0.0	0.0	14.3	5.8	23.2	0.0	45.0			
Cycle Q Clear(g_c), s	9.0	0.0	0.0	0.0	14.3	5.8	23.2	0.0	45.0			
Prop In Lane	1.00		0.00	0.00		1.00	0.96		1.00			
Lane Grp Cap(c), veh/h	163	1955	0	0	1511	674	669	0	1024			
V/C Ratio(X)	0.85	0.34	0.00	0.00	0.72	0.46	0.63	0.00	1.02			
Avail Cap(c_a), veh/h	223	1955	0	0	1511	674	669	0	1024			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.93	0.93	0.00	0.00	0.84	0.84	1.00	0.00	1.00			
Uniform Delay (d), s/veh	48.2	0.0	0.0	0.0	6.2	5.6	30.7	0.0	37.5			
Incr Delay (d2), s/veh	18.1	0.4	0.0	0.0	2.6	1.9	1.9	0.0	33.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.5	0.1	0.0	0.0	3.0	1.7	10.3	0.0	19.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.2	0.4	0.0	0.0	8.8	7.5	32.6	0.0	70.6			
LnGrp LOS	E	A	A	A	A	A	C	A	F			
Approach Vol, veh/h		804			1402			1466				
Approach Delay, s/veh		11.7			8.5			59.6				
Approach LOS		B			A			E				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		50.0		70.0			15.0	55.0				
Change Period (Y+Rc), s		5.0		4.0			4.0	4.0				
Max Green Setting (Gmax), s		45.0		66.0			15.0	47.0				
Max Q Clear Time (g_c+I1), s		47.0		2.0			11.0	16.3				
Green Ext Time (p_c), s		0.0		5.5			0.1	11.2				
Intersection Summary												
HCM 6th Ctrl Delay				29.6								
HCM 6th LOS				C								

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021

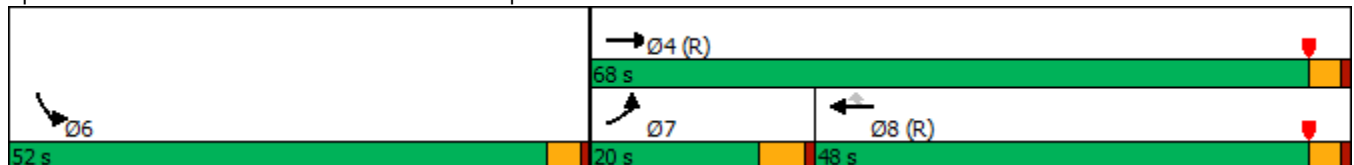


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↕	↕	↗	↘
Traffic Volume (vph)	187	749	1037	455	1066
Future Volume (vph)	187	749	1037	455	1066
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	20.0	68.0	48.0	48.0	52.0
Total Split (%)	16.7%	56.7%	40.0%	40.0%	43.3%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	14.9	64.0	44.1	44.1	48.0
Actuated g/C Ratio	0.12	0.53	0.37	0.37	0.40
v/c Ratio	0.90	0.42	0.85	0.58	0.97
Control Delay	85.2	15.9	42.4	8.6	54.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	85.2	15.9	42.4	8.6	54.0
LOS	F	B	D	A	D
Approach Delay		29.7	32.1		54.0
Approach LOS		C	C		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 39.0
 Intersection LOS: D
 Intersection Capacity Utilization 86.1%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	187	749	1037	455	1066	185	
Future Volume (veh/h)	187	749	1037	455	1066	185	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	199	797	1103	237	1260	0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	222	1972	1381	616	1348	600	
Arrive On Green	0.25	1.00	0.39	0.39	0.38	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	199	797	1103	237	1260	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	13.0	0.0	33.0	12.9	40.8	0.0	
Cycle Q Clear(g_c), s	13.0	0.0	33.0	12.9	40.8	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	222	1972	1381	616	1348	600	
V/C Ratio(X)	0.90	0.40	0.80	0.38	0.93	0.00	
Avail Cap(c_a), veh/h	223	1972	1381	616	1425	634	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.91	0.91	0.70	0.70	1.00	0.00	
Uniform Delay (d), s/veh	44.3	0.0	32.5	26.4	35.9	0.0	
Incr Delay (d2), s/veh	31.8	0.6	3.5	1.3	11.3	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	6.9	0.2	14.7	5.1	19.5	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	76.1	0.6	36.0	27.6	47.2	0.0	
LnGrp LOS	E	A	D	C	D	A	
Approach Vol, veh/h		996	1340		1260		
Approach Delay, s/veh		15.7	34.5		47.2		
Approach LOS		B	C		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				70.6	49.4	19.9	50.6
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				64.0	48.0	15.0	44.0
Max Q Clear Time (g_c+I1), s				2.0	42.8	15.0	35.0
Green Ext Time (p_c), s				6.9	2.6	0.0	5.4

Intersection Summary

HCM 6th Ctrl Delay	33.7
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

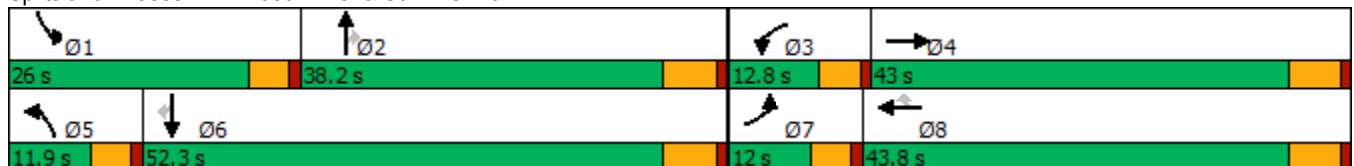
Ventana (JN 13769)
04/27/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	129	334	142	352	481	106	376	130	778	548	100
Future Volume (vph)	129	334	142	352	481	106	376	130	778	548	100
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	43.8	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	43.0	12.8	43.8	43.8	11.9	38.2	38.2	26.0	52.3	52.3
Total Split (%)	10.0%	35.8%	10.7%	36.5%	36.5%	9.9%	31.8%	31.8%	21.7%	43.6%	43.6%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	7.0	17.9	7.5	18.5	18.5	6.7	15.4	15.4	21.8	30.5	30.5
Actuated g/C Ratio	0.08	0.21	0.09	0.22	0.22	0.08	0.18	0.18	0.26	0.36	0.36
v/c Ratio	0.47	0.63	0.48	0.47	0.75	0.40	0.60	0.33	0.91	0.44	0.16
Control Delay	45.3	30.8	44.5	30.5	13.7	44.3	36.3	6.9	47.7	22.5	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.3	30.8	44.5	30.5	13.7	44.3	36.3	6.9	47.7	22.5	4.9
LOS	D	C	D	C	B	D	D	A	D	C	A
Approach Delay		34.0		24.3			31.5			35.0	
Approach LOS		C		C			C			D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 83.8
 Natural Cycle: 125
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 31.3
 Intersection LOS: C
 Intersection Capacity Utilization 73.5%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 7: Beech Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
 04/27/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	334	130	142	352	481	106	376	130	778	548	100
Future Volume (veh/h)	129	334	130	142	352	481	106	376	130	778	548	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	348	110	148	367	409	110	392	95	810	571	73
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	201	807	251	217	1093	487	175	638	281	797	1278	568
Arrive On Green	0.06	0.30	0.30	0.06	0.31	0.31	0.05	0.18	0.18	0.23	0.36	0.36
Sat Flow, veh/h	3456	2664	829	3456	3554	1584	3456	3554	1564	3456	3554	1581
Grp Volume(v), veh/h	134	230	228	148	367	409	110	392	95	810	571	73
Grp Sat Flow(s),veh/h/ln	1728	1777	1716	1728	1777	1584	1728	1777	1564	1728	1777	1581
Q Serve(g_s), s	3.5	9.6	9.9	3.9	7.4	22.4	2.9	9.4	4.9	21.4	11.4	2.9
Cycle Q Clear(g_c), s	3.5	9.6	9.9	3.9	7.4	22.4	2.9	9.4	4.9	21.4	11.4	2.9
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	201	538	520	217	1093	487	175	638	281	797	1278	568
V/C Ratio(X)	0.67	0.43	0.44	0.68	0.34	0.84	0.63	0.61	0.34	1.02	0.45	0.13
Avail Cap(c_a), veh/h	276	712	688	305	1455	648	272	1241	546	797	1781	792
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	25.9	26.0	42.6	24.8	30.0	43.2	35.1	33.2	35.7	22.7	20.0
Incr Delay (d2), s/veh	1.4	0.5	0.6	1.4	0.2	7.4	1.4	1.0	0.7	36.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	4.1	4.0	1.7	3.1	9.2	1.3	4.1	1.9	12.8	4.7	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.3	26.4	26.6	44.0	25.0	37.4	44.6	36.1	33.9	71.7	22.9	20.1
LnGrp LOS	D	C	C	D	C	D	D	D	C	F	C	C
Approach Vol, veh/h		592			924			597			1454	
Approach Delay, s/veh		30.5			33.5			37.3			50.0	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.0	22.5	10.4	33.9	9.3	39.2	10.0	34.3				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	21.4	32.4	8.2	37.2	7.3	46.5	7.4	38.0				
Max Q Clear Time (g_c+11), s	23.4	11.4	5.9	11.9	4.9	13.4	5.5	24.4				
Green Ext Time (p_c), s	0.0	2.8	0.1	2.9	0.0	4.6	0.0	3.4				
Intersection Summary												
HCM 6th Ctrl Delay			40.4									
HCM 6th LOS			D									

Timings
8: Lytle Creek Dr. & Duncan Canyon Rd.

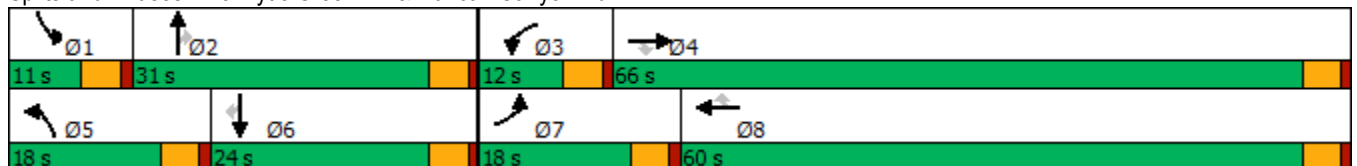
Ventana (JN 13769)
06/08/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	1215	164	74	1027	18	183	53	15	69	30	58
Future Volume (vph)	182	1215	164	74	1027	18	183	53	15	69	30	58
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	18.0	66.0	66.0	12.0	60.0	60.0	18.0	31.0	31.0	11.0	24.0	24.0
Total Split (%)	15.0%	55.0%	55.0%	10.0%	50.0%	50.0%	15.0%	25.8%	25.8%	9.2%	20.0%	20.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	10.7	40.7	40.7	7.1	34.4	34.4	10.7	28.4	28.4	6.5	21.5	21.5
Actuated g/C Ratio	0.11	0.43	0.43	0.07	0.36	0.36	0.11	0.30	0.30	0.07	0.22	0.22
v/c Ratio	0.52	0.61	0.23	0.31	0.61	0.03	0.52	0.10	0.03	0.32	0.04	0.13
Control Delay	47.4	23.0	4.6	49.6	26.3	0.1	47.4	30.9	0.1	50.9	34.7	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.4	23.0	4.6	49.6	26.3	0.1	47.4	30.9	0.1	50.9	34.7	0.5
LOS	D	C	A	D	C	A	D	C	A	D	C	A
Approach Delay		23.9			27.4			41.1			29.2	
Approach LOS		C			C			D			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 95.6
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 26.9
 Intersection LOS: C
 Intersection Capacity Utilization 50.8%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 8: Lytle Creek Dr. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 8: Lytle Creek Dr. & Duncan Canyon Rd.

Ventana (JN 13769)
 06/08/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	1215	164	74	1027	18	183	53	15	69	30	58
Future Volume (veh/h)	182	1215	164	74	1027	18	183	53	15	69	30	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	198	1321	107	80	1116	20	199	58	16	75	33	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	2007	623	169	1840	571	284	568	481	166	957	427
Arrive On Green	0.08	0.39	0.39	0.05	0.36	0.36	0.08	0.30	0.30	0.05	0.27	0.27
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	1870	1585	3456	3554	1585
Grp Volume(v), veh/h	198	1321	107	80	1116	20	199	58	16	75	33	63
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1870	1585	1728	1777	1585
Q Serve(g_s), s	4.9	18.5	3.8	2.0	15.6	0.7	4.9	1.9	0.6	1.8	0.6	2.6
Cycle Q Clear(g_c), s	4.9	18.5	3.8	2.0	15.6	0.7	4.9	1.9	0.6	1.8	0.6	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	2007	623	169	1840	571	284	568	481	166	957	427
V/C Ratio(X)	0.70	0.66	0.17	0.47	0.61	0.04	0.70	0.10	0.03	0.45	0.03	0.15
Avail Cap(c_a), veh/h	534	3598	1117	297	3247	1008	534	568	481	257	957	427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	21.7	17.2	40.4	22.9	18.1	39.0	21.8	21.4	40.4	23.5	24.3
Incr Delay (d2), s/veh	3.1	0.4	0.1	2.0	0.3	0.0	3.1	0.4	0.1	1.9	0.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	7.1	1.4	0.9	6.1	0.3	2.2	0.9	0.2	0.8	0.3	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.2	22.1	17.4	42.4	23.2	18.1	42.1	22.2	21.5	42.4	23.6	25.0
LnGrp LOS	D	C	B	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		1626			1216			273			171	
Approach Delay, s/veh		24.2			24.4			36.7			32.3	
Approach LOS		C			C			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.7	31.0	8.8	38.8	11.7	28.0	11.6	36.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	6.5	26.5	7.5	61.5	13.5	19.5	13.5	55.5				
Max Q Clear Time (g_c+1), s	3.8	3.9	4.0	20.5	6.9	4.6	6.9	17.6				
Green Ext Time (p_c), s	0.0	0.3	0.1	13.8	0.3	0.3	0.3	10.3				
Intersection Summary												
HCM 6th Ctrl Delay			25.7									
HCM 6th LOS			C									

Timings
9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
04/27/2021

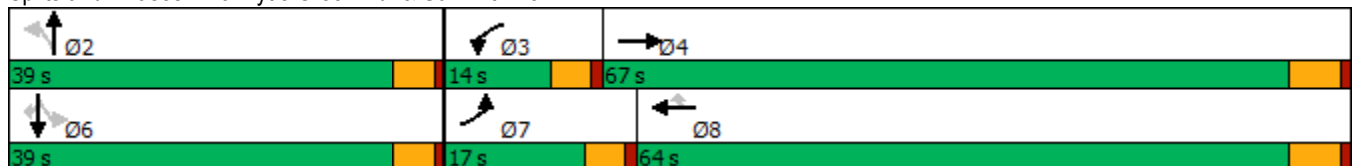


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↖	↕	↖	↕	↖
Traffic Volume (vph)	206	1262	60	993	159	54	39	131	26	175
Future Volume (vph)	206	1262	60	993	159	54	39	131	26	175
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8			2		6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	9.6	28.8	28.8	33.7	33.7	31.7	31.7	31.7
Total Split (s)	17.0	67.0	14.0	64.0	64.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	14.2%	55.8%	11.7%	53.3%	53.3%	32.5%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None
Act Effct Green (s)	13.0	48.7	7.7	40.5	40.5	16.7	16.7	16.7	16.7	16.7
Actuated g/C Ratio	0.15	0.56	0.09	0.47	0.47	0.19	0.19	0.19	0.19	0.19
v/c Ratio	0.85	0.73	0.42	0.66	0.22	0.22	0.29	0.58	0.08	0.42
Control Delay	68.6	18.0	51.5	19.2	4.5	34.7	18.2	44.5	32.5	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.6	18.0	51.5	19.2	4.5	34.7	18.2	44.5	32.5	8.3
LOS	E	B	D	B	A	C	B	D	C	A
Approach Delay		24.8		18.9			24.0		24.5	
Approach LOS		C		B			C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 86.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 22.5
 Intersection LOS: C
 Intersection Capacity Utilization 68.9%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 9: Lytle Creek Rd. & Summit Ave.



HCM 6th Signalized Intersection Summary
 9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
 04/27/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	206	1262	49	60	993	159	54	39	61	131	26	175
Future Volume (veh/h)	206	1262	49	60	993	159	54	39	61	131	26	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	226	1387	47	66	1091	170	59	43	57	144	29	161
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	1852	63	89	1523	672	342	158	209	314	410	344
Arrive On Green	0.15	0.53	0.53	0.05	0.43	0.43	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	3506	119	1781	3554	1568	1185	719	954	1285	1870	1570
Grp Volume(v), veh/h	226	702	732	66	1091	170	59	0	100	144	29	161
Grp Sat Flow(s),veh/h/ln	1781	1777	1848	1781	1777	1568	1185	0	1673	1285	1870	1570
Q Serve(g_s), s	9.2	23.0	23.1	2.7	18.9	5.2	3.1	0.0	3.7	7.8	0.9	6.6
Cycle Q Clear(g_c), s	9.2	23.0	23.1	2.7	18.9	5.2	4.0	0.0	3.7	11.5	0.9	6.6
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.57	1.00		1.00
Lane Grp Cap(c), veh/h	267	939	976	89	1523	672	342	0	367	314	410	344
V/C Ratio(X)	0.85	0.75	0.75	0.74	0.72	0.25	0.17	0.00	0.27	0.46	0.07	0.47
Avail Cap(c_a), veh/h	297	1460	1518	225	2777	1225	628	0	770	625	861	723
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.8	13.7	13.7	34.9	17.5	13.6	24.7	0.0	24.2	28.9	23.1	25.3
Incr Delay (d2), s/veh	17.0	1.2	1.2	4.5	0.6	0.2	0.2	0.0	0.4	1.0	0.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	8.3	8.7	1.3	7.2	1.7	0.9	0.0	1.5	2.4	0.4	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.8	14.9	14.9	39.4	18.2	13.8	24.9	0.0	24.6	30.0	23.1	26.3
LnGrp LOS	D	B	B	D	B	B	C	A	C	C	C	C
Approach Vol, veh/h		1660			1327			159			334	
Approach Delay, s/veh		19.4			18.7			24.7			27.6	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		21.0	8.3	45.1		21.0	15.7	37.7				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 34	9.4	61.2		* 34	12.4	58.2				
Max Q Clear Time (g_c+I1), s		6.0	4.7	25.1		13.5	11.2	20.9				
Green Ext Time (p_c), s		0.8	0.0	13.9		1.1	0.0	11.1				
Intersection Summary												
HCM 6th Ctrl Delay				20.2								
HCM 6th LOS				C								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑↑	
Traffic Vol, veh/h	11	3	21	120	102	0
Future Vol, veh/h	11	3	21	120	102	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	3	23	130	111	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	287	56	111	0	-	0
Stage 1	111	-	-	-	-	-
Stage 2	176	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	692	999	1478	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	854	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	681	999	1478	-	-	-
Mov Cap-2 Maneuver	708	-	-	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	854	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	1.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1478	-	755	-	-
HCM Lane V/C Ratio	0.015	-	0.02	-	-
HCM Control Delay (s)	7.5	-	9.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Timings
11: Citrus Ave. & Driveway 1

Ventana (JN 13769)
04/27/2021

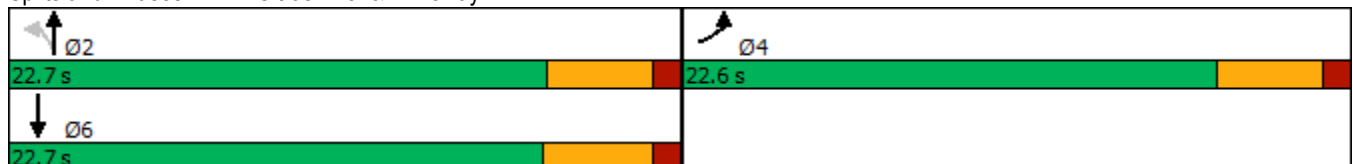


Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	3	11	138	102
Future Volume (vph)	3	11	138	102
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	10.0
Minimum Split (s)	22.6	22.6	22.6	22.7
Total Split (s)	22.6	22.7	22.7	22.7
Total Split (%)	49.9%	50.1%	50.1%	50.1%
Yellow Time (s)	3.6	3.6	3.6	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.7
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Min	Min	Min
Act Effct Green (s)	5.8	29.4	29.4	29.4
Actuated g/C Ratio	0.18	0.92	0.92	0.92
v/c Ratio	0.04	0.01	0.09	0.04
Control Delay	9.6	1.8	1.5	1.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.6	1.8	1.5	1.3
LOS	A	A	A	A
Approach Delay	9.6		1.5	1.3
Approach LOS	A		A	A

Intersection Summary

Cycle Length: 45.3
 Actuated Cycle Length: 31.9
 Natural Cycle: 50
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.09
 Intersection Signal Delay: 1.8
 Intersection LOS: A
 Intersection Capacity Utilization 20.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 11: Citrus Ave. & Driveway 1



HCM 6th Signalized Intersection Summary
 11: Citrus Ave. & Driveway 1

Ventana (JN 13769)
 04/27/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	8	11	138	102	4
Future Volume (veh/h)	3	8	11	138	102	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	9	12	150	111	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	7	20	996	952	1781	64
Arrive On Green	0.02	0.02	0.51	0.51	0.51	0.51
Sat Flow, veh/h	380	1140	1277	1870	3593	125
Grp Volume(v), veh/h	13	0	12	150	56	59
Grp Sat Flow(s),veh/h/ln	1646	0	1277	1870	1777	1848
Q Serve(g_s), s	0.2	0.0	0.1	0.8	0.3	0.3
Cycle Q Clear(g_c), s	0.2	0.0	0.4	0.8	0.3	0.3
Prop In Lane	0.23	0.69	1.00			0.07
Lane Grp Cap(c), veh/h	29	0	996	952	905	941
V/C Ratio(X)	0.45	0.00	0.01	0.16	0.06	0.06
Avail Cap(c_a), veh/h	1509	0	1523	1723	1628	1693
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.6	0.0	2.5	2.6	2.4	2.4
Incr Delay (d2), s/veh	10.8	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.3	0.0	2.6	2.6	2.5	2.5
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	13			162	115	
Approach Delay, s/veh	20.3			2.6	2.5	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		14.7		4.9		14.7
Change Period (Y+Rc), s		* 4.7		4.6		* 4.7
Max Green Setting (Gmax), s		* 18		18.0		* 18
Max Q Clear Time (g_c+I1), s		2.8		2.2		2.3
Green Ext Time (p_c), s		0.7		0.0		0.4

Intersection Summary

HCM 6th Ctrl Delay	3.4
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings
12: Citrus Ave. & Duncan Canyon Rd.

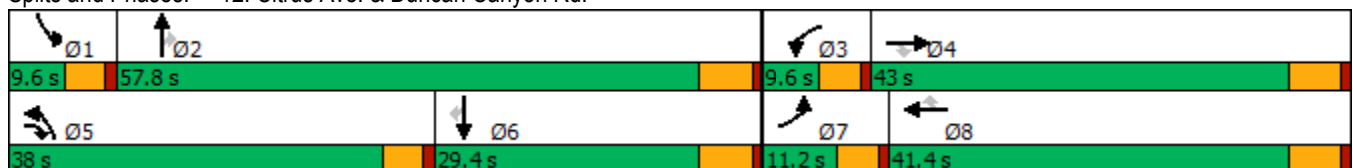
Ventana (JN 13769)
06/03/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	260	960	20	186	16	857	58	21	9	59	45
Future Volume (vph)	75	260	960	20	186	16	857	58	21	9	59	45
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	27.8	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	11.2	43.0	38.0	9.6	41.4	41.4	38.0	57.8	57.8	9.6	29.4	29.4
Total Split (%)	9.3%	35.8%	31.7%	8.0%	34.5%	34.5%	31.7%	48.2%	48.2%	8.0%	24.5%	24.5%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.1	15.7	47.2	5.1	10.9	10.9	25.6	38.9	38.9	5.1	10.2	10.2
Actuated g/C Ratio	0.09	0.22	0.66	0.07	0.15	0.15	0.36	0.54	0.54	0.07	0.14	0.14
v/c Ratio	0.27	0.35	0.78	0.09	0.25	0.05	0.71	0.03	0.02	0.07	0.12	0.13
Control Delay	36.3	27.3	7.7	36.0	29.9	0.2	23.4	9.6	0.0	36.9	31.2	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.3	27.3	7.7	36.0	29.9	0.2	23.4	9.6	0.0	36.9	31.2	0.8
LOS	D	C	A	D	C	A	C	A	A	D	C	A
Approach Delay		13.3			28.3			22.0			19.4	
Approach LOS		B			C			C			B	

Intersection Summary

































Cycle Length: 120
 Actuated Cycle Length: 71.5
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 18.0
 Intersection LOS: B
 Intersection Capacity Utilization 84.4%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
 06/03/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	  		 	 			 	
Traffic Volume (veh/h)	75	260	960	20	186	16	857	58	21	9	59	45
Future Volume (veh/h)	75	260	960	20	186	16	857	58	21	9	59	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	271	870	21	194	13	893	60	17	9	61	37
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	1362	1047	77	1840	571	988	1312	585	20	366	163
Arrive On Green	0.05	0.38	0.38	0.02	0.36	0.36	0.28	0.37	0.37	0.01	0.10	0.10
Sat Flow, veh/h	3456	3554	1585	3456	5106	1585	3563	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	78	271	870	21	194	13	893	60	17	9	61	37
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1702	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.1	4.9	37.2	0.6	2.5	0.5	23.5	1.1	0.7	0.5	1.5	2.1
Cycle Q Clear(g_c), s	2.1	4.9	37.2	0.6	2.5	0.5	23.5	1.1	0.7	0.5	1.5	2.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	156	1362	1047	77	1840	571	988	1312	585	20	366	163
V/C Ratio(X)	0.50	0.20	0.83	0.27	0.11	0.02	0.90	0.05	0.03	0.46	0.17	0.23
Avail Cap(c_a), veh/h	235	1362	1047	178	1873	581	1226	1904	849	92	864	385
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.3	20.0	12.4	46.7	20.6	20.0	33.8	19.6	19.5	47.7	39.7	40.0
Incr Delay (d2), s/veh	0.9	0.1	5.8	0.7	0.0	0.0	7.4	0.0	0.0	6.0	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.0	13.8	0.3	1.0	0.2	10.9	0.4	0.2	0.2	0.7	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.2	20.1	18.2	47.4	20.7	20.0	41.2	19.7	19.5	53.7	39.9	40.7
LnGrp LOS	D	C	B	D	C	C	D	B	B	D	D	D
Approach Vol, veh/h		1219			228			970			107	
Approach Delay, s/veh		20.4			23.1			39.5			41.4	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.7	41.6	6.8	43.0	31.5	15.8	9.0	40.8				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	5.0	52.0	5.0	37.2	33.4	23.6	6.6	35.6				
Max Q Clear Time (g_c+I1), s	2.5	3.1	2.6	39.2	25.5	4.1	4.1	4.5				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	1.4	0.4	0.0	1.4				
Intersection Summary												
HCM 6th Ctrl Delay				28.9								
HCM 6th LOS				C								

Timings
13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
04/29/2021

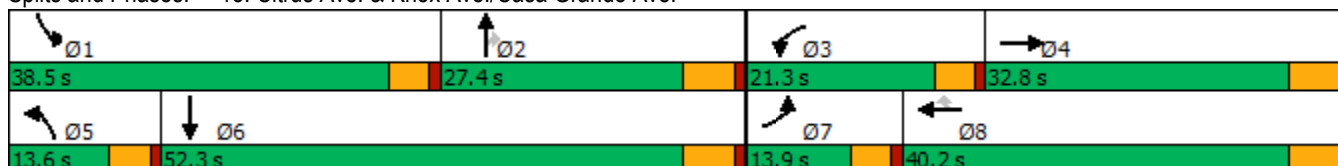


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↗	↖	↑↑	↗	↖	↖↗
Traffic Volume (vph)	53	40	236	37	350	49	503	341	496	346
Future Volume (vph)	53	40	236	37	350	49	503	341	496	346
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	30.8	30.8	9.6	26.8	26.8	9.6	22.8
Total Split (s)	13.9	32.8	21.3	40.2	40.2	13.6	27.4	27.4	38.5	52.3
Total Split (%)	11.6%	27.3%	17.8%	33.5%	33.5%	11.3%	22.8%	22.8%	32.1%	43.6%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	7.4	10.3	16.9	18.2	18.2	7.1	19.8	19.8	34.2	49.3
Actuated g/C Ratio	0.08	0.10	0.17	0.19	0.19	0.07	0.20	0.20	0.35	0.50
v/c Ratio	0.42	0.28	0.80	0.11	0.61	0.40	0.73	0.59	0.83	0.24
Control Delay	54.9	38.8	61.8	36.6	9.2	54.6	44.0	8.3	44.4	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.9	38.8	61.8	36.6	9.2	54.6	44.0	8.3	44.4	15.6
LOS	D	D	E	D	A	D	D	A	D	B
Approach Delay		46.8		30.7			30.9			31.5
Approach LOS		D		C			C			C

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 98.3
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 31.8
 Intersection LOS: C
 Intersection Capacity Utilization 74.6%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 13: Citrus Ave. & Knox Ave./Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	40	14	236	37	350	49	503	341	496	346	55
Future Volume (veh/h)	53	40	14	236	37	350	49	503	341	496	346	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	55	41	14	243	38	181	51	519	182	511	357	57
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	150	51	279	426	361	72	670	299	548	1401	222
Arrive On Green	0.04	0.11	0.11	0.16	0.23	0.23	0.04	0.19	0.19	0.31	0.46	0.46
Sat Flow, veh/h	1781	1333	455	1781	1870	1585	1781	3554	1585	1781	3073	486
Grp Volume(v), veh/h	55	0	55	243	38	181	51	519	182	511	205	209
Grp Sat Flow(s),veh/h/ln	1781	0	1788	1781	1870	1585	1781	1777	1585	1781	1777	1783
Q Serve(g_s), s	2.7	0.0	2.5	11.8	1.4	8.8	2.5	12.3	9.3	24.7	6.3	6.4
Cycle Q Clear(g_c), s	2.7	0.0	2.5	11.8	1.4	8.8	2.5	12.3	9.3	24.7	6.3	6.4
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	75	0	202	279	426	361	72	670	299	548	810	813
V/C Ratio(X)	0.74	0.00	0.27	0.87	0.09	0.50	0.71	0.77	0.61	0.93	0.25	0.26
Avail Cap(c_a), veh/h	187	0	544	335	725	615	181	865	386	681	932	935
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.0	0.0	36.0	36.5	27.0	29.9	42.0	34.2	33.0	29.8	14.8	14.9
Incr Delay (d2), s/veh	5.2	0.0	0.7	16.7	0.1	1.1	4.7	3.3	2.0	16.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.1	6.3	0.6	3.4	1.2	5.5	3.7	12.6	2.5	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	0.0	36.7	53.2	27.1	31.0	46.8	37.5	35.0	45.9	15.0	15.0
LnGrp LOS	D	A	D	D	C	C	D	D	C	D	B	B
Approach Vol, veh/h		110			462			752			925	
Approach Delay, s/veh		42.0			42.3			37.5			32.1	
Approach LOS		D			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.9	22.5	18.5	15.8	8.2	46.2	8.3	26.0				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	33.9	21.6	16.7	27.0	9.0	46.5	9.3	34.4				
Max Q Clear Time (g_c+11), s	26.7	14.3	13.8	4.5	4.5	8.4	4.7	10.8				
Green Ext Time (p_c), s	0.6	2.4	0.1	0.2	0.0	2.7	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay				36.5								
HCM 6th LOS				D								

Timings
14: Citrus Ave. & Summit Ave.

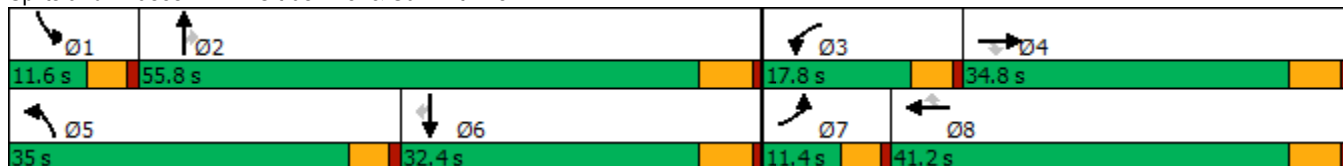
Ventana (JN 13769)
04/27/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	543	453	162	433	103	1069	399	140	84	275	81
Future Volume (vph)	147	543	453	162	433	103	1069	399	140	84	275	81
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	34.8	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	11.4	34.8	34.8	17.8	41.2	41.2	35.0	55.8	55.8	11.6	32.4	32.4
Total Split (%)	9.5%	29.0%	29.0%	14.8%	34.3%	34.3%	29.2%	46.5%	46.5%	9.7%	27.0%	27.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.8	25.0	25.0	12.8	31.0	31.0	30.6	37.8	37.8	7.0	14.3	14.3
Actuated g/C Ratio	0.07	0.24	0.24	0.12	0.30	0.30	0.30	0.36	0.36	0.07	0.14	0.14
v/c Ratio	1.37	0.69	0.70	0.80	0.45	0.20	2.23	0.34	0.23	0.76	0.61	0.23
Control Delay	250.8	40.8	12.2	72.6	30.9	2.7	579.7	25.1	4.7	86.6	48.4	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	250.8	40.8	12.2	72.6	30.9	2.7	579.7	25.1	4.7	86.6	48.4	1.4
LOS	F	D	B	E	C	A	F	C	A	F	D	A
Approach Delay		56.5			36.4			392.0			47.0	
Approach LOS		E			D			F			D	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 103.6
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 2.23
 Intersection Signal Delay: 190.6
 Intersection LOS: F
 Intersection Capacity Utilization 109.2%
 ICU Level of Service H
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/27/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	543	453	162	433	103	1069	399	140	84	275	81
Future Volume (veh/h)	147	543	453	162	433	103	1069	399	140	84	275	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	590	399	176	471	102	1162	434	116	91	299	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	968	425	206	1149	512	513	1246	539	115	451	198
Arrive On Green	0.06	0.27	0.27	0.12	0.32	0.32	0.29	0.35	0.35	0.06	0.13	0.13
Sat Flow, veh/h	1781	3554	1562	1781	3554	1582	1781	3554	1539	1781	3554	1560
Grp Volume(v), veh/h	160	590	399	176	471	102	1162	434	116	91	299	86
Grp Sat Flow(s),veh/h/ln	1781	1777	1562	1781	1777	1582	1781	1777	1539	1781	1777	1560
Q Serve(g_s), s	6.8	15.3	26.4	10.2	10.9	4.9	30.4	9.5	5.6	5.3	8.5	5.4
Cycle Q Clear(g_c), s	6.8	15.3	26.4	10.2	10.9	4.9	30.4	9.5	5.6	5.3	8.5	5.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	115	968	425	206	1149	512	513	1246	539	115	451	198
V/C Ratio(X)	1.39	0.61	0.94	0.86	0.41	0.20	2.26	0.35	0.22	0.79	0.66	0.43
Avail Cap(c_a), veh/h	115	977	429	223	1192	531	513	1684	729	118	896	393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	33.5	37.5	45.8	27.8	25.8	37.6	25.4	24.1	48.7	43.9	42.6
Incr Delay (d2), s/veh	221.7	1.1	28.3	23.4	0.2	0.2	575.3	0.2	0.2	26.8	1.7	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	6.7	13.2	5.8	4.6	1.9	95.0	4.0	2.1	3.2	3.8	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	271.0	34.6	65.8	69.2	28.1	26.0	612.8	25.5	24.3	75.4	45.6	44.1
LnGrp LOS	F	C	E	E	C	C	F	C	C	E	D	D
Approach Vol, veh/h		1149			749			1712			476	
Approach Delay, s/veh		78.4			37.5			424.1			51.0	
Approach LOS		E			D			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.4	42.8	16.8	34.5	35.0	19.2	11.4	39.9				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.0	50.0	13.2	29.0	30.4	26.6	6.8	35.4				
Max Q Clear Time (g_c+I1), s	7.3	11.5	12.2	28.4	32.4	10.5	8.8	12.9				
Green Ext Time (p_c), s	0.0	3.6	0.0	0.4	0.0	2.0	0.0	3.5				
Intersection Summary												
HCM 6th Ctrl Delay			212.5									
HCM 6th LOS			F									

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

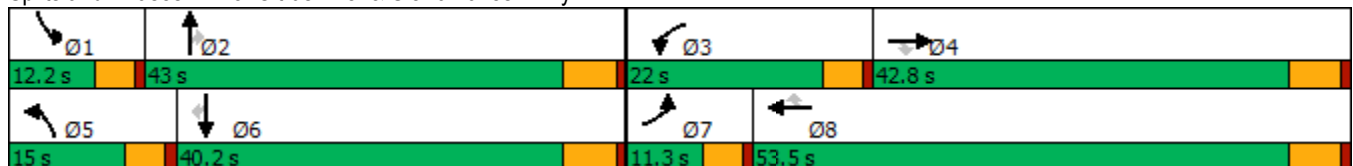
Ventana (JN 13769)
04/27/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	395	409	763	378	266	984	675	921	230	543	90
Future Volume (vph)	106	395	409	763	378	266	984	675	921	230	543	90
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	42.8	42.8	9.6	39.8	39.8	9.6	39.8	39.8	9.6	39.8	39.8
Total Split (s)	11.3	42.8	42.8	22.0	53.5	53.5	15.0	43.0	43.0	12.2	40.2	40.2
Total Split (%)	9.4%	35.7%	35.7%	18.3%	44.6%	44.6%	12.5%	35.8%	35.8%	10.2%	33.5%	33.5%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.5	25.0	25.0	17.5	36.0	36.0	10.5	37.4	37.4	7.6	34.6	34.6
Actuated g/C Ratio	0.06	0.23	0.23	0.16	0.33	0.33	0.10	0.34	0.34	0.07	0.32	0.32
v/c Ratio	0.54	0.50	0.83	1.44	0.34	0.42	3.10	0.58	1.24	1.00	0.50	0.16
Control Delay	61.9	37.8	34.6	241.0	27.5	8.3	971.3	32.6	138.6	108.6	33.1	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.9	37.8	34.6	241.0	27.5	8.3	971.3	32.6	138.6	108.6	33.1	1.3
LOS	E	D	C	F	C	A	F	C	F	F	C	A
Approach Delay		39.2			139.7			428.5			49.9	
Approach LOS		D			F			F			D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 108.5
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 3.10
 Intersection Signal Delay: 239.7
 Intersection LOS: F
 Intersection Capacity Utilization 95.0%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/27/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	395	409	763	378	266	984	675	921	230	543	90
Future Volume (veh/h)	106	395	409	763	378	266	984	675	921	230	543	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	110	411	350	795	394	178	1025	703	767	240	566	57
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	165	931	409	535	1312	577	320	1175	518	233	1087	478
Arrive On Green	0.05	0.26	0.26	0.15	0.37	0.37	0.09	0.33	0.33	0.07	0.31	0.31
Sat Flow, veh/h	3456	3554	1559	3456	3554	1564	3456	3554	1565	3456	3554	1564
Grp Volume(v), veh/h	110	411	350	795	394	178	1025	703	767	240	566	57
Grp Sat Flow(s),veh/h/ln	1728	1777	1559	1728	1777	1564	1728	1777	1565	1728	1777	1564
Q Serve(g_s), s	3.5	10.9	24.0	17.4	8.8	9.1	10.4	18.6	37.2	7.6	14.8	3.0
Cycle Q Clear(g_c), s	3.5	10.9	24.0	17.4	8.8	9.1	10.4	18.6	37.2	7.6	14.8	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	165	931	409	535	1312	577	320	1175	518	233	1087	478
V/C Ratio(X)	0.67	0.44	0.86	1.49	0.30	0.31	3.21	0.60	1.48	1.03	0.52	0.12
Avail Cap(c_a), veh/h	206	1169	513	535	1507	663	320	1175	518	233	1087	478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.7	34.6	39.5	47.5	25.2	25.3	51.0	31.4	37.6	52.4	32.2	28.1
Incr Delay (d2), s/veh	3.1	0.3	11.2	229.1	0.1	0.3	1001.7	0.8	227.1	66.3	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	4.7	10.4	24.4	3.7	3.4	48.9	8.0	46.6	5.4	6.4	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.8	35.0	50.7	276.6	25.3	25.6	1052.8	32.2	264.7	118.8	32.7	28.2
LnGrp LOS	E	C	D	F	C	C	F	C	F	F	C	C
Approach Vol, veh/h		871			1367			2495			863	
Approach Delay, s/veh		43.9			171.5			523.0			56.3	
Approach LOS		D			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	43.0	22.0	35.3	15.0	40.2	10.0	47.3				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.6	37.2	17.4	37.0	10.4	34.4	6.7	47.7				
Max Q Clear Time (g_c+I1), s	9.6	39.2	19.4	26.0	12.4	16.8	5.5	11.1				
Green Ext Time (p_c), s	0.0	0.0	0.0	3.1	0.0	3.8	0.0	3.5				
Intersection Summary												
HCM 6th Ctrl Delay				290.6								
HCM 6th LOS				F								

Intersection	
Intersection Delay, s/veh	195.7
Intersection LOS	F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕		↘	↕
Traffic Vol, veh/h	125	492	769	89	503	774
Future Vol, veh/h	125	492	769	89	503	774
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	133	523	818	95	535	823
Number of Lanes	1	1	2	0	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay	271.4	233.4	133.8
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	74%	0%	0%	0%	100%	100%
Vol Right, %	0%	26%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	513	345	125	492	503	387	387
LT Vol	0	0	125	0	503	0	0
Through Vol	513	256	0	0	0	387	387
RT Vol	0	89	0	492	0	0	0
Lane Flow Rate	545	367	133	523	535	412	412
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	1.599	1.059	0.457	1.626	1.419	1.035	0.837
Departure Headway (Hd)	13.252	13.061	15.729	14.496	11.267	10.743	8.928
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	278	283	231	256	326	342	408
Service Time	10.952	10.761	13.429	12.196	8.967	8.443	6.628
HCM Lane V/C Ratio	1.96	1.297	0.576	2.043	1.641	1.205	1.01
HCM Control Delay	317.2	109	31	332.5	235.1	92.5	43.6
HCM Lane LOS	F	F	D	F	F	F	E
HCM 95th-tile Q	26.5	11.5	2.2	25.4	23.9	12.2	7.9

Intersection						
Int Delay, s/veh	14.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑	
Traffic Vol, veh/h	110	72	120	1249	851	153
Future Vol, veh/h	110	72	120	1249	851	153
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	115	75	125	1301	886	159

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2517	966	1045	0	-	0
Stage 1	966	-	-	-	-	-
Stage 2	1551	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 31	309	666	-	-	-
Stage 1	369	-	-	-	-	-
Stage 2	192	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 25	309	666	-	-	-
Mov Cap-2 Maneuver	118	-	-	-	-	-
Stage 1	300	-	-	-	-	-
Stage 2	192	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	198.9	1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	666	-	156	-	-
HCM Lane V/C Ratio	0.188	-	1.215	-	-
HCM Control Delay (s)	11.7	-	198.9	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.7	-	10.8	-	-

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

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	281	467	530	1081	744	200
Future Volume (vph)	281	467	530	1081	744	200
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	44.8	9.6	16.5	29.5	29.5
Total Split (s)	44.8	44.8	42.0	75.2	33.2	33.2
Total Split (%)	37.3%	37.3%	35.0%	62.7%	27.7%	27.7%
Yellow Time (s)	4.8	4.8	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	6.5	6.5	6.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	23.0	23.0	37.5	68.9	26.8	26.8
Actuated g/C Ratio	0.22	0.22	0.36	0.66	0.26	0.26
v/c Ratio	0.76	0.67	0.88	0.49	0.86	0.43
Control Delay	50.7	8.0	49.1	10.6	49.0	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	8.0	49.1	10.6	49.0	20.1
LOS	D	A	D	B	D	C
Approach Delay	24.0			23.2	42.8	
Approach LOS	C			C	D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 104.3	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 29.0	Intersection LOS: C
Intersection Capacity Utilization 79.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	281	467	530	1081	744	200
Future Volume (veh/h)	281	467	530	1081	744	200
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	296	349	558	1138	783	150
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	447	398	593	2230	885	395
Arrive On Green	0.25	0.25	0.33	0.63	0.25	0.25
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	296	349	558	1138	783	150
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	15.1	21.4	30.8	17.8	21.5	7.9
Cycle Q Clear(g_c), s	15.1	21.4	30.8	17.8	21.5	7.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	447	398	593	2230	885	395
V/C Ratio(X)	0.66	0.88	0.94	0.51	0.88	0.38
Avail Cap(c_a), veh/h	686	610	658	2411	937	418
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	36.4	32.8	10.3	36.6	31.5
Incr Delay (d2), s/veh	1.7	9.1	20.7	0.2	9.7	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	18.2	16.3	6.4	10.4	3.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.7	45.5	53.5	10.5	46.3	32.1
LnGrp LOS	D	D	D	B	D	C
Approach Vol, veh/h	645			1696	933	
Approach Delay, s/veh	41.0			24.7	44.1	
Approach LOS	D			C	D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		70.0		31.2	38.3	31.7
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	37.4	26.7
Max Q Clear Time (g_c+I1), s		19.8		23.4	32.8	23.5
Green Ext Time (p_c), s		11.4		2.0	0.9	1.7
Intersection Summary						
HCM 6th Ctrl Delay			33.4			
HCM 6th LOS			C			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

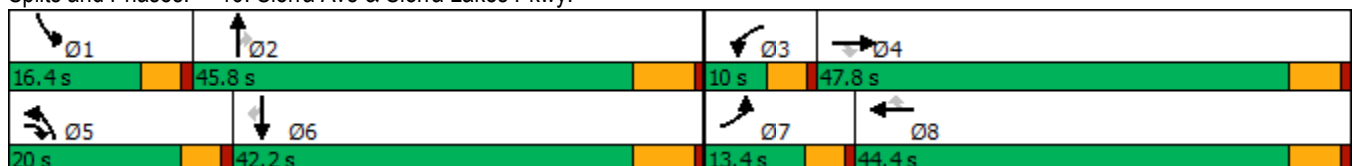
Ventana (JN 13769)
04/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	312	340	954	225	274	311	871	1130	269	294	915	229
Future Volume (vph)	312	340	954	225	274	311	871	1130	269	294	915	229
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	13.4	47.8	20.0	10.0	44.4	44.4	20.0	45.8	45.8	16.4	42.2	42.2
Total Split (%)	11.2%	39.8%	16.7%	8.3%	37.0%	37.0%	16.7%	38.2%	38.2%	13.7%	35.2%	35.2%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.9	18.2	35.1	5.5	14.8	14.8	15.6	32.7	32.7	11.5	28.6	28.6
Actuated g/C Ratio	0.10	0.20	0.39	0.06	0.16	0.16	0.17	0.36	0.36	0.13	0.32	0.32
v/c Ratio	0.94	0.49	1.49	1.11	0.48	0.69	1.50	0.63	0.40	0.69	0.58	0.36
Control Delay	80.0	34.7	252.9	137.6	37.6	18.0	264.6	25.4	8.2	48.6	27.2	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.0	34.7	252.9	137.6	37.6	18.0	264.6	25.4	8.2	48.6	27.2	4.9
LOS	E	C	F	F	D	B	F	C	A	D	C	A
Approach Delay		173.1			57.8			115.1			28.0	
Approach LOS		F			E			F			C	

Intersection Summary



































Cycle Length: 120
 Actuated Cycle Length: 89.7
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.50
 Intersection Signal Delay: 102.3
 Intersection LOS: F
 Intersection Capacity Utilization 97.5%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/06/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		 	  	
Traffic Volume (veh/h)	312	340	954	225	274	311	871	1130	269	294	915	229
Future Volume (veh/h)	312	340	954	225	274	311	871	1130	269	294	915	229
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	322	351	716	232	282	263	898	1165	213	303	943	190
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	267	1310	797	164	1204	529	467	1490	456	358	1329	411
Arrive On Green	0.08	0.37	0.37	0.05	0.34	0.34	0.14	0.29	0.29	0.10	0.26	0.26
Sat Flow, veh/h	3456	3554	1582	3456	3554	1562	3456	5106	1564	3456	5106	1580
Grp Volume(v), veh/h	322	351	716	232	282	263	898	1165	213	303	943	190
Grp Sat Flow(s),veh/h/ln	1728	1777	1582	1728	1777	1562	1728	1702	1564	1728	1702	1580
Q Serve(g_s), s	8.8	7.9	42.0	5.4	6.5	15.3	15.4	23.9	12.7	9.8	19.1	11.5
Cycle Q Clear(g_c), s	8.8	7.9	42.0	5.4	6.5	15.3	15.4	23.9	12.7	9.8	19.1	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	267	1310	797	164	1204	529	467	1490	456	358	1329	411
V/C Ratio(X)	1.21	0.27	0.90	1.42	0.23	0.50	1.92	0.78	0.47	0.85	0.71	0.46
Avail Cap(c_a), veh/h	267	1310	797	164	1204	529	467	1761	539	358	1599	495
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.6	25.2	25.6	54.3	27.1	30.0	49.3	37.0	33.1	50.2	38.2	35.4
Incr Delay (d2), s/veh	122.9	0.1	13.0	219.5	0.1	0.7	423.3	2.0	0.7	16.2	1.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.4	3.3	19.6	7.3	2.8	5.8	34.1	10.1	4.9	5.0	8.1	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	175.4	25.3	38.6	273.8	27.2	30.7	472.6	39.0	33.8	66.4	39.4	36.3
LnGrp LOS	F	C	D	F	C	C	F	D	C	E	D	D
Approach Vol, veh/h		1389			777			2276			1436	
Approach Delay, s/veh		67.0			102.0			209.6			44.7	
Approach LOS		E			F			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.4	39.8	10.0	47.8	20.0	36.2	13.4	44.4				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	11.8	39.3	5.4	42.0	15.4	35.7	8.8	38.6				
Max Q Clear Time (g_c+I1), s	11.8	25.9	7.4	44.0	17.4	21.1	10.8	17.3				
Green Ext Time (p_c), s	0.0	7.4	0.0	0.0	0.0	6.4	0.0	2.7				
Intersection Summary												
HCM 6th Ctrl Delay			121.4									
HCM 6th LOS			F									

APPENDIX 6.3:

**OPENING YEAR CUMULATIVE (2030) WITHOUT PROJECT CONDITIONS TRAFFIC
SIGNAL WARRANT ANALYSIS WORKSHEETS**

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **2030 Without Project Conditions - Weekday AM Peak Hour**

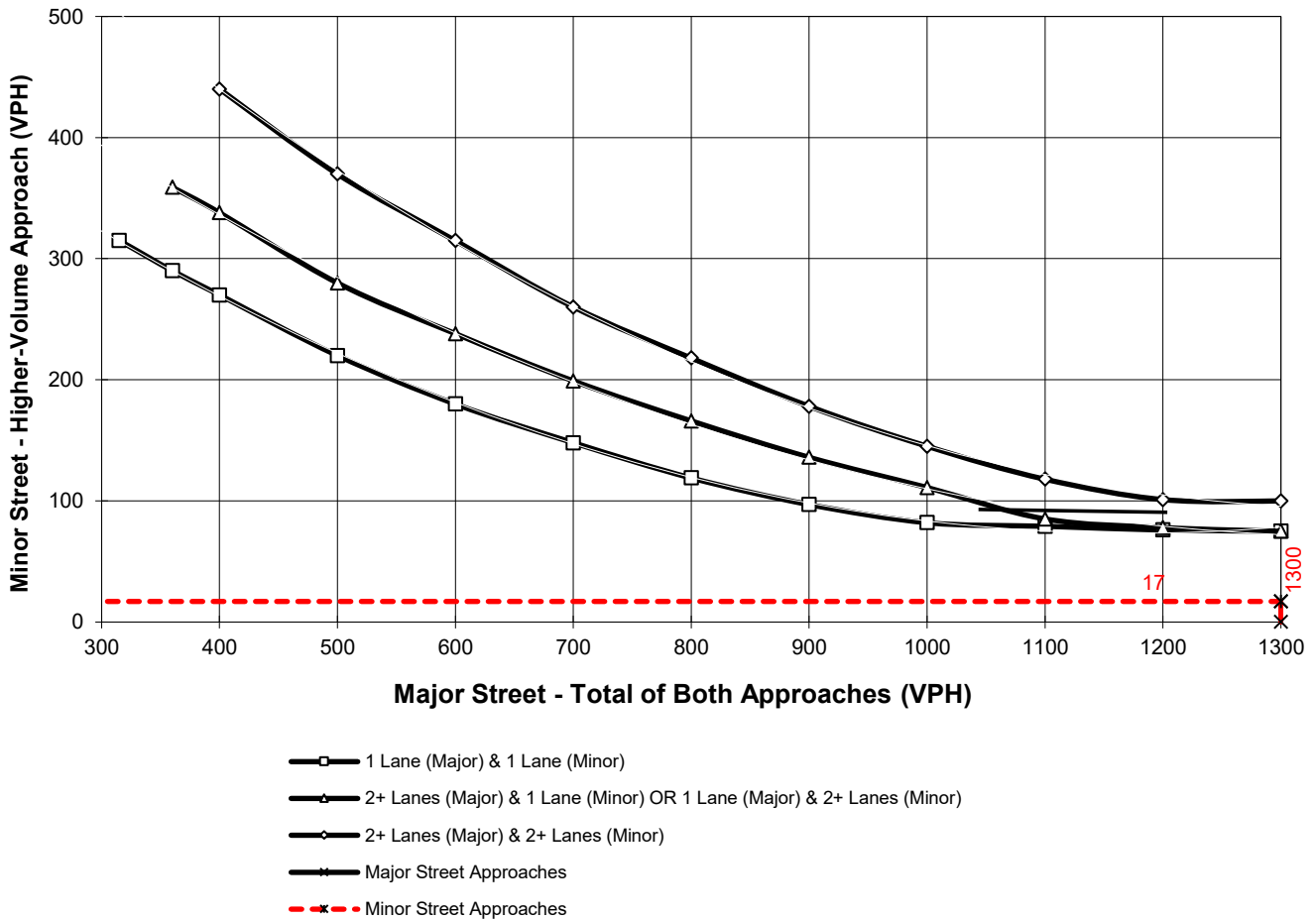
Major Street Name = **Duncan Canyon Rd.**

Total of Both Approaches (VPH) = **1424**
 Number of Approach Lanes Major Street = **2**

Minor Street Name = **Lytle Creek Rd.**

High Volume Approach (VPH) = **17**
 Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

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APPENDIX 6.4:

**OPENING YEAR CUMULATIVE (2030) WITH PROJECT CONDITIONS TRAFFIC SIGNAL
WARRANT ANALYSIS WORKSHEETS**

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **2030 With Project Conditions - Weekday AM Peak Hour**

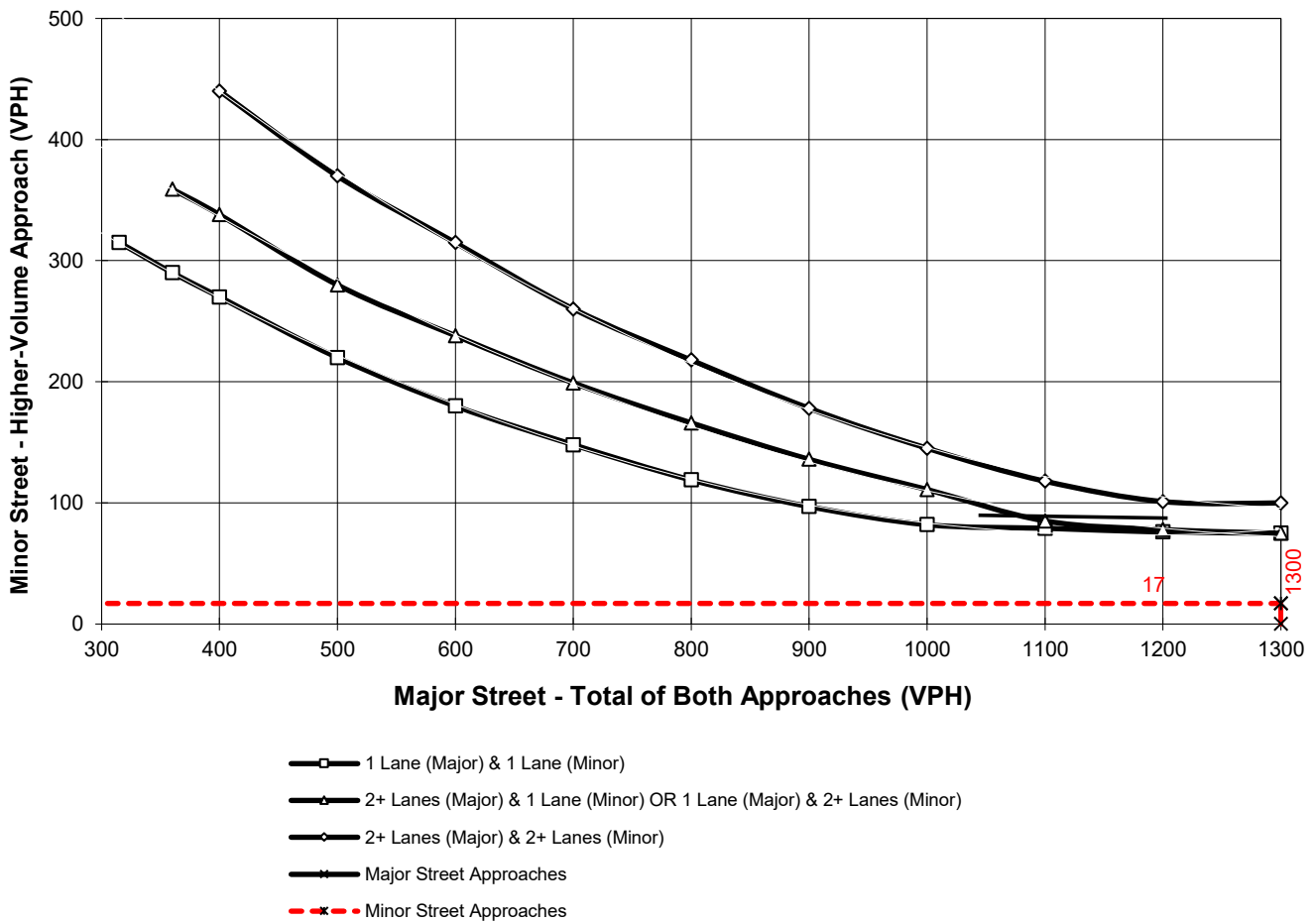
Major Street Name = **Duncan Canyon Rd.**

Total of Both Approaches (VPH) = **1487**
 Number of Approach Lanes Major Street = **2**

Minor Street Name = **Lytle Creek Rd.**

High Volume Approach (VPH) = **17**
 Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

<u>DIST</u>	<u>CO</u>	<u>RTE</u>	<u>PM</u>	<u>CALC</u>	<u>TRAFFIC CONDITIONS</u>	<u>2030 WP</u>
Jurisdiction: <u>City of Fontana</u>				CHK <u>CS</u>		DATE <u>07/08/20</u>
Major Street: <u>Citrus Av.</u>					Critical Approach Speed (Major) <u>25</u> mph	DATE <u>07/08/20</u>
Minor Street: <u>Lytle Creek Rd.</u>					Critical Approach Speed (Minor) <u>25</u> mph	
Major Street Approach Lanes =		<u>1</u>	lane	Minor Street Approach Lanes =		<u>1</u> lane
Major Street Future ADT =		<u>2,403</u>	vpd	Minor Street Future ADT =		<u>206</u> vpd
Speed limit or critical speed on major street traffic > 64 km/h (40 mph);					<input type="text"/>	
In built up area of isolated community of < 10,000 population					or	<input type="text"/>
						URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

<u>URBAN</u>	<u>RURAL</u>	Minimum Requirements EADT			
XX		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
CONDITION A - Minimum Vehicular Volume	Not Satisfied				
<u>Satisfied</u>	XX				
Number of lanes for moving traffic on each approach	Number of lanes for moving traffic on each approach	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
<u>Major Street</u>	<u>Minor Street</u>				
1 2,403	1 206				
2 +	1	8,000	5,600	2,400	1,680
2 +	2 +	9,600	6,720	2,400	1,680
1	2 +	9,600	6,720	3,200	2,240
1	2 +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic	Not Satisfied	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
<u>Satisfied</u>	XX				
Number of lanes for moving traffic on each approach	Number of lanes for moving traffic on each approach	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
<u>Major Street</u>	<u>Minor Street</u>				
1 2,403	1 206	12,000	8,400	1,200	850
2 +	1	14,400	10,080	1,200	850
2 +	2 +	14,400	10,080	1,600	1,120
1	2 +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B	Not Satisfied	2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>Satisfied</u>	XX				
No one condition satisfied, but following conditions fulfilled 80% of more	A				
	9%				
	B				
	17%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

<u>DIST</u>	<u>CO</u>	<u>RTE</u>	<u>PM</u>	<u>CALC</u>	<u>TRAFFIC CONDITIONS</u>	<u>2030 WP</u>
Jurisdiction: <u>City of Fontana</u>				<u>CS</u>		<u>DATE 07/08/20</u>
Major Street: <u>Citrus Ave.</u>				<u>CHK CS</u>		<u>DATE 07/08/20</u>
Minor Street: <u>Driveway 1</u>					Critical Approach Speed (Major) <u>25</u> mph	
					Critical Approach Speed (Minor) <u>25</u> mph	
Major Street Approach Lanes =		<u>1</u>	lane	Minor Street Approach Lanes =		<u>1</u> lane
Major Street Future ADT =		<u>2,534</u>	vpd	Minor Street Future ADT =		<u>149</u> vpd
Speed limit or critical speed on major street traffic > 64 km/h (40 mph);		<input type="text"/>		or		URBAN (U)
In built up area of isolated community of < 10,000 population		<input type="text"/>				

(Based on Estimated Average Daily Traffic - See Note)

<u>URBAN</u>	<u>RURAL</u>	Minimum Requirements			
XX		EADT			
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street		Vehicles Per Day on Higher-Volume Minor Street Approach	
<u>Satisfied</u>	<u>Not Satisfied</u>	(Total of Both Approaches)		(One Direction Only)	
	XX	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
Number of lanes for moving traffic on each approach					
<u>Major Street</u>	<u>Minor Street</u>				
<u>1 2,534</u>	<u>1 149</u>	8,000	5,600	2,400	1,680
<u>2 +</u>	<u>1</u>	9,600	6,720	2,400	1,680
<u>2 +</u>	<u>2 +</u>	9,600	6,720	3,200	2,240
<u>1</u>	<u>2 +</u>	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street		Vehicles Per Day on Higher-Volume Minor Street Approach	
<u>Satisfied</u>	<u>Not Satisfied</u>	(Total of Both Approaches)		(One Direction Only)	
	XX	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
Number of lanes for moving traffic on each approach					
<u>Major Street</u>	<u>Minor Street</u>				
<u>1 2,534</u>	<u>1 149</u>	12,000	8,400	1,200	850
<u>2 +</u>	<u>1</u>	14,400	10,080	1,200	850
<u>2 +</u>	<u>2 +</u>	14,400	10,080	1,600	1,120
<u>1</u>	<u>2 +</u>	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B		2 CONDITIONS		2 CONDITIONS	
<u>Satisfied</u>	<u>Not Satisfied</u>	80%		80%	
No one condition satisfied, but following conditions fulfilled 80% of more	XX				
	A				
	6%				
	B				
	12%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



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APPENDIX 6.5:

**OPENING YEAR CUMULATIVE (2030) WITHOUT PROJECT CONDITIONS OFF-RAMP
QUEUING ANALYSIS WORKSHEETS**

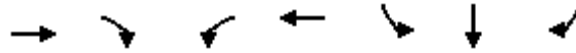
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Queues

Ventana (JN 13769)

04/27/2021

3: I-15 SB Ramp & Duncan Canyon Rd.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	431	643	937	444	158	159	63
v/c Ratio	0.27	0.67	0.92	0.16	0.69	0.69	0.23
Control Delay	20.6	11.9	68.0	2.8	64.4	64.4	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	11.9	68.0	2.8	64.4	64.4	12.6
Queue Length 50th (ft)	105	123	387	26	124	125	0
Queue Length 95th (ft)	142	259	#570	44	191	193	39
Internal Link Dist (ft)	583			936		3134	
Turn Bay Length (ft)		260	620		650		
Base Capacity (vph)	1622	954	1019	2790	308	310	341
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.67	0.92	0.16	0.51	0.51	0.18

Intersection Summary

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

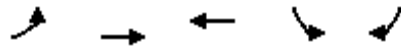
Queue shown is maximum after two cycles.

Queues

Ventana (JN 13769)

04/27/2021

4: Beech Ave. & I-15 SB Ramps



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	316	580	1397	236	303
v/c Ratio	0.82	0.21	0.77	0.78	0.58
Control Delay	61.2	4.6	14.4	65.3	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	61.2	4.6	14.4	65.3	9.3
Queue Length 50th (ft)	233	58	118	176	0
Queue Length 95th (ft)	318	88	#231	257	76
Internal Link Dist (ft)		1839	1079	3017	
Turn Bay Length (ft)	400				290
Base Capacity (vph)	486	2699	1804	368	569
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	0.65	0.21	0.77	0.64	0.53

Intersection Summary

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

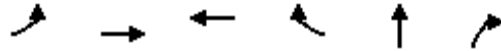
Queue shown is maximum after two cycles.

Queues

Ventana (JN 13769)

5: I-15 NB Ramp & Duncan Canyon Rd.

04/27/2021



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	119	607	1201	276	167	467
v/c Ratio	0.61	0.22	0.53	0.25	0.65	0.58
Control Delay	49.3	4.9	14.5	2.1	60.0	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	4.9	14.5	2.1	60.0	6.9
Queue Length 50th (ft)	89	125	252	0	124	0
Queue Length 95th (ft)	163	157	403	40	186	47
Internal Link Dist (ft)		936	871		2645	
Turn Bay Length (ft)	235			260		
Base Capacity (vph)	309	2764	2252	1107	428	1027
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	0.39	0.22	0.53	0.25	0.39	0.45

Intersection Summary

Queues
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	100	839	1479	233	624
v/c Ratio	0.61	0.33	0.72	0.23	0.84
Control Delay	71.7	6.5	21.3	3.4	54.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	71.7	6.5	21.3	3.4	54.0
Queue Length 50th (ft)	79	139	424	11	229
Queue Length 95th (ft)	120	135	445	35	247
Internal Link Dist (ft)		1079	938		1808
Turn Bay Length (ft)	145			230	
Base Capacity (vph)	191	2543	2066	1007	833
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	0.52	0.33	0.72	0.23	0.75

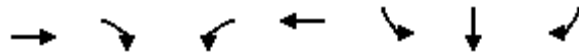
Intersection Summary

Queues

Ventana (JN 13769)

3: I-15 SB Ramp & Duncan Canyon Rd.

04/29/2021



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	431	258	444	780	131	132	106
v/c Ratio	0.20	0.25	0.75	0.28	0.63	0.63	0.37
Control Delay	12.7	2.4	49.8	3.6	62.5	62.8	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	2.4	49.8	3.6	62.5	62.8	12.0
Queue Length 50th (ft)	75	0	160	39	103	104	0
Queue Length 95th (ft)	130	42	214	141	163	164	49
Internal Link Dist (ft)	583			936		3134	
Turn Bay Length (ft)		260	620		650		
Base Capacity (vph)	2108	1047	671	2834	378	378	433
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.25	0.66	0.28	0.35	0.35	0.24

Intersection Summary

4: Beech Ave. & I-15 SB Ramps



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	148	726	1234	252	93
v/c Ratio	0.66	0.27	0.61	0.77	0.25
Control Delay	63.2	5.6	41.9	61.3	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	5.6	41.9	61.3	9.1
Queue Length 50th (ft)	111	81	427	187	0
Queue Length 95th (ft)	173	133	m397	261	42
Internal Link Dist (ft)		1839	1079	3017	
Turn Bay Length (ft)	400				290
Base Capacity (vph)	309	2645	2011	457	477
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	0.48	0.27	0.61	0.55	0.19

Intersection Summary

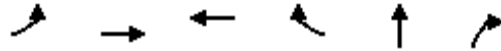
m Volume for 95th percentile queue is metered by upstream signal.

Queues

Ventana (JN 13769)

5: I-15 NB Ramp & Duncan Canyon Rd.

04/29/2021



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	138	548	804	253	422	742
v/c Ratio	0.64	0.25	0.49	0.29	0.76	0.61
Control Delay	70.2	12.8	26.0	4.1	46.5	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.2	12.8	26.0	4.1	46.5	10.5
Queue Length 50th (ft)	115	120	228	0	291	66
Queue Length 95th (ft)	185	150	338	54	384	125
Internal Link Dist (ft)		936	871		2645	
Turn Bay Length (ft)	235			260		
Base Capacity (vph)	309	2174	1625	863	651	1340
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	0.45	0.25	0.49	0.29	0.65	0.55

Intersection Summary

Queues
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	199	779	1039	484	1275
v/c Ratio	0.84	0.41	0.81	0.58	0.95
Control Delay	69.7	16.3	40.9	8.0	49.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	69.7	16.3	40.9	8.0	49.5
Queue Length 50th (ft)	143	232	387	35	474
Queue Length 95th (ft)	#257	171	475	133	#621
Internal Link Dist (ft)		1079	938		1808
Turn Bay Length (ft)	145			230	
Base Capacity (vph)	250	1908	1284	840	1367
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	0.80	0.41	0.81	0.58	0.93

Intersection Summary

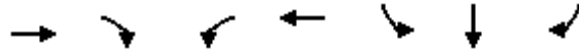
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX 6.6:

**OPENING YEAR CUMULATIVE (2030) WITH PROJECT CONDITIONS OFF-RAMP
QUEUING ANALYSIS WORKSHEETS**

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3: I-15 SB Ramp & Duncan Canyon Rd.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	467	643	1277	479	208	206	63
v/c Ratio	0.29	0.68	1.35	0.18	0.79	0.78	0.21
Control Delay	20.9	12.1	204.5	4.4	69.3	68.1	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.9	12.1	204.5	4.4	69.3	68.1	11.9
Queue Length 50th (ft)	115	126	~705	35	163	161	0
Queue Length 95th (ft)	154	262	#867	79	249	247	39
Internal Link Dist (ft)	583			936		3134	
Turn Bay Length (ft)		260	620		650		
Base Capacity (vph)	1622	952	948	2717	308	309	341
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.68	1.35	0.18	0.68	0.67	0.18

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.

Queues
4: Beech Ave. & I-15 SB Ramps

Ventana (JN 13769)
04/27/2021



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	316	600	1468	236	303
v/c Ratio	0.82	0.22	0.88dr	0.78	0.58
Control Delay	61.2	4.6	16.9	65.3	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	61.2	4.6	16.9	65.3	9.3
Queue Length 50th (ft)	233	61	183	176	0
Queue Length 95th (ft)	318	92	m#243	257	76
Internal Link Dist (ft)		1839	1079	3017	
Turn Bay Length (ft)	400				290
Base Capacity (vph)	486	2699	1807	368	569
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	0.65	0.22	0.81	0.64	0.53

Intersection Summary

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

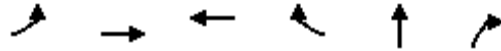
Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Queues

5: I-15 NB Ramp & Duncan Canyon Rd.



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	119	736	1571	368	167	812
v/c Ratio	0.61	0.29	0.76	0.35	0.48	0.88
Control Delay	51.8	8.5	23.7	4.8	46.4	30.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.8	8.5	23.7	4.8	46.4	30.2
Queue Length 50th (ft)	98	172	472	26	114	151
Queue Length 95th (ft)	m156	205	678	90	176	232
Internal Link Dist (ft)		936	871		2645	
Turn Bay Length (ft)	235			260		
Base Capacity (vph)	309	2582	2070	1046	428	1032
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	0.39	0.29	0.76	0.35	0.39	0.79

Intersection Summary

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

Queues
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	100	861	1560	233	682
v/c Ratio	0.67	0.34	0.76	0.23	0.87
Control Delay	77.3	7.2	22.6	3.4	56.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	77.3	7.2	22.6	3.4	56.3
Queue Length 50th (ft)	79	144	479	12	251
Queue Length 95th (ft)	m120	140	465	35	275
Internal Link Dist (ft)		1079	938		1808
Turn Bay Length (ft)	145			230	
Base Capacity (vph)	163	2503	2054	1001	833
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	0.61	0.34	0.76	0.23	0.82

Intersection Summary

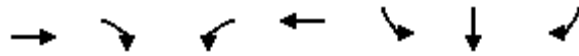
m Volume for 95th percentile queue is metered by upstream signal.

Queues

Ventana (JN 13769)

04/27/2021

3: I-15 SB Ramp & Duncan Canyon Rd.



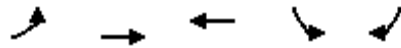
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	464	258	707	808	174	175	106
v/c Ratio	0.27	0.29	0.80	0.30	0.68	0.69	0.32
Control Delay	19.3	3.0	43.2	7.2	60.9	61.2	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	3.0	43.2	7.2	60.9	61.2	10.2
Queue Length 50th (ft)	111	0	276	81	136	136	0
Queue Length 95th (ft)	147	45	#425	219	202	203	47
Internal Link Dist (ft)	583			936		3134	
Turn Bay Length (ft)		260	620		650		
Base Capacity (vph)	1702	895	888	2735	378	378	433
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.29	0.80	0.30	0.46	0.46	0.24

Intersection Summary

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

Queue shown is maximum after two cycles.

4: Beech Ave. & I-15 SB Ramps

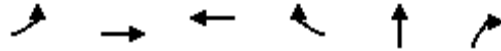


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	148	744	1299	252	93
v/c Ratio	0.66	0.28	0.65	0.77	0.25
Control Delay	63.2	5.6	43.0	61.3	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	5.6	43.0	61.3	9.1
Queue Length 50th (ft)	111	83	456	187	0
Queue Length 95th (ft)	173	137	m398	261	42
Internal Link Dist (ft)		1839	1079	3017	
Turn Bay Length (ft)	400				290
Base Capacity (vph)	309	2645	2013	457	477
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	0.48	0.28	0.65	0.55	0.19

Intersection Summary

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

5: I-15 NB Ramp & Duncan Canyon Rd.



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	138	666	1091	323	422	1052
v/c Ratio	0.64	0.32	0.72	0.38	0.70	0.88
Control Delay	65.7	15.4	33.4	5.5	40.4	31.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.7	15.4	33.4	5.5	40.4	31.4
Queue Length 50th (ft)	115	157	378	13	269	275
Queue Length 95th (ft)	184	191	502	79	384	382
Internal Link Dist (ft)		936	871		2645	
Turn Bay Length (ft)	235			260		
Base Capacity (vph)	309	2062	1513	846	651	1256
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	0.45	0.32	0.72	0.38	0.65	0.84

Intersection Summary

Queues
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	199	797	1103	484	1331
v/c Ratio	0.90	0.42	0.85	0.58	0.97
Control Delay	85.2	15.9	42.4	8.6	54.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	85.2	15.9	42.4	8.6	54.0
Queue Length 50th (ft)	129	237	410	42	509
Queue Length 95th (ft)	#281	168	502	141	#669
Internal Link Dist (ft)		1079	938		1808
Turn Bay Length (ft)	145			230	
Base Capacity (vph)	221	1887	1299	836	1367
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	0.90	0.42	0.85	0.58	0.97

Intersection Summary

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

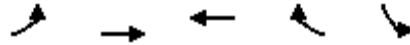
APPENDIX 6.7:

**OPENING YEAR CUMULATIVE (2030) WITHOUT PROJECT CONDITIONS INTERSECTION
OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS**

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Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021

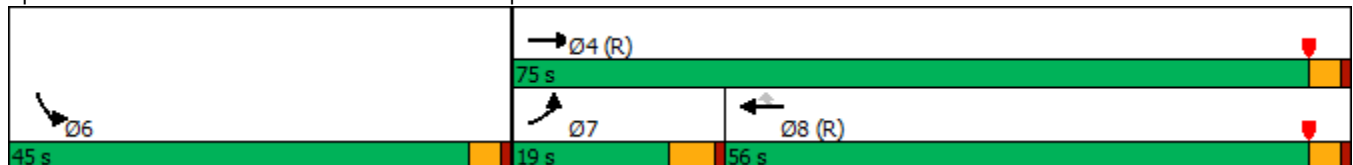


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↗↗	↗↗	↖	↖↖↖
Traffic Volume (vph)	80	671	1183	186	396
Future Volume (vph)	80	671	1183	186	396
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	19.0	75.0	56.0	56.0	45.0
Total Split (%)	15.8%	62.5%	46.7%	46.7%	37.5%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	12.1	84.9	67.9	67.9	27.1
Actuated g/C Ratio	0.10	0.71	0.57	0.57	0.23
v/c Ratio	0.56	0.33	0.74	0.24	0.80
Control Delay	60.5	7.5	24.0	5.9	49.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	60.5	7.5	24.0	5.9	49.5
LOS	E	A	C	A	D
Approach Delay		13.1	21.5		49.5
Approach LOS		B	C		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 24.4
 Intersection LOS: C
 Intersection Capacity Utilization 62.5%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↑↑	↘	↙↘		
Traffic Volume (veh/h)	80	671	1183	186	396	103	
Future Volume (veh/h)	80	671	1183	186	396	103	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	100	839	1479	168	545	0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	123	2672	2278	1016	646	288	
Arrive On Green	0.14	1.00	0.64	0.64	0.18	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	100	839	1479	168	545	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	6.5	0.0	30.7	5.1	17.7	0.0	
Cycle Q Clear(g_c), s	6.5	0.0	30.7	5.1	17.7	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	123	2672	2278	1016	646	288	
V/C Ratio(X)	0.81	0.31	0.65	0.17	0.84	0.00	
Avail Cap(c_a), veh/h	208	2672	2278	1016	1217	542	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.93	0.93	0.61	0.61	1.00	0.00	
Uniform Delay (d), s/veh	50.9	0.0	13.3	8.7	47.5	0.0	
Incr Delay (d2), s/veh	11.1	0.3	0.9	0.2	3.1	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	3.1	0.1	10.9	1.6	8.2	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	62.0	0.3	14.1	8.9	50.6	0.0	
LnGrp LOS	E	A	B	A	D	A	
Approach Vol, veh/h		939	1647		545		
Approach Delay, s/veh		6.9	13.6		50.6		
Approach LOS		A	B		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				94.2	25.8	13.3	80.9
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				71.0	41.0	14.0	52.0
Max Q Clear Time (g_c+I1), s				2.0	19.7	8.5	32.7
Green Ext Time (p_c), s				6.4	2.0	0.1	10.8

Intersection Summary

HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

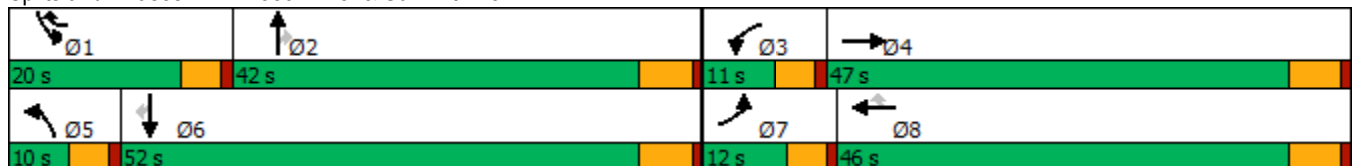
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	85	132	91	193	641	45	388	58	341	262	39
Future Volume (vph)	85	132	91	193	641	45	388	58	341	262	39
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	1	5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	9.6	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	47.0	11.0	46.0	20.0	10.0	42.0	42.0	20.0	52.0	52.0
Total Split (%)	10.0%	39.2%	9.2%	38.3%	16.7%	8.3%	35.0%	35.0%	16.7%	43.3%	43.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None	None	None	None
Act Effct Green (s)	6.3	10.9	6.1	10.7	25.3	5.4	13.2	13.2	13.3	25.8	25.8
Actuated g/C Ratio	0.10	0.18	0.10	0.17	0.41	0.09	0.21	0.21	0.21	0.41	0.41
v/c Ratio	0.26	0.26	0.29	0.33	0.91	0.16	0.54	0.14	0.47	0.19	0.06
Control Delay	30.6	23.3	31.5	26.9	31.4	31.2	26.1	0.6	24.8	14.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	23.3	31.5	26.9	31.4	31.2	26.1	0.6	24.8	14.2	0.2
LOS	C	C	C	C	C	C	C	A	C	B	A
Approach Delay		25.9		30.5			23.6			19.0	
Approach LOS		C		C			C			B	

Intersection Summary
































Cycle Length: 120	
Actuated Cycle Length: 62.2	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 25.3	Intersection LOS: C
Intersection Capacity Utilization 68.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 7: Beech Ave. & Summit Ave.



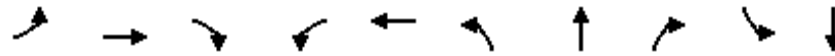
HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	85	132	24	91	193	641	45	388	58	341	262	39
Future Volume (veh/h)	85	132	24	91	193	641	45	388	58	341	262	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	139	20	96	203	564	47	408	49	359	276	38
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	1112	157	200	1269	770	144	636	279	461	948	422
Arrive On Green	0.06	0.36	0.36	0.06	0.36	0.36	0.04	0.18	0.18	0.13	0.27	0.27
Sat Flow, veh/h	3456	3125	442	3456	3554	1582	3456	3554	1557	3563	3554	1581
Grp Volume(v), veh/h	89	78	81	96	203	564	47	408	49	359	276	38
Grp Sat Flow(s),veh/h/ln	1728	1777	1790	1728	1777	1582	1728	1777	1557	1781	1777	1581
Q Serve(g_s), s	1.9	2.2	2.3	2.0	2.9	21.3	1.0	8.0	2.0	7.3	4.6	1.4
Cycle Q Clear(g_c), s	1.9	2.2	2.3	2.0	2.9	21.3	1.0	8.0	2.0	7.3	4.6	1.4
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	195	632	637	200	1269	770	144	636	279	461	948	422
V/C Ratio(X)	0.46	0.12	0.13	0.48	0.16	0.73	0.33	0.64	0.18	0.78	0.29	0.09
Avail Cap(c_a), veh/h	342	979	986	296	1910	1056	250	1720	754	734	2196	977
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	16.2	16.3	34.1	16.4	15.3	34.8	28.5	26.0	31.5	21.8	20.6
Incr Delay (d2), s/veh	0.6	0.1	0.1	0.7	0.1	1.7	0.5	1.1	0.3	1.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.8	0.8	0.8	1.1	6.6	0.4	3.2	0.7	3.0	1.8	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.8	16.3	16.3	34.8	16.4	17.0	35.3	29.6	26.3	32.6	22.0	20.7
LnGrp LOS	C	B	B	C	B	B	D	C	C	C	C	C
Approach Vol, veh/h		248			863			504			673	
Approach Delay, s/veh		23.0			18.9			29.8			27.6	
Approach LOS		C			B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.3	19.2	8.9	32.4	7.7	25.7	8.8	32.5				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	15.4	36.2	6.4	41.2	5.4	46.2	7.4	40.2				
Max Q Clear Time (g_c+1), s	9.3	10.0	4.0	4.3	3.0	6.6	3.9	23.3				
Green Ext Time (p_c), s	0.4	2.6	0.0	0.8	0.0	1.8	0.0	3.1				
Intersection Summary												
HCM 6th Ctrl Delay			24.3									
HCM 6th LOS			C									

Timings
12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

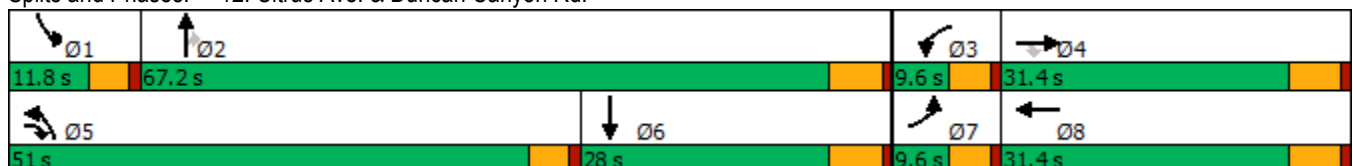


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	23	231	726	31	221	1010	8	32	14	23
Future Volume (vph)	23	231	726	31	221	1010	8	32	14	23
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	9.6	27.8	27.8	9.6	27.8
Total Split (s)	9.6	31.4	51.0	9.6	31.4	51.0	67.2	67.2	11.8	28.0
Total Split (%)	8.0%	26.2%	42.5%	8.0%	26.2%	42.5%	56.0%	56.0%	9.8%	23.3%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min	None	None	None	None	None
Act Effct Green (s)	5.7	17.3	57.8	5.7	19.1	32.1	38.9	38.9	6.2	11.4
Actuated g/C Ratio	0.07	0.22	0.74	0.07	0.25	0.41	0.50	0.50	0.08	0.15
v/c Ratio	0.19	0.58	0.55	0.25	0.51	0.74	0.01	0.04	0.11	0.18
Control Delay	48.0	37.7	2.0	49.1	34.0	25.2	14.5	0.1	45.6	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.0	37.7	2.1	49.1	34.0	25.2	14.5	0.1	45.6	17.2
LOS	D	D	A	D	C	C	B	A	D	B
Approach Delay		11.5			35.8		24.4			21.1
Approach LOS		B			D		C			C

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 77.6
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 20.2
 Intersection LOS: C
 Intersection Capacity Utilization 70.0%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	231	726	31	221	5	1010	8	32	14	23	68
Future Volume (veh/h)	23	231	726	31	221	5	1010	8	32	14	23	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	241	574	32	230	5	1052	8	33	15	24	71
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	45	500	960	56	498	11	1169	816	692	31	205	183
Arrive On Green	0.03	0.27	0.27	0.03	0.27	0.27	0.34	0.44	0.44	0.02	0.12	0.12
Sat Flow, veh/h	1781	1870	1585	1781	1824	40	3456	1870	1585	1781	1777	1585
Grp Volume(v), veh/h	24	241	574	32	0	235	1052	8	33	15	24	71
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1863	1728	1870	1585	1781	1777	1585
Q Serve(g_s), s	1.1	9.1	18.8	1.5	0.0	8.8	24.3	0.2	1.0	0.7	1.0	3.5
Cycle Q Clear(g_c), s	1.1	9.1	18.8	1.5	0.0	8.8	24.3	0.2	1.0	0.7	1.0	3.5
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	45	500	960	56	0	509	1169	816	692	31	205	183
V/C Ratio(X)	0.53	0.48	0.60	0.57	0.00	0.46	0.90	0.01	0.05	0.48	0.12	0.39
Avail Cap(c_a), veh/h	106	570	1019	106	0	568	1909	1367	1159	153	470	419
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	25.9	10.2	40.1	0.0	25.4	26.4	13.4	13.6	40.9	33.3	34.4
Incr Delay (d2), s/veh	3.5	0.7	0.9	3.4	0.0	0.7	2.3	0.0	0.0	4.2	0.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.8	5.3	0.7	0.0	3.7	9.4	0.1	0.3	0.3	0.4	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	26.6	11.1	43.5	0.0	26.1	28.7	13.4	13.7	45.0	33.5	35.7
LnGrp LOS	D	C	B	D	A	C	C	B	B	D	C	D
Approach Vol, veh/h		839			267			1093			110	
Approach Delay, s/veh		16.5			28.2			28.2			36.5	
Approach LOS		B			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.1	42.4	7.2	28.2	33.0	15.5	6.7	28.7				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.2	61.4	5.0	25.6	46.4	22.2	5.0	25.6				
Max Q Clear Time (g_c+I1), s	2.7	3.0	3.5	20.8	26.3	5.5	3.1	10.8				
Green Ext Time (p_c), s	0.0	0.1	0.0	1.6	2.1	0.3	0.0	1.0				
Intersection Summary												
HCM 6th Ctrl Delay			24.3									
HCM 6th LOS			C									

Timings
14: Citrus Ave. & Summit Ave.

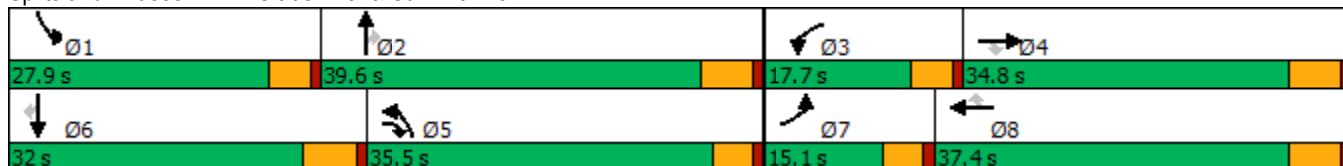
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	156	184	155	258	64	684	231	104	88	255	147
Future Volume (vph)	64	156	184	155	258	64	684	231	104	88	255	147
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	9.6	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	15.1	34.8	35.5	17.7	37.4	37.4	35.5	39.6	39.6	27.9	32.0	32.0
Total Split (%)	12.6%	29.0%	29.6%	14.8%	31.2%	31.2%	29.6%	33.0%	33.0%	23.3%	26.7%	26.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.5	10.6	31.8	11.8	17.2	17.2	20.0	25.8	25.8	8.7	12.1	12.1
Actuated g/C Ratio	0.10	0.14	0.42	0.16	0.23	0.23	0.26	0.34	0.34	0.12	0.16	0.16
v/c Ratio	0.38	0.31	0.25	0.58	0.32	0.15	0.76	0.19	0.18	0.45	0.47	0.40
Control Delay	40.7	33.3	2.0	41.1	29.0	3.1	31.8	19.7	5.2	40.5	33.1	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	33.3	2.0	41.1	29.0	3.1	31.8	19.7	5.2	40.5	33.1	9.3
LOS	D	C	A	D	C	A	C	B	A	D	C	A
Approach Delay		20.2			29.4			26.3			27.3	
Approach LOS		C			C			C			C	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 75.6
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 26.1
 Intersection LOS: C
 Intersection Capacity Utilization 63.6%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	156	184	155	258	64	684	231	104	88	255	147
Future Volume (veh/h)	64	156	184	155	258	64	684	231	104	88	255	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	162	103	161	269	25	712	241	93	92	266	111
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	95	605	634	202	829	351	853	1286	532	120	545	243
Arrive On Green	0.05	0.16	0.16	0.11	0.22	0.22	0.24	0.34	0.34	0.07	0.15	0.15
Sat Flow, veh/h	1781	3741	1576	1781	3741	1583	3563	3741	1549	1781	3554	1585
Grp Volume(v), veh/h	67	162	103	161	269	25	712	241	93	92	266	111
Grp Sat Flow(s),veh/h/ln	1781	1870	1576	1781	1870	1583	1781	1870	1549	1781	1777	1585
Q Serve(g_s), s	2.4	2.5	0.8	5.8	4.0	0.8	12.6	3.0	2.8	3.4	4.5	3.2
Cycle Q Clear(g_c), s	2.4	2.5	0.8	5.8	4.0	0.8	12.6	3.0	2.8	3.4	4.5	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	95	605	634	202	829	351	853	1286	532	120	545	243
V/C Ratio(X)	0.70	0.27	0.16	0.80	0.32	0.07	0.83	0.19	0.17	0.77	0.49	0.46
Avail Cap(c_a), veh/h	282	1638	1070	352	1785	755	1663	1910	791	627	1406	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.8	24.3	3.2	28.6	21.6	20.4	23.9	15.2	15.2	30.4	25.7	14.4
Incr Delay (d2), s/veh	3.5	0.2	0.1	2.7	0.2	0.1	0.8	0.1	0.2	3.9	0.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.0	0.3	2.4	1.6	0.3	4.7	1.1	0.9	1.4	1.8	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.3	24.6	3.4	31.3	21.8	20.5	24.8	15.3	15.3	34.3	26.3	15.7
LnGrp LOS	C	C	A	C	C	C	C	B	B	C	C	B
Approach Vol, veh/h		332			455			1046			469	
Approach Delay, s/veh		19.9			25.1			21.8			25.4	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	28.6	12.1	16.5	21.6	15.9	8.1	20.5				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	5.8	* 5.8	4.6	5.8				
Max Green Setting (Gmax), s	23.3	33.8	13.1	29.0	30.9	* 26	10.5	31.6				
Max Q Clear Time (g_c+I1), s	5.4	5.0	7.8	4.5	14.6	6.5	4.4	6.0				
Green Ext Time (p_c), s	0.1	1.7	0.1	1.2	1.3	1.8	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay				22.9								
HCM 6th LOS				C								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

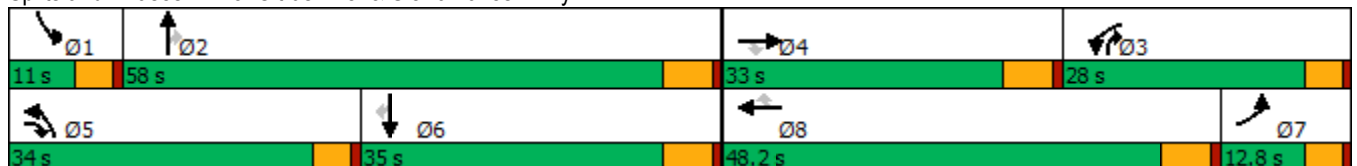
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	255	389	580	202	101	781	432	708	120	572	66
Future Volume (vph)	60	255	389	580	202	101	781	432	708	120	572	66
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	32.8	9.6	9.6	34.8	34.8	9.6	34.8	9.6	9.6	34.8	34.8
Total Split (s)	12.8	33.0	34.0	28.0	48.2	48.2	34.0	58.0	28.0	11.0	35.0	35.0
Total Split (%)	9.8%	25.4%	26.2%	21.5%	37.1%	37.1%	26.2%	44.6%	21.5%	8.5%	26.9%	26.9%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	4.6	4.6	5.8	5.8
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	Min
Act Effct Green (s)	20.7	13.7	44.4	23.4	18.4	18.4	29.5	47.2	71.8	6.4	24.1	24.1
Actuated g/C Ratio	0.19	0.12	0.40	0.21	0.17	0.17	0.26	0.42	0.64	0.06	0.22	0.22
v/c Ratio	0.10	0.61	0.61	0.85	0.36	0.29	0.91	0.30	0.72	0.64	0.77	0.15
Control Delay	36.9	52.9	14.1	55.5	47.3	5.9	55.0	22.0	10.8	68.0	48.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.9	52.9	14.1	55.5	47.3	5.9	55.0	22.0	10.8	68.0	48.5	0.6
LOS	D	D	B	E	D	A	D	C	B	E	D	A
Approach Delay		30.1			47.9			31.2			47.4	
Approach LOS		C			D			C			D	

Intersection Summary

































Cycle Length: 130
 Actuated Cycle Length: 111.5
 Natural Cycle: 130
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 37.4
 Intersection LOS: D
 Intersection Capacity Utilization 81.7%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	60	255	389	580	202	101	781	432	708	120	572	66
Future Volume (veh/h)	60	255	389	580	202	101	781	432	708	120	572	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	277	184	630	220	83	849	470	444	130	622	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	730	446	597	703	418	177	921	1544	966	196	782	331
Arrive On Green	0.20	0.12	0.12	0.30	0.11	0.11	0.39	0.41	0.41	0.05	0.31	0.21
Sat Flow, veh/h	3563	3741	1573	3563	3741	1585	3563	3741	1583	3563	3741	1585
Grp Volume(v), veh/h	65	277	184	630	220	83	849	470	444	130	622	61
Grp Sat Flow(s),veh/h/ln	1781	1870	1573	1781	1870	1585	1781	1870	1583	1781	1870	1585
Q Serve(g_s), s	1.4	6.8	3.4	16.3	5.3	3.9	21.9	8.1	3.9	3.4	14.7	1.8
Cycle Q Clear(g_c), s	1.4	6.8	3.4	16.3	5.3	3.9	21.9	8.1	3.9	3.4	14.7	1.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	730	446	597	703	418	177	921	1544	966	196	782	331
V/C Ratio(X)	0.09	0.62	0.31	0.90	0.53	0.47	0.92	0.30	0.46	0.66	0.80	0.18
Avail Cap(c_a), veh/h	730	1056	854	865	1646	697	1087	2026	1170	237	1134	480
HCM Platoon Ratio	1.00	1.00	1.00	1.50	1.00	1.00	1.50	1.00	1.00	1.00	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	40.4	7.2	33.0	40.4	26.8	28.6	19.0	2.9	44.7	31.2	11.5
Incr Delay (d2), s/veh	0.0	1.4	0.3	9.2	1.0	1.9	10.5	0.1	0.3	3.0	2.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.1	1.3	6.8	2.4	1.8	8.6	3.3	1.0	1.5	5.8	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.0	41.8	7.5	42.2	41.4	28.7	39.1	19.1	3.2	47.7	33.7	11.7
LnGrp LOS	C	D	A	D	D	C	D	B	A	D	C	B
Approach Vol, veh/h		526			933			1763			813	
Approach Delay, s/veh		28.5			40.8			24.7			34.3	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	45.6	23.6	17.3	29.5	25.9	24.3	16.6				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	6.4	52.2	23.4	27.2	29.4	29.2	8.2	42.4				
Max Q Clear Time (g_c+I1), s	5.4	10.1	18.3	8.8	23.9	16.7	3.4	7.3				
Green Ext Time (p_c), s	0.0	4.9	0.7	2.0	1.1	3.2	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			30.9									
HCM 6th LOS			C									

Timings
16: Sierra Ave/Sierra Ave. & Riverside Ave.

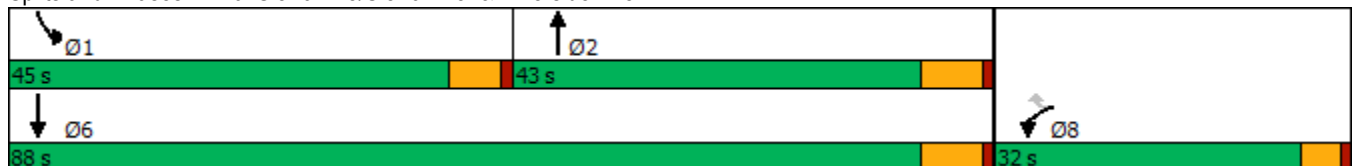
Ventana (JN 13769)
04/06/2022

	↙	↖	↑	↘	↓
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↖	↑↔	↘	↑↑
Traffic Volume (vph)	72	508	594	409	677
Future Volume (vph)	72	508	594	409	677
Turn Type	Prot	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	26.6	26.6	28.5	15.8	16.5
Total Split (s)	32.0	32.0	43.0	45.0	88.0
Total Split (%)	26.7%	26.7%	35.8%	37.5%	73.3%
Yellow Time (s)	3.6	3.6	5.5	4.8	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	6.5	5.8	6.5
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	10.0	10.0	24.4	25.2	55.9
Actuated g/C Ratio	0.13	0.13	0.31	0.32	0.72
v/c Ratio	0.35	0.81	0.70	0.78	0.29
Control Delay	39.3	13.8	28.3	36.0	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	13.8	28.3	36.0	4.4
LOS	D	B	C	D	A
Approach Delay	17.0		28.3		16.3
Approach LOS	B		C		B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 77.9
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 20.1
 Intersection LOS: C
 Intersection Capacity Utilization 60.8%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 16: Sierra Ave/Sierra Ave. & Riverside Ave.



HCM 6th Signalized Intersection Summary
 16: Sierra Ave/Sierra Ave. & Riverside Ave.

Ventana (JN 13769)
 04/06/2022



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	72	508	594	110	409	677
Future Volume (veh/h)	72	508	594	110	409	677
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	280	646	60	445	736
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	369	328	869	81	496	2234
Arrive On Green	0.21	0.21	0.26	0.26	0.28	0.63
Sat Flow, veh/h	1781	1585	3381	305	1781	3647
Grp Volume(v), veh/h	78	280	349	357	445	736
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1815	1781	1777
Q Serve(g_s), s	2.4	11.5	12.1	12.2	16.2	6.5
Cycle Q Clear(g_c), s	2.4	11.5	12.1	12.2	16.2	6.5
Prop In Lane	1.00	1.00		0.17	1.00	
Lane Grp Cap(c), veh/h	369	328	470	480	496	2234
V/C Ratio(X)	0.21	0.85	0.74	0.74	0.90	0.33
Avail Cap(c_a), veh/h	724	644	962	982	1035	4294
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.2	25.8	22.7	22.7	23.4	5.9
Incr Delay (d2), s/veh	0.1	2.5	2.3	2.3	2.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	4.1	4.5	4.7	6.0	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.3	28.2	25.1	25.0	25.8	6.0
LnGrp LOS	C	C	C	C	C	A
Approach Vol, veh/h	358		706			1181
Approach Delay, s/veh	26.9		25.1			13.4
Approach LOS	C		C			B
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	24.6	24.3			48.9	18.6
Change Period (Y+Rc), s	5.8	6.5			6.5	4.6
Max Green Setting (Gmax), s	39.2	36.5			81.5	27.4
Max Q Clear Time (g_c+I1), s	18.2	14.2			8.5	13.5
Green Ext Time (p_c), s	0.6	3.7			4.9	0.5

Intersection Summary

HCM 6th Ctrl Delay	19.2
HCM 6th LOS	B

Timings
17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	93	38	586	1152
Future Volume (vph)	93	38	586	1152
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	5	2	6
Permitted Phases				
Detector Phase	4	5	2	6
Switch Phase				
Minimum Initial (s)	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	9.6	15.8	27.8
Total Split (s)	38.0	12.2	82.0	69.8
Total Split (%)	31.7%	10.2%	68.3%	58.2%
Yellow Time (s)	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	5.8	5.8
Lead/Lag		Lead		Lag
Lead-Lag Optimize?		Yes		Yes
Recall Mode	None	None	Min	Min
Act Effct Green (s)	13.7	6.4	37.4	31.6
Actuated g/C Ratio	0.21	0.10	0.59	0.50
v/c Ratio	0.52	0.22	0.29	0.70
Control Delay	24.9	36.8	6.6	15.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	24.9	36.8	6.6	15.9
LOS	C	D	A	B
Approach Delay	24.9		8.4	15.9
Approach LOS	C		A	B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 63.8
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 14.5
 Intersection LOS: B
 Intersection Capacity Utilization 54.7%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 17: Sierra Ave & Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	93	111	38	586	1152	39
Future Volume (veh/h)	93	111	38	586	1152	39
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	95	113	39	598	1176	40
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	137	163	74	2127	1647	56
Arrive On Green	0.18	0.18	0.04	0.60	0.47	0.47
Sat Flow, veh/h	759	903	1781	3647	3600	119
Grp Volume(v), veh/h	209	0	39	598	596	620
Grp Sat Flow(s),veh/h/ln	1670	0	1781	1777	1777	1849
Q Serve(g_s), s	6.2	0.0	1.1	4.3	14.1	14.1
Cycle Q Clear(g_c), s	6.2	0.0	1.1	4.3	14.1	14.1
Prop In Lane	0.45	0.54	1.00			0.06
Lane Grp Cap(c), veh/h	302	0	74	2127	835	869
V/C Ratio(X)	0.69	0.00	0.53	0.28	0.71	0.71
Avail Cap(c_a), veh/h	1022	0	257	5146	2161	2249
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	0.0	24.7	5.1	11.1	11.1
Incr Delay (d2), s/veh	2.8	0.0	2.2	0.1	1.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.4	0.7	3.6	3.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.0	0.0	26.9	5.2	12.3	12.2
LnGrp LOS	C	A	C	A	B	B
Approach Vol, veh/h	209			637	1216	
Approach Delay, s/veh	23.0			6.5	12.3	
Approach LOS	C			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		37.3		15.3	6.8	30.5
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		76.2		32.2	7.6	64.0
Max Q Clear Time (g_c+I1), s		6.3		8.2	3.1	16.1
Green Ext Time (p_c), s		3.8		0.6	0.0	8.6
Intersection Summary						
HCM 6th Ctrl Delay			11.6			
HCM 6th LOS			B			
Notes						
User approved volume balancing among the lanes for turning movement.						

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	86	326	293	620	1135	133
Future Volume (vph)	86	326	293	620	1135	133
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	9.6	9.6	16.5	29.5	29.5
Total Split (s)	44.8	28.0	28.0	75.2	47.2	47.2
Total Split (%)	37.3%	23.3%	23.3%	62.7%	39.3%	39.3%
Yellow Time (s)	4.8	3.6	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	4.6	6.5	6.5	6.5
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.4	36.6	23.2	70.4	41.0	41.0
Actuated g/C Ratio	0.13	0.41	0.26	0.79	0.46	0.46
v/c Ratio	0.44	0.58	0.74	0.26	0.77	0.20
Control Delay	44.0	23.4	42.8	3.8	25.0	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.0	23.4	42.8	3.8	25.0	11.1
LOS	D	C	D	A	C	B
Approach Delay	27.7			16.3	23.5	
Approach LOS	C			B	C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 88.8
 Natural Cycle: 125
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 21.6
 Intersection LOS: C
 Intersection Capacity Utilization 70.0%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	86	326	293	620	1135	133
Future Volume (veh/h)	86	326	293	620	1135	133
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	100	117	341	721	1320	114
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	229	550	389	2530	1623	688
Arrive On Green	0.13	0.13	0.22	0.71	0.43	0.43
Sat Flow, veh/h	1781	1585	1781	3647	3741	1585
Grp Volume(v), veh/h	100	117	341	721	1320	114
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1870	1585
Q Serve(g_s), s	4.0	4.0	14.3	5.7	23.8	3.4
Cycle Q Clear(g_c), s	4.0	4.0	14.3	5.7	23.8	3.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	229	550	389	2530	1623	688
V/C Ratio(X)	0.44	0.21	0.88	0.28	0.81	0.17
Avail Cap(c_a), veh/h	901	1148	541	3167	1975	837
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	17.8	29.1	4.0	19.1	13.3
Incr Delay (d2), s/veh	1.3	0.2	11.5	0.1	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	4.2	6.6	1.0	8.8	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.3	17.9	40.6	4.1	21.3	13.4
LnGrp LOS	C	B	D	A	C	B
Approach Vol, veh/h	217			1062	1434	
Approach Delay, s/veh	24.6			15.8	20.7	
Approach LOS	C			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		61.4		15.7	21.4	40.0
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	23.4	40.7
Max Q Clear Time (g_c+1), s		7.7		6.0	16.3	25.8
Green Ext Time (p_c), s		4.8		0.6	0.6	7.7
Intersection Summary						
HCM 6th Ctrl Delay			19.1			
HCM 6th LOS			B			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

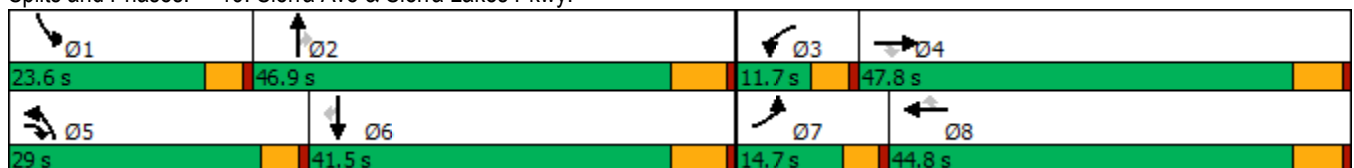
Ventana (JN 13769)
04/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	177	527	151	204	258	581	748	284	278	1153	211
Future Volume (vph)	129	177	527	151	204	258	581	748	284	278	1153	211
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	14.7	47.8	29.0	11.7	44.8	44.8	29.0	46.9	46.9	23.6	41.5	41.5
Total Split (%)	11.3%	36.8%	22.3%	9.0%	34.5%	34.5%	22.3%	36.1%	36.1%	18.2%	31.9%	31.9%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.2	13.4	42.5	7.2	12.3	12.3	23.2	41.1	41.1	12.8	30.7	30.7
Actuated g/C Ratio	0.09	0.14	0.44	0.07	0.13	0.13	0.24	0.43	0.43	0.13	0.32	0.32
v/c Ratio	0.47	0.38	0.79	0.63	0.47	0.64	0.75	0.34	0.37	0.65	0.71	0.35
Control Delay	48.9	40.5	29.5	56.9	43.6	12.2	41.0	19.5	3.7	47.3	31.6	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	40.5	29.5	56.9	43.6	12.2	41.0	19.5	3.7	47.3	31.6	5.0
LOS	D	D	C	E	D	B	D	B	A	D	C	A
Approach Delay		34.8			33.6			24.5			30.9	
Approach LOS		C			C			C			C	

Intersection Summary



































Cycle Length: 130
 Actuated Cycle Length: 96.2
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 29.7
 Intersection LOS: C
 Intersection Capacity Utilization 72.3%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



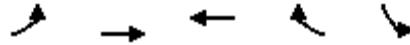
HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/06/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		 	  	
Traffic Volume (veh/h)	129	177	527	151	204	258	581	748	284	278	1153	211
Future Volume (veh/h)	129	177	527	151	204	258	581	748	284	278	1153	211
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	142	195	459	166	224	232	638	822	279	305	1267	205
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	987	731	226	1011	427	704	2093	590	374	1574	445
Arrive On Green	0.06	0.26	0.26	0.06	0.27	0.27	0.20	0.37	0.37	0.10	0.28	0.28
Sat Flow, veh/h	3563	3741	1585	3563	3741	1582	3563	5611	1581	3563	5611	1585
Grp Volume(v), veh/h	142	195	459	166	224	232	638	822	279	305	1267	205
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1582	1781	1870	1581	1781	1870	1585
Q Serve(g_s), s	4.3	4.5	24.3	5.1	5.1	13.9	19.3	11.9	14.8	9.3	23.2	11.8
Cycle Q Clear(g_c), s	4.3	4.5	24.3	5.1	5.1	13.9	19.3	11.9	14.8	9.3	23.2	11.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	204	987	731	226	1011	427	704	2093	590	374	1574	445
V/C Ratio(X)	0.70	0.20	0.63	0.73	0.22	0.54	0.91	0.39	0.47	0.82	0.81	0.46
Avail Cap(c_a), veh/h	326	1422	916	229	1320	558	787	2093	590	613	1777	502
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	31.6	22.6	50.8	31.3	34.5	43.3	25.4	26.4	48.4	36.9	32.9
Incr Delay (d2), s/veh	1.6	0.1	0.9	10.0	0.1	1.1	12.5	0.1	0.6	1.7	2.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	2.0	8.6	2.5	2.3	5.2	9.2	4.9	5.4	4.0	10.2	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.8	31.7	23.5	60.8	31.4	35.6	55.8	25.6	27.0	50.1	39.5	33.6
LnGrp LOS	D	C	C	E	C	D	E	C	C	D	D	C
Approach Vol, veh/h		796			622			1739			1777	
Approach Delay, s/veh		30.7			40.8			36.9			40.6	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.2	47.7	11.6	35.0	26.4	37.5	10.9	35.7				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	19.0	40.4	7.1	42.0	24.4	35.0	10.1	39.0				
Max Q Clear Time (g_c+I1), s	11.3	16.8	7.1	26.3	21.3	25.2	6.3	15.9				
Green Ext Time (p_c), s	0.3	6.1	0.0	2.5	0.5	5.7	0.1	2.0				
Intersection Summary												
HCM 6th Ctrl Delay			37.7									
HCM 6th LOS			D									

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021

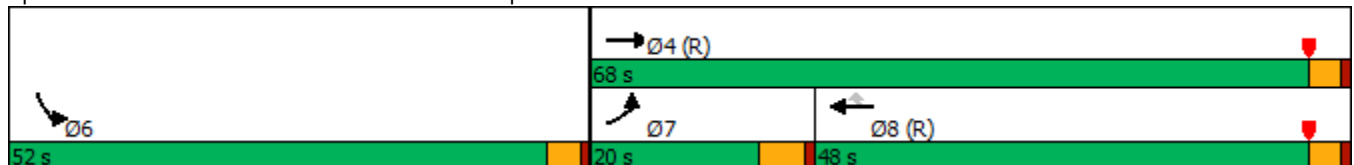


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↗↗	↗↗	↖	↖↖↖
Traffic Volume (vph)	187	732	977	455	1013
Future Volume (vph)	187	732	977	455	1013
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	20.0	68.0	48.0	48.0	52.0
Total Split (%)	16.7%	56.7%	40.0%	40.0%	43.3%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	14.9	64.7	44.8	44.8	47.3
Actuated g/C Ratio	0.12	0.54	0.37	0.37	0.39
v/c Ratio	0.90	0.41	0.79	0.56	0.95
Control Delay	83.9	16.3	38.8	7.1	49.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	83.9	16.3	38.8	7.1	49.5
LOS	F	B	D	A	D
Approach Delay		30.1	28.7		49.5
Approach LOS		C	C		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 36.1
 Intersection LOS: D
 Intersection Capacity Utilization 82.9%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↑↑	↑	↙↘		
Traffic Volume (veh/h)	187	732	977	455	1013	185	
Future Volume (veh/h)	187	732	977	455	1013	185	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	199	779	1039	165	1204	0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	222	2015	1425	635	1305	580	
Arrive On Green	0.25	1.00	0.40	0.40	0.37	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	199	779	1039	165	1204	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	13.0	0.0	29.7	8.4	38.8	0.0	
Cycle Q Clear(g_c), s	13.0	0.0	29.7	8.4	38.8	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	222	2015	1425	635	1305	580	
V/C Ratio(X)	0.90	0.39	0.73	0.26	0.92	0.00	
Avail Cap(c_a), veh/h	223	2015	1425	635	1425	634	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.92	0.92	0.81	0.81	1.00	0.00	
Uniform Delay (d), s/veh	44.3	0.0	30.4	24.0	36.4	0.0	
Incr Delay (d2), s/veh	32.0	0.5	2.7	0.8	9.8	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	6.9	0.1	13.1	3.3	18.4	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	76.3	0.5	33.1	24.8	46.2	0.0	
LnGrp LOS	E	A	C	C	D	A	
Approach Vol, veh/h		978	1204		1204		
Approach Delay, s/veh		15.9	32.0		46.2		
Approach LOS		B	C		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				72.1	47.9	19.9	52.1
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				64.0	48.0	15.0	44.0
Max Q Clear Time (g_c+I1), s				2.0	40.8	15.0	31.7
Green Ext Time (p_c), s				6.7	3.1	0.0	6.3

Intersection Summary

HCM 6th Ctrl Delay	32.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

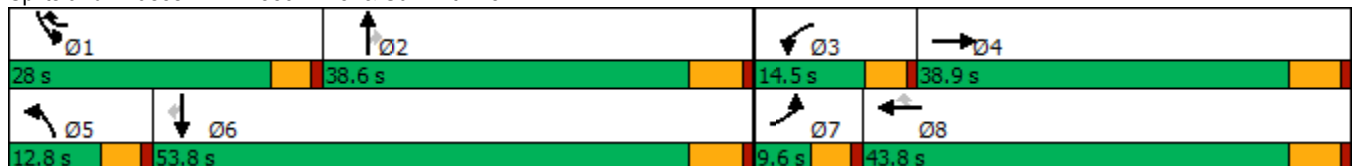
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations												
Traffic Volume (vph)	129	317	135	338	421	106	376	121	708	548	100	
Future Volume (vph)	129	317	135	338	421	106	376	121	708	548	100	
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7	4	3	8	1	5	2		1	6		
Permitted Phases					8			2			6	
Detector Phase	7	4	3	8	1	5	2	2	1	6	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	
Minimum Split (s)	9.6	37.8	9.6	43.8	9.6	9.6	37.8	37.8	9.6	34.8	34.8	
Total Split (s)	9.6	38.9	14.5	43.8	28.0	12.8	38.6	38.6	28.0	53.8	53.8	
Total Split (%)	8.0%	32.4%	12.1%	36.5%	23.3%	10.7%	32.2%	32.2%	23.3%	44.8%	44.8%	
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Min	None	Min	None	None	None	None	None	None	None	
Act Effct Green (s)	5.1	16.3	7.9	19.1	44.1	7.0	15.5	15.5	23.7	32.2	32.2	
Actuated g/C Ratio	0.06	0.19	0.09	0.23	0.52	0.08	0.18	0.18	0.28	0.38	0.38	
v/c Ratio	0.65	0.67	0.44	0.44	0.50	0.39	0.60	0.29	0.74	0.42	0.15	
Control Delay	57.7	33.7	42.7	29.9	9.4	43.2	36.4	2.6	35.0	21.3	1.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	57.7	33.7	42.7	29.9	9.4	43.2	36.4	2.6	35.0	21.3	1.7	
LOS	E	C	D	C	A	D	D	A	D	C	A	
Approach Delay		39.1		22.1			30.8			27.0		
Approach LOS		D		C			C			C		

Intersection Summary
































Cycle Length: 120
 Actuated Cycle Length: 84.5
 Natural Cycle: 115
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 28.4
 Intersection LOS: C
 Intersection Capacity Utilization 71.1%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 7: Beech Ave. & Summit Ave.



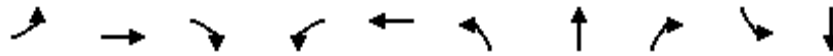
HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	129	317	130	135	338	421	106	376	121	708	548	100
Future Volume (veh/h)	129	317	130	135	338	421	106	376	121	708	548	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	330	110	141	352	347	110	392	86	738	571	73
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	619	203	220	846	754	203	683	301	848	1320	587
Arrive On Green	0.06	0.24	0.24	0.06	0.24	0.24	0.06	0.19	0.19	0.24	0.37	0.37
Sat Flow, veh/h	3456	2626	860	3456	3554	1583	3456	3554	1565	3563	3554	1581
Grp Volume(v), veh/h	134	221	219	141	352	347	110	392	86	738	571	73
Grp Sat Flow(s),veh/h/ln	1728	1777	1709	1728	1777	1583	1728	1777	1565	1781	1777	1581
Q Serve(g_s), s	2.9	8.4	8.6	3.1	6.4	11.3	2.4	7.7	3.6	15.3	9.3	2.3
Cycle Q Clear(g_c), s	2.9	8.4	8.6	3.1	6.4	11.3	2.4	7.7	3.6	15.3	9.3	2.3
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	212	419	403	220	846	754	203	683	301	848	1320	587
V/C Ratio(X)	0.63	0.53	0.54	0.64	0.42	0.46	0.54	0.57	0.29	0.87	0.43	0.12
Avail Cap(c_a), veh/h	225	764	735	445	1755	1159	368	1515	667	1083	2216	986
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	25.7	25.8	35.2	24.8	13.5	35.2	28.2	26.6	28.2	18.1	15.9
Incr Delay (d2), s/veh	3.7	1.0	1.1	1.2	0.3	0.4	0.8	0.8	0.5	5.4	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.5	3.5	1.3	2.7	3.8	1.0	3.2	1.4	6.9	3.6	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.0	26.7	26.9	36.3	25.1	14.0	36.0	29.0	27.1	33.6	18.3	16.0
LnGrp LOS	D	C	C	D	C	B	D	C	C	C	B	B
Approach Vol, veh/h		574			840			588			1382	
Approach Delay, s/veh		29.7			22.4			30.0			26.3	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.9	20.6	9.5	23.9	9.1	34.4	9.3	24.1				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	23.4	32.8	9.9	33.1	8.2	48.0	5.0	38.0				
Max Q Clear Time (g_c+I1), s	17.3	9.7	5.1	10.6	4.4	11.3	4.9	13.3				
Green Ext Time (p_c), s	1.0	2.9	0.1	2.7	0.1	4.6	0.0	3.7				
Intersection Summary												
HCM 6th Ctrl Delay			26.6									
HCM 6th LOS			C									

Timings
12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

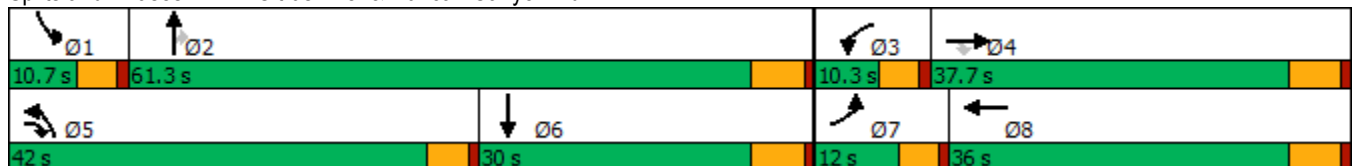


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↙	↑	↘	↙	↘	↙↘	↑	↘	↙	↕
Traffic Volume (vph)	75	225	884	20	144	744	26	21	9	15
Future Volume (vph)	75	225	884	20	144	744	26	21	9	15
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	9.6	27.8	27.8	9.6	27.8
Total Split (s)	12.0	37.7	42.0	10.3	36.0	42.0	61.3	61.3	10.7	30.0
Total Split (%)	10.0%	31.4%	35.0%	8.6%	30.0%	35.0%	51.1%	51.1%	8.9%	25.0%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min	None	None	None	None	None
Act Effct Green (s)	7.6	20.1	52.1	6.0	14.8	23.4	31.7	31.7	6.0	11.4
Actuated g/C Ratio	0.11	0.29	0.74	0.09	0.21	0.33	0.45	0.45	0.09	0.16
v/c Ratio	0.41	0.44	0.65	0.14	0.43	0.68	0.03	0.03	0.06	0.11
Control Delay	43.4	27.9	3.0	40.1	32.0	25.3	13.1	0.0	39.2	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.4	27.9	3.0	40.1	32.0	25.3	13.1	0.0	39.2	15.9
LOS	D	C	A	D	C	C	B	A	D	B
Approach Delay		10.3			32.9		24.2			18.9
Approach LOS		B			C		C			B

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 70
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 17.3
 Intersection LOS: B
 Intersection Capacity Utilization 79.7%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	225	884	20	144	16	744	26	21	9	15	45
Future Volume (veh/h)	75	225	884	20	144	16	744	26	21	9	15	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	234	661	21	150	17	775	27	22	9	16	47
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	100	639	952	42	510	58	894	680	577	20	207	185
Arrive On Green	0.06	0.34	0.34	0.02	0.31	0.31	0.26	0.36	0.36	0.01	0.12	0.12
Sat Flow, veh/h	1781	1870	1585	1781	1650	187	3456	1870	1585	1781	1777	1585
Grp Volume(v), veh/h	78	234	661	21	0	167	775	27	22	9	16	47
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1837	1728	1870	1585	1781	1777	1585
Q Serve(g_s), s	3.5	7.5	22.9	0.9	0.0	5.5	17.2	0.7	0.7	0.4	0.6	2.2
Cycle Q Clear(g_c), s	3.5	7.5	22.9	0.9	0.0	5.5	17.2	0.7	0.7	0.4	0.6	2.2
Prop In Lane	1.00		1.00	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	100	639	952	42	0	567	894	680	577	20	207	185
V/C Ratio(X)	0.78	0.37	0.69	0.51	0.00	0.29	0.87	0.04	0.04	0.45	0.08	0.25
Avail Cap(c_a), veh/h	165	745	1041	127	0	693	1614	1296	1099	136	537	479
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.3	19.8	11.0	38.6	0.0	21.0	28.4	16.4	16.4	39.3	31.5	32.2
Incr Delay (d2), s/veh	4.8	0.4	1.8	3.5	0.0	0.3	1.0	0.0	0.0	5.6	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	3.2	7.3	0.4	0.0	2.3	6.9	0.3	0.3	0.2	0.3	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.1	20.2	12.8	42.2	0.0	21.3	29.4	16.5	16.5	45.0	31.7	32.9
LnGrp LOS	D	C	B	D	A	C	C	B	B	D	C	C
Approach Vol, veh/h		973			188			824			72	
Approach Delay, s/veh		16.9			23.7			28.6			34.2	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.5	34.9	6.5	33.2	25.3	15.1	9.1	30.5				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	6.1	55.5	5.7	31.9	37.4	24.2	7.4	30.2				
Max Q Clear Time (g_c+I1), s	2.4	2.7	2.9	24.9	19.2	4.2	5.5	7.5				
Green Ext Time (p_c), s	0.0	0.2	0.0	2.5	1.6	0.2	0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay			22.8									
HCM 6th LOS			C									

Timings
14: Citrus Ave. & Summit Ave.

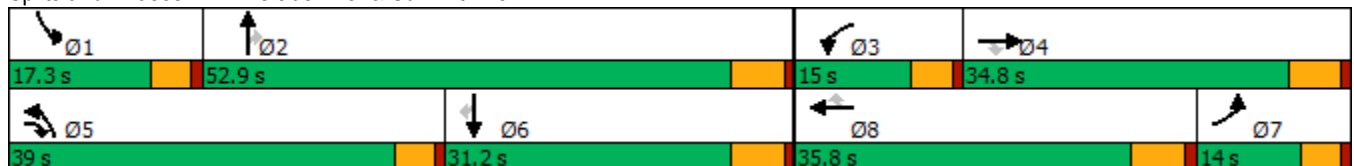
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	509	410	162	395	71	1002	371	140	59	253	81
Future Volume (vph)	147	509	410	162	395	71	1002	371	140	59	253	81
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	9.6	9.6	34.8	34.8	9.6	31.8	31.8	9.6	30.8	30.8
Total Split (s)	14.0	34.8	39.0	15.0	35.8	35.8	39.0	52.9	52.9	17.3	31.2	31.2
Total Split (%)	11.7%	29.0%	32.5%	12.5%	29.8%	29.8%	32.5%	44.1%	44.1%	14.4%	26.0%	26.0%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.7	20.8	56.6	10.5	17.5	17.5	34.6	42.1	42.1	8.1	13.4	13.4
Actuated g/C Ratio	0.14	0.21	0.56	0.10	0.17	0.17	0.35	0.42	0.42	0.08	0.13	0.13
v/c Ratio	0.66	0.72	0.47	0.96	0.66	0.19	0.89	0.26	0.21	0.45	0.58	0.23
Control Delay	56.8	42.8	8.2	102.9	44.0	1.0	42.7	21.3	4.0	55.3	46.4	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.8	42.8	8.2	102.9	44.0	1.0	42.7	21.3	4.0	55.3	46.4	1.4
LOS	E	D	A	F	D	A	D	C	A	E	D	A
Approach Delay		31.4			54.3			33.9			38.5	
Approach LOS		C			D			C			D	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 100.2
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 37.2
 Intersection LOS: D
 Intersection Capacity Utilization 77.6%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	509	410	162	395	71	1002	371	140	59	253	81
Future Volume (veh/h)	147	509	410	162	395	71	1002	371	140	59	253	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	553	299	176	429	61	1089	403	116	64	275	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	779	850	199	621	262	1180	1531	631	83	442	194
Arrive On Green	0.14	0.21	0.21	0.11	0.17	0.17	0.33	0.41	0.41	0.05	0.12	0.12
Sat Flow, veh/h	1781	3741	1560	1781	3741	1579	3563	3741	1541	1781	3554	1560
Grp Volume(v), veh/h	160	553	299	176	429	61	1089	403	116	64	275	86
Grp Sat Flow(s),veh/h/ln	1781	1870	1560	1781	1870	1579	1781	1870	1541	1781	1777	1560
Q Serve(g_s), s	7.9	12.8	10.1	9.0	10.0	2.5	27.3	6.6	4.5	3.3	6.8	3.3
Cycle Q Clear(g_c), s	7.9	12.8	10.1	9.0	10.0	2.5	27.3	6.6	4.5	3.3	6.8	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	252	779	850	199	621	262	1180	1531	631	83	442	194
V/C Ratio(X)	0.64	0.71	0.35	0.88	0.69	0.23	0.92	0.26	0.18	0.77	0.62	0.44
Avail Cap(c_a), veh/h	252	1168	1012	199	1208	510	1319	1897	781	244	972	427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	34.2	12.2	40.6	36.5	22.0	29.9	18.2	17.5	43.8	38.6	18.2
Incr Delay (d2), s/veh	4.0	1.2	0.2	32.8	1.4	0.4	9.7	0.1	0.1	5.7	1.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	5.8	3.4	5.7	4.6	1.2	12.9	2.8	1.6	1.6	3.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	35.4	12.4	73.4	37.9	22.5	39.6	18.2	17.7	49.5	40.0	19.8
LnGrp LOS	D	D	B	E	D	C	D	B	B	D	D	B
Approach Vol, veh/h		1012			666			1608			425	
Approach Delay, s/veh		29.6			45.8			32.6			37.4	
Approach LOS		C			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.9	43.8	15.0	25.2	35.4	17.4	18.9	21.2				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	5.8	* 5.8				
Max Green Setting (Gmax), s	12.7	47.1	10.4	29.0	34.4	25.4	9.4	* 30				
Max Q Clear Time (g_c+I1), s	5.3	8.6	11.0	14.8	29.3	8.8	9.9	12.0				
Green Ext Time (p_c), s	0.0	3.4	0.0	4.2	1.4	1.8	0.0	2.8				

Intersection Summary

HCM 6th Ctrl Delay	34.7
HCM 6th LOS	C

Notes

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

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
04/29/2021

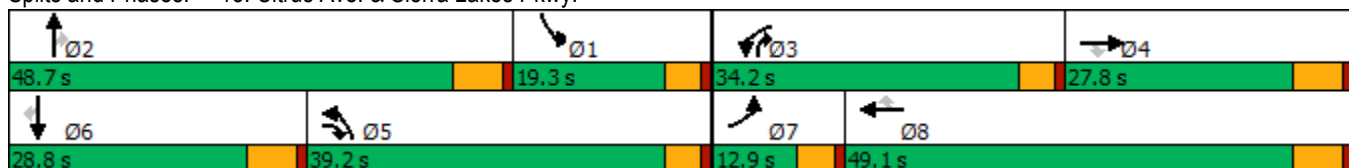


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖↗	↑↑	↖	↖↗	↑↑	↖	↖↗	↑↑	↖
Traffic Volume (vph)	95	395	395	738	378	266	935	657	900	230	529	82
Future Volume (vph)	95	395	395	738	378	266	935	657	900	230	529	82
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	27.8	9.6	27.8	9.6	9.6	27.8	27.8
Total Split (s)	12.9	27.8	39.2	34.2	49.1	49.1	39.2	48.7	34.2	19.3	28.8	28.8
Total Split (%)	9.9%	21.4%	30.2%	26.3%	37.8%	37.8%	30.2%	37.5%	26.3%	14.8%	22.2%	22.2%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	4.6	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	Min
Act Effct Green (s)	7.4	18.6	54.5	29.6	40.9	40.9	34.7	29.9	60.8	26.6	21.9	21.9
Actuated g/C Ratio	0.06	0.15	0.43	0.24	0.33	0.33	0.28	0.24	0.48	0.21	0.17	0.17
v/c Ratio	0.48	0.74	0.56	0.92	0.33	0.40	1.00	0.77	1.18	0.32	0.85	0.20
Control Delay	65.9	60.3	13.0	64.5	33.1	5.3	74.2	50.9	114.9	45.3	63.9	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.9	60.3	13.0	64.5	33.1	5.3	74.2	50.9	114.9	45.3	63.9	1.0
LOS	E	E	B	E	C	A	E	D	F	D	E	A
Approach Delay		39.8			44.5			82.7			52.7	
Approach LOS		D			D			F			D	

Intersection Summary

































Cycle Length: 130
 Actuated Cycle Length: 125.6
 Natural Cycle: 140
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.18
 Intersection Signal Delay: 62.0
 Intersection LOS: E
 Intersection Capacity Utilization 91.3%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	95	395	395	738	378	266	935	657	900	230	529	82
Future Volume (veh/h)	95	395	395	738	378	266	935	657	900	230	529	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	99	411	377	769	394	251	974	684	547	240	551	66
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	536	673	820	1237	517	1013	893	738	766	634	265
Arrive On Green	0.04	0.21	0.14	0.35	0.50	0.33	0.43	0.36	0.24	0.32	0.25	0.17
Sat Flow, veh/h	3563	3741	1554	3563	3741	1564	3563	3741	1565	3563	3741	1562
Grp Volume(v), veh/h	99	411	377	769	394	251	974	684	547	240	551	66
Grp Sat Flow(s),veh/h/ln	1781	1870	1554	1781	1870	1564	1781	1870	1565	1781	1870	1562
Q Serve(g_s), s	3.3	12.4	10.4	25.2	7.6	8.5	32.0	19.5	12.4	6.1	17.0	3.7
Cycle Q Clear(g_c), s	3.3	12.4	10.4	25.2	7.6	8.5	32.0	19.5	12.4	6.1	17.0	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	536	673	820	1237	517	1013	893	738	766	634	265
V/C Ratio(X)	0.65	0.77	0.56	0.94	0.32	0.49	0.96	0.77	0.74	0.31	0.87	0.25
Avail Cap(c_a), veh/h	246	684	734	876	1345	562	1024	1333	922	766	715	298
HCM Platoon Ratio	1.00	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	45.4	9.5	38.6	22.2	9.7	33.9	35.7	9.3	34.1	43.6	30.9
Incr Delay (d2), s/veh	1.8	4.0	0.8	16.2	0.1	0.7	19.3	1.5	2.5	0.1	10.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	5.7	3.2	11.8	3.2	2.9	15.0	8.3	5.2	2.6	8.2	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.5	49.4	10.3	54.8	22.4	10.4	53.2	37.2	11.8	34.2	53.8	31.4
LnGrp LOS	E	D	B	D	C	B	D	D	B	C	D	C
Approach Vol, veh/h		887			1414			2205			857	
Approach Delay, s/veh		33.8			37.9			37.9			46.6	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.5	34.5	32.3	23.0	38.8	26.2	9.7	45.6				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	14.7	42.9	29.6	22.0	34.6	23.0	8.3	43.3				
Max Q Clear Time (g_c+I1), s	8.1	21.5	27.2	14.4	34.0	19.0	5.3	10.5				
Green Ext Time (p_c), s	0.3	7.3	0.6	2.6	0.2	1.4	0.0	3.8				
Intersection Summary												
HCM 6th Ctrl Delay				38.6								
HCM 6th LOS				D								

Timings
16: Sierra Ave/Sierra Ave. & Riverside Ave.

Ventana (JN 13769)
04/06/2022

	↙	↖	↑	↘	↓
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↖	↑↕	↘	↑↑
Traffic Volume (vph)	100	492	748	503	749
Future Volume (vph)	100	492	748	503	749
Turn Type	Prot	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	27.8	27.8	27.8	9.6	15.8
Total Split (s)	42.3	42.3	45.9	31.8	77.7
Total Split (%)	35.3%	35.3%	38.3%	26.5%	64.8%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	13.6	13.6	28.4	27.7	60.8
Actuated g/C Ratio	0.16	0.16	0.33	0.32	0.71
v/c Ratio	0.38	0.81	0.75	0.94	0.32
Control Delay	37.7	16.9	30.3	57.7	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	37.7	16.9	30.3	57.7	5.7
LOS	D	B	C	E	A
Approach Delay	20.4		30.3		26.6
Approach LOS	C		C		C

Intersection Summary














Cycle Length: 120
 Actuated Cycle Length: 86.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 26.3
 Intersection LOS: C
 Intersection Capacity Utilization 72.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 16: Sierra Ave/Sierra Ave. & Riverside Ave.



HCM 6th Signalized Intersection Summary
 16: Sierra Ave/Sierra Ave. & Riverside Ave.

Ventana (JN 13769)
 04/06/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (veh/h)	100	492	748	68	503	749
Future Volume (veh/h)	100	492	748	68	503	749
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	106	124	796	-61	535	797
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	320	284	1376	0	597	2153
Arrive On Green	0.18	0.18	0.19	0.00	0.34	0.61
Sat Flow, veh/h	1781	1585	3741	0	1781	3647
Grp Volume(v), veh/h	106	124	735	0	535	797
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	0	1781	1777
Q Serve(g_s), s	2.8	3.8	0.0	0.0	15.4	6.2
Cycle Q Clear(g_c), s	2.8	3.8	0.0	0.0	15.4	6.2
Prop In Lane	1.00	1.00		0.00	1.00	
Lane Grp Cap(c), veh/h	320	284	0	0	597	2153
V/C Ratio(X)	0.33	0.44	0.00	0.00	0.90	0.37
Avail Cap(c_a), veh/h	1204	1072	0	0	898	4733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	19.3	19.7	0.0	0.0	17.0	5.4
Incr Delay (d2), s/veh	0.2	0.4	0.0	0.0	5.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.3	0.0	0.0	6.4	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.6	20.1	0.0	0.0	23.0	5.5
LnGrp LOS	B	C	A	A	C	A
Approach Vol, veh/h	230		735			1332
Approach Delay, s/veh	19.9		0.0			12.5
Approach LOS	B		A			B
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	22.7	15.8			38.5	15.5
Change Period (Y+Rc), s	4.6	5.8			5.8	5.8
Max Green Setting (Gmax), s	27.2	40.1			71.9	36.5
Max Q Clear Time (g_c+I1), s	17.4	2.0			8.2	5.8
Green Ext Time (p_c), s	0.7	5.9			6.9	0.4
Intersection Summary						
HCM 6th Ctrl Delay			9.2			
HCM 6th LOS			A			

Timings
17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	68	120	1249	851
Future Volume (vph)	68	120	1249	851
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	5	2	6
Permitted Phases				
Detector Phase	4	5	2	6
Switch Phase				
Minimum Initial (s)	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	9.6	15.8	27.8
Total Split (s)	33.0	24.0	87.0	63.0
Total Split (%)	27.5%	20.0%	72.5%	52.5%
Yellow Time (s)	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	5.8	5.8
Lead/Lag		Lead		Lag
Lead-Lag Optimize?		Yes		Yes
Recall Mode	None	None	Min	Min
Act Effct Green (s)	11.7	9.7	42.4	30.6
Actuated g/C Ratio	0.18	0.15	0.64	0.46
v/c Ratio	0.44	0.48	0.57	0.61
Control Delay	25.0	34.9	7.7	16.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	25.0	34.9	7.7	16.4
LOS	C	C	A	B
Approach Delay	25.0		10.1	16.4
Approach LOS	C		B	B

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 66.2	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 13.4	Intersection LOS: B
Intersection Capacity Utilization 55.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 17: Sierra Ave & Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	68	72	120	1249	851	103
Future Volume (veh/h)	68	72	120	1249	851	103
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	75	125	1301	886	107
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	139	146	163	2141	1344	162
Arrive On Green	0.17	0.17	0.09	0.60	0.42	0.42
Sat Flow, veh/h	809	855	1781	3647	3286	386
Grp Volume(v), veh/h	147	0	125	1301	493	500
Grp Sat Flow(s),veh/h/ln	1676	0	1781	1777	1777	1801
Q Serve(g_s), s	4.1	0.0	3.5	11.8	11.4	11.4
Cycle Q Clear(g_c), s	4.1	0.0	3.5	11.8	11.4	11.4
Prop In Lane	0.48	0.51	1.00			0.21
Lane Grp Cap(c), veh/h	287	0	163	2141	748	758
V/C Ratio(X)	0.51	0.00	0.77	0.61	0.66	0.66
Avail Cap(c_a), veh/h	890	0	675	5634	1984	2011
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.3	0.0	22.7	6.4	11.9	11.9
Incr Delay (d2), s/veh	1.4	0.0	2.8	0.3	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	1.5	2.9	3.9	3.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.7	0.0	25.6	6.7	12.9	12.9
LnGrp LOS	C	A	C	A	B	B
Approach Vol, veh/h	147			1426	993	
Approach Delay, s/veh	20.7			8.3	12.9	
Approach LOS	C			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		36.7		14.6	9.3	27.4
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		81.2		27.2	19.4	57.2
Max Q Clear Time (g_c+I1), s		13.8		6.1	5.5	13.4
Green Ext Time (p_c), s		14.9		0.4	0.1	8.2

Intersection Summary

HCM 6th Ctrl Delay	10.8
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	281	418	471	1081	744	200
Future Volume (vph)	281	418	471	1081	744	200
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	9.6	9.6	16.5	29.5	29.5
Total Split (s)	44.8	42.3	42.3	75.2	32.9	32.9
Total Split (%)	37.3%	35.3%	35.3%	62.7%	27.4%	27.4%
Yellow Time (s)	4.8	3.6	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	4.6	6.5	6.5	6.5
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	21.9	60.5	32.7	63.2	25.9	25.9
Actuated g/C Ratio	0.22	0.62	0.33	0.65	0.27	0.27
v/c Ratio	0.75	0.45	0.84	0.50	0.79	0.42
Control Delay	48.4	10.9	45.0	10.4	42.2	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	10.9	45.0	10.4	42.2	18.9
LOS	D	B	D	B	D	B
Approach Delay	26.0			20.9	37.3	
Approach LOS	C			C	D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 97.7
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 26.9
 Intersection LOS: C
 Intersection Capacity Utilization 76.3%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	281	418	471	1081	744	200
Future Volume (veh/h)	281	418	471	1081	744	200
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	296	297	496	1138	783	150
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	371	821	552	2262	1005	426
Arrive On Green	0.21	0.21	0.31	0.64	0.27	0.27
Sat Flow, veh/h	1781	1585	1781	3647	3741	1585
Grp Volume(v), veh/h	296	297	496	1138	783	150
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1870	1585
Q Serve(g_s), s	12.5	8.8	21.1	13.6	15.3	6.1
Cycle Q Clear(g_c), s	12.5	8.8	21.1	13.6	15.3	6.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	371	821	552	2262	1005	426
V/C Ratio(X)	0.80	0.36	0.90	0.50	0.78	0.35
Avail Cap(c_a), veh/h	878	1272	848	3084	1247	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	11.3	26.1	7.7	26.8	23.4
Incr Delay (d2), s/veh	4.0	0.3	8.5	0.2	2.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	9.7	9.7	4.3	6.9	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.8	11.6	34.6	7.9	29.3	23.9
LnGrp LOS	C	B	C	A	C	C
Approach Vol, veh/h	593			1634	933	
Approach Delay, s/veh	22.7			16.0	28.5	
Approach LOS	C			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		56.9		22.3	29.1	27.8
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	37.7	26.4
Max Q Clear Time (g_c+1), s		15.6		14.5	23.1	17.3
Green Ext Time (p_c), s		11.5		2.0	1.5	3.9
Intersection Summary						
HCM 6th Ctrl Delay			20.9			
HCM 6th LOS			C			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
04/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	303	340	954	225	274	286	871	1113	269	273	901	222
Future Volume (vph)	303	340	954	225	274	286	871	1113	269	273	901	222
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	41.8	9.6	9.6	42.8	42.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	14.0	42.7	31.0	14.1	42.8	42.8	31.0	51.1	51.1	22.1	42.2	42.2
Total Split (%)	10.8%	32.8%	23.8%	10.8%	32.9%	32.9%	23.8%	39.3%	39.3%	17.0%	32.5%	32.5%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	10.1	15.1	42.9	9.4	14.4	14.4	26.6	41.0	41.0	12.4	26.8	26.8
Actuated g/C Ratio	0.10	0.15	0.43	0.09	0.14	0.14	0.27	0.41	0.41	0.12	0.27	0.27
v/c Ratio	0.87	0.62	1.37	0.69	0.53	0.62	0.95	0.50	0.36	0.64	0.62	0.39
Control Delay	69.9	45.5	198.7	57.1	43.8	11.3	57.2	23.2	7.1	49.3	33.8	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.9	45.5	198.7	57.1	43.8	11.3	57.2	23.2	7.1	49.3	33.8	5.9
LOS	E	D	F	E	D	B	E	C	A	D	C	A
Approach Delay		141.6			35.8			34.4			32.4	
Approach LOS		F			D			C			C	

Intersection Summary



































Cycle Length: 130	
Actuated Cycle Length: 99.6	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.37	
Intersection Signal Delay: 62.5	Intersection LOS: E
Intersection Capacity Utilization 97.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.

Ø1 22.1 s	Ø2 51.1 s	Ø4 42.7 s	Ø3 14.1 s
Ø5 31 s	Ø6 42.2 s	Ø8 42.8 s	Ø7 14 s

HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/06/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		 	  	
Traffic Volume (veh/h)	303	340	954	225	274	286	871	1113	269	273	901	222
Future Volume (veh/h)	303	340	954	225	274	286	871	1113	269	273	901	222
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	312	351	603	232	282	140	898	1147	213	281	929	183
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	727	911	768	294	456	189	861	2126	593	351	1322	372
Arrive On Green	0.20	0.24	0.24	0.08	0.12	0.12	0.27	0.42	0.38	0.10	0.24	0.24
Sat Flow, veh/h	3563	3741	1581	3563	3741	1554	3563	5611	1564	3563	5611	1579
Grp Volume(v), veh/h	312	351	603	232	282	140	898	1147	213	281	929	183
Grp Sat Flow(s),veh/h/ln	1781	1870	1581	1781	1870	1554	1781	1870	1564	1781	1870	1579
Q Serve(g_s), s	8.3	8.6	19.9	7.0	7.8	7.4	26.4	16.8	7.5	8.4	16.6	6.6
Cycle Q Clear(g_c), s	8.3	8.6	19.9	7.0	7.8	7.4	26.4	16.8	7.5	8.4	16.6	6.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	727	911	768	294	456	189	861	2126	593	351	1322	372
V/C Ratio(X)	0.43	0.39	0.79	0.79	0.62	0.74	1.04	0.54	0.36	0.80	0.70	0.49
Avail Cap(c_a), veh/h	727	1263	917	310	1267	526	861	2290	638	571	1833	516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.10	1.10	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.9	34.5	9.1	49.2	45.6	28.1	40.1	24.7	12.1	48.2	38.3	13.0
Incr Delay (d2), s/veh	0.1	0.3	3.8	11.1	1.4	5.6	42.6	0.2	0.4	1.6	0.7	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	3.9	6.7	3.6	3.7	3.0	16.3	7.2	2.6	3.8	7.6	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.1	34.8	12.9	60.4	46.9	33.7	82.7	24.9	12.5	49.8	39.0	14.0
LnGrp LOS	D	C	B	E	D	C	F	C	B	D	D	B
Approach Vol, veh/h		1266			654			2258			1393	
Approach Delay, s/veh		25.2			48.9			46.7			37.9	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.4	47.9	13.6	32.4	31.0	32.3	26.9	19.1				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	17.5	44.6	9.5	36.9	26.4	35.7	9.4	37.0				
Max Q Clear Time (g_c+I1), s	10.4	18.8	9.0	21.9	28.4	18.6	10.3	9.8				
Green Ext Time (p_c), s	0.3	10.4	0.0	4.3	0.0	6.8	0.0	2.4				
Intersection Summary												
HCM 6th Ctrl Delay				39.9								
HCM 6th LOS				D								

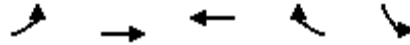
APPENDIX 6.8:

**OPENING YEAR CUMULATIVE (2030) WITH PROJECT CONDITIONS INTERSECTION
OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS**

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Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021

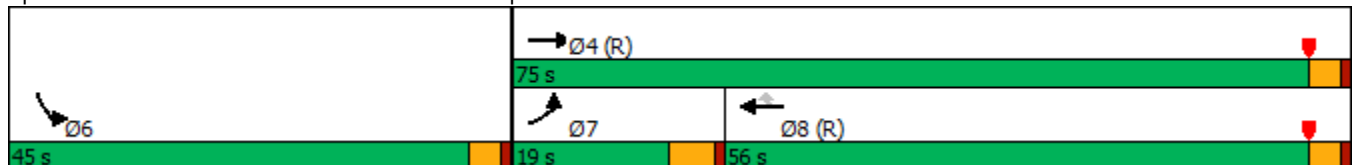


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↗↗	↗↗	↖	↖↖↖
Traffic Volume (vph)	80	689	1248	186	442
Future Volume (vph)	80	689	1248	186	442
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	19.0	75.0	56.0	56.0	45.0
Total Split (%)	15.8%	62.5%	46.7%	46.7%	37.5%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	12.1	82.7	65.6	65.6	29.3
Actuated g/C Ratio	0.10	0.69	0.55	0.55	0.24
v/c Ratio	0.56	0.35	0.81	0.25	0.81
Control Delay	57.4	8.8	27.9	6.9	48.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	8.8	27.9	6.9	48.7
LOS	E	A	C	A	D
Approach Delay		13.8	25.1		48.7
Approach LOS		B	C		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 26.7
 Intersection LOS: C
 Intersection Capacity Utilization 65.6%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↑↑	↖	↙↘		
Traffic Volume (veh/h)	80	689	1248	186	442	103	
Future Volume (veh/h)	80	689	1248	186	442	103	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	100	861	1560	168	602	0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	123	2612	2218	989	707	314	
Arrive On Green	0.14	1.00	0.62	0.62	0.20	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	100	861	1560	168	602	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	6.5	0.0	35.3	5.3	19.6	0.0	
Cycle Q Clear(g_c), s	6.5	0.0	35.3	5.3	19.6	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	123	2612	2218	989	707	314	
V/C Ratio(X)	0.81	0.33	0.70	0.17	0.85	0.00	
Avail Cap(c_a), veh/h	208	2612	2218	989	1217	542	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.93	0.93	0.53	0.53	1.00	0.00	
Uniform Delay (d), s/veh	50.9	0.0	15.1	9.5	46.4	0.0	
Incr Delay (d2), s/veh	11.1	0.3	1.0	0.2	3.0	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	3.1	0.1	12.8	1.7	9.0	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	62.0	0.3	16.1	9.7	49.4	0.0	
LnGrp LOS	E	A	B	A	D	A	
Approach Vol, veh/h		961	1728		602		
Approach Delay, s/veh		6.7	15.5		49.4		
Approach LOS		A	B		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				92.2	27.8	13.3	78.9
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				71.0	41.0	14.0	52.0
Max Q Clear Time (g_c+I1), s				2.0	21.6	8.5	37.3
Green Ext Time (p_c), s				6.6	2.2	0.1	9.5

Intersection Summary

HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

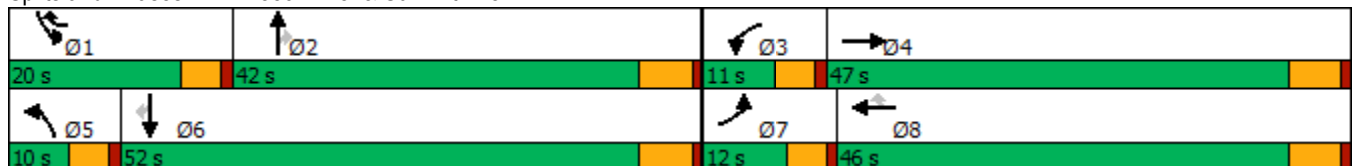
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	85	150	100	211	706	45	388	67	405	262	39
Future Volume (vph)	85	150	100	211	706	45	388	67	405	262	39
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	1	5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	9.6	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	47.0	11.0	46.0	20.0	10.0	42.0	42.0	20.0	52.0	52.0
Total Split (%)	10.0%	39.2%	9.2%	38.3%	16.7%	8.3%	35.0%	35.0%	16.7%	43.3%	43.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None	None	None	None
Act Effct Green (s)	6.2	11.1	6.1	10.9	26.7	5.3	13.4	13.4	14.6	27.2	27.2
Actuated g/C Ratio	0.10	0.17	0.10	0.17	0.42	0.08	0.21	0.21	0.23	0.43	0.43
v/c Ratio	0.27	0.30	0.32	0.37	0.98	0.16	0.55	0.16	0.53	0.18	0.06
Control Delay	31.3	24.3	32.5	27.5	43.8	31.7	26.6	0.8	25.7	14.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	24.3	32.5	27.5	43.8	31.7	26.6	0.8	25.7	14.1	0.2
LOS	C	C	C	C	D	C	C	A	C	B	A
Approach Delay		26.6		39.3			23.6			20.0	
Approach LOS		C		D			C			B	

Intersection Summary
































Cycle Length: 120	
Actuated Cycle Length: 63.8	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 7: Beech Ave. & Summit Ave.



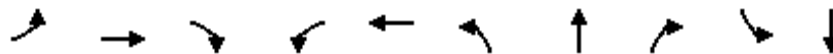
HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	85	150	24	100	211	706	45	388	67	405	262	39
Future Volume (veh/h)	85	150	24	100	211	706	45	388	67	405	262	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	158	20	105	222	632	47	408	59	426	276	38
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	1200	150	189	1350	830	138	615	270	514	987	439
Arrive On Green	0.05	0.38	0.38	0.05	0.38	0.38	0.04	0.17	0.17	0.14	0.28	0.28
Sat Flow, veh/h	3456	3179	397	3456	3554	1583	3456	3554	1557	3563	3554	1582
Grp Volume(v), veh/h	89	87	91	105	222	632	47	408	59	426	276	38
Grp Sat Flow(s),veh/h/ln	1728	1777	1799	1728	1777	1583	1728	1777	1557	1781	1777	1582
Q Serve(g_s), s	2.1	2.7	2.7	2.5	3.4	26.3	1.1	8.9	2.7	9.7	5.1	1.5
Cycle Q Clear(g_c), s	2.1	2.7	2.7	2.5	3.4	26.3	1.1	8.9	2.7	9.7	5.1	1.5
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	181	671	679	189	1350	830	138	615	270	514	987	439
V/C Ratio(X)	0.49	0.13	0.13	0.55	0.16	0.76	0.34	0.66	0.22	0.83	0.28	0.09
Avail Cap(c_a), veh/h	308	880	891	266	1718	994	224	1547	678	660	1974	879
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.3	16.9	17.0	38.3	17.1	15.7	38.9	32.1	29.5	34.6	23.5	22.2
Incr Delay (d2), s/veh	0.8	0.1	0.1	0.9	0.1	2.9	0.5	1.2	0.4	5.5	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.0	1.0	1.0	1.3	8.5	0.5	3.7	1.0	4.3	2.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	17.0	17.1	39.3	17.1	18.6	39.4	33.3	29.9	40.1	23.7	22.3
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		267			959			514			740	
Approach Delay, s/veh		24.4			20.5			33.5			33.0	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.6	20.2	9.2	37.2	7.9	28.9	9.0	37.4				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	15.4	36.2	6.4	41.2	5.4	46.2	7.4	40.2				
Max Q Clear Time (g_c+I1), s	11.7	10.9	4.5	4.7	3.1	7.1	4.1	28.3				
Green Ext Time (p_c), s	0.3	2.6	0.0	0.9	0.0	1.8	0.0	3.1				
Intersection Summary												
HCM 6th Ctrl Delay				27.4								
HCM 6th LOS				C								

Timings
12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

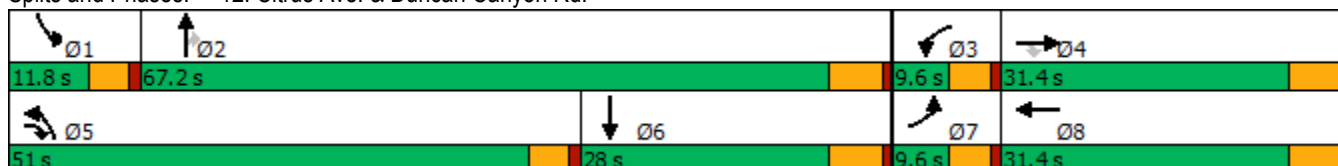


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↙	↑	↘	↙	↘	↙↘	↑	↘	↙	↙↘
Traffic Volume (vph)	23	275	838	31	266	1145	52	32	14	81
Future Volume (vph)	23	275	838	31	266	1145	52	32	14	81
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	9.6	27.8	27.8	9.6	27.8
Total Split (s)	9.6	31.4	51.0	9.6	31.4	51.0	67.2	67.2	11.8	28.0
Total Split (%)	8.0%	26.2%	42.5%	8.0%	26.2%	42.5%	56.0%	56.0%	9.8%	23.3%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min	None	None	None	None	None
Act Effct Green (s)	5.2	19.6	63.3	5.2	21.3	37.7	49.5	49.5	5.8	10.7
Actuated g/C Ratio	0.06	0.22	0.70	0.06	0.24	0.42	0.55	0.55	0.06	0.12
v/c Ratio	0.23	0.71	0.68	0.31	0.64	0.83	0.05	0.04	0.13	0.34
Control Delay	53.9	45.0	5.3	56.3	40.1	30.0	13.7	0.1	50.1	26.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.9	45.0	5.3	56.3	40.1	30.0	13.7	0.1	50.1	26.7
LOS	D	D	A	E	D	C	B	A	D	C
Approach Delay		15.9			41.8		28.5			28.7
Approach LOS		B			D		C			C

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 89.9
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 24.9
 Intersection LOS: C
 Intersection Capacity Utilization 77.0%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	275	838	31	266	5	1145	52	32	14	81	68
Future Volume (veh/h)	23	275	838	31	266	5	1145	52	32	14	81	68
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	286	691	32	277	5	1193	54	33	15	84	71
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	44	505	1022	54	505	9	1295	866	734	31	202	155
Arrive On Green	0.02	0.27	0.27	0.03	0.28	0.28	0.37	0.46	0.46	0.02	0.11	0.11
Sat Flow, veh/h	1781	1870	1585	1781	1831	33	3456	1870	1585	1781	1915	1468
Grp Volume(v), veh/h	24	286	691	32	0	282	1193	54	33	15	77	78
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1864	1728	1870	1585	1781	1777	1606
Q Serve(g_s), s	1.3	12.5	25.6	1.7	0.0	12.2	31.2	1.5	1.1	0.8	3.9	4.3
Cycle Q Clear(g_c), s	1.3	12.5	25.6	1.7	0.0	12.2	31.2	1.5	1.1	0.8	3.9	4.3
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.91
Lane Grp Cap(c), veh/h	44	505	1022	54	0	514	1295	866	734	31	187	169
V/C Ratio(X)	0.55	0.57	0.68	0.60	0.00	0.55	0.92	0.06	0.04	0.49	0.41	0.46
Avail Cap(c_a), veh/h	94	505	1022	94	0	514	1692	1212	1027	135	416	376
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	29.8	10.6	45.4	0.0	29.3	28.3	14.1	13.9	46.1	39.6	39.8
Incr Delay (d2), s/veh	3.9	1.5	1.8	3.9	0.0	1.2	6.3	0.0	0.0	4.4	1.5	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	5.5	7.6	0.8	0.0	5.3	12.9	0.6	0.4	0.4	1.7	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.5	31.3	12.4	49.3	0.0	30.5	34.6	14.1	14.0	50.6	41.1	41.8
LnGrp LOS	D	C	B	D	A	C	C	B	B	D	D	D
Approach Vol, veh/h		1001			314			1280			170	
Approach Delay, s/veh		18.7			32.5			33.2			42.2	
Approach LOS		B			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.2	49.7	7.4	31.4	40.1	15.8	6.9	31.9				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.2	61.4	5.0	25.6	46.4	22.2	5.0	25.6				
Max Q Clear Time (g_c+I1), s	2.8	3.5	3.7	27.6	33.2	6.3	3.3	14.2				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	2.3	0.6	0.0	1.1				
Intersection Summary												
HCM 6th Ctrl Delay			28.4									
HCM 6th LOS			C									

Timings
14: Citrus Ave. & Summit Ave.

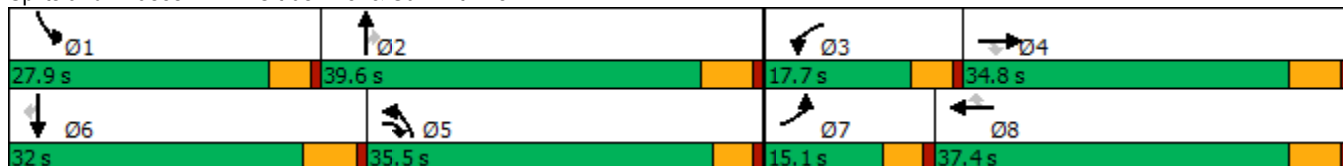
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	190	227	155	291	108	753	270	104	129	291	147
Future Volume (vph)	64	190	227	155	291	108	753	270	104	129	291	147
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	9.6	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	15.1	34.8	35.5	17.7	37.4	37.4	35.5	39.6	39.6	27.9	32.0	32.0
Total Split (%)	12.6%	29.0%	29.6%	14.8%	31.2%	31.2%	29.6%	33.0%	33.0%	23.3%	26.7%	26.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.6	11.2	35.4	11.9	17.8	17.8	23.0	25.2	25.2	10.9	13.1	13.1
Actuated g/C Ratio	0.09	0.14	0.44	0.15	0.22	0.22	0.29	0.31	0.31	0.14	0.16	0.16
v/c Ratio	0.40	0.38	0.30	0.61	0.37	0.26	0.77	0.24	0.19	0.56	0.53	0.40
Control Delay	44.4	35.9	3.4	45.7	31.3	8.8	32.5	21.7	5.6	43.7	35.7	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	35.9	3.4	45.7	31.3	8.8	32.5	21.7	5.6	43.7	35.7	9.3
LOS	D	D	A	D	C	A	C	C	A	D	D	A
Approach Delay		21.7			30.9			27.5			30.7	
Approach LOS		C			C			C			C	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 80.4
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 27.8
 Intersection LOS: C
 Intersection Capacity Utilization 65.6%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	190	227	155	291	108	753	270	104	129	291	147
Future Volume (veh/h)	64	190	227	155	291	108	753	270	104	129	291	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	198	147	161	303	70	784	281	93	134	303	111
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	587	658	201	813	344	922	1230	509	172	529	236
Arrive On Green	0.05	0.16	0.16	0.11	0.22	0.22	0.26	0.33	0.33	0.10	0.15	0.15
Sat Flow, veh/h	1781	3741	1576	1781	3741	1583	3563	3741	1549	1781	3554	1585
Grp Volume(v), veh/h	67	198	147	161	303	70	784	281	93	134	303	111
Grp Sat Flow(s),veh/h/ln	1781	1870	1576	1781	1870	1583	1781	1870	1549	1781	1777	1585
Q Serve(g_s), s	2.5	3.2	1.3	6.0	4.7	2.5	14.3	3.7	2.9	5.0	5.4	3.3
Cycle Q Clear(g_c), s	2.5	3.2	1.3	6.0	4.7	2.5	14.3	3.7	2.9	5.0	5.4	3.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	94	587	658	201	813	344	922	1230	509	172	529	236
V/C Ratio(X)	0.71	0.34	0.22	0.80	0.37	0.20	0.85	0.23	0.18	0.78	0.57	0.47
Avail Cap(c_a), veh/h	274	1589	1080	342	1732	733	1613	1852	767	608	1364	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.8	25.6	3.3	29.5	22.7	21.9	24.0	16.6	16.4	30.1	27.0	15.3
Incr Delay (d2), s/veh	3.7	0.3	0.2	2.8	0.3	0.3	0.9	0.1	0.2	2.9	1.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.3	0.5	2.5	1.9	0.9	5.4	1.4	0.9	2.1	2.2	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.6	25.9	3.5	32.3	23.0	22.2	24.9	16.7	16.5	33.0	28.0	16.8
LnGrp LOS	D	C	A	C	C	C	C	B	B	C	C	B
Approach Vol, veh/h		412			534			1158			548	
Approach Delay, s/veh		19.5			25.7			22.3			27.0	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.2	28.2	12.3	16.5	23.5	16.0	8.2	20.6				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	5.8	* 5.8	4.6	5.8				
Max Green Setting (Gmax), s	23.3	33.8	13.1	29.0	30.9	* 26	10.5	31.6				
Max Q Clear Time (g_c+1), s	7.0	5.7	8.0	5.2	16.3	7.4	4.5	6.7				
Green Ext Time (p_c), s	0.1	2.0	0.1	1.6	1.4	2.0	0.0	2.0				
Intersection Summary												
HCM 6th Ctrl Delay			23.5									
HCM 6th LOS			C									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

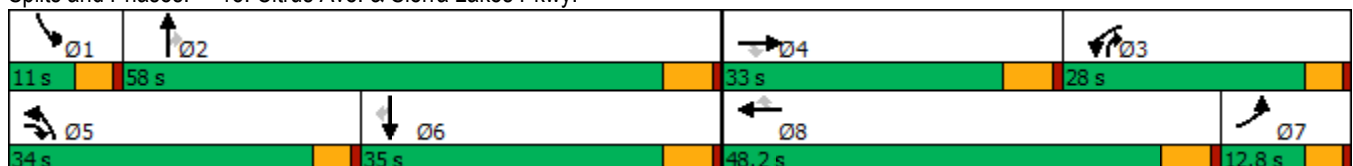
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	255	401	607	202	101	828	456	735	120	595	80
Future Volume (vph)	75	255	401	607	202	101	828	456	735	120	595	80
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	32.8	9.6	9.6	34.8	34.8	9.6	34.8	9.6	9.6	34.8	34.8
Total Split (s)	12.8	33.0	34.0	28.0	48.2	48.2	34.0	58.0	28.0	11.0	35.0	35.0
Total Split (%)	9.8%	25.4%	26.2%	21.5%	37.1%	37.1%	26.2%	44.6%	21.5%	8.5%	26.9%	26.9%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	4.6	4.6	5.8	5.8
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	Min
Act Effct Green (s)	20.8	13.7	44.4	23.5	18.5	18.5	29.5	47.8	72.5	6.4	24.7	24.7
Actuated g/C Ratio	0.19	0.12	0.40	0.21	0.16	0.16	0.26	0.43	0.65	0.06	0.22	0.22
v/c Ratio	0.13	0.61	0.63	0.89	0.36	0.29	0.97	0.31	0.75	0.65	0.79	0.18
Control Delay	37.6	53.3	14.9	59.8	47.6	5.9	64.9	22.1	11.8	68.8	49.1	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.6	53.3	14.9	59.8	47.6	5.9	64.9	22.1	11.8	68.8	49.1	0.8
LOS	D	D	B	E	D	A	E	C	B	E	D	A
Approach Delay		30.6			51.1			35.9			47.2	
Approach LOS		C			D			D			D	

Intersection Summary

































Cycle Length: 130
 Actuated Cycle Length: 112.3
 Natural Cycle: 140
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 40.2
 Intersection LOS: D
 Intersection Capacity Utilization 84.4%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	75	255	401	607	202	101	828	456	735	120	595	80
Future Volume (veh/h)	75	255	401	607	202	101	828	456	735	120	595	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	277	197	660	220	83	900	496	473	130	647	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	765	436	608	722	391	166	956	1592	995	192	790	335
Arrive On Green	0.21	0.12	0.12	0.30	0.10	0.10	0.40	0.43	0.43	0.05	0.32	0.21
Sat Flow, veh/h	3563	3741	1573	3563	3741	1585	3563	3741	1583	3563	3741	1585
Grp Volume(v), veh/h	82	277	197	660	220	83	900	496	473	130	647	76
Grp Sat Flow(s),veh/h/ln	1781	1870	1573	1781	1870	1585	1781	1870	1583	1781	1870	1585
Q Serve(g_s), s	1.9	7.3	4.0	18.5	5.8	4.2	25.1	9.1	4.3	3.7	16.5	2.5
Cycle Q Clear(g_c), s	1.9	7.3	4.0	18.5	5.8	4.2	25.1	9.1	4.3	3.7	16.5	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	765	436	608	722	391	166	956	1592	995	192	790	335
V/C Ratio(X)	0.11	0.64	0.32	0.91	0.56	0.50	0.94	0.31	0.48	0.68	0.82	0.23
Avail Cap(c_a), veh/h	765	984	839	806	1534	650	1013	1889	1121	221	1056	448
HCM Platoon Ratio	1.00	1.00	1.00	1.50	1.00	1.00	1.50	1.00	1.00	1.00	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	43.6	7.8	35.1	44.0	29.9	30.1	19.7	2.9	48.0	33.5	12.2
Incr Delay (d2), s/veh	0.0	1.5	0.3	13.1	1.3	2.3	15.3	0.1	0.4	4.6	3.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.4	1.5	8.0	2.7	2.0	10.6	3.7	1.1	1.7	6.7	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.7	45.1	8.1	48.2	45.3	32.3	45.4	19.8	3.3	52.7	37.3	12.5
LnGrp LOS	C	D	A	D	D	C	D	B	A	D	D	B
Approach Vol, veh/h		556			963			1869			853	
Approach Delay, s/veh		30.2			46.2			27.9			37.5	
Approach LOS		C			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.2	49.8	25.6	17.8	32.3	27.6	26.8	16.6				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	6.4	52.2	23.4	27.2	29.4	29.2	8.2	42.4				
Max Q Clear Time (g_c+I1), s	5.7	11.1	20.5	9.3	27.1	18.5	3.9	7.8				
Green Ext Time (p_c), s	0.0	5.3	0.5	2.1	0.6	3.1	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay			34.3									
HCM 6th LOS			C									

Timings
16: Sierra Ave/Sierra Ave. & Riverside Ave.

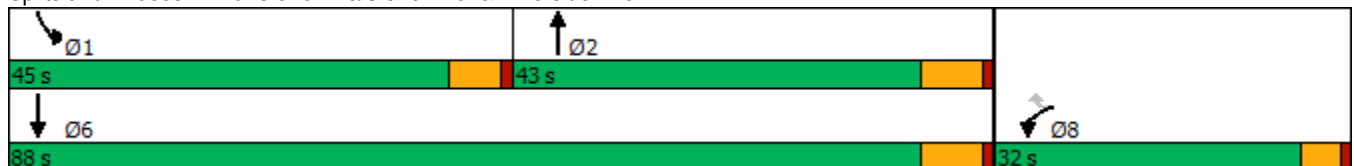
Ventana (JN 13769)
04/06/2022

	↙	↖	↑	↘	↓
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↖	↑↔	↘	↑↑
Traffic Volume (vph)	99	508	621	409	704
Future Volume (vph)	99	508	621	409	704
Turn Type	Prot	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	26.6	26.6	28.5	15.8	16.5
Total Split (s)	32.0	32.0	43.0	45.0	88.0
Total Split (%)	26.7%	26.7%	35.8%	37.5%	73.3%
Yellow Time (s)	3.6	3.6	5.5	4.8	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	6.5	5.8	6.5
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effect Green (s)	11.2	11.2	26.5	26.2	58.9
Actuated g/C Ratio	0.14	0.14	0.32	0.32	0.72
v/c Ratio	0.45	0.80	0.73	0.79	0.30
Control Delay	42.6	13.2	29.7	38.0	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	13.2	29.7	38.0	4.7
LOS	D	B	C	D	A
Approach Delay	18.0		29.7		16.9
Approach LOS	B		C		B

Intersection Summary














Cycle Length: 120
 Actuated Cycle Length: 81.9
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 21.1
 Intersection LOS: C
 Intersection Capacity Utilization 63.8%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 16: Sierra Ave/Sierra Ave. & Riverside Ave.



HCM 6th Signalized Intersection Summary
 16: Sierra Ave/Sierra Ave. & Riverside Ave.

Ventana (JN 13769)
 04/06/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (veh/h)	99	508	621	137	409	704
Future Volume (veh/h)	99	508	621	137	409	704
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	108	280	675	89	445	765
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	367	326	884	116	493	2268
Arrive On Green	0.21	0.21	0.28	0.28	0.28	0.64
Sat Flow, veh/h	1781	1585	3250	416	1781	3647
Grp Volume(v), veh/h	108	280	380	384	445	765
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1796	1781	1777
Q Serve(g_s), s	3.6	12.1	13.9	14.0	17.1	7.1
Cycle Q Clear(g_c), s	3.6	12.1	13.9	14.0	17.1	7.1
Prop In Lane	1.00	1.00		0.23	1.00	
Lane Grp Cap(c), veh/h	367	326	497	503	493	2268
V/C Ratio(X)	0.29	0.86	0.76	0.76	0.90	0.34
Avail Cap(c_a), veh/h	686	610	911	921	981	4069
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.9	27.3	23.5	23.5	24.8	5.9
Incr Delay (d2), s/veh	0.2	2.6	2.5	2.5	2.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.4	5.3	5.3	6.4	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.1	29.8	25.9	25.9	27.4	6.0
LnGrp LOS	C	C	C	C	C	A
Approach Vol, veh/h	388		764			1210
Approach Delay, s/veh	28.2		25.9			13.9
Approach LOS	C		C			B
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	25.5	26.4			51.9	19.2
Change Period (Y+Rc), s	5.8	6.5			6.5	4.6
Max Green Setting (Gmax), s	39.2	36.5			81.5	27.4
Max Q Clear Time (g_c+I1), s	19.1	16.0			9.1	14.1
Green Ext Time (p_c), s	0.6	4.0			5.2	0.5
Intersection Summary						
HCM 6th Ctrl Delay			20.1			
HCM 6th LOS			C			

Timings
17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	146	38	586	1152
Future Volume (vph)	146	38	586	1152
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	5	2	6
Permitted Phases				
Detector Phase	4	5	2	6
Switch Phase				
Minimum Initial (s)	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	9.6	15.8	27.8
Total Split (s)	38.0	12.2	82.0	69.8
Total Split (%)	31.7%	10.2%	68.3%	58.2%
Yellow Time (s)	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	5.8	5.8
Lead/Lag		Lead		Lag
Lead-Lag Optimize?		Yes		Yes
Recall Mode	None	None	Min	Min
Act Effct Green (s)	17.1	6.7	40.9	35.2
Actuated g/C Ratio	0.24	0.09	0.58	0.50
v/c Ratio	0.61	0.23	0.29	0.73
Control Delay	31.2	43.0	7.7	18.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	31.2	43.0	7.7	18.1
LOS	C	D	A	B
Approach Delay	31.2		9.9	18.1
Approach LOS	C		A	B

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 71.1	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 17.2	Intersection LOS: B
Intersection Capacity Utilization 59.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 17: Sierra Ave & Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	146	111	38	586	1152	93
Future Volume (veh/h)	146	111	38	586	1152	93
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	149	113	39	598	1176	95
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	185	141	72	2143	1605	130
Arrive On Green	0.19	0.19	0.04	0.60	0.48	0.48
Sat Flow, veh/h	958	727	1781	3647	3424	269
Grp Volume(v), veh/h	263	0	39	598	627	644
Grp Sat Flow(s),veh/h/ln	1692	0	1781	1777	1777	1822
Q Serve(g_s), s	8.5	0.0	1.2	4.6	16.1	16.2
Cycle Q Clear(g_c), s	8.5	0.0	1.2	4.6	16.1	16.2
Prop In Lane	0.57	0.43	1.00			0.15
Lane Grp Cap(c), veh/h	327	0	72	2143	857	878
V/C Ratio(X)	0.80	0.00	0.54	0.28	0.73	0.73
Avail Cap(c_a), veh/h	955	0	237	4748	1994	2045
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	0.0	26.8	5.4	11.8	11.8
Incr Delay (d2), s/veh	4.6	0.0	2.3	0.1	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	0.5	0.8	4.3	4.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.6	0.0	29.2	5.5	13.0	13.0
LnGrp LOS	C	A	C	A	B	B
Approach Vol, veh/h	263			637	1271	
Approach Delay, s/veh	26.6			6.9	13.0	
Approach LOS	C			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		40.2		16.8	6.9	33.3
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		76.2		32.2	7.6	64.0
Max Q Clear Time (g_c+I1), s		6.6		10.5	3.2	18.2
Green Ext Time (p_c), s		3.8		0.7	0.0	9.3

Intersection Summary

HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	86	388	356	620	1135	133
Future Volume (vph)	86	388	356	620	1135	133
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	9.6	9.6	16.5	29.5	29.5
Total Split (s)	44.8	28.0	28.0	75.2	47.2	47.2
Total Split (%)	37.3%	23.3%	23.3%	62.7%	39.3%	39.3%
Yellow Time (s)	4.8	3.6	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	4.6	6.5	6.5	6.5
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.4	37.0	23.6	70.7	41.0	41.0
Actuated g/C Ratio	0.13	0.41	0.26	0.79	0.46	0.46
v/c Ratio	0.44	0.68	0.89	0.26	0.77	0.20
Control Delay	44.1	26.7	55.8	3.8	25.2	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	26.7	55.8	3.8	25.2	11.1
LOS	D	C	E	A	C	B
Approach Delay	29.9			22.7	23.7	
Approach LOS	C			C	C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 89.2
 Natural Cycle: 135
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 24.4
 Intersection LOS: C
 Intersection Capacity Utilization 73.5%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	86	388	356	620	1135	133
Future Volume (veh/h)	86	388	356	620	1135	133
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	100	189	414	721	1320	114
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	214	594	453	2600	1578	669
Arrive On Green	0.12	0.12	0.25	0.73	0.42	0.42
Sat Flow, veh/h	1781	1585	1781	3647	3741	1585
Grp Volume(v), veh/h	100	189	414	721	1320	114
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1870	1585
Q Serve(g_s), s	4.3	7.0	18.7	5.7	26.2	3.7
Cycle Q Clear(g_c), s	4.3	7.0	18.7	5.7	26.2	3.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	214	594	453	2600	1578	669
V/C Ratio(X)	0.47	0.32	0.91	0.28	0.84	0.17
Avail Cap(c_a), veh/h	837	1148	502	2940	1834	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	18.4	30.1	3.8	21.4	14.9
Incr Delay (d2), s/veh	1.6	0.3	20.2	0.1	3.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.1	9.7	1.0	10.2	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.6	18.7	50.2	3.8	24.6	15.1
LnGrp LOS	D	B	D	A	C	B
Approach Vol, veh/h	289			1135	1434	
Approach Delay, s/veh	24.6			20.7	23.8	
Approach LOS	C			C	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		67.2		15.8	25.7	41.5
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	23.4	40.7
Max Q Clear Time (g_c+I1), s		7.7		9.0	20.7	28.2
Green Ext Time (p_c), s		4.8		0.9	0.4	6.9
Intersection Summary						
HCM 6th Ctrl Delay			22.7			
HCM 6th LOS			C			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

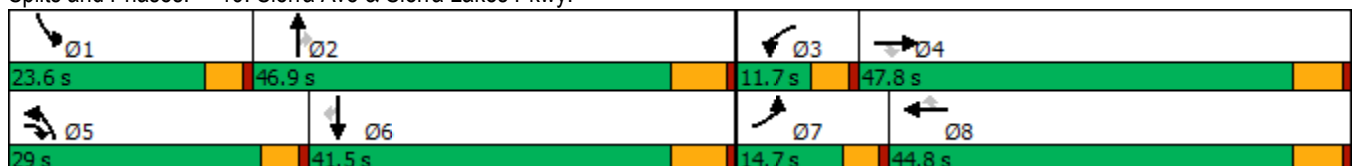
Ventana (JN 13769)
04/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	177	527	151	204	285	581	766	284	305	1171	220
Future Volume (vph)	138	177	527	151	204	285	581	766	284	305	1171	220
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	14.7	47.8	29.0	11.7	44.8	44.8	29.0	46.9	46.9	23.6	41.5	41.5
Total Split (%)	11.3%	36.8%	22.3%	9.0%	34.5%	34.5%	22.3%	36.1%	36.1%	18.2%	31.9%	31.9%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.5	13.9	43.0	7.2	12.6	12.6	23.3	40.9	40.9	13.7	31.3	31.3
Actuated g/C Ratio	0.09	0.14	0.44	0.07	0.13	0.13	0.24	0.42	0.42	0.14	0.32	0.32
v/c Ratio	0.50	0.37	0.79	0.64	0.47	0.66	0.76	0.36	0.37	0.67	0.72	0.36
Control Delay	49.8	40.4	29.6	57.9	43.7	12.2	42.0	20.5	3.9	47.8	32.0	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	40.4	29.6	57.9	43.7	12.2	42.0	20.5	3.9	47.8	32.0	5.1
LOS	D	D	C	E	D	B	D	C	A	D	C	A
Approach Delay		35.2			33.0			25.2			31.4	
Approach LOS		D			C			C			C	

Intersection Summary




































Cycle Length: 130	
Actuated Cycle Length: 97.3	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 30.2	Intersection LOS: C
Intersection Capacity Utilization 72.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/06/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		  	  	
Traffic Volume (veh/h)	138	177	527	151	204	285	581	766	284	305	1171	220
Future Volume (veh/h)	138	177	527	151	204	285	581	766	284	305	1171	220
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	195	459	166	224	261	638	842	279	335	1287	215
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	987	731	226	999	422	703	2056	579	403	1584	447
Arrive On Green	0.06	0.26	0.26	0.06	0.27	0.27	0.20	0.37	0.37	0.11	0.28	0.28
Sat Flow, veh/h	3563	3741	1585	3563	3741	1581	3563	5611	1581	3563	5611	1585
Grp Volume(v), veh/h	152	195	459	166	224	261	638	842	279	335	1287	215
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1581	1781	1870	1581	1781	1870	1585
Q Serve(g_s), s	4.7	4.5	24.4	5.1	5.2	16.1	19.5	12.4	15.1	10.2	23.8	12.5
Cycle Q Clear(g_c), s	4.7	4.5	24.4	5.1	5.2	16.1	19.5	12.4	15.1	10.2	23.8	12.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	987	731	226	999	422	703	2056	579	403	1584	447
V/C Ratio(X)	0.71	0.20	0.63	0.74	0.22	0.62	0.91	0.41	0.48	0.83	0.81	0.48
Avail Cap(c_a), veh/h	324	1413	911	227	1312	555	782	2056	579	609	1766	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.3	31.8	22.7	51.2	31.8	35.8	43.6	26.3	27.1	48.3	37.2	33.1
Incr Delay (d2), s/veh	1.6	0.1	0.9	10.2	0.1	1.5	12.8	0.1	0.6	3.6	2.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.0	8.6	2.5	2.3	6.1	9.3	5.2	5.5	4.5	10.5	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.0	31.9	23.7	61.4	31.9	37.2	56.4	26.4	27.7	51.9	39.9	33.9
LnGrp LOS	D	C	C	E	C	D	E	C	C	D	D	C
Approach Vol, veh/h		806			651			1759			1837	
Approach Delay, s/veh		31.2			41.6			37.5			41.4	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.2	47.2	11.6	35.1	26.5	37.9	11.3	35.5				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	19.0	40.4	7.1	42.0	24.4	35.0	10.1	39.0				
Max Q Clear Time (g_c+I1), s	12.2	17.1	7.1	26.4	21.5	25.8	6.7	18.1				
Green Ext Time (p_c), s	0.4	6.3	0.0	2.5	0.5	5.5	0.1	2.1				
Intersection Summary												
HCM 6th Ctrl Delay			38.4									
HCM 6th LOS			D									

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021

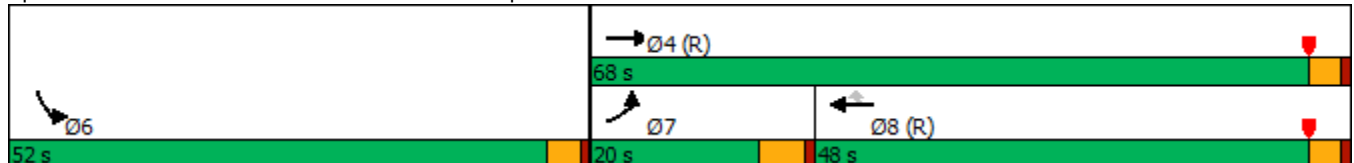


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↑↑	↑↑	↗	↖↗
Traffic Volume (vph)	187	749	1037	455	1066
Future Volume (vph)	187	749	1037	455	1066
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	20.0	68.0	48.0	48.0	52.0
Total Split (%)	16.7%	56.7%	40.0%	40.0%	43.3%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	14.9	64.0	44.1	44.1	48.0
Actuated g/C Ratio	0.12	0.53	0.37	0.37	0.40
v/c Ratio	0.90	0.42	0.85	0.58	0.97
Control Delay	84.1	16.8	42.4	8.6	54.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	84.1	16.8	42.4	8.6	54.0
LOS	F	B	D	A	D
Approach Delay		30.2	32.1		54.0
Approach LOS		C	C		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 39.1
 Intersection LOS: D
 Intersection Capacity Utilization 86.1%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↑↑	↖	↙↘		
Traffic Volume (veh/h)	187	749	1037	455	1066	185	
Future Volume (veh/h)	187	749	1037	455	1066	185	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	199	797	1103	165	1260	0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	222	1972	1381	616	1348	600	
Arrive On Green	0.25	1.00	0.39	0.39	0.38	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	199	797	1103	165	1260	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	13.0	0.0	33.0	8.5	40.8	0.0	
Cycle Q Clear(g_c), s	13.0	0.0	33.0	8.5	40.8	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	222	1972	1381	616	1348	600	
V/C Ratio(X)	0.90	0.40	0.80	0.27	0.93	0.00	
Avail Cap(c_a), veh/h	223	1972	1381	616	1425	634	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.92	0.92	0.78	0.78	1.00	0.00	
Uniform Delay (d), s/veh	44.3	0.0	32.5	25.0	35.9	0.0	
Incr Delay (d2), s/veh	32.0	0.6	3.9	0.8	11.3	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	6.9	0.2	14.7	3.4	19.5	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	76.3	0.6	36.4	25.9	47.2	0.0	
LnGrp LOS	E	A	D	C	D	A	
Approach Vol, veh/h		996	1268		1260		
Approach Delay, s/veh		15.7	35.0		47.2		
Approach LOS		B	D		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				70.6	49.4	19.9	50.6
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				64.0	48.0	15.0	44.0
Max Q Clear Time (g_c+I1), s				2.0	42.8	15.0	35.0
Green Ext Time (p_c), s				6.9	2.6	0.0	5.3

Intersection Summary

HCM 6th Ctrl Delay	33.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

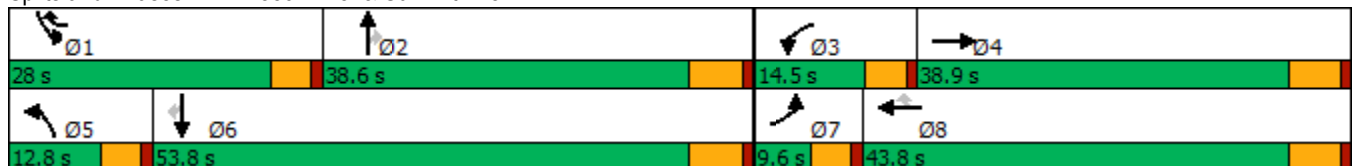


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↕	↖↗	↕	↖	↖↗	↕	↖	↖↗	↕	↖
Traffic Volume (vph)	129	334	142	352	481	106	376	130	778	548	100
Future Volume (vph)	129	334	142	352	481	106	376	130	778	548	100
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	1	5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	9.6	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	9.6	38.9	14.5	43.8	28.0	12.8	38.6	38.6	28.0	53.8	53.8
Total Split (%)	8.0%	32.4%	12.1%	36.5%	23.3%	10.7%	32.2%	32.2%	23.3%	44.8%	44.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None	None	None	None
Act Effct Green (s)	5.1	17.3	8.0	20.3	45.2	7.0	15.7	15.7	23.7	32.4	32.4
Actuated g/C Ratio	0.06	0.20	0.09	0.24	0.53	0.08	0.18	0.18	0.28	0.38	0.38
v/c Ratio	0.66	0.67	0.46	0.44	0.56	0.39	0.61	0.31	0.83	0.43	0.15
Control Delay	59.2	33.9	43.7	29.6	10.7	44.1	37.1	3.3	39.7	22.0	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.2	33.9	43.7	29.6	10.7	44.1	37.1	3.3	39.7	22.0	1.7
LOS	E	C	D	C	B	D	D	A	D	C	A
Approach Delay		39.4		22.4			31.2			30.2	
Approach LOS		D		C			C			C	

Intersection Summary
































Cycle Length: 120
 Actuated Cycle Length: 85.8
 Natural Cycle: 125
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 29.8
 Intersection LOS: C
 Intersection Capacity Utilization 73.5%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 7: Beech Ave. & Summit Ave.



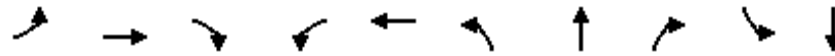
HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	129	334	130	142	352	481	106	376	130	778	548	100
Future Volume (veh/h)	129	334	130	142	352	481	106	376	130	778	548	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	348	110	148	367	409	110	392	95	810	571	73
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	668	208	223	911	805	189	661	291	897	1362	606
Arrive On Green	0.06	0.25	0.25	0.06	0.26	0.26	0.05	0.19	0.19	0.25	0.38	0.38
Sat Flow, veh/h	3456	2663	829	3456	3554	1583	3456	3554	1565	3563	3554	1581
Grp Volume(v), veh/h	134	230	228	148	367	409	110	392	95	810	571	73
Grp Sat Flow(s),veh/h/ln	1728	1777	1715	1728	1777	1583	1728	1777	1565	1781	1777	1581
Q Serve(g_s), s	3.2	9.4	9.7	3.5	7.2	14.4	2.6	8.5	4.4	18.6	10.0	2.5
Cycle Q Clear(g_c), s	3.2	9.4	9.7	3.5	7.2	14.4	2.6	8.5	4.4	18.6	10.0	2.5
Prop In Lane	1.00		0.48	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	204	446	430	223	911	805	189	661	291	897	1362	606
V/C Ratio(X)	0.66	0.52	0.53	0.66	0.40	0.51	0.58	0.59	0.33	0.90	0.42	0.12
Avail Cap(c_a), veh/h	205	697	673	406	1601	1112	336	1382	608	988	2022	900
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.9	27.2	27.3	38.6	26.0	13.7	38.9	31.4	29.7	30.6	19.1	16.8
Incr Delay (d2), s/veh	5.9	0.9	1.0	1.3	0.3	0.5	1.1	0.9	0.6	10.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	4.0	4.0	1.5	3.0	4.9	1.1	3.6	1.7	8.9	4.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.8	28.1	28.3	39.8	26.3	14.2	40.0	32.3	30.4	40.7	19.3	16.9
LnGrp LOS	D	C	C	D	C	B	D	C	C	D	B	B
Approach Vol, veh/h		592			924			597			1454	
Approach Delay, s/veh		32.0			23.1			33.4			31.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.8	21.5	10.0	27.0	9.2	38.1	9.6	27.4				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	23.4	32.8	9.9	33.1	8.2	48.0	5.0	38.0				
Max Q Clear Time (g_c+I1), s	20.6	10.5	5.5	11.7	4.6	12.0	5.2	16.4				
Green Ext Time (p_c), s	0.7	2.9	0.1	2.8	0.0	4.6	0.0	4.0				
Intersection Summary												
HCM 6th Ctrl Delay				29.6								
HCM 6th LOS				C								

Timings
12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

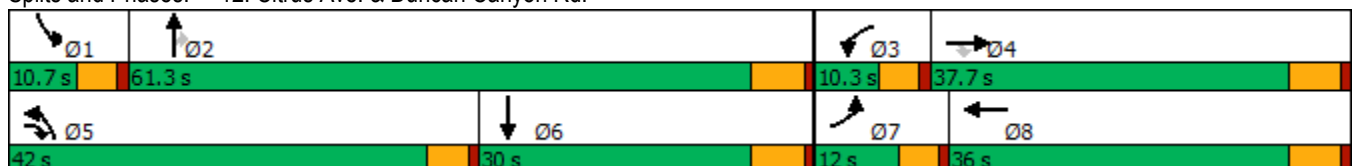


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	75	260	960	20	186	857	58	21	9	59
Future Volume (vph)	75	260	960	20	186	857	58	21	9	59
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	5	3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	9.6	27.8	27.8	9.6	27.8
Total Split (s)	12.0	37.7	42.0	10.3	36.0	42.0	61.3	61.3	10.7	30.0
Total Split (%)	10.0%	31.4%	35.0%	8.6%	30.0%	35.0%	51.1%	51.1%	8.9%	25.0%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min	None	None	None	None	None
Act Effct Green (s)	7.5	22.0	59.5	5.9	16.7	29.3	37.7	37.7	5.8	11.1
Actuated g/C Ratio	0.10	0.28	0.77	0.08	0.22	0.38	0.49	0.49	0.07	0.14
v/c Ratio	0.45	0.51	0.72	0.16	0.53	0.69	0.07	0.03	0.07	0.21
Control Delay	49.6	31.0	5.7	44.5	35.9	26.1	13.4	0.0	43.2	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.6	31.0	5.7	44.5	35.9	26.1	13.4	0.0	43.2	24.7
LOS	D	C	A	D	D	C	B	A	D	C
Approach Delay		13.3			36.7		24.7			26.2
Approach LOS		B			D		C			C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 77.6
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 20.1
 Intersection LOS: C
 Intersection Capacity Utilization 84.4%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	260	960	20	186	16	857	58	21	9	59	45
Future Volume (veh/h)	75	260	960	20	186	16	857	58	21	9	59	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	271	740	21	194	17	893	60	22	9	61	47
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	100	650	1009	40	532	47	999	726	615	20	220	154
Arrive On Green	0.06	0.35	0.35	0.02	0.31	0.31	0.29	0.39	0.39	0.01	0.11	0.11
Sat Flow, veh/h	1781	1870	1585	1781	1695	149	3456	1870	1585	1781	2000	1396
Grp Volume(v), veh/h	78	271	740	21	0	211	893	60	22	9	53	55
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1844	1728	1870	1585	1781	1777	1619
Q Serve(g_s), s	3.9	10.0	28.7	1.1	0.0	8.0	22.3	1.8	0.8	0.5	2.5	2.8
Cycle Q Clear(g_c), s	3.9	10.0	28.7	1.1	0.0	8.0	22.3	1.8	0.8	0.5	2.5	2.8
Prop In Lane	1.00		1.00	1.00		0.08	1.00		1.00	1.00		0.86
Lane Grp Cap(c), veh/h	100	650	1009	40	0	579	999	726	615	20	196	178
V/C Ratio(X)	0.78	0.42	0.73	0.52	0.00	0.36	0.89	0.08	0.04	0.45	0.27	0.31
Avail Cap(c_a), veh/h	146	662	1019	113	0	617	1433	1151	975	120	477	434
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.0	22.4	11.2	43.6	0.0	24.0	30.7	17.5	17.1	44.3	36.8	37.0
Incr Delay (d2), s/veh	8.3	0.4	2.7	3.8	0.0	0.4	4.3	0.0	0.0	5.8	0.7	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.3	9.4	0.5	0.0	3.5	9.6	0.8	0.3	0.2	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.3	22.9	13.9	47.4	0.0	24.3	35.0	17.5	17.2	50.1	37.6	37.9
LnGrp LOS	D	C	B	D	A	C	D	B	B	D	D	D
Approach Vol, veh/h		1089			232			975			117	
Approach Delay, s/veh		18.7			26.4			33.5			38.7	
Approach LOS		B			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.6	40.8	6.6	37.1	30.7	15.7	9.7	34.1				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	6.1	55.5	5.7	31.9	37.4	24.2	7.4	30.2				
Max Q Clear Time (g_c+I1), s	2.5	3.8	3.1	30.7	24.3	4.8	5.9	10.0				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.6	1.7	0.5	0.0	1.1				
Intersection Summary												
HCM 6th Ctrl Delay			26.4									
HCM 6th LOS			C									

Timings
14: Citrus Ave. & Summit Ave.

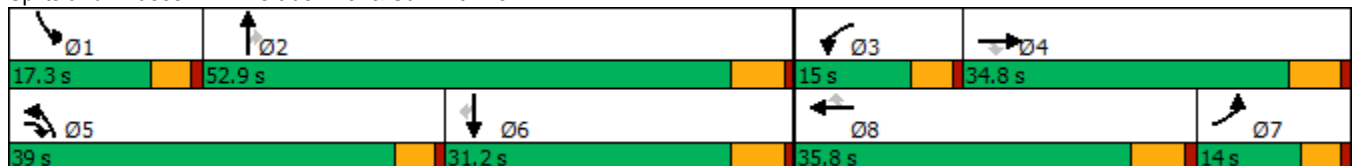
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	543	453	162	433	103	1069	399	140	84	275	81
Future Volume (vph)	147	543	453	162	433	103	1069	399	140	84	275	81
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	9.6	9.6	34.8	34.8	9.6	31.8	31.8	9.6	30.8	30.8
Total Split (s)	14.0	34.8	39.0	15.0	35.8	35.8	39.0	52.9	52.9	17.3	31.2	31.2
Total Split (%)	11.7%	29.0%	32.5%	12.5%	29.8%	29.8%	32.5%	44.1%	44.1%	14.4%	26.0%	26.0%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.2	22.1	57.9	10.5	19.3	19.3	34.6	41.6	41.6	9.4	14.1	14.1
Actuated g/C Ratio	0.13	0.22	0.57	0.10	0.19	0.19	0.34	0.41	0.41	0.09	0.14	0.14
v/c Ratio	0.70	0.73	0.52	0.97	0.67	0.26	0.97	0.29	0.21	0.56	0.61	0.23
Control Delay	61.6	43.3	9.9	109.2	43.7	3.1	54.7	22.9	4.1	59.3	47.7	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.6	43.3	9.9	109.2	43.7	3.1	54.7	22.9	4.1	59.3	47.7	1.3
LOS	E	D	A	F	D	A	D	C	A	E	D	A
Approach Delay		32.5			52.9			42.4			41.3	
Approach LOS		C			D			D			D	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 102.2
 Natural Cycle: 130
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 41.3
 Intersection LOS: D
 Intersection Capacity Utilization 80.4%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	543	453	162	433	103	1069	399	140	84	275	81
Future Volume (veh/h)	147	543	453	162	433	103	1069	399	140	84	275	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	590	345	176	471	96	1162	434	116	91	299	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	801	877	187	657	277	1219	1518	625	116	457	201
Arrive On Green	0.13	0.21	0.21	0.10	0.18	0.18	0.34	0.41	0.41	0.07	0.13	0.13
Sat Flow, veh/h	1781	3741	1561	1781	3741	1580	3563	3741	1541	1781	3554	1561
Grp Volume(v), veh/h	160	590	345	176	471	96	1162	434	116	91	299	86
Grp Sat Flow(s),veh/h/ln	1781	1870	1561	1781	1870	1580	1781	1870	1541	1781	1777	1561
Q Serve(g_s), s	8.5	14.6	12.5	9.7	11.8	4.2	31.5	7.7	4.8	5.0	7.9	3.6
Cycle Q Clear(g_c), s	8.5	14.6	12.5	9.7	11.8	4.2	31.5	7.7	4.8	5.0	7.9	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	801	877	187	657	277	1219	1518	625	116	457	201
V/C Ratio(X)	0.68	0.74	0.39	0.94	0.72	0.35	0.95	0.29	0.19	0.78	0.65	0.43
Avail Cap(c_a), veh/h	234	1095	999	187	1133	478	1237	1778	733	228	911	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.1	36.3	12.5	44.0	38.5	22.6	31.8	19.8	18.9	45.6	41.1	20.3
Incr Delay (d2), s/veh	6.6	1.7	0.3	48.5	1.5	0.7	15.4	0.1	0.1	4.3	1.6	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	6.8	4.2	6.8	5.5	2.0	15.7	3.3	1.7	2.3	3.5	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.7	38.0	12.8	92.5	40.0	23.3	47.2	19.9	19.1	49.9	42.7	21.8
LnGrp LOS	D	D	B	F	D	C	D	B	B	D	D	C
Approach Vol, veh/h		1095			743			1712			476	
Approach Delay, s/veh		31.5			50.3			38.4			40.3	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.1	46.0	15.0	27.0	38.5	18.5	18.8	23.2				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	5.8	* 5.8				
Max Green Setting (Gmax), s	12.7	47.1	10.4	29.0	34.4	25.4	9.4	* 30				
Max Q Clear Time (g_c+I1), s	7.0	9.7	11.7	16.6	33.5	9.9	10.5	13.8				
Green Ext Time (p_c), s	0.0	3.6	0.0	4.3	0.4	1.9	0.0	3.1				
Intersection Summary												
HCM 6th Ctrl Delay			38.9									
HCM 6th LOS			D									
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

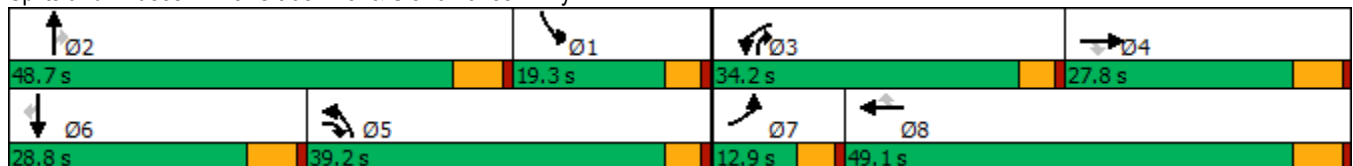
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	395	409	763	378	266	984	675	921	230	543	90
Future Volume (vph)	106	395	409	763	378	266	984	675	921	230	543	90
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	27.8	9.6	27.8	9.6	9.6	27.8	27.8
Total Split (s)	12.9	27.8	39.2	34.2	49.1	49.1	39.2	48.7	34.2	19.3	28.8	28.8
Total Split (%)	9.9%	21.4%	30.2%	26.3%	37.8%	37.8%	30.2%	37.5%	26.3%	14.8%	22.2%	22.2%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	4.6	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	Min
Act Effct Green (s)	7.6	18.6	54.5	29.6	40.7	40.7	34.6	30.7	61.5	26.0	22.1	22.1
Actuated g/C Ratio	0.06	0.15	0.43	0.24	0.32	0.32	0.28	0.24	0.49	0.21	0.18	0.18
v/c Ratio	0.52	0.75	0.58	0.95	0.33	0.40	1.05	0.77	1.20	0.33	0.87	0.22
Control Delay	67.1	60.4	13.6	69.7	33.3	5.3	87.7	50.4	120.6	46.0	65.3	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.1	60.4	13.6	69.7	33.3	5.3	87.7	50.4	120.6	46.0	65.3	1.2
LOS	E	E	B	E	C	A	F	D	F	D	E	A
Approach Delay		40.1			47.7			89.7			53.5	
Approach LOS		D			D			F			D	

Intersection Summary

























Cycle Length: 130
 Actuated Cycle Length: 125.8
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.20
 Intersection Signal Delay: 66.2
 Intersection LOS: E
 Intersection Capacity Utilization 93.8%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	395	409	763	378	266	984	675	921	230	543	90
Future Volume (veh/h)	106	395	409	763	378	266	984	675	921	230	543	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	110	411	392	795	394	251	1025	703	568	240	566	75
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	532	667	838	1241	519	1003	909	753	749	642	268
Arrive On Green	0.05	0.21	0.14	0.35	0.50	0.33	0.42	0.36	0.24	0.32	0.26	0.17
Sat Flow, veh/h	3563	3741	1554	3563	3741	1564	3563	3741	1565	3563	3741	1562
Grp Volume(v), veh/h	110	411	392	795	394	251	1025	703	568	240	566	75
Grp Sat Flow(s),veh/h/ln	1781	1870	1554	1781	1870	1564	1781	1870	1565	1781	1870	1562
Q Serve(g_s), s	3.7	12.7	11.3	26.7	7.7	8.8	34.6	20.4	13.3	6.3	17.9	4.3
Cycle Q Clear(g_c), s	3.7	12.7	11.3	26.7	7.7	8.8	34.6	20.4	13.3	6.3	17.9	4.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	163	532	667	838	1241	519	1003	909	753	749	642	268
V/C Ratio(X)	0.67	0.77	0.59	0.95	0.32	0.48	1.02	0.77	0.75	0.32	0.88	0.28
Avail Cap(c_a), veh/h	241	670	724	858	1318	551	1003	1306	919	749	700	292
HCM Platoon Ratio	1.00	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.7	46.5	10.0	39.0	22.6	10.2	35.5	36.1	9.3	35.4	44.4	31.4
Incr Delay (d2), s/veh	1.8	4.3	1.1	18.8	0.1	0.7	34.1	1.8	2.9	0.1	12.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	5.9	3.6	12.8	3.2	3.0	18.1	8.7	5.5	2.7	8.8	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.5	50.8	11.1	57.8	22.7	10.9	69.5	37.9	12.2	35.5	56.4	32.0
LnGrp LOS	E	D	B	E	C	B	F	D	B	D	E	C
Approach Vol, veh/h		913			1440			2296			881	
Approach Delay, s/veh		34.8			40.0			45.7			48.6	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	30.4	35.7	33.5	23.3	39.2	26.9	10.2	46.6				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	14.7	42.9	29.6	22.0	34.6	23.0	8.3	43.3				
Max Q Clear Time (g_c+1), s	8.3	22.4	28.7	14.7	36.6	19.9	5.7	10.8				
Green Ext Time (p_c), s	0.2	7.4	0.3	2.5	0.0	1.2	0.0	3.8				
Intersection Summary												
HCM 6th Ctrl Delay				42.9								
HCM 6th LOS				D								

Timings
16: Sierra Ave/Sierra Ave. & Riverside Ave.

Ventana (JN 13769)
04/06/2022

	↙	↖	↑	↘	↓
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↖	↑↕	↘	↕
Traffic Volume (vph)	125	492	769	503	774
Future Volume (vph)	125	492	769	503	774
Turn Type	Prot	Perm	NA	Prot	NA
Protected Phases	8		2	1	6
Permitted Phases		8			
Detector Phase	8	8	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	27.8	27.8	27.8	9.6	15.8
Total Split (s)	42.3	42.3	45.9	31.8	77.7
Total Split (%)	35.3%	35.3%	38.3%	26.5%	64.8%
Yellow Time (s)	4.8	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	5.8	4.6	5.8
Lead/Lag			Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effect Green (s)	13.9	13.9	30.0	27.7	62.4
Actuated g/C Ratio	0.16	0.16	0.34	0.31	0.71
v/c Ratio	0.48	0.82	0.77	0.96	0.33
Control Delay	40.6	17.2	30.7	63.2	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	17.2	30.7	63.2	5.8
LOS	D	B	C	E	A
Approach Delay	21.9		30.7		28.4
Approach LOS	C		C		C

Intersection Summary














Cycle Length: 120
 Actuated Cycle Length: 88.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 27.7
 Intersection LOS: C
 Intersection Capacity Utilization 73.8%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 16: Sierra Ave/Sierra Ave. & Riverside Ave.



HCM 6th Signalized Intersection Summary
 16: Sierra Ave/Sierra Ave. & Riverside Ave.

Ventana (JN 13769)
 04/06/2022

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (veh/h)	125	492	769	89	503	774
Future Volume (veh/h)	125	492	769	89	503	774
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	133	124	818	-38	535	823
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	322	287	1323	0	597	2149
Arrive On Green	0.18	0.18	0.18	0.00	0.34	0.60
Sat Flow, veh/h	1781	1585	3741	0	1781	3647
Grp Volume(v), veh/h	133	124	780	0	535	823
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	0	1781	1777
Q Serve(g_s), s	3.6	3.8	0.0	0.0	15.4	6.4
Cycle Q Clear(g_c), s	3.6	3.8	0.0	0.0	15.4	6.4
Prop In Lane	1.00	1.00		0.00	1.00	
Lane Grp Cap(c), veh/h	322	287	0	0	597	2149
V/C Ratio(X)	0.41	0.43	0.00	0.00	0.90	0.38
Avail Cap(c_a), veh/h	1201	1069	0	0	895	4720
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	19.6	19.7	0.0	0.0	17.1	5.5
Incr Delay (d2), s/veh	0.3	0.4	0.0	0.0	6.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.3	0.0	0.0	6.4	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.9	20.1	0.0	0.0	23.1	5.6
LnGrp LOS	B	C	A	A	C	A
Approach Vol, veh/h	257		780			1358
Approach Delay, s/veh	20.0		0.0			12.5
Approach LOS	C		A			B
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	22.7	15.8			38.5	15.6
Change Period (Y+Rc), s	4.6	5.8			5.8	5.8
Max Green Setting (Gmax), s	27.2	40.1			71.9	36.5
Max Q Clear Time (g_c+I1), s	17.4	2.0			8.4	5.8
Green Ext Time (p_c), s	0.7	6.3			7.2	0.4
Intersection Summary						
HCM 6th Ctrl Delay			9.2			
HCM 6th LOS			A			

Timings
17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	110	120	1249	851
Future Volume (vph)	110	120	1249	851
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	5	2	6
Permitted Phases				
Detector Phase	4	5	2	6
Switch Phase				
Minimum Initial (s)	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	9.6	15.8	27.8
Total Split (s)	33.0	24.0	87.0	63.0
Total Split (%)	27.5%	20.0%	72.5%	52.5%
Yellow Time (s)	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	5.8	5.8
Lead/Lag		Lead		Lag
Lead-Lag Optimize?		Yes		Yes
Recall Mode	None	None	Min	Min
Act Effct Green (s)	14.0	10.3	46.3	31.2
Actuated g/C Ratio	0.19	0.14	0.64	0.43
v/c Ratio	0.54	0.50	0.58	0.70
Control Delay	31.9	39.7	8.6	19.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	31.9	39.7	8.6	19.6
LOS	C	D	A	B
Approach Delay	31.9		11.3	19.6
Approach LOS	C		B	B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 72.6
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 16.1
 Intersection LOS: B
 Intersection Capacity Utilization 59.1%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 17: Sierra Ave & Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	110	72	120	1249	851	153
Future Volume (veh/h)	110	72	120	1249	851	153
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	75	125	1301	886	159
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	178	116	163	2174	1311	235
Arrive On Green	0.17	0.17	0.09	0.61	0.44	0.44
Sat Flow, veh/h	1023	667	1781	3647	3103	540
Grp Volume(v), veh/h	191	0	125	1301	523	522
Grp Sat Flow(s),veh/h/ln	1699	0	1781	1777	1777	1773
Q Serve(g_s), s	5.7	0.0	3.7	12.1	12.8	12.8
Cycle Q Clear(g_c), s	5.7	0.0	3.7	12.1	12.8	12.8
Prop In Lane	0.60	0.39	1.00			0.30
Lane Grp Cap(c), veh/h	296	0	163	2174	774	773
V/C Ratio(X)	0.65	0.00	0.77	0.60	0.68	0.68
Avail Cap(c_a), veh/h	853	0	638	5324	1875	1871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.8	0.0	24.1	6.4	12.2	12.2
Incr Delay (d2), s/veh	2.4	0.0	2.9	0.3	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	1.6	3.1	4.4	4.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.2	0.0	26.9	6.7	13.3	13.3
LnGrp LOS	C	A	C	A	B	B
Approach Vol, veh/h	191			1426	1045	
Approach Delay, s/veh	23.2			8.5	13.3	
Approach LOS	C			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		39.0		15.2	9.6	29.4
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		81.2		27.2	19.4	57.2
Max Q Clear Time (g_c+I1), s		14.1		7.7	5.7	14.8
Green Ext Time (p_c), s		14.8		0.5	0.1	8.9

Intersection Summary

HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/06/2022



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	281	467	530	1081	744	200
Future Volume (vph)	281	467	530	1081	744	200
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	9.6	9.6	16.5	29.5	29.5
Total Split (s)	44.8	42.3	42.3	75.2	32.9	32.9
Total Split (%)	37.3%	35.3%	35.3%	62.7%	27.4%	27.4%
Yellow Time (s)	4.8	3.6	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	4.6	6.5	6.5	6.5
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	22.3	66.0	37.9	68.5	26.0	26.0
Actuated g/C Ratio	0.22	0.64	0.37	0.66	0.25	0.25
v/c Ratio	0.77	0.48	0.86	0.48	0.83	0.44
Control Delay	52.2	11.4	46.2	10.1	46.3	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.2	11.4	46.2	10.1	46.3	19.3
LOS	D	B	D	B	D	B
Approach Delay	26.7			22.0	40.6	
Approach LOS	C			C	D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 103.1	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 28.4	Intersection LOS: C
Intersection Capacity Utilization 79.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/06/2022



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	281	467	530	1081	744	200
Future Volume (veh/h)	281	467	530	1081	744	200
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	296	349	558	1138	783	150
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	368	867	606	2317	967	410
Arrive On Green	0.21	0.21	0.34	0.65	0.26	0.26
Sat Flow, veh/h	1781	1585	1781	3647	3741	1585
Grp Volume(v), veh/h	296	349	558	1138	783	150
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1870	1585
Q Serve(g_s), s	13.7	11.1	26.1	14.2	17.0	6.7
Cycle Q Clear(g_c), s	13.7	11.1	26.1	14.2	17.0	6.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	368	867	606	2317	967	410
V/C Ratio(X)	0.81	0.40	0.92	0.49	0.81	0.37
Avail Cap(c_a), veh/h	801	1252	774	2814	1138	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	11.4	27.5	7.7	30.2	26.3
Incr Delay (d2), s/veh	4.2	0.3	13.9	0.2	3.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	12.3	12.9	4.7	7.9	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.0	11.7	41.4	7.9	34.0	26.9
LnGrp LOS	D	B	D	A	C	C
Approach Vol, veh/h	645			1696	933	
Approach Delay, s/veh	23.3			18.9	32.9	
Approach LOS	C			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		63.1		23.7	34.1	28.9
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	37.7	26.4
Max Q Clear Time (g_c+1), s		16.2		15.7	28.1	19.0
Green Ext Time (p_c), s		11.5		2.2	1.4	3.4
Intersection Summary						
HCM 6th Ctrl Delay			23.8			
HCM 6th LOS			C			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

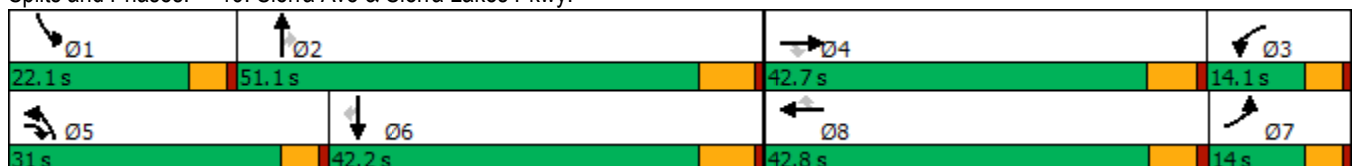
Ventana (JN 13769)
04/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	312	340	954	225	274	311	871	1130	269	294	915	229
Future Volume (vph)	312	340	954	225	274	311	871	1130	269	294	915	229
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	41.8	9.6	9.6	42.8	42.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	14.0	42.7	31.0	14.1	42.8	42.8	31.0	51.1	51.1	22.1	42.2	42.2
Total Split (%)	10.8%	32.8%	23.8%	10.8%	32.9%	32.9%	23.8%	39.3%	39.3%	17.0%	32.5%	32.5%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	10.0	15.1	43.0	9.6	14.7	14.7	26.6	40.8	40.8	13.0	27.2	27.2
Actuated g/C Ratio	0.10	0.15	0.43	0.10	0.15	0.15	0.27	0.41	0.41	0.13	0.27	0.27
v/c Ratio	0.91	0.62	1.38	0.69	0.52	0.67	0.95	0.51	0.36	0.66	0.62	0.40
Control Delay	77.4	45.8	201.1	57.0	43.5	14.5	58.3	23.8	7.5	49.6	33.9	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.4	45.8	201.1	57.0	43.5	14.5	58.3	23.8	7.5	49.6	33.9	5.9
LOS	E	D	F	E	D	B	E	C	A	D	C	A
Approach Delay		144.2			36.1			35.1			32.7	
Approach LOS		F			D			D			C	

Intersection Summary

























Cycle Length: 130
 Actuated Cycle Length: 100.2
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.38
 Intersection Signal Delay: 63.3
 Intersection LOS: E
 Intersection Capacity Utilization 97.5%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/06/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	312	340	954	225	274	311	871	1130	269	294	915	229
Future Volume (veh/h)	312	340	954	225	274	311	871	1130	269	294	915	229
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	322	351	603	232	282	166	898	1165	213	303	943	190
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	698	913	767	293	488	203	856	2096	584	372	1335	376
Arrive On Green	0.20	0.24	0.24	0.08	0.13	0.13	0.26	0.41	0.37	0.10	0.24	0.24
Sat Flow, veh/h	3563	3741	1581	3563	3741	1554	3563	5611	1564	3563	5611	1579
Grp Volume(v), veh/h	322	351	603	232	282	166	898	1165	213	303	943	190
Grp Sat Flow(s),veh/h/ln	1781	1870	1581	1781	1870	1554	1781	1870	1564	1781	1870	1579
Q Serve(g_s), s	8.8	8.6	20.1	7.0	7.8	8.8	26.4	17.4	7.7	9.1	16.9	7.0
Cycle Q Clear(g_c), s	8.8	8.6	20.1	7.0	7.8	8.8	26.4	17.4	7.7	9.1	16.9	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	698	913	767	293	488	203	856	2096	584	372	1335	376
V/C Ratio(X)	0.46	0.38	0.79	0.79	0.58	0.82	1.05	0.56	0.36	0.81	0.71	0.51
Avail Cap(c_a), veh/h	698	1256	912	308	1259	523	856	2277	635	567	1823	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.10	1.10	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.1	34.7	9.2	49.5	44.9	27.6	40.4	25.4	12.5	48.2	38.4	13.5
Incr Delay (d2), s/veh	0.2	0.3	3.9	11.4	1.1	7.9	44.5	0.3	0.4	2.9	0.8	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	3.9	6.9	3.6	3.7	3.7	16.5	7.5	2.7	4.2	7.8	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.2	34.9	13.1	60.9	46.0	35.5	85.0	25.7	12.9	51.1	39.2	14.6
LnGrp LOS	D	C	B	E	D	D	F	C	B	D	D	B
Approach Vol, veh/h		1276			680			2276			1436	
Approach Delay, s/veh		25.7			48.5			47.9			38.4	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.1	47.6	13.6	32.6	31.0	32.6	26.1	20.1				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	17.5	44.6	9.5	36.9	26.4	35.7	9.4	37.0				
Max Q Clear Time (g_c+I1), s	11.1	19.4	9.0	22.1	28.4	18.9	10.8	10.8				
Green Ext Time (p_c), s	0.3	10.4	0.0	4.3	0.0	6.8	0.0	2.5				
Intersection Summary												
HCM 6th Ctrl Delay			40.6									
HCM 6th LOS			D									

APPENDIX 7.1:

**HORIZON YEAR (2040) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS
ANALYSIS WORKSHEETS**

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Intersection	
Intersection Delay, s/veh	46
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↔		↵	↕↔		↵	↕	↵	↵	↕	↵
Traffic Vol, veh/h	29	515	8	79	330	129	6	6	190	360	10	62
Future Vol, veh/h	29	515	8	79	330	129	6	6	190	360	10	62
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	548	9	84	351	137	6	6	202	383	11	66
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	46.3	24.4	23.1	83.3
HCM LOS	E	C	C	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	96%	0%	100%	46%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	4%	0%	0%	54%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	6	6	190	29	343	180	79	220	239	360	10
LT Vol	6	0	0	29	0	0	79	0	0	360	0
Through Vol	0	6	0	0	343	172	0	220	110	0	10
RT Vol	0	0	190	0	0	8	0	0	129	0	0
Lane Flow Rate	6	6	202	31	365	191	84	234	254	383	11
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.019	0.018	0.546	0.083	0.937	0.489	0.229	0.606	0.632	1.062	0.028
Departure Headway (Hd)	10.99	10.396	9.719	9.875	9.375	9.344	9.962	9.462	9.084	9.983	9.483
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	328	343	370	365	391	388	362	384	399	364	378
Service Time	8.69	8.19	7.49	7.575	7.075	7.044	7.662	7.162	6.784	7.738	7.238
HCM Lane V/C Ratio	0.018	0.017	0.546	0.085	0.934	0.492	0.232	0.609	0.637	1.052	0.029
HCM Control Delay	13.9	13.4	23.7	13.5	62.4	20.7	15.6	25.7	26.1	97.3	12.5
HCM Lane LOS	B	B	C	B	F	C	C	D	D	F	B
HCM 95th-tile Q	0.1	0.1	3.1	0.3	10.2	2.6	0.9	3.8	4.2	13.4	0.1

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	1064	501	3	0	38
Future Vol, veh/h	0	1064	501	3	0	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1132	533	3	0	40

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	- 268
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	- 6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	- 3.32
Pot Cap-1 Maneuver	0	-	-	-	0 *899
Stage 1	0	-	-	-	0 -
Stage 2	0	-	-	-	0 -
Platoon blocked, %		-	-	-	- 1
Mov Cap-1 Maneuver	-	-	-	-	- *899
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

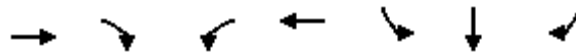
Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	899
HCM Lane V/C Ratio	-	-	-	0.045
HCM Control Delay (s)	-	-	-	9.2
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.1

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

Timings
3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

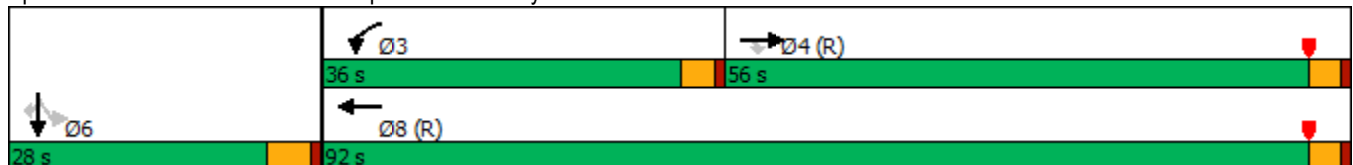


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↖↗	↑↑	↖	↖	↖
Traffic Volume (vph)	427	637	927	440	330	14	63
Future Volume (vph)	427	637	927	440	330	14	63
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8		6	
Permitted Phases		4			6		6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	34.0	34.0	12.0	29.0	13.0	13.0	13.0
Total Split (s)	56.0	56.0	36.0	92.0	28.0	28.0	28.0
Total Split (%)	46.7%	46.7%	30.0%	76.7%	23.3%	23.3%	23.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effct Green (s)	52.0	52.0	36.5	92.5	18.5	18.5	18.5
Actuated g/C Ratio	0.43	0.43	0.30	0.77	0.15	0.15	0.15
v/c Ratio	0.31	0.77	0.99	0.18	0.74	0.74	0.23
Control Delay	23.0	17.8	77.2	3.5	65.2	65.0	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	17.8	77.2	3.5	65.2	65.0	11.4
LOS	C	B	E	A	E	E	B
Approach Delay	19.9			53.5		56.8	
Approach LOS	B			D		E	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 41.4
 Intersection LOS: D
 Intersection Capacity Utilization 86.2%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 3: I-15 SB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Traffic Volume (veh/h)	0	427	637	927	440	0	0	0	0	330	14	63
Future Volume (veh/h)	0	427	637	927	440	0	0	0	0	330	14	63
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	474	541	1030	489	0				378	0	54
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1764	787	922	2831	0				458	0	204
Arrive On Green	0.00	0.50	0.50	0.45	1.00	0.00				0.13	0.00	0.13
Sat Flow, veh/h	0	3647	1585	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	474	541	1030	489	0				378	0	54
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	9.3	31.3	32.0	0.0	0.0				12.4	0.0	3.7
Cycle Q Clear(g_c), s	0.0	9.3	31.3	32.0	0.0	0.0				12.4	0.0	3.7
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1764	787	922	2831	0				458	0	204
V/C Ratio(X)	0.00	0.27	0.69	1.12	0.17	0.00				0.83	0.00	0.27
Avail Cap(c_a), veh/h	0	1764	787	922	2831	0				683	0	304
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.76	0.76	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	17.6	23.1	33.3	0.0	0.0				51.0	0.0	47.2
Incr Delay (d2), s/veh	0.0	0.4	4.9	64.5	0.1	0.0				5.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.7	11.9	18.7	0.0	0.0				5.7	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.9	28.0	97.8	0.1	0.0				56.2	0.0	47.9
LnGrp LOS	A	B	C	F	A	A				E	A	D
Approach Vol, veh/h		1015			1519						432	
Approach Delay, s/veh		23.3			66.4						55.2	
Approach LOS		C			E						E	
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			36.0	63.6		20.4		99.6				
Change Period (Y+Rc), s			4.0	4.0		5.0		4.0				
Max Green Setting (Gmax), s			32.0	52.0		23.0		88.0				
Max Q Clear Time (g_c+I1), s			34.0	33.3		14.4		2.0				
Green Ext Time (p_c), s			0.0	4.8		1.0		3.3				
Intersection Summary												
HCM 6th Ctrl Delay			50.0									
HCM 6th LOS			D									
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings
4: Beech Ave. & I-15 SB Ramps

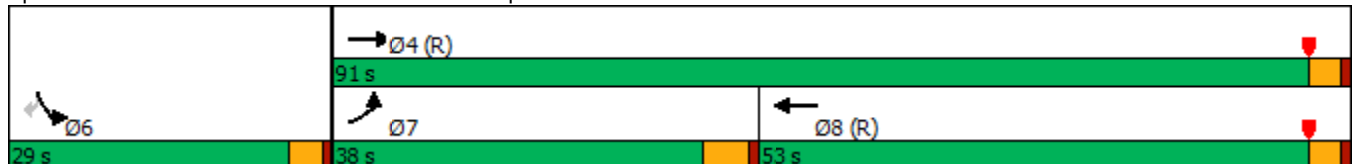


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations	↖	↗↗	↗↗	↖	↗
Traffic Volume (vph)	320	588	576	248	307
Future Volume (vph)	320	588	576	248	307
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	5.0	5.0
Minimum Split (s)	10.0	12.0	12.0	9.0	9.0
Total Split (s)	38.0	91.0	53.0	29.0	29.0
Total Split (%)	31.7%	75.8%	44.2%	24.2%	24.2%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	None	None
Act Effct Green (s)	27.8	89.9	57.1	22.1	22.1
Actuated g/C Ratio	0.23	0.75	0.48	0.18	0.18
v/c Ratio	0.85	0.24	0.95dr	0.83	0.59
Control Delay	62.9	5.1	19.9	68.3	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	62.9	5.1	19.9	68.3	9.0
LOS	E	A	B	E	A
Approach Delay		25.5	19.9	35.5	
Approach LOS		C	B	D	

Intersection Summary

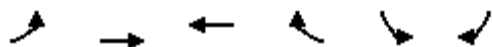
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 24.7
 Intersection LOS: C
 Intersection Capacity Utilization 84.5%
 ICU Level of Service E
 Analysis Period (min) 15
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 4: Beech Ave. & I-15 SB Ramps



HCM 6th Signalized Intersection Summary
4: Beech Ave. & I-15 SB Ramps

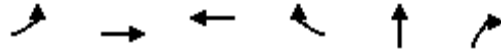
Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗		↙	↘	
Traffic Volume (veh/h)	320	588	576	841	248	307	
Future Volume (veh/h)	320	588	576	841	248	307	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	348	639	626	822	270	333	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	380	2576	835	745	371	330	
Arrive On Green	0.21	0.73	0.79	0.79	0.21	0.21	
Sat Flow, veh/h	1781	3647	1870	1585	1781	1585	
Grp Volume(v), veh/h	348	639	626	822	270	333	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	22.9	7.2	22.1	56.4	17.0	25.0	
Cycle Q Clear(g_c), s	22.9	7.2	22.1	56.4	17.0	25.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	380	2576	835	745	371	330	
V/C Ratio(X)	0.92	0.25	0.75	1.10	0.73	1.01	
Avail Cap(c_a), veh/h	490	2576	835	745	371	330	
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.25	0.25	1.00	1.00	
Uniform Delay (d), s/veh	46.2	5.5	9.2	12.9	44.3	47.5	
Incr Delay (d2), s/veh	18.9	0.2	1.6	52.2	7.0	51.7	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	11.8	2.3	4.5	16.0	8.0	24.5	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	65.0	5.8	10.8	65.0	51.3	99.2	
LnGrp LOS	E	A	B	F	D	F	
Approach Vol, veh/h		987	1448		603		
Approach Delay, s/veh		26.7	41.6		77.8		
Approach LOS		C	D		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				91.0	29.0	30.6	60.4
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				87.0	25.0	33.0	49.0
Max Q Clear Time (g_c+I1), s				9.2	27.0	24.9	58.4
Green Ext Time (p_c), s				4.5	0.0	0.7	0.0
Intersection Summary							
HCM 6th Ctrl Delay			43.9				
HCM 6th LOS			D				

Timings
5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/28/2021

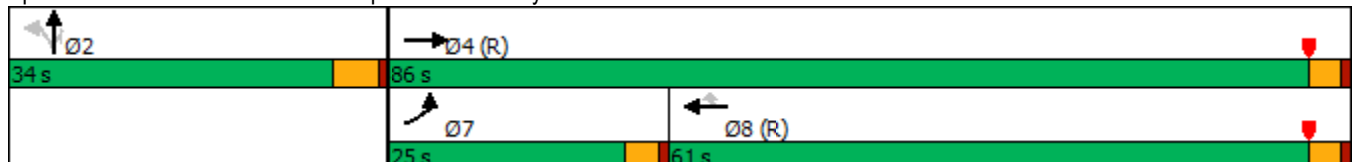


Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations	↶	↷	↶	↷	↷	↷
Traffic Volume (vph)	128	629	1203	276	2	467
Future Volume (vph)	128	629	1203	276	2	467
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8		2	
Permitted Phases				8		2
Detector Phase	7	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	30.0	36.0	36.0	13.0	13.0
Total Split (s)	25.0	86.0	61.0	61.0	34.0	34.0
Total Split (%)	20.8%	71.7%	50.8%	50.8%	28.3%	28.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	14.8	92.1	73.3	73.3	18.9	18.9
Actuated g/C Ratio	0.12	0.77	0.61	0.61	0.16	0.16
v/c Ratio	0.65	0.25	0.61	0.28	0.66	0.59
Control Delay	50.0	5.8	17.7	2.9	58.0	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	5.8	17.7	2.9	58.0	6.4
LOS	D	A	B	A	E	A
Approach Delay		13.3	15.0		20.0	
Approach LOS		B	B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 15.6
 Intersection Capacity Utilization 86.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

Splits and Phases: 5: I-15 NB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
5: I-15 NB Ramp & Duncan Canyon Rd.

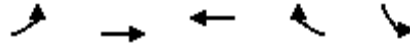
Ventana (JN 13769)
04/28/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑			↑↑	↗		↖	↗↗			
Traffic Volume (veh/h)	128	629	0	0	1203	276	165	2	467	0	0	0
Future Volume (veh/h)	128	629	0	0	1203	276	165	2	467	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	141	691	0	0	1322	303	181	2	465			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	167	2601	0	0	2148	958	341	4	539			
Arrive On Green	0.19	1.00	0.00	0.00	0.60	0.60	0.19	0.19	0.19			
Sat Flow, veh/h	1781	3647	0	0	3647	1585	1763	19	2790			
Grp Volume(v), veh/h	141	691	0	0	1322	303	183	0	465			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1585	1782	0	1395			
Q Serve(g_s), s	9.2	0.0	0.0	0.0	28.1	11.2	11.1	0.0	19.4			
Cycle Q Clear(g_c), s	9.2	0.0	0.0	0.0	28.1	11.2	11.1	0.0	19.4			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	167	2601	0	0	2148	958	344	0	539			
V/C Ratio(X)	0.84	0.27	0.00	0.00	0.62	0.32	0.53	0.00	0.86			
Avail Cap(c_a), veh/h	312	2601	0	0	2148	958	431	0	674			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.91	0.91	0.00	0.00	0.89	0.89	1.00	0.00	1.00			
Uniform Delay (d), s/veh	47.9	0.0	0.0	0.0	14.9	11.6	43.5	0.0	46.9			
Incr Delay (d2), s/veh	9.9	0.2	0.0	0.0	1.2	0.8	1.3	0.0	9.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.1	0.1	0.0	0.0	10.5	3.8	4.9	0.0	7.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.8	0.2	0.0	0.0	16.1	12.4	44.8	0.0	56.2			
LnGrp LOS	E	A	A	A	B	B	D	A	E			
Approach Vol, veh/h		832			1625			648				
Approach Delay, s/veh		10.0			15.4			53.0				
Approach LOS		A			B			D				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		28.2		91.8			15.3	76.5				
Change Period (Y+Rc), s		5.0		4.0			4.0	4.0				
Max Green Setting (Gmax), s		29.0		82.0			21.0	57.0				
Max Q Clear Time (g_c+I1), s		21.4		2.0			11.2	30.1				
Green Ext Time (p_c), s		1.8		4.9			0.2	11.9				
Intersection Summary												
HCM 6th Ctrl Delay				21.8								
HCM 6th LOS				C								

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021

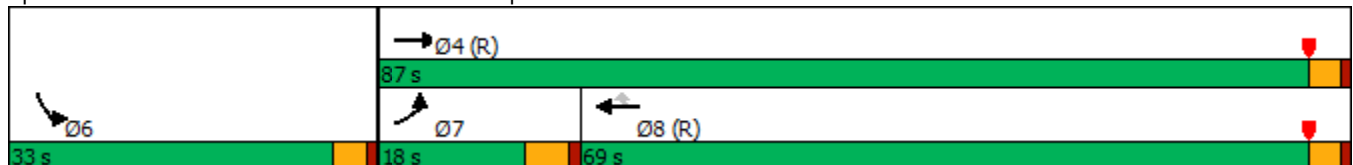


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↘	↑↑	↑↑	↗	↘↘
Traffic Volume (vph)	89	747	1301	225	436
Future Volume (vph)	89	747	1301	225	436
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	18.0	87.0	69.0	69.0	33.0
Total Split (%)	15.0%	72.5%	57.5%	57.5%	27.5%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	11.5	84.7	68.2	68.2	27.3
Actuated g/C Ratio	0.10	0.71	0.57	0.57	0.23
v/c Ratio	0.66	0.37	0.81	0.28	0.88
Control Delay	74.1	7.3	25.5	4.3	56.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	74.1	7.3	25.5	4.3	56.4
LOS	E	A	C	A	E
Approach Delay		14.4	22.4		56.4
Approach LOS		B	C		E

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 26.5
 Intersection LOS: C
 Intersection Capacity Utilization 67.8%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↶	↷	↷	↷	↶	↷	
Traffic Volume (veh/h)	89	747	1301	225	436	116	
Future Volume (veh/h)	89	747	1301	225	436	116	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	111	934	1626	217	610	0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	135	2623	2206	984	695	309	
Arrive On Green	0.15	1.00	0.62	0.62	0.20	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	111	934	1626	217	610	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	7.2	0.0	38.4	7.2	20.0	0.0	
Cycle Q Clear(g_c), s	7.2	0.0	38.4	7.2	20.0	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	135	2623	2206	984	695	309	
V/C Ratio(X)	0.82	0.36	0.74	0.22	0.88	0.00	
Avail Cap(c_a), veh/h	193	2623	2206	984	861	383	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.91	0.91	0.50	0.50	1.00	0.00	
Uniform Delay (d), s/veh	50.1	0.0	15.9	10.0	46.9	0.0	
Incr Delay (d2), s/veh	15.7	0.3	1.1	0.3	8.7	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	3.5	0.1	14.0	2.4	9.7	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	65.8	0.3	17.0	10.3	55.6	0.0	
LnGrp LOS	E	A	B	B	E	A	
Approach Vol, veh/h		1045	1843		610		
Approach Delay, s/veh		7.3	16.2		55.6		
Approach LOS		A	B		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				92.6	27.4	14.1	78.5
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				83.0	29.0	13.0	65.0
Max Q Clear Time (g_c+I1), s				2.0	22.0	9.2	40.4
Green Ext Time (p_c), s				7.4	1.5	0.1	14.1

Intersection Summary

HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

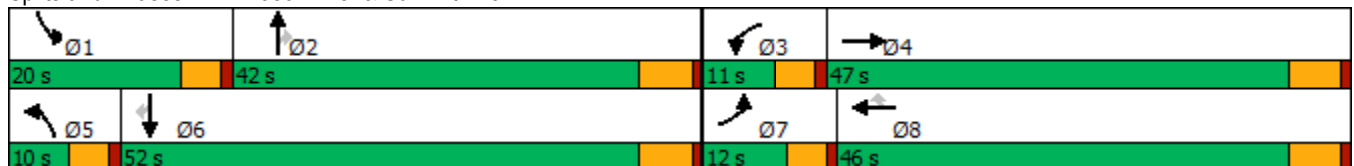
Ventana (JN 13769)
04/28/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	116	145	100	298	705	61	427	64	375	288	71
Future Volume (vph)	116	145	100	298	705	61	427	64	375	288	71
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	43.8	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	47.0	11.0	46.0	46.0	10.0	42.0	42.0	20.0	52.0	52.0
Total Split (%)	10.0%	39.2%	9.2%	38.3%	38.3%	8.3%	35.0%	35.0%	16.7%	43.3%	43.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	6.9	41.1	6.2	40.3	40.3	5.3	18.3	18.3	14.8	29.9	29.9
Actuated g/C Ratio	0.07	0.41	0.06	0.40	0.40	0.05	0.18	0.18	0.15	0.30	0.30
v/c Ratio	0.52	0.13	0.50	0.22	0.90	0.36	0.70	0.17	0.79	0.29	0.14
Control Delay	54.9	18.1	56.0	21.5	32.5	53.8	45.3	0.9	54.8	28.9	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.9	18.1	56.0	21.5	32.5	53.8	45.3	0.9	54.8	28.9	2.6
LOS	D	B	E	C	C	D	D	A	D	C	A
Approach Delay		33.0		31.7			41.1			39.6	
Approach LOS		C		C			D			D	

Intersection Summary































Cycle Length: 120
 Actuated Cycle Length: 101.2
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 35.9
 Intersection LOS: D
 Intersection Capacity Utilization 74.3%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 7: Beech Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/28/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	116	145	26	100	298	705	61	427	64	375	288	71
Future Volume (veh/h)	116	145	26	100	298	705	61	427	64	375	288	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	122	153	22	105	314	631	64	449	55	395	303	72
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	1311	185	170	1475	657	148	633	278	467	962	428
Arrive On Green	0.05	0.42	0.42	0.05	0.41	0.41	0.04	0.18	0.18	0.14	0.27	0.27
Sat Flow, veh/h	3456	3125	442	3456	3554	1583	3456	3554	1557	3456	3554	1582
Grp Volume(v), veh/h	122	86	89	105	314	631	64	449	55	395	303	72
Grp Sat Flow(s),veh/h/ln	1728	1777	1790	1728	1777	1583	1728	1777	1557	1728	1777	1582
Q Serve(g_s), s	3.3	2.8	2.9	2.8	5.4	37.0	1.7	11.3	2.9	10.7	6.5	3.3
Cycle Q Clear(g_c), s	3.3	2.8	2.9	2.8	5.4	37.0	1.7	11.3	2.9	10.7	6.5	3.3
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	745	751	170	1475	657	148	633	278	467	962	428
V/C Ratio(X)	0.66	0.12	0.12	0.62	0.21	0.96	0.43	0.71	0.20	0.85	0.32	0.17
Avail Cap(c_a), veh/h	268	767	773	232	1497	667	196	1348	590	558	1720	766
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.3	16.9	16.9	44.5	17.9	27.2	44.6	36.9	33.4	40.3	27.8	26.6
Incr Delay (d2), s/veh	1.5	0.1	0.1	1.4	0.1	25.3	0.7	1.5	0.3	8.7	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.1	1.1	1.2	2.1	17.2	0.7	4.8	1.1	4.9	2.6	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.8	17.0	17.0	45.9	18.0	52.4	45.3	38.4	33.8	49.0	27.9	26.8
LnGrp LOS	D	B	B	D	B	D	D	D	C	D	C	C
Approach Vol, veh/h		297			1050			568			770	
Approach Delay, s/veh		28.8			41.5			38.7			38.6	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.5	22.8	9.3	45.8	8.7	31.6	9.7	45.4				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	15.4	36.2	6.4	41.2	5.4	46.2	7.4	40.2				
Max Q Clear Time (g_c+I1), s	12.7	13.3	4.8	4.9	3.7	8.5	5.3	39.0				
Green Ext Time (p_c), s	0.2	2.8	0.0	0.9	0.0	2.1	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay				38.7								
HCM 6th LOS				D								

Timings
9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
04/28/2021

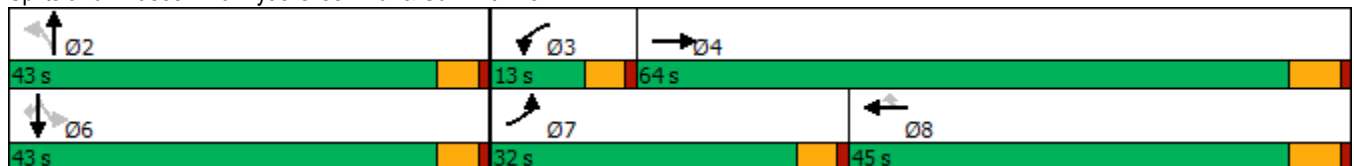


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖	↗	↖	↗	↗
Traffic Volume (vph)	191	411	56	860	89	66	135	82	95	256
Future Volume (vph)	191	411	56	860	89	66	135	82	95	256
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8			2		6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	9.6	28.8	28.8	33.7	33.7	31.7	31.7	31.7
Total Split (s)	32.0	64.0	13.0	45.0	45.0	43.0	43.0	43.0	43.0	43.0
Total Split (%)	26.7%	53.3%	10.8%	37.5%	37.5%	35.8%	35.8%	35.8%	35.8%	35.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None
Act Effct Green (s)	14.0	36.9	7.1	27.3	27.3	14.3	14.3	14.3	14.3	14.3
Actuated g/C Ratio	0.20	0.52	0.10	0.38	0.38	0.20	0.20	0.20	0.20	0.20
v/c Ratio	0.61	0.29	0.35	0.70	0.15	0.29	0.50	0.43	0.28	0.52
Control Delay	36.6	10.8	41.3	22.5	4.6	31.0	31.6	35.9	29.6	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.6	10.8	41.3	22.5	4.6	31.0	31.6	35.9	29.6	8.0
LOS	D	B	D	C	A	C	C	D	C	A
Approach Delay		18.3		21.9			31.4		18.0	
Approach LOS		B		C			C		B	

Intersection Summary

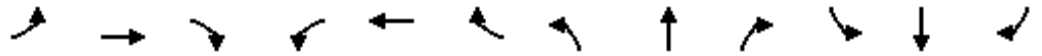
Cycle Length: 120
 Actuated Cycle Length: 71.4
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 21.1
 Intersection LOS: C
 Intersection Capacity Utilization 69.3%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 9: Lytle Creek Rd. & Summit Ave.



HCM 6th Signalized Intersection Summary
 9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
 04/28/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖	↖	↗		↖	↗	↖
Traffic Volume (veh/h)	191	411	57	56	860	89	66	135	33	82	95	256
Future Volume (veh/h)	191	411	57	56	860	89	66	135	33	82	95	256
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	210	452	55	62	945	88	73	148	32	90	104	244
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	262	1491	181	96	1330	593	307	336	73	289	423	358
Arrive On Green	0.15	0.47	0.47	0.05	0.37	0.37	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1781	3190	386	1781	3554	1585	1031	1485	321	1202	1870	1581
Grp Volume(v), veh/h	210	251	256	62	945	88	73	0	180	90	104	244
Grp Sat Flow(s),veh/h/ln	1781	1777	1800	1781	1777	1585	1031	0	1807	1202	1870	1581
Q Serve(g_s), s	6.8	5.2	5.3	2.0	13.5	2.2	3.7	0.0	5.1	4.2	2.7	8.4
Cycle Q Clear(g_c), s	6.8	5.2	5.3	2.0	13.5	2.2	6.5	0.0	5.1	9.3	2.7	8.4
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	262	830	841	96	1330	593	307	0	409	289	423	358
V/C Ratio(X)	0.80	0.30	0.30	0.65	0.71	0.15	0.24	0.00	0.44	0.31	0.25	0.68
Avail Cap(c_a), veh/h	817	1731	1753	250	2332	1040	735	0	1158	788	1199	1013
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	9.9	9.9	27.7	15.9	12.4	21.6	0.0	19.9	23.8	18.9	21.2
Incr Delay (d2), s/veh	2.2	0.2	0.2	2.7	0.7	0.1	0.4	0.0	0.7	0.6	0.3	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	1.6	1.6	0.9	4.5	0.7	0.9	0.0	2.1	1.2	1.1	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.8	10.1	10.1	30.4	16.7	12.5	22.0	0.0	20.6	24.5	19.2	23.5
LnGrp LOS	C	B	B	C	B	B	C	A	C	C	B	C
Approach Vol, veh/h		717			1095			253			438	
Approach Delay, s/veh		15.0			17.1			21.0			22.7	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.2	7.8	33.7		18.2	13.4	28.2				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 38	8.4	58.2		* 38	27.4	39.2				
Max Q Clear Time (g_c+I1), s		8.5	4.0	7.3		11.3	8.8	15.5				
Green Ext Time (p_c), s		1.4	0.0	2.9		1.8	0.2	6.8				

Intersection Summary

HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B

Notes

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

Intersection												
Intersection Delay, s/veh	512.2											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔		↔			
Traffic Vol, veh/h	25	257	814	52	262	6	1133	9	35	15	64	84
Future Vol, veh/h	25	257	814	52	262	6	1133	9	35	15	64	84
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	268	848	54	273	6	1180	9	36	16	67	88
Number of Lanes	0	1	0	0	1	0	1	0	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	461.5	36	688.8
HCM LOS	F	E	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	2%	16%
Vol Thru, %	0%	20%	23%	82%
Vol Right, %	0%	80%	74%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1133	44	1096	320
LT Vol	1133	0	25	52
Through Vol	0	9	257	262
RT Vol	0	35	814	6
Lane Flow Rate	1180	46	1142	333
Geometry Grp	7	7	2	2
Degree of Util (X)	2.529	0.085	1.957	0.653
Departure Headway (Hd)	9.304	8.204	9.397	12.396
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	401	440	400	297
Service Time	7.004	5.904	7.397	10.396
HCM Lane V/C Ratio	2.943	0.105	2.855	1.121
HCM Control Delay	715.1	11.7	461.5	36
HCM Lane LOS	F	B	F	E
HCM 95th-tile Q	78.6	0.3	51.3	4.2

Timings
13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
04/29/2021

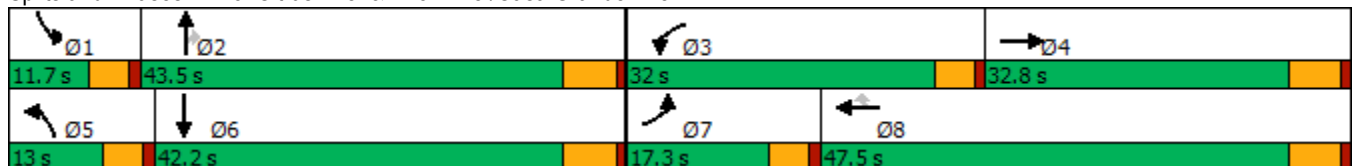


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↗	↖	↑↑	↗	↖	↖↗
Traffic Volume (vph)	87	28	344	48	110	89	536	159	40	830
Future Volume (vph)	87	28	344	48	110	89	536	159	40	830
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	30.8	30.8	9.6	26.8	26.8	9.6	22.8
Total Split (s)	17.3	32.8	32.0	47.5	47.5	13.0	43.5	43.5	11.7	42.2
Total Split (%)	14.4%	27.3%	26.7%	39.6%	39.6%	10.8%	36.3%	36.3%	9.8%	35.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	9.3	10.7	23.9	23.5	23.5	8.2	38.6	38.6	6.5	31.7
Actuated g/C Ratio	0.10	0.12	0.26	0.26	0.26	0.09	0.42	0.42	0.07	0.35
v/c Ratio	0.51	0.30	0.77	0.10	0.24	0.59	0.37	0.22	0.33	0.78
Control Delay	53.3	25.9	46.1	29.9	7.6	61.4	22.1	4.5	53.1	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.3	25.9	46.1	29.9	7.6	61.4	22.1	4.5	53.1	33.0
LOS	D	C	D	C	A	E	C	A	D	C
Approach Delay		41.4		36.1			23.0			33.8
Approach LOS		D		D			C			C

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 91.4
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 31.3
 Intersection LOS: C
 Intersection Capacity Utilization 69.6%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 13: Citrus Ave. & Knox Ave./Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	28	39	344	48	110	89	536	159	40	830	79
Future Volume (veh/h)	87	28	39	344	48	110	89	536	159	40	830	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	91	29	30	358	50	87	93	558	160	42	865	79
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	113	117	399	548	464	119	1253	557	67	1064	97
Arrive On Green	0.07	0.13	0.13	0.22	0.29	0.29	0.07	0.35	0.35	0.04	0.32	0.32
Sat Flow, veh/h	1781	837	866	1781	1870	1583	1781	3554	1581	1781	3292	301
Grp Volume(v), veh/h	91	0	59	358	50	87	93	558	160	42	467	477
Grp Sat Flow(s),veh/h/ln	1781	0	1703	1781	1870	1583	1781	1777	1581	1781	1777	1816
Q Serve(g_s), s	4.2	0.0	2.6	16.1	1.6	3.4	4.3	10.0	6.0	1.9	20.0	20.0
Cycle Q Clear(g_c), s	4.2	0.0	2.6	16.1	1.6	3.4	4.3	10.0	6.0	1.9	20.0	20.0
Prop In Lane	1.00		0.51	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	117	0	229	399	548	464	119	1253	557	67	574	587
V/C Ratio(X)	0.78	0.00	0.26	0.90	0.09	0.19	0.78	0.45	0.29	0.63	0.81	0.81
Avail Cap(c_a), veh/h	273	0	556	590	943	798	181	1620	720	153	782	799
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	0.0	32.1	31.2	21.3	21.9	38.0	20.6	19.3	39.2	25.7	25.7
Incr Delay (d2), s/veh	4.1	0.0	0.6	9.2	0.1	0.2	5.4	0.2	0.3	3.6	4.8	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	1.0	7.4	0.7	1.2	1.9	3.8	2.1	0.9	8.3	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.2	0.0	32.7	40.3	21.3	22.1	43.4	20.8	19.6	42.9	30.5	30.4
LnGrp LOS	D	A	C	D	C	C	D	C	B	D	C	C
Approach Vol, veh/h		150			495			811			986	
Approach Delay, s/veh		38.4			35.2			23.2			30.9	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.7	35.0	23.1	16.9	10.1	32.5	10.0	30.0				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.1	37.7	27.4	27.0	8.4	36.4	12.7	41.7				
Max Q Clear Time (g_c+I1), s	3.9	12.0	18.1	4.6	6.3	22.0	6.2	5.4				
Green Ext Time (p_c), s	0.0	4.1	0.4	0.2	0.0	4.8	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay			29.7									
HCM 6th LOS			C									

Timings
14: Citrus Ave. & Summit Ave.

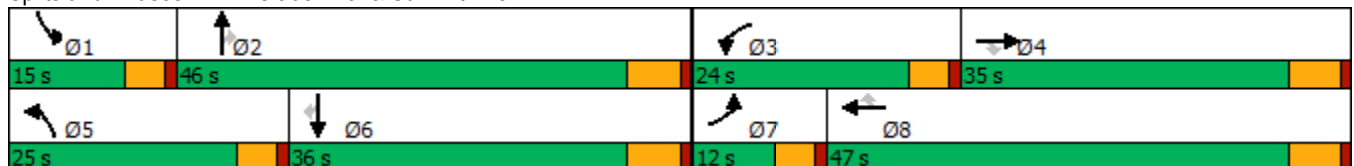
Ventana (JN 13769)
04/28/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	178	202	171	294	108	752	263	114	155	484	162
Future Volume (vph)	70	178	202	171	294	108	752	263	114	155	484	162
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	34.8	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	12.0	35.0	35.0	24.0	47.0	47.0	25.0	46.0	46.0	15.0	36.0	36.0
Total Split (%)	10.0%	29.2%	29.2%	20.0%	39.2%	39.2%	20.8%	38.3%	38.3%	12.5%	30.0%	30.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	7.0	11.3	11.3	13.8	20.3	20.3	20.5	40.3	40.3	10.4	30.3	30.3
Actuated g/C Ratio	0.07	0.12	0.12	0.14	0.21	0.21	0.21	0.42	0.42	0.11	0.31	0.31
v/c Ratio	0.57	0.45	0.57	0.70	0.41	0.25	2.09	0.19	0.16	0.85	0.45	0.27
Control Delay	63.0	44.2	12.6	55.0	35.5	3.6	525.3	19.2	2.3	79.7	29.1	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.0	44.2	12.6	55.0	35.5	3.6	525.3	19.2	2.3	79.7	29.1	4.0
LOS	E	D	B	D	D	A	F	B	A	E	C	A
Approach Delay		32.9			35.3			354.4			33.8	
Approach LOS		C			D			F			C	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 96.7
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 2.09
 Intersection Signal Delay: 156.6
 Intersection LOS: F
 Intersection Capacity Utilization 91.7%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/28/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	178	202	171	294	108	752	263	114	155	484	162
Future Volume (veh/h)	70	178	202	171	294	108	752	263	114	155	484	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	73	185	177	178	306	103	783	274	104	161	504	162
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	536	238	211	771	343	372	1461	637	190	1098	490
Arrive On Green	0.05	0.15	0.15	0.12	0.22	0.22	0.21	0.41	0.41	0.11	0.31	0.31
Sat Flow, veh/h	1781	3554	1576	1781	3554	1583	1781	3554	1550	1781	3554	1585
Grp Volume(v), veh/h	73	185	177	178	306	103	783	274	104	161	504	162
Grp Sat Flow(s),veh/h/ln	1781	1777	1576	1781	1777	1583	1781	1777	1550	1781	1777	1585
Q Serve(g_s), s	4.0	4.6	10.5	9.6	7.2	5.3	20.4	4.8	4.1	8.7	11.2	7.7
Cycle Q Clear(g_c), s	4.0	4.6	10.5	9.6	7.2	5.3	20.4	4.8	4.1	8.7	11.2	7.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	94	536	238	211	771	343	372	1461	637	190	1098	490
V/C Ratio(X)	0.78	0.35	0.74	0.84	0.40	0.30	2.11	0.19	0.16	0.85	0.46	0.33
Avail Cap(c_a), veh/h	135	1062	471	354	1498	667	372	1461	637	190	1098	490
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	37.2	39.7	42.2	32.8	32.1	38.7	18.4	18.2	42.9	27.2	26.0
Incr Delay (d2), s/veh	9.6	0.4	4.6	3.7	0.3	0.5	506.9	0.3	0.5	27.6	1.4	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.9	4.2	4.2	3.0	2.0	60.8	1.9	1.5	5.1	4.7	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.4	37.6	44.3	45.9	33.1	32.5	545.6	18.6	18.7	70.5	28.6	27.8
LnGrp LOS	E	D	D	D	C	C	F	B	B	E	C	C
Approach Vol, veh/h		435			587			1161			827	
Approach Delay, s/veh		43.3			36.9			374.0			36.6	
Approach LOS		D			D			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	46.0	16.2	20.5	25.0	36.0	9.7	27.0				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	10.4	40.2	19.4	29.2	20.4	30.2	7.4	41.2				
Max Q Clear Time (g_c+I1), s	10.7	6.8	11.6	12.5	22.4	13.2	6.0	9.2				
Green Ext Time (p_c), s	0.0	2.0	0.1	1.4	0.0	3.3	0.0	2.2				
Intersection Summary												
HCM 6th Ctrl Delay			167.8									
HCM 6th LOS			F									

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

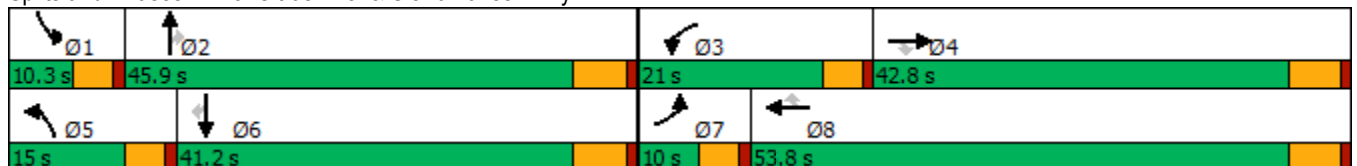
Ventana (JN 13769)
04/28/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	280	428	638	222	111	859	476	779	132	801	75
Future Volume (vph)	66	280	428	638	222	111	859	476	779	132	801	75
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	42.8	42.8	9.6	39.8	39.8	9.6	39.8	39.8	9.6	39.8	39.8
Total Split (s)	10.0	42.8	42.8	21.0	53.8	53.8	15.0	45.9	45.9	10.3	41.2	41.2
Total Split (%)	8.3%	35.7%	35.7%	17.5%	44.8%	44.8%	12.5%	38.3%	38.3%	8.6%	34.3%	34.3%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	5.3	26.8	26.8	16.5	40.2	40.2	10.5	40.3	40.3	5.7	35.6	35.6
Actuated g/C Ratio	0.05	0.24	0.24	0.15	0.36	0.36	0.10	0.37	0.37	0.05	0.32	0.32
v/c Ratio	0.43	0.35	0.89	1.35	0.19	0.18	2.87	0.40	1.00	0.80	0.76	0.13
Control Delay	62.1	34.9	42.3	207.5	24.4	2.4	870.5	28.5	49.0	84.5	40.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.1	34.9	42.3	207.5	24.4	2.4	870.5	28.5	49.0	84.5	40.1	0.4
LOS	E	C	D	F	C	A	F	C	D	F	D	A
Approach Delay		41.3			142.1			378.3			42.9	
Approach LOS		D			F			F			D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 110.3
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 2.87
 Intersection Signal Delay: 208.1
 Intersection LOS: F
 Intersection Capacity Utilization 92.7%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/28/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	280	428	638	222	111	859	476	779	132	801	75
Future Volume (veh/h)	66	280	428	638	222	111	859	476	779	132	801	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	72	304	379	693	241	94	934	517	748	143	871	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	958	426	499	1331	594	316	1254	558	173	1107	494
Arrive On Green	0.04	0.27	0.27	0.14	0.37	0.37	0.09	0.35	0.35	0.05	0.31	0.31
Sat Flow, veh/h	3456	3554	1580	3456	3554	1585	3456	3554	1582	3456	3554	1585
Grp Volume(v), veh/h	72	304	379	693	241	94	934	517	748	143	871	71
Grp Sat Flow(s),veh/h/ln	1728	1777	1580	1728	1777	1585	1728	1777	1582	1728	1777	1585
Q Serve(g_s), s	2.3	7.8	26.2	16.4	5.2	4.5	10.4	12.5	40.1	4.7	25.4	3.7
Cycle Q Clear(g_c), s	2.3	7.8	26.2	16.4	5.2	4.5	10.4	12.5	40.1	4.7	25.4	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	136	958	426	499	1331	594	316	1254	558	173	1107	494
V/C Ratio(X)	0.53	0.32	0.89	1.39	0.18	0.16	2.95	0.41	1.34	0.83	0.79	0.14
Avail Cap(c_a), veh/h	164	1157	514	499	1501	669	316	1254	558	173	1107	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	33.1	39.9	48.6	23.8	23.6	51.6	27.9	36.8	53.5	35.7	28.2
Incr Delay (d2), s/veh	1.2	0.2	15.3	187.4	0.1	0.1	887.7	0.2	164.7	25.2	3.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	3.3	11.5	19.8	2.1	1.6	43.4	5.1	40.1	2.6	11.1	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	33.3	55.2	236.1	23.9	23.8	939.3	28.1	201.5	78.7	39.5	28.3
LnGrp LOS	D	C	E	F	C	C	F	C	F	E	D	C
Approach Vol, veh/h		755			1028			2199			1085	
Approach Delay, s/veh		46.3			166.9			474.1			44.0	
Approach LOS		D			F			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.3	45.9	21.0	36.5	15.0	41.2	9.1	48.4				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	5.7	40.1	16.4	37.0	10.4	35.4	5.4	48.0				
Max Q Clear Time (g_c+I1), s	6.7	42.1	18.4	28.2	12.4	27.4	4.3	7.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.1	0.0	3.5	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay			255.9									
HCM 6th LOS			F									

Intersection	
Intersection Delay, s/veh	482.5
Intersection LOS	F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	127	708	634	204	1021	736
Future Vol, veh/h	127	708	634	204	1021	736
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	138	770	689	222	1110	800
Number of Lanes	1	1	2	0	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left NB			WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right SB		WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay	577.3	221.9	561.8
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	51%	0%	0%	0%	100%	100%
Vol Right, %	0%	49%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	423	415	127	708	1021	368	368
LT Vol	0	0	127	0	1021	0	0
Through Vol	423	211	0	0	0	368	368
RT Vol	0	204	0	708	0	0	0
Lane Flow Rate	459	451	138	770	1110	400	400
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	1.35	1.283	0.472	2.375	2.965	1.013	0.821
Departure Headway (Hd)	19.484	19.114	20.944	19.713	12.362	11.834	10.001
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	193	194	174	192	311	312	364
Service Time	17.184	16.814	18.644	17.413	10.062	9.534	7.701
HCM Lane V/C Ratio	2.378	2.325	0.793	4.01	3.569	1.282	1.099
HCM Control Delay	235.2	208.3	41.1	673.5	917.6	91	45.3
HCM Lane LOS	F	F	E	F	F	F	E
HCM 95th-tile Q	14.5	13.4	2.2	35.9	75.8	11	7.2

Intersection						
Int Delay, s/veh	21.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	102	122	42	590	1261	43
Future Vol, veh/h	102	122	42	590	1261	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	124	43	602	1287	44

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1997	1309	1331	0	-	0
Stage 1	1309	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 66	195	519	-	-	-
Stage 1	253	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 61	195	519	-	-	-
Mov Cap-2 Maneuver	168	-	-	-	-	-
Stage 1	232	-	-	-	-	-
Stage 2	499	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	202.7	0.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	519	-	182	-	-
HCM Lane V/C Ratio	0.083	-	1.256	-	-
HCM Control Delay (s)	12.6	-	202.7	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.3	-	12.6	-	-

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

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/28/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	94	387	322	627	1242	146
Future Volume (vph)	94	387	322	627	1242	146
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	44.8	9.6	16.5	29.5	29.5
Total Split (s)	44.8	44.8	30.0	75.2	45.2	45.2
Total Split (%)	37.3%	37.3%	25.0%	62.7%	37.7%	37.7%
Yellow Time (s)	4.8	4.8	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	6.5	6.5	6.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effct Green (s)	12.7	12.7	25.4	68.8	38.8	38.8
Actuated g/C Ratio	0.14	0.14	0.27	0.73	0.41	0.41
v/c Ratio	0.46	0.76	0.78	0.28	0.99	0.25
Control Delay	43.5	13.9	45.3	4.9	49.3	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	13.9	45.3	4.9	49.3	14.0
LOS	D	B	D	A	D	B
Approach Delay	19.6			18.6	45.6	
Approach LOS	B			B	D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 93.8
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 32.1
 Intersection LOS: C
 Intersection Capacity Utilization 74.6%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/28/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	94	387	322	627	1242	146
Future Volume (veh/h)	94	387	322	627	1242	146
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	109	450	374	729	1444	170
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	538	479	390	2104	1185	529
Arrive On Green	0.30	0.30	0.22	0.59	0.33	0.33
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	109	450	374	729	1444	170
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	5.3	32.1	24.1	12.2	38.7	9.3
Cycle Q Clear(g_c), s	5.3	32.1	24.1	12.2	38.7	9.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	538	479	390	2104	1185	529
V/C Ratio(X)	0.20	0.94	0.96	0.35	1.22	0.32
Avail Cap(c_a), veh/h	599	533	390	2104	1185	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	39.5	44.8	12.2	38.7	28.9
Incr Delay (d2), s/veh	0.2	23.7	35.0	0.5	106.2	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	27.8	13.8	4.3	33.0	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.3	63.2	79.8	12.6	144.9	30.5
LnGrp LOS	C	E	E	B	F	C
Approach Vol, veh/h	559			1103	1614	
Approach Delay, s/veh	56.8			35.4	132.8	
Approach LOS	E			D	F	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		75.2		40.9	30.0	45.2
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	25.4	38.7
Max Q Clear Time (g_c+11), s		14.2		34.1	26.1	40.7
Green Ext Time (p_c), s		4.8		0.9	0.0	0.0
Intersection Summary						
HCM 6th Ctrl Delay			87.0			
HCM 6th LOS			F			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

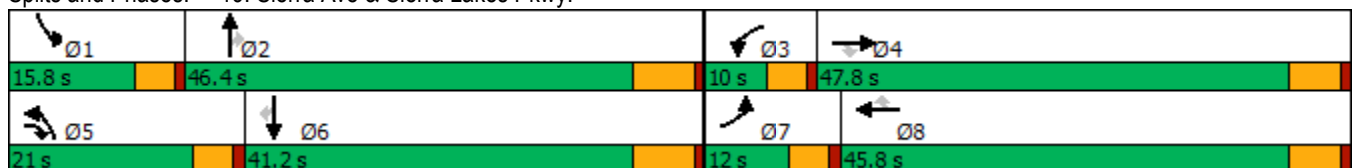
Ventana (JN 13769)
04/28/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	195	580	166	224	284	639	768	312	306	1330	233
Future Volume (vph)	142	195	580	166	224	284	639	768	312	306	1330	233
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	12.0	47.8	21.0	10.0	45.8	45.8	21.0	46.4	46.4	15.8	41.2	41.2
Total Split (%)	10.0%	39.8%	17.5%	8.3%	38.2%	38.2%	17.5%	38.7%	38.7%	13.2%	34.3%	34.3%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.2	15.1	37.3	5.4	13.3	13.3	16.4	40.0	40.0	11.2	34.8	34.8
Actuated g/C Ratio	0.08	0.16	0.40	0.06	0.14	0.14	0.18	0.43	0.43	0.12	0.37	0.37
v/c Ratio	0.59	0.37	0.94	0.91	0.49	0.70	1.16	0.39	0.40	0.81	0.77	0.34
Control Delay	51.8	36.4	47.4	91.0	40.0	16.9	126.0	19.3	3.6	57.5	29.6	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.8	36.4	47.4	91.0	40.0	16.9	126.0	19.3	3.6	57.5	29.6	4.3
LOS	D	D	D	F	D	B	F	B	A	E	C	A
Approach Delay		45.8			42.8			56.1			31.0	
Approach LOS		D			D			E			C	

Intersection Summary



































Cycle Length: 120
 Actuated Cycle Length: 93.2
 Natural Cycle: 140
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.16
 Intersection Signal Delay: 43.5
 Intersection LOS: D
 Intersection Capacity Utilization 79.4%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/28/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		 	  	
Traffic Volume (veh/h)	142	195	580	166	224	284	639	768	312	306	1330	233
Future Volume (veh/h)	142	195	580	166	224	284	639	768	312	306	1330	233
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	156	214	517	182	246	260	702	844	310	336	1462	229
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	1089	718	167	1040	463	506	1805	559	346	1568	487
Arrive On Green	0.06	0.31	0.31	0.05	0.29	0.29	0.15	0.35	0.35	0.10	0.31	0.31
Sat Flow, veh/h	3456	3554	1585	3456	3554	1582	3456	5106	1581	3456	5106	1585
Grp Volume(v), veh/h	156	214	517	182	246	260	702	844	310	336	1462	229
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1582	1728	1702	1581	1728	1702	1585
Q Serve(g_s), s	5.0	5.0	29.7	5.4	5.9	15.6	16.4	14.3	17.7	10.9	31.1	13.1
Cycle Q Clear(g_c), s	5.0	5.0	29.7	5.4	5.9	15.6	16.4	14.3	17.7	10.9	31.1	13.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	214	1089	718	167	1040	463	506	1805	559	346	1568	487
V/C Ratio(X)	0.73	0.20	0.72	1.09	0.24	0.56	1.39	0.47	0.55	0.97	0.93	0.47
Avail Cap(c_a), veh/h	228	1333	826	167	1269	565	506	1819	563	346	1582	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.6	28.7	24.9	53.3	30.1	33.5	47.8	28.0	29.1	50.2	37.7	31.4
Incr Delay (d2), s/veh	8.9	0.1	2.6	96.6	0.1	1.1	186.2	0.2	1.2	40.7	10.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.1	10.8	4.5	2.5	5.9	19.8	5.5	6.6	6.4	13.5	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.5	28.8	27.5	149.9	30.2	34.6	234.0	28.2	30.3	90.9	48.1	32.1
LnGrp LOS	E	C	C	F	C	C	F	C	C	F	D	C
Approach Vol, veh/h		887			688			1856			2027	
Approach Delay, s/veh		33.6			63.5			106.4			53.4	
Approach LOS		C			E			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.8	46.1	10.0	40.1	21.0	40.9	11.5	38.6				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	11.2	39.9	5.4	42.0	16.4	34.7	7.4	40.0				
Max Q Clear Time (g_c+I1), s	12.9	19.7	7.4	31.7	18.4	33.1	7.0	17.6				
Green Ext Time (p_c), s	0.0	6.1	0.0	2.4	0.0	1.3	0.0	2.2				
Intersection Summary												
HCM 6th Ctrl Delay			69.5									
HCM 6th LOS			E									

Intersection	
Intersection Delay, s/veh	46.4
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕		↘	↕		↘	↕	↘	↘	↕	↘
Traffic Vol, veh/h	70	377	18	172	356	335	11	5	136	200	2	38
Future Vol, veh/h	70	377	18	172	356	335	11	5	136	200	2	38
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	80	433	21	198	409	385	13	6	156	230	2	44
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	25.5	67.6	18.6	28.3
HCM LOS	D	F	C	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	87%	0%	100%	26%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	13%	0%	0%	74%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	11	5	136	70	251	144	172	237	454	200	2
LT Vol	11	0	0	70	0	0	172	0	0	200	0
Through Vol	0	5	0	0	251	126	0	237	119	0	2
RT Vol	0	0	136	0	0	18	0	0	335	0	0
Lane Flow Rate	13	6	156	80	289	165	198	273	521	230	2
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.038	0.016	0.415	0.214	0.728	0.412	0.483	0.629	1.128	0.658	0.006
Departure Headway (Hd)	10.927	10.427	9.727	9.569	9.078	8.992	8.803	8.303	7.787	10.499	9.999
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	330	345	372	374	399	400	409	436	469	347	360
Service Time	8.627	8.127	7.427	7.345	6.845	6.757	6.547	6.047	5.53	8.199	7.699
HCM Lane V/C Ratio	0.039	0.017	0.419	0.214	0.724	0.412	0.484	0.626	1.111	0.663	0.006
HCM Control Delay	14.1	13.3	19.2	15	32.8	18	19.5	24.2	108.6	31.3	12.8
HCM Lane LOS	B	B	C	B	D	C	C	C	F	D	B
HCM 95th-tile Q	0.1	0	2	0.8	5.6	2	2.6	4.2	18.1	4.4	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	714	854	41	0	9
Future Vol, veh/h	0	714	854	41	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	760	909	44	0	10

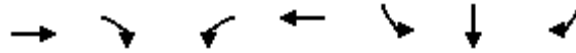
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	477
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	0	534
Stage 1	0	-	-	0	-
Stage 2	0	-	-	0	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	534
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	534
HCM Lane V/C Ratio	-	-	-	0.018
HCM Control Delay (s)	-	-	-	11.9
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Timings
3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

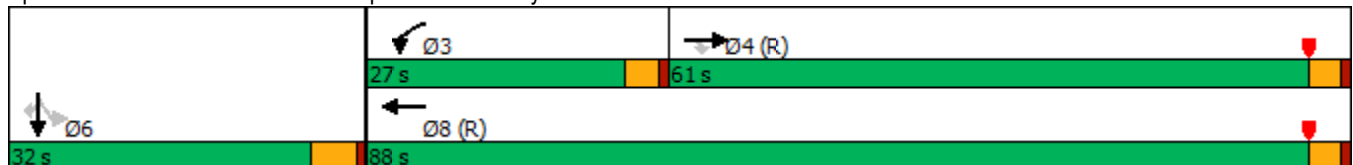


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↔	↑↑	↔	↔	↔
Traffic Volume (vph)	433	281	440	789	261	0	106
Future Volume (vph)	433	281	440	789	261	0	106
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8		6	
Permitted Phases		4			6		6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	34.0	34.0	12.0	29.0	13.0	13.0	13.0
Total Split (s)	61.0	61.0	27.0	88.0	32.0	32.0	32.0
Total Split (%)	50.8%	50.8%	22.5%	73.3%	26.7%	26.7%	26.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effct Green (s)	68.9	68.9	22.0	94.8	16.2	16.2	16.2
Actuated g/C Ratio	0.57	0.57	0.18	0.79	0.14	0.14	0.14
v/c Ratio	0.24	0.30	0.78	0.31	0.64	0.64	0.38
Control Delay	14.3	2.6	48.5	5.1	61.3	61.3	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	2.6	48.5	5.1	61.3	61.3	11.0
LOS	B	A	D	A	E	E	B
Approach Delay	9.7			20.6		46.8	
Approach LOS	A			C		D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 21.4
 Intersection LOS: C
 Intersection Capacity Utilization 69.0%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 3: I-15 SB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 3: I-15 SB Ramp & Duncan Canyon Rd.

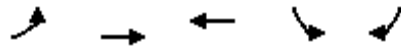
Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↘↗	↑↑					↘	↗	↗
Traffic Volume (veh/h)	0	433	281	440	789	0	0	0	0	261	0	106
Future Volume (veh/h)	0	433	281	440	789	0	0	0	0	261	0	106
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	481	295	489	877	0				290	0	92
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	2229	994	548	2911	0				377	0	165
Arrive On Green	0.00	0.63	0.63	0.32	1.00	0.00				0.11	0.00	0.11
Sat Flow, veh/h	0	3647	1585	3456	3647	0				3563	0	1563
Grp Volume(v), veh/h	0	481	295	489	877	0				290	0	92
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1563
Q Serve(g_s), s	0.0	7.0	10.2	16.2	0.0	0.0				9.5	0.0	6.7
Cycle Q Clear(g_c), s	0.0	7.0	10.2	16.2	0.0	0.0				9.5	0.0	6.7
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2229	994	548	2911	0				377	0	165
V/C Ratio(X)	0.00	0.22	0.30	0.89	0.30	0.00				0.77	0.00	0.56
Avail Cap(c_a), veh/h	0	2229	994	662	2911	0				802	0	352
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.77	0.77	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.6	10.2	40.0	0.0	0.0				52.2	0.0	51.0
Incr Delay (d2), s/veh	0.0	0.2	0.8	10.2	0.2	0.0				3.3	0.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.7	3.7	6.6	0.1	0.0				4.4	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	9.9	11.0	50.2	0.2	0.0				55.6	0.0	53.9
LnGrp LOS	A	A	B	D	A	A				E	A	D
Approach Vol, veh/h		776			1366						382	
Approach Delay, s/veh		10.3			18.1						55.2	
Approach LOS		B			B						E	
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			23.0	79.3		17.7		102.3				
Change Period (Y+Rc), s			4.0	4.0		5.0		4.0				
Max Green Setting (Gmax), s			23.0	57.0		27.0		84.0				
Max Q Clear Time (g_c+I1), s			18.2	12.2		11.5		2.0				
Green Ext Time (p_c), s			0.9	4.8		1.2		7.9				
Intersection Summary												
HCM 6th Ctrl Delay			21.3									
HCM 6th LOS			C									
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings
4: Beech Ave. & I-15 SB Ramps

Ventana (JN 13769)
04/29/2021

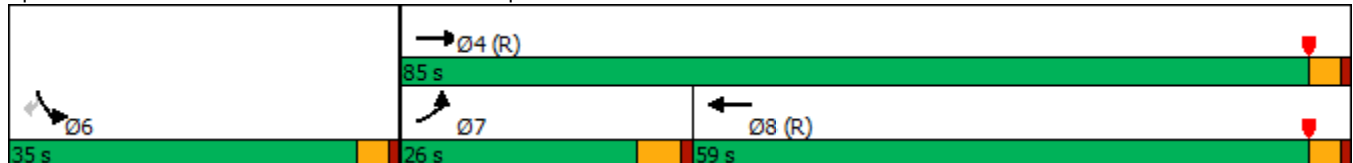


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations	↖	↗↗	↗↗	↖	↗
Traffic Volume (vph)	153	819	643	295	96
Future Volume (vph)	153	819	643	295	96
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	5.0	5.0
Minimum Split (s)	10.0	12.0	12.0	9.0	9.0
Total Split (s)	26.0	85.0	59.0	35.0	35.0
Total Split (%)	21.7%	70.8%	49.2%	29.2%	29.2%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	None	None
Act Effct Green (s)	16.0	86.3	65.3	25.7	25.7
Actuated g/C Ratio	0.13	0.72	0.54	0.21	0.21
v/c Ratio	0.69	0.34	0.72	0.83	0.24
Control Delay	64.4	7.2	47.9	63.2	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	64.4	7.2	47.9	63.2	8.2
LOS	E	A	D	E	A
Approach Delay		16.2	47.9	49.7	
Approach LOS		B	D	D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 36.6
 Intersection LOS: D
 Intersection Capacity Utilization 74.2%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 4: Beech Ave. & I-15 SB Ramps



HCM 6th Signalized Intersection Summary
 4: Beech Ave. & I-15 SB Ramps

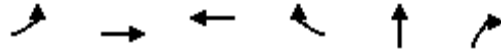
Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗		↙	↘	
Traffic Volume (veh/h)	153	819	643	646	295	96	
Future Volume (veh/h)	153	819	643	646	295	96	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	163	871	684	687	314	102	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	193	2620	1044	931	349	311	
Arrive On Green	0.11	0.74	0.98	0.98	0.20	0.20	
Sat Flow, veh/h	1781	3647	1870	1585	1781	1585	
Grp Volume(v), veh/h	163	871	684	687	314	102	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	10.8	10.2	2.5	3.6	20.6	6.6	
Cycle Q Clear(g_c), s	10.8	10.2	2.5	3.6	20.6	6.6	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	193	2620	1044	931	349	311	
V/C Ratio(X)	0.85	0.33	0.66	0.74	0.90	0.33	
Avail Cap(c_a), veh/h	312	2620	1044	931	460	409	
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.09	0.09	1.00	1.00	
Uniform Delay (d), s/veh	52.5	5.5	0.5	0.5	47.1	41.4	
Incr Delay (d2), s/veh	11.2	0.3	0.3	0.5	16.8	0.6	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	5.4	3.5	0.4	0.5	10.7	6.2	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	63.7	5.8	0.8	1.0	63.9	42.0	
LnGrp LOS	E	A	A	A	E	D	
Approach Vol, veh/h		1034	1371		416		
Approach Delay, s/veh		15.0	0.9		58.5		
Approach LOS		B	A		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				92.5	27.5	18.0	74.5
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				81.0	31.0	21.0	55.0
Max Q Clear Time (g_c+I1), s				12.2	22.6	12.8	5.6
Green Ext Time (p_c), s				7.8	0.9	0.3	15.1
Intersection Summary							
HCM 6th Ctrl Delay			14.5				
HCM 6th LOS			B				

Timings
5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

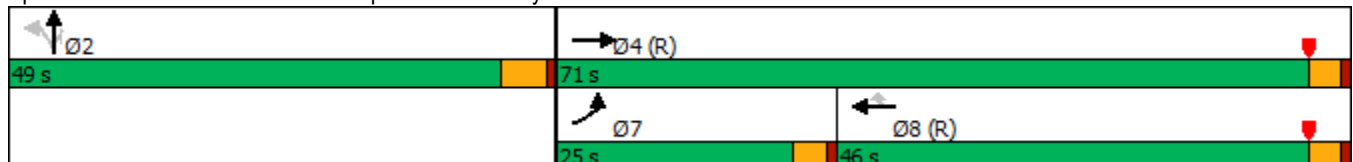


Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations	↖	↗↗	↗↗	↖	↖	↗↗
Traffic Volume (vph)	140	554	817	421	28	749
Future Volume (vph)	140	554	817	421	28	749
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8		2	
Permitted Phases				8		2
Detector Phase	7	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	30.0	36.0	36.0	13.0	13.0
Total Split (s)	25.0	71.0	46.0	46.0	49.0	49.0
Total Split (%)	20.8%	59.2%	38.3%	38.3%	40.8%	40.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	15.6	70.9	51.3	51.3	40.1	40.1
Actuated g/C Ratio	0.13	0.59	0.43	0.43	0.33	0.33
v/c Ratio	0.67	0.29	0.59	0.49	0.81	0.67
Control Delay	72.4	14.1	30.1	4.4	48.0	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.4	14.1	30.1	4.4	48.0	16.6
LOS	E	B	C	A	D	B
Approach Delay		25.9	21.4		28.2	
Approach LOS		C	C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 25.0
 Intersection LOS: C
 Intersection Capacity Utilization 69.0%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 5: I-15 NB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	554	0	0	817	421	412	28	749	0	0	0
Future Volume (veh/h)	140	554	0	0	817	421	412	28	749	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	154	609	0	0	898	451	453	31	815			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	181	2097	0	0	1618	721	560	38	915			
Arrive On Green	0.20	1.00	0.00	0.00	0.46	0.46	0.34	0.34	0.34			
Sat Flow, veh/h	1781	3647	0	0	3647	1585	1672	114	2731			
Grp Volume(v), veh/h	154	609	0	0	898	451	484	0	815			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1585	1787	0	1365			
Q Serve(g_s), s	10.0	0.0	0.0	0.0	22.1	26.0	29.6	0.0	33.9			
Cycle Q Clear(g_c), s	10.0	0.0	0.0	0.0	22.1	26.0	29.6	0.0	33.9			
Prop In Lane	1.00		0.00	0.00		1.00	0.94		1.00			
Lane Grp Cap(c), veh/h	181	2097	0	0	1618	721	599	0	915			
V/C Ratio(X)	0.85	0.29	0.00	0.00	0.56	0.63	0.81	0.00	0.89			
Avail Cap(c_a), veh/h	312	2097	0	0	1618	721	655	0	1001			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.95	0.95	0.00	0.00	0.93	0.93	1.00	0.00	1.00			
Uniform Delay (d), s/veh	47.0	0.0	0.0	0.0	23.8	24.9	36.4	0.0	37.8			
Incr Delay (d2), s/veh	10.2	0.3	0.0	0.0	1.3	3.8	6.9	0.0	9.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.5	0.1	0.0	0.0	9.5	10.4	13.9	0.0	12.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.2	0.3	0.0	0.0	25.1	28.7	43.3	0.0	47.3			
LnGrp LOS	E	A	A	A	C	C	D	A	D			
Approach Vol, veh/h		763			1349			1299				
Approach Delay, s/veh		11.8			26.3			45.8				
Approach LOS		B			C			D				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		45.2		74.8			16.2	58.6				
Change Period (Y+Rc), s		5.0		4.0			4.0	4.0				
Max Green Setting (Gmax), s		44.0		67.0			21.0	42.0				
Max Q Clear Time (g_c+I1), s		35.9		2.0			12.0	28.0				
Green Ext Time (p_c), s		4.3		4.9			0.2	6.9				
Intersection Summary												
HCM 6th Ctrl Delay				30.5								
HCM 6th LOS				C								

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021

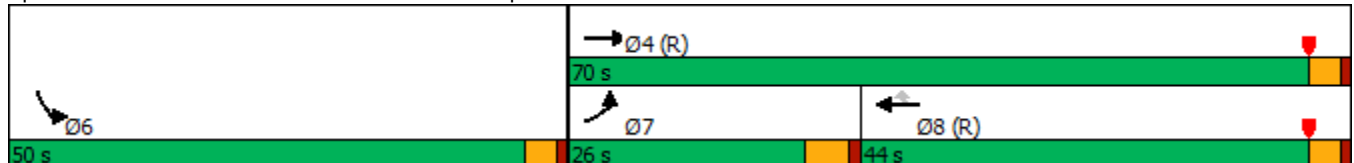


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↗	↑↑	↑↑	↖	↖↖
Traffic Volume (vph)	292	822	1075	548	1115
Future Volume (vph)	292	822	1075	548	1115
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	26.0	70.0	44.0	44.0	50.0
Total Split (%)	21.7%	58.3%	36.7%	36.7%	41.7%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	21.0	66.0	40.0	40.0	46.0
Actuated g/C Ratio	0.18	0.55	0.33	0.33	0.38
v/c Ratio	1.01	0.45	0.97	0.71	1.08
Control Delay	93.4	14.6	59.7	13.4	84.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	93.4	14.6	59.7	13.4	84.4
LOS	F	B	E	B	F
Approach Delay		35.3	44.1		84.4
Approach LOS		D	D		F

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.08
 Intersection Signal Delay: 54.8
 Intersection LOS: D
 Intersection Capacity Utilization 95.3%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗↗	↖	↘↘		
Traffic Volume (veh/h)	292	822	1075	548	1115	214	
Future Volume (veh/h)	292	822	1075	548	1115	214	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	311	874	1144	336	1341	0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	312	1955	1185	528	1366	608	
Arrive On Green	0.35	1.00	0.33	0.33	0.38	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	311	874	1144	336	1341	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	20.9	0.0	38.0	21.5	44.7	0.0	
Cycle Q Clear(g_c), s	20.9	0.0	38.0	21.5	44.7	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	312	1955	1185	528	1366	608	
V/C Ratio(X)	1.00	0.45	0.97	0.64	0.98	0.00	
Avail Cap(c_a), veh/h	312	1955	1185	528	1366	608	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.88	0.88	0.71	0.71	1.00	0.00	
Uniform Delay (d), s/veh	39.0	0.0	39.3	33.8	36.6	0.0	
Incr Delay (d2), s/veh	47.2	0.7	15.3	4.1	20.1	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	11.7	0.2	18.8	8.8	22.8	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	86.1	0.7	54.6	38.0	56.7	0.0	
LnGrp LOS	F	A	D	D	E	A	
Approach Vol, veh/h		1185	1480		1341		
Approach Delay, s/veh		23.1	50.8		56.7		
Approach LOS		C	D		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				70.0	50.0	26.0	44.0
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				66.0	46.0	21.0	40.0
Max Q Clear Time (g_c+I1), s				2.0	46.7	22.9	40.0
Green Ext Time (p_c), s				7.9	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	44.6
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

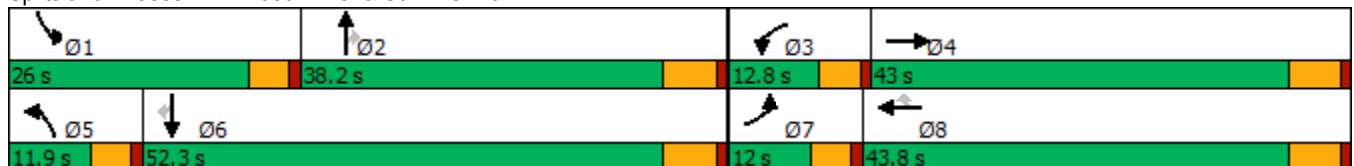
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	142	349	149	372	463	123	414	137	779	602	113
Future Volume (vph)	142	349	149	372	463	123	414	137	779	602	113
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	43.8	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	43.0	12.8	43.8	43.8	11.9	38.2	38.2	26.0	52.3	52.3
Total Split (%)	10.0%	35.8%	10.7%	36.5%	36.5%	9.9%	31.8%	31.8%	21.7%	43.6%	43.6%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	7.2	18.7	7.6	19.1	19.1	6.9	17.1	17.1	21.8	32.0	32.0
Actuated g/C Ratio	0.08	0.22	0.09	0.22	0.22	0.08	0.20	0.20	0.25	0.37	0.37
v/c Ratio	0.52	0.67	0.51	0.50	0.73	0.47	0.62	0.33	0.94	0.48	0.18
Control Delay	47.7	32.2	46.6	31.7	13.7	47.0	36.3	7.3	53.2	23.1	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	32.2	46.6	31.7	13.7	47.0	36.3	7.3	53.2	23.1	4.9
LOS	D	C	D	C	B	D	D	A	D	C	A
Approach Delay		35.7		25.5			32.4			37.4	
Approach LOS		D		C			C			D	

Intersection Summary
































Cycle Length: 120	
Actuated Cycle Length: 86.4	
Natural Cycle: 125	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 33.1	Intersection LOS: C
Intersection Capacity Utilization 75.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 7: Beech Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	142	349	143	149	372	463	123	414	137	779	602	113
Future Volume (veh/h)	142	349	143	149	372	463	123	414	137	779	602	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	148	364	124	155	388	390	128	431	103	811	627	87
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	215	770	258	223	1057	471	193	676	298	789	1288	573
Arrive On Green	0.06	0.30	0.30	0.06	0.30	0.30	0.06	0.19	0.19	0.23	0.36	0.36
Sat Flow, veh/h	3456	2609	876	3456	3554	1583	3456	3554	1565	3456	3554	1581
Grp Volume(v), veh/h	148	246	242	155	388	390	128	431	103	811	627	87
Grp Sat Flow(s),veh/h/ln	1728	1777	1707	1728	1777	1583	1728	1777	1565	1728	1777	1581
Q Serve(g_s), s	3.9	10.6	10.9	4.1	8.1	21.5	3.4	10.5	5.3	21.4	12.8	3.5
Cycle Q Clear(g_c), s	3.9	10.6	10.9	4.1	8.1	21.5	3.4	10.5	5.3	21.4	12.8	3.5
Prop In Lane	1.00		0.51	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	215	524	504	223	1057	471	193	676	298	789	1288	573
V/C Ratio(X)	0.69	0.47	0.48	0.69	0.37	0.83	0.66	0.64	0.35	1.03	0.49	0.15
Avail Cap(c_a), veh/h	273	705	677	302	1440	642	269	1228	541	789	1762	784
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	27.0	27.1	42.9	26.0	30.7	43.4	35.0	32.9	36.2	23.1	20.2
Incr Delay (d2), s/veh	2.9	0.7	0.7	1.9	0.2	6.5	1.4	1.0	0.7	39.5	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	4.5	4.5	1.8	3.4	8.8	1.5	4.6	2.1	13.1	5.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.9	27.7	27.8	44.8	26.2	37.2	44.8	36.0	33.6	75.6	23.4	20.3
LnGrp LOS	D	C	C	D	C	D	D	D	C	F	C	C
Approach Vol, veh/h		636			933			662			1525	
Approach Delay, s/veh		32.0			33.9			37.3			51.0	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.0	23.6	10.7	33.5	9.8	39.8	10.4	33.7				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	21.4	32.4	8.2	37.2	7.3	46.5	7.4	38.0				
Max Q Clear Time (g_c+I1), s	23.4	12.5	6.1	12.9	5.4	14.8	5.9	23.5				
Green Ext Time (p_c), s	0.0	3.1	0.1	3.1	0.0	5.1	0.0	3.5				
Intersection Summary												
HCM 6th Ctrl Delay				41.1								
HCM 6th LOS				D								

Timings
9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
04/29/2021

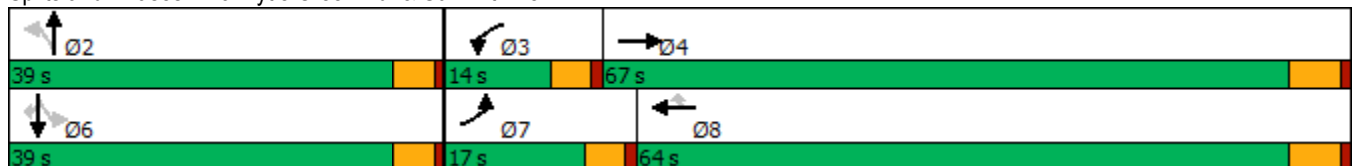


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↖	↕	↖	↕	↖
Traffic Volume (vph)	122	1389	66	1092	70	60	24	52	14	103
Future Volume (vph)	122	1389	66	1092	70	60	24	52	14	103
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8			2		6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	9.6	28.8	28.8	33.7	33.7	31.7	31.7	31.7
Total Split (s)	17.0	67.0	14.0	64.0	64.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	14.2%	55.8%	11.7%	53.3%	53.3%	32.5%	32.5%	32.5%	32.5%	32.5%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None
Act Effct Green (s)	10.8	49.7	7.8	43.8	43.8	11.4	11.4	11.4	11.4	11.4
Actuated g/C Ratio	0.13	0.61	0.10	0.54	0.54	0.14	0.14	0.14	0.14	0.14
v/c Ratio	0.57	0.74	0.43	0.63	0.09	0.34	0.34	0.32	0.06	0.36
Control Delay	47.8	14.6	48.1	14.6	3.9	42.4	18.3	42.2	37.1	11.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.8	14.6	48.1	14.6	3.9	42.4	18.3	42.2	37.1	11.7
LOS	D	B	D	B	A	D	B	D	D	B
Approach Delay		17.2		15.8			27.9		23.2	
Approach LOS		B		B			C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 81.8
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 17.5
 Intersection LOS: B
 Intersection Capacity Utilization 69.8%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 9: Lytle Creek Rd. & Summit Ave.



HCM 6th Signalized Intersection Summary
 9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗		↖	↗	↗
Traffic Volume (veh/h)	122	1389	53	66	1092	70	60	24	67	52	14	103
Future Volume (veh/h)	122	1389	53	66	1092	70	60	24	67	52	14	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.97	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	1526	51	73	1200	72	66	26	64	57	15	82
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	2010	67	94	1886	834	307	80	197	255	318	266
Arrive On Green	0.10	0.57	0.57	0.05	0.53	0.53	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1781	3508	117	1781	3554	1572	1285	470	1157	1294	1870	1565
Grp Volume(v), veh/h	134	771	806	73	1200	72	66	0	90	57	15	82
Grp Sat Flow(s),veh/h/ln	1781	1777	1848	1781	1777	1572	1285	0	1627	1294	1870	1565
Q Serve(g_s), s	5.4	24.2	24.4	3.0	17.7	1.7	3.4	0.0	3.6	3.0	0.5	3.4
Cycle Q Clear(g_c), s	5.4	24.2	24.4	3.0	17.7	1.7	3.8	0.0	3.6	6.6	0.5	3.4
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.71	1.00		1.00
Lane Grp Cap(c), veh/h	169	1018	1059	94	1886	834	307	0	277	255	318	266
V/C Ratio(X)	0.79	0.76	0.76	0.78	0.64	0.09	0.21	0.00	0.33	0.22	0.05	0.31
Avail Cap(c_a), veh/h	299	1470	1529	226	2796	1237	685	0	754	635	867	726
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.7	11.9	12.0	34.6	12.3	8.5	27.3	0.0	27.0	29.9	25.7	26.9
Incr Delay (d2), s/veh	3.1	1.4	1.4	5.1	0.4	0.0	0.3	0.0	0.7	0.4	0.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	8.4	8.8	1.4	6.2	0.5	1.0	0.0	1.4	0.9	0.2	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.9	13.3	13.3	39.7	12.7	8.6	27.6	0.0	27.6	30.3	25.7	27.5
LnGrp LOS	D	B	B	D	B	A	C	A	C	C	C	C
Approach Vol, veh/h		1711			1345			156			154	
Approach Delay, s/veh		15.1			13.9			27.6			28.4	
Approach LOS		B			B			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.3	8.5	48.2		17.3	11.6	45.0				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 34	9.4	61.2		* 34	12.4	58.2				
Max Q Clear Time (g_c+I1), s		5.8	5.0	26.4		8.6	7.4	19.7				
Green Ext Time (p_c), s		0.7	0.0	16.0		0.5	0.1	12.1				

Intersection Summary

HCM 6th Ctrl Delay	15.8
HCM 6th LOS	B

Notes

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

Intersection												
Intersection Delay, s/veh	476.3											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔		↔			
Traffic Vol, veh/h	83	248	973	22	320	18	868	29	34	10	17	50
Future Vol, veh/h	83	248	973	22	320	18	868	29	34	10	17	50
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	86	258	1014	23	333	19	904	30	35	10	18	52
Number of Lanes	0	1	0	0	1	0	1	0	1	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	631	39.8	428.5
HCM LOS	F	E	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	6%	6%
Vol Thru, %	0%	46%	19%	89%
Vol Right, %	0%	54%	75%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	868	63	1304	360
LT Vol	868	0	83	22
Through Vol	0	29	248	320
RT Vol	0	34	973	18
Lane Flow Rate	904	66	1358	375
Geometry Grp	7	7	2	2
Degree of Util (X)	1.948	0.125	2.346	0.73
Departure Headway (Hd)	9.925	9.005	8.258	11.384
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	380	401	462	323
Service Time	7.625	6.705	6.258	9.384
HCM Lane V/C Ratio	2.379	0.165	2.939	1.161
HCM Control Delay	458.7	13	631	39.8
HCM Lane LOS	F	B	F	E
HCM 95th-tile Q	48.5	0.4	78.2	5.4

Timings
13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
04/29/2021

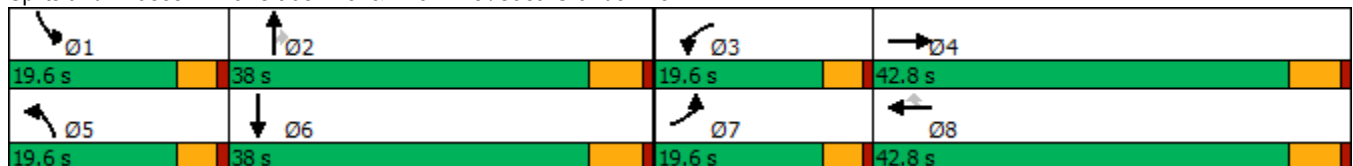


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↗	↖	↕	↗	↖	↕
Traffic Volume (vph)	69	43	259	41	55	54	1243	375	110	412
Future Volume (vph)	69	43	259	41	55	54	1243	375	110	412
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	30.8	30.8	9.6	26.8	26.8	9.6	22.8
Total Split (s)	19.6	42.8	19.6	42.8	42.8	19.6	38.0	38.0	19.6	38.0
Total Split (%)	16.3%	35.7%	16.3%	35.7%	35.7%	16.3%	31.7%	31.7%	16.3%	31.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	7.9	10.4	15.5	16.2	16.2	7.3	33.2	33.2	9.8	35.5
Actuated g/C Ratio	0.10	0.13	0.19	0.20	0.20	0.09	0.40	0.40	0.12	0.43
v/c Ratio	0.42	0.25	0.81	0.12	0.14	0.36	0.90	0.51	0.54	0.33
Control Delay	46.0	32.1	56.2	32.7	1.7	45.1	37.0	13.3	46.5	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.0	32.1	56.2	32.7	1.7	45.1	37.0	13.3	46.5	18.0
LOS	D	C	E	C	A	D	D	B	D	B
Approach Delay		39.7		45.0			32.0			23.4
Approach LOS		D		D			C			C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 82.8
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 32.2
 Intersection LOS: C
 Intersection Capacity Utilization 75.0%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 13: Citrus Ave. & Knox Ave./Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
 04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	43	15	259	41	55	54	1243	375	110	412	60
Future Volume (veh/h)	69	43	15	259	41	55	54	1243	375	110	412	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	44	15	267	42	57	56	1281	387	113	425	62
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	158	54	303	444	376	77	1358	606	144	1306	189
Arrive On Green	0.05	0.12	0.12	0.17	0.24	0.24	0.04	0.38	0.38	0.08	0.42	0.42
Sat Flow, veh/h	1781	1334	455	1781	1870	1585	1781	3554	1585	1781	3114	452
Grp Volume(v), veh/h	71	0	59	267	42	57	56	1281	387	113	241	246
Grp Sat Flow(s),veh/h/ln	1781	0	1789	1781	1870	1585	1781	1777	1585	1781	1777	1789
Q Serve(g_s), s	3.3	0.0	2.5	12.3	1.5	2.4	2.6	29.2	16.7	5.2	7.6	7.7
Cycle Q Clear(g_c), s	3.3	0.0	2.5	12.3	1.5	2.4	2.6	29.2	16.7	5.2	7.6	7.7
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	92	0	212	303	444	376	77	1358	606	144	745	750
V/C Ratio(X)	0.77	0.00	0.28	0.88	0.09	0.15	0.72	0.94	0.64	0.79	0.32	0.33
Avail Cap(c_a), veh/h	319	0	789	319	825	700	319	1365	609	319	745	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	0.0	33.7	33.9	24.9	25.3	39.6	25.0	21.2	37.8	16.3	16.4
Incr Delay (d2), s/veh	5.1	0.0	0.7	21.8	0.1	0.2	4.7	13.1	2.2	3.5	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	1.1	7.0	0.7	0.9	1.2	14.0	6.3	2.4	3.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.4	0.0	34.4	55.8	25.0	25.5	44.3	38.2	23.4	41.4	16.6	16.6
LnGrp LOS	D	A	C	E	C	C	D	D	C	D	B	B
Approach Vol, veh/h		130			366			1724			600	
Approach Delay, s/veh		39.8			47.5			35.0			21.3	
Approach LOS		D			D			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.4	37.8	18.9	15.8	8.2	41.0	8.9	25.7				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	15.0	32.2	15.0	37.0	15.0	32.2	15.0	37.0				
Max Q Clear Time (g_c+I1), s	7.2	31.2	14.3	4.5	4.6	9.7	5.3	4.4				
Green Ext Time (p_c), s	0.1	0.8	0.0	0.3	0.0	3.0	0.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay			34.0									
HCM 6th LOS			C									

Timings
14: Citrus Ave. & Summit Ave.

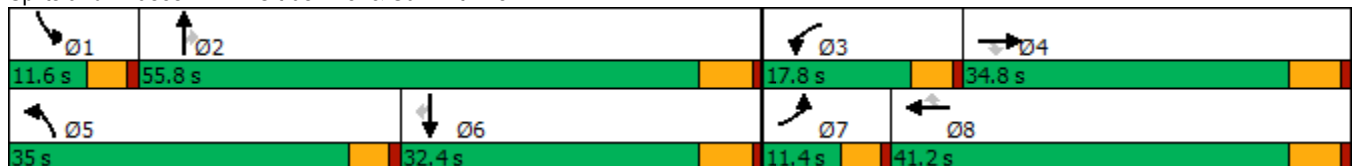
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	589	451	178	472	123	1102	654	154	89	353	89
Future Volume (vph)	162	589	451	178	472	123	1102	654	154	89	353	89
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	34.8	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	11.4	34.8	34.8	17.8	41.2	41.2	35.0	55.8	55.8	11.6	32.4	32.4
Total Split (%)	9.5%	29.0%	29.0%	14.8%	34.3%	34.3%	29.2%	46.5%	46.5%	9.7%	27.0%	27.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.8	26.4	26.4	13.3	32.8	32.8	30.5	41.2	41.2	7.0	17.7	17.7
Actuated g/C Ratio	0.06	0.24	0.24	0.12	0.30	0.30	0.28	0.38	0.38	0.06	0.16	0.16
v/c Ratio	1.59	0.75	0.73	0.90	0.48	0.23	2.41	0.53	0.24	0.85	0.67	0.23
Control Delay	337.6	44.5	15.4	88.6	33.1	4.6	662.9	28.1	4.4	104.3	49.0	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	337.6	44.5	15.4	88.6	33.1	4.6	662.9	28.1	4.4	104.3	49.0	1.3
LOS	F	D	B	F	C	A	F	C	A	F	D	A
Approach Delay		73.1			41.3			392.5			50.3	
Approach LOS		E			D			F			D	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 108.8
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 2.41
 Intersection Signal Delay: 203.0
 Intersection LOS: F
 Intersection Capacity Utilization 114.5%
 ICU Level of Service H
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	589	451	178	472	123	1102	654	154	89	353	89
Future Volume (veh/h)	162	589	451	178	472	123	1102	654	154	89	353	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	176	640	397	193	513	124	1198	711	131	97	384	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	938	412	214	1145	510	493	1289	558	114	532	234
Arrive On Green	0.06	0.26	0.26	0.12	0.32	0.32	0.28	0.36	0.36	0.06	0.15	0.15
Sat Flow, veh/h	1781	3554	1562	1781	3554	1582	1781	3554	1539	1781	3554	1561
Grp Volume(v), veh/h	176	640	397	193	513	124	1198	711	131	97	384	95
Grp Sat Flow(s),veh/h/ln	1781	1777	1562	1781	1777	1582	1781	1777	1539	1781	1777	1561
Q Serve(g_s), s	6.8	17.8	27.6	11.7	12.6	6.3	30.4	17.5	6.5	5.9	11.3	6.1
Cycle Q Clear(g_c), s	6.8	17.8	27.6	11.7	12.6	6.3	30.4	17.5	6.5	5.9	11.3	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	110	938	412	214	1145	510	493	1289	558	114	532	234
V/C Ratio(X)	1.60	0.68	0.96	0.90	0.45	0.24	2.43	0.55	0.23	0.85	0.72	0.41
Avail Cap(c_a), veh/h	110	938	412	214	1145	510	493	1618	701	114	861	378
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	36.3	39.9	47.7	29.5	27.4	39.7	27.9	24.4	50.9	44.5	42.3
Incr Delay (d2), s/veh	306.4	2.0	34.7	35.1	0.3	0.2	649.5	0.4	0.2	41.6	1.9	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.4	7.9	14.4	7.3	5.4	2.4	102.0	7.4	2.4	3.9	5.1	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	357.9	38.3	74.5	82.8	29.7	27.6	689.2	28.3	24.6	92.5	46.4	43.4
LnGrp LOS	F	D	E	F	C	C	F	C	C	F	D	D
Approach Vol, veh/h		1213			830			2040			576	
Approach Delay, s/veh		96.5			41.8			416.2			53.7	
Approach LOS		F			D			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.6	45.6	17.8	34.8	35.0	22.2	11.4	41.2				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.0	50.0	13.2	29.0	30.4	26.6	6.8	35.4				
Max Q Clear Time (g_c+I1), s	7.9	19.5	13.7	29.6	32.4	13.3	8.8	14.6				
Green Ext Time (p_c), s	0.0	6.1	0.0	0.0	0.0	2.3	0.0	3.8				
Intersection Summary												
HCM 6th Ctrl Delay			221.4									
HCM 6th LOS			F									

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

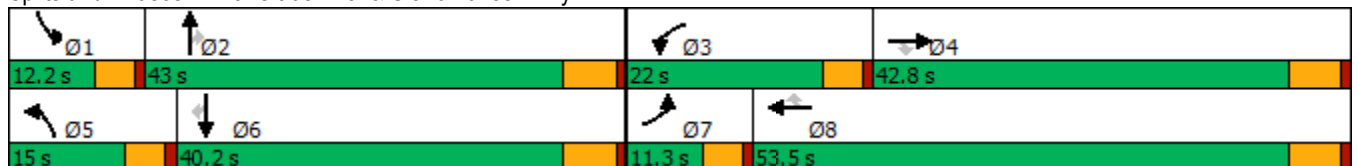
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	435	434	812	416	292	1028	840	990	254	582	91
Future Volume (vph)	112	435	434	812	416	292	1028	840	990	254	582	91
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	42.8	42.8	9.6	39.8	39.8	9.6	39.8	39.8	9.6	39.8	39.8
Total Split (s)	11.3	42.8	42.8	22.0	53.5	53.5	15.0	43.0	43.0	12.2	40.2	40.2
Total Split (%)	9.4%	35.7%	35.7%	18.3%	44.6%	44.6%	12.5%	35.8%	35.8%	10.2%	33.5%	33.5%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.5	27.6	27.6	17.5	38.6	38.6	10.5	37.4	37.4	7.6	34.6	34.6
Actuated g/C Ratio	0.06	0.25	0.25	0.16	0.35	0.35	0.09	0.34	0.34	0.07	0.31	0.31
v/c Ratio	0.58	0.52	0.85	1.57	0.35	0.45	3.32	0.73	1.37	1.12	0.55	0.16
Control Delay	65.2	37.4	37.8	296.4	27.3	11.6	1068.1	38.2	196.5	144.1	35.4	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.2	37.4	37.8	296.4	27.3	11.6	1068.1	38.2	196.5	144.1	35.4	1.4
LOS	E	D	D	F	C	B	F	D	F	F	D	A
Approach Delay		40.8			168.1			463.5			61.8	
Approach LOS		D			F			F			E	

Intersection Summary

































Cycle Length: 120
 Actuated Cycle Length: 111.1
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 3.32
 Intersection Signal Delay: 266.9
 Intersection LOS: F
 Intersection Capacity Utilization 99.7%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	112	435	434	812	416	292	1028	840	990	254	582	91
Future Volume (veh/h)	112	435	434	812	416	292	1028	840	990	254	582	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	117	453	376	846	433	205	1071	875	839	265	606	58
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	172	980	430	525	1343	591	314	1154	508	229	1067	469
Arrive On Green	0.05	0.28	0.28	0.15	0.38	0.38	0.09	0.32	0.32	0.07	0.30	0.30
Sat Flow, veh/h	3456	3554	1560	3456	3554	1564	3456	3554	1565	3456	3554	1564
Grp Volume(v), veh/h	117	453	376	846	433	205	1071	875	839	265	606	58
Grp Sat Flow(s),veh/h/ln	1728	1777	1560	1728	1777	1564	1728	1777	1565	1728	1777	1564
Q Serve(g_s), s	3.8	12.1	26.4	17.4	9.9	10.8	10.4	25.3	37.2	7.6	16.5	3.1
Cycle Q Clear(g_c), s	3.8	12.1	26.4	17.4	9.9	10.8	10.4	25.3	37.2	7.6	16.5	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	172	980	430	525	1343	591	314	1154	508	229	1067	469
V/C Ratio(X)	0.68	0.46	0.87	1.61	0.32	0.35	3.41	0.76	1.65	1.16	0.57	0.12
Avail Cap(c_a), veh/h	202	1147	504	525	1479	651	314	1154	508	229	1067	469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.6	34.5	39.6	48.6	25.3	25.5	52.1	34.7	38.7	53.5	33.8	29.1
Incr Delay (d2), s/veh	4.9	0.3	14.1	284.3	0.1	0.3	1094.7	3.0	301.9	108.1	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	5.3	11.7	28.2	4.2	4.0	52.2	11.3	56.6	6.7	7.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.5	34.8	53.7	332.9	25.4	25.9	1146.8	37.6	340.6	161.6	34.5	29.3
LnGrp LOS	E	C	D	F	C	C	F	D	F	F	C	C
Approach Vol, veh/h		946			1484			2785			929	
Approach Delay, s/veh		45.2			200.7			555.5			70.5	
Approach LOS		D			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	43.0	22.0	37.4	15.0	40.2	10.3	49.1				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.6	37.2	17.4	37.0	10.4	34.4	6.7	47.7				
Max Q Clear Time (g_c+I1), s	9.6	39.2	19.4	28.4	12.4	18.5	5.8	12.8				
Green Ext Time (p_c), s	0.0	0.0	0.0	3.0	0.0	3.9	0.0	3.9				
Intersection Summary												
HCM 6th Ctrl Delay			317.9									
HCM 6th LOS			F									

Intersection						
Intersection Delay, s/veh	689.7					
Intersection LOS	F					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	257	1081	789	207	999	816
Future Vol, veh/h	257	1081	789	207	999	816
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	273	1150	839	220	1063	868
Number of Lanes	1	1	2	0	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left NB			WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right SB		WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay	1045.5	447.6	560.3
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	56%	0%	0%	0%	100%	100%
Vol Right, %	0%	44%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	526	470	257	1081	999	408	408
LT Vol	0	0	257	0	999	0	0
Through Vol	526	263	0	0	0	408	408
RT Vol	0	207	0	1081	0	0	0
Lane Flow Rate	560	500	273	1150	1063	434	434
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	1.873	1.631	0.957	3.642	2.967	1.152	0.943
Departure Headway (Hd)	35.294	34.971	30.895	29.681	15.433	14.918	13.133
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	112	110	120	138	244	247	282
Service Time	32.994	32.671	28.595	27.381	13.133	12.618	10.833
HCM Lane V/C Ratio	5	4.545	2.275	8.333	4.357	1.757	1.539
HCM Control Delay	495.8	393.7	139.7	1260.9	926	146.2	78.8
HCM Lane LOS	F	F	F	F	F	F	F
HCM 95th-tile Q	15.7	13	6.2	43.8	61.6	12.8	8.9

Intersection						
Int Delay, s/veh	8.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑	
Traffic Vol, veh/h	75	80	132	1328	916	113
Future Vol, veh/h	75	80	132	1328	916	113
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	78	83	138	1383	954	118

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2672	1013	1072	0	-	0
Stage 1	1013	-	-	-	-	-
Stage 2	1659	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 25	290	650	-	-	-
Stage 1	351	-	-	-	-	-
Stage 2	170	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 20	290	650	-	-	-
Mov Cap-2 Maneuver	105	-	-	-	-	-
Stage 1	277	-	-	-	-	-
Stage 2	170	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	137.5	1.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	650	-	157	-	-
HCM Lane V/C Ratio	0.212	-	1.028	-	-
HCM Control Delay (s)	12	-	137.5	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.8	-	8.1	-	-

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

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/29/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	310	459	518	1143	798	220
Future Volume (vph)	310	459	518	1143	798	220
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	44.8	9.6	16.5	29.5	29.5
Total Split (s)	44.8	44.8	42.0	75.2	33.2	33.2
Total Split (%)	37.3%	37.3%	35.0%	62.7%	27.7%	27.7%
Yellow Time (s)	4.8	4.8	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	6.5	6.5	6.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	25.1	25.1	37.0	68.4	26.8	26.8
Actuated g/C Ratio	0.24	0.24	0.35	0.65	0.25	0.25
v/c Ratio	0.78	0.65	0.88	0.53	0.94	0.48
Control Delay	51.0	7.4	51.1	12.0	58.3	22.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	7.4	51.1	12.0	58.3	22.5
LOS	D	A	D	B	E	C
Approach Delay	24.9			24.2	50.6	
Approach LOS	C			C	D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 105.9
 Natural Cycle: 125
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 32.2
 Intersection LOS: C
 Intersection Capacity Utilization 82.0%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	310	459	518	1143	798	220
Future Volume (veh/h)	310	459	518	1143	798	220
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	326	340	545	1203	840	171
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	439	391	582	2244	921	411
Arrive On Green	0.25	0.25	0.33	0.63	0.26	0.26
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	326	340	545	1203	840	171
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	17.0	20.7	29.9	19.0	23.1	9.0
Cycle Q Clear(g_c), s	17.0	20.7	29.9	19.0	23.1	9.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	439	391	582	2244	921	411
V/C Ratio(X)	0.74	0.87	0.94	0.54	0.91	0.42
Avail Cap(c_a), veh/h	690	614	662	2425	942	420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	36.4	32.9	10.3	36.2	31.0
Incr Delay (d2), s/veh	2.5	8.1	19.6	0.2	12.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	17.5	15.7	6.8	11.4	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.5	44.5	52.5	10.5	49.0	31.7
LnGrp LOS	D	D	D	B	D	C
Approach Vol, veh/h	666			1748	1011	
Approach Delay, s/veh	41.1			23.6	46.0	
Approach LOS	D			C	D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		70.1		30.6	37.5	32.6
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	37.4	26.7
Max Q Clear Time (g_c+I1), s		21.0		22.7	31.9	25.1
Green Ext Time (p_c), s		12.4		2.1	1.0	1.0
Intersection Summary						
HCM 6th Ctrl Delay			33.6			
HCM 6th LOS			C			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

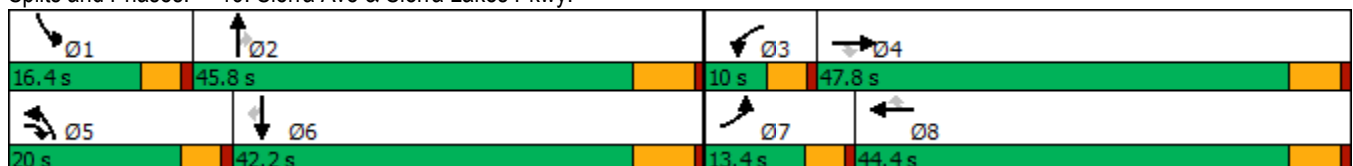
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	374	1049	248	301	314	958	1178	296	301	971	244
Future Volume (vph)	334	374	1049	248	301	314	958	1178	296	301	971	244
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	13.4	47.8	20.0	10.0	44.4	44.4	20.0	45.8	45.8	16.4	42.2	42.2
Total Split (%)	11.2%	39.8%	16.7%	8.3%	37.0%	37.0%	16.7%	38.2%	38.2%	13.7%	35.2%	35.2%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.9	19.0	35.8	5.5	15.6	15.6	15.6	34.1	34.1	11.6	30.1	30.1
Actuated g/C Ratio	0.10	0.21	0.39	0.06	0.17	0.17	0.17	0.37	0.37	0.13	0.33	0.33
v/c Ratio	1.04	0.53	1.65	1.25	0.52	0.69	1.70	0.64	0.43	0.72	0.60	0.37
Control Delay	102.3	35.8	320.4	187.9	38.5	18.1	348.8	25.9	9.0	50.8	27.7	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	102.3	35.8	320.4	187.9	38.5	18.1	348.8	25.9	9.0	50.8	27.7	4.8
LOS	F	D	F	F	D	B	F	C	A	D	C	A
Approach Delay		218.3			74.1			151.1			28.6	
Approach LOS		F			E			F			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 92
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.70
 Intersection Signal Delay: 130.7
 Intersection LOS: F
 Intersection Capacity Utilization 105.0%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	334	374	1049	248	301	314	958	1178	296	301	971	244
Future Volume (veh/h)	334	374	1049	248	301	314	958	1178	296	301	971	244
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	344	386	813	256	310	266	988	1214	241	310	1001	206
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	264	1297	790	162	1192	524	463	1525	467	354	1365	422
Arrive On Green	0.08	0.37	0.37	0.05	0.34	0.34	0.13	0.30	0.30	0.10	0.27	0.27
Sat Flow, veh/h	3456	3554	1582	3456	3554	1561	3456	5106	1564	3456	5106	1580
Grp Volume(v), veh/h	344	386	813	256	310	266	988	1214	241	310	1001	206
Grp Sat Flow(s),veh/h/ln	1728	1777	1582	1728	1777	1561	1728	1702	1564	1728	1702	1580
Q Serve(g_s), s	8.8	8.9	42.0	5.4	7.3	15.7	15.4	25.2	14.7	10.2	20.6	12.6
Cycle Q Clear(g_c), s	8.8	8.9	42.0	5.4	7.3	15.7	15.4	25.2	14.7	10.2	20.6	12.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	264	1297	790	162	1192	524	463	1525	467	354	1365	422
V/C Ratio(X)	1.30	0.30	1.03	1.58	0.26	0.51	2.14	0.80	0.52	0.87	0.73	0.49
Avail Cap(c_a), veh/h	264	1297	790	162	1192	524	463	1744	534	354	1584	490
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	26.0	28.8	54.8	27.8	30.6	49.8	37.1	33.5	50.9	38.4	35.5
Incr Delay (d2), s/veh	160.6	0.1	39.8	287.7	0.1	0.8	518.5	2.4	0.9	20.1	1.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	3.8	29.4	8.8	3.1	6.0	39.9	10.7	5.7	5.4	8.7	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	213.7	26.1	68.6	342.5	27.9	31.4	568.3	39.5	34.3	71.0	39.9	36.4
LnGrp LOS	F	C	F	F	C	C	F	D	C	E	D	D
Approach Vol, veh/h		1543			832			2443			1517	
Approach Delay, s/veh		90.3			125.9			252.8			45.8	
Approach LOS		F			F			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.4	40.9	10.0	47.8	20.0	37.3	13.4	44.4				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	11.8	39.3	5.4	42.0	15.4	35.7	8.8	38.6				
Max Q Clear Time (g_c+I1), s	12.2	27.2	7.4	44.0	17.4	22.6	10.8	17.7				
Green Ext Time (p_c), s	0.0	7.2	0.0	0.0	0.0	6.3	0.0	2.9				
Intersection Summary												
HCM 6th Ctrl Delay			147.0									
HCM 6th LOS			F									

APPENDIX 7.2:

**HORIZON YEAR (2040) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS
ANALYSIS WORKSHEETS**

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Intersection	
Intersection Delay, s/veh	51.8
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↕		↘	↕		↘	↕	↘	↘	↕	↘
Traffic Vol, veh/h	29	537	8	88	352	129	6	6	199	360	10	62
Future Vol, veh/h	29	537	8	88	352	129	6	6	199	360	10	62
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	571	9	94	374	137	6	6	212	383	11	66
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	55.9	26.9	25.3	92.2
HCM LOS	F	D	D	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	96%	0%	100%	48%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	4%	0%	0%	52%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	6	6	199	29	358	187	88	235	246	360	10
LT Vol	6	0	0	29	0	0	88	0	0	360	0
Through Vol	0	6	0	0	358	179	0	235	117	0	10
RT Vol	0	0	199	0	0	8	0	0	129	0	0
Lane Flow Rate	6	6	212	31	381	199	94	250	262	383	11
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.02	0.019	0.585	0.085	0.996	0.519	0.259	0.657	0.664	1.092	0.029
Departure Headway (Hd)	11.264	10.764	10.064	10.108	9.608	9.578	10.18	9.68	9.313	10.268	9.768
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	320	335	360	357	381	378	355	374	390	356	366
Service Time	8.964	8.464	7.764	7.808	7.308	7.278	7.88	7.38	7.013	8.027	7.527
HCM Lane V/C Ratio	0.019	0.018	0.589	0.087	1	0.526	0.265	0.668	0.672	1.076	0.03
HCM Control Delay	14.2	13.7	26	13.7	77	22.2	16.4	29.1	28.6	107.9	12.8
HCM Lane LOS	B	B	D	B	F	C	C	D	D	F	B
HCM 95th-tile Q	0.1	0.1	3.5	0.3	11.7	2.9	1	4.5	4.6	14.1	0.1

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	1096	532	3	0	38
Future Vol, veh/h	0	1096	532	3	0	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1166	566	3	0	40

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	- 285
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	- 6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	- 3.32
Pot Cap-1 Maneuver	0	-	-	-	0 *874
Stage 1	0	-	-	-	0 -
Stage 2	0	-	-	-	0 -
Platoon blocked, %		-	-	-	- 1
Mov Cap-1 Maneuver	-	-	-	-	- *874
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

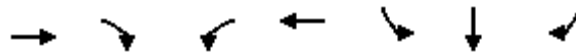
Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	874
HCM Lane V/C Ratio	-	-	-	0.046
HCM Control Delay (s)	-	-	-	9.3
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.1

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

Timings
3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

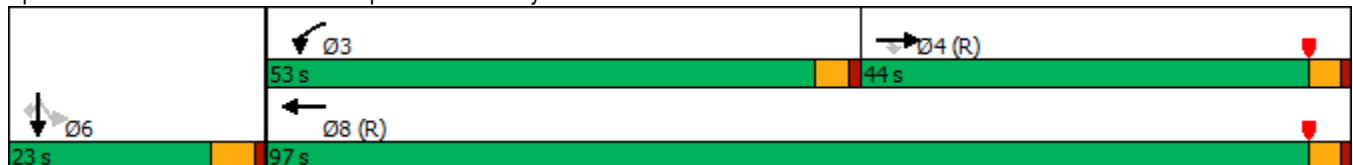


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↖↗	↑↑	↖	↗	↖
Traffic Volume (vph)	459	637	1233	471	417	14	63
Future Volume (vph)	459	637	1233	471	417	14	63
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8		6	
Permitted Phases		4			6		6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	34.0	34.0	12.0	29.0	13.0	13.0	13.0
Total Split (s)	44.0	44.0	53.0	97.0	23.0	23.0	23.0
Total Split (%)	36.7%	36.7%	44.2%	80.8%	19.2%	19.2%	19.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effct Green (s)	40.0	40.0	49.0	93.0	18.0	18.0	18.0
Actuated g/C Ratio	0.33	0.33	0.41	0.78	0.15	0.15	0.15
v/c Ratio	0.43	1.01	0.98	0.19	0.96	0.94	0.24
Control Delay	32.6	61.4	64.5	3.6	97.6	94.2	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	61.4	64.5	3.6	97.6	94.2	12.5
LOS	C	E	E	A	F	F	B
Approach Delay	49.3			47.7		85.3	
Approach LOS	D			D		F	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 53.9
 Intersection LOS: D
 Intersection Capacity Utilization 97.4%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 3: I-15 SB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↘↗	↑↑					↘	↗	↗
Traffic Volume (veh/h)	0	459	637	1233	471	0	0	0	0	417	14	63
Future Volume (veh/h)	0	459	637	1233	471	0	0	0	0	417	14	63
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	510	640	1370	523	0				474	0	54
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1206	538	1397	2761	0				527	0	235
Arrive On Green	0.00	0.34	0.34	0.68	1.00	0.00				0.15	0.00	0.15
Sat Flow, veh/h	0	3647	1585	3456	3647	0				3563	0	1585
Grp Volume(v), veh/h	0	510	640	1370	523	0				474	0	54
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1585
Q Serve(g_s), s	0.0	13.3	40.7	45.7	0.0	0.0				15.7	0.0	3.6
Cycle Q Clear(g_c), s	0.0	13.3	40.7	45.7	0.0	0.0				15.7	0.0	3.6
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1206	538	1397	2761	0				527	0	235
V/C Ratio(X)	0.00	0.42	1.19	0.98	0.19	0.00				0.90	0.00	0.23
Avail Cap(c_a), veh/h	0	1206	538	1411	2761	0				534	0	238
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.45	0.45	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	30.6	39.6	19.0	0.0	0.0				50.2	0.0	45.1
Incr Delay (d2), s/veh	0.0	1.1	103.0	11.8	0.1	0.0				17.9	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.7	30.4	12.2	0.0	0.0				8.1	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	31.7	142.6	30.9	0.1	0.0				68.1	0.0	45.6
LnGrp LOS	A	C	F	C	A	A				E	A	D
Approach Vol, veh/h		1150			1893						528	
Approach Delay, s/veh		93.4			22.3						65.8	
Approach LOS		F			C						E	
Timer - Assigned Phs			3	4		6			8			
Phs Duration (G+Y+Rc), s			52.5	44.7		22.8			97.2			
Change Period (Y+Rc), s			4.0	4.0		5.0			4.0			
Max Green Setting (Gmax), s			49.0	40.0		18.0			93.0			
Max Q Clear Time (g_c+I1), s			47.7	42.7		17.7			2.0			
Green Ext Time (p_c), s			0.8	0.0		0.1			3.5			

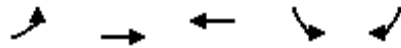
Intersection Summary

HCM 6th Ctrl Delay	51.7
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Timings
4: Beech Ave. & I-15 SB Ramps

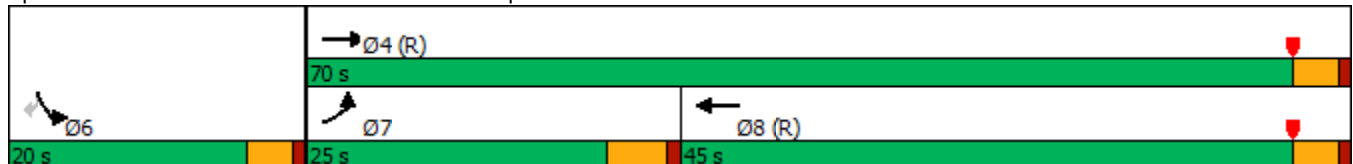


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations	↖	↗↗	↗↗	↖	↗
Traffic Volume (vph)	320	606	594	248	307
Future Volume (vph)	320	606	594	248	307
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	5.0	5.0
Minimum Split (s)	10.0	12.0	12.0	9.0	9.0
Total Split (s)	25.0	70.0	45.0	20.0	20.0
Total Split (%)	27.8%	77.8%	50.0%	22.2%	22.2%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	None	None
Act Effect Green (s)	19.5	66.4	42.0	15.6	15.6
Actuated g/C Ratio	0.22	0.74	0.47	0.17	0.17
v/c Ratio	0.91	0.25	0.92dr	0.88	0.61
Control Delay	64.0	4.1	22.7	66.6	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	64.0	4.1	22.7	66.6	9.1
LOS	E	A	C	E	A
Approach Delay		24.8	22.7	34.8	
Approach LOS		C	C	C	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 25.6
 Intersection LOS: C
 Intersection Capacity Utilization 86.5%
 ICU Level of Service E
 Analysis Period (min) 15
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 4: Beech Ave. & I-15 SB Ramps



HCM 6th Signalized Intersection Summary
 4: Beech Ave. & I-15 SB Ramps

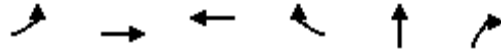
Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗		↙	↘	
Traffic Volume (veh/h)	320	606	594	888	248	307	
Future Volume (veh/h)	320	606	594	888	248	307	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	348	659	646	829	270	252	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	381	2606	824	735	317	282	
Arrive On Green	0.21	0.73	0.46	0.46	0.18	0.18	
Sat Flow, veh/h	1781	3647	1870	1585	1781	1585	
Grp Volume(v), veh/h	348	659	646	829	270	252	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	17.2	5.5	27.6	41.7	13.2	14.0	
Cycle Q Clear(g_c), s	17.2	5.5	27.6	41.7	13.2	14.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	381	2606	824	735	317	282	
V/C Ratio(X)	0.91	0.25	0.78	1.13	0.85	0.89	
Avail Cap(c_a), veh/h	396	2606	824	735	317	282	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.23	0.23	1.00	1.00	
Uniform Delay (d), s/veh	34.5	3.9	20.3	24.1	35.9	36.2	
Incr Delay (d2), s/veh	24.5	0.2	1.8	62.1	19.6	28.3	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	9.6	1.3	10.4	26.2	7.1	13.7	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	59.1	4.2	22.1	86.3	55.4	64.5	
LnGrp LOS	E	A	C	F	E	E	
Approach Vol, veh/h		1007	1475		522		
Approach Delay, s/veh		23.1	58.2		59.8		
Approach LOS		C	E		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				70.0	20.0	24.3	45.7
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				66.0	16.0	20.0	41.0
Max Q Clear Time (g_c+I1), s				7.5	16.0	19.2	43.7
Green Ext Time (p_c), s				4.6	0.0	0.1	0.0
Intersection Summary							
HCM 6th Ctrl Delay			46.7				
HCM 6th LOS			D				

Timings
5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

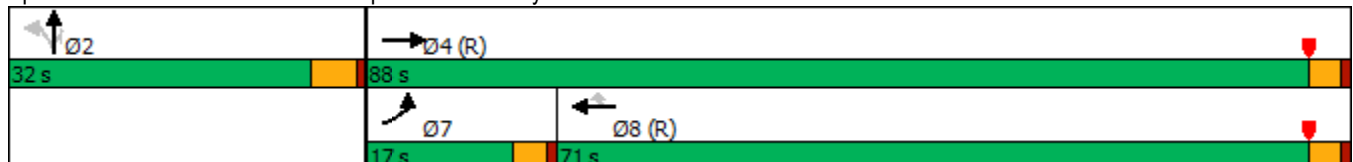


Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations	↖	↗↗	↗↗	↖	↖	↗↗
Traffic Volume (vph)	128	747	1540	360	2	781
Future Volume (vph)	128	747	1540	360	2	781
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8		2	
Permitted Phases				8		2
Detector Phase	7	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	30.0	36.0	36.0	13.0	13.0
Total Split (s)	17.0	88.0	71.0	71.0	32.0	32.0
Total Split (%)	14.2%	73.3%	59.2%	59.2%	26.7%	26.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	12.4	85.5	69.1	69.1	25.5	25.5
Actuated g/C Ratio	0.10	0.71	0.58	0.58	0.21	0.21
v/c Ratio	0.77	0.33	0.83	0.37	0.49	0.93
Control Delay	55.9	9.9	25.9	3.4	45.8	41.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	9.9	25.9	3.4	45.8	41.0
LOS	E	A	C	A	D	D
Approach Delay		16.6	21.6		41.9	
Approach LOS		B	C		D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 25.6
 Intersection LOS: C
 Intersection Capacity Utilization 97.4%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 5: I-15 NB Ramp & Duncan Canyon Rd.



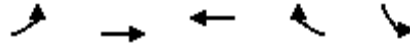
HCM 6th Signalized Intersection Summary
 5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	747	0	0	1540	360	165	2	781	0	0	0
Future Volume (veh/h)	128	747	0	0	1540	360	165	2	781	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	141	821	0	0	1692	396	181	2	583			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	165	2494	0	0	2046	912	393	4	623			
Arrive On Green	0.19	1.00	0.00	0.00	0.58	0.58	0.22	0.22	0.22			
Sat Flow, veh/h	1781	3647	0	0	3647	1585	1763	19	2790			
Grp Volume(v), veh/h	141	821	0	0	1692	396	183	0	583			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1585	1782	0	1395			
Q Serve(g_s), s	9.2	0.0	0.0	0.0	46.3	17.0	10.7	0.0	24.6			
Cycle Q Clear(g_c), s	9.2	0.0	0.0	0.0	46.3	17.0	10.7	0.0	24.6			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	165	2494	0	0	2046	912	398	0	623			
V/C Ratio(X)	0.85	0.33	0.00	0.00	0.83	0.43	0.46	0.00	0.94			
Avail Cap(c_a), veh/h	193	2494	0	0	2046	912	401	0	628			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.77	0.77	0.00	0.00	0.09	0.09	1.00	0.00	1.00			
Uniform Delay (d), s/veh	48.1	0.0	0.0	0.0	20.6	14.4	40.3	0.0	45.8			
Incr Delay (d2), s/veh	21.2	0.3	0.0	0.0	0.4	0.1	0.8	0.0	21.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.6	0.1	0.0	0.0	17.2	5.6	4.6	0.0	10.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.3	0.3	0.0	0.0	21.0	14.5	41.2	0.0	67.3			
LnGrp LOS	E	A	A	A	C	B	D	A	E			
Approach Vol, veh/h		962			2088			766				
Approach Delay, s/veh		10.4			19.8			61.1				
Approach LOS		B			B			E				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		31.8		88.2			15.1	73.1				
Change Period (Y+Rc), s		5.0		4.0			4.0	4.0				
Max Green Setting (Gmax), s		27.0		84.0			13.0	67.0				
Max Q Clear Time (g_c+I1), s		26.6		2.0			11.2	48.3				
Green Ext Time (p_c), s		0.2		6.2			0.1	12.9				
Intersection Summary												
HCM 6th Ctrl Delay				25.7								
HCM 6th LOS				C								

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021

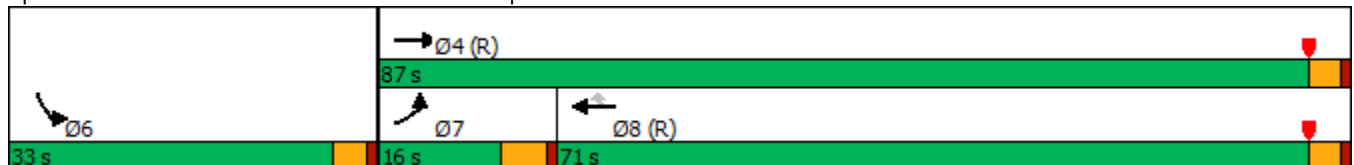


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↗↗	↗↗	↖	↖↖↖
Traffic Volume (vph)	89	765	1366	225	482
Future Volume (vph)	89	765	1366	225	482
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	16.0	87.0	71.0	71.0	33.0
Total Split (%)	13.3%	72.5%	59.2%	59.2%	27.5%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	10.5	83.7	68.3	68.3	28.3
Actuated g/C Ratio	0.09	0.70	0.57	0.57	0.24
v/c Ratio	0.72	0.39	0.85	0.28	0.92
Control Delay	78.8	8.2	27.1	4.2	60.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	78.8	8.2	27.1	4.2	60.7
LOS	E	A	C	A	E
Approach Delay		15.5	23.9		60.7
Approach LOS		B	C		E

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 28.8
 Intersection LOS: C
 Intersection Capacity Utilization 70.9%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗	↖	↙	↘	
Traffic Volume (veh/h)	89	765	1366	225	482	116	
Future Volume (veh/h)	89	765	1366	225	482	116	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	111	956	1708	217	667	0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	136	2571	2152	960	747	332	
Arrive On Green	0.08	0.72	0.61	0.61	0.21	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	111	956	1708	217	667	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	7.4	12.2	43.8	7.5	21.8	0.0	
Cycle Q Clear(g_c), s	7.4	12.2	43.8	7.5	21.8	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	136	2571	2152	960	747	332	
V/C Ratio(X)	0.82	0.37	0.79	0.23	0.89	0.00	
Avail Cap(c_a), veh/h	163	2571	2152	960	861	383	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.90	0.90	0.40	0.40	1.00	0.00	
Uniform Delay (d), s/veh	54.6	6.3	18.0	10.8	46.1	0.0	
Incr Delay (d2), s/veh	20.9	0.4	1.3	0.2	10.6	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	4.0	3.8	16.2	2.5	10.8	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	75.5	6.6	19.2	11.0	56.7	0.0	
LnGrp LOS	E	A	B	B	E	A	
Approach Vol, veh/h		1067	1925		667		
Approach Delay, s/veh		13.8	18.3		56.7		
Approach LOS		B	B		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				90.8	29.2	14.2	76.7
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				83.0	29.0	11.0	67.0
Max Q Clear Time (g_c+I1), s				14.2	23.8	9.4	45.8
Green Ext Time (p_c), s				7.6	1.3	0.0	13.6

Intersection Summary

HCM 6th Ctrl Delay	24.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

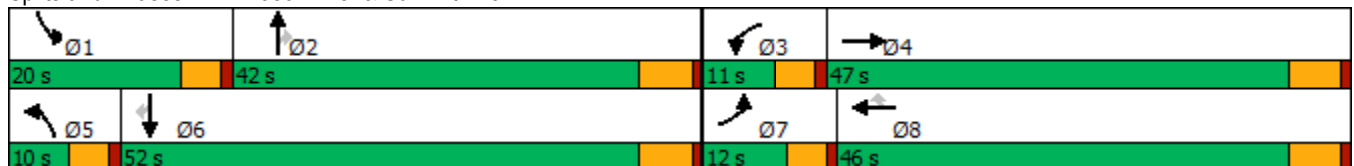
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	116	163	109	316	770	61	427	73	439	288	71
Future Volume (vph)	116	163	109	316	770	61	427	73	439	288	71
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	43.8	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	47.0	11.0	46.0	46.0	10.0	42.0	42.0	20.0	52.0	52.0
Total Split (%)	10.0%	39.2%	9.2%	38.3%	38.3%	8.3%	35.0%	35.0%	16.7%	43.3%	43.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	6.9	41.0	6.2	40.3	40.3	5.3	18.3	18.3	15.4	30.5	30.5
Actuated g/C Ratio	0.07	0.40	0.06	0.40	0.40	0.05	0.18	0.18	0.15	0.30	0.30
v/c Ratio	0.52	0.14	0.55	0.24	0.99	0.36	0.70	0.19	0.89	0.29	0.14
Control Delay	55.1	18.7	57.7	21.8	49.4	53.9	45.6	1.0	63.6	28.8	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.1	18.7	57.7	21.8	49.4	53.9	45.6	1.0	63.6	28.8	2.6
LOS	E	B	E	C	D	D	D	A	E	C	A
Approach Delay		32.6		42.9			40.7			45.6	
Approach LOS		C		D			D			D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 101.8
 Natural Cycle: 115
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 42.1
 Intersection LOS: D
 Intersection Capacity Utilization 78.3%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 7: Beech Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	163	26	109	316	770	61	427	73	439	288	71
Future Volume (veh/h)	116	163	26	109	316	770	61	427	73	439	288	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	122	172	22	115	333	700	64	449	65	462	303	72
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	184	1301	164	176	1448	645	145	628	275	525	1019	453
Arrive On Green	0.05	0.41	0.41	0.05	0.41	0.41	0.04	0.18	0.18	0.15	0.29	0.29
Sat Flow, veh/h	3456	3174	400	3456	3554	1583	3456	3554	1557	3456	3554	1582
Grp Volume(v), veh/h	122	95	99	115	333	700	64	449	65	462	303	72
Grp Sat Flow(s),veh/h/ln	1728	1777	1798	1728	1777	1583	1728	1777	1557	1728	1777	1582
Q Serve(g_s), s	3.4	3.3	3.4	3.2	6.0	40.2	1.8	11.7	3.5	12.9	6.6	3.4
Cycle Q Clear(g_c), s	3.4	3.3	3.4	3.2	6.0	40.2	1.8	11.7	3.5	12.9	6.6	3.4
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	728	737	176	1448	645	145	628	275	525	1019	453
V/C Ratio(X)	0.66	0.13	0.13	0.65	0.23	1.09	0.44	0.71	0.24	0.88	0.30	0.16
Avail Cap(c_a), veh/h	259	742	751	224	1448	645	189	1304	571	539	1664	740
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	18.2	18.2	46.0	19.1	29.2	46.1	38.3	34.9	41.0	27.4	26.3
Incr Delay (d2), s/veh	1.5	0.1	0.1	2.0	0.1	61.0	0.8	1.5	0.4	14.7	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.3	1.3	1.4	2.3	24.7	0.8	5.0	1.3	6.3	2.7	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.4	18.2	18.3	48.0	19.2	90.2	46.9	39.8	35.3	55.6	27.6	26.5
LnGrp LOS	D	B	B	D	B	F	D	D	D	E	C	C
Approach Vol, veh/h		316			1148			578			837	
Approach Delay, s/veh		29.5			65.4			40.1			43.0	
Approach LOS		C			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.6	23.2	9.6	46.2	8.7	34.1	9.9	46.0				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	15.4	36.2	6.4	41.2	5.4	46.2	7.4	40.2				
Max Q Clear Time (g_c+I1), s	14.9	13.7	5.2	5.4	3.8	8.6	5.4	42.2				
Green Ext Time (p_c), s	0.1	2.9	0.0	1.0	0.0	2.1	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			49.9									
HCM 6th LOS			D									

Timings
8: Lytle Creek Dr. & Duncan Canyon Rd.

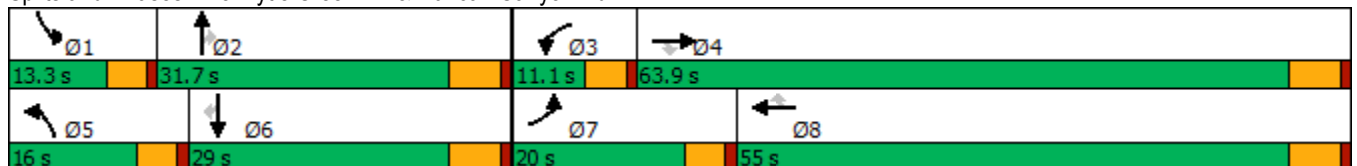
Ventana (JN 13769)
06/08/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	254	1134	141	69	1557	39	184	65	7	114	45	96
Future Volume (vph)	254	1134	141	69	1557	39	184	65	7	114	45	96
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	27.8	9.6	27.8	27.8	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	20.0	63.9	63.9	11.1	55.0	55.0	16.0	31.7	31.7	13.3	29.0	29.0
Total Split (%)	16.7%	53.3%	53.3%	9.3%	45.8%	45.8%	13.3%	26.4%	26.4%	11.1%	24.2%	24.2%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	12.2	51.3	51.3	6.1	42.8	42.8	9.8	12.3	12.3	7.6	10.1	10.1
Actuated g/C Ratio	0.13	0.53	0.53	0.06	0.45	0.45	0.10	0.13	0.13	0.08	0.11	0.11
v/c Ratio	0.63	0.45	0.17	0.34	0.75	0.05	0.57	0.30	0.02	0.46	0.13	0.34
Control Delay	48.0	14.8	3.2	50.9	24.6	0.1	49.7	45.1	0.1	50.2	43.7	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.0	14.8	3.2	50.9	24.6	0.1	49.7	45.1	0.1	50.2	43.7	5.7
LOS	D	B	A	D	C	A	D	D	A	D	D	A
Approach Delay		19.2			25.1			47.1			32.3	
Approach LOS		B			C			D			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 96
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 24.7
 Intersection LOS: C
 Intersection Capacity Utilization 62.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 8: Lytle Creek Dr. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
8: Lytle Creek Dr. & Duncan Canyon Rd.

Ventana (JN 13769)
06/08/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	254	1134	141	69	1557	39	184	65	7	114	45	96
Future Volume (veh/h)	254	1134	141	69	1557	39	184	65	7	114	45	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	276	1233	153	75	1692	42	200	71	8	124	49	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	361	2588	803	169	2304	715	280	267	226	194	419	187
Arrive On Green	0.10	0.51	0.51	0.05	0.45	0.45	0.08	0.14	0.14	0.06	0.12	0.12
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	1870	1585	3456	3554	1585
Grp Volume(v), veh/h	276	1233	153	75	1692	42	200	71	8	124	49	104
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1870	1585	1728	1777	1585
Q Serve(g_s), s	6.6	13.3	4.5	1.8	23.1	1.3	4.8	2.9	0.4	3.0	1.0	5.3
Cycle Q Clear(g_c), s	6.6	13.3	4.5	1.8	23.1	1.3	4.8	2.9	0.4	3.0	1.0	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	361	2588	803	169	2304	715	280	267	226	194	419	187
V/C Ratio(X)	0.76	0.48	0.19	0.44	0.73	0.06	0.71	0.27	0.04	0.64	0.12	0.56
Avail Cap(c_a), veh/h	628	3498	1086	265	2963	920	465	571	484	355	972	434
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	13.6	11.4	39.2	19.1	13.1	38.0	32.4	31.3	39.2	33.4	35.3
Incr Delay (d2), s/veh	1.3	0.1	0.1	0.7	0.7	0.0	1.3	0.5	0.1	1.3	0.1	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	4.4	1.4	0.7	8.1	0.4	2.0	1.3	0.1	1.3	0.5	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.2	13.7	11.5	39.9	19.8	13.2	39.3	32.9	31.4	40.5	33.6	37.9
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	D
Approach Vol, veh/h		1662			1809			279			277	
Approach Delay, s/veh		17.6			20.5			37.4			38.3	
Approach LOS		B			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.4	17.9	8.7	48.8	11.5	15.8	13.5	44.1				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	8.7	25.9	6.5	58.1	11.4	23.2	15.4	49.2				
Max Q Clear Time (g_c+1), s	5.0	4.9	3.8	15.3	6.8	7.3	8.6	25.1				
Green Ext Time (p_c), s	0.1	0.3	0.0	11.3	0.2	0.5	0.3	13.2				
Intersection Summary												
HCM 6th Ctrl Delay			21.7									
HCM 6th LOS			C									

Timings
9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
04/29/2021

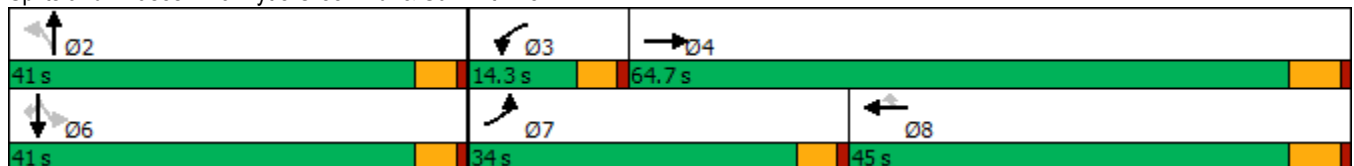


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↗	↖	↗	↖	↗	↗
Traffic Volume (vph)	281	411	56	860	173	66	153	168	113	347
Future Volume (vph)	281	411	56	860	173	66	153	168	113	347
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8			2		6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	9.6	28.8	28.8	33.7	33.7	31.7	31.7	31.7
Total Split (s)	34.0	64.7	14.3	45.0	45.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	28.3%	53.9%	11.9%	37.5%	37.5%	34.2%	34.2%	34.2%	34.2%	34.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None
Act Effct Green (s)	21.2	48.7	7.8	32.1	32.1	24.6	24.6	24.6	24.6	24.6
Actuated g/C Ratio	0.23	0.52	0.08	0.34	0.34	0.26	0.26	0.26	0.26	0.26
v/c Ratio	0.78	0.29	0.42	0.78	0.30	0.23	0.43	0.73	0.26	0.55
Control Delay	51.1	14.8	57.4	35.1	10.9	31.8	32.2	51.9	31.1	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.1	14.8	57.4	35.1	10.9	31.8	32.2	51.9	31.1	6.6
LOS	D	B	E	D	B	C	C	D	C	A
Approach Delay		28.4		32.4			32.1		23.2	
Approach LOS		C		C			C		C	

Intersection Summary























Cycle Length: 120
 Actuated Cycle Length: 94.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 29.2
 Intersection LOS: C
 Intersection Capacity Utilization 76.2%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 9: Lytle Creek Rd. & Summit Ave.



HCM 6th Signalized Intersection Summary
 9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	281	411	57	56	860	173	66	153	33	168	113	347
Future Volume (veh/h)	281	411	57	56	860	173	66	153	33	168	113	347
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	309	452	55	62	945	130	73	168	32	185	124	244
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	350	1557	188	81	1197	534	325	437	83	320	536	453
Arrive On Green	0.20	0.49	0.49	0.05	0.34	0.34	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1781	3190	386	1781	3554	1585	1013	1523	290	1181	1870	1582
Grp Volume(v), veh/h	309	251	256	62	945	130	73	0	200	185	124	244
Grp Sat Flow(s),veh/h/ln	1781	1777	1800	1781	1777	1585	1013	0	1813	1181	1870	1582
Q Serve(g_s), s	14.2	7.1	7.1	2.9	20.2	5.0	5.0	0.0	7.4	12.5	4.3	10.9
Cycle Q Clear(g_c), s	14.2	7.1	7.1	2.9	20.2	5.0	9.2	0.0	7.4	19.9	4.3	10.9
Prop In Lane	1.00		0.21	1.00		1.00	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	350	867	878	81	1197	534	325	0	520	320	536	453
V/C Ratio(X)	0.88	0.29	0.29	0.76	0.79	0.24	0.22	0.00	0.38	0.58	0.23	0.54
Avail Cap(c_a), veh/h	624	1247	1263	206	1660	740	473	0	784	492	809	684
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	12.8	12.8	39.6	25.1	20.1	26.4	0.0	24.0	32.0	22.9	25.2
Incr Delay (d2), s/veh	2.9	0.2	0.2	5.5	1.8	0.2	0.3	0.0	0.5	1.7	0.2	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	2.5	2.5	1.3	8.0	1.7	1.2	0.0	3.2	3.6	1.9	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.7	13.0	13.0	45.1	26.9	20.3	26.7	0.0	24.5	33.6	23.1	26.2
LnGrp LOS	D	B	B	D	C	C	C	A	C	C	C	C
Approach Vol, veh/h		816			1137			273			553	
Approach Delay, s/veh		21.6			27.2			25.1			28.0	
Approach LOS		C			C			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		28.8	8.4	46.7		28.8	21.1	34.1				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 36	9.7	58.9		* 36	29.4	39.2				
Max Q Clear Time (g_c+I1), s		11.2	4.9	9.1		21.9	16.2	22.2				
Green Ext Time (p_c), s		1.5	0.0	2.9		2.0	0.4	6.1				
Intersection Summary												
HCM 6th Ctrl Delay				25.5								
HCM 6th LOS				C								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑↑	
Traffic Vol, veh/h	18	5	29	45	203	0
Future Vol, veh/h	18	5	29	45	203	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	5	32	49	221	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	334	111	221	0	-	0
Stage 1	221	-	-	-	-	-
Stage 2	113	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	648	922	1347	-	-	-
Stage 1	795	-	-	-	-	-
Stage 2	911	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	632	922	1347	-	-	-
Mov Cap-2 Maneuver	632	-	-	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	911	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1347	-	678	-	-
HCM Lane V/C Ratio	0.023	-	0.037	-	-
HCM Control Delay (s)	7.7	-	10.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Timings
11: Citrus Ave. & Driveway 1

Ventana (JN 13769)
04/29/2021



Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	5	15	69	203
Future Volume (vph)	5	15	69	203
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	5	2	6
Permitted Phases				
Detector Phase	4	5	2	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	9.5	22.5	22.5
Total Split (s)	44.5	31.5	75.5	44.0
Total Split (%)	37.1%	26.3%	62.9%	36.7%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5
Lead/Lag		Lead		Lag
Lead-Lag Optimize?		Yes		Yes
Recall Mode	None	None	C-Min	C-Min
Act Effct Green (s)	6.3	6.7	113.5	108.5
Actuated g/C Ratio	0.05	0.06	0.95	0.90
v/c Ratio	0.20	0.16	0.04	0.07
Control Delay	32.9	57.1	0.8	2.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	32.9	57.1	0.8	2.0
LOS	C	E	A	A
Approach Delay	32.9		10.7	2.0
Approach LOS	C		B	A

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.20
 Intersection Signal Delay: 6.2
 Intersection LOS: A
 Intersection Capacity Utilization 24.1%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 11: Citrus Ave. & Driveway 1



HCM 6th Signalized Intersection Summary
 11: Citrus Ave. & Driveway 1

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	14	15	69	203	5
Future Volume (veh/h)	5	14	15	69	203	5
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	15	16	75	221	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	8	25	31	1691	3017	68
Arrive On Green	0.02	0.02	0.02	0.90	0.85	0.85
Sat Flow, veh/h	390	1171	1781	1870	3646	80
Grp Volume(v), veh/h	21	0	16	75	110	116
Grp Sat Flow(s),veh/h/ln	1640	0	1781	1870	1777	1856
Q Serve(g_s), s	1.5	0.0	1.1	0.5	1.2	1.2
Cycle Q Clear(g_c), s	1.5	0.0	1.1	0.5	1.2	1.2
Prop In Lane	0.24	0.71	1.00			0.04
Lane Grp Cap(c), veh/h	34	0	31	1691	1509	1576
V/C Ratio(X)	0.61	0.00	0.52	0.04	0.07	0.07
Avail Cap(c_a), veh/h	547	0	401	1691	1509	1576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.3	0.0	58.5	0.6	1.5	1.5
Incr Delay (d2), s/veh	16.2	0.0	13.0	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.6	0.0	0.2	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	74.5	0.0	71.5	0.6	1.5	1.5
LnGrp LOS	E	A	E	A	A	A
Approach Vol, veh/h	21			91	226	
Approach Delay, s/veh	74.5			13.1	1.5	
Approach LOS	E			B	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		113.0		7.0	6.6	106.4
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		71.0		40.0	27.0	39.5
Max Q Clear Time (g_c+I1), s		2.5		3.5	3.1	3.2
Green Ext Time (p_c), s		0.4		0.0	0.0	1.2

Intersection Summary

HCM 6th Ctrl Delay	9.2
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Timings
12: Citrus Ave. & Duncan Canyon Rd.

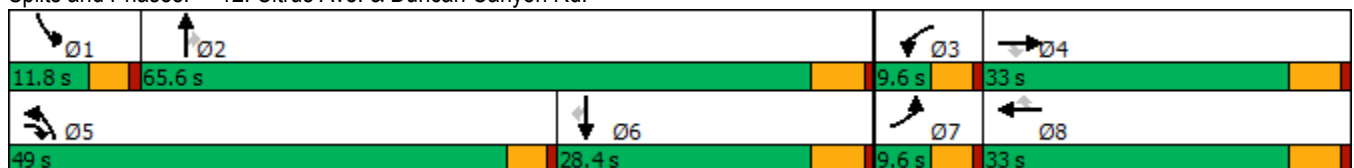
Ventana (JN 13769)
06/03/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	314	914	52	332	35	1243	24	48	42	95	84
Future Volume (vph)	25	314	914	52	332	35	1243	24	48	42	95	84
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	27.8	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	9.6	33.0	49.0	9.6	33.0	33.0	49.0	65.6	65.6	11.8	28.4	28.4
Total Split (%)	8.0%	27.5%	40.8%	8.0%	27.5%	27.5%	40.8%	54.7%	54.7%	9.8%	23.7%	23.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	5.0	13.8	63.6	5.0	17.5	17.5	44.0	52.1	52.1	6.4	10.1	10.1
Actuated g/C Ratio	0.05	0.15	0.69	0.05	0.19	0.19	0.48	0.57	0.57	0.07	0.11	0.11
v/c Ratio	0.14	0.61	0.76	0.29	0.36	0.08	0.78	0.01	0.05	0.36	0.25	0.29
Control Delay	45.4	42.3	9.0	48.0	33.9	0.4	25.1	12.3	0.1	51.0	41.2	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	42.3	9.0	48.0	33.9	0.4	25.1	12.3	0.1	51.0	41.2	3.2
LOS	D	D	A	D	C	A	C	B	A	D	D	A
Approach Delay		18.0			32.9			24.0			28.6	
Approach LOS		B			C			C			C	

Intersection Summary

































Cycle Length: 120
 Actuated Cycle Length: 91.6
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 23.1
 Intersection LOS: C
 Intersection Capacity Utilization 81.6%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
 06/03/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	  		 	 		 	 	
Traffic Volume (veh/h)	25	314	914	52	332	35	1243	24	48	42	95	84
Future Volume (veh/h)	25	314	914	52	332	35	1243	24	48	42	95	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	327	431	54	346	36	1295	25	50	44	99	88
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	716	963	144	1106	343	1404	1715	765	67	404	180
Arrive On Green	0.03	0.20	0.20	0.04	0.22	0.22	0.41	0.48	0.48	0.04	0.11	0.11
Sat Flow, veh/h	3456	3554	1585	3456	5106	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	26	327	431	54	346	36	1295	25	50	44	99	88
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1702	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.6	7.1	12.9	1.3	5.0	1.6	31.3	0.3	1.5	2.1	2.2	4.6
Cycle Q Clear(g_c), s	0.6	7.1	12.9	1.3	5.0	1.6	31.3	0.3	1.5	2.1	2.2	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	92	716	963	144	1106	343	1404	1715	765	67	404	180
V/C Ratio(X)	0.28	0.46	0.45	0.37	0.31	0.10	0.92	0.01	0.07	0.66	0.24	0.49
Avail Cap(c_a), veh/h	197	1100	1135	197	1581	491	1746	2419	1079	146	914	408
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.9	30.8	9.3	41.0	28.9	27.6	24.8	11.8	12.1	41.7	35.5	36.5
Incr Delay (d2), s/veh	0.6	0.5	0.3	0.6	0.2	0.1	6.7	0.0	0.0	4.1	0.3	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.9	3.6	0.6	1.9	0.6	12.6	0.1	0.5	1.0	0.9	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.5	31.3	9.6	41.6	29.1	27.7	31.5	11.9	12.2	45.8	35.8	38.6
LnGrp LOS	D	C	A	D	C	C	C	B	B	D	D	D
Approach Vol, veh/h		784			436			1370			231	
Approach Delay, s/veh		19.7			30.5			30.4			38.8	
Approach LOS		B			C			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.9	48.2	8.3	23.5	40.3	15.8	6.9	24.8				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.2	59.8	5.0	27.2	44.4	22.6	5.0	27.2				
Max Q Clear Time (g_c+I1), s	4.1	3.5	3.3	14.9	33.3	6.6	2.6	7.0				
Green Ext Time (p_c), s	0.0	0.3	0.0	2.8	2.4	0.6	0.0	2.1				
Intersection Summary												
HCM 6th Ctrl Delay			28.2									
HCM 6th LOS			C									

Timings
13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
04/29/2021

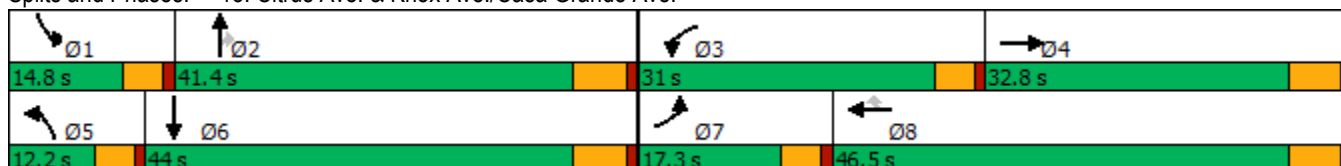


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↗	↖	↑↑	↗	↖	↖↗
Traffic Volume (vph)	87	28	344	48	137	89	634	159	67	921
Future Volume (vph)	87	28	344	48	137	89	634	159	67	921
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	30.8	30.8	9.6	26.8	26.8	9.6	22.8
Total Split (s)	17.3	32.8	31.0	46.5	46.5	12.2	41.4	41.4	14.8	44.0
Total Split (%)	14.4%	27.3%	25.8%	38.8%	38.8%	10.2%	34.5%	34.5%	12.3%	36.7%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	9.3	10.6	24.3	23.8	23.8	7.7	37.6	37.6	8.0	35.0
Actuated g/C Ratio	0.10	0.11	0.26	0.25	0.25	0.08	0.40	0.40	0.08	0.37
v/c Ratio	0.52	0.31	0.79	0.11	0.29	0.65	0.47	0.23	0.47	0.80
Control Delay	54.9	26.4	48.5	30.9	7.3	68.4	25.5	4.8	55.1	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.9	26.4	48.5	30.9	7.3	68.4	25.5	4.8	55.1	33.0
LOS	D	C	D	C	A	E	C	A	E	C
Approach Delay		42.5		36.2			26.1			34.4
Approach LOS		D		D			C			C

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 94.4
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 32.4
 Intersection LOS: C
 Intersection Capacity Utilization 72.1%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 13: Citrus Ave. & Knox Ave./Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	28	39	344	48	137	89	634	159	67	921	79
Future Volume (veh/h)	87	28	39	344	48	137	89	634	159	67	921	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	91	29	30	358	50	115	93	660	160	70	959	79
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	107	111	396	532	451	119	1285	572	90	1149	95
Arrive On Green	0.07	0.13	0.13	0.22	0.28	0.28	0.07	0.36	0.36	0.05	0.35	0.35
Sat Flow, veh/h	1781	837	866	1781	1870	1583	1781	3554	1581	1781	3324	274
Grp Volume(v), veh/h	91	0	59	358	50	115	93	660	160	70	513	525
Grp Sat Flow(s),veh/h/ln	1781	0	1702	1781	1870	1583	1781	1777	1581	1781	1777	1821
Q Serve(g_s), s	4.4	0.0	2.7	17.1	1.7	4.9	4.5	12.8	6.3	3.4	23.2	23.2
Cycle Q Clear(g_c), s	4.4	0.0	2.7	17.1	1.7	4.9	4.5	12.8	6.3	3.4	23.2	23.2
Prop In Lane	1.00		0.51	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	117	0	218	396	532	451	119	1285	572	90	614	629
V/C Ratio(X)	0.78	0.00	0.27	0.90	0.09	0.26	0.78	0.51	0.28	0.78	0.83	0.83
Avail Cap(c_a), veh/h	258	0	525	537	869	736	155	1444	642	207	775	794
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	0.0	34.5	33.2	23.0	24.2	40.3	21.9	19.9	41.1	26.4	26.4
Incr Delay (d2), s/veh	4.2	0.0	0.7	12.8	0.1	0.3	13.0	0.3	0.3	5.3	6.4	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	1.1	8.3	0.7	1.8	2.3	4.9	2.2	1.6	10.0	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	0.0	35.2	46.0	23.1	24.5	53.2	22.2	20.1	46.4	32.7	32.6
LnGrp LOS	D	A	D	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		150			523			913			1108	
Approach Delay, s/veh		40.8			39.1			25.0			33.5	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.0	37.5	24.1	17.0	10.4	36.1	10.3	30.7				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	10.2	35.6	26.4	27.0	7.6	38.2	12.7	40.7				
Max Q Clear Time (g_c+I1), s	5.4	14.8	19.1	4.7	6.5	25.2	6.4	6.9				
Green Ext Time (p_c), s	0.0	4.6	0.3	0.2	0.0	5.0	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay				32.1								
HCM 6th LOS				C								

Timings
14: Citrus Ave. & Summit Ave.

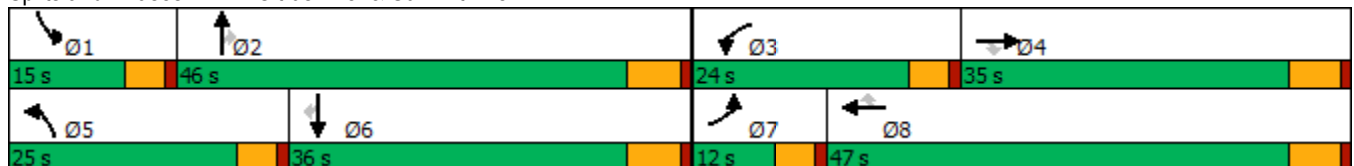
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	212	245	171	327	152	821	302	114	196	520	162
Future Volume (vph)	70	212	245	171	327	152	821	302	114	196	520	162
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	34.8	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	12.0	35.0	35.0	24.0	47.0	47.0	25.0	46.0	46.0	15.0	36.0	36.0
Total Split (%)	10.0%	29.2%	29.2%	20.0%	39.2%	39.2%	20.8%	38.3%	38.3%	12.5%	30.0%	30.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	7.0	12.2	12.2	13.9	21.2	21.2	20.5	40.3	40.3	10.4	30.3	30.3
Actuated g/C Ratio	0.07	0.12	0.12	0.14	0.22	0.22	0.21	0.41	0.41	0.11	0.31	0.31
v/c Ratio	0.57	0.50	0.61	0.71	0.44	0.34	2.30	0.22	0.16	1.08	0.49	0.27
Control Delay	64.3	44.7	12.1	56.0	35.6	7.3	618.6	20.0	2.3	132.6	30.3	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.3	44.7	12.1	56.0	35.6	7.3	618.6	20.0	2.3	132.6	30.3	4.1
LOS	E	D	B	E	D	A	F	C	A	F	C	A
Approach Delay		32.2			34.4			415.4			48.3	
Approach LOS		C			C			F			D	

Intersection Summary





























Cycle Length: 120	
Actuated Cycle Length: 97.7	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 2.30	
Intersection Signal Delay: 180.9	Intersection LOS: F
Intersection Capacity Utilization 96.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 14: Citrus Ave. & Summit Ave.



































HCM 6th Signalized Intersection Summary
14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	70	212	245	171	327	152	821	302	114	196	520	162
Future Volume (veh/h)	70	212	245	171	327	152	821	302	114	196	520	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	73	221	222	178	341	149	855	315	104	204	542	162
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	630	280	210	863	384	359	1410	615	183	1059	472
Arrive On Green	0.05	0.18	0.18	0.12	0.24	0.24	0.20	0.40	0.40	0.10	0.30	0.30
Sat Flow, veh/h	1781	3554	1577	1781	3554	1583	1781	3554	1550	1781	3554	1585
Grp Volume(v), veh/h	73	221	222	178	341	149	855	315	104	204	542	162
Grp Sat Flow(s),veh/h/ln	1781	1777	1577	1781	1777	1583	1781	1777	1550	1781	1777	1585
Q Serve(g_s), s	4.1	5.5	13.7	9.9	8.1	8.0	20.4	5.9	4.4	10.4	12.8	8.1
Cycle Q Clear(g_c), s	4.1	5.5	13.7	9.9	8.1	8.0	20.4	5.9	4.4	10.4	12.8	8.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	94	630	280	210	863	384	359	1410	615	183	1059	472
V/C Ratio(X)	0.78	0.35	0.79	0.85	0.40	0.39	2.38	0.22	0.17	1.12	0.51	0.34
Avail Cap(c_a), veh/h	130	1024	454	341	1445	644	359	1410	615	183	1059	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	36.6	39.9	43.8	32.1	32.1	40.5	20.2	19.8	45.5	29.5	27.8
Incr Delay (d2), s/veh	11.7	0.3	5.1	5.3	0.3	0.6	631.5	0.4	0.6	101.1	1.8	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.3	5.5	4.5	3.4	3.0	71.4	2.4	1.6	9.6	5.4	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.1	36.9	45.0	49.0	32.4	32.7	672.0	20.6	20.4	146.5	31.2	29.8
LnGrp LOS	E	D	D	D	C	C	F	C	C	F	C	C
Approach Vol, veh/h		516			668			1274			908	
Approach Delay, s/veh		43.5			36.9			457.7			56.9	
Approach LOS		D			D			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.0	46.0	16.6	23.8	25.0	36.0	9.9	30.4				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	10.4	40.2	19.4	29.2	20.4	30.2	7.4	41.2				
Max Q Clear Time (g_c+I1), s	12.4	7.9	11.9	15.7	22.4	14.8	6.1	10.1				
Green Ext Time (p_c), s	0.0	2.3	0.1	1.7	0.0	3.4	0.0	2.6				
Intersection Summary												
HCM 6th Ctrl Delay			202.6									
HCM 6th LOS			F									

HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	81	280	440	665	222	111	906	500	806	132	824	89
Future Volume (veh/h)	81	280	440	665	222	111	906	500	806	132	824	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	88	304	392	723	241	94	985	543	777	143	896	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	142	981	436	494	1344	599	313	1243	553	172	1097	489
Arrive On Green	0.04	0.28	0.28	0.14	0.38	0.38	0.09	0.35	0.35	0.05	0.31	0.31
Sat Flow, veh/h	3456	3554	1580	3456	3554	1585	3456	3554	1582	3456	3554	1585
Grp Volume(v), veh/h	88	304	392	723	241	94	985	543	777	143	896	86
Grp Sat Flow(s),veh/h/ln	1728	1777	1580	1728	1777	1585	1728	1777	1582	1728	1777	1585
Q Serve(g_s), s	2.9	7.8	27.4	16.4	5.2	4.5	10.4	13.4	40.1	4.7	26.7	4.5
Cycle Q Clear(g_c), s	2.9	7.8	27.4	16.4	5.2	4.5	10.4	13.4	40.1	4.7	26.7	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	142	981	436	494	1344	599	313	1243	553	172	1097	489
V/C Ratio(X)	0.62	0.31	0.90	1.46	0.18	0.16	3.14	0.44	1.40	0.83	0.82	0.18
Avail Cap(c_a), veh/h	163	1147	510	494	1488	664	313	1243	553	172	1097	489
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.1	32.9	40.0	49.1	23.8	23.6	52.1	28.6	37.3	54.0	36.6	29.0
Incr Delay (d2), s/veh	3.2	0.2	17.0	219.1	0.1	0.1	972.4	0.2	192.5	26.6	4.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	3.3	12.2	21.9	2.1	1.6	46.7	5.5	44.2	2.6	11.8	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.3	33.0	57.0	268.3	23.8	23.7	1024.6	28.9	229.8	80.6	41.5	29.1
LnGrp LOS	E	C	E	F	C	C	F	C	F	F	D	C
Approach Vol, veh/h		784			1058			2305			1125	
Approach Delay, s/veh		47.7			190.9			522.1			45.6	
Approach LOS		D			F			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.3	45.9	21.0	37.5	15.0	41.2	9.3	49.2				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	5.7	40.1	16.4	37.0	10.4	35.4	5.4	48.0				
Max Q Clear Time (g_c+I1), s	6.7	42.1	18.4	29.4	12.4	28.7	4.9	7.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.0	0.0	3.2	0.0	1.8				
Intersection Summary												
HCM 6th Ctrl Delay				283.4								
HCM 6th LOS				F								

Intersection	
Intersection Delay, s/veh	496
Intersection LOS	F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	154	708	661	231	1021	763
Future Vol, veh/h	154	708	661	231	1021	763
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	167	770	718	251	1110	829
Number of Lanes	1	1	2	0	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left NB			WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right SB		WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay	576.5	277.8	566.3
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	49%	0%	0%	0%	100%	100%
Vol Right, %	0%	51%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	441	451	154	708	1021	382	382
LT Vol	0	0	154	0	1021	0	0
Through Vol	441	220	0	0	0	382	382
RT Vol	0	231	0	708	0	0	0
Lane Flow Rate	479	491	167	770	1110	415	415
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	1.451	1.437	0.577	2.397	2.993	1.061	0.861
Departure Headway (Hd)	21.344	20.962	23.649	22.422	12.567	12.042	10.221
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	177	182	154	169	300	307	357
Service Time	19.044	18.662	21.349	20.122	10.267	9.742	7.921
HCM Lane V/C Ratio	2.706	2.698	1.084	4.556	3.7	1.352	1.162
HCM Control Delay	281.2	274.4	54.5	690.1	930.6	105.5	51.9
HCM Lane LOS	F	F	F	F	F	F	F
HCM 95th-tile Q	15.4	15.4	3	32.5	75.6	12.1	8

Intersection						
Int Delay, s/veh	21.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑	
Traffic Vol, veh/h	102	122	42	590	1261	43
Future Vol, veh/h	102	122	42	590	1261	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	124	43	602	1287	44

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1997	1309	1331	0	-	0
Stage 1	1309	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 66	195	519	-	-	-
Stage 1	253	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 61	195	519	-	-	-
Mov Cap-2 Maneuver	168	-	-	-	-	-
Stage 1	232	-	-	-	-	-
Stage 2	499	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	202.7	0.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	519	-	182	-	-
HCM Lane V/C Ratio	0.083	-	1.256	-	-
HCM Control Delay (s)	12.6	-	202.7	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.3	-	12.6	-	-

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

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/29/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	94	449	385	627	1242	146
Future Volume (vph)	94	449	385	627	1242	146
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	44.8	9.6	16.5	29.5	29.5
Total Split (s)	44.8	44.8	30.0	75.2	45.2	45.2
Total Split (%)	37.3%	37.3%	25.0%	62.7%	37.7%	37.7%
Yellow Time (s)	4.8	4.8	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	6.5	6.5	6.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Max	Max	Max
Act Effct Green (s)	15.6	15.6	25.5	69.0	38.9	38.9
Actuated g/C Ratio	0.16	0.16	0.26	0.71	0.40	0.40
v/c Ratio	0.38	0.84	0.96	0.29	1.02	0.26
Control Delay	39.4	20.9	70.9	6.3	58.8	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	20.9	70.9	6.3	58.8	15.7
LOS	D	C	E	A	E	B
Approach Delay	24.1			30.9	54.3	
Approach LOS	C			C	D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 97
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.02
 Intersection Signal Delay: 40.7
 Intersection LOS: D
 Intersection Capacity Utilization 78.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	94	449	385	627	1242	146
Future Volume (veh/h)	94	449	385	627	1242	146
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	109	522	448	729	1444	170
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	579	515	377	2034	1146	511
Arrive On Green	0.32	0.32	0.21	0.57	0.32	0.32
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	109	522	448	729	1444	170
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	5.3	39.0	25.4	13.2	38.7	9.8
Cycle Q Clear(g_c), s	5.3	39.0	25.4	13.2	38.7	9.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	579	515	377	2034	1146	511
V/C Ratio(X)	0.19	1.01	1.19	0.36	1.26	0.33
Avail Cap(c_a), veh/h	579	515	377	2034	1146	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	40.5	47.3	13.8	40.7	30.8
Incr Delay (d2), s/veh	0.2	43.0	108.3	0.5	124.2	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	34.9	22.0	4.8	35.5	3.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.3	83.5	155.6	14.3	164.8	32.6
LnGrp LOS	C	F	F	B	F	C
Approach Vol, veh/h	631			1177	1614	
Approach Delay, s/veh	74.2			68.1	150.9	
Approach LOS	E			E	F	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		75.2		44.8	30.0	45.2
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	25.4	38.7
Max Q Clear Time (g_c+I1), s		15.2		41.0	27.4	40.7
Green Ext Time (p_c), s		4.8		0.0	0.0	0.0
Intersection Summary						
HCM 6th Ctrl Delay			108.2			
HCM 6th LOS			F			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

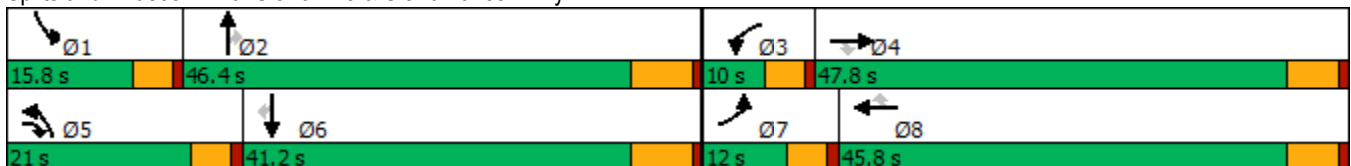
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	195	580	166	224	311	639	786	312	333	1348	242
Future Volume (vph)	151	195	580	166	224	311	639	786	312	333	1348	242
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	12.0	47.8	21.0	10.0	45.8	45.8	21.0	46.4	46.4	15.8	41.2	41.2
Total Split (%)	10.0%	39.8%	17.5%	8.3%	38.2%	38.2%	17.5%	38.7%	38.7%	13.2%	34.3%	34.3%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	7.3	16.2	38.4	5.4	14.3	14.3	16.4	40.0	40.0	11.2	34.8	34.8
Actuated g/C Ratio	0.08	0.17	0.41	0.06	0.15	0.15	0.17	0.42	0.42	0.12	0.37	0.37
v/c Ratio	0.63	0.35	0.93	0.92	0.46	0.75	1.17	0.40	0.40	0.90	0.79	0.35
Control Delay	54.5	35.6	44.5	94.0	39.0	21.0	131.6	20.2	3.9	67.8	31.0	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	35.6	44.5	94.0	39.0	21.0	131.6	20.2	3.9	67.8	31.0	4.5
LOS	D	D	D	F	D	C	F	C	A	E	C	A
Approach Delay		44.3			44.0			58.2			34.1	
Approach LOS		D			D			E			C	

Intersection Summary



































Cycle Length: 120
 Actuated Cycle Length: 94.4
 Natural Cycle: 140
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.17
 Intersection Signal Delay: 45.1
 Intersection LOS: D
 Intersection Capacity Utilization 79.8%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		 	  	
Traffic Volume (veh/h)	151	195	580	166	224	311	639	786	312	333	1348	242
Future Volume (veh/h)	151	195	580	166	224	311	639	786	312	333	1348	242
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	166	214	517	182	246	290	702	864	310	366	1481	239
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	224	1088	717	166	1030	458	505	1808	560	345	1571	488
Arrive On Green	0.06	0.31	0.31	0.05	0.29	0.29	0.15	0.35	0.35	0.10	0.31	0.31
Sat Flow, veh/h	3456	3554	1585	3456	3554	1582	3456	5106	1581	3456	5106	1585
Grp Volume(v), veh/h	166	214	517	182	246	290	702	864	310	366	1481	239
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1582	1728	1702	1581	1728	1702	1585
Q Serve(g_s), s	5.3	5.0	29.7	5.4	5.9	17.9	16.4	14.8	17.7	11.2	31.7	13.8
Cycle Q Clear(g_c), s	5.3	5.0	29.7	5.4	5.9	17.9	16.4	14.8	17.7	11.2	31.7	13.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	224	1088	717	166	1030	458	505	1808	560	345	1571	488
V/C Ratio(X)	0.74	0.20	0.72	1.09	0.24	0.63	1.39	0.48	0.55	1.06	0.94	0.49
Avail Cap(c_a), veh/h	228	1330	825	166	1267	564	505	1816	562	345	1579	490
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.6	28.7	25.0	53.4	30.4	34.7	47.9	28.2	29.1	50.5	37.9	31.7
Incr Delay (d2), s/veh	10.6	0.1	2.6	97.2	0.1	1.6	187.3	0.2	1.2	65.5	11.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	2.1	10.9	4.5	2.5	6.8	19.8	5.6	6.6	7.7	13.9	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.2	28.8	27.6	150.6	30.5	36.2	235.2	28.4	30.3	116.0	49.5	32.4
LnGrp LOS	E	C	C	F	C	D	F	C	C	F	D	C
Approach Vol, veh/h		897			718			1876			2086	
Approach Delay, s/veh		34.3			63.3			106.1			59.2	
Approach LOS		C			E			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.8	46.2	10.0	40.2	21.0	41.0	11.9	38.3				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	11.2	39.9	5.4	42.0	16.4	34.7	7.4	40.0				
Max Q Clear Time (g_c+I1), s	13.2	19.7	7.4	31.7	18.4	33.7	7.3	19.9				
Green Ext Time (p_c), s	0.0	6.3	0.0	2.4	0.0	0.8	0.0	2.3				
Intersection Summary												
HCM 6th Ctrl Delay				71.5								
HCM 6th LOS				E								

Intersection	
Intersection Delay, s/veh	51.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↕↔		↖	↕↔		↖	↕	↖	↖	↕	↖
Traffic Vol, veh/h	70	396	18	179	374	335	11	5	144	200	2	38
Future Vol, veh/h	70	396	18	179	374	335	11	5	144	200	2	38
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	80	455	21	206	430	385	13	6	166	230	2	44
Number of Lanes	1	2	0	1	2	0	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	3	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	3	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	3	3
HCM Control Delay	28.8	75.6	19.9	29.7
HCM LOS	D	F	C	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	100%	0%	0%	100%	88%	0%	100%	27%	0%	100%
Vol Right, %	0%	0%	100%	0%	0%	12%	0%	0%	73%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	11	5	144	70	264	150	179	249	460	200	2
LT Vol	11	0	0	70	0	0	179	0	0	200	0
Through Vol	0	5	0	0	264	132	0	249	125	0	2
RT Vol	0	0	144	0	0	18	0	0	335	0	0
Lane Flow Rate	13	6	166	80	303	172	206	287	528	230	2
Geometry Grp	8	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.038	0.017	0.448	0.217	0.778	0.436	0.512	0.674	1.167	0.672	0.006
Departure Headway (Hd)	11.163	10.663	9.963	9.823	9.224	9.239	8.962	8.462	7.952	10.773	10.273
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	323	338	364	368	391	391	403	427	460	338	350
Service Time	8.863	8.363	7.663	7.523	7.023	6.939	6.709	6.209	5.699	8.473	7.973
HCM Lane V/C Ratio	0.04	0.018	0.456	0.217	0.775	0.44	0.511	0.672	1.148	0.68	0.006
HCM Control Delay	14.3	13.5	20.5	15.2	38	18.9	20.8	27.1	123.2	33	13
HCM Lane LOS	B	B	C	C	E	C	C	D	F	D	B
HCM 95th-tile Q	0.1	0.1	2.2	0.8	6.5	2.2	2.8	4.8	19.5	4.6	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	742	879	41	0	9
Future Vol, veh/h	0	742	879	41	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	789	935	44	0	10

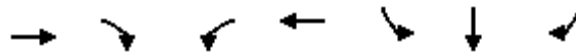
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	490
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	524
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	524
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	524
HCM Lane V/C Ratio	-	-	-	0.018
HCM Control Delay (s)	-	-	-	12
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Timings
3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

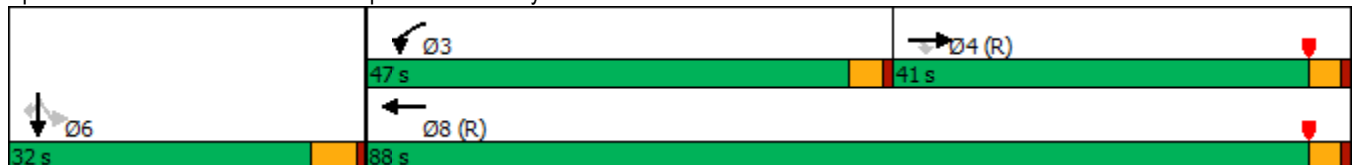


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↑↑	↑↑	↑	↑	↑
Traffic Volume (vph)	461	281	677	814	333	0	106
Future Volume (vph)	461	281	677	814	333	0	106
Turn Type	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases	4		3	8		6	
Permitted Phases		4			6		6
Detector Phase	4	4	3	8	6	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	34.0	34.0	12.0	29.0	13.0	13.0	13.0
Total Split (s)	41.0	41.0	47.0	88.0	32.0	32.0	32.0
Total Split (%)	34.2%	34.2%	39.2%	73.3%	26.7%	26.7%	26.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	None
Act Effct Green (s)	55.6	55.6	32.4	91.9	19.1	19.1	19.1
Actuated g/C Ratio	0.46	0.46	0.27	0.77	0.16	0.16	0.16
v/c Ratio	0.31	0.35	0.81	0.33	0.69	0.69	0.34
Control Delay	22.9	4.0	42.0	7.4	60.6	60.6	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.9	4.0	42.0	7.4	60.6	60.6	9.7
LOS	C	A	D	A	E	E	A
Approach Delay	15.8			23.1		48.3	
Approach LOS	B			C		D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 25.2
 Intersection LOS: C
 Intersection Capacity Utilization 72.9%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 3: I-15 SB Ramp & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 3: I-15 SB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↘↗	↑↑					↘	↗	↗
Traffic Volume (veh/h)	0	461	281	677	814	0	0	0	0	333	0	106
Future Volume (veh/h)	0	461	281	677	814	0	0	0	0	333	0	106
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0				1870	1870	1870
Adj Flow Rate, veh/h	0	512	295	752	904	0				370	0	92
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1857	828	829	2828	0				460	0	202
Arrive On Green	0.00	0.52	0.52	0.48	1.00	0.00				0.13	0.00	0.13
Sat Flow, veh/h	0	3647	1585	3456	3647	0				3563	0	1563
Grp Volume(v), veh/h	0	512	295	752	904	0				370	0	92
Grp Sat Flow(s),veh/h/ln	0	1777	1585	1728	1777	0				1781	0	1563
Q Serve(g_s), s	0.0	9.6	13.1	24.0	0.0	0.0				12.1	0.0	6.5
Cycle Q Clear(g_c), s	0.0	9.6	13.1	24.0	0.0	0.0				12.1	0.0	6.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1857	828	829	2828	0				460	0	202
V/C Ratio(X)	0.00	0.28	0.36	0.91	0.32	0.00				0.80	0.00	0.46
Avail Cap(c_a), veh/h	0	1857	828	1238	2828	0				802	0	352
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.51	0.51	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	16.0	16.8	30.0	0.0	0.0				50.8	0.0	48.4
Incr Delay (d2), s/veh	0.0	0.4	1.2	3.8	0.2	0.0				3.3	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.0	5.0	8.1	0.1	0.0				5.6	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.3	18.0	33.8	0.2	0.0				54.1	0.0	50.0
LnGrp LOS	A	B	B	C	A	A				D	A	D
Approach Vol, veh/h		807			1656						462	
Approach Delay, s/veh		16.9			15.4						53.3	
Approach LOS		B			B						D	
Timer - Assigned Phs			3	4		6		8				
Phs Duration (G+Y+Rc), s			32.8	66.7		20.5		99.5				
Change Period (Y+Rc), s			4.0	4.0		5.0		4.0				
Max Green Setting (Gmax), s			43.0	37.0		27.0		84.0				
Max Q Clear Time (g_c+I1), s			26.0	15.1		14.1		2.0				
Green Ext Time (p_c), s			2.7	4.6		1.4		8.3				
Intersection Summary												
HCM 6th Ctrl Delay			21.8									
HCM 6th LOS			C									
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings
4: Beech Ave. & I-15 SB Ramps

Ventana (JN 13769)
04/29/2021

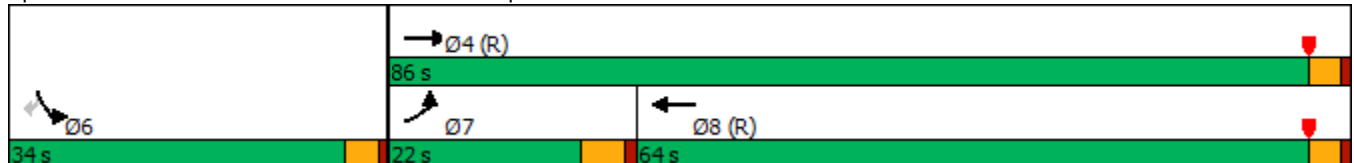


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations	↗	↑↑	↑↑	↖	↗
Traffic Volume (vph)	153	834	657	295	96
Future Volume (vph)	153	834	657	295	96
Turn Type	Prot	NA	NA	Prot	Perm
Protected Phases	7	4	8	6	
Permitted Phases					6
Detector Phase	7	4	8	6	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	5.0	5.0
Minimum Split (s)	10.0	12.0	12.0	9.0	9.0
Total Split (s)	22.0	86.0	64.0	34.0	34.0
Total Split (%)	18.3%	71.7%	53.3%	28.3%	28.3%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	None	None
Act Effct Green (s)	15.0	86.5	66.6	25.5	25.5
Actuated g/C Ratio	0.12	0.72	0.56	0.21	0.21
v/c Ratio	0.74	0.35	0.74	0.84	0.25
Control Delay	70.3	7.1	47.8	64.4	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	70.3	7.1	47.8	64.4	8.3
LOS	E	A	D	E	A
Approach Delay		16.9	47.8	50.6	
Approach LOS		B	D	D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 37.0
 Intersection LOS: D
 Intersection Capacity Utilization 76.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 4: Beech Ave. & I-15 SB Ramps



HCM 6th Signalized Intersection Summary
4: Beech Ave. & I-15 SB Ramps

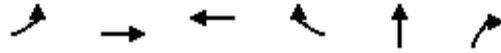
Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗		↙	↘	
Traffic Volume (veh/h)	153	834	657	693	295	96	
Future Volume (veh/h)	153	834	657	693	295	96	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	163	887	699	737	314	102	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	191	2621	1046	933	349	310	
Arrive On Green	0.11	0.74	0.98	0.98	0.20	0.20	
Sat Flow, veh/h	1781	3647	1870	1585	1781	1585	
Grp Volume(v), veh/h	163	887	699	737	314	102	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	10.8	10.5	2.3	4.3	20.7	6.6	
Cycle Q Clear(g_c), s	10.8	10.5	2.3	4.3	20.7	6.6	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	191	2621	1046	933	349	310	
V/C Ratio(X)	0.85	0.34	0.67	0.79	0.90	0.33	
Avail Cap(c_a), veh/h	252	2621	1046	933	445	396	
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00	
Upstream Filter(I)	1.00	1.00	0.09	0.09	1.00	1.00	
Uniform Delay (d), s/veh	52.6	5.5	0.4	0.5	47.1	41.5	
Incr Delay (d2), s/veh	18.8	0.4	0.3	0.6	18.0	0.6	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	5.8	3.6	0.4	0.5	10.9	6.2	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	71.4	5.9	0.8	1.1	65.1	42.1	
LnGrp LOS	E	A	A	A	E	D	
Approach Vol, veh/h		1050	1436		416		
Approach Delay, s/veh		16.0	0.9		59.5		
Approach LOS		B	A		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				92.5	27.5	17.9	74.6
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				82.0	30.0	17.0	60.0
Max Q Clear Time (g_c+I1), s				12.5	22.7	12.8	6.3
Green Ext Time (p_c), s				8.0	0.8	0.2	16.8
Intersection Summary							
HCM 6th Ctrl Delay			14.8				
HCM 6th LOS			B				

Timings
5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

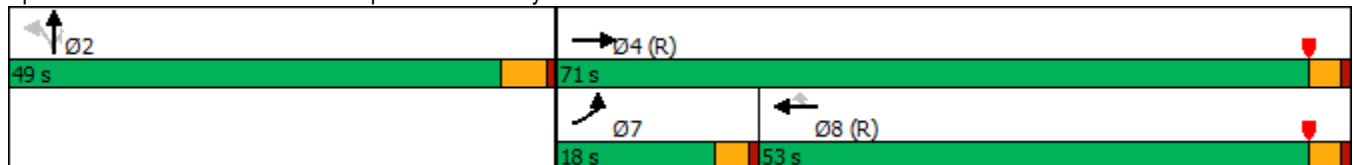


Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Configurations	↖	↗↗	↗↗	↖	↖	↗↗
Traffic Volume (vph)	140	653	1079	485	28	1010
Future Volume (vph)	140	653	1079	485	28	1010
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	7	4	8		2	
Permitted Phases				8		2
Detector Phase	7	4	8	8	2	2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	30.0	36.0	36.0	13.0	13.0
Total Split (s)	18.0	71.0	53.0	53.0	49.0	49.0
Total Split (%)	15.0%	59.2%	44.2%	44.2%	40.8%	40.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	13.3	68.1	50.8	50.8	42.9	42.9
Actuated g/C Ratio	0.11	0.57	0.42	0.42	0.36	0.36
v/c Ratio	0.79	0.36	0.79	0.56	0.76	0.92
Control Delay	77.6	16.2	30.6	4.7	42.8	37.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.6	16.2	30.6	4.7	42.8	37.9
LOS	E	B	C	A	D	D
Approach Delay		27.1	22.6		39.4	
Approach LOS		C	C		D	

Intersection Summary



















Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 29.9
 Intersection LOS: C
 Intersection Capacity Utilization 72.9%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 5: I-15 NB Ramp & Duncan Canyon Rd.



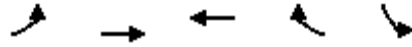
HCM 6th Signalized Intersection Summary
 5: I-15 NB Ramp & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	653	0	0	1079	485	412	28	1010	0	0	0
Future Volume (veh/h)	140	653	0	0	1079	485	412	28	1010	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	154	718	0	0	1186	401	453	31	978			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	179	1984	0	0	1509	673	613	42	1001			
Arrive On Green	0.20	1.00	0.00	0.00	0.56	0.56	0.37	0.37	0.37			
Sat Flow, veh/h	1781	3647	0	0	3647	1585	1672	114	2731			
Grp Volume(v), veh/h	154	718	0	0	1186	401	484	0	978			
Grp Sat Flow(s),veh/h/ln	1781	1777	0	0	1777	1585	1787	0	1366			
Q Serve(g_s), s	10.0	0.0	0.0	0.0	31.3	19.9	28.2	0.0	42.4			
Cycle Q Clear(g_c), s	10.0	0.0	0.0	0.0	31.3	19.9	28.2	0.0	42.4			
Prop In Lane	1.00		0.00	0.00		1.00	0.94		1.00			
Lane Grp Cap(c), veh/h	179	1984	0	0	1509	673	655	0	1001			
V/C Ratio(X)	0.86	0.36	0.00	0.00	0.79	0.60	0.74	0.00	0.98			
Avail Cap(c_a), veh/h	208	1984	0	0	1509	673	655	0	1001			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.33	1.33	1.00	1.00	1.00			
Upstream Filter(I)	0.91	0.91	0.00	0.00	0.79	0.79	1.00	0.00	1.00			
Uniform Delay (d), s/veh	47.2	0.0	0.0	0.0	21.8	19.3	33.0	0.0	37.5			
Incr Delay (d2), s/veh	24.5	0.5	0.0	0.0	3.3	3.1	4.4	0.0	22.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.2	0.1	0.0	0.0	12.1	7.0	12.9	0.0	17.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.6	0.5	0.0	0.0	25.2	22.4	37.4	0.0	60.3			
LnGrp LOS	E	A	A	A	C	C	D	A	E			
Approach Vol, veh/h		872			1587			1462				
Approach Delay, s/veh		13.0			24.5			52.7				
Approach LOS		B			C			D				
Timer - Assigned Phs		2		4			7	8				
Phs Duration (G+Y+Rc), s		49.0		71.0			16.0	55.0				
Change Period (Y+Rc), s		5.0		4.0			4.0	4.0				
Max Green Setting (Gmax), s		44.0		67.0			14.0	49.0				
Max Q Clear Time (g_c+I1), s		44.4		2.0			12.0	33.3				
Green Ext Time (p_c), s		0.0		6.0			0.1	9.1				
Intersection Summary												
HCM 6th Ctrl Delay				32.5								
HCM 6th LOS				C								

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021

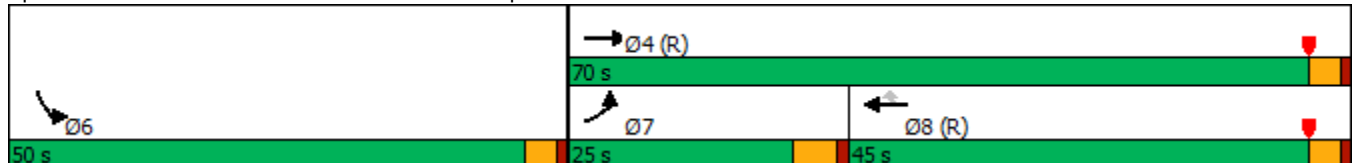


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↗	↑↑	↑↑	↖	↖↖
Traffic Volume (vph)	292	837	1136	548	1161
Future Volume (vph)	292	837	1136	548	1161
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	25.0	70.0	45.0	45.0	50.0
Total Split (%)	20.8%	58.3%	37.5%	37.5%	41.7%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	20.0	66.0	41.0	41.0	46.0
Actuated g/C Ratio	0.17	0.55	0.34	0.34	0.38
v/c Ratio	1.05	0.46	1.00	0.71	1.08
Control Delay	107.0	14.8	65.6	14.2	85.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	107.0	14.8	65.6	14.2	85.3
LOS	F	B	E	B	F
Approach Delay		38.7	48.9		85.3
Approach LOS		D	D		F

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.08
 Intersection Signal Delay: 58.1
 Intersection LOS: E
 Intersection Capacity Utilization 98.3%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗	↑	↙	↘	
Traffic Volume (veh/h)	292	837	1136	548	1161	214	
Future Volume (veh/h)	292	837	1136	548	1161	214	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	311	890	1209	290	1373	0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	297	1955	1214	542	1366	608	
Arrive On Green	0.33	1.00	0.34	0.34	0.38	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	311	890	1209	290	1373	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	20.0	0.0	40.7	17.7	46.0	0.0	
Cycle Q Clear(g_c), s	20.0	0.0	40.7	17.7	46.0	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	297	1955	1214	542	1366	608	
V/C Ratio(X)	1.05	0.46	1.00	0.54	1.01	0.00	
Avail Cap(c_a), veh/h	297	1955	1214	542	1366	608	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.88	0.88	0.65	0.65	1.00	0.00	
Uniform Delay (d), s/veh	40.0	0.0	39.4	31.8	37.0	0.0	
Incr Delay (d2), s/veh	62.0	0.7	19.8	2.5	25.7	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	12.4	0.2	20.8	7.1	24.4	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	102.0	0.7	59.3	34.3	62.7	0.0	
LnGrp LOS	F	A	E	C	F	A	
Approach Vol, veh/h		1201	1499		1373		
Approach Delay, s/veh		26.9	54.4		62.7		
Approach LOS		C	D		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				70.0	50.0	25.0	45.0
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				66.0	46.0	20.0	41.0
Max Q Clear Time (g_c+I1), s				2.0	48.0	22.0	42.7
Green Ext Time (p_c), s				8.1	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	49.1
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

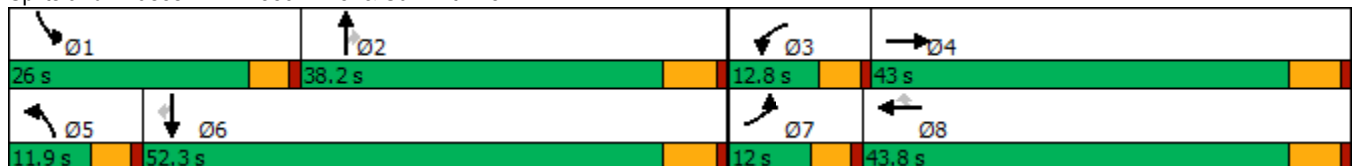
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	142	364	156	386	524	123	414	145	840	602	113
Future Volume (vph)	142	364	156	386	524	123	414	145	840	602	113
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	43.8	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	43.0	12.8	43.8	43.8	11.9	38.2	38.2	26.0	52.3	52.3
Total Split (%)	10.0%	35.8%	10.7%	36.5%	36.5%	9.9%	31.8%	31.8%	21.7%	43.6%	43.6%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	7.2	21.3	7.8	21.8	21.8	6.9	17.5	17.5	21.9	32.5	32.5
Actuated g/C Ratio	0.08	0.24	0.09	0.24	0.24	0.08	0.19	0.19	0.24	0.36	0.36
v/c Ratio	0.54	0.63	0.55	0.47	0.80	0.49	0.63	0.36	1.04	0.49	0.18
Control Delay	50.8	31.1	50.1	30.6	18.5	50.0	38.4	8.4	78.9	24.9	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	31.1	50.1	30.6	18.5	50.0	38.4	8.4	78.9	24.9	5.4
LOS	D	C	D	C	B	D	D	A	E	C	A
Approach Delay		35.4		27.5			34.1			52.7	
Approach LOS		D		C			C			D	

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 89.8
 Natural Cycle: 125
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.04
 Intersection Signal Delay: 39.9
 Intersection LOS: D
 Intersection Capacity Utilization 77.4%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 7: Beech Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	364	143	156	386	524	123	414	145	840	602	113
Future Volume (veh/h)	142	364	143	156	386	524	123	414	145	840	602	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	148	379	124	162	402	454	128	431	111	875	627	87
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	850	274	227	1161	517	191	663	292	746	1234	549
Arrive On Green	0.06	0.32	0.32	0.07	0.33	0.33	0.06	0.19	0.19	0.22	0.35	0.35
Sat Flow, veh/h	3456	2638	852	3456	3554	1584	3456	3554	1565	3456	3554	1581
Grp Volume(v), veh/h	148	254	249	162	402	454	128	431	111	875	627	87
Grp Sat Flow(s),veh/h/ln	1728	1777	1712	1728	1777	1584	1728	1777	1565	1728	1777	1581
Q Serve(g_s), s	4.2	11.2	11.5	4.6	8.5	26.8	3.6	11.1	6.2	21.4	13.9	3.8
Cycle Q Clear(g_c), s	4.2	11.2	11.5	4.6	8.5	26.8	3.6	11.1	6.2	21.4	13.9	3.8
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	212	572	552	227	1161	517	191	663	292	746	1234	549
V/C Ratio(X)	0.70	0.44	0.45	0.71	0.35	0.88	0.67	0.65	0.38	1.17	0.51	0.16
Avail Cap(c_a), veh/h	258	666	642	286	1361	607	254	1161	511	746	1666	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	26.6	26.7	45.4	25.4	31.5	46.0	37.3	35.3	38.9	25.7	22.4
Incr Delay (d2), s/veh	4.1	0.5	0.6	3.9	0.2	12.4	1.6	1.1	0.8	92.0	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.8	4.7	2.1	3.6	11.7	1.6	4.9	2.4	18.4	5.8	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.8	27.1	27.2	49.3	25.5	43.9	47.6	38.4	36.1	130.9	26.0	22.5
LnGrp LOS	D	C	C	D	C	D	D	D	D	F	C	C
Approach Vol, veh/h		651			1018			670			1589	
Approach Delay, s/veh		32.3			37.5			39.8			83.6	
Approach LOS		C			D			D			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.0	24.3	11.1	37.8	10.1	40.2	10.7	38.2				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	21.4	32.4	8.2	37.2	7.3	46.5	7.4	38.0				
Max Q Clear Time (g_c+I1), s	23.4	13.1	6.6	13.5	5.6	15.9	6.2	28.8				
Green Ext Time (p_c), s	0.0	3.1	0.0	3.2	0.0	5.1	0.0	3.1				
Intersection Summary												
HCM 6th Ctrl Delay			55.7									
HCM 6th LOS			E									

Timings
8: Lytle Creek Dr. & Duncan Canyon Rd.

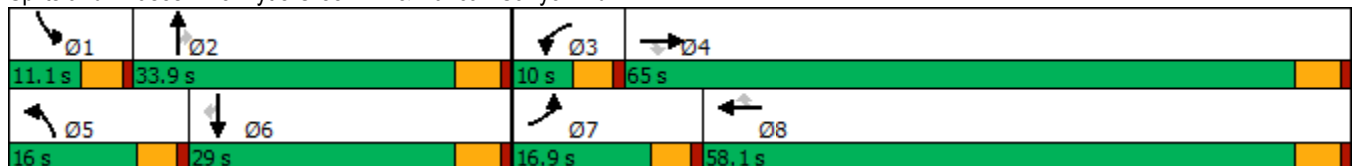
Ventana (JN 13769)
06/08/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	1341	141	66	1292	28	184	53	16	69	29	58
Future Volume (vph)	182	1341	141	66	1292	28	184	53	16	69	29	58
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.1	27.1	9.6	27.1	27.1	9.6	27.1	27.1	9.6	27.1	27.1
Total Split (s)	16.9	65.0	65.0	10.0	58.1	58.1	16.0	33.9	33.9	11.1	29.0	29.0
Total Split (%)	14.1%	54.2%	54.2%	8.3%	48.4%	48.4%	13.3%	28.3%	28.3%	9.3%	24.2%	24.2%
Yellow Time (s)	3.6	4.1	4.1	3.6	4.1	4.1	3.6	4.1	4.1	3.6	4.1	4.1
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.1	5.1	4.6	5.1	5.1	4.6	5.1	5.1	4.6	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	9.5	43.5	43.5	5.4	36.9	36.9	9.4	16.0	16.0	6.1	10.2	10.2
Actuated g/C Ratio	0.11	0.51	0.51	0.06	0.43	0.43	0.11	0.19	0.19	0.07	0.12	0.12
v/c Ratio	0.52	0.57	0.18	0.33	0.64	0.04	0.53	0.17	0.04	0.31	0.08	0.18
Control Delay	43.4	16.0	2.8	47.3	20.7	0.1	43.8	36.8	0.2	45.5	39.3	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.4	16.0	2.8	47.3	20.7	0.1	43.8	36.8	0.2	45.5	39.3	1.1
LOS	D	B	A	D	C	A	D	D	A	D	D	A
Approach Delay		17.8			21.5			39.7			27.9	
Approach LOS		B			C			D			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 85.9
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.64
 Intersection Signal Delay: 21.4
 Intersection LOS: C
 Intersection Capacity Utilization 54.4%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 8: Lytle Creek Dr. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
8: Lytle Creek Dr. & Duncan Canyon Rd.

Ventana (JN 13769)
06/08/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	1341	141	66	1292	28	184	53	16	69	29	58
Future Volume (veh/h)	182	1341	141	66	1292	28	184	53	16	69	29	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	198	1458	153	72	1404	30	200	58	17	75	32	63
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	2370	736	181	2209	686	291	312	264	184	483	215
Arrive On Green	0.08	0.46	0.46	0.05	0.43	0.43	0.08	0.17	0.17	0.05	0.14	0.14
Sat Flow, veh/h	3456	5106	1585	3456	5106	1585	3456	1870	1585	3456	3554	1585
Grp Volume(v), veh/h	198	1458	153	72	1404	30	200	58	17	75	32	63
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1585	1728	1870	1585	1728	1777	1585
Q Serve(g_s), s	4.1	15.8	4.2	1.5	15.8	0.8	4.1	2.0	0.7	1.5	0.6	2.6
Cycle Q Clear(g_c), s	4.1	15.8	4.2	1.5	15.8	0.8	4.1	2.0	0.7	1.5	0.6	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	2370	736	181	2209	686	291	312	264	184	483	215
V/C Ratio(X)	0.68	0.62	0.21	0.40	0.64	0.04	0.69	0.19	0.06	0.41	0.07	0.29
Avail Cap(c_a), veh/h	577	4154	1289	253	3675	1141	535	732	620	305	1154	515
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	14.8	11.7	33.8	16.3	12.1	32.8	26.4	25.8	33.7	27.7	28.6
Incr Delay (d2), s/veh	1.1	0.3	0.1	0.5	0.3	0.0	1.1	0.3	0.1	0.5	0.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	5.6	1.4	0.6	5.7	0.3	1.7	0.9	0.3	0.6	0.2	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.8	15.1	11.8	34.3	16.7	12.1	33.9	26.7	25.9	34.3	27.8	29.4
LnGrp LOS	C	B	B	C	B	B	C	C	C	C	C	C
Approach Vol, veh/h		1809			1506			275			170	
Approach Delay, s/veh		16.8			17.4			31.8			31.2	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.5	17.4	8.5	39.3	10.8	15.1	10.8	37.0				
Change Period (Y+Rc), s	4.6	5.1	4.6	5.1	4.6	5.1	4.6	5.1				
Max Green Setting (Gmax), s	6.5	28.8	5.4	59.9	11.4	23.9	12.3	53.0				
Max Q Clear Time (g_c+I1), s	3.5	4.0	3.5	17.8	6.1	4.6	6.1	17.8				
Green Ext Time (p_c), s	0.0	0.3	0.0	16.4	0.2	0.3	0.2	13.9				
Intersection Summary												
HCM 6th Ctrl Delay				18.8								
HCM 6th LOS				B								

Timings
9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
04/29/2021

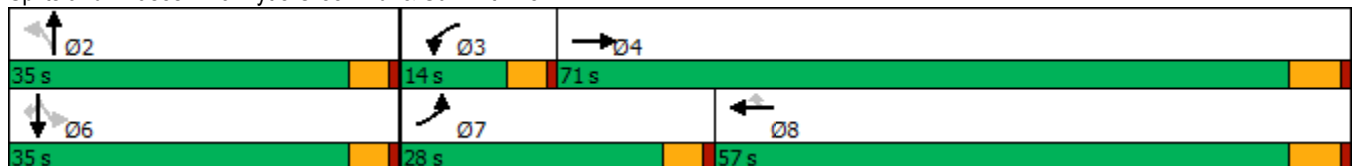


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	↖	↕	↖	↕	↖	↖	↕	↖	↕	↖
Traffic Volume (vph)	206	1389	66	1092	153	60	39	136	28	185
Future Volume (vph)	206	1389	66	1092	153	60	39	136	28	185
Turn Type	Prot	NA	Prot	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	7	4	3	8			2		6	
Permitted Phases					8	2		6		6
Detector Phase	7	4	3	8	8	2	2	6	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	9.6	22.8	9.6	28.8	28.8	33.7	33.7	31.7	31.7	31.7
Total Split (s)	28.0	71.0	14.0	57.0	57.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	23.3%	59.2%	11.7%	47.5%	47.5%	29.2%	29.2%	29.2%	29.2%	29.2%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.7	3.7	3.7	3.7	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.7	4.7	4.7	4.7	4.7
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	Min	None	Min	Min	None	None	None	None	None
Act Effct Green (s)	16.8	54.9	7.9	43.0	43.0	18.4	18.4	18.4	18.4	18.4
Actuated g/C Ratio	0.18	0.58	0.08	0.46	0.46	0.20	0.20	0.20	0.20	0.20
v/c Ratio	0.72	0.77	0.49	0.74	0.22	0.25	0.31	0.62	0.09	0.44
Control Delay	53.2	19.9	59.4	25.6	8.1	38.1	19.4	50.1	35.2	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.2	19.9	59.4	25.6	8.1	38.1	19.4	50.1	35.2	8.4
LOS	D	B	E	C	A	D	B	D	D	A
Approach Delay		24.1		25.2			26.1		26.8	
Approach LOS		C		C			C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 94.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 24.9
 Intersection LOS: C
 Intersection Capacity Utilization 72.8%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 9: Lytle Creek Rd. & Summit Ave.



HCM 6th Signalized Intersection Summary
 9: Lytle Creek Rd. & Summit Ave.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗	↖	↗		↖	↗	↗
Traffic Volume (veh/h)	206	1389	53	66	1092	153	60	39	67	136	28	185
Future Volume (veh/h)	206	1389	53	66	1092	153	60	39	67	136	28	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	226	1526	51	73	1200	163	66	43	64	149	31	172
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	266	1939	65	94	1622	716	324	146	217	294	408	342
Arrive On Green	0.15	0.55	0.55	0.05	0.46	0.46	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	3508	117	1781	3554	1569	1171	669	995	1277	1870	1570
Grp Volume(v), veh/h	226	771	806	73	1200	163	66	0	107	149	31	172
Grp Sat Flow(s),veh/h/ln	1781	1777	1848	1781	1777	1569	1171	0	1664	1277	1870	1570
Q Serve(g_s), s	10.6	29.3	29.6	3.5	23.7	5.4	4.1	0.0	4.6	9.4	1.1	8.2
Cycle Q Clear(g_c), s	10.6	29.3	29.6	3.5	23.7	5.4	5.2	0.0	4.6	14.0	1.1	8.2
Prop In Lane	1.00		0.06	1.00		1.00	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	266	982	1022	94	1622	716	324	0	363	294	408	342
V/C Ratio(X)	0.85	0.79	0.79	0.78	0.74	0.23	0.20	0.00	0.30	0.51	0.08	0.50
Avail Cap(c_a), veh/h	487	1354	1408	196	2126	939	483	0	589	468	662	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	15.1	15.2	40.0	19.1	14.1	28.7	0.0	28.0	33.8	26.6	29.4
Incr Delay (d2), s/veh	3.0	2.1	2.1	5.1	1.0	0.2	0.3	0.0	0.4	1.4	0.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	11.1	11.7	1.6	9.3	1.9	1.1	0.0	1.8	3.0	0.5	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.5	17.2	17.3	45.1	20.1	14.3	29.0	0.0	28.4	35.2	26.7	30.5
LnGrp LOS	D	B	B	D	C	B	C	A	C	D	C	C
Approach Vol, veh/h		1803			1436			173			352	
Approach Delay, s/veh		19.9			20.7			28.6			32.2	
Approach LOS		B			C			C			C	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		23.4	9.1	53.1		23.4	17.4	44.9				
Change Period (Y+Rc), s		* 4.7	4.6	5.8		* 4.7	4.6	5.8				
Max Green Setting (Gmax), s		* 30	9.4	65.2		* 30	23.4	51.2				
Max Q Clear Time (g_c+I1), s		7.2	5.5	31.6		16.0	12.6	25.7				
Green Ext Time (p_c), s		0.8	0.0	15.7		1.1	0.2	10.9				

Intersection Summary

HCM 6th Ctrl Delay	21.8
HCM 6th LOS	C

Notes

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

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↑↑	
Traffic Vol, veh/h	11	3	21	132	107	0
Future Vol, veh/h	11	3	21	132	107	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	3	23	143	116	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	305	58	116	0	-	0
Stage 1	116	-	-	-	-	-
Stage 2	189	-	-	-	-	-
Critical Hdwy	6.63	6.93	4.13	-	-	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	675	996	1472	-	-	-
Stage 1	897	-	-	-	-	-
Stage 2	843	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	664	996	1472	-	-	-
Mov Cap-2 Maneuver	696	-	-	-	-	-
Stage 1	883	-	-	-	-	-
Stage 2	843	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1472	-	744	-	-
HCM Lane V/C Ratio	0.016	-	0.02	-	-
HCM Control Delay (s)	7.5	-	9.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Timings
11: Citrus Ave. & Driveway 1

Ventana (JN 13769)
04/29/2021

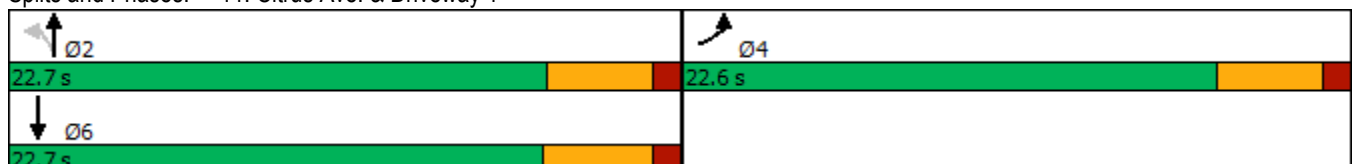


Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	3	11	150	107
Future Volume (vph)	3	11	150	107
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	10.0
Minimum Split (s)	22.6	22.6	22.6	22.7
Total Split (s)	22.6	22.7	22.7	22.7
Total Split (%)	49.9%	50.1%	50.1%	50.1%
Yellow Time (s)	3.6	3.6	3.6	3.7
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	4.6	4.6	4.7
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	Min	Min	Min
Act Effct Green (s)	5.8	29.4	29.4	29.4
Actuated g/C Ratio	0.18	0.92	0.92	0.92
v/c Ratio	0.04	0.01	0.09	0.04
Control Delay	9.6	1.8	1.5	1.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.6	1.8	1.5	1.3
LOS	A	A	A	A
Approach Delay	9.6		1.5	1.3
Approach LOS	A		A	A

Intersection Summary

Cycle Length: 45.3
 Actuated Cycle Length: 31.9
 Natural Cycle: 50
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.09
 Intersection Signal Delay: 1.8
 Intersection LOS: A
 Intersection Capacity Utilization 20.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 11: Citrus Ave. & Driveway 1



HCM 6th Signalized Intersection Summary
 11: Citrus Ave. & Driveway 1

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	8	11	150	107	4
Future Volume (veh/h)	3	8	11	150	107	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	9	12	163	116	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	7	20	992	952	1785	61
Arrive On Green	0.02	0.02	0.51	0.51	0.51	0.51
Sat Flow, veh/h	380	1140	1272	1870	3599	120
Grp Volume(v), veh/h	13	0	12	163	59	61
Grp Sat Flow(s),veh/h/ln	1646	0	1272	1870	1777	1849
Q Serve(g_s), s	0.2	0.0	0.1	0.9	0.3	0.3
Cycle Q Clear(g_c), s	0.2	0.0	0.4	0.9	0.3	0.3
Prop In Lane	0.23	0.69	1.00			0.07
Lane Grp Cap(c), veh/h	29	0	992	952	905	941
V/C Ratio(X)	0.45	0.00	0.01	0.17	0.06	0.07
Avail Cap(c_a), veh/h	1509	0	1517	1723	1628	1694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.6	0.0	2.6	2.6	2.4	2.4
Incr Delay (d2), s/veh	10.8	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.3	0.0	2.6	2.7	2.5	2.5
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	13			175	120	
Approach Delay, s/veh	20.3			2.7	2.5	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		14.7		4.9		14.7
Change Period (Y+Rc), s		* 4.7		4.6		* 4.7
Max Green Setting (Gmax), s		* 18		18.0		* 18
Max Q Clear Time (g_c+I1), s		2.9		2.2		2.3
Green Ext Time (p_c), s		0.7		0.0		0.5

Intersection Summary

HCM 6th Ctrl Delay	3.3
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.
 * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings
12: Citrus Ave. & Duncan Canyon Rd.

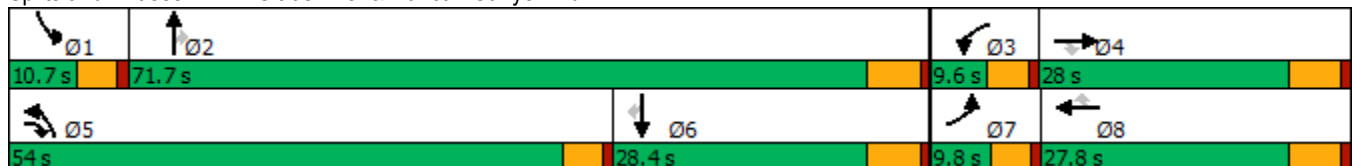
Ventana (JN 13769)
06/03/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	296	1037	22	384	39	950	40	47	26	42	50
Future Volume (vph)	83	296	1037	22	384	39	950	40	47	26	42	50
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	27.8	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	9.8	28.0	54.0	9.6	27.8	27.8	54.0	71.7	71.7	10.7	28.4	28.4
Total Split (%)	8.2%	23.3%	45.0%	8.0%	23.2%	23.2%	45.0%	59.8%	59.8%	8.9%	23.7%	23.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	5.3	17.1	54.4	5.2	12.9	12.9	31.3	42.8	42.8	5.7	10.4	10.4
Actuated g/C Ratio	0.07	0.22	0.69	0.07	0.16	0.16	0.40	0.54	0.54	0.07	0.13	0.13
v/c Ratio	0.37	0.40	0.81	0.10	0.48	0.11	0.73	0.02	0.05	0.21	0.09	0.15
Control Delay	45.1	31.0	8.4	42.2	33.9	0.6	23.7	11.1	0.1	44.5	36.6	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.1	31.0	8.4	42.2	33.9	0.6	23.7	11.1	0.1	44.5	36.6	1.0
LOS	D	C	A	D	C	A	C	B	A	D	D	A
Approach Delay		15.3			31.4			22.1			23.3	
Approach LOS		B			C			C			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 78.8
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 20.3
 Intersection LOS: C
 Intersection Capacity Utilization 89.2%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
06/03/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	296	1037	22	384	39	950	40	47	26	42	50
Future Volume (veh/h)	83	296	1037	22	384	39	950	40	47	26	42	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	308	507	23	400	41	990	42	49	27	44	52
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	189	887	911	87	1124	349	1123	1516	676	51	462	206
Arrive On Green	0.05	0.25	0.25	0.03	0.22	0.22	0.33	0.43	0.43	0.03	0.13	0.13
Sat Flow, veh/h	3456	3554	1585	3456	5106	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	86	308	507	23	400	41	990	42	49	27	44	52
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1702	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.9	5.5	15.4	0.5	5.1	1.6	20.9	0.5	1.4	1.2	0.8	2.3
Cycle Q Clear(g_c), s	1.9	5.5	15.4	0.5	5.1	1.6	20.9	0.5	1.4	1.2	0.8	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	189	887	911	87	1124	349	1123	1516	676	51	462	206
V/C Ratio(X)	0.46	0.35	0.56	0.26	0.36	0.12	0.88	0.03	0.07	0.53	0.10	0.25
Avail Cap(c_a), veh/h	234	1025	972	225	1460	453	2218	3043	1357	141	1044	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.3	23.7	10.2	36.8	25.4	24.0	24.6	12.8	13.1	36.9	29.5	30.1
Incr Delay (d2), s/veh	0.6	0.2	0.6	0.6	0.2	0.1	0.9	0.0	0.0	3.2	0.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	2.2	4.8	0.2	2.0	0.6	8.2	0.2	0.5	0.5	0.4	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.9	24.0	10.9	37.4	25.6	24.2	25.5	12.8	13.1	40.1	29.6	30.8
LnGrp LOS	D	C	B	D	C	C	C	B	B	D	C	C
Approach Vol, veh/h		901			464			1081			123	
Approach Delay, s/veh		17.7			26.0			24.5			32.4	
Approach LOS		B			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.8	38.6	6.5	25.0	29.6	15.8	8.8	22.7				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	6.1	65.9	5.0	22.2	49.4	22.6	5.2	22.0				
Max Q Clear Time (g_c+I1), s	3.2	3.4	2.5	17.4	22.9	4.3	3.9	7.1				
Green Ext Time (p_c), s	0.0	0.4	0.0	1.8	2.2	0.3	0.0	2.4				
Intersection Summary												
HCM 6th Ctrl Delay			22.8									
HCM 6th LOS			C									

Timings
13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
04/29/2021

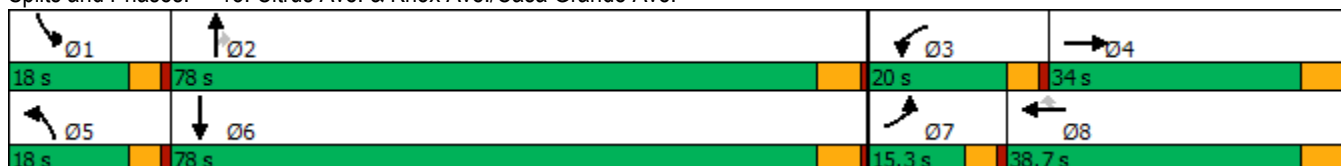


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↗	↖	↑↑	↗	↖	↖↗
Traffic Volume (vph)	69	43	259	41	78	54	1313	375	131	467
Future Volume (vph)	69	43	259	41	78	54	1313	375	131	467
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	7	4	3	8		5	2		1	6
Permitted Phases					8			2		
Detector Phase	7	4	3	8	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0
Minimum Split (s)	9.6	32.8	9.6	30.8	30.8	9.6	26.8	26.8	9.6	22.8
Total Split (s)	15.3	34.0	20.0	38.7	38.7	18.0	78.0	78.0	18.0	78.0
Total Split (%)	10.2%	22.7%	13.3%	25.8%	25.8%	12.0%	52.0%	52.0%	12.0%	52.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	8.7	10.9	16.0	16.5	16.5	8.4	59.4	59.4	12.7	66.6
Actuated g/C Ratio	0.08	0.09	0.14	0.14	0.14	0.07	0.51	0.51	0.11	0.57
v/c Ratio	0.53	0.33	1.10	0.16	0.27	0.44	0.75	0.42	0.70	0.27
Control Delay	72.1	53.2	134.6	52.0	11.9	67.8	25.7	8.9	73.3	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.1	53.2	134.6	52.0	11.9	67.8	25.7	8.9	73.3	14.0
LOS	E	D	F	D	B	E	C	A	E	B
Approach Delay		63.5		100.5			23.4			25.8
Approach LOS		E		F			C			C

Intersection Summary

Cycle Length: 150
 Actuated Cycle Length: 116
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.10
 Intersection Signal Delay: 35.7
 Intersection LOS: D
 Intersection Capacity Utilization 78.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 13: Citrus Ave. & Knox Ave./Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 13: Citrus Ave. & Knox Ave./Casa Grande Ave.

Ventana (JN 13769)
 04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	43	15	259	41	78	54	1313	375	131	467	60
Future Volume (veh/h)	69	43	15	259	41	78	54	1313	375	131	467	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	44	15	267	42	80	56	1354	387	135	481	62
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	122	42	252	340	288	72	1722	768	163	1696	218
Arrive On Green	0.05	0.09	0.09	0.14	0.18	0.18	0.04	0.48	0.48	0.09	0.54	0.54
Sat Flow, veh/h	1781	1334	455	1781	1870	1585	1781	3554	1585	1781	3167	407
Grp Volume(v), veh/h	71	0	59	267	42	80	56	1354	387	135	269	274
Grp Sat Flow(s),veh/h/ln	1781	0	1789	1781	1870	1585	1781	1777	1585	1781	1777	1797
Q Serve(g_s), s	4.3	0.0	3.4	15.4	2.0	4.7	3.4	34.6	18.2	8.1	9.0	9.1
Cycle Q Clear(g_c), s	4.3	0.0	3.4	15.4	2.0	4.7	3.4	34.6	18.2	8.1	9.0	9.1
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	91	0	164	252	340	288	72	1722	768	163	952	963
V/C Ratio(X)	0.78	0.00	0.36	1.06	0.12	0.28	0.77	0.79	0.50	0.83	0.28	0.28
Avail Cap(c_a), veh/h	175	0	463	252	565	478	219	2354	1050	219	1177	1190
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	0.0	46.5	46.8	37.3	38.4	51.8	23.4	19.2	48.6	13.9	13.9
Incr Delay (d2), s/veh	5.3	0.0	1.3	73.7	0.2	0.5	6.4	1.3	0.5	13.2	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	1.6	11.9	1.0	1.9	1.6	14.2	6.6	4.2	3.6	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.4	0.0	47.8	120.5	37.5	38.9	58.2	24.7	19.7	61.8	14.0	14.0
LnGrp LOS	E	A	D	F	D	D	E	C	B	E	B	B
Approach Vol, veh/h		130			389			1797			678	
Approach Delay, s/veh		52.5			94.8			24.6			23.5	
Approach LOS		D			F			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.6	58.6	20.0	15.8	9.0	64.2	10.2	25.6				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	13.4	72.2	15.4	28.2	13.4	72.2	10.7	32.9				
Max Q Clear Time (g_c+I1), s	10.1	36.6	17.4	5.4	5.4	11.1	6.3	6.7				
Green Ext Time (p_c), s	0.1	16.2	0.0	0.2	0.0	3.8	0.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay			34.7									
HCM 6th LOS			C									

Timings
14: Citrus Ave. & Summit Ave.

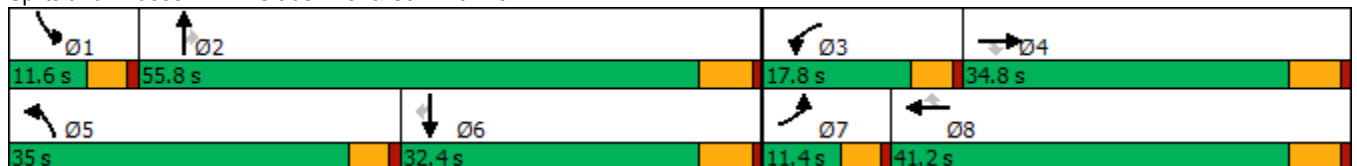
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	623	494	178	505	155	1162	682	154	114	375	89
Future Volume (vph)	162	623	494	178	505	155	1162	682	154	114	375	89
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	34.8	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	11.4	34.8	34.8	17.8	41.2	41.2	35.0	55.8	55.8	11.6	32.4	32.4
Total Split (%)	9.5%	29.0%	29.0%	14.8%	34.3%	34.3%	29.2%	46.5%	46.5%	9.7%	27.0%	27.0%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.8	27.1	27.1	13.3	33.6	33.6	30.5	42.1	42.1	7.0	18.6	18.6
Actuated g/C Ratio	0.06	0.25	0.25	0.12	0.30	0.30	0.28	0.38	0.38	0.06	0.17	0.17
v/c Ratio	1.61	0.78	0.78	0.91	0.51	0.29	2.58	0.55	0.24	1.11	0.69	0.23
Control Delay	349.0	46.3	18.8	92.0	34.0	7.8	737.9	28.6	4.3	165.2	49.6	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	349.0	46.3	18.8	92.0	34.0	7.8	737.9	28.6	4.3	165.2	49.6	1.3
LOS	F	D	B	F	C	A	F	C	A	F	D	A
Approach Delay		74.0			41.5			439.4			64.9	
Approach LOS		E			D			F			E	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 110.4
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 2.58
 Intersection Signal Delay: 222.6
 Intersection LOS: F
 Intersection Capacity Utilization 119.4%
 ICU Level of Service H
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	623	494	178	505	155	1162	682	154	114	375	89
Future Volume (veh/h)	162	623	494	178	505	155	1162	682	154	114	375	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	176	677	444	193	549	158	1263	741	131	124	408	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	109	931	409	213	1137	506	489	1305	565	113	554	243
Arrive On Green	0.06	0.26	0.26	0.12	0.32	0.32	0.27	0.37	0.37	0.06	0.16	0.16
Sat Flow, veh/h	1781	3554	1562	1781	3554	1582	1781	3554	1540	1781	3554	1562
Grp Volume(v), veh/h	176	677	444	193	549	158	1263	741	131	124	408	95
Grp Sat Flow(s),veh/h/ln	1781	1777	1562	1781	1777	1582	1781	1777	1540	1781	1777	1562
Q Serve(g_s), s	6.8	19.2	29.0	11.8	13.7	8.3	30.4	18.4	6.5	7.0	12.1	6.1
Cycle Q Clear(g_c), s	6.8	19.2	29.0	11.8	13.7	8.3	30.4	18.4	6.5	7.0	12.1	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	109	931	409	213	1137	506	489	1305	565	113	554	243
V/C Ratio(X)	1.61	0.73	1.08	0.91	0.48	0.31	2.58	0.57	0.23	1.10	0.74	0.39
Avail Cap(c_a), veh/h	109	931	409	213	1137	506	489	1606	696	113	854	375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	37.2	40.8	48.1	30.3	28.4	40.1	28.0	24.2	51.8	44.5	42.0
Incr Delay (d2), s/veh	311.6	2.9	69.2	36.8	0.3	0.3	717.2	0.4	0.2	114.3	1.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	8.6	18.8	7.4	5.9	3.2	110.6	7.8	2.4	6.7	5.5	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	363.5	40.1	110.0	84.9	30.6	28.8	757.3	28.4	24.4	166.1	46.5	43.0
LnGrp LOS	F	D	F	F	C	C	F	C	C	F	D	D
Approach Vol, veh/h		1297			900			2135			627	
Approach Delay, s/veh		107.9			41.9			459.3			69.6	
Approach LOS		F			D			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.6	46.4	17.8	34.8	35.0	23.0	11.4	41.2				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.0	50.0	13.2	29.0	30.4	26.6	6.8	35.4				
Max Q Clear Time (g_c+I1), s	9.0	20.4	13.8	31.0	32.4	14.1	8.8	15.7				
Green Ext Time (p_c), s	0.0	6.3	0.0	0.0	0.0	2.4	0.0	4.2				
Intersection Summary												
HCM 6th Ctrl Delay			242.4									
HCM 6th LOS			F									

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

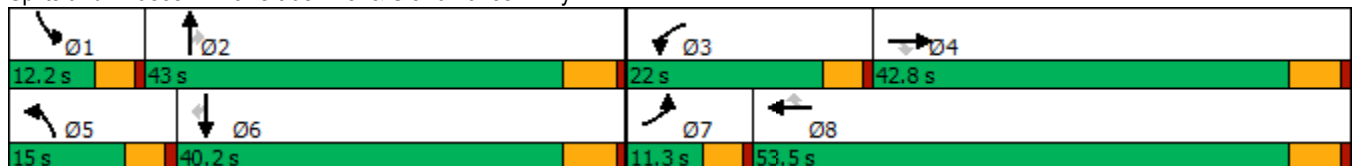
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	435	446	835	416	292	1075	858	1011	254	596	99
Future Volume (vph)	123	435	446	835	416	292	1075	858	1011	254	596	99
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	42.8	42.8	9.6	39.8	39.8	9.6	39.8	39.8	9.6	39.8	39.8
Total Split (s)	11.3	42.8	42.8	22.0	53.5	53.5	15.0	43.0	43.0	12.2	40.2	40.2
Total Split (%)	9.4%	35.7%	35.7%	18.3%	44.6%	44.6%	12.5%	35.8%	35.8%	10.2%	33.5%	33.5%
Yellow Time (s)	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	6.6	28.5	28.5	17.5	39.4	39.4	10.5	37.4	37.4	7.6	34.6	34.6
Actuated g/C Ratio	0.06	0.25	0.25	0.16	0.35	0.35	0.09	0.33	0.33	0.07	0.31	0.31
v/c Ratio	0.64	0.50	0.87	1.62	0.35	0.45	3.50	0.76	1.40	1.13	0.57	0.18
Control Delay	68.1	37.1	39.9	320.6	27.1	11.8	1148.2	39.4	211.8	147.2	36.1	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.1	37.1	39.9	320.6	27.1	11.8	1148.2	39.4	211.8	147.2	36.1	2.1
LOS	E	D	D	F	C	B	F	D	F	F	D	A
Approach Delay		42.1			183.1			503.5			62.3	
Approach LOS		D			F			F			E	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 112
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 3.50
 Intersection Signal Delay: 289.8
 Intersection LOS: F
 Intersection Capacity Utilization 102.1%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	435	446	835	416	292	1075	858	1011	254	596	99
Future Volume (veh/h)	123	435	446	835	416	292	1075	858	1011	254	596	99
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	453	389	870	433	205	1120	894	861	265	621	66
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	1000	439	521	1347	593	311	1144	504	227	1058	466
Arrive On Green	0.05	0.28	0.28	0.15	0.38	0.38	0.09	0.32	0.32	0.07	0.30	0.30
Sat Flow, veh/h	3456	3554	1560	3456	3554	1564	3456	3554	1565	3456	3554	1564
Grp Volume(v), veh/h	128	453	389	870	433	205	1120	894	861	265	621	66
Grp Sat Flow(s),veh/h/ln	1728	1777	1560	1728	1777	1564	1728	1777	1565	1728	1777	1564
Q Serve(g_s), s	4.2	12.1	27.6	17.4	10.0	10.8	10.4	26.3	37.2	7.6	17.2	3.6
Cycle Q Clear(g_c), s	4.2	12.1	27.6	17.4	10.0	10.8	10.4	26.3	37.2	7.6	17.2	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	183	1000	439	521	1347	593	311	1144	504	227	1058	466
V/C Ratio(X)	0.70	0.45	0.89	1.67	0.32	0.35	3.60	0.78	1.71	1.17	0.59	0.14
Avail Cap(c_a), veh/h	200	1138	500	521	1467	646	311	1144	504	227	1058	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.8	34.2	39.7	49.1	25.4	25.6	52.6	35.5	39.2	54.0	34.5	29.7
Incr Delay (d2), s/veh	7.3	0.3	15.9	310.5	0.1	0.3	1177.9	3.6	327.2	111.7	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	5.3	12.4	29.9	4.2	4.1	55.4	11.8	59.8	6.8	7.5	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.1	34.5	55.6	359.6	25.5	26.0	1230.5	39.0	366.4	165.6	35.4	29.9
LnGrp LOS	E	C	E	F	C	C	F	D	F	F	D	C
Approach Vol, veh/h		970			1508			2875			952	
Approach Delay, s/veh		46.5			218.3			601.2			71.2	
Approach LOS		D			F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.2	43.0	22.0	38.3	15.0	40.2	10.7	49.6				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.6	37.2	17.4	37.0	10.4	34.4	6.7	47.7				
Max Q Clear Time (g_c+I1), s	9.6	39.2	19.4	29.6	12.4	19.2	6.2	12.8				
Green Ext Time (p_c), s	0.0	0.0	0.0	2.7	0.0	4.0	0.0	3.9				
Intersection Summary												
HCM 6th Ctrl Delay			344.3									
HCM 6th LOS			F									

Intersection

Intersection Delay, s/veh 706.1
Intersection LOS F

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	280	1081	810	228	999	839
Future Vol, veh/h	280	1081	810	228	999	839
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	298	1150	862	243	1063	893
Number of Lanes	1	1	2	0	1	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	3	2
Conflicting Approach Left NB			WB
Conflicting Lanes Left	2	0	2
Conflicting Approach Right SB		WB	
Conflicting Lanes Right	3	2	0
HCM Control Delay	1054.1	495	567.6
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	100%	54%	0%	0%	0%	100%	100%
Vol Right, %	0%	46%	0%	100%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	540	498	280	1081	999	420	420
LT Vol	0	0	280	0	999	0	0
Through Vol	540	270	0	0	0	420	420
RT Vol	0	228	0	1081	0	0	0
Lane Flow Rate	574	530	298	1150	1063	446	446
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	1.945	1.747	1.05	3.671	2.991	1.194	0.979
Departure Headway (Hd)	38.801	38.469	34.28	33.071	16.038	15.528	13.758
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	103	101	110	127	244	237	268
Service Time	36.501	36.169	31.98	30.771	13.738	13.228	11.458
HCM Lane V/C Ratio	5.573	5.248	2.709	9.055	4.357	1.882	1.664
HCM Control Delay	535.5	451.1	176	1281.6	938.2	163.1	89.7
HCM Lane LOS	F	F	F	F	F	F	F
HCM 95th-tile Q	15.4	13.3	6.8	40.1	60.1	13.4	9.5

Intersection						
Int Delay, s/veh	8.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	75	80	132	1328	916	113
Future Vol, veh/h	75	80	132	1328	916	113
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	78	83	138	1383	954	118

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2672	1013	1072	0	-	0
Stage 1	1013	-	-	-	-	-
Stage 2	1659	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 25	290	650	-	-	-
Stage 1	351	-	-	-	-	-
Stage 2	170	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 20	290	650	-	-	-
Mov Cap-2 Maneuver	105	-	-	-	-	-
Stage 1	277	-	-	-	-	-
Stage 2	170	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	137.5	1.1	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	650	-	157	-	-
HCM Lane V/C Ratio	0.212	-	1.028	-	-
HCM Control Delay (s)	12	-	137.5	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.8	-	8.1	-	-

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

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/29/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	310	508	572	1143	798	220
Future Volume (vph)	310	508	572	1143	798	220
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	44.8	9.6	16.5	29.5	29.5
Total Split (s)	44.8	44.8	42.0	75.2	33.2	33.2
Total Split (%)	37.3%	37.3%	35.0%	62.7%	27.7%	27.7%
Yellow Time (s)	4.8	4.8	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	5.8	4.6	6.5	6.5	6.5
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?			Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	25.3	25.3	37.6	69.0	26.8	26.8
Actuated g/C Ratio	0.24	0.24	0.35	0.65	0.25	0.25
v/c Ratio	0.78	0.68	0.97	0.53	0.94	0.48
Control Delay	51.0	7.7	64.6	12.1	59.9	22.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	7.7	64.6	12.1	59.9	22.6
LOS	D	A	E	B	E	C
Approach Delay	24.1			29.6	51.8	
Approach LOS	C			C	D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 106.7
 Natural Cycle: 135
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 34.7
 Intersection LOS: C
 Intersection Capacity Utilization 85.0%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	310	508	572	1143	798	220
Future Volume (veh/h)	310	508	572	1143	798	220
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	326	392	602	1203	840	171
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	488	434	597	2188	850	379
Arrive On Green	0.27	0.27	0.34	0.62	0.24	0.24
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	326	392	602	1203	840	171
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	18.1	26.6	37.4	21.9	26.3	10.3
Cycle Q Clear(g_c), s	18.1	26.6	37.4	21.9	26.3	10.3
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	488	434	597	2188	850	379
V/C Ratio(X)	0.67	0.90	1.01	0.55	0.99	0.45
Avail Cap(c_a), veh/h	623	554	597	2188	850	379
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	39.1	37.1	12.5	42.3	36.2
Incr Delay (d2), s/veh	1.9	15.4	38.9	0.3	27.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	22.8	22.4	8.3	14.7	4.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.8	54.4	76.0	12.7	70.0	37.0
LnGrp LOS	D	D	F	B	E	D
Approach Vol, veh/h	718			1805	1011	
Approach Delay, s/veh	46.9			33.8	64.4	
Approach LOS	D			C	E	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		75.2		36.4	42.0	33.2
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	37.4	26.7
Max Q Clear Time (g_c+I1), s		23.9		28.6	39.4	28.3
Green Ext Time (p_c), s		12.2		2.0	0.0	0.0
Intersection Summary						
HCM 6th Ctrl Delay			45.2			
HCM 6th LOS			D			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

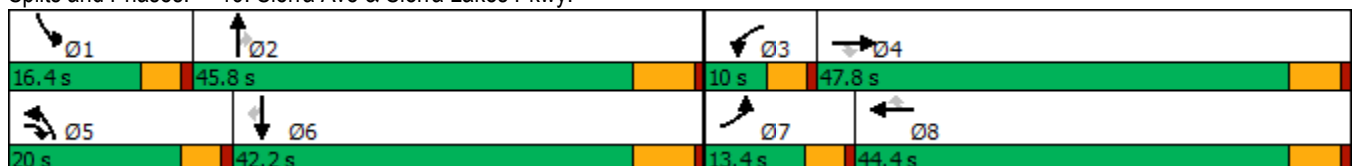
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	342	374	1049	248	301	337	958	1193	296	322	985	251
Future Volume (vph)	342	374	1049	248	301	337	958	1193	296	322	985	251
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	13.4	47.8	20.0	10.0	44.4	44.4	20.0	45.8	45.8	16.4	42.2	42.2
Total Split (%)	11.2%	39.8%	16.7%	8.3%	37.0%	37.0%	16.7%	38.2%	38.2%	13.7%	35.2%	35.2%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.9	19.9	36.7	5.5	16.5	16.5	15.6	34.3	34.3	12.0	30.7	30.7
Actuated g/C Ratio	0.10	0.21	0.39	0.06	0.18	0.18	0.17	0.37	0.37	0.13	0.33	0.33
v/c Ratio	1.08	0.51	1.63	1.28	0.50	0.73	1.72	0.66	0.43	0.76	0.61	0.38
Control Delay	115.3	35.3	314.6	196.1	37.9	20.7	360.7	27.0	9.5	53.6	28.4	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	115.3	35.3	314.6	196.1	37.9	20.7	360.7	27.0	9.5	53.6	28.4	5.0
LOS	F	D	F	F	D	C	F	C	A	D	C	A
Approach Delay		216.7			75.7			155.5			29.8	
Approach LOS		F			E			F			C	

Intersection Summary

































Cycle Length: 120
 Actuated Cycle Length: 93.5
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.72
 Intersection Signal Delay: 131.7
 Intersection LOS: F
 Intersection Capacity Utilization 105.2%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		  		
Traffic Volume (veh/h)	342	374	1049	248	301	337	958	1193	296	322	985	251
Future Volume (veh/h)	342	374	1049	248	301	337	958	1193	296	322	985	251
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	353	386	813	256	310	289	988	1230	241	332	1015	213
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	264	1294	788	162	1189	522	461	1535	470	353	1376	426
Arrive On Green	0.08	0.36	0.36	0.05	0.33	0.33	0.13	0.30	0.30	0.10	0.27	0.27
Sat Flow, veh/h	3456	3554	1582	3456	3554	1561	3456	5106	1564	3456	5106	1580
Grp Volume(v), veh/h	353	386	813	256	310	289	988	1230	241	332	1015	213
Grp Sat Flow(s),veh/h/ln	1728	1777	1582	1728	1777	1561	1728	1702	1564	1728	1702	1580
Q Serve(g_s), s	8.8	8.9	42.0	5.4	7.3	17.4	15.4	25.6	14.7	11.0	20.9	13.1
Cycle Q Clear(g_c), s	8.8	8.9	42.0	5.4	7.3	17.4	15.4	25.6	14.7	11.0	20.9	13.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	264	1294	788	162	1189	522	461	1535	470	353	1376	426
V/C Ratio(X)	1.34	0.30	1.03	1.58	0.26	0.55	2.14	0.80	0.51	0.94	0.74	0.50
Avail Cap(c_a), veh/h	264	1294	788	162	1189	522	461	1739	533	353	1580	489
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	26.2	29.0	55.0	28.0	31.4	50.0	37.2	33.4	51.4	38.4	35.6
Incr Delay (d2), s/veh	176.1	0.1	40.7	289.7	0.1	1.3	521.2	2.5	0.9	32.2	1.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	3.8	29.6	8.9	3.1	6.7	40.0	10.9	5.7	6.3	8.9	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	229.4	26.3	69.7	344.7	28.1	32.6	571.2	39.7	34.2	83.6	40.0	36.5
LnGrp LOS	F	C	F	F	C	C	F	D	C	F	D	D
Approach Vol, veh/h		1552			855			2459			1560	
Approach Delay, s/veh		95.2			124.4			252.7			48.8	
Approach LOS		F			F			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.4	41.2	10.0	47.8	20.0	37.6	13.4	44.4				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	11.8	39.3	5.4	42.0	15.4	35.7	8.8	38.6				
Max Q Clear Time (g_c+I1), s	13.0	27.6	7.4	44.0	17.4	22.9	10.8	19.4				
Green Ext Time (p_c), s	0.0	7.1	0.0	0.0	0.0	6.3	0.0	2.9				
Intersection Summary												
HCM 6th Ctrl Delay	148.1											
HCM 6th LOS	F											

APPENDIX 7.3:

**HORIZON YEAR (2040) WITHOUT PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT
ANALYSIS WORKSHEETS**

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

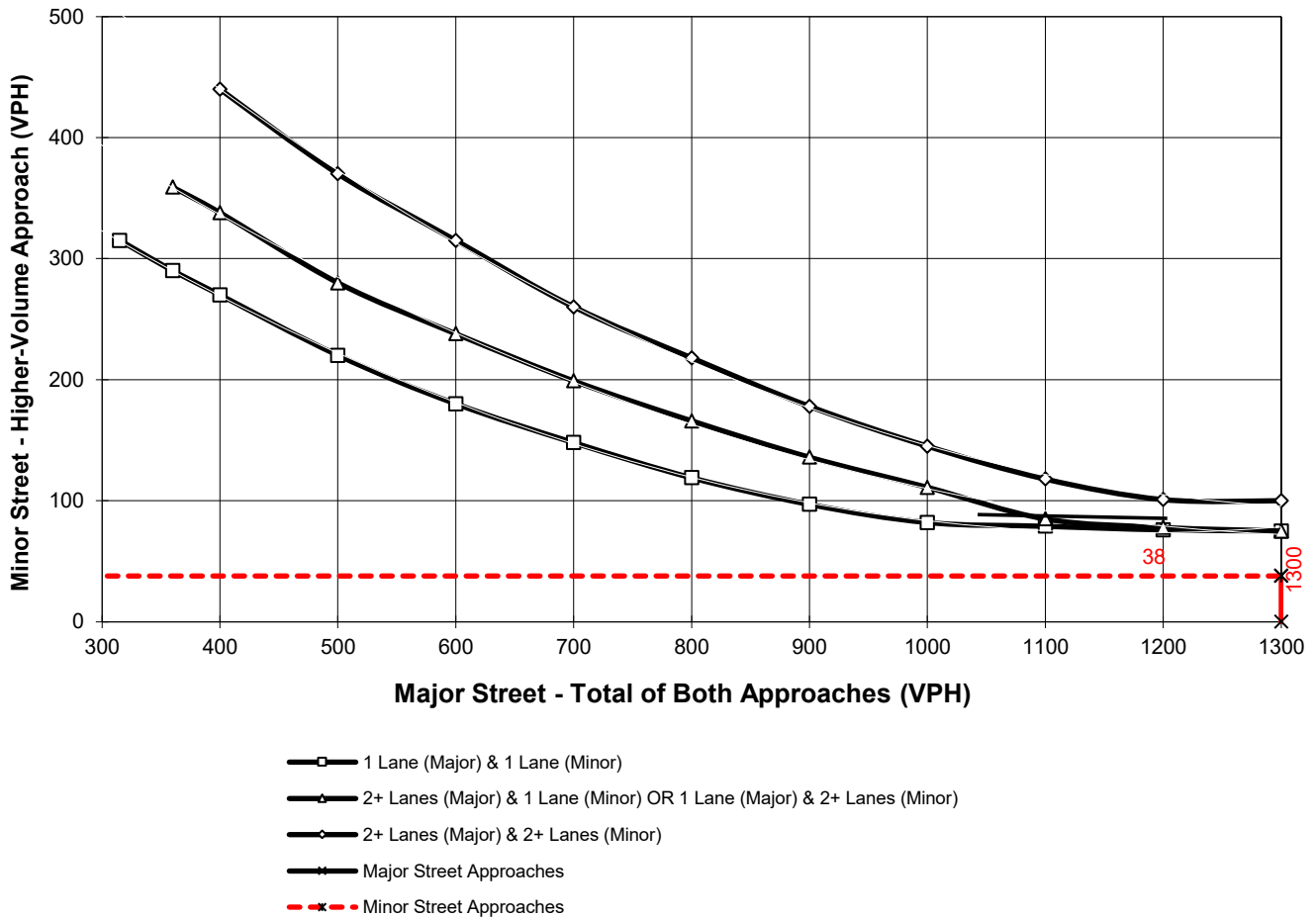
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **2040 Without Project Conditions - Weekday AM Peak Hour**

Major Street Name = **Duncan Canyon Rd.** Total of Both Approaches (VPH) = **1567**
 Number of Approach Lanes Major Street = **2**

Minor Street Name = **Lytle Creek Rd.** High Volume Approach (VPH) = **38**
 Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

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APPENDIX 7.4:

**HORIZON YEAR (2040) WITH PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT
ANALYSIS WORKSHEETS**

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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **2040 With Project Conditions - Weekday AM Peak Hour**

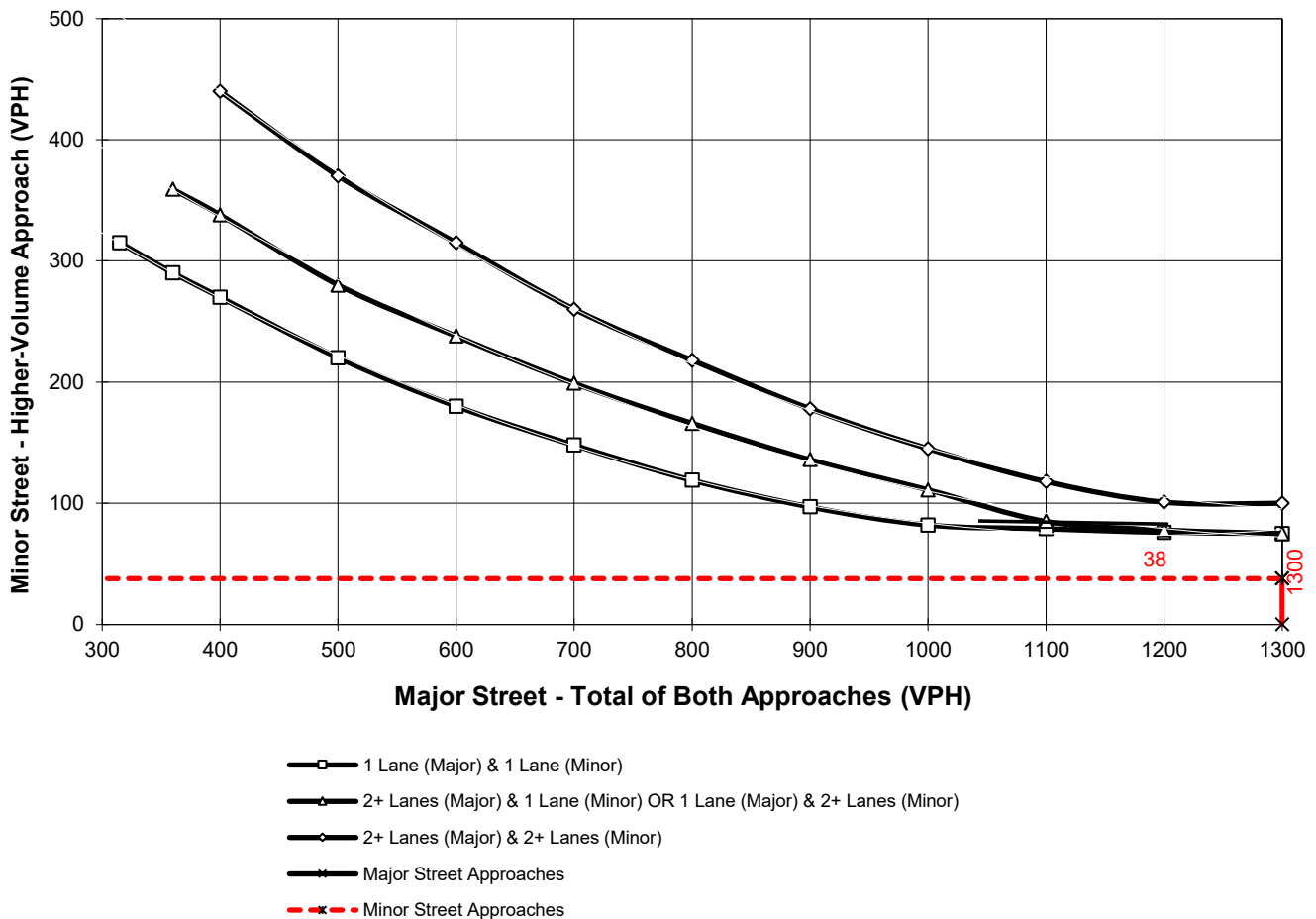
Major Street Name = **Duncan Canyon Rd.**

Total of Both Approaches (VPH) = **1630**
 Number of Approach Lanes Major Street = **2**

Minor Street Name = **Lytle Creek Rd.**

High Volume Approach (VPH) = **38**
 Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

<u>DIST</u>	<u>CO</u>	<u>RTE</u>	<u>PM</u>	CALC <u>CS</u>	TRAFFIC CONDITIONS	2040 WP
Jurisdiction: <u>City of Fontana</u>				CHK <u>CS</u>	DATE <u>07/08/20</u>	DATE <u>07/08/20</u>
Major Street: <u>Citrus Av.</u>					Critical Approach Speed (Major) <u>25</u> mph	
Minor Street: <u>Lytle Creek Rd.</u>					Critical Approach Speed (Minor) <u>25</u> mph	

Major Street Approach Lanes = 1 lane Minor Street Approach Lane: 1 lane

Major Street Future ADT = 2,581 vpd Minor Street Future ADT = 206 vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph);

or

URBAN (U)

In built up area of isolated community of < 10,000 population

(Based on Estimated Average Daily Traffic - See Note)

<u>URBAN</u> XX		<u>RURAL</u>		Minimum Requirements EADT			
CONDITION A - Minimum Vehicular Volume							
<u>Satisfied</u>		<u>Not Satisfied</u>		Vehicles Per Day on Major Street		Vehicles Per Day on Higher-Volume Minor Street Approach	
		XX		(Total of Both Approaches)		(One Direction Only)	
		<u>Major Street</u>	<u>Minor Street</u>	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
		1 2,581	1 206	8,000	5,600	2,400	1,680
		2 +	1	9,600	6,720	2,400	1,680
		2 +	2 +	9,600	6,720	3,200	2,240
		1	2 +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic							
<u>Satisfied</u>		<u>Not Satisfied</u>		Vehicles Per Day on Major Street		Vehicles Per Day on Higher-Volume Minor Street Approach	
		XX		(Total of Both Approaches)		(One Direction Only)	
		<u>Major Street</u>	<u>Minor Street</u>	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
		1 2,581	1 206	12,000	8,400	1,200	850
		2 +	1	14,400	10,080	1,200	850
		2 +	2 +	14,400	10,080	1,600	1,120
		1	2 +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B							
<u>Satisfied</u>		<u>Not Satisfied</u>		2 CONDITIONS		2 CONDITIONS	
No one condition satisfied, but following conditions fulfilled 80% of more		XX		80%		80%	
		<u>A</u>	<u>B</u>				
		9%	17%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

<u>DIST</u>	<u>CO</u>	<u>RTE</u>	<u>PM</u>	CALC <u>CS</u>	TRAFFIC CONDITIONS	2040 WP
Jurisdiction: <u>City of Fontana</u>				CHK <u>CS</u>	DATE <u>07/08/20</u>	DATE <u>07/08/20</u>
Major Street: <u>Citrus Ave.</u>					Critical Approach Speed (Major) <u>25</u> mph	
Minor Street: <u>Driveway 1</u>					Critical Approach Speed (Minor) <u>25</u> mph	

Major Street Approach Lanes = 1 lane Minor Street Approach Lane: 1 lane

Major Street Future ADT = 2,623 vpd Minor Street Future ADT = 149 vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph);

or

URBAN (U)

In built up area of isolated community of < 10,000 population

(Based on Estimated Average Daily Traffic - See Note)

<u>URBAN</u> XX		<u>RURAL</u>		Minimum Requirements EADT			
CONDITION A - Minimum Vehicular Volume		Not Satisfied XX		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
<u>Satisfied</u>	<u>Not Satisfied</u>	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
Number of lanes for moving traffic on each approach		Minor Street					
<u>Major Street</u>	<u>Minor Street</u>						
1 2,623	1 149						
2 +	1						
2 +	2 +						
1	2 +						
CONDITION B - Interruption of Continuous Traffic		Not Satisfied XX		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
<u>Satisfied</u>	<u>Not Satisfied</u>	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
Number of lanes for moving traffic on each approach		Minor Street					
<u>Major Street</u>	<u>Minor Street</u>						
1 2,623	1 149						
2 +	1						
2 +	2 +						
1	2 +						
Combination of CONDITIONS A + B		Not Satisfied XX		2 CONDITIONS 80%		2 CONDITIONS 80%	
<u>Satisfied</u>	<u>Not Satisfied</u>						
No one condition satisfied, but following conditions fulfilled 80% of more		<u>A</u>	<u>B</u>				
		6%	12%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

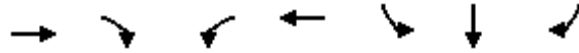
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APPENDIX 7.5:

**HORIZON YEAR (2040) WITHOUT PROJECT CONDITIONS OFF-RAMP QUEUING
ANALYSIS WORKSHEETS**

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3: I-15 SB Ramp & Duncan Canyon Rd.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	474	708	1030	489	191	192	70
v/c Ratio	0.29	0.75	1.07	0.18	0.75	0.75	0.23
Control Delay	20.9	15.9	99.3	3.4	66.6	66.4	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.9	15.9	99.3	3.4	66.6	66.4	11.6
Queue Length 50th (ft)	117	186	~477	35	149	150	0
Queue Length 95th (ft)	156	353	#650	55	229	230	41
Internal Link Dist (ft)	583			936		3134	
Turn Bay Length (ft)		260	620		650		
Base Capacity (vph)	1622	950	967	2737	308	310	347
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.75	1.07	0.18	0.62	0.62	0.20

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.

Queues
4: Beech Ave. & I-15 SB Ramps

Ventana (JN 13769)
04/28/2021



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	348	639	1540	270	334
v/c Ratio	0.85	0.24	0.95dr	0.83	0.59
Control Delay	62.9	5.1	19.9	68.3	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	62.9	5.1	19.9	68.3	9.0
Queue Length 50th (ft)	257	73	211	200	0
Queue Length 95th (ft)	354	98	m#238	#309	80
Internal Link Dist (ft)		1839	1079	3017	
Turn Bay Length (ft)	400				290
Base Capacity (vph)	486	2652	1729	368	594
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	0.72	0.24	0.89	0.73	0.56

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.

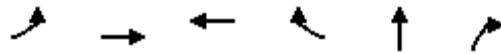
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Queues

Ventana (JN 13769)

5: I-15 NB Ramp & Duncan Canyon Rd.

04/28/2021



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	141	691	1322	303	183	513
v/c Ratio	0.65	0.25	0.61	0.28	0.66	0.59
Control Delay	50.0	5.8	17.7	2.9	58.0	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	5.8	17.7	2.9	58.0	6.4
Queue Length 50th (ft)	108	148	311	5	135	0
Queue Length 95th (ft)	187	186	502	53	198	47
Internal Link Dist (ft)		936	871		2645	
Turn Bay Length (ft)	235			260		
Base Capacity (vph)	309	2717	2162	1077	428	1062
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	0.25	0.61	0.28	0.43	0.48
Intersection Summary						



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	111	934	1626	281	690
v/c Ratio	0.66	0.37	0.81	0.28	0.88
Control Delay	74.1	7.3	25.5	4.3	56.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	74.1	7.3	25.5	4.3	56.4
Queue Length 50th (ft)	87	160	536	22	253
Queue Length 95th (ft)	m126	150	517	47	278
Internal Link Dist (ft)		1079	938		1808
Turn Bay Length (ft)	145			230	
Base Capacity (vph)	191	2498	2012	994	833
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	0.58	0.37	0.81	0.28	0.83

Intersection Summary

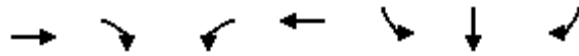
m Volume for 95th percentile queue is metered by upstream signal.

Queues

Ventana (JN 13769)

3: I-15 SB Ramp & Duncan Canyon Rd.

04/29/2021

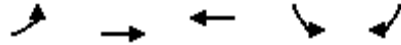


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	481	312	489	877	145	145	118
v/c Ratio	0.24	0.30	0.78	0.31	0.64	0.64	0.38
Control Delay	14.3	2.6	48.5	5.1	61.3	61.3	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	2.6	48.5	5.1	61.3	61.3	11.0
Queue Length 50th (ft)	91	0	181	47	113	113	0
Queue Length 95th (ft)	154	48	238	200	174	174	50
Internal Link Dist (ft)	583			936		3134	
Turn Bay Length (ft)		260	620		650		
Base Capacity (vph)	2030	1041	685	2797	378	378	443
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.30	0.71	0.31	0.38	0.38	0.27

Intersection Summary

Queues
4: Beech Ave. & I-15 SB Ramps

Ventana (JN 13769)
04/29/2021



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	163	871	1371	314	102
v/c Ratio	0.69	0.34	0.72	0.83	0.24
Control Delay	64.4	7.2	19.9	63.2	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	64.4	7.2	19.9	63.2	8.2
Queue Length 50th (ft)	122	120	330	232	0
Queue Length 95th (ft)	188	173	498	324	43
Internal Link Dist (ft)		1839	1079	3017	
Turn Bay Length (ft)	400				290
Base Capacity (vph)	309	2545	1909	457	484
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	0.53	0.34	0.72	0.69	0.21

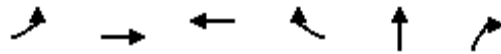
Intersection Summary

Queues

Ventana (JN 13769)

5: I-15 NB Ramp & Duncan Canyon Rd.

04/29/2021



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	154	609	898	463	484	823
v/c Ratio	0.67	0.29	0.59	0.49	0.81	0.67
Control Delay	72.4	14.1	30.1	4.4	48.0	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.4	14.1	30.1	4.4	48.0	16.6
Queue Length 50th (ft)	128	133	290	0	327	127
Queue Length 95th (ft)	200	163	393	72	456	201
Internal Link Dist (ft)		936	871		2645	
Turn Bay Length (ft)	235			260		
Base Capacity (vph)	309	2090	1512	941	652	1294
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	0.50	0.29	0.59	0.49	0.74	0.64

Intersection Summary

Queues
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	311	874	1144	583	1414
v/c Ratio	1.01	0.45	0.97	0.71	1.08
Control Delay	93.4	14.6	59.7	13.4	84.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	93.4	14.6	59.7	13.4	84.4
Queue Length 50th (ft)	~215	163	457	83	~625
Queue Length 95th (ft)	#419	192	#605	227	#763
Internal Link Dist (ft)		1079	938		1808
Turn Bay Length (ft)	145			230	
Base Capacity (vph)	309	1946	1179	824	1311
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	1.01	0.45	0.97	0.71	1.08

Intersection Summary

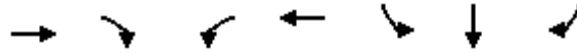
- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX 7.6:

**HORIZON YEAR (2040) WITH PROJECT CONDITIONS OFF-RAMP QUEUING ANALYSIS
WORKSHEETS**

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3: I-15 SB Ramp & Duncan Canyon Rd.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	510	708	1370	523	241	238	70
v/c Ratio	0.31	0.75	1.51	0.20	0.85	0.84	0.22
Control Delay	21.3	16.0	271.9	5.3	74.5	72.6	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.3	16.0	271.9	5.3	74.5	72.6	11.3
Queue Length 50th (ft)	128	188	~809	52	189	186	0
Queue Length 95th (ft)	169	354	#948	m80	#320	#312	41
Internal Link Dist (ft)	583			936		3134	
Turn Bay Length (ft)		260	620		650		
Base Capacity (vph)	1622	949	908	2675	308	309	347
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.75	1.51	0.20	0.78	0.77	0.20

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.

Queues
4: Beech Ave. & I-15 SB Ramps



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	348	659	1611	270	334
v/c Ratio	0.85	0.25	1.00dr	0.83	0.59
Control Delay	62.9	5.2	20.2	68.3	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	62.9	5.2	20.2	68.3	9.0
Queue Length 50th (ft)	257	75	244	200	0
Queue Length 95th (ft)	354	102	m222	#309	80
Internal Link Dist (ft)		1839	1079	3017	
Turn Bay Length (ft)	400				290
Base Capacity (vph)	486	2652	1731	368	594
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	0.72	0.25	0.93	0.73	0.56

Intersection Summary

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

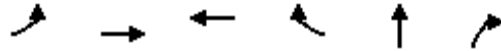
Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Queues

5: I-15 NB Ramp & Duncan Canyon Rd.



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	141	821	1692	396	183	858
v/c Ratio	0.65	0.33	0.88	0.40	0.46	0.92
Control Delay	53.3	10.3	31.6	6.1	44.0	39.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.3	10.3	31.6	6.1	44.0	39.8
Queue Length 50th (ft)	118	195	602	40	120	208
Queue Length 95th (ft)	m170	231	#853	115	192	#334
Internal Link Dist (ft)		936	871		2645	
Turn Bay Length (ft)	235			260		
Base Capacity (vph)	309	2485	1930	995	428	976
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	0.33	0.88	0.40	0.43	0.88

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.

Queues
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	111	956	1708	281	748
v/c Ratio	0.72	0.39	0.84	0.28	0.91
Control Delay	78.5	8.0	26.8	4.2	58.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	78.5	8.0	26.8	4.2	58.7
Queue Length 50th (ft)	85	148	567	22	271
Queue Length 95th (ft)	#133	155	540	46	294
Internal Link Dist (ft)		1079	938		1808
Turn Bay Length (ft)	145			230	
Base Capacity (vph)	163	2480	2023	997	858
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	0.68	0.39	0.84	0.28	0.87

Intersection Summary

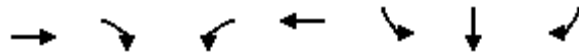
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

Ventana (JN 13769)

04/28/2021

3: I-15 SB Ramp & Duncan Canyon Rd.



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	512	312	752	904	185	185	118
v/c Ratio	0.30	0.34	0.85	0.33	0.69	0.69	0.34
Control Delay	20.0	3.0	44.2	8.6	60.6	60.6	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	3.0	44.2	8.6	60.6	60.6	9.7
Queue Length 50th (ft)	124	0	295	132	144	144	0
Queue Length 95th (ft)	164	48	#476	249	211	211	48
Internal Link Dist (ft)	583			936		3134	
Turn Bay Length (ft)		260	620		650		
Base Capacity (vph)	1681	915	884	2710	378	378	443
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.34	0.85	0.33	0.49	0.49	0.27

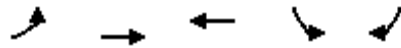
Intersection Summary

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

Queue shown is maximum after two cycles.

Queues

4: Beech Ave. & I-15 SB Ramps



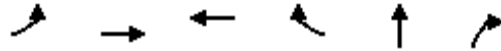
Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	163	887	1436	314	102
v/c Ratio	0.69	0.35	0.75	0.83	0.24
Control Delay	64.4	7.2	49.2	63.2	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	64.4	7.2	49.2	63.2	8.2
Queue Length 50th (ft)	122	123	517	232	0
Queue Length 95th (ft)	188	177	m399	324	43
Internal Link Dist (ft)		1839	1079	3017	
Turn Bay Length (ft)	400				290
Base Capacity (vph)	309	2545	1911	457	484
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	0.53	0.35	0.75	0.69	0.21

Intersection Summary

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

Queues

5: I-15 NB Ramp & Duncan Canyon Rd.



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	154	718	1186	533	484	1110
v/c Ratio	0.67	0.36	0.83	0.59	0.76	0.92
Control Delay	67.8	16.1	39.3	8.2	42.8	37.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.8	16.1	39.3	8.2	42.8	37.9
Queue Length 50th (ft)	129	167	435	41	324	337
Queue Length 95th (ft)	199	201	#616	156	456	#494
Internal Link Dist (ft)		936	871		2645	
Turn Bay Length (ft)	235			260		
Base Capacity (vph)	309	2006	1429	906	652	1225
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	0.50	0.36	0.83	0.59	0.74	0.91

Intersection Summary

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

Queues
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
06/03/2021



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	311	890	1209	583	1463
v/c Ratio	1.05	0.46	1.00	0.71	1.08
Control Delay	107.0	14.8	65.6	14.2	85.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	107.0	14.8	65.6	14.2	85.3
Queue Length 50th (ft)	~257	172	490	98	~630
Queue Length 95th (ft)	#432	194	#649	242	#764
Internal Link Dist (ft)		1079	938		1808
Turn Bay Length (ft)	145			230	
Base Capacity (vph)	295	1946	1209	821	1352
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	1.05	0.46	1.00	0.71	1.08

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.

APPENDIX 7.7:

**HORIZON YEAR (2040) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS
ANALYSIS WORKSHEETS WITH IMPROVEMENTS**

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Timings
1: Coyote Canyon Rd. & Duncan Canyon Rd.

Ventana (JN 13769)

04/29/2021

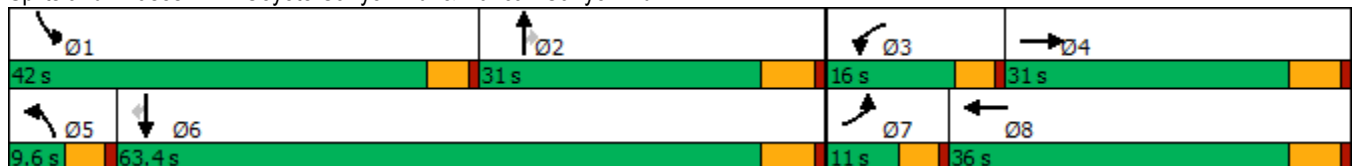


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	29	515	79	330	6	6	190	360	10	62
Future Volume (vph)	29	515	79	330	6	6	190	360	10	62
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	11.0	31.0	16.0	36.0	9.6	31.0	31.0	42.0	63.4	63.4
Total Split (%)	9.2%	25.8%	13.3%	30.0%	8.0%	25.8%	25.8%	35.0%	52.8%	52.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None	None	None
Act Effct Green (s)	6.0	18.9	8.5	23.5	5.3	11.1	11.1	22.6	37.2	37.2
Actuated g/C Ratio	0.07	0.24	0.11	0.29	0.07	0.14	0.14	0.28	0.46	0.46
v/c Ratio	0.23	0.67	0.45	0.48	0.05	0.02	0.51	0.77	0.01	0.08
Control Delay	46.9	34.1	47.0	24.3	45.3	38.5	11.5	39.0	16.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.9	34.1	47.0	24.3	45.3	38.5	11.5	39.0	16.1	0.2
LOS	D	C	D	C	D	D	B	D	B	A
Approach Delay		34.8		27.7		13.2			32.9	
Approach LOS		C		C		B			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 80.3
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 29.6
 Intersection LOS: C
 Intersection Capacity Utilization 59.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 1: Coyote Canyon Rd. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 1: Coyote Canyon Rd. & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	515	8	79	330	129	6	6	190	360	10	62
Future Volume (veh/h)	29	515	8	79	330	129	6	6	190	360	10	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	548	9	84	351	105	6	6	149	383	11	66
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	59	764	13	108	652	192	14	289	245	437	733	621
Arrive On Green	0.03	0.21	0.21	0.06	0.24	0.24	0.01	0.15	0.15	0.25	0.39	0.39
Sat Flow, veh/h	1781	3578	59	1781	2706	798	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	31	272	285	84	229	227	6	6	149	383	11	66
Grp Sat Flow(s),veh/h/ln	1781	1777	1860	1781	1777	1727	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.1	9.1	9.1	3.0	7.2	7.3	0.2	0.2	5.6	13.2	0.2	1.7
Cycle Q Clear(g_c), s	1.1	9.1	9.1	3.0	7.2	7.3	0.2	0.2	5.6	13.2	0.2	1.7
Prop In Lane	1.00		0.03	1.00		0.46	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	59	379	397	108	428	416	14	289	245	437	733	621
V/C Ratio(X)	0.53	0.72	0.72	0.78	0.53	0.55	0.43	0.02	0.61	0.88	0.02	0.11
Avail Cap(c_a), veh/h	179	702	734	318	841	817	140	738	626	1044	1688	1430
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	23.3	23.3	29.5	21.1	21.2	31.5	22.9	25.2	23.1	11.9	12.3
Incr Delay (d2), s/veh	2.7	2.6	2.4	4.4	1.0	1.1	7.4	0.0	2.4	2.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.6	3.8	1.3	2.7	2.7	0.1	0.1	2.0	5.0	0.1	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.0	25.9	25.8	34.0	22.1	22.3	38.9	22.9	27.6	25.4	11.9	12.4
LnGrp LOS	C	C	C	C	C	C	D	C	C	C	B	B
Approach Vol, veh/h		588			540			161			460	
Approach Delay, s/veh		26.2			24.0			27.9			23.2	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.3	15.7	8.5	19.4	5.1	30.8	6.7	21.2				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	37.4	25.2	11.4	25.2	5.0	57.6	6.4	30.2				
Max Q Clear Time (g_c+I1), s	15.2	7.6	5.0	11.1	2.2	3.7	3.1	9.3				
Green Ext Time (p_c), s	0.5	0.4	0.0	2.5	0.0	0.3	0.0	2.4				
Intersection Summary												
HCM 6th Ctrl Delay				24.9								
HCM 6th LOS				C								

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021

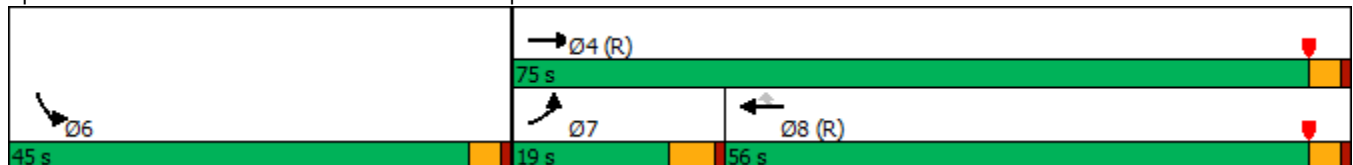


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↗↗	↗↗	↖	↖↖↖
Traffic Volume (vph)	89	747	1301	225	436
Future Volume (vph)	89	747	1301	225	436
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	19.0	75.0	56.0	56.0	45.0
Total Split (%)	15.8%	62.5%	46.7%	46.7%	37.5%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	12.8	82.5	64.7	64.7	29.5
Actuated g/C Ratio	0.11	0.69	0.54	0.54	0.25
v/c Ratio	0.59	0.38	0.85	0.30	0.81
Control Delay	58.8	9.1	30.7	7.6	48.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	58.8	9.1	30.7	7.6	48.3
LOS	E	A	C	A	D
Approach Delay		14.4	27.3		48.3
Approach LOS		B	C		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 27.6
 Intersection LOS: C
 Intersection Capacity Utilization 67.8%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↶	↷	↷	↷	↶	↷	
Traffic Volume (veh/h)	89	747	1301	225	436	116	
Future Volume (veh/h)	89	747	1301	225	436	116	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	111	934	1626	217	610	0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	135	2604	2186	975	715	318	
Arrive On Green	0.15	1.00	0.62	0.62	0.20	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	111	934	1626	217	610	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	7.2	0.0	39.0	7.3	19.8	0.0	
Cycle Q Clear(g_c), s	7.2	0.0	39.0	7.3	19.8	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	135	2604	2186	975	715	318	
V/C Ratio(X)	0.82	0.36	0.74	0.22	0.85	0.00	
Avail Cap(c_a), veh/h	208	2604	2186	975	1217	542	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.91	0.91	0.47	0.47	1.00	0.00	
Uniform Delay (d), s/veh	50.1	0.0	16.4	10.3	46.3	0.0	
Incr Delay (d2), s/veh	12.9	0.4	1.1	0.2	3.0	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	3.4	0.1	14.2	2.4	9.1	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	63.0	0.4	17.5	10.5	49.3	0.0	
LnGrp LOS	E	A	B	B	D	A	
Approach Vol, veh/h		1045	1843		610		
Approach Delay, s/veh		7.0	16.7		49.3		
Approach LOS		A	B		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				91.9	28.1	14.1	77.8
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				71.0	41.0	14.0	52.0
Max Q Clear Time (g_c+I1), s				2.0	21.8	9.2	41.0
Green Ext Time (p_c), s				7.4	2.3	0.1	8.0

Intersection Summary

HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

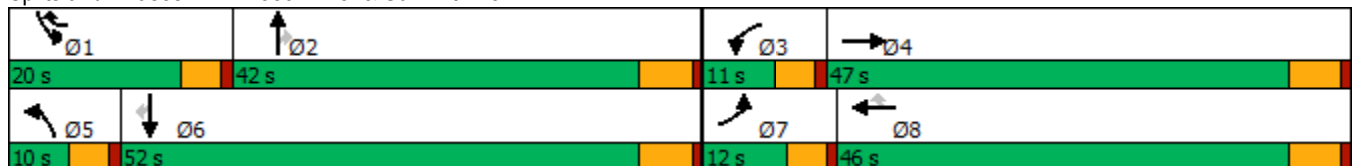
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	116	145	100	298	705	61	427	64	375	288	71
Future Volume (vph)	116	145	100	298	705	61	427	64	375	288	71
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	1	5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	9.6	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	47.0	11.0	46.0	20.0	10.0	42.0	42.0	20.0	52.0	52.0
Total Split (%)	10.0%	39.2%	9.2%	38.3%	16.7%	8.3%	35.0%	35.0%	16.7%	43.3%	43.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None	None	None	None
Act Effct Green (s)	6.6	14.9	6.0	12.1	28.6	5.3	14.5	14.5	15.3	26.7	26.7
Actuated g/C Ratio	0.09	0.21	0.09	0.17	0.41	0.08	0.21	0.21	0.22	0.38	0.38
v/c Ratio	0.37	0.24	0.35	0.51	1.02	0.24	0.61	0.15	0.51	0.22	0.11
Control Delay	34.4	23.2	35.2	29.9	56.0	34.8	29.0	0.7	27.5	16.2	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	23.2	35.2	29.9	56.0	34.8	29.0	0.7	27.5	16.2	2.1
LOS	C	C	D	C	E	C	C	A	C	B	A
Approach Delay		27.7		47.1			26.4			20.6	
Approach LOS		C		D			C			C	

Intersection Summary
























Cycle Length: 120	
Actuated Cycle Length: 69.5	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 33.5	Intersection LOS: C
Intersection Capacity Utilization 73.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 7: Beech Ave. & Summit Ave.



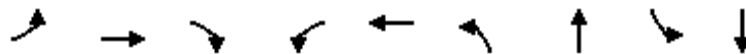
HCM 6th Signalized Intersection Summary
 7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	145	26	100	298	705	61	427	64	375	288	71
Future Volume (veh/h)	116	145	26	100	298	705	61	427	64	375	288	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	122	153	22	105	314	631	64	449	55	395	303	72
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	1204	170	185	1363	821	157	654	287	481	972	433
Arrive On Green	0.06	0.39	0.39	0.05	0.38	0.38	0.05	0.18	0.18	0.14	0.27	0.27
Sat Flow, veh/h	3456	3125	442	3456	3554	1583	3456	3554	1557	3563	3554	1582
Grp Volume(v), veh/h	122	86	89	105	314	631	64	449	55	395	303	72
Grp Sat Flow(s),veh/h/ln	1728	1777	1790	1728	1777	1583	1728	1777	1557	1781	1777	1582
Q Serve(g_s), s	3.0	2.7	2.8	2.5	5.1	27.4	1.5	10.1	2.6	9.3	5.8	3.0
Cycle Q Clear(g_c), s	3.0	2.7	2.8	2.5	5.1	27.4	1.5	10.1	2.6	9.3	5.8	3.0
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	191	684	690	185	1363	821	157	654	287	481	972	433
V/C Ratio(X)	0.64	0.13	0.13	0.57	0.23	0.77	0.41	0.69	0.19	0.82	0.31	0.17
Avail Cap(c_a), veh/h	298	852	859	258	1663	955	217	1498	656	639	1912	851
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.7	17.1	17.1	39.7	17.9	16.6	39.9	32.7	29.6	36.1	24.8	23.7
Incr Delay (d2), s/veh	1.3	0.1	0.1	1.0	0.1	3.3	0.6	1.3	0.3	4.8	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.0	1.1	1.1	1.9	9.1	0.6	4.2	0.9	4.1	2.3	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	17.1	17.2	40.7	18.0	19.9	40.5	34.0	30.0	41.0	25.0	23.9
LnGrp LOS	D	B	B	D	B	B	D	C	C	D	C	C
Approach Vol, veh/h		297			1050			568			770	
Approach Delay, s/veh		27.0			21.4			34.3			33.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.2	21.6	9.2	38.9	8.5	29.3	9.3	38.7				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	15.4	36.2	6.4	41.2	5.4	46.2	7.4	40.2				
Max Q Clear Time (g_c+I1), s	11.3	12.1	4.5	4.8	3.5	7.8	5.0	29.4				
Green Ext Time (p_c), s	0.3	2.9	0.0	0.9	0.0	2.1	0.0	3.3				
Intersection Summary												
HCM 6th Ctrl Delay				28.1								
HCM 6th LOS				C								

Timings
12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

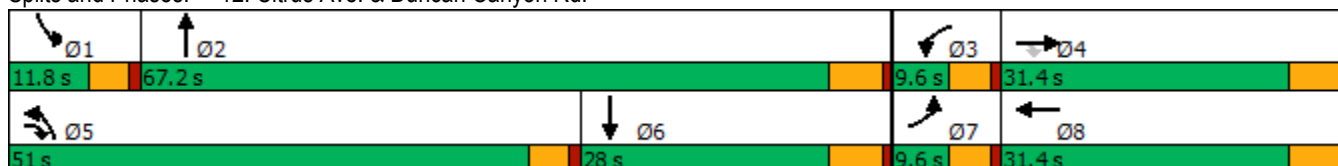


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↘	↑	↗	↘	↗	↘↗	↘↗	↘	↗
Traffic Volume (vph)	25	257	814	52	262	1133	9	15	64
Future Volume (vph)	25	257	814	52	262	1133	9	15	64
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4								
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	9.6	27.8	9.6	27.8
Total Split (s)	9.6	31.4	51.0	9.6	31.4	51.0	67.2	11.8	28.0
Total Split (%)	8.0%	26.2%	42.5%	8.0%	26.2%	42.5%	56.0%	9.8%	23.3%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min	None	None	None	None
Act Effct Green (s)	5.2	19.2	63.2	5.2	21.3	37.9	49.4	5.8	10.5
Actuated g/C Ratio	0.06	0.21	0.69	0.06	0.23	0.41	0.54	0.06	0.11
v/c Ratio	0.26	0.69	0.66	0.54	0.65	0.83	0.03	0.14	0.35
Control Delay	54.6	45.3	4.8	68.5	41.9	30.7	6.5	49.9	23.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.6	45.3	4.8	68.5	41.9	30.7	6.5	49.9	23.1
LOS	D	D	A	E	D	C	A	D	C
Approach Delay	15.4		46.2			29.8		25.6	
Approach LOS	B		D			C		C	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 91.7	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 25.7	Intersection LOS: C
Intersection Capacity Utilization 76.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	257	814	52	262	6	1133	9	35	15	64	84
Future Volume (veh/h)	25	257	814	52	262	6	1133	9	35	15	64	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	268	666	54	273	6	1180	9	36	16	67	88
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	46	501	1012	71	513	11	1281	812	724	32	185	165
Arrive On Green	0.03	0.27	0.27	0.04	0.28	0.28	0.37	0.46	0.46	0.02	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	1781	1823	40	3456	1777	1585	1781	1777	1585
Grp Volume(v), veh/h	26	268	666	54	0	279	1180	9	36	16	67	88
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1863	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.4	11.7	25.1	2.9	0.0	12.1	31.2	0.3	1.2	0.9	3.4	5.0
Cycle Q Clear(g_c), s	1.4	11.7	25.1	2.9	0.0	12.1	31.2	0.3	1.2	0.9	3.4	5.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	46	501	1012	71	0	524	1281	812	724	32	185	165
V/C Ratio(X)	0.56	0.54	0.66	0.76	0.00	0.53	0.92	0.01	0.05	0.50	0.36	0.53
Avail Cap(c_a), veh/h	93	501	1012	93	0	524	1677	1141	1018	134	412	368
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	29.9	10.8	45.5	0.0	29.0	28.7	14.2	14.4	46.5	39.9	40.6
Incr Delay (d2), s/veh	3.9	1.1	1.6	16.0	0.0	1.0	6.3	0.0	0.0	4.3	1.2	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	5.1	7.4	1.5	0.0	5.2	12.9	0.1	0.4	0.4	1.5	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.9	31.1	12.4	61.4	0.0	30.1	35.1	14.2	14.5	50.8	41.1	43.3
LnGrp LOS	D	C	B	E	A	C	D	B	B	D	D	D
Approach Vol, veh/h		960			333			1225			171	
Approach Delay, s/veh		18.6			35.2			34.3			43.1	
Approach LOS		B			D			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.3	49.5	8.4	31.4	40.1	15.8	7.1	32.7				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.2	61.4	5.0	25.6	46.4	22.2	5.0	25.6				
Max Q Clear Time (g_c+I1), s	2.9	3.2	4.9	27.1	33.2	7.0	3.4	14.1				
Green Ext Time (p_c), s	0.0	0.2	0.0	0.0	2.3	0.6	0.0	1.1				
Intersection Summary												
HCM 6th Ctrl Delay			29.4									
HCM 6th LOS			C									

Timings
14: Citrus Ave. & Summit Ave.

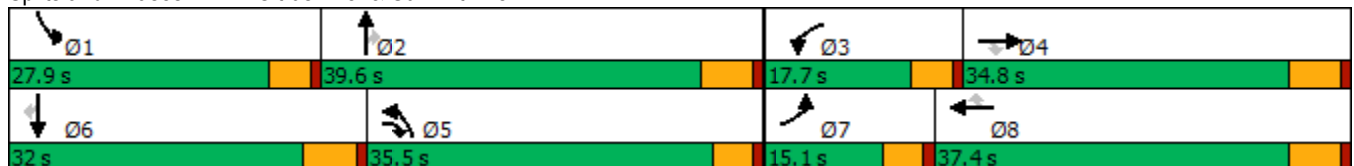
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	178	202	171	294	108	752	263	114	155	484	162
Future Volume (vph)	70	178	202	171	294	108	752	263	114	155	484	162
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	9.6	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	15.1	34.8	35.5	17.7	37.4	37.4	35.5	39.6	39.6	27.9	32.0	32.0
Total Split (%)	12.6%	29.0%	29.6%	14.8%	31.2%	31.2%	29.6%	33.0%	33.0%	23.3%	26.7%	26.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.0	11.5	37.5	12.9	18.7	18.7	24.8	31.3	31.3	12.9	19.4	19.4
Actuated g/C Ratio	0.09	0.13	0.42	0.14	0.21	0.21	0.28	0.35	0.35	0.14	0.22	0.22
v/c Ratio	0.46	0.39	0.30	0.70	0.39	0.27	0.80	0.21	0.19	0.63	0.66	0.36
Control Delay	51.7	40.5	7.1	55.7	36.1	9.5	37.8	21.6	5.2	49.4	37.4	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.7	40.5	7.1	55.7	36.1	9.5	37.8	21.6	5.2	49.4	37.4	7.4
LOS	D	D	A	E	D	A	D	C	A	D	D	A
Approach Delay		27.2			36.9			30.7			33.7	
Approach LOS		C			D			C			C	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 89.7
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 32.2
 Intersection LOS: C
 Intersection Capacity Utilization 71.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	178	202	171	294	108	752	263	114	155	484	162
Future Volume (veh/h)	70	178	202	171	294	108	752	263	114	155	484	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	73	185	121	178	306	70	783	274	104	161	504	127
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	526	623	217	783	331	904	1328	550	200	704	314
Arrive On Green	0.05	0.14	0.14	0.12	0.21	0.21	0.25	0.35	0.35	0.11	0.20	0.20
Sat Flow, veh/h	1781	3741	1575	1781	3741	1583	3563	3741	1550	1781	3554	1585
Grp Volume(v), veh/h	73	185	121	178	306	70	783	274	104	161	504	127
Grp Sat Flow(s),veh/h/ln	1781	1870	1575	1781	1870	1583	1781	1870	1550	1781	1777	1585
Q Serve(g_s), s	3.1	3.4	1.2	7.5	5.4	2.8	16.2	3.9	3.6	6.8	10.2	4.1
Cycle Q Clear(g_c), s	3.1	3.4	1.2	7.5	5.4	2.8	16.2	3.9	3.6	6.8	10.2	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	94	526	623	217	783	331	904	1328	550	200	704	314
V/C Ratio(X)	0.78	0.35	0.19	0.82	0.39	0.21	0.87	0.21	0.19	0.80	0.72	0.40
Avail Cap(c_a), veh/h	243	1410	996	303	1536	650	1431	1643	681	539	1210	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	29.9	4.5	33.0	26.2	25.2	27.5	17.3	17.2	33.3	28.8	15.8
Incr Delay (d2), s/veh	5.1	0.4	0.2	8.3	0.3	0.3	2.1	0.1	0.2	2.8	1.4	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.5	0.5	3.5	2.3	1.0	6.5	1.5	1.2	2.9	4.1	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.1	30.3	4.6	41.3	26.5	25.5	29.5	17.4	17.3	36.2	30.2	16.6
LnGrp LOS	D	C	A	D	C	C	C	B	B	D	C	B
Approach Vol, veh/h		379			554			1161			792	
Approach Delay, s/veh		24.2			31.1			25.6			29.2	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.3	33.1	14.0	16.6	25.3	21.0	8.7	21.9				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	5.8	* 5.8	4.6	5.8				
Max Green Setting (Gmax), s	23.3	33.8	13.1	29.0	30.9	* 26	10.5	31.6				
Max Q Clear Time (g_c+I1), s	8.8	5.9	9.5	5.4	18.2	12.2	5.1	7.4				
Green Ext Time (p_c), s	0.2	1.9	0.1	1.4	1.4	2.9	0.0	2.0				
Intersection Summary												
HCM 6th Ctrl Delay											27.5	
HCM 6th LOS											C	
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
04/29/2021

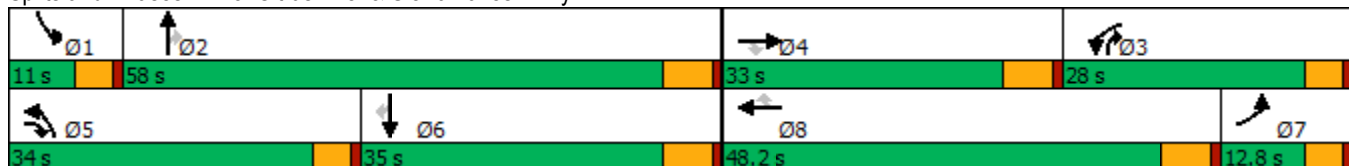


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖↗	↑↑	↖	↖↗	↑↑	↖	↖↗	↑↑	↖
Traffic Volume (vph)	66	280	428	638	222	111	859	476	779	132	801	75
Future Volume (vph)	66	280	428	638	222	111	859	476	779	132	801	75
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	32.8	9.6	9.6	34.8	34.8	9.6	34.8	9.6	9.6	34.8	34.8
Total Split (s)	12.8	33.0	34.0	28.0	48.2	48.2	34.0	58.0	28.0	11.0	35.0	35.0
Total Split (%)	9.8%	25.4%	26.2%	21.5%	37.1%	37.1%	26.2%	44.6%	21.5%	8.5%	26.9%	26.9%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	4.6	4.6	5.8	5.8
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	Min
Act Effct Green (s)	21.2	14.8	45.4	23.4	19.1	19.1	29.4	52.2	76.9	6.4	29.2	29.2
Actuated g/C Ratio	0.18	0.13	0.39	0.20	0.16	0.16	0.25	0.44	0.65	0.05	0.25	0.25
v/c Ratio	0.11	0.65	0.69	0.98	0.40	0.33	1.06	0.31	0.79	0.74	0.94	0.15
Control Delay	38.8	55.7	17.4	77.9	49.2	8.0	89.2	22.1	15.0	78.3	62.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	55.7	17.4	77.9	49.2	8.0	89.2	22.1	15.0	78.3	62.5	0.6
LOS	D	E	B	E	D	A	F	C	B	E	E	A
Approach Delay		33.1			63.3			46.7			60.0	
Approach LOS		C			E			D			E	

Intersection Summary

































Cycle Length: 130
 Actuated Cycle Length: 117.7
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.06
 Intersection Signal Delay: 50.6
 Intersection LOS: D
 Intersection Capacity Utilization 91.9%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	66	280	428	638	222	111	859	476	779	132	801	75
Future Volume (veh/h)	66	280	428	638	222	111	859	476	779	132	801	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	72	304	226	693	241	94	934	517	521	143	871	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	783	449	589	716	379	161	900	1665	1023	196	925	392
Arrive On Green	0.22	0.12	0.12	0.30	0.10	0.10	0.38	0.45	0.45	0.06	0.37	0.25
Sat Flow, veh/h	3563	3741	1573	3563	3741	1585	3563	3741	1583	3563	3741	1585
Grp Volume(v), veh/h	72	304	226	693	241	94	934	517	521	143	871	71
Grp Sat Flow(s),veh/h/ln	1781	1870	1573	1781	1870	1585	1781	1870	1583	1781	1870	1585
Q Serve(g_s), s	1.9	9.1	5.8	22.3	7.2	5.5	29.4	10.4	5.4	4.6	26.2	2.4
Cycle Q Clear(g_c), s	1.9	9.1	5.8	22.3	7.2	5.5	29.4	10.4	5.4	4.6	26.2	2.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	783	449	589	716	379	161	900	1665	1023	196	925	392
V/C Ratio(X)	0.09	0.68	0.38	0.97	0.64	0.58	1.04	0.31	0.51	0.73	0.94	0.18
Avail Cap(c_a), veh/h	783	874	768	716	1363	578	900	1678	1029	196	939	398
HCM Platoon Ratio	1.00	1.00	1.00	1.50	1.00	1.00	1.50	1.00	1.00	1.00	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.1	49.0	9.9	40.3	50.2	35.2	36.1	20.8	3.3	54.1	35.8	12.0
Incr Delay (d2), s/veh	0.0	1.8	0.4	25.5	1.8	3.3	40.2	0.1	0.4	11.4	16.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	4.2	2.3	11.0	3.4	2.7	15.7	4.3	1.6	2.3	12.2	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.2	50.8	10.3	65.8	52.0	38.5	76.3	20.9	3.7	65.5	52.7	12.2
LnGrp LOS	D	D	B	E	D	D	F	C	A	E	D	B
Approach Vol, veh/h		602			1028			1972			1085	
Approach Delay, s/veh		33.9			60.1			42.6			51.7	
Approach LOS		C			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	57.6	28.0	19.8	34.0	34.6	30.2	17.6				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	6.4	52.2	23.4	27.2	29.4	29.2	8.2	42.4				
Max Q Clear Time (g_c+I1), s	6.6	12.4	24.3	11.1	31.4	28.2	3.9	9.2				
Green Ext Time (p_c), s	0.0	5.7	0.0	2.3	0.0	0.6	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay			47.4									
HCM 6th LOS			D									

Timings
16: Sierra Ave/Sierra Ave. & Riverside Ave.

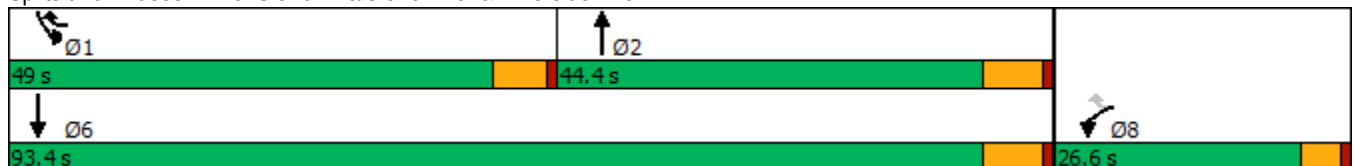
Ventana (JN 13769)
04/29/2021

	↙	↖	↑	↘	↓
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↖	↑↔	↘↙	↑↑
Traffic Volume (vph)	127	708	634	1021	736
Future Volume (vph)	127	708	634	1021	736
Turn Type	Prot	pm+ov	NA	Prot	NA
Protected Phases	8	1	2	1	6
Permitted Phases	8				
Detector Phase	8	1	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	26.6	15.8	28.5	15.8	16.5
Total Split (s)	26.6	49.0	44.4	49.0	93.4
Total Split (%)	22.2%	40.8%	37.0%	40.8%	77.8%
Yellow Time (s)	3.6	4.8	5.5	4.8	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	6.5	5.8	6.5
Lead/Lag		Lead	Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	12.6	55.4	32.0	38.0	76.1
Actuated g/C Ratio	0.13	0.55	0.32	0.38	0.76
v/c Ratio	0.62	0.85	0.82	0.85	0.30
Control Delay	56.9	28.9	37.8	36.9	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	56.9	28.9	37.8	36.9	4.2
LOS	E	C	D	D	A
Approach Delay	33.2		37.8		23.2
Approach LOS	C		D		C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 100.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 29.2
 Intersection LOS: C
 Intersection Capacity Utilization 78.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 16: Sierra Ave/Sierra Ave. & Riverside Ave.



HCM 6th Signalized Intersection Summary
 16: Sierra Ave/Sierra Ave. & Riverside Ave.

Ventana (JN 13769)
 04/29/2021



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	127	708	634	204	1021	736
Future Volume (veh/h)	127	708	634	204	1021	736
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	138	498	689	162	1110	800
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	375	881	807	190	1194	2429
Arrive On Green	0.21	0.21	0.28	0.28	0.35	0.68
Sat Flow, veh/h	1781	1585	2949	671	3456	3647
Grp Volume(v), veh/h	138	498	429	422	1110	800
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1750	1728	1777
Q Serve(g_s), s	6.9	21.3	23.9	23.9	32.4	9.6
Cycle Q Clear(g_c), s	6.9	21.3	23.9	23.9	32.4	9.6
Prop In Lane	1.00	1.00		0.38	1.00	
Lane Grp Cap(c), veh/h	375	881	502	494	1194	2429
V/C Ratio(X)	0.37	0.57	0.85	0.85	0.93	0.33
Avail Cap(c_a), veh/h	375	881	644	634	1427	2952
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	15.0	35.5	35.5	33.0	6.8
Incr Delay (d2), s/veh	0.2	0.5	8.8	9.0	9.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	6.9	10.7	10.6	13.8	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.6	15.6	44.3	44.5	42.1	6.8
LnGrp LOS	D	B	D	D	D	A
Approach Vol, veh/h	636		851			1910
Approach Delay, s/veh	19.9		44.4			27.3
Approach LOS	B		D			C
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	42.0	36.1			78.0	26.6
Change Period (Y+Rc), s	5.8	6.5			6.5	4.6
Max Green Setting (Gmax), s	43.2	37.9			86.9	22.0
Max Q Clear Time (g_c+I1), s	34.4	25.9			11.6	23.3
Green Ext Time (p_c), s	1.8	3.7			5.5	0.0
Intersection Summary						
HCM 6th Ctrl Delay			30.2			
HCM 6th LOS			C			

Timings
17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
04/29/2021



Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	102	42	590	1261
Future Volume (vph)	102	42	590	1261
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	5	2	6
Permitted Phases				
Detector Phase	4	5	2	6
Switch Phase				
Minimum Initial (s)	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	9.6	15.8	27.8
Total Split (s)	34.0	13.0	86.0	73.0
Total Split (%)	28.3%	10.8%	71.7%	60.8%
Yellow Time (s)	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	5.8	5.8
Lead/Lag		Lead		Lag
Lead-Lag Optimize?		Yes		Yes
Recall Mode	None	None	Min	Min
Act Effct Green (s)	15.3	6.8	44.0	38.0
Actuated g/C Ratio	0.21	0.09	0.61	0.53
v/c Ratio	0.58	0.26	0.28	0.72
Control Delay	29.9	42.3	6.6	16.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	29.9	42.3	6.6	16.6
LOS	C	D	A	B
Approach Delay	29.9		9.0	16.6
Approach LOS	C		A	B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 72
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 15.7
 Intersection LOS: B
 Intersection Capacity Utilization 59.0%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 17: Sierra Ave & Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	102	122	42	590	1261	43
Future Volume (veh/h)	102	122	42	590	1261	43
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	104	124	43	602	1287	44
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	131	156	77	2220	1757	60
Arrive On Green	0.17	0.17	0.04	0.62	0.50	0.50
Sat Flow, veh/h	758	904	1781	3647	3599	120
Grp Volume(v), veh/h	229	0	43	602	652	679
Grp Sat Flow(s),veh/h/ln	1670	0	1781	1777	1777	1849
Q Serve(g_s), s	7.5	0.0	1.4	4.4	16.5	16.6
Cycle Q Clear(g_c), s	7.5	0.0	1.4	4.4	16.5	16.6
Prop In Lane	0.45	0.54	1.00			0.06
Lane Grp Cap(c), veh/h	288	0	77	2220	890	927
V/C Ratio(X)	0.80	0.00	0.56	0.27	0.73	0.73
Avail Cap(c_a), veh/h	823	0	261	4980	2086	2171
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.7	0.0	26.8	4.8	11.2	11.3
Incr Delay (d2), s/veh	5.0	0.0	2.3	0.1	1.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	0.5	0.7	4.3	4.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.7	0.0	29.2	4.9	12.4	12.4
LnGrp LOS	C	A	C	A	B	B
Approach Vol, veh/h	229			645	1331	
Approach Delay, s/veh	27.7			6.5	12.4	
Approach LOS	C			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		41.6		15.7	7.1	34.5
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		80.2		28.2	8.4	67.2
Max Q Clear Time (g_c+I1), s		6.4		9.5	3.4	18.6
Green Ext Time (p_c), s		3.8		0.6	0.0	10.1

Intersection Summary

HCM 6th Ctrl Delay	12.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/29/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	94	387	322	627	1242	146
Future Volume (vph)	94	387	322	627	1242	146
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	9.6	9.6	16.5	29.5	29.5
Total Split (s)	44.8	28.0	28.0	75.2	47.2	47.2
Total Split (%)	37.3%	23.3%	23.3%	62.7%	39.3%	39.3%
Yellow Time (s)	4.8	3.6	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	4.6	6.5	6.5	6.5
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.7	40.9	23.4	68.7	40.7	40.7
Actuated g/C Ratio	0.13	0.44	0.25	0.74	0.44	0.44
v/c Ratio	0.49	0.64	0.84	0.28	0.88	0.23
Control Delay	45.6	25.2	51.4	4.4	32.0	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	25.2	51.4	4.4	32.0	11.8
LOS	D	C	D	A	C	B
Approach Delay	29.1			20.3	29.9	
Approach LOS	C			C	C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 92.7
 Natural Cycle: 135
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 26.5
 Intersection LOS: C
 Intersection Capacity Utilization 74.6%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	94	387	322	627	1242	146
Future Volume (veh/h)	94	387	322	627	1242	146
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	109	188	374	729	1444	129
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	216	561	415	2603	1664	705
Arrive On Green	0.12	0.12	0.23	0.73	0.44	0.44
Sat Flow, veh/h	1781	1585	1781	3647	3741	1585
Grp Volume(v), veh/h	109	188	374	729	1444	129
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1870	1585
Q Serve(g_s), s	4.8	7.3	17.1	5.8	29.4	4.1
Cycle Q Clear(g_c), s	4.8	7.3	17.1	5.8	29.4	4.1
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	216	561	415	2603	1664	705
V/C Ratio(X)	0.51	0.33	0.90	0.28	0.87	0.18
Avail Cap(c_a), veh/h	826	1104	496	2903	1810	767
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	19.9	31.3	3.8	21.1	14.1
Incr Delay (d2), s/veh	1.8	0.3	17.4	0.1	4.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.1	8.6	1.0	11.6	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.4	20.2	48.7	3.8	25.6	14.2
LnGrp LOS	D	C	D	A	C	B
Approach Vol, veh/h	297			1103	1573	
Approach Delay, s/veh	26.2			19.1	24.7	
Approach LOS	C			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		68.1		16.0	24.2	43.9
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	23.4	40.7
Max Q Clear Time (g_c+I1), s		7.8		9.3	19.1	31.4
Green Ext Time (p_c), s		4.9		0.9	0.5	6.1
Intersection Summary						
HCM 6th Ctrl Delay			22.7			
HCM 6th LOS			C			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

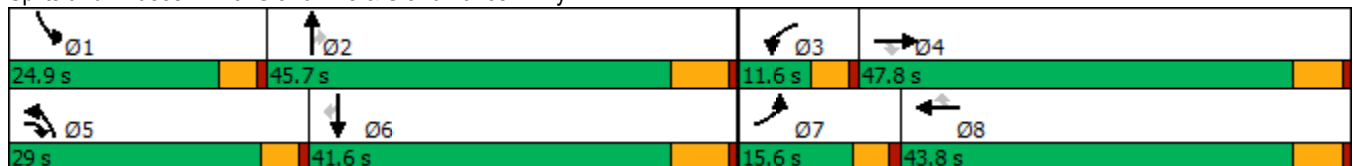
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	195	580	166	224	284	639	768	312	306	1330	233
Future Volume (vph)	142	195	580	166	224	284	639	768	312	306	1330	233
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	15.6	47.8	29.0	11.6	43.8	43.8	29.0	45.7	45.7	24.9	41.6	41.6
Total Split (%)	12.0%	36.8%	22.3%	8.9%	33.7%	33.7%	22.3%	35.2%	35.2%	19.2%	32.0%	32.0%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.8	14.9	45.2	7.0	13.2	13.2	24.5	45.0	45.0	13.9	34.5	34.5
Actuated g/C Ratio	0.09	0.15	0.44	0.07	0.13	0.13	0.24	0.44	0.44	0.14	0.34	0.34
v/c Ratio	0.52	0.39	0.87	0.75	0.51	0.66	0.83	0.34	0.39	0.70	0.78	0.36
Control Delay	51.7	41.6	36.8	67.8	45.9	12.2	47.6	20.4	4.0	50.9	34.4	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.7	41.6	36.8	67.8	45.9	12.2	47.6	20.4	4.0	50.9	34.4	5.0
LOS	D	D	D	E	D	B	D	C	A	D	C	A
Approach Delay		40.1			37.1			27.5			33.4	
Approach LOS		D			D			C			C	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 102.4
 Natural Cycle: 130
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 33.1
 Intersection LOS: C
 Intersection Capacity Utilization 79.4%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	195	580	166	224	284	639	768	312	306	1330	233
Future Volume (veh/h)	142	195	580	166	224	284	639	768	312	306	1330	233
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	156	214	517	182	246	260	702	844	310	336	1462	229
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	213	1070	769	203	1060	448	709	2075	585	398	1586	448
Arrive On Green	0.06	0.29	0.29	0.06	0.28	0.28	0.20	0.37	0.37	0.11	0.28	0.28
Sat Flow, veh/h	3563	3741	1585	3563	3741	1582	3563	5611	1581	3563	5611	1585
Grp Volume(v), veh/h	156	214	517	182	246	260	702	844	310	336	1462	229
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1582	1781	1870	1581	1781	1870	1585
Q Serve(g_s), s	5.3	5.3	30.6	6.2	6.2	17.3	24.1	13.7	18.9	11.3	31.0	14.9
Cycle Q Clear(g_c), s	5.3	5.3	30.6	6.2	6.2	17.3	24.1	13.7	18.9	11.3	31.0	14.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	213	1070	769	203	1060	448	709	2075	585	398	1586	448
V/C Ratio(X)	0.73	0.20	0.67	0.90	0.23	0.58	0.99	0.41	0.53	0.84	0.92	0.51
Avail Cap(c_a), veh/h	319	1281	858	203	1159	490	709	2075	585	590	1606	454
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	33.2	24.1	57.5	33.7	37.7	49.0	28.7	30.3	53.4	42.7	36.9
Incr Delay (d2), s/veh	1.8	0.1	1.8	35.0	0.1	1.5	31.3	0.1	0.9	4.8	9.1	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.4	11.1	3.7	2.8	6.7	13.3	5.8	7.1	5.1	14.8	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.5	33.2	25.9	92.5	33.8	39.1	80.3	28.8	31.2	58.2	51.8	37.8
LnGrp LOS	E	C	C	F	C	D	F	C	C	E	D	D
Approach Vol, veh/h		887			688			1856			2027	
Approach Delay, s/veh		33.4			51.4			48.7			51.3	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.3	51.9	11.6	40.9	29.0	41.2	11.9	40.6				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	20.3	39.2	7.0	42.0	24.4	35.1	11.0	38.0				
Max Q Clear Time (g_c+I1), s	13.3	20.9	8.2	32.6	26.1	33.0	7.3	19.3				
Green Ext Time (p_c), s	0.4	5.9	0.0	2.3	0.0	1.7	0.1	2.1				
Intersection Summary												
HCM 6th Ctrl Delay			47.5									
HCM 6th LOS			D									

Timings
1: Coyote Canyon Rd. & Duncan Canyon Rd.

Ventana (JN 13769)

04/29/2021

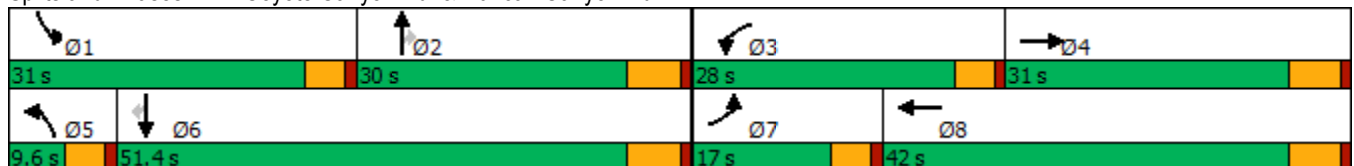


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↖	↗	↗	↖	↗	↗
Traffic Volume (vph)	70	377	172	356	11	5	136	200	2	38
Future Volume (vph)	70	377	172	356	11	5	136	200	2	38
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	17.0	31.0	28.0	42.0	9.6	30.0	30.0	31.0	51.4	51.4
Total Split (%)	14.2%	25.8%	23.3%	35.0%	8.0%	25.0%	25.0%	25.8%	42.8%	42.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None	None	None
Act Effct Green (s)	8.3	17.3	13.8	25.4	5.2	10.4	10.4	15.3	28.9	28.9
Actuated g/C Ratio	0.11	0.22	0.18	0.32	0.07	0.13	0.13	0.20	0.37	0.37
v/c Ratio	0.43	0.58	0.63	0.66	0.11	0.02	0.41	0.67	0.00	0.06
Control Delay	43.7	31.4	41.5	20.8	44.1	37.8	7.0	40.9	22.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.7	31.4	41.5	20.8	44.1	37.8	7.0	40.9	22.0	0.2
LOS	D	C	D	C	D	D	A	D	C	A
Approach Delay		33.2		25.0		10.8			34.3	
Approach LOS		C		C		B			C	

Intersection Summary























Cycle Length: 120
 Actuated Cycle Length: 78.3
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 27.2
 Intersection LOS: C
 Intersection Capacity Utilization 56.0%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 1: Coyote Canyon Rd. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 1: Coyote Canyon Rd. & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	377	18	172	356	335	11	5	136	200	2	38
Future Volume (veh/h)	70	377	18	172	356	335	11	5	136	200	2	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	80	433	21	198	409	241	13	6	116	230	2	44
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	109	685	33	248	598	348	29	295	250	284	563	477
Arrive On Green	0.06	0.20	0.20	0.14	0.28	0.28	0.02	0.16	0.16	0.16	0.30	0.30
Sat Flow, veh/h	1781	3450	167	1781	2161	1259	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	80	222	232	198	335	315	13	6	116	230	2	44
Grp Sat Flow(s),veh/h/ln	1781	1777	1840	1781	1777	1644	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	2.7	6.9	7.0	6.5	10.1	10.3	0.4	0.2	4.0	7.5	0.0	1.2
Cycle Q Clear(g_c), s	2.7	6.9	7.0	6.5	10.1	10.3	0.4	0.2	4.0	7.5	0.0	1.2
Prop In Lane	1.00		0.09	1.00		0.77	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	109	353	365	248	491	455	29	295	250	284	563	477
V/C Ratio(X)	0.73	0.63	0.63	0.80	0.68	0.69	0.45	0.02	0.46	0.81	0.00	0.09
Avail Cap(c_a), veh/h	366	743	769	692	1067	987	148	751	636	780	1415	1199
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.8	22.1	22.2	25.1	19.4	19.5	29.4	21.4	23.1	24.5	14.7	15.2
Incr Delay (d2), s/veh	3.5	1.9	1.8	2.2	1.7	1.9	4.0	0.0	1.3	2.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.9	3.0	2.7	4.1	3.8	0.2	0.1	1.5	3.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.4	24.0	24.0	27.3	21.1	21.4	33.4	21.5	24.4	26.6	14.7	15.2
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	B	B
Approach Vol, veh/h		534			848			135			276	
Approach Delay, s/veh		25.1			22.7			25.1			24.7	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.2	15.3	13.0	17.8	5.6	23.9	8.3	22.5				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	26.4	24.2	23.4	25.2	5.0	45.6	12.4	36.2				
Max Q Clear Time (g_c+I1), s	9.5	6.0	8.5	9.0	2.4	3.2	4.7	12.3				
Green Ext Time (p_c), s	0.3	0.3	0.2	2.4	0.0	0.1	0.0	4.4				
Intersection Summary												
HCM 6th Ctrl Delay				23.9								
HCM 6th LOS				C								

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021

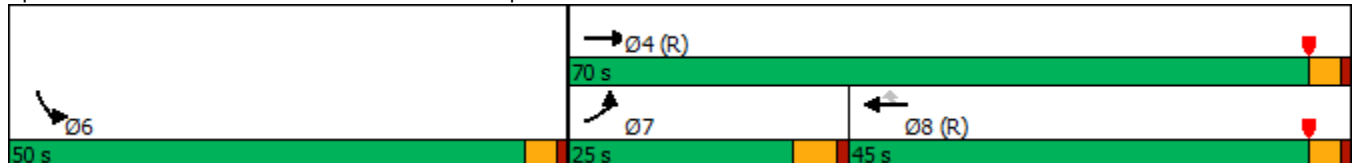


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↗	↑↑	↑↑	↖	↖↖
Traffic Volume (vph)	292	822	1075	548	1115
Future Volume (vph)	292	822	1075	548	1115
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	25.0	70.0	45.0	45.0	50.0
Total Split (%)	20.8%	58.3%	37.5%	37.5%	41.7%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	20.0	66.0	41.0	41.0	46.0
Actuated g/C Ratio	0.17	0.55	0.34	0.34	0.38
v/c Ratio	1.05	0.45	0.95	0.70	1.08
Control Delay	106.9	14.7	54.6	12.6	84.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	106.9	14.7	54.6	12.6	84.4
LOS	F	B	D	B	F
Approach Delay		38.9	40.4		84.4
Approach LOS		D	D		F

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.08
 Intersection Signal Delay: 54.4
 Intersection LOS: D
 Intersection Capacity Utilization 95.3%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗	↑	↙	↘	
Traffic Volume (veh/h)	292	822	1075	548	1115	214	
Future Volume (veh/h)	292	822	1075	548	1115	214	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	311	874	1144	264	1341	0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	297	1955	1214	542	1366	608	
Arrive On Green	0.33	1.00	0.34	0.34	0.38	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	311	874	1144	264	1341	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	20.0	0.0	37.5	15.8	44.7	0.0	
Cycle Q Clear(g_c), s	20.0	0.0	37.5	15.8	44.7	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	297	1955	1214	542	1366	608	
V/C Ratio(X)	1.05	0.45	0.94	0.49	0.98	0.00	
Avail Cap(c_a), veh/h	297	1955	1214	542	1366	608	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.88	0.88	0.77	0.77	1.00	0.00	
Uniform Delay (d), s/veh	40.0	0.0	38.3	31.2	36.6	0.0	
Incr Delay (d2), s/veh	62.0	0.7	12.6	2.4	20.1	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	12.4	0.2	18.2	6.4	22.8	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	102.0	0.7	50.9	33.6	56.7	0.0	
LnGrp LOS	F	A	D	C	E	A	
Approach Vol, veh/h		1185	1408		1341		
Approach Delay, s/veh		27.2	47.7		56.7		
Approach LOS		C	D		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				70.0	50.0	25.0	45.0
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				66.0	46.0	20.0	41.0
Max Q Clear Time (g_c+I1), s				2.0	46.7	22.0	39.5
Green Ext Time (p_c), s				7.9	0.0	0.0	1.1

Intersection Summary

HCM 6th Ctrl Delay	44.6
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

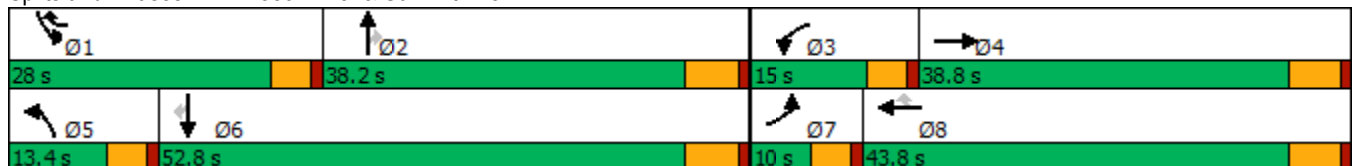
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations												
Traffic Volume (vph)	142	349	149	372	463	123	414	137	779	602	113	
Future Volume (vph)	142	349	149	372	463	123	414	137	779	602	113	
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	7	4	3	8	1	5	2		1	6		
Permitted Phases					8			2			6	
Detector Phase	7	4	3	8	1	5	2	2	1	6	6	
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	
Minimum Split (s)	9.6	37.8	9.6	43.8	9.6	9.6	37.8	37.8	9.6	34.8	34.8	
Total Split (s)	10.0	38.8	15.0	43.8	28.0	13.4	38.2	38.2	28.0	52.8	52.8	
Total Split (%)	8.3%	32.3%	12.5%	36.5%	23.3%	11.2%	31.8%	31.8%	23.3%	44.0%	44.0%	
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Min	None	Min	None	None	None	None	None	None	None	
Act Effct Green (s)	5.5	18.5	8.4	21.4	46.4	7.5	17.5	17.5	23.8	33.8	33.8	
Actuated g/C Ratio	0.06	0.21	0.09	0.24	0.52	0.08	0.20	0.20	0.27	0.38	0.38	
v/c Ratio	0.70	0.70	0.48	0.46	0.56	0.44	0.62	0.31	0.86	0.47	0.17	
Control Delay	62.8	35.2	45.8	30.8	12.1	46.5	37.7	3.6	44.1	23.3	2.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	62.8	35.2	45.8	30.8	12.1	46.5	37.7	3.6	44.1	23.3	2.4	
LOS	E	D	D	C	B	D	D	A	D	C	A	
Approach Delay		41.4		24.2			32.3			32.6		
Approach LOS		D		C			C			C		

Intersection Summary
































Cycle Length: 120
 Actuated Cycle Length: 89.3
 Natural Cycle: 125
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 31.8
 Intersection LOS: C
 Intersection Capacity Utilization 75.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 7: Beech Ave. & Summit Ave.



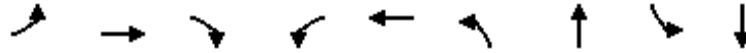
HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	142	349	143	149	372	463	123	414	137	779	602	113
Future Volume (veh/h)	142	349	143	149	372	463	123	414	137	779	602	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	148	364	124	155	388	390	128	431	103	811	627	87
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	217	638	214	230	884	791	198	697	307	894	1384	616
Arrive On Green	0.06	0.24	0.24	0.07	0.25	0.25	0.06	0.20	0.20	0.25	0.39	0.39
Sat Flow, veh/h	3456	2608	875	3456	3554	1583	3456	3554	1566	3563	3554	1581
Grp Volume(v), veh/h	148	246	242	155	388	390	128	431	103	811	627	87
Grp Sat Flow(s),veh/h/ln	1728	1777	1706	1728	1777	1583	1728	1777	1566	1781	1777	1581
Q Serve(g_s), s	3.6	10.5	10.7	3.8	7.9	14.1	3.1	9.5	4.9	19.0	11.3	3.1
Cycle Q Clear(g_c), s	3.6	10.5	10.7	3.8	7.9	14.1	3.1	9.5	4.9	19.0	11.3	3.1
Prop In Lane	1.00		0.51	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	217	435	418	230	884	791	198	697	307	894	1384	616
V/C Ratio(X)	0.68	0.57	0.58	0.67	0.44	0.49	0.65	0.62	0.34	0.91	0.45	0.14
Avail Cap(c_a), veh/h	217	681	654	418	1569	1097	353	1338	589	969	1941	864
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.5	28.5	28.6	39.3	27.3	14.3	39.7	31.6	29.8	31.3	19.5	17.0
Incr Delay (d2), s/veh	7.1	1.2	1.3	1.3	0.3	0.5	1.3	0.9	0.6	11.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	4.5	4.4	1.6	3.3	4.8	1.3	4.1	1.9	9.2	4.5	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.6	29.7	29.9	40.5	27.6	14.8	41.0	32.5	30.4	42.2	19.7	17.1
LnGrp LOS	D	C	C	D	C	B	D	C	C	D	B	B
Approach Vol, veh/h		636			933			662			1525	
Approach Delay, s/veh		33.7			24.4			33.9			31.5	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.2	22.7	10.3	26.9	9.5	39.3	10.0	27.2				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	23.4	32.4	10.4	33.0	8.8	47.0	5.4	38.0				
Max Q Clear Time (g_c+I1), s	21.0	11.5	5.8	12.7	5.1	13.3	5.6	16.1				
Green Ext Time (p_c), s	0.6	3.2	0.1	2.9	0.1	5.2	0.0	4.1				
Intersection Summary												
HCM 6th Ctrl Delay			30.5									
HCM 6th LOS			C									

Timings
12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

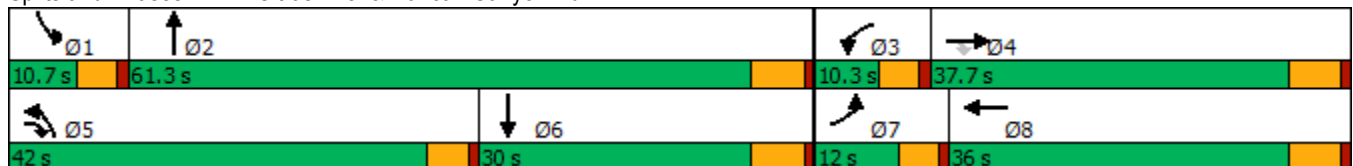


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↑	↗	↖	↗	↖↗	↖↗	↖	↖↗
Traffic Volume (vph)	83	248	973	22	320	868	29	10	17
Future Volume (vph)	83	248	973	22	320	868	29	10	17
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	9.6	27.8	9.6	27.8
Total Split (s)	12.0	37.7	42.0	10.3	36.0	42.0	61.3	10.7	30.0
Total Split (%)	10.0%	31.4%	35.0%	8.6%	30.0%	35.0%	51.1%	8.9%	25.0%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min	None	None	None	None
Act Effct Green (s)	7.6	31.8	69.8	5.7	22.8	30.3	38.7	5.6	10.7
Actuated g/C Ratio	0.09	0.36	0.79	0.06	0.26	0.34	0.44	0.06	0.12
v/c Ratio	0.57	0.38	0.70	0.20	0.74	0.77	0.04	0.09	0.16
Control Delay	61.2	27.5	3.9	50.5	42.0	32.1	9.3	48.3	19.0
Queue Delay	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.2	27.5	4.0	50.5	42.0	32.1	9.3	48.3	19.0
LOS	E	C	A	D	D	C	A	D	B
Approach Delay		12.1			42.5		30.6		22.6
Approach LOS		B			D		C		C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 88.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 22.9
 Intersection LOS: C
 Intersection Capacity Utilization 85.2%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	248	973	22	320	18	868	29	34	10	17	50
Future Volume (veh/h)	83	248	973	22	320	18	868	29	34	10	17	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	258	754	23	333	19	904	30	35	10	18	52
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	653	1016	43	546	31	1008	687	612	22	190	169
Arrive On Green	0.06	0.35	0.35	0.02	0.31	0.31	0.29	0.39	0.39	0.01	0.11	0.11
Sat Flow, veh/h	1781	1870	1585	1781	1752	100	3456	1777	1585	1781	1777	1585
Grp Volume(v), veh/h	86	258	754	23	0	352	904	30	35	10	18	52
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1852	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	4.3	9.5	29.7	1.2	0.0	14.7	22.9	1.0	1.3	0.5	0.8	2.8
Cycle Q Clear(g_c), s	4.3	9.5	29.7	1.2	0.0	14.7	22.9	1.0	1.3	0.5	0.8	2.8
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	110	653	1016	43	0	577	1008	687	612	22	190	169
V/C Ratio(X)	0.78	0.40	0.74	0.53	0.00	0.61	0.90	0.04	0.06	0.46	0.09	0.31
Avail Cap(c_a), veh/h	145	654	1017	111	0	614	1417	1082	965	119	472	421
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.2	22.4	11.2	44.0	0.0	26.7	31.0	17.5	17.6	44.7	36.7	37.6
Incr Delay (d2), s/veh	13.2	0.4	3.0	3.8	0.0	1.6	4.7	0.0	0.0	5.5	0.2	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	4.1	9.7	0.6	0.0	6.6	9.9	0.4	0.5	0.3	0.4	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.4	22.8	14.2	47.7	0.0	28.3	35.7	17.5	17.6	50.2	37.0	38.6
LnGrp LOS	E	C	B	D	A	C	D	B	B	D	D	D
Approach Vol, veh/h		1098			375			969				80
Approach Delay, s/veh		19.4			29.5			34.4				39.7
Approach LOS		B			C			C				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.7	41.0	6.8	37.6	31.2	15.5	10.2	34.2				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	6.1	55.5	5.7	31.9	37.4	24.2	7.4	30.2				
Max Q Clear Time (g_c+I1), s	2.5	3.3	3.2	31.7	24.9	4.8	6.3	16.7				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.1	1.7	0.3	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay				27.3								
HCM 6th LOS				C								

Timings
14: Citrus Ave. & Summit Ave.

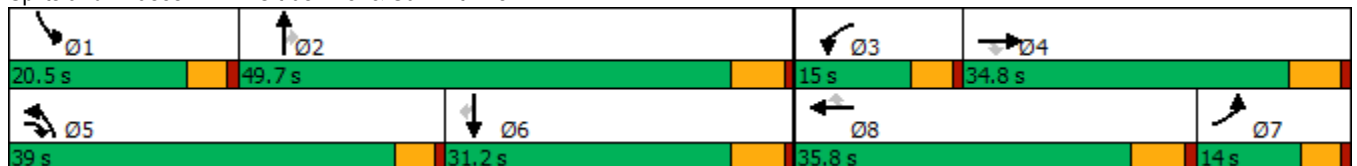
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	589	451	178	472	123	1102	654	154	89	353	89
Future Volume (vph)	162	589	451	178	472	123	1102	654	154	89	353	89
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	9.6	9.6	34.8	34.8	9.6	31.8	31.8	9.6	30.8	30.8
Total Split (s)	14.0	34.8	39.0	15.0	35.8	35.8	39.0	49.7	49.7	20.5	31.2	31.2
Total Split (%)	11.7%	29.0%	32.5%	12.5%	29.8%	29.8%	32.5%	41.4%	41.4%	17.1%	26.0%	26.0%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	13.1	24.0	59.9	10.5	21.3	21.3	34.6	42.0	42.0	10.3	17.6	17.6
Actuated g/C Ratio	0.12	0.22	0.56	0.10	0.20	0.20	0.32	0.39	0.39	0.10	0.16	0.16
v/c Ratio	0.82	0.77	0.54	1.12	0.70	0.31	1.05	0.49	0.24	0.57	0.66	0.23
Control Delay	76.7	46.4	13.0	152.0	45.7	5.0	78.5	27.3	4.7	61.3	48.5	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.7	46.4	13.0	152.0	45.7	5.0	78.5	27.3	4.7	61.3	48.5	1.2
LOS	E	D	B	F	D	A	E	C	A	E	D	A
Approach Delay		38.0			63.6			55.0			42.7	
Approach LOS		D			E			E			D	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 107.7
 Natural Cycle: 130
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.12
 Intersection Signal Delay: 50.4
 Intersection LOS: D
 Intersection Capacity Utilization 84.9%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	589	451	178	472	123	1102	654	154	89	353	89
Future Volume (veh/h)	162	589	451	178	472	123	1102	654	154	89	353	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	176	640	343	193	513	118	1198	711	131	97	384	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	222	829	868	177	691	292	1173	1537	633	123	535	235
Arrive On Green	0.12	0.22	0.22	0.10	0.18	0.18	0.33	0.41	0.41	0.07	0.15	0.15
Sat Flow, veh/h	1781	3741	1561	1781	3741	1580	3563	3741	1541	1781	3554	1561
Grp Volume(v), veh/h	176	640	343	193	513	118	1198	711	131	97	384	95
Grp Sat Flow(s),veh/h/ln	1781	1870	1561	1781	1870	1580	1781	1870	1541	1781	1777	1561
Q Serve(g_s), s	10.0	16.8	13.2	10.4	13.5	5.5	34.4	14.4	5.7	5.6	10.8	4.2
Cycle Q Clear(g_c), s	10.0	16.8	13.2	10.4	13.5	5.5	34.4	14.4	5.7	5.6	10.8	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	222	829	868	177	691	292	1173	1537	633	123	535	235
V/C Ratio(X)	0.79	0.77	0.40	1.09	0.74	0.40	1.02	0.46	0.21	0.79	0.72	0.40
Avail Cap(c_a), veh/h	222	1038	955	177	1074	454	1173	1572	647	271	864	380
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	38.2	13.5	47.0	40.2	23.6	35.0	22.4	19.8	47.9	42.3	20.9
Incr Delay (d2), s/veh	16.2	2.9	0.3	93.2	1.6	0.9	31.8	0.2	0.2	4.2	1.8	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	7.9	4.5	9.2	6.3	2.7	19.7	6.3	2.1	2.6	4.8	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.6	41.1	13.8	140.3	41.8	24.5	66.9	22.6	20.0	52.1	44.1	22.1
LnGrp LOS	E	D	B	F	D	C	F	C	B	D	D	C
Approach Vol, veh/h		1159			824			2040			576	
Approach Delay, s/veh		36.0			62.4			48.4			41.8	
Approach LOS		D			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.8	48.7	15.0	28.9	39.0	21.5	18.8	25.1				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	5.8	* 5.8				
Max Green Setting (Gmax), s	15.9	43.9	10.4	29.0	34.4	25.4	9.4	* 30				
Max Q Clear Time (g_c+I1), s	7.6	16.4	12.4	18.8	36.4	12.8	12.0	15.5				
Green Ext Time (p_c), s	0.1	5.9	0.0	4.1	0.0	2.3	0.0	3.3				

Intersection Summary

HCM 6th Ctrl Delay	47.0
HCM 6th LOS	D

Notes

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

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

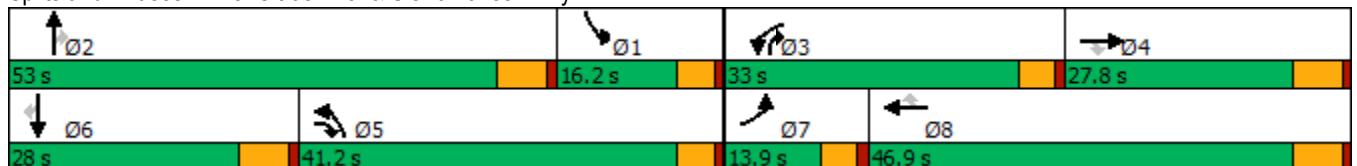
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	435	434	812	416	292	1028	840	990	254	582	91
Future Volume (vph)	112	435	434	812	416	292	1028	840	990	254	582	91
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	27.8	9.6	27.8	9.6	9.6	27.8	27.8
Total Split (s)	13.9	27.8	41.2	33.0	46.9	46.9	41.2	53.0	33.0	16.2	28.0	28.0
Total Split (%)	10.7%	21.4%	31.7%	25.4%	36.1%	36.1%	31.7%	40.8%	25.4%	12.5%	21.5%	21.5%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	4.6	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	Min
Act Effct Green (s)	8.1	19.7	57.5	28.4	40.0	40.0	36.6	37.9	67.5	20.9	22.2	22.2
Actuated g/C Ratio	0.06	0.15	0.45	0.22	0.31	0.31	0.29	0.30	0.53	0.16	0.17	0.17
v/c Ratio	0.52	0.79	0.59	1.07	0.37	0.46	1.06	0.79	1.20	0.46	0.94	0.22
Control Delay	66.7	62.8	13.5	101.1	35.3	9.7	88.2	46.7	120.0	53.3	75.1	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.7	62.8	13.5	101.1	35.3	9.7	88.2	46.7	120.0	53.3	75.1	1.2
LOS	E	E	B	F	D	A	F	D	F	D	E	A
Approach Delay		41.4			65.6			87.0			61.8	
Approach LOS		D			E			F			E	

Intersection Summary

































Cycle Length: 130
 Actuated Cycle Length: 127.7
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.20
 Intersection Signal Delay: 71.0
 Intersection LOS: E
 Intersection Capacity Utilization 98.5%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	112	435	434	812	416	292	1028	840	990	254	582	91
Future Volume (veh/h)	112	435	434	812	416	292	1028	840	990	254	582	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	117	453	418	846	433	278	1071	875	640	265	606	76
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	170	559	690	797	1218	509	1028	1086	809	614	652	272
Arrive On Green	0.05	0.22	0.15	0.34	0.49	0.33	0.43	0.44	0.29	0.26	0.26	0.17
Sat Flow, veh/h	3563	3741	1554	3563	3741	1564	3563	3741	1565	3563	3741	1562
Grp Volume(v), veh/h	117	453	418	846	433	278	1071	875	640	265	606	76
Grp Sat Flow(s),veh/h/ln	1781	1870	1554	1781	1870	1564	1781	1870	1565	1781	1870	1562
Q Serve(g_s), s	4.1	14.6	12.1	28.4	9.1	11.5	36.6	25.8	17.1	7.9	20.1	4.5
Cycle Q Clear(g_c), s	4.1	14.6	12.1	28.4	9.1	11.5	36.6	25.8	17.1	7.9	20.1	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	170	559	690	797	1218	509	1028	1086	809	614	652	272
V/C Ratio(X)	0.69	0.81	0.61	1.06	0.36	0.55	1.04	0.81	0.79	0.43	0.93	0.28
Avail Cap(c_a), veh/h	261	649	727	797	1218	509	1028	1391	937	614	654	273
HCM Platoon Ratio	1.00	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.5	47.5	10.0	42.1	24.2	13.6	36.0	32.7	8.7	41.9	46.1	32.3
Incr Delay (d2), s/veh	1.9	6.7	1.3	49.3	0.2	1.2	39.7	2.8	4.1	0.2	19.8	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	6.9	3.8	16.9	3.8	4.2	19.8	10.9	5.7	3.4	10.5	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.3	54.2	11.4	91.5	24.4	14.8	75.7	35.5	12.8	42.0	65.9	32.9
LnGrp LOS	E	D	B	F	C	B	F	D	B	D	E	C
Approach Vol, veh/h		988			1557			2586			947	
Approach Delay, s/veh		36.9			59.1			46.5			56.5	
Approach LOS		D			E			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.5	42.7	33.0	24.8	41.2	27.9	10.7	47.1				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	11.6	47.2	28.4	22.0	36.6	22.2	9.3	41.1				
Max Q Clear Time (g_c+1), s	9.9	27.8	30.4	16.6	38.6	22.1	6.1	13.5				
Green Ext Time (p_c), s	0.1	9.0	0.0	2.2	0.0	0.1	0.0	4.1				
Intersection Summary												
HCM 6th Ctrl Delay			49.8									
HCM 6th LOS			D									

Timings
16: Sierra Ave/Sierra Ave. & Riverside Ave.

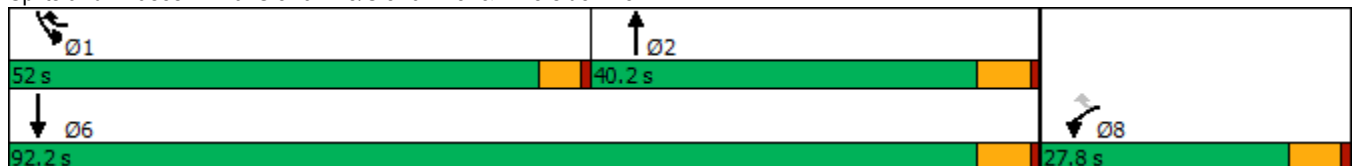
Ventana (JN 13769)
04/29/2021

	↙	↖	↑	↘	↓
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↖	↑↔	↘↙	↑↑
Traffic Volume (vph)	257	1081	789	999	816
Future Volume (vph)	257	1081	789	999	816
Turn Type	Prot	pm+ov	NA	Prot	NA
Protected Phases	8	1	2	1	6
Permitted Phases		8			
Detector Phase	8	1	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	27.8	9.6	27.8	9.6	15.8
Total Split (s)	27.8	52.0	40.2	52.0	92.2
Total Split (%)	23.2%	43.3%	33.5%	43.3%	76.8%
Yellow Time (s)	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	5.8	4.6	5.8
Lead/Lag		Lead	Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	20.5	73.7	34.4	47.4	86.4
Actuated g/C Ratio	0.17	0.62	0.29	0.40	0.73
v/c Ratio	0.90	1.16	1.04	0.77	0.34
Control Delay	78.9	106.8	80.6	35.9	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	78.9	106.8	80.6	35.9	6.3
LOS	E	F	F	D	A
Approach Delay	101.5		80.6		22.6
Approach LOS	F		F		C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 118.5
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.16
 Intersection Signal Delay: 62.0
 Intersection LOS: E
 Intersection Capacity Utilization 104.0%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 16: Sierra Ave/Sierra Ave. & Riverside Ave.



HCM 6th Signalized Intersection Summary
 16: Sierra Ave/Sierra Ave. & Riverside Ave.

Ventana (JN 13769)
 04/29/2021



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	257	1081	789	207	999	816
Future Volume (veh/h)	257	1081	789	207	999	816
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	273	751	839	87	1063	868
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	378	868	962	100	1160	2402
Arrive On Green	0.21	0.21	0.30	0.30	0.34	0.68
Sat Flow, veh/h	1781	1585	3343	337	3456	3647
Grp Volume(v), veh/h	273	751	459	467	1063	868
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1810	1728	1777
Q Serve(g_s), s	14.8	22.0	25.4	25.4	30.6	10.9
Cycle Q Clear(g_c), s	14.8	22.0	25.4	25.4	30.6	10.9
Prop In Lane	1.00	1.00		0.19	1.00	
Lane Grp Cap(c), veh/h	378	868	526	536	1160	2402
V/C Ratio(X)	0.72	0.86	0.87	0.87	0.92	0.36
Avail Cap(c_a), veh/h	378	868	589	600	1579	2960
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	20.2	34.6	34.6	33.1	7.2
Incr Delay (d2), s/veh	5.8	8.7	12.5	12.3	5.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	16.6	12.6	12.8	13.4	3.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.8	28.9	47.1	47.0	38.9	7.3
LnGrp LOS	D	C	D	D	D	A
Approach Vol, veh/h	1024		926			1931
Approach Delay, s/veh	32.9		47.1			24.7
Approach LOS	C		D			C
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	39.4	36.5			75.9	27.8
Change Period (Y+Rc), s	4.6	5.8			5.8	5.8
Max Green Setting (Gmax), s	47.4	34.4			86.4	22.0
Max Q Clear Time (g_c+I1), s	32.6	27.4			12.9	24.0
Green Ext Time (p_c), s	2.2	3.3			7.8	0.0
Intersection Summary						
HCM 6th Ctrl Delay			32.2			
HCM 6th LOS			C			

Timings
17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
04/29/2021



Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	75	132	1328	916
Future Volume (vph)	75	132	1328	916
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	5	2	6
Permitted Phases				
Detector Phase	4	5	2	6
Switch Phase				
Minimum Initial (s)	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	9.6	15.8	27.8
Total Split (s)	27.8	15.4	92.2	76.8
Total Split (%)	23.2%	12.8%	76.8%	64.0%
Yellow Time (s)	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	5.8	5.8
Lead/Lag		Lead		Lag
Lead-Lag Optimize?		Yes		Yes
Recall Mode	None	None	Min	Min
Act Effct Green (s)	11.8	10.2	44.8	29.9
Actuated g/C Ratio	0.17	0.15	0.65	0.44
v/c Ratio	0.50	0.52	0.60	0.70
Control Delay	27.3	38.2	7.9	18.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	27.3	38.2	7.9	18.0
LOS	C	D	A	B
Approach Delay	27.3		10.7	18.0
Approach LOS	C		B	B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 68.4
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 14.5
 Intersection LOS: B
 Intersection Capacity Utilization 58.8%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 17: Sierra Ave & Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	75	80	132	1328	916	113
Future Volume (veh/h)	75	80	132	1328	916	113
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	83	138	1383	954	118
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	133	142	177	2225	1412	175
Arrive On Green	0.17	0.17	0.10	0.63	0.44	0.44
Sat Flow, veh/h	807	858	1781	3647	3276	394
Grp Volume(v), veh/h	162	0	138	1383	532	540
Grp Sat Flow(s),veh/h/ln	1676	0	1781	1777	1777	1800
Q Serve(g_s), s	5.0	0.0	4.2	13.2	13.2	13.2
Cycle Q Clear(g_c), s	5.0	0.0	4.2	13.2	13.2	13.2
Prop In Lane	0.48	0.51	1.00			0.22
Lane Grp Cap(c), veh/h	277	0	177	2225	788	799
V/C Ratio(X)	0.59	0.00	0.78	0.62	0.68	0.68
Avail Cap(c_a), veh/h	663	0	346	5527	2271	2300
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	24.4	6.4	12.3	12.3
Incr Delay (d2), s/veh	2.0	0.0	2.8	0.3	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	1.8	3.4	4.6	4.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.4	0.0	27.2	6.6	13.3	13.3
LnGrp LOS	C	A	C	A	B	B
Approach Vol, veh/h	162			1521	1072	
Approach Delay, s/veh	23.4			8.5	13.3	
Approach LOS	C			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		40.6		15.0	10.1	30.5
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		86.4		22.0	10.8	71.0
Max Q Clear Time (g_c+I1), s		15.2		7.0	6.2	15.2
Green Ext Time (p_c), s		16.7		0.4	0.1	9.4

Intersection Summary

HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/29/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	310	459	518	1143	798	220
Future Volume (vph)	310	459	518	1143	798	220
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	9.6	9.6	16.5	29.5	29.5
Total Split (s)	44.8	42.3	42.3	75.2	32.9	32.9
Total Split (%)	37.3%	35.3%	35.3%	62.7%	27.4%	27.4%
Yellow Time (s)	4.8	3.6	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	4.6	6.5	6.5	6.5
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effect Green (s)	24.3	67.2	37.0	68.2	26.5	26.5
Actuated g/C Ratio	0.23	0.64	0.35	0.65	0.25	0.25
v/c Ratio	0.80	0.48	0.87	0.52	0.89	0.48
Control Delay	52.5	11.2	49.2	11.6	51.8	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	11.2	49.2	11.6	51.8	21.4
LOS	D	B	D	B	D	C
Approach Delay	27.9			23.3	45.2	
Approach LOS	C			C	D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 104.9	
Natural Cycle: 115	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 30.8	Intersection LOS: C
Intersection Capacity Utilization 82.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	310	459	518	1143	798	220
Future Volume (veh/h)	310	459	518	1143	798	220
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	326	340	545	1203	840	171
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	393	874	590	2293	987	418
Arrive On Green	0.22	0.22	0.33	0.65	0.26	0.26
Sat Flow, veh/h	1781	1585	1781	3647	3741	1585
Grp Volume(v), veh/h	326	340	545	1203	840	171
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1870	1585
Q Serve(g_s), s	16.0	11.2	27.0	16.6	19.5	8.2
Cycle Q Clear(g_c), s	16.0	11.2	27.0	16.6	19.5	8.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	393	874	590	2293	987	418
V/C Ratio(X)	0.83	0.39	0.92	0.52	0.85	0.41
Avail Cap(c_a), veh/h	758	1199	733	2665	1078	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	11.7	29.5	8.7	32.0	27.8
Incr Delay (d2), s/veh	4.5	0.3	15.3	0.2	6.2	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.1	13.6	5.7	9.4	3.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	38.6	12.0	44.9	8.9	38.2	28.5
LnGrp LOS	D	B	D	A	D	C
Approach Vol, veh/h	666			1748	1011	
Approach Delay, s/veh	25.0			20.1	36.6	
Approach LOS	C			C	D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		65.6		26.0	34.9	30.7
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	37.7	26.4
Max Q Clear Time (g_c+11), s		18.6		18.0	29.0	21.5
Green Ext Time (p_c), s		12.5		2.2	1.3	2.6
Intersection Summary						
HCM 6th Ctrl Delay			25.9			
HCM 6th LOS			C			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

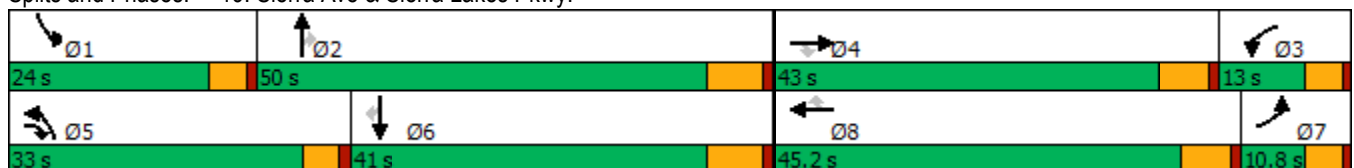
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	374	1049	248	301	314	958	1178	296	301	971	244
Future Volume (vph)	334	374	1049	248	301	314	958	1178	296	301	971	244
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	41.8	9.6	9.6	42.8	42.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	10.8	43.0	33.0	13.0	45.2	45.2	33.0	50.0	50.0	24.0	41.0	41.0
Total Split (%)	8.3%	33.1%	25.4%	10.0%	34.8%	34.8%	25.4%	38.5%	38.5%	18.5%	31.5%	31.5%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	9.3	16.4	46.2	8.5	15.5	15.5	28.6	44.3	44.3	13.5	29.2	29.2
Actuated g/C Ratio	0.09	0.16	0.44	0.08	0.15	0.15	0.27	0.43	0.43	0.13	0.28	0.28
v/c Ratio	1.09	0.66	1.47	0.90	0.56	0.64	1.02	0.51	0.39	0.68	0.64	0.41
Control Delay	122.6	47.6	241.9	81.4	45.7	10.9	72.5	23.6	8.2	51.9	35.0	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	122.6	47.6	241.9	81.4	45.7	10.9	72.5	23.6	8.2	51.9	35.0	5.8
LOS	F	D	F	F	D	B	E	C	A	D	D	A
Approach Delay		177.9			43.3			41.0			33.7	
Approach LOS		F			D			D			C	

Intersection Summary


































Cycle Length: 130
 Actuated Cycle Length: 104.2
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.47
 Intersection Signal Delay: 76.2
 Intersection LOS: E
 Intersection Capacity Utilization 105.0%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	  		 	  	
Traffic Volume (veh/h)	334	374	1049	248	301	314	958	1178	296	301	971	244
Future Volume (veh/h)	334	374	1049	248	301	314	958	1178	296	301	971	244
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	344	386	700	256	310	169	988	1214	241	310	1001	206
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	769	1036	814	250	490	204	844	2068	576	374	1328	374
Arrive On Green	0.22	0.28	0.28	0.07	0.13	0.13	0.26	0.41	0.37	0.11	0.24	0.24
Sat Flow, veh/h	3563	3741	1582	3563	3741	1554	3563	5611	1564	3563	5611	1579
Grp Volume(v), veh/h	344	386	700	256	310	169	988	1214	241	310	1001	206
Grp Sat Flow(s),veh/h/ln	1781	1870	1582	1781	1870	1554	1781	1870	1564	1781	1870	1579
Q Serve(g_s), s	10.0	10.0	27.7	8.4	9.4	9.9	28.4	20.2	10.2	10.2	19.9	8.2
Cycle Q Clear(g_c), s	10.0	10.0	27.7	8.4	9.4	9.9	28.4	20.2	10.2	10.2	19.9	8.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	769	1036	814	250	490	204	844	2068	576	374	1328	374
V/C Ratio(X)	0.45	0.37	0.86	1.03	0.63	0.83	1.17	0.59	0.42	0.83	0.75	0.55
Avail Cap(c_a), veh/h	769	1161	867	250	1230	511	844	2068	576	577	1615	455
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.10	1.10	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	34.9	10.4	55.7	49.3	30.8	44.3	28.5	15.6	52.6	42.5	14.3
Incr Delay (d2), s/veh	0.2	0.2	8.4	63.6	1.4	8.4	89.2	0.4	0.5	3.3	1.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	4.6	10.4	6.0	4.5	4.2	22.7	8.9	3.7	4.7	9.4	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	35.2	18.8	119.3	50.7	39.2	133.5	28.9	16.0	55.9	44.2	15.5
LnGrp LOS	D	D	B	F	D	D	F	C	B	E	D	B
Approach Vol, veh/h		1430			735			2443			1517	
Approach Delay, s/veh		28.5			71.9			69.9			42.7	
Approach LOS		C			E			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.2	50.7	13.0	39.0	33.0	34.9	30.5	21.5				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	19.4	43.5	8.4	37.2	28.4	34.5	6.2	39.4				
Max Q Clear Time (g_c+I1), s	12.2	22.2	10.4	29.7	30.4	21.9	12.0	11.9				
Green Ext Time (p_c), s	0.4	10.2	0.0	3.4	0.0	6.2	0.0	2.7				
Intersection Summary												
HCM 6th Ctrl Delay			53.8									
HCM 6th LOS			D									

APPENDIX 7.8:

**HORIZON YEAR (2040) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS
ANALYSIS WORKSHEETS WITH IMPROVEMENTS**

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Timings
1: Coyote Canyon Rd. & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	29	537	88	352	6	6	199	360	10	62
Future Volume (vph)	29	537	88	352	6	6	199	360	10	62
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	11.0	31.0	16.0	36.0	9.6	31.0	31.0	42.0	63.4	63.4
Total Split (%)	9.2%	25.8%	13.3%	30.0%	8.0%	25.8%	25.8%	35.0%	52.8%	52.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None	None	None
Act Effct Green (s)	6.0	19.9	8.9	24.8	5.3	11.1	11.1	23.3	37.8	37.8
Actuated g/C Ratio	0.07	0.24	0.11	0.30	0.06	0.14	0.14	0.28	0.46	0.46
v/c Ratio	0.24	0.68	0.49	0.48	0.05	0.02	0.53	0.76	0.01	0.08
Control Delay	47.5	34.5	48.6	24.7	45.8	38.8	11.6	39.1	16.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	34.5	48.6	24.7	45.8	38.8	11.6	39.1	16.4	0.2
LOS	D	C	D	C	D	D	B	D	B	A
Approach Delay		35.2		28.4		13.3			33.0	
Approach LOS		D		C		B			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 82.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 29.9
 Intersection LOS: C
 Intersection Capacity Utilization 60.9%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 1: Coyote Canyon Rd. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 1: Coyote Canyon Rd. & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗	↗	↖	↗	↖
Traffic Volume (veh/h)	29	537	8	88	352	129	6	6	199	360	10	62
Future Volume (veh/h)	29	537	8	88	352	129	6	6	199	360	10	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	571	9	94	374	105	6	6	159	383	11	66
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	59	783	12	121	697	193	14	282	239	436	726	615
Arrive On Green	0.03	0.22	0.22	0.07	0.25	0.25	0.01	0.15	0.15	0.24	0.39	0.39
Sat Flow, veh/h	1781	3581	56	1781	2748	762	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	31	283	297	94	240	239	6	6	159	383	11	66
Grp Sat Flow(s),veh/h/ln	1781	1777	1860	1781	1777	1733	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.1	9.7	9.7	3.4	7.6	7.8	0.2	0.2	6.2	13.6	0.2	1.7
Cycle Q Clear(g_c), s	1.1	9.7	9.7	3.4	7.6	7.8	0.2	0.2	6.2	13.6	0.2	1.7
Prop In Lane	1.00		0.03	1.00		0.44	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	59	388	407	121	451	440	14	282	239	436	726	615
V/C Ratio(X)	0.53	0.73	0.73	0.78	0.53	0.54	0.43	0.02	0.66	0.88	0.02	0.11
Avail Cap(c_a), veh/h	174	684	716	310	819	799	136	719	610	1017	1645	1394
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	23.8	23.8	30.0	21.1	21.2	32.3	23.7	26.2	23.8	12.3	12.8
Incr Delay (d2), s/veh	2.7	2.6	2.5	4.0	1.0	1.0	7.4	0.0	3.2	2.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.9	4.0	1.5	2.9	2.9	0.1	0.1	2.3	5.2	0.1	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	26.4	26.3	34.0	22.1	22.2	39.8	23.7	29.4	26.1	12.4	12.9
LnGrp LOS	C	C	C	C	C	C	D	C	C	C	B	B
Approach Vol, veh/h		611			573			171			460	
Approach Delay, s/veh		26.8			24.1			29.6			23.9	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.6	15.7	9.1	20.1	5.1	31.2	6.8	22.4				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	37.4	25.2	11.4	25.2	5.0	57.6	6.4	30.2				
Max Q Clear Time (g_c+I1), s	15.6	8.2	5.4	11.7	2.2	3.7	3.1	9.8				
Green Ext Time (p_c), s	0.5	0.4	0.0	2.6	0.0	0.3	0.0	2.5				
Intersection Summary												
HCM 6th Ctrl Delay			25.4									
HCM 6th LOS			C									

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021

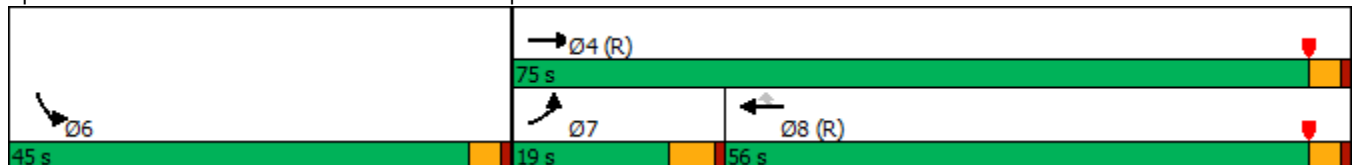


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↗↗	↗↗	↖	↖↖↖
Traffic Volume (vph)	89	765	1366	225	482
Future Volume (vph)	89	765	1366	225	482
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	19.0	75.0	56.0	56.0	45.0
Total Split (%)	15.8%	62.5%	46.7%	46.7%	37.5%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	12.6	80.2	62.7	62.7	31.8
Actuated g/C Ratio	0.10	0.67	0.52	0.52	0.26
v/c Ratio	0.60	0.40	0.92	0.31	0.82
Control Delay	57.5	10.6	37.6	8.5	47.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	57.5	10.6	37.6	8.5	47.6
LOS	E	B	D	A	D
Approach Delay		15.5	33.5		47.6
Approach LOS		B	C		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 31.2
 Intersection LOS: C
 Intersection Capacity Utilization 70.9%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗↗	↑	↙↙		
Traffic Volume (veh/h)	89	765	1366	225	482	116	
Future Volume (veh/h)	89	765	1366	225	482	116	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	111	956	1708	217	667	0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	135	2544	2127	949	774	345	
Arrive On Green	0.15	1.00	0.60	0.60	0.22	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	111	956	1708	217	667	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	7.2	0.0	44.6	7.6	21.6	0.0	
Cycle Q Clear(g_c), s	7.2	0.0	44.6	7.6	21.6	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	135	2544	2127	949	774	345	
V/C Ratio(X)	0.82	0.38	0.80	0.23	0.86	0.00	
Avail Cap(c_a), veh/h	208	2544	2127	949	1217	542	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.91	0.91	0.35	0.35	1.00	0.00	
Uniform Delay (d), s/veh	50.1	0.0	18.6	11.2	45.2	0.0	
Incr Delay (d2), s/veh	12.9	0.4	1.2	0.2	4.0	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	3.4	0.1	16.5	2.5	10.0	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	63.0	0.4	19.8	11.4	49.2	0.0	
LnGrp LOS	E	A	B	B	D	A	
Approach Vol, veh/h		1067	1925		667		
Approach Delay, s/veh		6.9	18.9		49.2		
Approach LOS		A	B		D		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				89.9	30.1	14.1	75.8
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				71.0	41.0	14.0	52.0
Max Q Clear Time (g_c+I1), s				2.0	23.6	9.2	46.6
Green Ext Time (p_c), s				7.6	2.5	0.1	4.5

Intersection Summary

HCM 6th Ctrl Delay	20.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Timings
7: Beech Ave. & Summit Ave.

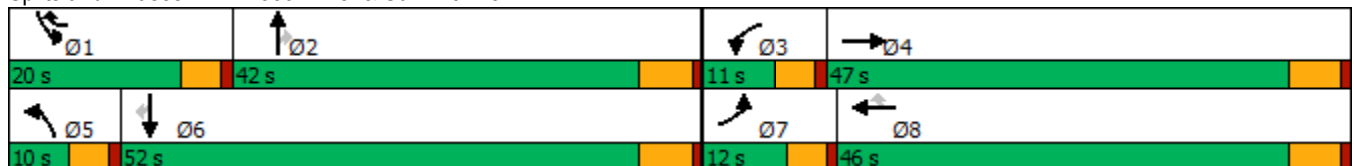
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	116	163	109	316	770	61	427	73	439	288	71
Future Volume (vph)	116	163	109	316	770	61	427	73	439	288	71
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	1	5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	9.6	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	12.0	47.0	11.0	46.0	20.0	10.0	42.0	42.0	20.0	52.0	52.0
Total Split (%)	10.0%	39.2%	9.2%	38.3%	16.7%	8.3%	35.0%	35.0%	16.7%	43.3%	43.3%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None	None	None	None
Act Effct Green (s)	6.7	12.9	6.1	12.4	29.1	5.3	14.6	14.6	15.5	26.9	26.9
Actuated g/C Ratio	0.10	0.18	0.09	0.18	0.42	0.08	0.21	0.21	0.22	0.38	0.38
v/c Ratio	0.37	0.31	0.38	0.53	1.10	0.25	0.61	0.17	0.59	0.22	0.11
Control Delay	34.7	24.4	35.9	30.2	84.5	35.1	29.3	1.0	29.2	16.3	2.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.7	24.4	35.9	30.2	84.5	35.1	29.3	1.0	29.2	16.3	2.1
LOS	C	C	D	C	F	D	C	A	C	B	A
Approach Delay		28.3		65.7			26.2			22.1	
Approach LOS		C		E			C			C	

Intersection Summary
































Cycle Length: 120
 Actuated Cycle Length: 70.1
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.10
 Intersection Signal Delay: 41.8
 Intersection LOS: D
 Intersection Capacity Utilization 77.3%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 7: Beech Ave. & Summit Ave.



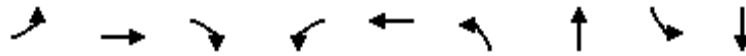
HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	116	163	26	109	316	770	61	427	73	439	288	71
Future Volume (veh/h)	116	163	26	109	316	770	61	427	73	439	288	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	122	172	22	115	333	700	64	449	65	462	303	72
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	1275	161	177	1419	869	148	635	278	533	1014	451
Arrive On Green	0.05	0.40	0.40	0.05	0.40	0.40	0.04	0.18	0.18	0.15	0.29	0.29
Sat Flow, veh/h	3456	3174	400	3456	3554	1583	3456	3554	1557	3563	3554	1582
Grp Volume(v), veh/h	122	95	99	115	333	700	64	449	65	462	303	72
Grp Sat Flow(s),veh/h/ln	1728	1777	1798	1728	1777	1583	1728	1777	1557	1781	1777	1582
Q Serve(g_s), s	3.3	3.2	3.3	3.1	5.9	34.0	1.7	11.3	3.4	12.1	6.3	3.2
Cycle Q Clear(g_c), s	3.3	3.2	3.3	3.1	5.9	34.0	1.7	11.3	3.4	12.1	6.3	3.2
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	714	722	177	1419	869	148	635	278	533	1014	451
V/C Ratio(X)	0.66	0.13	0.14	0.65	0.23	0.81	0.43	0.71	0.23	0.87	0.30	0.16
Avail Cap(c_a), veh/h	269	770	779	233	1502	906	196	1353	593	577	1726	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	18.0	18.0	44.3	18.9	17.4	44.4	36.7	33.5	39.5	26.5	25.4
Incr Delay (d2), s/veh	1.5	0.1	0.1	1.5	0.1	5.2	0.7	1.5	0.4	11.7	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.2	1.3	1.3	2.3	11.7	0.7	4.8	1.3	5.9	2.6	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	18.1	18.1	45.8	19.0	22.6	45.1	38.2	33.9	51.2	26.7	25.6
LnGrp LOS	D	B	B	D	B	C	D	D	C	D	C	C
Approach Vol, veh/h		316			1148			578			837	
Approach Delay, s/veh		28.7			23.9			38.5			40.2	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.8	22.8	9.5	44.0	8.7	32.9	9.7	43.8				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	15.4	36.2	6.4	41.2	5.4	46.2	7.4	40.2				
Max Q Clear Time (g_c+I1), s	14.1	13.3	5.1	5.3	3.7	8.3	5.3	36.0				
Green Ext Time (p_c), s	0.2	2.9	0.0	1.0	0.0	2.1	0.0	1.9				
Intersection Summary												
HCM 6th Ctrl Delay				32.1								
HCM 6th LOS				C								

Timings
12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

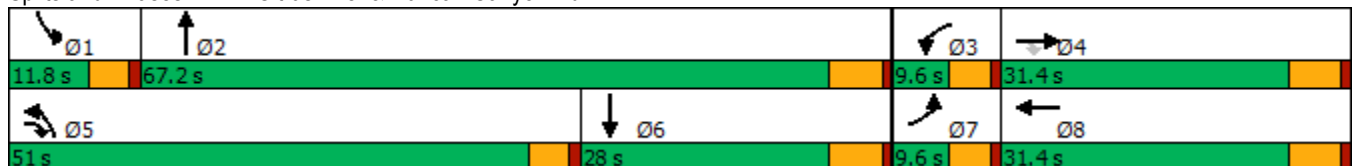


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↘	↑	↗	↘	↗	↘↗	↗↘	↘	↗↘
Traffic Volume (vph)	25	314	914	52	332	1243	24	42	95
Future Volume (vph)	25	314	914	52	332	1243	24	42	95
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4								
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	9.6	27.8	9.6	27.8
Total Split (s)	9.6	31.4	51.0	9.6	31.4	51.0	67.2	11.8	28.0
Total Split (%)	8.0%	26.2%	42.5%	8.0%	26.2%	42.5%	56.0%	9.8%	23.3%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min	None	None	None	None
Act Effct Green (s)	5.0	24.4	74.7	5.0	26.3	44.4	50.8	6.5	10.5
Actuated g/C Ratio	0.05	0.24	0.73	0.05	0.26	0.43	0.49	0.06	0.10
v/c Ratio	0.30	0.74	0.74	0.63	0.81	0.87	0.05	0.40	0.45
Control Delay	59.4	49.2	8.2	81.7	52.1	35.2	7.3	59.5	28.2
Queue Delay	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	49.2	8.4	81.7	52.1	35.2	7.3	59.5	28.2
LOS	E	D	A	F	D	D	A	E	C
Approach Delay	19.6		55.7			33.7		34.2	
Approach LOS	B		E			C		C	

Intersection Summary























Cycle Length: 120	
Actuated Cycle Length: 103	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 31.1	Intersection LOS: C
Intersection Capacity Utilization 84.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	314	914	52	332	35	1243	24	48	42	95	84
Future Volume (veh/h)	25	314	914	52	332	35	1243	24	48	42	95	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	327	770	54	346	36	1295	25	50	44	99	88
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	46	476	1038	69	446	46	1384	826	737	63	185	150
Arrive On Green	0.03	0.25	0.25	0.04	0.27	0.27	0.40	0.46	0.46	0.04	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	1781	1666	173	3456	1777	1585	1781	1866	1509
Grp Volume(v), veh/h	26	327	770	54	0	382	1295	25	50	44	94	93
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1839	1728	1777	1585	1781	1777	1599
Q Serve(g_s), s	1.5	15.9	25.6	3.0	0.0	19.3	36.1	0.8	1.8	2.5	5.0	5.6
Cycle Q Clear(g_c), s	1.5	15.9	25.6	3.0	0.0	19.3	36.1	0.8	1.8	2.5	5.0	5.6
Prop In Lane	1.00		1.00	1.00		0.09	1.00		1.00	1.00		0.94
Lane Grp Cap(c), veh/h	46	476	1038	69	0	492	1384	826	737	63	177	159
V/C Ratio(X)	0.57	0.69	0.74	0.78	0.00	0.78	0.94	0.03	0.07	0.70	0.53	0.59
Avail Cap(c_a), veh/h	89	476	1038	89	0	492	1594	1084	967	127	392	353
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.5	33.9	11.6	47.9	0.0	34.0	28.9	14.6	14.9	48.0	43.1	43.3
Incr Delay (d2), s/veh	4.1	4.1	2.9	21.4	0.0	7.6	9.4	0.0	0.0	5.2	2.5	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	7.4	9.9	1.7	0.0	9.2	15.5	0.3	0.6	1.1	2.3	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.5	38.0	14.5	69.3	0.0	41.7	38.3	14.6	14.9	53.2	45.5	46.7
LnGrp LOS	D	D	B	E	A	D	D	B	B	D	D	D
Approach Vol, veh/h		1123			436			1370			231	
Approach Delay, s/veh		22.2			45.1			37.0			47.5	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.1	52.6	8.5	31.4	44.9	15.8	7.2	32.7				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	7.2	61.4	5.0	25.6	46.4	22.2	5.0	25.6				
Max Q Clear Time (g_c+I1), s	4.5	3.8	5.0	27.6	38.1	7.6	3.5	21.3				
Green Ext Time (p_c), s	0.0	0.4	0.0	0.0	2.1	0.7	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay			33.6									
HCM 6th LOS			C									

Timings
14: Citrus Ave. & Summit Ave.

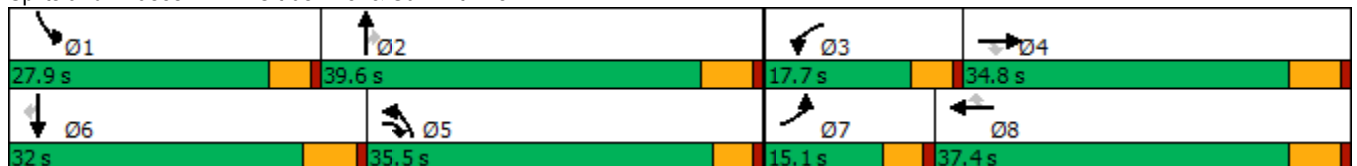
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	212	245	171	327	152	821	302	114	196	520	162
Future Volume (vph)	70	212	245	171	327	152	821	302	114	196	520	162
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	9.6	9.6	34.8	34.8	9.6	31.8	31.8	9.6	31.8	31.8
Total Split (s)	15.1	34.8	35.5	17.7	37.4	37.4	35.5	39.6	39.6	27.9	32.0	32.0
Total Split (%)	12.6%	29.0%	29.6%	14.8%	31.2%	31.2%	29.6%	33.0%	33.0%	23.3%	26.7%	26.7%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	8.1	12.4	41.5	12.9	19.5	19.5	27.9	33.0	33.0	15.5	20.6	20.6
Actuated g/C Ratio	0.09	0.13	0.44	0.14	0.21	0.21	0.29	0.35	0.35	0.16	0.22	0.22
v/c Ratio	0.48	0.45	0.35	0.74	0.45	0.35	0.82	0.24	0.19	0.71	0.71	0.36
Control Delay	55.0	42.7	8.3	61.7	38.1	8.8	39.6	23.6	5.7	52.3	40.5	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	42.7	8.3	61.7	38.1	8.8	39.6	23.6	5.7	52.3	40.5	7.5
LOS	E	D	A	E	D	A	D	C	A	D	D	A
Approach Delay		28.3			37.5			32.6			37.0	
Approach LOS		C			D			C			D	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 94.9
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 34.0
 Intersection LOS: C
 Intersection Capacity Utilization 74.4%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	212	245	171	327	152	821	302	114	196	520	162
Future Volume (veh/h)	70	212	245	171	327	152	821	302	114	196	520	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	73	221	166	178	341	116	855	315	104	204	542	127
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	94	497	640	215	751	318	968	1326	549	244	730	326
Arrive On Green	0.05	0.13	0.13	0.12	0.20	0.20	0.27	0.35	0.35	0.14	0.21	0.21
Sat Flow, veh/h	1781	3741	1574	1781	3741	1583	3563	3741	1550	1781	3554	1585
Grp Volume(v), veh/h	73	221	166	178	341	116	855	315	104	204	542	127
Grp Sat Flow(s),veh/h/ln	1781	1870	1574	1781	1870	1583	1781	1870	1550	1781	1777	1585
Q Serve(g_s), s	3.3	4.4	1.7	8.0	6.5	5.2	18.8	4.8	3.8	9.1	11.7	4.4
Cycle Q Clear(g_c), s	3.3	4.4	1.7	8.0	6.5	5.2	18.8	4.8	3.8	9.1	11.7	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	94	497	640	215	751	318	968	1326	549	244	730	326
V/C Ratio(X)	0.78	0.44	0.26	0.83	0.45	0.36	0.88	0.24	0.19	0.83	0.74	0.39
Avail Cap(c_a), veh/h	229	1328	989	286	1447	612	1347	1548	641	508	1140	508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	32.6	4.9	35.1	28.7	28.1	28.5	18.6	18.2	34.3	30.4	16.8
Incr Delay (d2), s/veh	5.1	0.6	0.2	10.8	0.4	0.7	4.3	0.1	0.2	2.9	1.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.9	0.7	3.9	2.8	1.9	7.9	1.9	1.3	3.9	4.8	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	33.3	5.1	45.9	29.1	28.9	32.8	18.7	18.4	37.2	32.0	17.5
LnGrp LOS	D	C	A	D	C	C	C	B	B	D	C	B
Approach Vol, veh/h		460			635			1274			873	
Approach Delay, s/veh		24.7			33.8			28.1			31.1	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.8	34.8	14.5	16.7	28.0	22.6	8.9	22.2				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	5.8	* 5.8	4.6	5.8				
Max Green Setting (Gmax), s	23.3	33.8	13.1	29.0	30.9	* 26	10.5	31.6				
Max Q Clear Time (g_c+I1), s	11.1	6.8	10.0	6.4	20.8	13.7	5.3	8.5				
Green Ext Time (p_c), s	0.2	2.2	0.1	1.7	1.4	3.0	0.0	2.3				
Intersection Summary												
HCM 6th Ctrl Delay				29.5								
HCM 6th LOS				C								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
04/29/2021

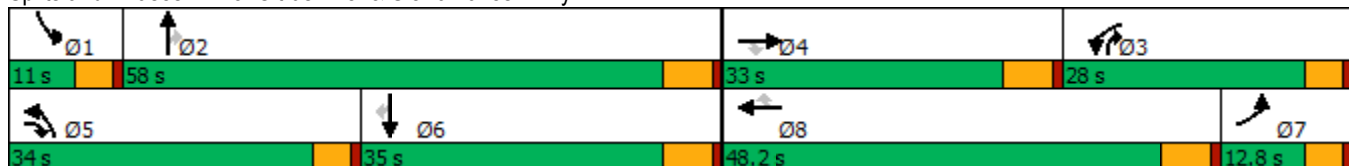


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↖	↖↗	↑↑	↖	↖↗	↑↑	↖	↖↗	↑↑	↖
Traffic Volume (vph)	81	280	440	665	222	111	906	500	806	132	824	89
Future Volume (vph)	81	280	440	665	222	111	906	500	806	132	824	89
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	32.8	9.6	9.6	34.8	34.8	9.6	34.8	9.6	9.6	34.8	34.8
Total Split (s)	12.8	33.0	34.0	28.0	48.2	48.2	34.0	58.0	28.0	11.0	35.0	35.0
Total Split (%)	9.8%	25.4%	26.2%	21.5%	37.1%	37.1%	26.2%	44.6%	21.5%	8.5%	26.9%	26.9%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	4.6	4.6	5.8	5.8
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	Min
Act Effct Green (s)	21.2	14.8	45.4	23.4	19.1	19.1	29.4	52.2	76.9	6.4	29.2	29.2
Actuated g/C Ratio	0.18	0.13	0.39	0.20	0.16	0.16	0.25	0.44	0.65	0.05	0.25	0.25
v/c Ratio	0.14	0.65	0.71	1.03	0.40	0.33	1.11	0.33	0.82	0.74	0.97	0.18
Control Delay	39.3	55.7	18.3	87.7	49.2	8.0	107.9	22.3	16.7	78.3	67.4	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	55.7	18.3	87.7	49.2	8.0	107.9	22.3	16.7	78.3	67.4	0.8
LOS	D	E	B	F	D	A	F	C	B	E	E	A
Approach Delay		33.5			70.3			55.3			63.1	
Approach LOS		C			E			E			E	

Intersection Summary

































Cycle Length: 130
 Actuated Cycle Length: 117.7
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.11
 Intersection Signal Delay: 56.4
 Intersection LOS: E
 Intersection Capacity Utilization 94.6%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	81	280	440	665	222	111	906	500	806	132	824	89
Future Volume (veh/h)	81	280	440	665	222	111	906	500	806	132	824	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	88	304	239	723	241	94	985	543	550	143	896	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	781	450	588	713	379	161	896	1671	1024	195	935	396
Arrive On Green	0.22	0.12	0.12	0.30	0.10	0.10	0.38	0.45	0.45	0.05	0.37	0.25
Sat Flow, veh/h	3563	3741	1573	3563	3741	1585	3563	3741	1583	3563	3741	1585
Grp Volume(v), veh/h	88	304	239	723	241	94	985	543	550	143	896	86
Grp Sat Flow(s),veh/h/ln	1781	1870	1573	1781	1870	1585	1781	1870	1583	1781	1870	1585
Q Serve(g_s), s	2.3	9.1	6.3	23.4	7.2	5.6	29.4	11.0	5.9	4.6	27.3	3.0
Cycle Q Clear(g_c), s	2.3	9.1	6.3	23.4	7.2	5.6	29.4	11.0	5.9	4.6	27.3	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	781	450	588	713	379	161	896	1671	1024	195	935	396
V/C Ratio(X)	0.11	0.68	0.41	1.01	0.64	0.59	1.10	0.32	0.54	0.73	0.96	0.22
Avail Cap(c_a), veh/h	781	871	765	713	1357	575	896	1671	1024	195	935	396
HCM Platoon Ratio	1.00	1.00	1.00	1.50	1.00	1.00	1.50	1.00	1.00	1.00	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	49.2	10.1	40.9	50.4	35.4	36.4	20.9	3.4	54.4	35.9	12.1
Incr Delay (d2), s/veh	0.0	1.8	0.5	37.1	1.8	3.4	60.8	0.1	0.6	11.7	20.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.2	2.5	12.5	3.4	2.7	18.3	4.6	1.8	2.3	13.1	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	51.0	10.6	78.0	52.2	38.8	97.2	21.0	3.9	66.1	56.0	12.3
LnGrp LOS	D	D	B	F	D	D	F	C	A	E	E	B
Approach Vol, veh/h		631			1058			2078			1125	
Approach Delay, s/veh		33.7			68.6			52.6			53.9	
Approach LOS		C			E			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	58.0	28.0	19.9	34.0	35.0	30.2	17.6				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	6.4	52.2	23.4	27.2	29.4	29.2	8.2	42.4				
Max Q Clear Time (g_c+I1), s	6.6	13.0	25.4	11.1	31.4	29.3	4.3	9.2				
Green Ext Time (p_c), s	0.0	6.1	0.0	2.3	0.0	0.0	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay			53.9									
HCM 6th LOS			D									

Timings
16: Sierra Ave/Sierra Ave. & Riverside Ave.

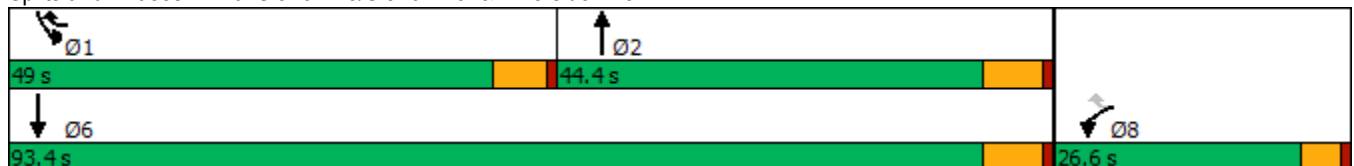
Ventana (JN 13769)
04/29/2021

	↙	↖	↑	↘	↓
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↖	↑↔	↘↙	↑↑
Traffic Volume (vph)	154	708	661	1021	763
Future Volume (vph)	154	708	661	1021	763
Turn Type	Prot	pm+ov	NA	Prot	NA
Protected Phases	8	1	2	1	6
Permitted Phases	8				
Detector Phase	8	1	2	1	6
Switch Phase					
Minimum Initial (s)	5.0	10.0	10.0	10.0	10.0
Minimum Split (s)	26.6	15.8	28.5	15.8	16.5
Total Split (s)	26.6	49.0	44.4	49.0	93.4
Total Split (%)	22.2%	40.8%	37.0%	40.8%	77.8%
Yellow Time (s)	3.6	4.8	5.5	4.8	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	6.5	5.8	6.5
Lead/Lag		Lead	Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	14.5	57.8	34.1	38.5	78.6
Actuated g/C Ratio	0.14	0.55	0.33	0.37	0.75
v/c Ratio	0.68	0.86	0.85	0.88	0.31
Control Delay	59.2	29.9	41.0	40.7	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	59.2	29.9	41.0	40.7	4.8
LOS	E	C	D	D	A
Approach Delay	35.1		41.0		25.4
Approach LOS	D		D		C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 104.5
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 31.7
 Intersection LOS: C
 Intersection Capacity Utilization 79.7%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 16: Sierra Ave/Sierra Ave. & Riverside Ave.



HCM 6th Signalized Intersection Summary
 16: Sierra Ave/Sierra Ave. & Riverside Ave.

Ventana (JN 13769)
 04/29/2021



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	154	708	661	231	1021	763
Future Volume (veh/h)	154	708	661	231	1021	763
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	167	498	718	191	1110	829
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	362	868	822	219	1189	2466
Arrive On Green	0.20	0.20	0.30	0.30	0.34	0.69
Sat Flow, veh/h	1781	1585	2870	738	3456	3647
Grp Volume(v), veh/h	167	498	460	449	1110	829
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1737	1728	1777
Q Serve(g_s), s	8.9	22.0	26.5	26.6	33.6	10.1
Cycle Q Clear(g_c), s	8.9	22.0	26.5	26.6	33.6	10.1
Prop In Lane	1.00	1.00		0.42	1.00	
Lane Grp Cap(c), veh/h	362	868	526	514	1189	2466
V/C Ratio(X)	0.46	0.57	0.87	0.87	0.93	0.34
Avail Cap(c_a), veh/h	362	868	623	609	1381	2857
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.8	16.1	36.1	36.1	34.3	6.6
Incr Delay (d2), s/veh	0.3	0.6	11.6	11.8	10.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	7.4	12.3	12.1	14.5	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	38.2	16.7	47.7	48.0	44.4	6.7
LnGrp LOS	D	B	D	D	D	A
Approach Vol, veh/h	665		909			1939
Approach Delay, s/veh	22.1		47.8			28.3
Approach LOS	C		D			C
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	43.0	38.5			81.5	26.6
Change Period (Y+Rc), s	5.8	6.5			6.5	4.6
Max Green Setting (Gmax), s	43.2	37.9			86.9	22.0
Max Q Clear Time (g_c+I1), s	35.6	28.6			12.1	24.0
Green Ext Time (p_c), s	1.7	3.4			5.8	0.0
Intersection Summary						
HCM 6th Ctrl Delay			32.2			
HCM 6th LOS			C			

Timings
17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
04/29/2021



Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	102	42	590	1261
Future Volume (vph)	102	42	590	1261
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	5	2	6
Permitted Phases				
Detector Phase	4	5	2	6
Switch Phase				
Minimum Initial (s)	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	9.6	15.8	27.8
Total Split (s)	34.0	13.0	86.0	73.0
Total Split (%)	28.3%	10.8%	71.7%	60.8%
Yellow Time (s)	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	5.8	5.8
Lead/Lag		Lead		Lag
Lead-Lag Optimize?		Yes		Yes
Recall Mode	None	None	Min	Min
Act Effct Green (s)	15.3	6.8	44.0	38.0
Actuated g/C Ratio	0.21	0.09	0.61	0.53
v/c Ratio	0.58	0.26	0.28	0.72
Control Delay	29.9	42.3	6.6	16.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	29.9	42.3	6.6	16.6
LOS	C	D	A	B
Approach Delay	29.9		9.0	16.6
Approach LOS	C		A	B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 72
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 15.7
 Intersection LOS: B
 Intersection Capacity Utilization 59.0%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 17: Sierra Ave & Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	102	122	42	590	1261	43
Future Volume (veh/h)	102	122	42	590	1261	43
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	104	124	43	602	1287	44
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	131	156	77	2220	1757	60
Arrive On Green	0.17	0.17	0.04	0.62	0.50	0.50
Sat Flow, veh/h	758	904	1781	3647	3599	120
Grp Volume(v), veh/h	229	0	43	602	652	679
Grp Sat Flow(s),veh/h/ln	1670	0	1781	1777	1777	1849
Q Serve(g_s), s	7.5	0.0	1.4	4.4	16.5	16.6
Cycle Q Clear(g_c), s	7.5	0.0	1.4	4.4	16.5	16.6
Prop In Lane	0.45	0.54	1.00			0.06
Lane Grp Cap(c), veh/h	288	0	77	2220	890	927
V/C Ratio(X)	0.80	0.00	0.56	0.27	0.73	0.73
Avail Cap(c_a), veh/h	823	0	261	4980	2086	2171
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.7	0.0	26.8	4.8	11.2	11.3
Incr Delay (d2), s/veh	5.0	0.0	2.3	0.1	1.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	0.0	0.5	0.7	4.3	4.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.7	0.0	29.2	4.9	12.4	12.4
LnGrp LOS	C	A	C	A	B	B
Approach Vol, veh/h	229			645	1331	
Approach Delay, s/veh	27.7			6.5	12.4	
Approach LOS	C			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		41.6		15.7	7.1	34.5
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		80.2		28.2	8.4	67.2
Max Q Clear Time (g_c+I1), s		6.4		9.5	3.4	18.6
Green Ext Time (p_c), s		3.8		0.6	0.0	10.1

Intersection Summary

HCM 6th Ctrl Delay	12.3
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/29/2021



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	94	449	385	627	1242	146
Future Volume (vph)	94	449	385	627	1242	146
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	9.6	9.6	16.5	29.5	29.5
Total Split (s)	44.8	28.0	28.0	75.2	47.2	47.2
Total Split (%)	37.3%	23.3%	23.3%	62.7%	39.3%	39.3%
Yellow Time (s)	4.8	3.6	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	4.6	6.5	6.5	6.5
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	11.7	40.9	23.4	68.7	40.7	40.7
Actuated g/C Ratio	0.13	0.44	0.25	0.74	0.44	0.44
v/c Ratio	0.49	0.75	1.00	0.28	0.88	0.23
Control Delay	45.6	29.3	80.1	4.4	32.0	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	29.3	80.1	4.4	32.0	11.8
LOS	D	C	F	A	C	B
Approach Delay	32.1			33.2	29.9	
Approach LOS	C			C	C	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 92.7	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 31.4	Intersection LOS: C
Intersection Capacity Utilization 78.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	94	449	385	627	1242	146
Future Volume (veh/h)	94	449	385	627	1242	146
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	109	260	448	729	1444	129
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	269	634	443	2552	1572	666
Arrive On Green	0.15	0.15	0.25	0.72	0.42	0.42
Sat Flow, veh/h	1781	1585	1781	3647	3741	1585
Grp Volume(v), veh/h	109	260	448	729	1444	129
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1870	1585
Q Serve(g_s), s	5.2	11.1	23.4	6.8	34.3	4.8
Cycle Q Clear(g_c), s	5.2	11.1	23.4	6.8	34.3	4.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	269	634	443	2552	1572	666
V/C Ratio(X)	0.41	0.41	1.01	0.29	0.92	0.19
Avail Cap(c_a), veh/h	739	1052	443	2596	1619	686
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.1	20.3	35.3	4.7	25.7	17.2
Incr Delay (d2), s/veh	1.0	0.4	45.4	0.1	8.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.1	14.8	1.6	15.0	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.1	20.7	80.8	4.8	34.4	17.3
LnGrp LOS	D	C	F	A	C	B
Approach Vol, veh/h	369			1177	1573	
Approach Delay, s/veh	25.5			33.7	33.0	
Approach LOS	C			C	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		74.0		20.0	28.0	46.0
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	23.4	40.7
Max Q Clear Time (g_c+I1), s		8.8		13.1	25.4	36.3
Green Ext Time (p_c), s		4.9		1.1	0.0	3.3
Intersection Summary						
HCM 6th Ctrl Delay			32.4			
HCM 6th LOS			C			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

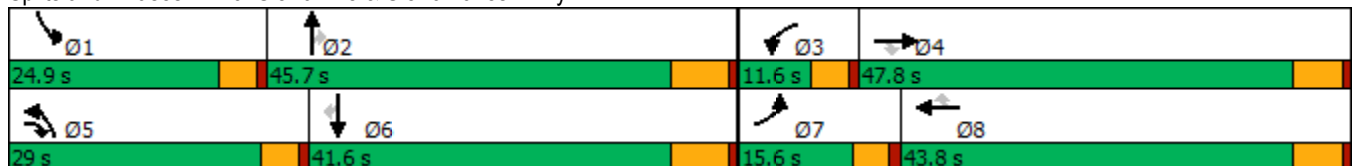
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	195	580	166	224	311	639	786	312	333	1348	242
Future Volume (vph)	151	195	580	166	224	311	639	786	312	333	1348	242
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	47.8	9.6	9.6	43.8	43.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	15.6	47.8	29.0	11.6	43.8	43.8	29.0	45.7	45.7	24.9	41.6	41.6
Total Split (%)	12.0%	36.8%	22.3%	8.9%	33.7%	33.7%	22.3%	35.2%	35.2%	19.2%	32.0%	32.0%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	9.0	15.3	45.5	7.0	13.3	13.3	24.5	44.4	44.4	14.8	34.8	34.8
Actuated g/C Ratio	0.09	0.15	0.44	0.07	0.13	0.13	0.24	0.43	0.43	0.14	0.34	0.34
v/c Ratio	0.54	0.39	0.86	0.76	0.51	0.69	0.84	0.36	0.40	0.72	0.79	0.37
Control Delay	52.4	41.4	36.7	68.6	46.0	12.3	48.3	21.3	4.5	50.9	34.9	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.4	41.4	36.7	68.6	46.0	12.3	48.3	21.3	4.5	50.9	34.9	5.0
LOS	D	D	D	E	D	B	D	C	A	D	C	A
Approach Delay		40.2			36.4			28.2			33.9	
Approach LOS		D			D			C			C	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 103.1
 Natural Cycle: 130
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 33.5
 Intersection LOS: C
 Intersection Capacity Utilization 79.8%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	195	580	166	224	311	639	786	312	333	1348	242
Future Volume (veh/h)	151	195	580	166	224	311	639	786	312	333	1348	242
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	166	214	517	182	246	290	702	864	310	366	1481	239
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	223	1070	768	203	1049	444	707	2031	572	428	1590	449
Arrive On Green	0.06	0.29	0.29	0.06	0.28	0.28	0.20	0.36	0.36	0.12	0.28	0.28
Sat Flow, veh/h	3563	3741	1585	3563	3741	1582	3563	5611	1581	3563	5611	1585
Grp Volume(v), veh/h	166	214	517	182	246	290	702	864	310	366	1481	239
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1582	1781	1870	1581	1781	1870	1585
Q Serve(g_s), s	5.6	5.3	30.6	6.2	6.2	19.8	24.2	14.3	19.1	12.4	31.6	15.6
Cycle Q Clear(g_c), s	5.6	5.3	30.6	6.2	6.2	19.8	24.2	14.3	19.1	12.4	31.6	15.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	223	1070	768	203	1049	444	707	2031	572	428	1590	449
V/C Ratio(X)	0.74	0.20	0.67	0.90	0.23	0.65	0.99	0.43	0.54	0.86	0.93	0.53
Avail Cap(c_a), veh/h	319	1279	857	203	1157	489	707	2031	572	589	1603	453
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.6	33.2	24.2	57.6	34.0	38.9	49.1	29.6	31.1	53.0	42.9	37.2
Incr Delay (d2), s/veh	2.7	0.1	1.8	35.4	0.1	2.7	31.8	0.1	1.0	6.9	10.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	2.4	11.1	3.7	2.8	7.8	13.3	6.1	7.2	5.7	15.2	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.3	33.3	26.0	93.0	34.2	41.7	80.9	29.7	32.2	59.9	53.1	38.3
LnGrp LOS	E	C	C	F	C	D	F	C	C	E	D	D
Approach Vol, veh/h		897			718			1876			2086	
Approach Delay, s/veh		33.9			52.1			49.3			52.6	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.3	51.0	11.6	41.0	29.0	41.3	12.3	40.3				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	20.3	39.2	7.0	42.0	24.4	35.1	11.0	38.0				
Max Q Clear Time (g_c+I1), s	14.4	21.1	8.2	32.6	26.2	33.6	7.6	21.8				
Green Ext Time (p_c), s	0.4	6.0	0.0	2.3	0.0	1.2	0.1	2.2				
Intersection Summary												
HCM 6th Ctrl Delay			48.4									
HCM 6th LOS			D									

Timings
1: Coyote Canyon Rd. & Duncan Canyon Rd.

Ventana (JN 13769)

04/29/2021

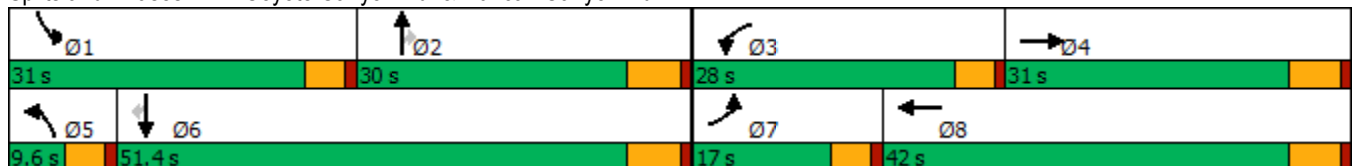


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↗	↖	↗	↗	↖	↗	↗
Traffic Volume (vph)	70	396	179	374	11	5	144	200	2	38
Future Volume (vph)	70	396	179	374	11	5	144	200	2	38
Turn Type	Prot	NA	Prot	NA	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	5	2		1	6	
Permitted Phases							2			6
Detector Phase	7	4	3	8	5	2	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	27.8	9.6	27.8	27.8	9.6	27.8	27.8
Total Split (s)	17.0	31.0	28.0	42.0	9.6	30.0	30.0	31.0	51.4	51.4
Total Split (%)	14.2%	25.8%	23.3%	35.0%	8.0%	25.0%	25.0%	25.8%	42.8%	42.8%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None	None	None
Act Effct Green (s)	8.4	18.0	14.3	26.6	5.2	10.4	10.4	15.4	29.1	29.1
Actuated g/C Ratio	0.11	0.23	0.18	0.33	0.07	0.13	0.13	0.19	0.36	0.36
v/c Ratio	0.43	0.60	0.65	0.67	0.11	0.02	0.44	0.67	0.00	0.07
Control Delay	44.9	31.9	42.4	21.3	45.2	38.8	8.5	42.0	23.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.9	31.9	42.4	21.3	45.2	38.8	8.5	42.0	23.0	0.2
LOS	D	C	D	C	D	D	A	D	C	A
Approach Delay		33.8		25.6		12.0			35.2	
Approach LOS		C		C		B			D	

Intersection Summary























Cycle Length: 120
 Actuated Cycle Length: 79.8
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 27.9
 Intersection LOS: C
 Intersection Capacity Utilization 56.5%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 1: Coyote Canyon Rd. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 1: Coyote Canyon Rd. & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	396	18	179	374	335	11	5	144	200	2	38
Future Volume (veh/h)	70	396	18	179	374	335	11	5	144	200	2	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	80	455	21	206	430	241	13	6	126	230	2	44
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	108	688	32	257	622	345	29	294	249	283	561	476
Arrive On Green	0.06	0.20	0.20	0.14	0.28	0.28	0.02	0.16	0.16	0.16	0.30	0.30
Sat Flow, veh/h	1781	3459	159	1781	2203	1224	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	80	233	243	206	346	325	13	6	126	230	2	44
Grp Sat Flow(s),veh/h/ln	1781	1777	1842	1781	1777	1650	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	2.7	7.4	7.4	6.8	10.6	10.7	0.4	0.2	4.4	7.6	0.0	1.2
Cycle Q Clear(g_c), s	2.7	7.4	7.4	6.8	10.6	10.7	0.4	0.2	4.4	7.6	0.0	1.2
Prop In Lane	1.00		0.09	1.00		0.74	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	108	354	367	257	502	466	29	294	249	283	561	476
V/C Ratio(X)	0.74	0.66	0.66	0.80	0.69	0.70	0.45	0.02	0.51	0.81	0.00	0.09
Avail Cap(c_a), veh/h	362	733	760	683	1053	978	146	741	628	770	1397	1184
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	22.6	22.6	25.3	19.5	19.6	29.8	21.8	23.6	24.8	15.0	15.4
Incr Delay (d2), s/veh	3.7	2.1	2.1	2.2	1.7	1.9	4.0	0.0	1.6	2.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	3.1	3.2	2.9	4.2	4.0	0.2	0.1	1.7	3.2	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.9	24.7	24.6	27.5	21.2	21.5	33.8	21.8	25.1	27.0	15.0	15.5
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	B	B
Approach Vol, veh/h		556			877			145			276	
Approach Delay, s/veh		25.7			22.8			25.8			25.0	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.3	15.4	13.4	18.0	5.6	24.1	8.3	23.0				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	26.4	24.2	23.4	25.2	5.0	45.6	12.4	36.2				
Max Q Clear Time (g_c+I1), s	9.6	6.4	8.8	9.4	2.4	3.2	4.7	12.7				
Green Ext Time (p_c), s	0.3	0.3	0.2	2.5	0.0	0.1	0.0	4.5				
Intersection Summary												
HCM 6th Ctrl Delay				24.2								
HCM 6th LOS				C								

Timings
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021

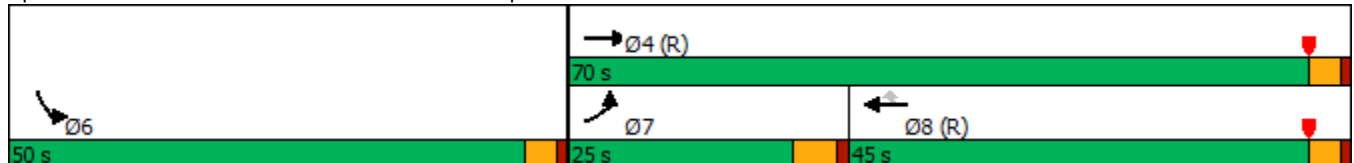


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↗	↗↗	↗↗	↗	↗↗↗
Traffic Volume (vph)	292	837	1136	548	1161
Future Volume (vph)	292	837	1136	548	1161
Turn Type	Prot	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases				8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0
Minimum Split (s)	10.0	12.0	12.0	12.0	12.0
Total Split (s)	25.0	70.0	45.0	45.0	50.0
Total Split (%)	20.8%	58.3%	37.5%	37.5%	41.7%
Yellow Time (s)	4.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	20.0	66.0	41.0	41.0	46.0
Actuated g/C Ratio	0.17	0.55	0.34	0.34	0.38
v/c Ratio	1.05	0.46	1.00	0.71	1.12
Control Delay	107.0	14.8	65.6	14.2	97.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	107.0	14.8	65.6	14.2	97.6
LOS	F	B	E	B	F
Approach Delay		38.7	48.9		97.6
Approach LOS		D	D		F

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.12
 Intersection Signal Delay: 62.1
 Intersection LOS: E
 Intersection Capacity Utilization 98.3%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 6: Beech Ave. & I-15 NB Ramps



HCM 6th Signalized Intersection Summary
6: Beech Ave. & I-15 NB Ramps

Ventana (JN 13769)
04/29/2021



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations	↖	↑↑	↗↗	↑	↙↙	↘	
Traffic Volume (veh/h)	292	837	1136	548	1161	214	
Future Volume (veh/h)	292	837	1136	548	1161	214	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No	No		No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	311	890	1209	264	1390	0	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	297	1955	1214	542	1366	608	
Arrive On Green	0.33	1.00	0.34	0.34	0.38	0.00	
Sat Flow, veh/h	1781	3647	3647	1585	3563	1585	
Grp Volume(v), veh/h	311	890	1209	264	1390	0	
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585	
Q Serve(g_s), s	20.0	0.0	40.7	15.8	46.0	0.0	
Cycle Q Clear(g_c), s	20.0	0.0	40.7	15.8	46.0	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	297	1955	1214	542	1366	608	
V/C Ratio(X)	1.05	0.46	1.00	0.49	1.02	0.00	
Avail Cap(c_a), veh/h	297	1955	1214	542	1366	608	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.88	0.88	0.73	0.73	1.00	0.00	
Uniform Delay (d), s/veh	40.0	0.0	39.4	31.2	37.0	0.0	
Incr Delay (d2), s/veh	62.0	0.7	21.1	2.3	28.9	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	12.4	0.2	21.0	6.4	25.0	0.0	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	102.0	0.7	60.5	33.5	65.9	0.0	
LnGrp LOS	F	A	E	C	F	A	
Approach Vol, veh/h		1201	1473		1390		
Approach Delay, s/veh		26.9	55.7		65.9		
Approach LOS		C	E		E		
Timer - Assigned Phs				4	6	7	8
Phs Duration (G+Y+Rc), s				70.0	50.0	25.0	45.0
Change Period (Y+Rc), s				4.0	4.0	5.0	4.0
Max Green Setting (Gmax), s				66.0	46.0	20.0	41.0
Max Q Clear Time (g_c+I1), s				2.0	48.0	22.0	42.7
Green Ext Time (p_c), s				8.1	0.0	0.0	0.0
Intersection Summary							
HCM 6th Ctrl Delay			50.7				
HCM 6th LOS			D				
Notes							
User approved volume balancing among the lanes for turning movement.							

Timings
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

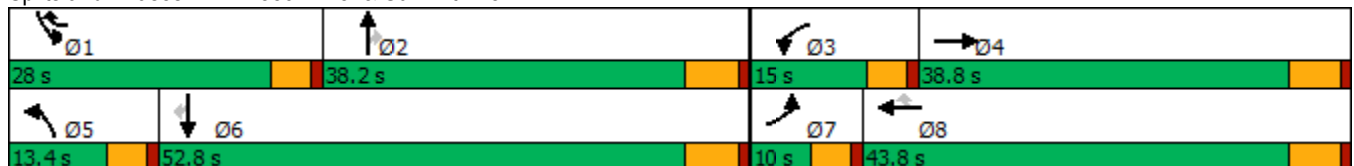


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	142	364	156	386	524	123	414	145	840	602	113
Future Volume (vph)	142	364	156	386	524	123	414	145	840	602	113
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8	1	5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	1	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	37.8	9.6	43.8	9.6	9.6	37.8	37.8	9.6	34.8	34.8
Total Split (s)	10.0	38.8	15.0	43.8	28.0	13.4	38.2	38.2	28.0	52.8	52.8
Total Split (%)	8.3%	32.3%	12.5%	36.5%	23.3%	11.2%	31.8%	31.8%	23.3%	44.0%	44.0%
Yellow Time (s)	3.6	4.8	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	Min	None	None	None	None	None	None	None
Act Effct Green (s)	5.5	19.0	8.6	22.1	47.1	7.5	17.6	17.6	23.8	33.9	33.9
Actuated g/C Ratio	0.06	0.21	0.10	0.25	0.52	0.08	0.20	0.20	0.26	0.38	0.38
v/c Ratio	0.71	0.70	0.50	0.46	0.63	0.45	0.62	0.33	0.94	0.47	0.17
Control Delay	63.7	35.8	46.4	30.8	13.8	47.0	38.1	4.1	52.8	23.7	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.7	35.8	46.4	30.8	13.8	47.0	38.1	4.1	52.8	23.7	2.5
LOS	E	D	D	C	B	D	D	A	D	C	A
Approach Delay		41.9		24.7			32.5			37.9	
Approach LOS		D		C			C			D	

Intersection Summary
































Cycle Length: 120
 Actuated Cycle Length: 90.1
 Natural Cycle: 125
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 34.1
 Intersection LOS: C
 Intersection Capacity Utilization 77.4%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 7: Beech Ave. & Summit Ave.



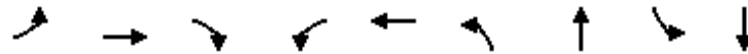
HCM 6th Signalized Intersection Summary
7: Beech Ave. & Summit Ave.

Ventana (JN 13769)
04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	142	364	143	156	386	524	123	414	145	840	602	113
Future Volume (veh/h)	142	364	143	156	386	524	123	414	145	840	602	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	148	379	124	162	402	454	128	431	111	875	627	87
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	202	690	223	234	961	831	195	681	300	904	1382	615
Arrive On Green	0.06	0.26	0.26	0.07	0.27	0.27	0.06	0.19	0.19	0.25	0.39	0.39
Sat Flow, veh/h	3456	2637	851	3456	3554	1583	3456	3554	1565	3563	3554	1581
Grp Volume(v), veh/h	148	254	249	162	402	454	128	431	111	875	627	87
Grp Sat Flow(s),veh/h/ln	1728	1777	1711	1728	1777	1583	1728	1777	1565	1781	1777	1581
Q Serve(g_s), s	3.9	11.3	11.6	4.2	8.6	17.6	3.3	10.3	5.7	22.4	12.1	3.3
Cycle Q Clear(g_c), s	3.9	11.3	11.6	4.2	8.6	17.6	3.3	10.3	5.7	22.4	12.1	3.3
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	465	448	234	961	831	195	681	300	904	1382	615
V/C Ratio(X)	0.73	0.55	0.56	0.69	0.42	0.55	0.66	0.63	0.37	0.97	0.45	0.14
Avail Cap(c_a), veh/h	202	636	613	390	1465	1055	330	1249	550	904	1812	806
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	29.3	29.4	42.1	27.7	14.6	42.6	34.3	32.4	34.0	20.9	18.2
Incr Delay (d2), s/veh	11.2	1.0	1.1	1.4	0.3	0.6	1.4	1.0	0.8	22.2	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	4.9	4.8	1.8	3.6	6.0	1.5	4.5	2.2	12.2	4.9	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.9	30.3	30.5	43.4	28.0	15.2	44.0	35.3	33.2	56.2	21.1	18.3
LnGrp LOS	D	C	C	D	C	B	D	D	C	E	C	B
Approach Vol, veh/h		651			1018			670			1589	
Approach Delay, s/veh		35.8			24.7			36.6			40.3	
Approach LOS		D			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	28.0	23.5	10.8	29.9	9.8	41.7	10.0	30.7				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	23.4	32.4	10.4	33.0	8.8	47.0	5.4	38.0				
Max Q Clear Time (g_c+I1), s	24.4	12.3	6.2	13.6	5.3	14.1	5.9	19.6				
Green Ext Time (p_c), s	0.0	3.2	0.1	3.0	0.1	5.1	0.0	4.2				
Intersection Summary												
HCM 6th Ctrl Delay				34.9								
HCM 6th LOS				C								

Timings
12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
04/29/2021

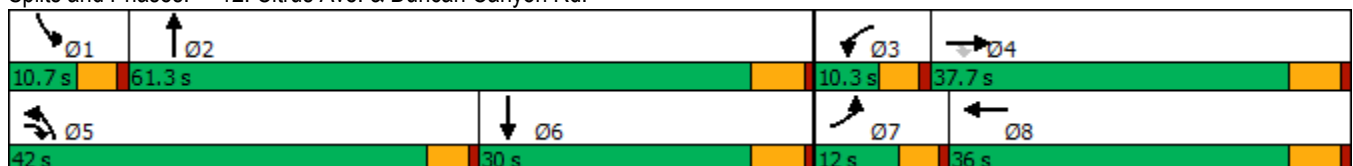


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↘	↑	↗	↘	↗	↘↗	↗↘	↘	↗↘
Traffic Volume (vph)	83	296	1037	22	384	950	40	26	42
Future Volume (vph)	83	296	1037	22	384	950	40	26	42
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4								
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	9.6	27.8	9.6	27.8
Total Split (s)	12.0	37.7	42.0	10.3	36.0	42.0	61.3	10.7	30.0
Total Split (%)	10.0%	31.4%	35.0%	8.6%	30.0%	35.0%	51.1%	8.9%	25.0%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	4.6	5.8	4.6	5.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Min	None	None	Min	None	None	None	None
Act Effct Green (s)	7.3	37.4	79.9	5.5	29.3	35.3	40.0	5.7	10.2
Actuated g/C Ratio	0.07	0.38	0.81	0.06	0.30	0.36	0.40	0.06	0.10
v/c Ratio	0.66	0.44	0.76	0.23	0.81	0.81	0.07	0.26	0.25
Control Delay	72.5	28.7	6.1	54.1	46.8	36.1	10.8	54.5	25.4
Queue Delay	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.5	28.7	6.4	54.1	46.8	36.1	10.8	54.5	25.4
LOS	E	C	A	D	D	D	B	D	C
Approach Delay	14.9		47.1			33.9		31.8	
Approach LOS	B		D			C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 99.1
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 26.9
 Intersection LOS: C
 Intersection Capacity Utilization 89.2%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 12: Citrus Ave. & Duncan Canyon Rd.



HCM 6th Signalized Intersection Summary
 12: Citrus Ave. & Duncan Canyon Rd.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↗		↖↗	↖↗		↖	↖↗	
Traffic Volume (veh/h)	83	296	1037	22	384	39	950	40	47	26	42	50
Future Volume (veh/h)	83	296	1037	22	384	39	950	40	47	26	42	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	308	820	23	400	41	990	42	49	27	44	52
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	630	1032	43	499	51	1088	698	623	48	187	167
Arrive On Green	0.06	0.34	0.34	0.02	0.30	0.30	0.31	0.39	0.39	0.03	0.11	0.11
Sat Flow, veh/h	1781	1870	1585	1781	1669	171	3456	1777	1585	1781	1777	1585
Grp Volume(v), veh/h	86	308	820	23	0	441	990	42	49	27	44	52
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1840	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	4.5	12.4	31.9	1.2	0.0	20.9	26.1	1.4	1.8	1.4	2.2	2.9
Cycle Q Clear(g_c), s	4.5	12.4	31.9	1.2	0.0	20.9	26.1	1.4	1.8	1.4	2.2	2.9
Prop In Lane	1.00		1.00	1.00		0.09	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	110	630	1032	43	0	550	1088	698	623	48	187	167
V/C Ratio(X)	0.78	0.49	0.79	0.54	0.00	0.80	0.91	0.06	0.08	0.56	0.24	0.31
Avail Cap(c_a), veh/h	139	630	1032	107	0	586	1364	1041	928	115	454	405
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	25.0	11.9	45.7	0.0	30.6	31.2	17.9	18.0	45.6	38.9	39.2
Incr Delay (d2), s/veh	15.3	0.6	4.4	3.9	0.0	7.5	7.1	0.0	0.1	3.8	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	5.5	11.9	0.6	0.0	10.2	11.6	0.6	0.7	0.7	1.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.1	25.5	16.3	49.6	0.0	38.1	38.3	17.9	18.1	49.4	39.5	40.3
LnGrp LOS	E	C	B	D	A	D	D	B	B	D	D	D
Approach Vol, veh/h		1214			464			1081			123	
Approach Delay, s/veh		21.7			38.7			36.6			42.0	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.1	43.0	6.9	37.7	34.4	15.8	10.4	34.1				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	6.1	55.5	5.7	31.9	37.4	24.2	7.4	30.2				
Max Q Clear Time (g_c+I1), s	3.4	3.8	3.2	33.9	28.1	4.9	6.5	22.9				
Green Ext Time (p_c), s	0.0	0.6	0.0	0.0	1.8	0.4	0.0	1.6				
Intersection Summary												
HCM 6th Ctrl Delay				30.9								
HCM 6th LOS				C								

Timings
14: Citrus Ave. & Summit Ave.

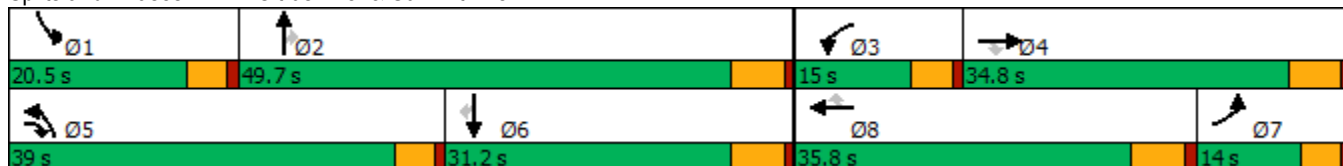
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	623	494	178	505	155	1162	682	154	114	375	89
Future Volume (vph)	162	623	494	178	505	155	1162	682	154	114	375	89
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	34.8	9.6	9.6	34.8	34.8	9.6	31.8	31.8	9.6	30.8	30.8
Total Split (s)	14.0	34.8	39.0	15.0	35.8	35.8	39.0	49.7	49.7	20.5	31.2	31.2
Total Split (%)	11.7%	29.0%	32.5%	12.5%	29.8%	29.8%	32.5%	41.4%	41.4%	17.1%	26.0%	26.0%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	5.8	4.6	5.8	5.8
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	12.9	25.1	60.9	10.5	22.7	22.7	34.6	41.4	41.4	11.7	18.5	18.5
Actuated g/C Ratio	0.12	0.23	0.56	0.10	0.21	0.21	0.32	0.38	0.38	0.11	0.17	0.17
v/c Ratio	0.85	0.79	0.59	1.15	0.71	0.37	1.13	0.53	0.24	0.66	0.68	0.22
Control Delay	83.3	47.8	15.1	159.7	46.0	8.7	106.6	29.1	4.9	64.9	49.2	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.3	47.8	15.1	159.7	46.0	8.7	106.6	29.1	4.9	64.9	49.2	1.2
LOS	F	D	B	F	D	A	F	C	A	E	D	A
Approach Delay		39.6			63.2			72.3			44.9	
Approach LOS		D			E			E			D	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 109.6
 Natural Cycle: 140
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.15
 Intersection Signal Delay: 58.4
 Intersection LOS: E
 Intersection Capacity Utilization 88.2%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 14: Citrus Ave. & Summit Ave.



HCM 6th Signalized Intersection Summary
 14: Citrus Ave. & Summit Ave.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	623	494	178	505	155	1162	682	154	114	375	89
Future Volume (veh/h)	162	623	494	178	505	155	1162	682	154	114	375	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	176	677	390	193	549	152	1263	741	131	124	408	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	216	856	868	174	726	307	1149	1470	605	153	555	244
Arrive On Green	0.12	0.23	0.23	0.10	0.19	0.19	0.32	0.39	0.39	0.09	0.16	0.16
Sat Flow, veh/h	1781	3741	1561	1781	3741	1580	3563	3741	1541	1781	3554	1562
Grp Volume(v), veh/h	176	677	390	193	549	152	1263	741	131	124	408	95
Grp Sat Flow(s),veh/h/ln	1781	1870	1561	1781	1870	1580	1781	1870	1541	1781	1777	1562
Q Serve(g_s), s	10.3	18.2	15.9	10.4	14.8	7.1	34.4	16.0	6.0	7.3	11.7	4.2
Cycle Q Clear(g_c), s	10.3	18.2	15.9	10.4	14.8	7.1	34.4	16.0	6.0	7.3	11.7	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	216	856	868	174	726	307	1149	1470	605	153	555	244
V/C Ratio(X)	0.82	0.79	0.45	1.11	0.76	0.50	1.10	0.50	0.22	0.81	0.74	0.39
Avail Cap(c_a), veh/h	216	1017	936	174	1052	444	1149	1540	634	266	846	372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	38.7	14.3	48.1	40.6	22.9	36.1	24.5	21.5	47.9	42.9	21.4
Incr Delay (d2), s/veh	19.8	3.6	0.4	101.3	1.9	1.2	58.0	0.3	0.2	3.9	1.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	8.7	5.5	9.5	6.9	2.7	23.8	7.0	2.2	3.4	5.2	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.5	42.4	14.7	149.4	42.5	24.1	94.2	24.8	21.7	51.8	44.8	22.4
LnGrp LOS	E	D	B	F	D	C	F	C	C	D	D	C
Approach Vol, veh/h		1243			894			2135			627	
Approach Delay, s/veh		37.0			62.5			65.6			42.8	
Approach LOS		D			E			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	47.7	15.0	30.2	39.0	22.5	18.7	26.5				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	5.8	* 5.8				
Max Green Setting (Gmax), s	15.9	43.9	10.4	29.0	34.4	25.4	9.4	* 30				
Max Q Clear Time (g_c+I1), s	9.3	18.0	12.4	20.2	36.4	13.7	12.3	16.8				
Green Ext Time (p_c), s	0.1	6.1	0.0	4.0	0.0	2.3	0.0	3.5				

Intersection Summary

HCM 6th Ctrl Delay	54.9
HCM 6th LOS	D

Notes

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

Timings
15: Citrus Ave. & Sierra Lakes Pkwy.

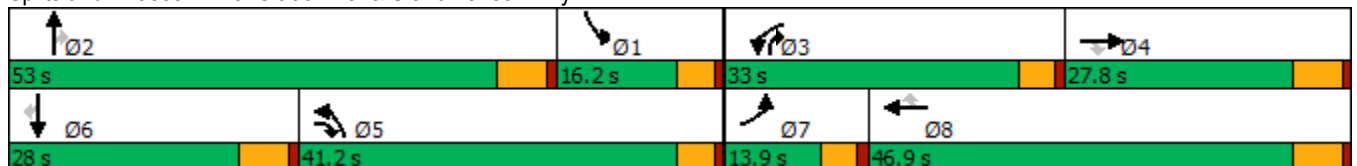
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	435	446	835	416	292	1075	858	1011	254	596	99
Future Volume (vph)	123	435	446	835	416	292	1075	858	1011	254	596	99
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2	3	1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	3	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	9.6	27.8	9.6	9.6	27.8	27.8	9.6	27.8	9.6	9.6	27.8	27.8
Total Split (s)	13.9	27.8	41.2	33.0	46.9	46.9	41.2	53.0	33.0	16.2	28.0	28.0
Total Split (%)	10.7%	21.4%	31.7%	25.4%	36.1%	36.1%	31.7%	40.8%	25.4%	12.5%	21.5%	21.5%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	4.8	3.6	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	5.8	4.6	4.6	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	None	None	Min	Min
Act Effct Green (s)	8.3	19.7	57.5	28.4	39.8	39.8	36.6	38.8	68.4	20.1	22.2	22.2
Actuated g/C Ratio	0.06	0.15	0.45	0.22	0.31	0.31	0.29	0.30	0.54	0.16	0.17	0.17
v/c Ratio	0.56	0.79	0.61	1.11	0.37	0.46	1.10	0.79	1.21	0.48	0.96	0.24
Control Delay	67.7	62.8	14.0	110.9	35.5	10.2	103.9	46.1	124.6	54.3	79.2	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.7	62.8	14.0	110.9	35.5	10.2	103.9	46.1	124.6	54.3	79.2	1.3
LOS	E	E	B	F	D	B	F	D	F	D	E	A
Approach Delay		41.7			71.5			94.1			64.4	
Approach LOS		D			E			F			E	

Intersection Summary

































Cycle Length: 130
 Actuated Cycle Length: 127.7
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.21
 Intersection Signal Delay: 76.2
 Intersection LOS: E
 Intersection Capacity Utilization 100.9%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 15: Citrus Ave. & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 15: Citrus Ave. & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 		 	 	
Traffic Volume (veh/h)	123	435	446	835	416	292	1075	858	1011	254	596	99
Future Volume (veh/h)	123	435	446	835	416	292	1075	858	1011	254	596	99
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	453	431	870	433	278	1120	894	662	265	621	84
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	560	689	797	1206	504	1027	1105	817	597	654	273
Arrive On Green	0.05	0.22	0.15	0.34	0.48	0.32	0.43	0.44	0.30	0.25	0.26	0.17
Sat Flow, veh/h	3563	3741	1554	3563	3741	1564	3563	3741	1565	3563	3741	1562
Grp Volume(v), veh/h	128	453	431	870	433	278	1120	894	662	265	621	84
Grp Sat Flow(s),veh/h/ln	1781	1870	1554	1781	1870	1564	1781	1870	1565	1781	1870	1562
Q Serve(g_s), s	4.5	14.6	12.7	28.4	9.2	11.8	36.6	26.3	18.2	8.0	20.7	5.0
Cycle Q Clear(g_c), s	4.5	14.6	12.7	28.4	9.2	11.8	36.6	26.3	18.2	8.0	20.7	5.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	560	689	797	1206	504	1027	1105	817	597	654	273
V/C Ratio(X)	0.71	0.81	0.63	1.09	0.36	0.55	1.09	0.81	0.81	0.44	0.95	0.31
Avail Cap(c_a), veh/h	261	648	726	797	1211	506	1027	1390	936	597	654	273
HCM Platoon Ratio	1.00	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00	1.50	1.50	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.3	47.5	10.2	42.2	24.6	14.2	36.1	32.2	8.7	42.6	46.3	32.2
Incr Delay (d2), s/veh	1.9	6.7	1.6	60.0	0.2	1.3	56.2	2.9	4.8	0.2	23.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.9	4.0	18.1	3.8	4.3	22.2	11.1	5.9	3.4	11.1	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.2	54.2	11.7	102.2	24.8	15.4	92.3	35.2	13.5	42.8	69.8	32.8
LnGrp LOS	E	D	B	F	C	B	F	D	B	D	E	C
Approach Vol, veh/h		1012			1581			2676			970	
Approach Delay, s/veh		37.0			65.7			53.7			59.2	
Approach LOS		D			E			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.9	43.3	33.0	24.8	41.2	28.0	11.1	46.7				
Change Period (Y+Rc), s	4.6	5.8	4.6	5.8	4.6	5.8	4.6	5.8				
Max Green Setting (Gmax), s	11.6	47.2	28.4	22.0	36.6	22.2	9.3	41.1				
Max Q Clear Time (g_c+I1), s	10.0	28.3	30.4	16.6	38.6	22.7	6.5	13.8				
Green Ext Time (p_c), s	0.1	9.2	0.0	2.3	0.0	0.0	0.1	4.1				
Intersection Summary												
HCM 6th Ctrl Delay			54.9									
HCM 6th LOS			D									

Timings
16: Sierra Ave/Sierra Ave. & Riverside Ave.

Ventana (JN 13769)
04/29/2021

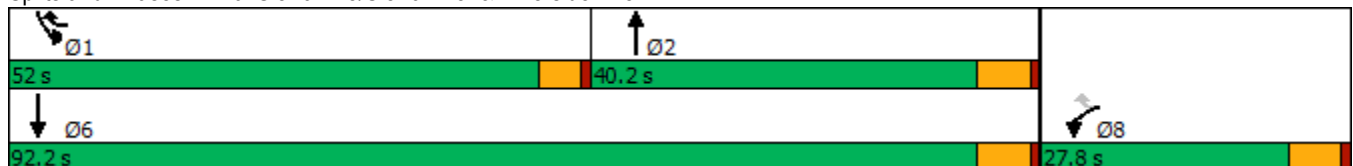


Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Configurations	↙	↗	↕	↘	↕
Traffic Volume (vph)	280	1081	810	999	839
Future Volume (vph)	280	1081	810	999	839
Turn Type	Prot	pm+ov	NA	Prot	NA
Protected Phases	8	1	2	1	6
Permitted Phases		8			
Detector Phase	8	1	2	1	6
Switch Phase					
Minimum Initial (s)	10.0	5.0	10.0	5.0	10.0
Minimum Split (s)	27.8	9.6	27.8	9.6	15.8
Total Split (s)	27.8	52.0	40.2	52.0	92.2
Total Split (%)	23.2%	43.3%	33.5%	43.3%	76.8%
Yellow Time (s)	4.8	3.6	4.8	3.6	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	5.8	4.6	5.8
Lead/Lag		Lead	Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	Yes	
Recall Mode	None	None	Min	None	Min
Act Effct Green (s)	21.4	74.6	34.4	47.4	86.4
Actuated g/C Ratio	0.18	0.62	0.29	0.40	0.72
v/c Ratio	0.94	1.16	1.10	0.78	0.35
Control Delay	86.3	105.0	98.1	36.5	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	86.3	105.0	98.1	36.5	6.6
LOS	F	F	F	D	A
Approach Delay	101.2		98.1		22.8
Approach LOS	F		F		C

Intersection Summary















Cycle Length: 120
 Actuated Cycle Length: 119.4
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.16
 Intersection Signal Delay: 66.4
 Intersection LOS: E
 Intersection Capacity Utilization 105.3%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 16: Sierra Ave/Sierra Ave. & Riverside Ave.



HCM 6th Signalized Intersection Summary
 16: Sierra Ave/Sierra Ave. & Riverside Ave.

Ventana (JN 13769)
 04/29/2021

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 		 	 
Traffic Volume (veh/h)	280	1081	810	228	999	839
Future Volume (veh/h)	280	1081	810	228	999	839
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	298	751	862	110	1063	893
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	371	861	963	123	1158	2424
Arrive On Green	0.21	0.21	0.30	0.30	0.33	0.68
Sat Flow, veh/h	1781	1585	3263	405	3456	3647
Grp Volume(v), veh/h	298	751	483	489	1063	893
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1798	1728	1777
Q Serve(g_s), s	16.8	22.0	27.5	27.5	31.2	11.3
Cycle Q Clear(g_c), s	16.8	22.0	27.5	27.5	31.2	11.3
Prop In Lane	1.00	1.00		0.23	1.00	
Lane Grp Cap(c), veh/h	371	861	540	546	1158	2424
V/C Ratio(X)	0.80	0.87	0.90	0.90	0.92	0.37
Avail Cap(c_a), veh/h	371	861	578	585	1549	2904
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.8	21.0	35.2	35.2	33.8	7.1
Incr Delay (d2), s/veh	11.3	9.4	15.8	15.7	6.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	17.3	14.0	14.2	13.8	3.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	51.1	30.4	51.0	50.9	40.1	7.2
LnGrp LOS	D	C	D	D	D	A
Approach Vol, veh/h	1049		972			1956
Approach Delay, s/veh	36.3		51.0			25.1
Approach LOS	D		D			C
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	40.0	37.9			77.9	27.8
Change Period (Y+Rc), s	4.6	5.8			5.8	5.8
Max Green Setting (Gmax), s	47.4	34.4			86.4	22.0
Max Q Clear Time (g_c+I1), s	33.2	29.5			13.3	24.0
Green Ext Time (p_c), s	2.2	2.6			8.1	0.0
Intersection Summary						
HCM 6th Ctrl Delay			34.4			
HCM 6th LOS			C			

Timings
17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
04/29/2021



Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	75	132	1328	916
Future Volume (vph)	75	132	1328	916
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	5	2	6
Permitted Phases				
Detector Phase	4	5	2	6
Switch Phase				
Minimum Initial (s)	10.0	5.0	10.0	10.0
Minimum Split (s)	27.8	9.6	15.8	27.8
Total Split (s)	27.8	15.4	92.2	76.8
Total Split (%)	23.2%	12.8%	76.8%	64.0%
Yellow Time (s)	4.8	3.6	4.8	4.8
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	5.8	5.8
Lead/Lag		Lead		Lag
Lead-Lag Optimize?		Yes		Yes
Recall Mode	None	None	Min	Min
Act Effct Green (s)	11.8	10.2	44.8	29.9
Actuated g/C Ratio	0.17	0.15	0.65	0.44
v/c Ratio	0.50	0.52	0.60	0.70
Control Delay	27.3	38.2	7.9	18.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	27.3	38.2	7.9	18.0
LOS	C	D	A	B
Approach Delay	27.3		10.7	18.0
Approach LOS	C		B	B

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 68.4
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 14.5
 Intersection LOS: B
 Intersection Capacity Utilization 58.8%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 17: Sierra Ave & Casa Grande Ave.



HCM 6th Signalized Intersection Summary
 17: Sierra Ave & Casa Grande Ave.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	75	80	132	1328	916	113
Future Volume (veh/h)	75	80	132	1328	916	113
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	83	138	1383	954	118
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	133	142	177	2225	1412	175
Arrive On Green	0.17	0.17	0.10	0.63	0.44	0.44
Sat Flow, veh/h	807	858	1781	3647	3276	394
Grp Volume(v), veh/h	162	0	138	1383	532	540
Grp Sat Flow(s),veh/h/ln	1676	0	1781	1777	1777	1800
Q Serve(g_s), s	5.0	0.0	4.2	13.2	13.2	13.2
Cycle Q Clear(g_c), s	5.0	0.0	4.2	13.2	13.2	13.2
Prop In Lane	0.48	0.51	1.00			0.22
Lane Grp Cap(c), veh/h	277	0	177	2225	788	799
V/C Ratio(X)	0.59	0.00	0.78	0.62	0.68	0.68
Avail Cap(c_a), veh/h	663	0	346	5527	2271	2300
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	24.4	6.4	12.3	12.3
Incr Delay (d2), s/veh	2.0	0.0	2.8	0.3	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	1.8	3.4	4.6	4.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.4	0.0	27.2	6.6	13.3	13.3
LnGrp LOS	C	A	C	A	B	B
Approach Vol, veh/h	162			1521	1072	
Approach Delay, s/veh	23.4			8.5	13.3	
Approach LOS	C			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		40.6		15.0	10.1	30.5
Change Period (Y+Rc), s		5.8		5.8	4.6	5.8
Max Green Setting (Gmax), s		86.4		22.0	10.8	71.0
Max Q Clear Time (g_c+I1), s		15.2		7.0	6.2	15.2
Green Ext Time (p_c), s		16.7		0.4	0.1	9.4

Intersection Summary

HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Timings
18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
04/29/2021

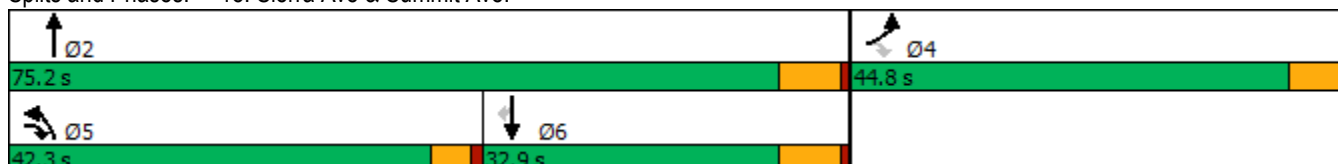


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖	↗	↖	↑↑	↑↑	↗
Traffic Volume (vph)	310	508	572	1143	798	220
Future Volume (vph)	310	508	572	1143	798	220
Turn Type	Prot	pm+ov	Prot	NA	NA	Perm
Protected Phases	4	5	5	2	6	
Permitted Phases		4				6
Detector Phase	4	5	5	2	6	6
Switch Phase						
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	10.0
Minimum Split (s)	44.8	9.6	9.6	16.5	29.5	29.5
Total Split (s)	44.8	42.3	42.3	75.2	32.9	32.9
Total Split (%)	37.3%	35.3%	35.3%	62.7%	27.4%	27.4%
Yellow Time (s)	4.8	3.6	3.6	5.5	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.8	4.6	4.6	6.5	6.5	6.5
Lead/Lag		Lead	Lead		Lag	Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes
Recall Mode	None	None	None	Min	Min	Min
Act Effct Green (s)	24.4	68.1	37.8	69.0	26.5	26.5
Actuated g/C Ratio	0.23	0.64	0.36	0.65	0.25	0.25
v/c Ratio	0.80	0.52	0.95	0.52	0.90	0.48
Control Delay	53.2	12.0	60.5	11.5	53.0	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.2	12.0	60.5	11.5	53.0	21.4
LOS	D	B	E	B	D	C
Approach Delay	27.6			27.8	46.1	
Approach LOS	C			C	D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 105.7
 Natural Cycle: 125
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 33.0
 Intersection LOS: C
 Intersection Capacity Utilization 85.0%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 18: Sierra Ave & Summit Ave.



HCM 6th Signalized Intersection Summary
 18: Sierra Ave & Summit Ave.

Ventana (JN 13769)
 04/29/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	310	508	572	1143	798	220
Future Volume (veh/h)	310	508	572	1143	798	220
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	326	392	602	1203	840	171
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	391	912	635	2333	949	402
Arrive On Green	0.22	0.22	0.36	0.66	0.25	0.25
Sat Flow, veh/h	1781	1585	1781	3647	3741	1585
Grp Volume(v), veh/h	326	392	602	1203	840	171
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1870	1585
Q Serve(g_s), s	17.3	13.8	32.6	17.4	21.4	8.9
Cycle Q Clear(g_c), s	17.3	13.8	32.6	17.4	21.4	8.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	391	912	635	2333	949	402
V/C Ratio(X)	0.83	0.43	0.95	0.52	0.88	0.43
Avail Cap(c_a), veh/h	701	1188	678	2463	996	422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	11.9	31.0	8.8	35.6	30.9
Incr Delay (d2), s/veh	4.7	0.3	22.1	0.2	9.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.1	17.4	6.0	10.8	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.7	12.2	53.1	9.0	44.9	31.6
LnGrp LOS	D	B	D	A	D	C
Approach Vol, veh/h	718			1805	1011	
Approach Delay, s/veh	25.6			23.7	42.6	
Approach LOS	C			C	D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		71.6		27.5	39.9	31.7
Change Period (Y+Rc), s		6.5		5.8	4.6	6.5
Max Green Setting (Gmax), s		68.7		39.0	37.7	26.4
Max Q Clear Time (g_c+1), s		19.4		19.3	34.6	23.4
Green Ext Time (p_c), s		12.5		2.4	0.7	1.7
Intersection Summary						
HCM 6th Ctrl Delay			29.5			
HCM 6th LOS			C			

Timings
19: Sierra Ave & Sierra Lakes Pkwy.

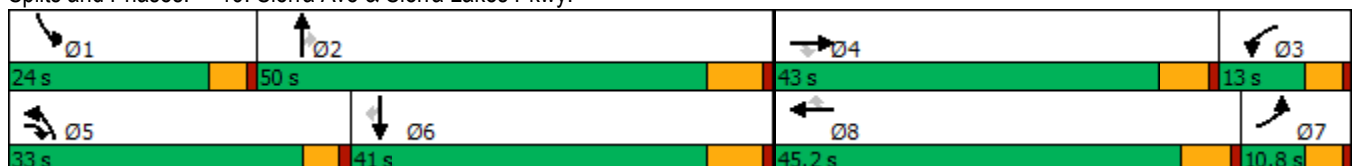
Ventana (JN 13769)
04/29/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	342	374	1049	248	301	337	958	1193	296	322	985	251
Future Volume (vph)	342	374	1049	248	301	337	958	1193	296	322	985	251
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	10.0	5.0	5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	9.6	41.8	9.6	9.6	42.8	42.8	9.6	40.5	40.5	9.6	40.5	40.5
Total Split (s)	10.8	43.0	33.0	13.0	45.2	45.2	33.0	50.0	50.0	24.0	41.0	41.0
Total Split (%)	8.3%	33.1%	25.4%	10.0%	34.8%	34.8%	25.4%	38.5%	38.5%	18.5%	31.5%	31.5%
Yellow Time (s)	3.6	4.8	3.6	3.6	4.8	4.8	3.6	5.5	5.5	3.6	5.5	5.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.6	5.8	4.6	4.6	5.8	5.8	4.6	6.5	6.5	4.6	6.5	6.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effct Green (s)	9.2	16.4	46.2	8.5	15.7	15.7	28.6	43.8	43.8	14.1	29.3	29.3
Actuated g/C Ratio	0.09	0.16	0.44	0.08	0.15	0.15	0.27	0.42	0.42	0.14	0.28	0.28
v/c Ratio	1.14	0.66	1.47	0.90	0.55	0.67	1.02	0.52	0.39	0.69	0.65	0.42
Control Delay	138.4	47.7	242.7	81.7	45.4	12.6	73.1	24.3	8.5	51.7	35.2	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	138.4	47.7	242.7	81.7	45.4	12.6	73.1	24.3	8.5	51.7	35.2	5.8
LOS	F	D	F	F	D	B	E	C	A	D	D	A
Approach Delay		181.1			43.1			41.5			33.9	
Approach LOS		F			D			D			C	

Intersection Summary

























Cycle Length: 130
 Actuated Cycle Length: 104.4
 Natural Cycle: 145
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.47
 Intersection Signal Delay: 76.9
 Intersection LOS: E
 Intersection Capacity Utilization 105.2%
 ICU Level of Service G
 Analysis Period (min) 15

Splits and Phases: 19: Sierra Ave & Sierra Lakes Pkwy.



HCM 6th Signalized Intersection Summary
 19: Sierra Ave & Sierra Lakes Pkwy.

Ventana (JN 13769)
 04/29/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	342	374	1049	248	301	337	958	1193	296	322	985	251
Future Volume (veh/h)	342	374	1049	248	301	337	958	1193	296	322	985	251
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	353	386	700	256	310	192	988	1230	241	332	1015	213
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	732	1037	812	249	529	220	841	2038	568	396	1338	376
Arrive On Green	0.21	0.28	0.28	0.07	0.14	0.14	0.26	0.40	0.36	0.11	0.24	0.24
Sat Flow, veh/h	3563	3741	1582	3563	3741	1555	3563	5611	1564	3563	5611	1579
Grp Volume(v), veh/h	353	386	700	256	310	192	988	1230	241	332	1015	213
Grp Sat Flow(s),veh/h/ln	1781	1870	1582	1781	1870	1555	1781	1870	1564	1781	1870	1579
Q Serve(g_s), s	10.5	10.0	27.9	8.4	9.3	11.2	28.4	20.9	10.4	11.0	20.2	8.7
Cycle Q Clear(g_c), s	10.5	10.0	27.9	8.4	9.3	11.2	28.4	20.9	10.4	11.0	20.2	8.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	732	1037	812	249	529	220	841	2038	568	396	1338	376
V/C Ratio(X)	0.48	0.37	0.86	1.03	0.59	0.87	1.18	0.60	0.42	0.84	0.76	0.57
Avail Cap(c_a), veh/h	732	1156	863	249	1225	509	841	2038	568	574	1609	453
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.10	1.10	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.2	35.1	10.5	56.0	48.4	30.0	44.6	29.3	16.0	52.4	42.6	15.0
Incr Delay (d2), s/veh	0.2	0.2	8.5	64.9	1.0	10.3	91.2	0.5	0.5	5.0	1.8	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	4.6	10.6	6.0	4.4	4.8	22.9	9.2	3.8	5.2	9.5	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.3	35.3	19.0	120.9	49.4	40.3	135.8	29.8	16.5	57.4	44.4	16.3
LnGrp LOS	D	D	B	F	D	D	F	C	B	E	D	B
Approach Vol, veh/h		1439			758			2459			1560	
Approach Delay, s/veh		29.1			71.2			71.1			43.3	
Approach LOS		C			E			E			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.0	50.2	13.0	39.2	33.0	35.2	29.3	22.8				
Change Period (Y+Rc), s	4.6	6.5	4.6	5.8	4.6	6.5	4.6	5.8				
Max Green Setting (Gmax), s	19.4	43.5	8.4	37.2	28.4	34.5	6.2	39.4				
Max Q Clear Time (g_c+I1), s	13.0	22.9	10.4	29.9	30.4	22.2	12.5	13.2				
Green Ext Time (p_c), s	0.4	10.1	0.0	3.3	0.0	6.2	0.0	2.8				
Intersection Summary												
HCM 6th Ctrl Delay			54.4									
HCM 6th LOS			D									