



# Traffic Operations Analysis for the General Plan Reset Project



Prepared for the City of San Carlos

Submitted by  
**W-Trans**

April 21, 2025



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# Executive Summary

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The proposed project includes the adoption and implementation of the 2045 General Plan Reset for the City of San Carlos. New housing is expected around Downtown, on infill parcels along the El Camino Real corridor, Old County Road between Holly Street and Terminal Avenue, and East San Carlos Avenue. It is likely that most units would be multiple family residences, such as apartments, townhouses, or condominiums. New detached residences may occur as accessory dwelling units (ADUs) and as rebuilt or remodeled homes in existing single-family neighborhoods. Commercial growth would also be expected under the General Plan Reset, primarily in the Downtown area. Office growth would occur Downtown, and in the Northeast, while industrial growth and research and development expansion is only expected in the east side of the City. The proposed project does not involve changes to the land use designations or map.

This report contains an analysis of existing conditions and two cumulative (2045) scenarios. For the cumulative scenarios, the City's Traffic Impact Fee (TIF) program was referenced to incorporate any potential improvements to the study intersections.

Twelve intersections were evaluated for this study, some of which are expected to operate at deficient Levels of Service (LOS) under the City's General Plan LOS policy with or without the change in number of trips associated with implementation of the General Plan Reset.

The roadway segment of El Camino Real between San Carlos' northern City Limits and San Carlos Avenue was assessed and is expected to operate at a sufficient Level of Service per the City/County Association of Governments (C/CAG) Congestion Management Program (CMP) guidelines, which are based on the volume to capacity ratio (V/C).

The freeway segment of US 101 between the SR 92 and Whipple Road interchanges was also analyzed using standards outlined in the C/CAG 2023 CMP Guidelines. Under the analyzed scenarios, this freeway segment would operate acceptably, or when deficient operation occurred, it would operate under significant and unavoidable conditions.

# Introduction

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This report presents an analysis of the potential effects on traffic operation that would be associated with the implementation of the proposed 2045 General Plan Reset in the City of San Carlos. The traffic study was completed in accordance with the criteria established by the City of San Carlos in their Transportation Study Guidelines and is consistent with standard traffic engineering techniques. The operational analysis presented in this report is not intended for use in evaluating transportation impacts under the guidelines set forth in the California Environmental Quality Act (CEQA).

## Prelude

The purpose of this study is to provide City staff and policy makers with data that they can use to make an informed decision regarding the potential effects on traffic operation associated with the proposed General Plan Reset, and any associated improvements that would be required in order to reduce these effects to an acceptable level according to the City's current General Plan or other policies. While no longer a part of the CEQA review process, vehicular traffic service levels at key intersections were evaluated for consistency with General Plan policies by determining the number of new trips that the proposed use would be expected to generate, distributing these trips to the surrounding street system based on anticipated travel patterns specific to the General Plan Reset, then analyzing the impact the new traffic would be expected to have on the study intersections.

## Project Profile

The proposed project includes the implementation of projected development associated with the 2045 General Plan Reset. Level of Service (LOS) and Vehicle Miles Traveled (VMT) were assessed for the transportation network under existing conditions, cumulative conditions under the currently adopted General Plan, and cumulative conditions under the General Plan Reset.

# Transportation Setting

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## Operational Analysis

### Study Area and Periods

The study area includes the following intersections.

- |                                      |   |
|--------------------------------------|---|
| 1. El Camino Real/Holly Street*      | 8. El Camino Real/Howard Avenue                   |
| 2. Old County Road/Holly Street      | 9. Old County Road/Howard Avenue                  |
| 3. Industrial Road/Holly Street      | 10. San Carlos Avenue/Dartmouth Avenue-Club Drive |
| 4. El Camino Real/San Carlos Avenue* | 11. Alameda de las Pulgas/San Carlos Avenue       |
| 5. El Camino Real/Brittan Avenue*    | 12. Alameda de las Pulgas/Brittan Avenue          |
| 6. Old County Road/Brittan Avenue    |   |
| 7. Industrial Road/Brittan Avenue    |   |

Operating conditions during the a.m. and p.m. peak periods were evaluated to capture the highest potential change in operations related to the proposed project as well as the highest volumes on the local transportation network. The morning peak hour occurs between 7:00 and 9:00 a.m. and reflects conditions during the home to work or school commute, while the p.m. peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward bound commute.

### Study Intersections

The locations of the study intersections and the existing lane configurations and controls are shown in Figures 1 and 2. For this study, El Camino Real and other parallel streets are defined as generally aligning in the North-South direction. A detailed description of each intersection is provided below.

**El Camino Real/Holly Street** is a four-legged signalized intersection with protected left-turn phasing on all four approaches. Crosswalks and associated pedestrian signal heads are present on all four legs.

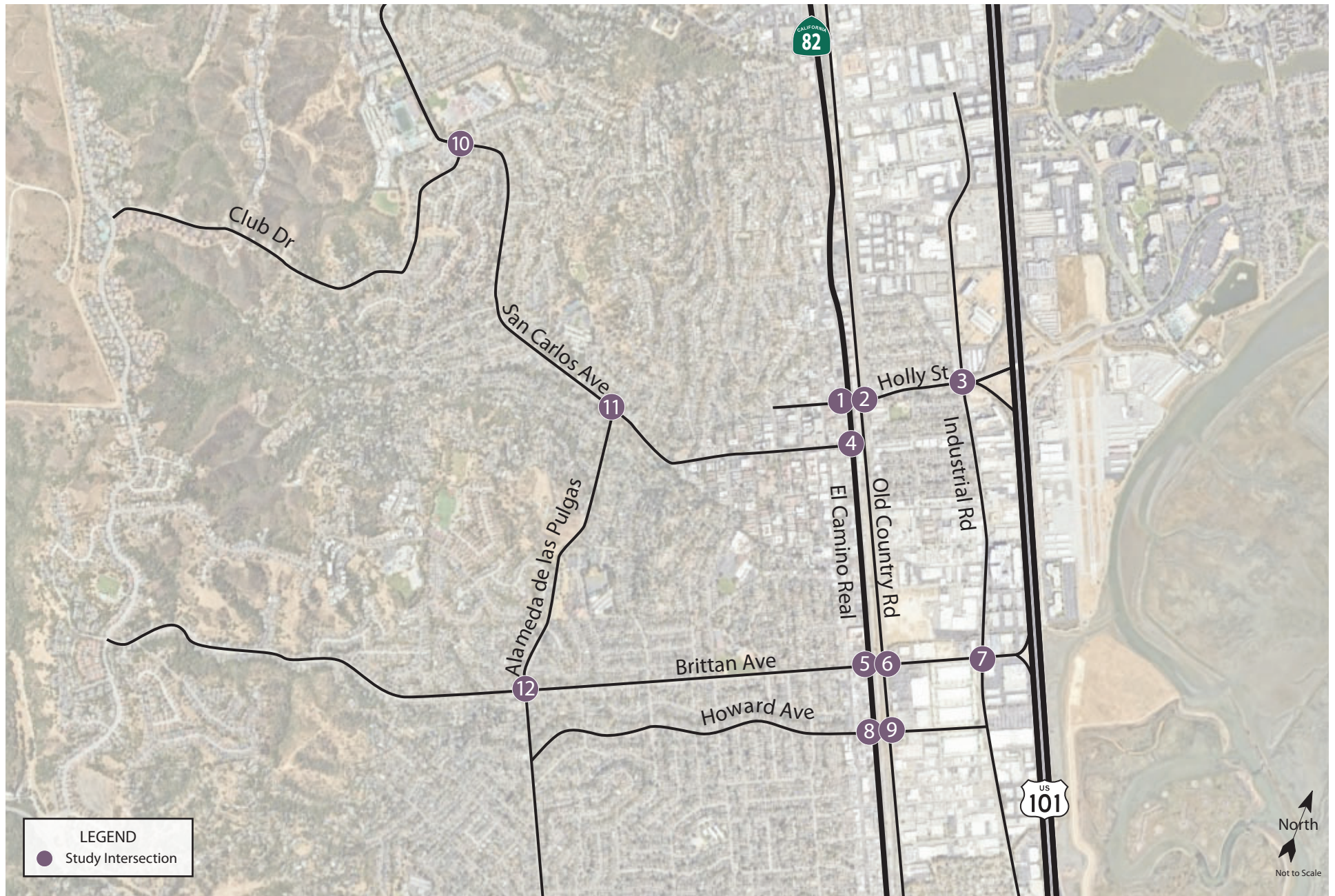
**Old County Road/Holly Street** is a four-legged signalized intersection with split phasing on the eastbound and westbound Holly Street approaches and protected left-turn phasing on the Old County Road approaches. Crosswalks and associated pedestrian signal heads are present on the north, south, and east legs. There are bicycle lanes along Old County Road.

**Industrial Road/Holly Street** is a four-legged signalized intersection with protected left-turn phasing on the northbound and southbound Industrial Road approaches; the northbound approach also has right-turn overlap phasing. There is split phasing on the eastbound and westbound Holly Street approaches. Crosswalks and associated pedestrian signal heads are present on the north, south, and west legs. Bicycle route pavement markings are present on the east side of the north leg and there are bicycle lanes on the west side of the north leg, and both sides of the south and east legs.

**El Camino Real/San Carlos Avenue** is a signalized tee intersection with protected left-turn phasing on the northbound approach and protected U-turns on the southbound approach. Crosswalks and associated pedestrian signal phasing are present on all three legs.

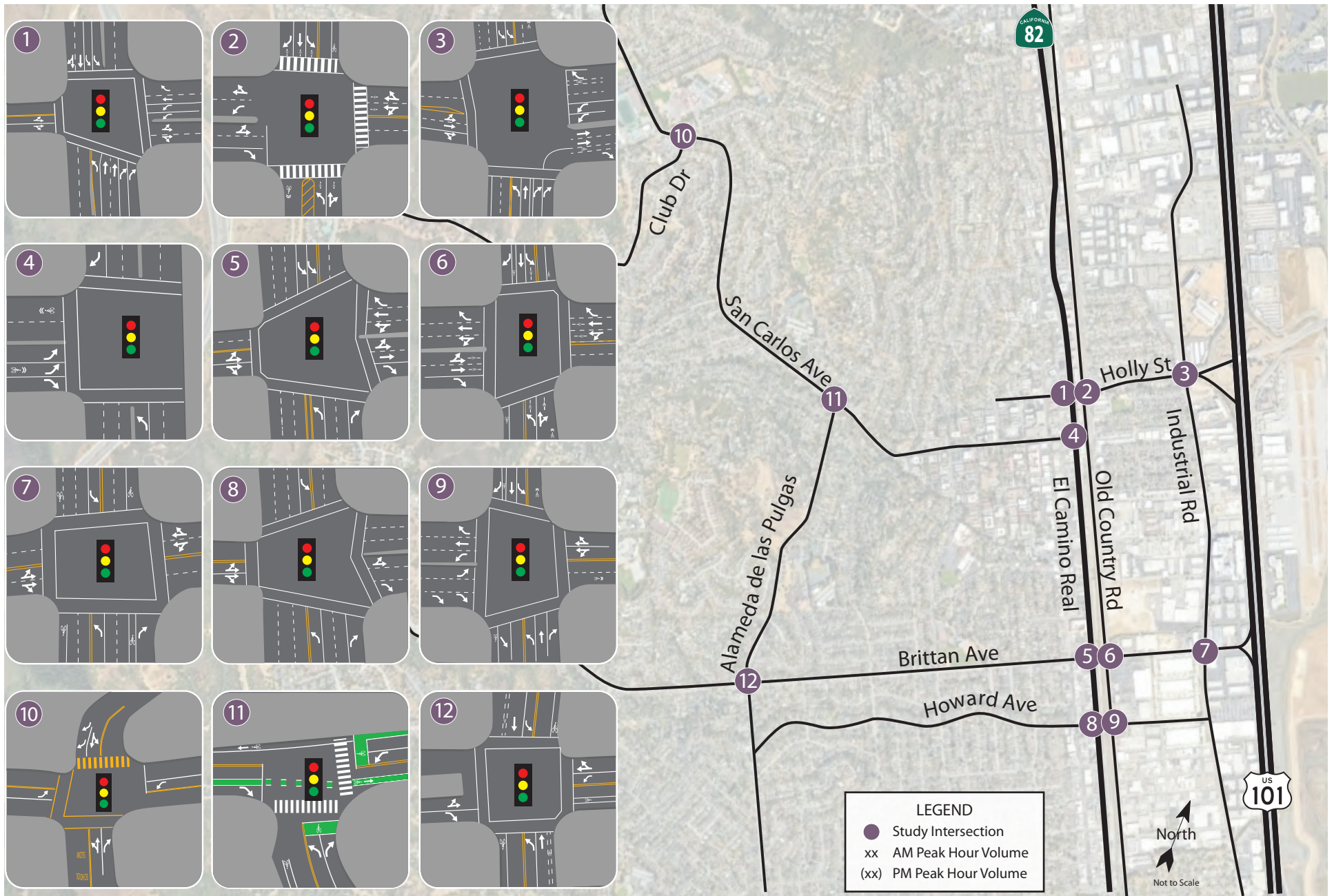
**El Camino Real/Brittan Avenue** is a four-legged signalized intersection with protected left-turn phasing on the northbound and southbound El Camino Real approaches and split-phasing on the eastbound and westbound Brittan Avenue approaches. Crosswalks and associated pedestrian signal heads are present on all four legs.





General Plan Reset  
Figure 1 – Study Area





General Plan Reset  
**Figure 2 – Existing Lane Configurations**

**Old County Road/Brittan Avenue** is a four-legged signalized intersection with split phasing on the eastbound and westbound Brittan Avenue approaches. The northbound and southbound Old County Road approaches have permitted left-turn phasing. There are crosswalks and associated pedestrian signal heads on all four legs and bicycle lanes on Old County Road, with bicycle detection on all four approaches.

**Industrial Road/Brittan Avenue** is a four-legged signalized intersection. There are protected left turns on the northbound and southbound Industrial Road approaches, and split phasing on the eastbound and westbound Brittan Avenue approaches. Crosswalks and associated pedestrian signal phasing are present on all four legs. Bicycle lanes are present along Industrial Road.

**El Camino Real/Howard Avenue** is a signalized four-legged intersection with protected left-turn phasing on the northbound and southbound El Camino Real approaches and split phasing on the eastbound and westbound Howard Avenue approaches. The intersection has crosswalks and associated pedestrian signal phasing on all four legs.

**Old County Road/Howard Avenue** is a signalized four-legged intersection with protected left-turn phasing on the northbound and southbound Old County Road approaches and split phasing on the eastbound and westbound Howard Avenue approaches. Crosswalks and associated pedestrian signal phasing are present on all four legs. Bicycle route markings are present along Old County Road and on the east leg.

**San Carlos Avenue/Dartmouth Avenue-Club Drive** is a signalized intersection with four legs and protected left-turn phasing on the eastbound and westbound approaches of San Carlos Avenue. On the Dartmouth Avenue and Club Drive approaches, protected-permissive left-turn phasing is provided. Marked pedestrian crossings are located on the north, west, and south legs of the intersection, alongside the provision of accessible curb ramps. Two bus stops are located near the intersection, on the east and west approaches of San Carlos Avenue.

**Alameda de las Pulgas/San Carlos Avenue** is a signalized tee-intersection with protected phasing for all left-turn movements. A northbound right-turn overlap also runs concurrently with the westbound left-turn phase. Marked crosswalks are provided on the east and south intersection legs. Painted green bike lanes are present on all legs, along with bike boxes at the northbound and westbound intersection approaches.

**Alameda de las Pulgas/Brittan Avenue** is a four-legged, signalized intersection with protected left-turn phasing on all approaches. The west leg of Brittain Avenue is split by a 20-foot-wide raised median. Marked crosswalks are present on all four legs, and Class II bike lanes are present on the north, east, and south legs.

# Capacity Analysis

## Intersection Level of Service Methodologies

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersections were analyzed using methodologies published in the *Highway Capacity Manual* (HCM), 6<sup>th</sup> Edition, Transportation Research Board, 2016 or the *Highway Capacity Manual*, Transportation Research Board, 2000 in cases where the HCM6 could not replicate and analyze the condition. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle.

The study intersections are all controlled by traffic signals so were evaluated using the signalized methodology from the HCM. This methodology is based on factors including traffic volumes, green time for each movement, phasing, whether the signals are coordinated or not, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology. For purposes of this study, delays were calculated using signal timing obtained from the City of San Carlos and Caltrans. The intersection of El Camino Real/San Carlos Avenue includes an exclusive pedestrian phase that can be modeled with HCM 2000 methodology but not the HCM, 6<sup>th</sup> Edition; as a result, delay for this intersection was determined using HCM 2000 methodology. The intersection of Industrial Road/Brittan Avenue includes a shared left-turn/through lane in a Cumulative Scenario under mitigation and was analyzed using HCM 2000 methodology in all scenarios to maintain consistency.

The ranges of delay associated with the various levels of service are indicated in Table 1.

**Table 1 – Signalized Intersection Level of Service Criteria**

LOS A	Delay of 0 to 10 seconds. Most vehicles arrive during the green phase, so do not stop at all.
LOS B	Delay of 10 to 20 seconds. More vehicles stop than with LOS A, but many drivers still do not have to stop.
LOS C	Delay of 20 to 35 seconds. The number of vehicles stopping is significant, although many still pass through without stopping.
LOS D	Delay of 35 to 55 seconds. The influence of congestion is noticeable, and most vehicles have to stop.
LOS E	Delay of 55 to 80 seconds. Most, if not all, vehicles must stop and drivers consider the delay excessive.
LOS F	Delay of more than 80 seconds. Vehicles may wait through more than one cycle to clear the intersection.

Reference: *Highway Capacity Manual*, 6<sup>th</sup> Edition, Transportation Research Board, 2016

## Arterial Level of Service Methodology

Levels of Service for arterial roadway segments were evaluated in accordance with the C/CAG CMP guidelines which are based on the V/C ratio. Volumes in each direction are divided by the capacity, estimated to be 1,100 vehicles per hour per lane to derive the V/C ratio. The correlation between LOS threshold and the volume-to-capacity ratios for freeway segments is summarized in Table 2.

**Table 2 - Arterial Segment Level of Service Thresholds**

LOS	V/C Ratio
A	Less than 0.6
B	0.61 - 0.70
C	0.71 - 0.80
D	0.81 - 0.90
E	0.91 - 1.00
F	1.00 or greater

Reference: *Highway Capacity Manual: Special Report 209*, Transportation Research Board, 2009, as detailed in the C/CAG 2023 CMP

## Freeway Segment Level of Service Methodology

Freeway segments were evaluated in accordance with C/CAG CMP guidelines. The measure of effectiveness used to evaluate freeway segments is based on density of vehicles, expressed in passenger cars per mile per lane and V/C ratios. The correlation between LOS threshold and the V/C ratios for freeway segments is summarized in Table 3.

**Table 3 - Freeway Segment Level of Service Thresholds**

LOS	V/C Ratio
A	Less than 0.283
B	0.283 - 0.457
C	0.457 - 0.673
D	0.673 - 0.849
E	0.849 - 1.00
F	1.00 or greater

Reference: *Highway Capacity Manual: Special Report 209*, Transportation Research Board, 2009, as detailed in the C/CAG 2023 CMP

## Traffic Operation Standards

The following operational standards were used to identify adverse effects on traffic operation in the study area and do not identify impacts for purposes of the CEQA process.

Caltrans does not have a standard of significance relative to operation as this is no longer a CEQA issue. The new *Vehicle Miles Traveled-Focused Transportation Impact Study Guide* (TISG), California Department of Transportation, 2020, replaced the *Guide for the Preparation of Traffic Impact Studies*, 2002. As indicated in the TISG, the Department is transitioning away from requesting LOS or other vehicle operations analyses of land use projects and will instead focus on Vehicle Miles Traveled (VMT). Adequacy of operation was therefore evaluated using local agency standards.

## Intersections

According to the *City of San Carlos Transportation Study Guidelines, 2024*, the City maintains a standard of LOS D for intersections. If the existing LOS is E or F, a project would have an adverse impact on operations if the LOS worsens by a letter grade or if the total volume at the study intersection increases by five percent or more due to project trip generation. Analysis should be conducted using the latest version of the HCM.

For queueing, the Guidelines state that a deficiency would occur if a project would cause the 95<sup>th</sup> percentile vehicle queue length to exceed the existing or planned length of a turn pocket or freeway off-ramp. If queue lengths already exceed the available storage length, a project would cause a deficiency by increasing the queue by more than 50 feet.

## Freeway Segments

The City/County Association of Governments of San Mateo County monitors the freeway segments within the study area. The C/CAG 2023 CMP states that the standard for US 101 freeway segments within the study area is LOS E.

## Roadway Segments

LOS standards for roadway segments were established by C/CAG and published in the 2023 CMP Monitoring Report.

Following are the LOS standards for roadway segments in San Mateo County.

- If the existing (1990/1991) LOS was F, then the standard was set to be LOS F.
- If the existing or future LOS was or will be E, then the standard was set to be LOS E.

Table 4 provides a summary of the standards of significance for the study area segments. If a roadway segment operates unacceptably without the addition of project-generated traffic, the project's effect would be considered adverse if the V/C ratio increases by 0.01 or more. This approach is consistent with the standards that were applied to other impact analyses recently completed for projects in the City of San Carlos.

**Table 4 – C/CAG Roadway Segments Level of Service**

Route Segment	Direction	Roadway Type	Estimated Capacity (vph)	LOS Standard
<b>US 101</b>				
SR 92 to Whipple Ave	SB	Freeway	13,800 <sup>1</sup>	E
Whipple Ave to SR 92	NB	Freeway	11,000 <sup>2</sup>	E
<b>SR 82 (El Camino Real)</b>				
San Carlos City Limit to San Carlos Ave	SB	Arterial	2,200 <sup>3</sup>	E
San Carlos Ave to San Carlos City Limit	NB	Arterial	2,200 <sup>3</sup>	E
San Carlos Ave to Whipple Ave	SB	Arterial	3,300 <sup>3</sup>	E
Whipple Ave to San Carlos Ave	NB	Arterial	2,200 <sup>3</sup>	E

Note: <sup>1</sup> Freeway capacity is 2,200 vehicles per hour per lane for five-lane segments

<sup>2</sup> Freeway capacity is 2,300 vehicles per hour per lane for six-lane segments

<sup>3</sup> Arterial capacity is 1,100 vehicles per hour per lane

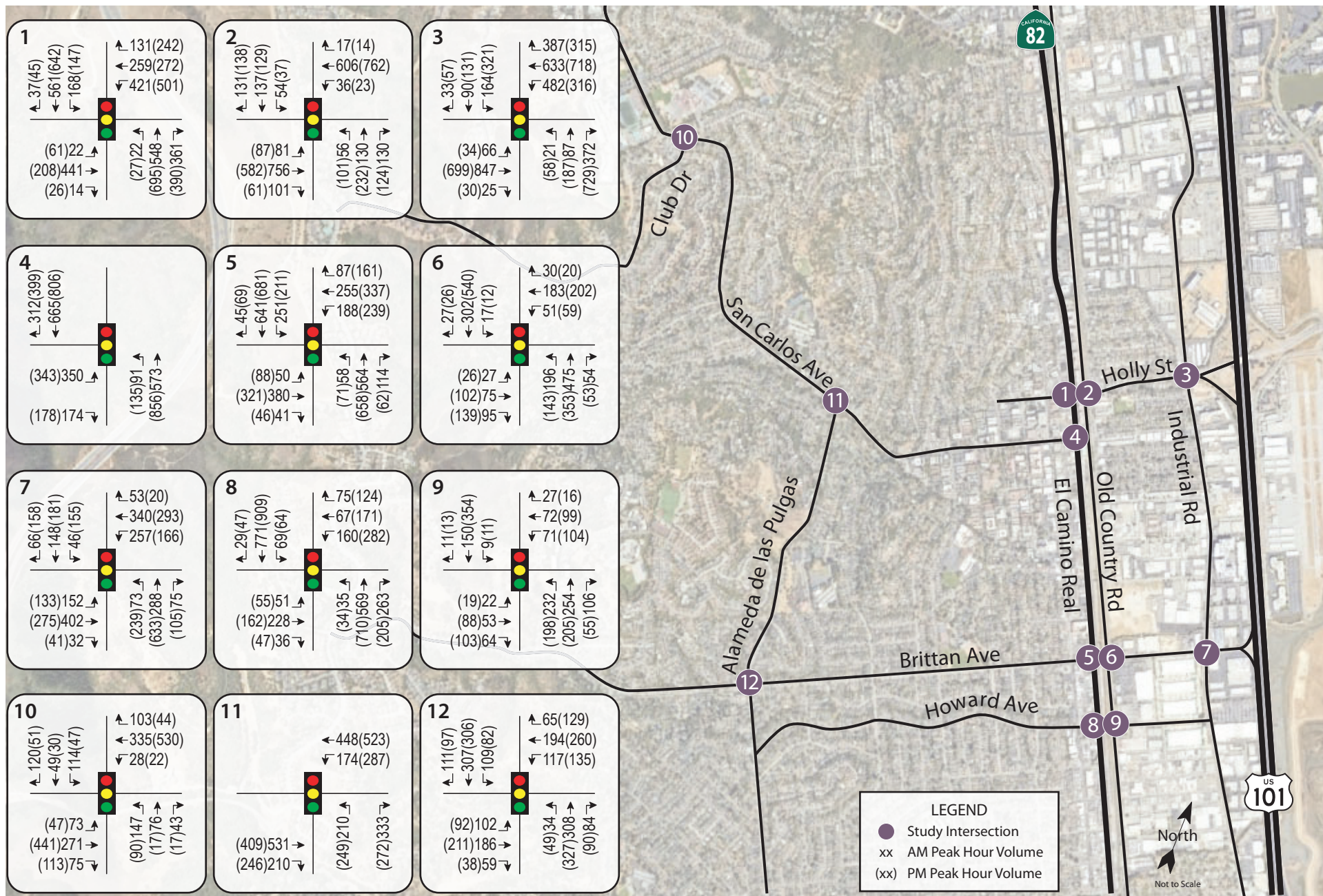


## Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes gathered during several months in 2023 during the a.m. and p.m. peak periods. This condition does not include project-generated traffic volumes. Volume data was collected while local schools were in session. Copies of the traffic count data sheets are provided in Appendix A.

## Intersection Levels of Service

Under existing conditions, most study intersections operate at acceptable Levels of Service during both peak hours. Old County Road/Holly Street, Old County Road/Brittan Avenue and Old County Road/Howard Avenue currently operate unacceptably at LOS E or F during both the a.m. and p.m. peak periods. Industrial Road/Holly Street also operates at a deficient LOS E during the p.m. peak hour. The existing traffic volumes are shown in Figure 3. A summary of the intersection Level of Service calculations is contained in Table 5, and copies are provided in Appendix B.



General Plan Reset  
Figure 3 – Existing Traffic Volumes

**Table 5 – Existing Peak Hour Intersection Levels of Service**

Study Intersection	AM Peak		PM Peak	
	Avg Delay	LOS	Avg Delay	LOS
1. El Camino Real/Holly St	42.6	D	39.2	D
2. Old County Rd/Holly St	<b>59.1</b>	<b>E</b>	<b>62.0</b>	<b>E</b>
3. Industrial Rd/Holly St	35.1	D	<b>48.1</b>	<b>E</b>
4. El Camino Real/San Carlos Ave*	33.4	C	27.4	C
5. El Camino Real/Brittan Ave	34.4	C	36.1	D
6. Old County Rd/Brittan Ave	<b>176.3</b>	<b>F</b>	<b>157.0</b>	<b>F</b>
7. Industrial Rd/Brittan Ave*	35.9	D	41.0	D
8. El Camino Real/Howard Ave	26.7	D	28.1	C
9. Old County Rd/Howard Ave	<b>58.4</b>	<b>E</b>	<b>160.6</b>	<b>F</b>
10. San Carlos Ave/Club Dr-Dartmouth Ave	31.1	C	36.9	D
11. Alameda de las Pulgas/San Carlos Ave	15.6	B	15.3	B
12. Alameda de las Pulgas/Brittan Ave	27.3	C	35.5	D

Note: Delay is measured in average seconds per vehicle; LOS = Level of Service; \* = the study intersection was analyzed under HCM 2000 criteria due to exclusive phasing; **Bold** text = deficient operation

## Roadway Segment Levels of Service

Under existing conditions, all analyzed segments of SR 82 (El Camino Real) operate acceptably in each direction during both peak hours evaluated. A summary of the roadway segment LOS calculations is shown in Table 6 and Appendix E for further reference.

**Table 6 – Existing Peak Hour Roadway Segment Levels of Service**

Roadway	Direction	AM Peak		PM Peak	
Study Segment		V/C	LOS	V/C	LOS
SR 82 (El Camino Real)					
San Carlos City Limit to San Carlos Ave	SB	0.453	A	0.531	A
San Carlos Ave to San Carlos City Limit	NB	0.319	A	0.454	A
San Carlos Ave to Whipple Ave	SB	0.293	A	0.375	A
Whipple Ave to San Carlos Ave	NB	0.316	A	0.404	A

Note: V/C = Volume to Capacity; LOS = Level of Service

## Freeway Segment Levels of Service

Under existing conditions, the segment of all lanes on US 101 between SR 92 and Whipple Avenue operates acceptably in each direction during both peak hours evaluated. A summary of the freeway segment level of service calculations is shown in Table 7 and detailed in Appendix F.

**Table 7 – Existing Peak Hour Freeway Segment Levels of Service**

Freeway Study Segment	Direction	AM Peak		PM Peak	
		V/C	LOS	V/C	LOS
<b>US 101</b>					
SR 92 to Whipple Ave	SB	0.645	C	0.597	C
Whipple Ave to SR 92	NB	0.647	C	0.696	C

Note: V/C = Volume to Capacity; LOS = Level of Service

## Cumulative Conditions

Segment volumes for the horizon year of 2045 were obtained from an updated version of the County's travel demand model and translated to turning movement volumes at each of the study intersections using the "Furness" method. The Furness method is an iterative process that employs existing turn movement data, existing link volumes and future link volumes to project likely turning future movement volumes at intersections. These future traffic demand projections assumed the build out of the current General Plan.

Intersection geometry for the cumulative year analysis was assumed to be unchanged from near-term conditions. Also, intersection improvements identified in the *City of San Carlos Traffic Impact Fee Plan*, Hexagon Transportation Consultants, Inc., 2015, (and updated in 2020) for intersections included in the study area, were not assumed as being complete for the cumulative analysis since the status of each improvement is uncertain.

## Project Description

The proposed project does not involve changes to the land use designations or map. The majority of new housing in San Carlos is expected on infill parcels near Downtown, along the El Camino Real corridor, along Old County Road between Holly Street and Terminal Avenue, and along East San Carlos Avenue. These units would mostly be multiple family residences, such as apartments, townhouses, or condominiums. New detached residences would likely occur as accessory dwelling units (ADUs) and as rebuilt or remodeled homes in existing single-family neighborhoods.

Most of the commercial growth is expected to occur in the Downtown area. Most of the office growth is expected in the Downtown and Northeast areas. Research and development and industrial growth would be limited to the east side area of San Carlos.

The present analysis is intended to review potential transportation effects associated with the adoption and implementation of the proposed General Plan under Cumulative 2045 Conditions. This report contains a program-level traffic operations analysis and does not include review of the effects of specific, individual developments that may be allowed in the future under the proposed project. Each future project may necessitate additional environmental review, as required by CEQA, to secure any necessary discretionary development permits.

The projected net change in land use intensities related to the 2045 General Plan Reset as compared to other adopted plans and approved projects is summarized in Table 8.



**Table 8 – Projected Net Change**

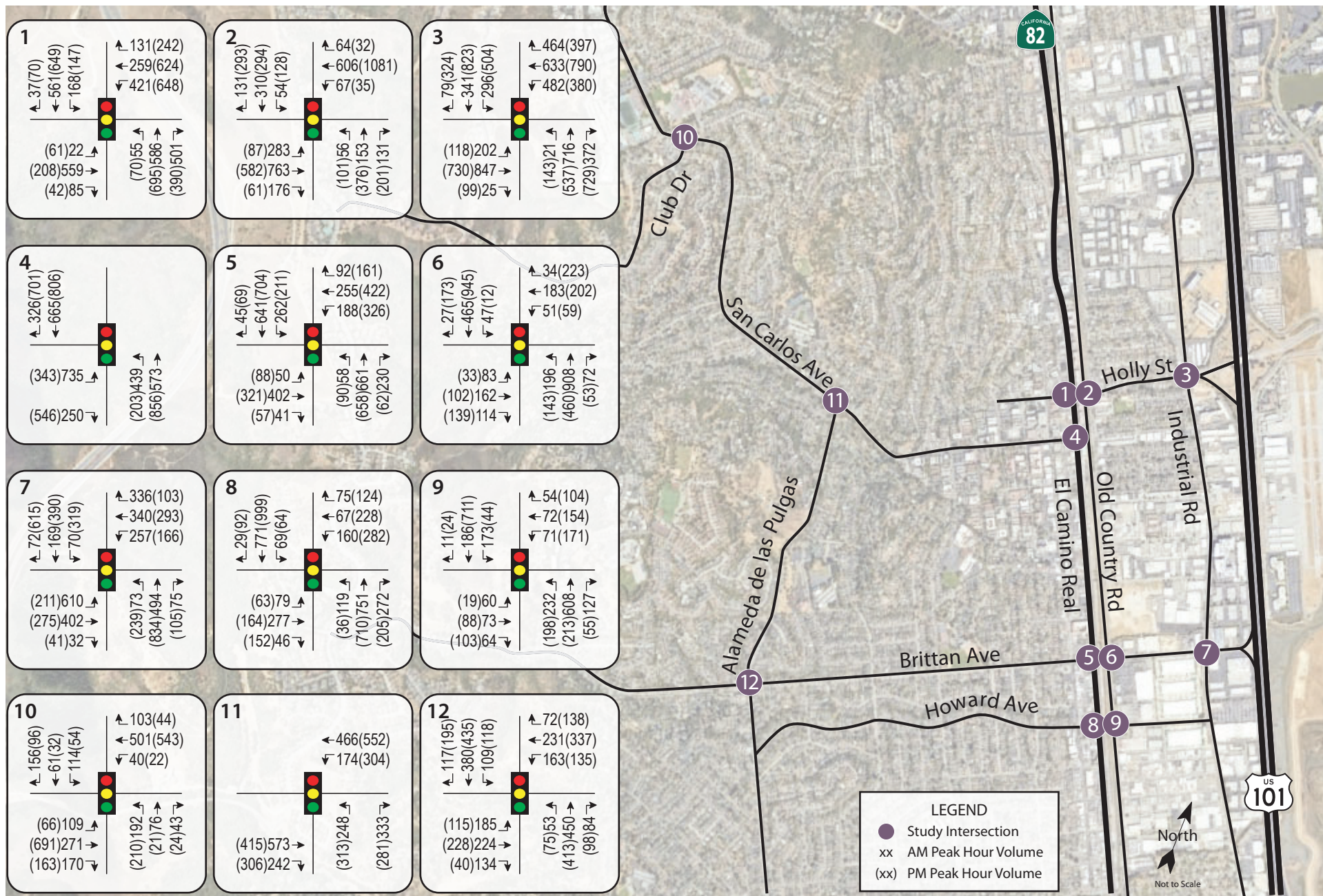
<b>Category</b>	<b>Net Change from Pipeline Development Projects</b>	<b>Net Change from Downtown Specific Plan</b>	<b>Net Change from Northeast Area Specific Plan</b>	<b>Additional Net Change</b>	<b>Total Projected Net Change</b>
Housing Units	242	1,565	1,890	4,063	<b>8,300</b>
Population	462	2,990	3,611	8,557	<b>15,620</b>
Non-Residential Square Footage	2,688,000	420,820	4,178,228	1,640,252	<b>8,927,300</b>
Jobs	8,525	908	12,990	4,107	<b>26,530</b>

Source: Placeworks, 2024

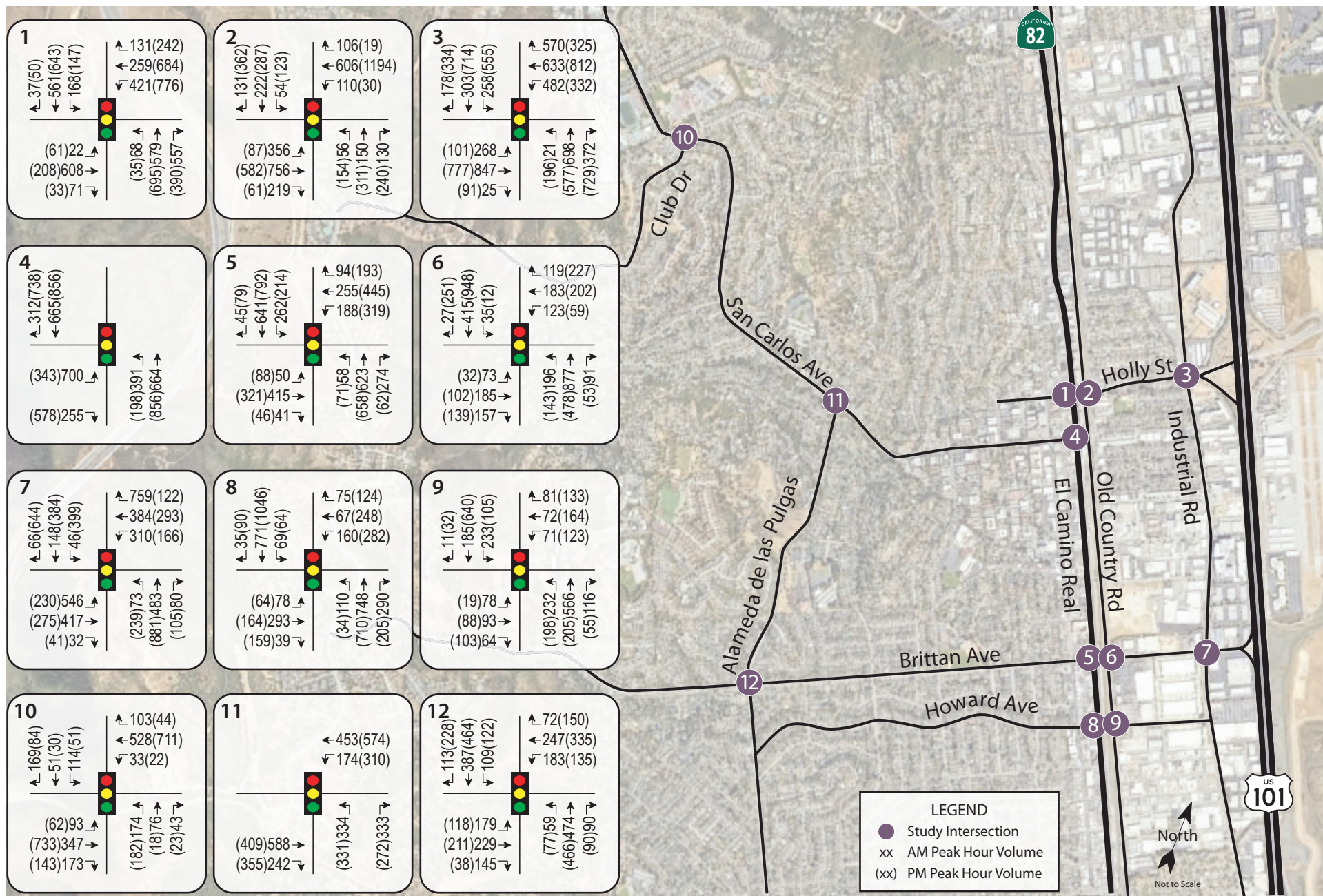
## Intersection Levels of Service

Under the anticipated future volumes with the current General Plan, five of the study intersections are expected to operate unacceptably during one or both peak periods. Upon the implementation of the proposed General Plan Reset, six of the study intersections are expected to operate unacceptably at LOS E or F conditions. Cumulative volumes are shown in Figures 4 and 5, while operating conditions are shown in Table 9. Copies of the calculations are provided in Appendices C and D.









General Plan Reset  
**Figure 5 – Cumulative 2045 General Plan Reset Traffic Volumes**

**Table 9 – Cumulative 2045 Peak Hour Intersection Levels of Service**

Study Intersection	2045 Current General Plan				2045 General Plan Reset			
	AM Peak		PM Peak		AM Peak		PM Peak	
	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS	Avg Delay	LOS
1. El Camino Real/Holly St	33.2	C	51.8	D	32.7	C	<b>56.5</b>	<b>E</b>
2. Old County Rd/Holly St	<b>73.3</b>	<b>E</b>	<b>102.1</b>	<b>F</b>	<b>59.0</b>	<b>E</b>	<b>106.1</b>	<b>F</b>
Restrict EBL/WBL Movements	<b>70.5</b>	<b>E</b>	<b>74.5</b>	<b>E</b>	44.4	D	<b>77.3</b>	<b>E</b>
3. Industrial Rd/Holly St	<b>85.1</b>	<b>F</b>	<b>81.6</b>	<b>F</b>	<b>97.1</b>	<b>F</b>	<b>84.9</b>	<b>F</b>
Add NBT Lane	<b>60.1</b>	<b>E</b>	<b>76.6</b>	<b>E</b>	<b>61.7</b>	<b>E</b>	<b>77.6</b>	<b>E</b>
4. El Camino Real/San Carlos Ave*	39.1	D	19.1	B	35.3	D	28.1	C
5. El Camino Real/Brittan Ave	26.3	C	34.7	C	26.3	C	31.2	C
6. Old County Rd/Brittan Ave	47.3	D	37.9	D	43.8	D	38.6	D
7. Industrial Rd/Brittan Ave *	<b>69.4</b>	<b>E</b>	<b>62.4</b>	<b>E</b>	<b>119.8</b>	<b>F</b>	<b>67.1</b>	<b>E</b>
Add LT Lanes to Every Approach*	37.2	D	37.9	D	<b>59.7</b>	<b>E</b>	44.2	D
8. El Camino Real/Howard Ave	22.0	C	21.0	C	21.8	C	21.2	C
9. Old County Rd/Howard Ave	30.7	C	49.3	D	36.9	D	39.0	D
10. San Carlos Ave/Club Dr-Dartmouth Ave	<b>158.4</b>	<b>F</b>	32.1	C	<b>172.7</b>	<b>F</b>	42.8	D
Convert NBL/T to NBL and NBR to NBT/R	<b>156.4</b>	<b>F</b>	29.6	C	<b>171.1</b>	<b>F</b>	41.6	D
11. Alameda de las Pulgas/San Carlos Ave	17.3	B	19.2	B	19.8	B	25.0	C
12. Alameda de las Pulgas/Brittan Ave	52.1	D	<b>76.1</b>	<b>E</b>	<b>55.9</b>	<b>E</b>	<b>84.7</b>	<b>F</b>
Add NBR and SBR Lanes	44.6	D	<b>58.2</b>	<b>E</b>	49.7	D	<b>64.9</b>	<b>E</b>

Note: Delay is measured in average seconds per vehicle; LOS = Level of Service; \* = the study intersection was analyzed under HCM 2000 criteria due to exclusive phasing; **Bold** text = deficient operation; **Shaded cells** = conditions with indicated improvements per City's TIF

Among the twelve study intersections, five would experience deficient operation with Cumulative (2045) scenario traffic. Of these five intersections, each one has an identified improvement measure in the City of San Carlos Traffic Impact Fee (TIF) program. These improvements are noted in Table 9 along with their resulting delay and service level. Even with the recommended TIF improvements, however, the five deficient intersections would not be improved enough to reach an acceptable LOS. As right-of-way constraints exist at each intersection limiting physical improvements, Transportation Demand Management (TDM) measures to encourage more sustainable modes of transportation, decrease the number of commuting vehicle trips, or shift trips to occur outside of peak hours are recommended to further improve traffic operations at the study intersections.

The intersection of El Camino Real/Holly Street is expected to operate at an unacceptable LOS E during the p.m. peak hour under the Cumulative General Plan Reset Scenario. The City's TIF does not recommend physical improvements to the intersection due to right-of-way constraints. As this analysis already includes optimized signal timing and coordination settings (including cycle length, splits, and offsets), it was concluded that acceptable operation cannot be reasonably achieved without a reduction in traffic demand.

Old County Road/Holly Street would operate unacceptably at LOS E and F respectively during the a.m. and p.m. peak hours under both the Cumulative and Cumulative with General Plan Reset scenarios. It is expected that the delay during the a.m. peak hour would decrease under the General Plan Reset, which could be attributed to a



decrease in cumulative volumes along the Old County Road approaches, when compared to the Cumulative 2045 General Plan volumes. This would improve operations at these approaches and decrease the overall intersection delay. The City's 2020 TIF recommends the restriction of left-turn movements from Holly Street to Old County Road in the eastbound and westbound directions during peak hours, alongside modifications to existing hardware and signal timing. With these improvements, Old County Road/Holly Street would experience decreased delays during the a.m. and p.m. peak hours under both Cumulative scenarios. With the proposed improvements, however, the a.m. peak period under the General Plan Reset would reach an acceptable LOS D, but all other scenarios would remain deficient at LOS E.

The intersection of Industrial Road/Holly Street would operate unacceptably between LOS E and LOS F under both Cumulative scenarios during both peak periods. The addition of a second northbound through lane is recommended in both the 2015 and 2020 TIF's, which would require widening Holly Street north of Industrial Road and modifying the existing full cloverleaf interchange to a partial cloverleaf design at the US 101/Holly Street interchange. These recommended improvements would decrease delays, but the intersection would still experience a deficient LOS E during both peak periods and under both Cumulative scenarios.

Deficient operation is expected at Industrial Road/Brittan Avenue under both the Cumulative General Plan and Cumulative General Plan Reset scenarios. It is anticipated that under the General Plan Reset scenario, the p.m. peak hour delay would increase, as compared to the General Plan Scenario. The TIF-recommended addition of dedicated left-turn lanes at all approaches would improve delays during both peak hours under the Cumulative General Plan scenario, reaching an acceptable LOS D. Under the Cumulative General Plan Reset Scenario, delays would decrease, with the p.m. peak LOS reaching LOS D and the a.m. peak LOS remaining deficient at LOS E.

San Carlos Avenue/Club Drive-Dartmouth Avenue would operate at a deficient LOS F during the a.m. and p.m. peak hours under both Cumulative scenarios. It is recommended per the City's TIF that the existing northbound shared through/left-turn lane be converted to an exclusive left-turn lane and the existing northbound right-turn lane be converted to a shared through/right-turn lane. These improvements, alongside the prohibition of parking along the eastern side of Club Drive, would allow increased queuing space and nominal decrease to average delay, however, they would not change the intersection's overall LOS under either Cumulative scenario. Additional physical improvements are not feasible due to right-of-way constraints. As this analysis already includes optimized signal timing, it was concluded that acceptable operation cannot be reasonably achieved.

The intersection of Alameda de las Pulgas/Brittan Avenue is expected to operate deficiently at LOS E during the a.m. peak hour under the Cumulative General Plan scenario. This intersection would also operate between LOS E and LOS F under the Cumulative General Plan Reset scenario during both peak periods. The recommended additions of right-turn lanes on Alameda de las Pulgas, updated striping and signal timing would decrease delays for all Cumulative scenarios. The a.m. peak hour scenarios would reach LOS D, while both Cumulative p.m. scenarios would maintain a deficient LOS E.

It is also noted that both Old County Road/Brittan Avenue and Old County Road/Howard Avenue, which operate deficiently under Existing Conditions, would be expected to operate at acceptable levels of service under the Cumulative Scenarios. This could be attributed to improved trip routing and balancing of volumes along Old County Road and the adjacent El Camino Real.

**Finding** – Under the Cumulative with General Plan scenario, five study intersections would operate at a deficient LOS, while six study intersections would operate deficiently under the Cumulative with General Plan Reset scenario.

## Roadway Segment Levels of Service

Under Cumulative 2045 conditions, SR 82 is expected to operate acceptably in each direction during both peak hours evaluated. A summary of the roadway segment Level of Service calculations is shown in Table 10.

**Table 10 – Cumulative Peak Hour Roadway Segment Levels of Service**

Roadway Study Segment	2045 Current General Plan				2045 General Plan Reset					
	AM Peak		PM Peak		AM Peak			PM Peak		
	V/C	LOS	V/C	LOS	V/C	LOS	+/-	V/C	LOS	+/-
<b>SR 82 (El Camino Real)</b>										
San Carlos CL to San Carlos Ave	0.485	A	0.609	B	0.479	A	-0.01	0.660	B	0.05
San Carlos Ave to San Carlos CL	0.336	A	0.454	A	0.333	A	0.00	0.454	A	0.00
San Carlos Ave to Whipple Ave	0.296	A	0.434	A	0.294	A	0.00	0.451	A	0.02
Whipple Ave to San Carlos Ave	0.411	A	0.408	A	0.410	A	0.00	0.408	A	0.00

Note: V/C = Volume to Capacity; LOS = Level of Service; CL = City Limit

## Freeway Segment Levels of Service

Upon the addition of traffic associated with the General Plan Reset to cumulative condition volumes, the study segments along US 101 would remain at LOS F in the northbound direction in the a.m. peak period. During all other Cumulative scenario peak hours the freeway segment would remain within the threshold at LOS E. As previously discussed, the City's General Plan EIR identified that deficient Levels of Services along the freeway segments are considered significant and unavoidable as feasible mitigation improvements have not been identified. These results are summarized in Table 11.

**Table 11 – Cumulative Peak Hour Freeway Segment Levels of Service**

Freeway Study Segment	2045 Current General Plan					2045 General Plan Reset				
	AM Peak		PM Peak		V/C	AM Peak		PM Peak		
	V/C	LOS	V/C	LOS		LOS	+/-	V/C	LOS	+/-
<b>US 101</b>										
SR 92 to Whipple Ave	0.891	E	0.885	D	0.902	E	0.011	0.909	E	0.024
Whipple Ave to SR 92	1.031	F	0.946	E	1.055	F	0.025	0.950	E	0.005

Note: V/C = Volume to Capacity; LOS = Level of Service



# Conclusions and Recommendations

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## Conclusions

- As summarized in Table 9, under the Cumulative (2045) General Plan conditions, five of the twelve study intersections are expected to operate with deficient LOS. Under the Cumulative General Plan Reset scenario, six study intersections are expected to operate deficiently.
- The addition of recommended improvements per the City's TIF would decrease delays at five intersections. However, deficient operation is still expected at six intersections during one or both peak periods under the two Cumulative scenarios even upon the implementation of the TIF-recommended improvements. Identification of additional improvements are not feasible as right-of-way constraints exist at each intersection and signal timing is already optimized.
- Implementation of TDM measures could improve intersection operations by providing more access to alternative modes and sustainable transportation methods and thus reducing the total number of vehicle trips through study intersections.
- Under both the Cumulative General Plan and Cumulative General Plan Reset scenarios, the study roadway segments on SR 82 are expected to operate acceptably. All segments would maintain the same acceptable Levels of Service as existing, except for the segment from the San Carlos City Limit to San Carlos Avenue, which would experience decreased LOS from A to B during the p.m. peaks of each scenario. However, it is recognized that the LOS at intersections is evaluated separately from service levels along roadway segments, thereby making it possible for a particular roadway to experience simultaneously deficient service levels at an intersection and acceptable levels of service along roadway segments. As such, these segments continue to experience acceptable levels of service under all scenarios.
- Under the Cumulative General Plan and the Cumulative General Plan Reset scenarios, the study freeway segments of US 101 are expected to decrease from LOS C to LOS E and F. As achieving acceptable operation on US 101 has been deemed infeasible by the City, the project's effect on operation would be adverse but unavoidable.

# Study Participants and References

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## Study Participants

<b>Principal in Charge</b>	Mark E. Spencer, PE (Traffic)
<b>Senior Engineer</b>	Kenneth Jeong, PE (Traffic)
<b>Associate Engineer</b>	Joseph Faria-Poynter, EIT
<b>Graphics</b>	Jessica Bender
<b>Editing/Formatting</b>	Jessica Bender, Rebecca Mansour
<b>Quality Control</b>	Kevin Carstens, PE (Civil, Traffic)

## References

- City of San Carlos Traffic Impact Fee Nexus Study*, W-Trans, 2020
- City of San Carlos Traffic Impact Fee Plan*, Hexagon Transportation Consultants, 2015
- City of San Carlos Transportation Study Guidelines*, City of San Carlos, 2024
- City of San Carlos Transportation Study Guidelines*, City of San Carlos, 2024
- Final San Mateo County Congestion Management Program 2015*, City/County Association of Governments of San Mateo County, 2015
- Guide for the Preparation of Traffic Impact Studies*, California Department of Transportation, 2002
- Highway Capacity Manual*, 6<sup>th</sup> Edition, Transportation Research Board, 2018
- Highway Capacity Manual*, Transportation Research Board, 2000
- Highway Capacity Manual: Special Report 2009*, Transportation Research Board, 2009
- San Carlos 2030 General Plan*, City of San Carlos, 2009
- Vehicle Miles Traveled-Focused Transportation Impact Study Guide*, California Department of Transportation, 2020

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# Appendix A

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## Traffic Counts



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# El Camino Real Holly St

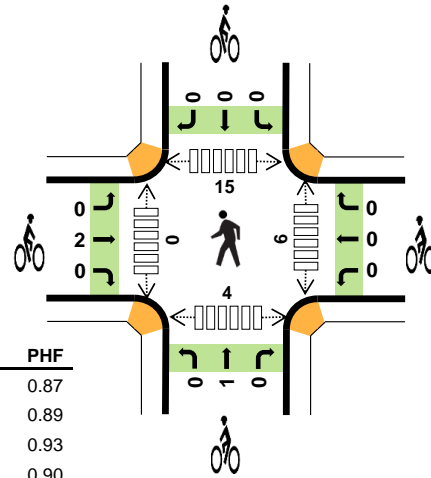
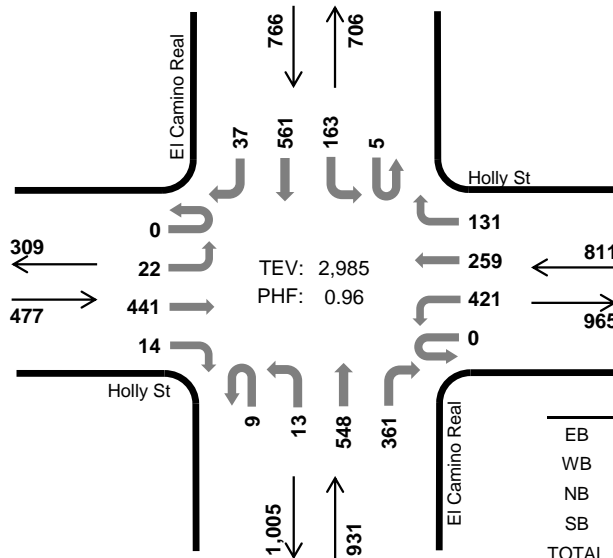


Peak Hour

Date: 04/25/2023

Count Period: 7:00 AM to 9:00 AM

Peak Hour: 8:00 AM to 9:00 AM



	HV %:	PHF
EB	0.8%	0.87
WB	3.7%	0.89
NB	2.0%	0.93
SB	3.1%	0.90
TOTAL	2.6%	0.96

## Two-Hour Count Summaries

Interval Start		Holly St				Holly St				El Camino Real				El Camino Real				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	5	39	2	0	49	27	26	0	2	48	66	0	19	65	2	350	0
7:15 AM		0	4	51	1	0	62	28	13	0	3	73	78	1	27	95	3	439	0
7:30 AM		0	7	69	8	0	83	61	24	0	2	100	91	0	28	105	5	583	0
7:45 AM		0	13	78	6	0	110	70	21	1	3	119	80	2	32	131	5	671	2,043
8:00 AM		0	3	103	4	0	116	81	28	0	3	133	89	3	41	141	6	751	2,444
8:15 AM		0	7	105	5	0	115	72	40	2	2	153	92	0	34	141	8	776	2,781
8:30 AM		0	7	129	1	0	107	53	33	4	5	120	91	2	49	146	15	762	2,960
8:45 AM		0	5	104	4	0	83	53	30	3	3	142	89	0	39	133	8	696	2,985
Count Total		0	51	678	31	0	725	445	215	10	23	888	676	8	269	957	52	5,028	0
Peak Hour	All	0	22	441	14	0	421	259	131	9	13	548	361	5	163	561	37	2,985	0
	HV	0	0	4	0	0	18	6	6	0	0	10	9	0	2	22	0	77	0
	HV%	-	0%	1%	0%	-	4%	2%	5%	0%	0%	2%	2%	0%	1%	4%	0%	3%	0

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	6	5	3	14	0	0	0	0	0	0	1	0	1	2
7:15 AM	2	4	5	7	18	0	1	0	0	1	1	0	1	1	3
7:30 AM	1	11	4	6	22	0	0	0	0	0	2	1	0	2	5
7:45 AM	2	10	4	6	22	0	0	0	0	0	0	2	0	4	6
8:00 AM	3	6	9	6	24	1	0	0	0	1	3	0	8	0	11
8:15 AM	0	9	3	6	18	1	0	0	0	1	0	0	2	0	2
8:30 AM	1	8	3	4	16	0	0	0	0	0	2	0	2	0	4
8:45 AM	0	7	4	8	19	0	0	1	0	1	1	0	3	4	8
Count Total	9	61	37	46	153	2	1	1	0	4	9	4	16	12	41
Peak Hour	4	30	19	24	77	2	0	1	0	3	6	0	15	4	25

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	Holly St				Holly St				El Camino Real				El Camino Real				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	0	0	0	0	4	0	2	0	0	0	2	3	0	1	2	0	14	0
7:15 AM	0	0	2	0	0	4	0	0	0	0	0	2	3	0	0	7	0	18	0
7:30 AM	0	0	1	0	0	9	2	0	0	0	0	4	0	0	0	6	0	22	0
7:45 AM	0	1	1	0	0	6	4	0	0	0	0	2	2	0	1	5	0	22	76
8:00 AM	0	0	3	0	0	3	2	1	0	0	0	3	6	0	0	6	0	24	86
8:15 AM	0	0	0	0	0	6	2	1	0	0	0	1	2	0	1	5	0	18	86
8:30 AM	0	0	1	0	0	3	2	3	0	0	0	2	1	0	0	4	0	16	80
8:45 AM	0	0	0	0	0	6	0	1	0	0	0	4	0	0	1	7	0	19	77
Count Total	0	1	8	0	0	41	12	8	0	0	0	20	17	0	4	42	0	153	0
Peak Hour	0	0	4	0	0	18	6	6	0	0	0	10	9	0	2	22	0	77	0

Two-Hour Count Summaries - Bikes																			
Interval Start	Holly St			Holly St			El Camino Real			El Camino Real			15-min Total	Rolling One Hour					
	Eastbound			Westbound			Northbound			Southbound									
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT							
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
7:30 AM	0	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	0	0	0	0	0	0	0	0	0	0	1	0
8:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0
8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	3	0
Count Total	0	2	0	0	0	1	0	0	0	1	0	0	0	0	0	0	4	0	0
Peak Hour	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0

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

# El Camino Real Holly St

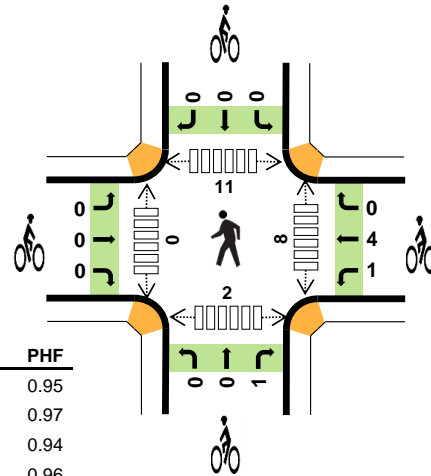
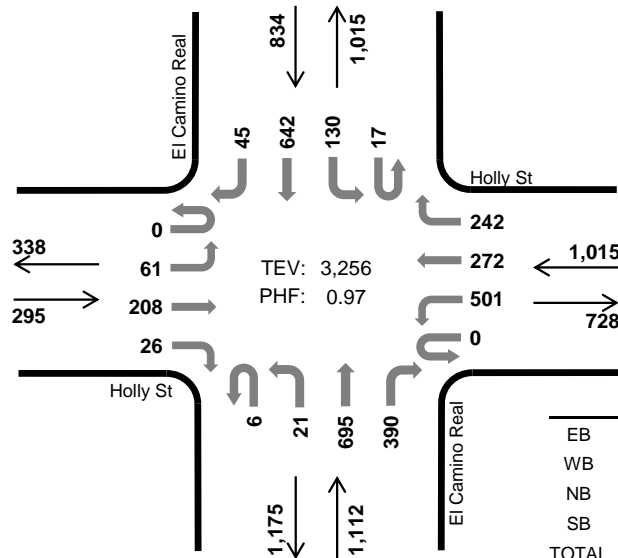


Peak Hour

Date: 04/25/2023

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	0.0%	0.95
WB	0.5%	0.97
NB	1.0%	0.94
SB	1.6%	0.96
TOTAL	0.9%	0.97

## Two-Hour Count Summaries

Interval Start		Holly St				Holly St				El Camino Real				El Camino Real				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	12	56	12	0	120	66	52	3	3	168	80	6	33	146	10	767	0
4:15 PM		0	23	51	9	0	123	52	55	1	1	169	97	3	35	152	17	788	0
4:30 PM		0	16	38	7	0	110	67	44	3	8	175	75	0	33	170	11	757	0
4:45 PM		0	14	63	6	0	115	69	49	0	3	151	85	4	26	155	11	751	3,063
5:00 PM		0	15	54	6	0	130	71	60	1	2	176	104	4	39	163	11	836	3,132
5:15 PM		0	20	52	6	0	114	79	54	0	4	188	103	6	41	155	8	830	3,174
5:30 PM		0	14	56	5	0	136	51	71	4	9	167	106	1	33	166	7	826	3,243
5:45 PM		0	12	46	9	0	121	71	57	1	6	164	77	6	17	158	19	764	3,256
Count Total		0	126	416	60	0	969	526	442	13	36	1,358	727	30	257	1,265	94	6,319	0
Peak Hour	All	0	61	208	26	0	501	272	242	6	21	695	390	17	130	642	45	3,256	0
	HV	0	0	0	0	0	2	1	2	0	0	6	5	0	4	9	0	29	0
	HV%	-	0%	0%	0%	-	0%	0%	1%	0%	0%	1%	1%	0%	3%	1%	0%	1%	0

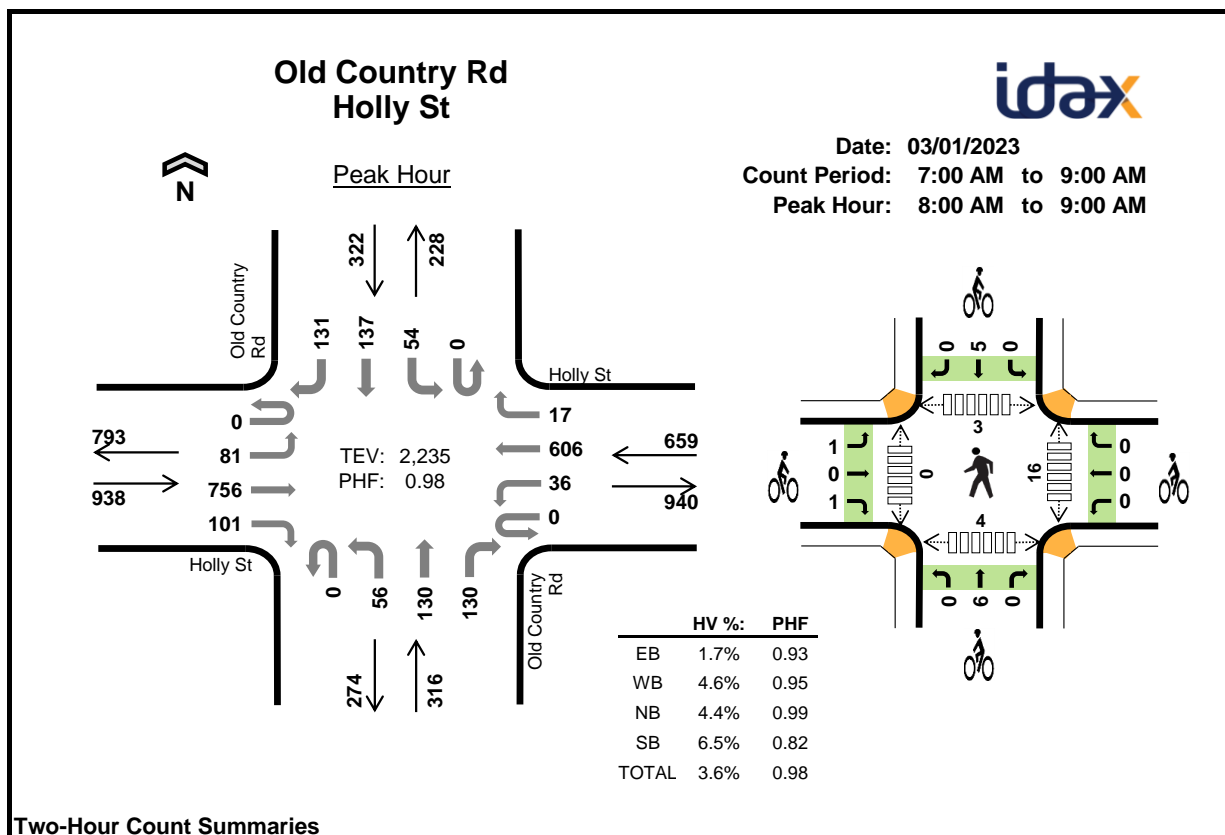
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	6	7	1	14	1	0	0	0	1	0	1	4	1	6
4:15 PM	5	0	4	2	11	0	0	1	0	1	1	0	1	0	2
4:30 PM	1	3	9	3	16	0	1	0	0	1	1	0	2	0	3
4:45 PM	0	1	7	1	9	0	1	0	0	1	2	0	2	0	4
5:00 PM	0	2	5	5	12	0	2	0	0	2	4	0	5	1	10
5:15 PM	0	0	2	2	4	0	0	0	0	0	3	0	6	0	9
5:30 PM	0	1	2	3	6	0	3	0	0	3	0	0	0	1	1
5:45 PM	0	2	2	3	7	0	0	1	0	1	1	0	0	0	1
Count Total	6	15	38	20	79	1	7	2	0	10	12	1	20	3	36
Peak Hour	0	5	11	13	29	0	5	1	0	6	8	0	11	2	21

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Holly St				Holly St				El Camino Real				El Camino Real				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	4	2	0	0	0	3	4	0	0	1	0	14	0
4:15 PM	0	0	4	1	0	0	0	0	0	0	2	2	0	0	2	0	11	0
4:30 PM	0	0	1	0	0	1	1	1	0	0	5	4	0	0	3	0	16	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	6	1	0	0	0	1	9	50
5:00 PM	0	0	0	0	0	1	0	1	0	0	3	2	0	2	3	0	12	48
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	4	41
5:30 PM	0	0	0	0	0	0	1	0	0	0	1	1	0	0	3	0	6	31
5:45 PM	0	0	0	0	0	1	0	1	0	0	1	1	0	1	2	0	7	29
Count Total	0	0	5	1	0	7	4	4	0	0	22	16	0	4	15	1	79	0
Peak Hour	0	0	0	0	0	2	1	2	0	0	6	5	0	4	9	0	29	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Holly St			Holly St			El Camino Real			El Camino Real			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0				
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0				
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0				
4:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	4				
5:00 PM	0	0	0	0	2	0	0	0	0	0	0	0	2	5				
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4				
5:30 PM	0	0	0	1	2	0	0	0	0	0	0	0	3	6				
5:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	6				
Count Total	0	1	0	2	5	0	0	1	1	0	0	0	10	0				
Peak Hour	0	0	0	1	4	0	0	0	1	0	0	0	6	0				

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

**Two-Hour Count Summaries**

Interval Start		Holly St				Holly St				Old Country Rd				Old Country Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	11	97	9	0	6	63	0	0	10	19	12	0	6	9	19	261	0
7:15 AM		0	15	106	10	0	10	115	3	0	12	26	20	0	13	18	11	359	0
7:30 AM		0	16	141	11	0	6	124	5	0	13	36	24	0	18	23	34	451	0
7:45 AM		0	29	167	16	0	7	153	8	0	23	38	36	0	15	29	33	554	1,625
8:00 AM		0	13	189	21	0	5	156	3	0	21	30	29	0	9	33	44	553	1,917
8:15 AM		0	21	185	19	0	7	139	9	0	15	32	33	0	19	43	36	558	2,116
8:30 AM		0	26	202	24	0	13	151	2	0	9	31	38	0	12	31	30	569	2,234
8:45 AM		0	21	180	37	0	11	160	3	0	11	37	30	0	14	30	21	555	2,235
Count Total		0	152	1,267	147	0	65	1,061	33	0	114	249	222	0	106	216	228	3,860	0
Peak Hour	All	0	81	756	101	0	36	606	17	0	56	130	130	0	54	137	131	2,235	0
	HV	0	2	11	3	0	4	22	4	0	2	7	5	0	2	13	6	81	0
	HV%	-	2%	1%	3%	-	11%	4%	24%	-	4%	5%	4%	-	4%	9%	5%	4%	0

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	5	1	2	2	10	0	0	2	0	2	6	0	3	0	9
7:15 AM	3	3	2	1	9	0	0	0	0	0	4	0	1	2	7
7:30 AM	3	3	3	4	13	0	0	1	1	2	4	0	0	1	5
7:45 AM	3	9	2	2	16	0	0	1	1	2	5	0	0	1	6
8:00 AM	4	8	1	3	16	1	0	2	2	5	4	0	1	1	6
8:15 AM	4	6	3	6	19	0	0	2	2	4	5	0	0	1	6
8:30 AM	2	6	4	5	17	0	0	2	1	3	3	0	0	1	4
8:45 AM	6	10	6	7	29	1	0	0	0	1	4	0	2	1	7
Count Total	30	46	23	30	129	2	0	10	7	19	35	0	7	8	50
Peak Hour	16	30	14	21	81	2	0	6	5	13	16	0	3	4	23

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Holly St				Holly St				Old Country Rd				Old Country Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	5	0	0	0	1	0	0	0	2	0	0	0	1	1	10	0
7:15 AM	0	0	3	0	0	1	2	0	0	0	1	1	0	0	1	0	9	0
7:30 AM	0	0	3	0	0	0	3	0	0	0	3	0	0	0	2	2	13	0
7:45 AM	0	0	3	0	0	2	6	1	0	0	1	1	0	1	1	0	16	48
8:00 AM	0	0	4	0	0	0	8	0	0	0	0	1	0	0	2	1	16	54
8:15 AM	0	1	2	1	0	0	5	1	0	1	1	1	0	0	3	3	19	64
8:30 AM	0	1	1	0	0	1	4	1	0	1	2	1	0	2	2	1	17	68
8:45 AM	0	0	4	2	0	3	5	2	0	0	4	2	0	0	6	1	29	81
Count Total	0	2	25	3	0	7	34	5	0	2	14	7	0	3	18	9	129	0
Peak Hour	0	2	11	3	0	4	22	4	0	2	7	5	0	2	13	6	81	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Holly St			Holly St			Old Country Rd			Old Country Rd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	2	0	0	0	0	2	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	1	0	0	1	0	2	0				
7:45 AM	0	0	0	0	0	0	0	1	0	0	1	0	2	6				
8:00 AM	1	0	0	0	0	0	0	2	0	0	2	0	5	9				
8:15 AM	0	0	0	0	0	0	0	2	0	0	2	0	4	13				
8:30 AM	0	0	0	0	0	0	0	2	0	0	1	0	3	14				
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	13				
Count Total	1	0	1	0	0	0	0	10	0	0	7	0	19	0				
Peak Hour	1	0	1	0	0	0	0	6	0	0	5	0	13	0				

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



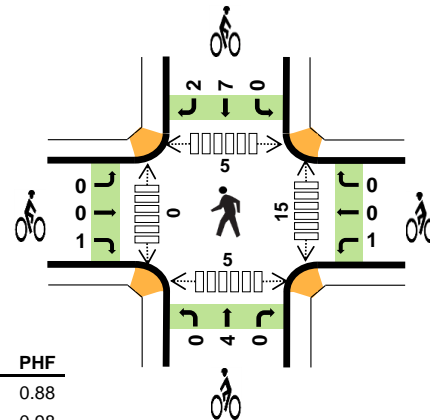
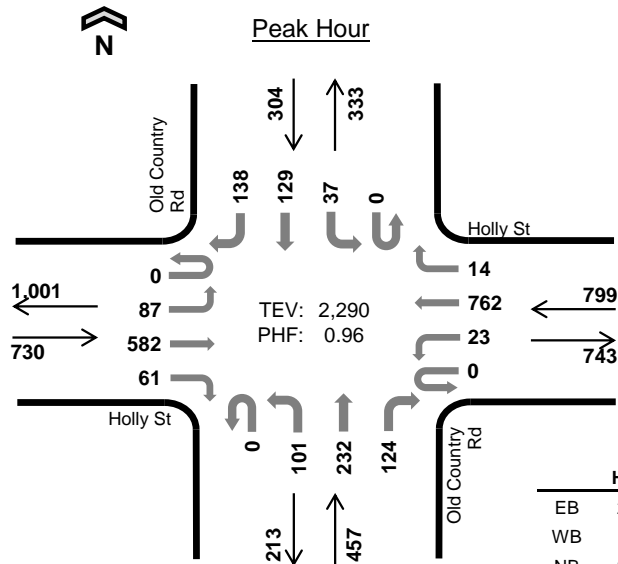
## Old Country Rd Holly St



Date: 03/01/2023

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 4:00 PM to 5:00 PM



	HV %:	PHF
EB	2.1%	0.88
WB	1.0%	0.98
NB	2.0%	0.94
SB	1.0%	0.84
TOTAL	1.5%	0.96

### Two-Hour Count Summaries

Interval Start		Holly St				Holly St				Old Country Rd				Old Country Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	22	172	14	0	10	193	1	0	26	58	25	0	9	31	36	597	0
4:15 PM		0	34	145	23	0	8	189	6	0	21	63	33	0	11	32	33	598	0
4:30 PM		0	21	131	13	0	1	195	4	0	23	50	36	0	8	37	46	565	0
4:45 PM		0	10	134	11	0	4	185	3	0	31	61	30	0	9	29	23	530	2,290
5:00 PM		0	15	134	14	0	5	191	5	0	21	44	31	0	9	33	30	532	2,225
5:15 PM		0	19	166	22	0	7	189	8	0	24	51	21	0	10	29	33	579	2,206
5:30 PM		0	22	123	17	0	8	189	5	0	28	49	22	0	3	34	41	541	2,182
5:45 PM		0	28	125	11	0	6	184	4	0	19	53	25	0	5	27	29	516	2,168
Count Total		0	171	1,130	125	0	49	1,515	36	0	193	429	223	0	64	252	271	4,458	0
Peak Hour	All	0	87	582	61	0	23	762	14	0	101	232	124	0	37	129	138	2,290	0
	HV	0	3	11	1	0	2	5	1	0	2	5	2	0	1	0	2	35	0
	HV%	-	3%	2%	2%	-	9%	1%	7%	-	2%	2%	2%	-	3%	0%	1%	2%	0

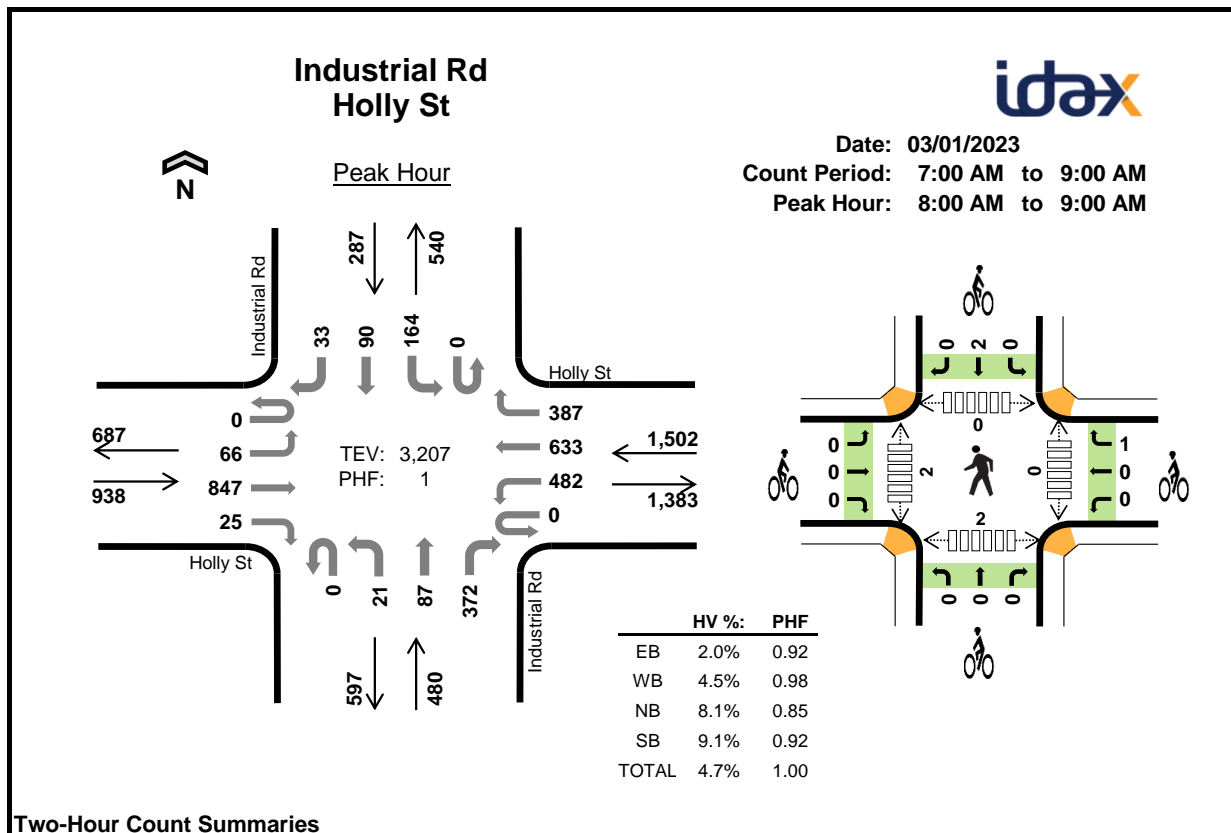
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	5	2	1	0	8	0	0	3	3	6	6	0	3	0	9
4:15 PM	5	3	5	1	14	1	1	0	3	5	4	0	1	1	6
4:30 PM	4	2	3	2	11	0	0	1	1	2	3	0	0	2	5
4:45 PM	1	1	0	0	2	0	0	0	2	2	2	0	1	2	5
5:00 PM	3	1	2	1	7	0	1	2	0	3	5	0	1	3	9
5:15 PM	1	2	0	0	3	0	1	2	0	3	7	0	5	1	13
5:30 PM	2	1	1	1	5	0	0	2	1	3	1	0	0	3	4
5:45 PM	0	2	0	0	2	0	1	2	1	4	3	0	1	2	6
Count Total	21	14	12	5	52	1	4	12	11	28	31	0	12	14	57
Peak Hour	15	8	9	3	35	1	1	4	9	15	15	0	5	5	25

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Holly St				Holly St				Old Country Rd				Old Country Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	5	0	0	0	2	0	0	1	0	0	0	0	0	0	8	0
4:15 PM	0	2	2	1	0	1	1	1	0	1	2	2	0	0	0	1	14	0
4:30 PM	0	1	3	0	0	1	1	0	0	0	3	0	0	1	0	1	11	0
4:45 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	35
5:00 PM	0	0	3	0	0	0	1	0	0	1	1	0	0	0	1	0	7	34
5:15 PM	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	3	23
5:30 PM	0	0	2	0	0	1	0	0	0	0	1	0	0	0	1	0	5	17
5:45 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	17
Count Total	0	3	17	1	0	5	8	1	0	3	7	2	0	1	2	2	52	0
Peak Hour	0	3	11	1	0	2	5	1	0	2	5	2	0	1	0	2	35	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Holly St			Holly St			Old Country Rd			Old Country Rd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	3	0	0	2	1	6	0				
4:15 PM	0	0	1	1	0	0	0	0	0	0	2	1	5	0				
4:30 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	0				
4:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	2	15				
5:00 PM	0	0	0	1	0	0	0	2	0	0	0	0	3	12				
5:15 PM	0	0	0	1	0	0	0	2	0	0	0	0	3	10				
5:30 PM	0	0	0	0	0	0	0	2	0	0	1	0	3	11				
5:45 PM	0	0	0	0	0	1	0	2	0	0	1	0	4	13				
Count Total	0	0	1	3	0	1	0	12	0	0	9	2	28	0				
Peak Hour	0	0	1	1	0	0	0	4	0	0	7	2	15	0				

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



## Two-Hour Count Summaries

Interval Start		Holly St				Holly St				Industrial Rd				Industrial Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	8	112	3	1	81	65	100	0	4	11	70	0	27	8	2	492	0
7:15 AM		0	17	133	6	0	113	124	102	0	6	13	64	0	29	12	6	625	0
7:30 AM		0	9	174	1	0	95	146	116	0	3	22	93	0	39	17	2	717	0
7:45 AM		0	11	196	11	0	107	161	119	0	4	27	78	0	46	25	3	788	2,622
8:00 AM		0	17	214	3	0	115	149	117	0	6	19	90	0	46	16	11	803	2,933
8:15 AM		0	19	205	3	0	118	154	103	0	6	16	97	0	39	32	7	799	3,107
8:30 AM		0	15	235	6	0	129	167	86	0	2	23	80	0	29	24	6	802	3,192
8:45 AM		0	15	193	13	0	120	163	81	0	7	29	105	0	50	18	9	803	3,207
Count Total		0	111	1,462	46	1	878	1,129	824	0	38	160	677	0	305	152	46	5,829	0
Peak Hour	All	0	66	847	25	0	482	633	387	0	21	87	372	0	164	90	33	3,207	0
	HV	0	3	15	1	0	14	27	26	0	2	8	29	0	21	4	1	151	0
	HV%	-	5%	2%	4%	-	3%	4%	7%	-	10%	9%	8%	-	13%	4%	3%	5%	0

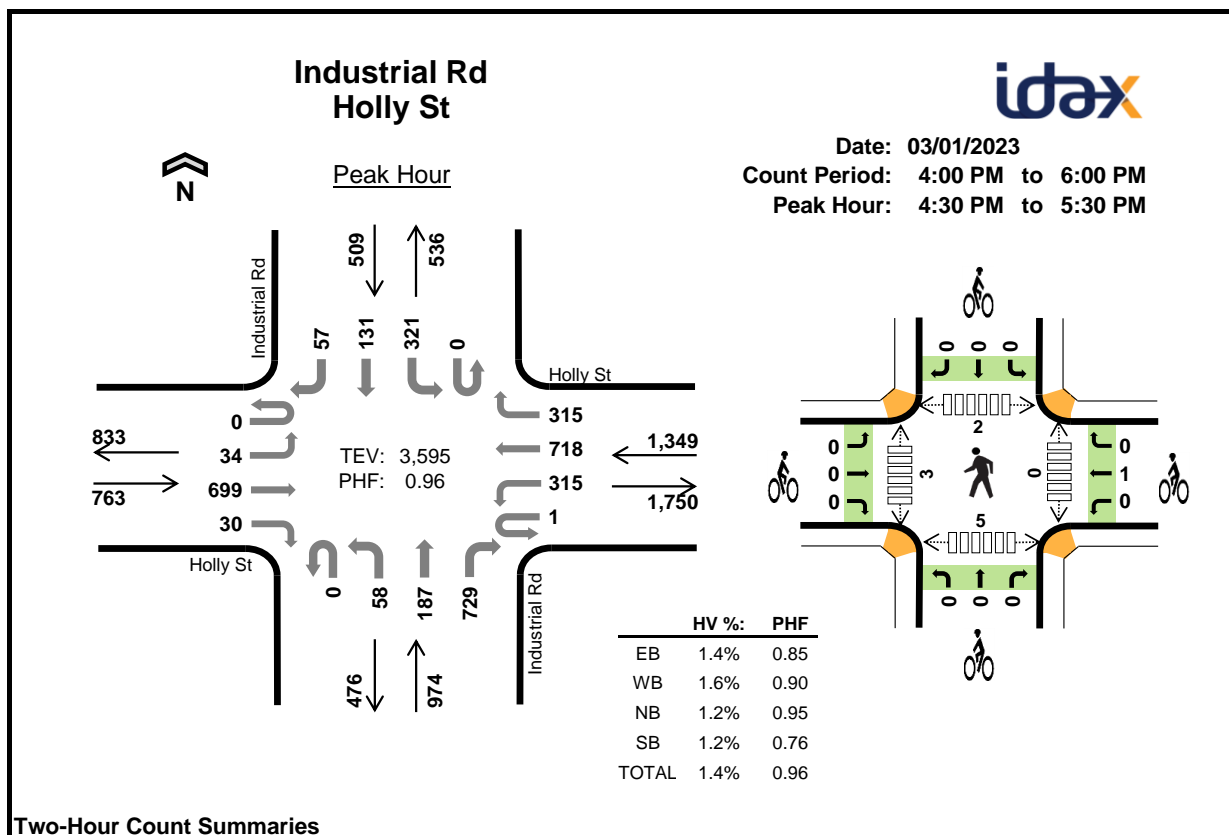
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	5	5	4	3	17	0	0	1	0	1	0	1	0	2	3
7:15 AM	4	21	11	7	43	0	1	0	0	1	0	1	1	1	3
7:30 AM	4	13	9	5	31	0	0	0	0	0	0	0	0	0	0
7:45 AM	6	23	9	9	47	0	0	1	1	2	0	0	0	0	0
8:00 AM	5	22	15	11	53	0	1	0	1	2	0	1	0	0	1
8:15 AM	3	15	7	7	32	0	0	0	0	0	0	0	0	1	1
8:30 AM	5	16	11	1	33	0	0	0	0	0	0	1	0	0	1
8:45 AM	6	14	6	7	33	0	0	0	1	1	0	0	0	1	1
Count Total	38	129	72	50	289	0	2	2	3	7	0	4	1	5	10
Peak Hour	19	67	39	26	151	0	1	0	2	3	0	2	0	2	4

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Holly St				Holly St				Industrial Rd				Industrial Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	4	1	0	0	1	4	0	1	1	2	0	3	0	0	17	0
7:15 AM	0	2	2	0	0	10	3	8	0	0	1	10	0	4	3	0	43	0
7:30 AM	0	0	4	0	0	5	4	4	0	0	1	8	0	5	0	0	31	0
7:45 AM	0	0	4	2	0	6	10	7	0	0	2	7	0	6	3	0	47	138
8:00 AM	0	0	5	0	0	5	6	11	0	1	4	10	0	9	1	1	53	174
8:15 AM	0	1	2	0	0	1	7	7	0	0	1	6	0	5	2	0	32	163
8:30 AM	0	2	2	1	0	6	6	4	0	0	3	8	0	1	0	0	33	165
8:45 AM	0	0	6	0	0	2	8	4	0	1	0	5	0	6	1	0	33	151
Count Total	0	5	29	4	0	35	45	49	0	3	13	56	0	39	10	1	289	0
Peak Hour	0	3	15	1	0	14	27	26	0	2	8	29	0	21	4	1	151	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Holly St			Holly St			Industrial Rd			Industrial Rd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	1	0				
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	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	1	0	0	1	0	2	4				
8:00 AM	0	0	0	0	0	1	0	0	0	0	1	0	2	5				
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4				
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4				
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	3				
Count Total	0	0	0	0	1	1	0	1	1	0	3	0	7	0				
Peak Hour	0	0	0	0	0	1	0	0	0	0	2	0	3	0				

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



## Two-Hour Count Summaries

Interval Start		Holly St				Holly St				Industrial Rd				Industrial Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	9	174	10	1	74	178	57	0	7	36	163	0	115	41	12	877	0
4:15 PM		0	10	173	11	0	73	186	71	0	8	42	144	0	96	52	12	878	0
4:30 PM		0	11	163	11	0	71	191	59	0	9	46	202	0	97	34	14	908	0
4:45 PM		0	6	159	8	0	81	144	72	0	18	47	181	0	63	33	14	826	3,489
5:00 PM		0	8	166	6	0	78	184	94	0	16	47	172	0	101	44	22	938	3,550
5:15 PM		0	9	211	5	1	85	199	90	0	15	47	174	0	60	20	7	923	3,595
5:30 PM		0	15	142	8	1	70	175	83	0	11	33	136	0	58	22	17	771	3,458
5:45 PM		0	9	152	8	0	53	200	89	0	13	41	142	0	47	22	6	782	3,414
Count Total		0	77	1,340	67	3	585	1,457	615	0	97	339	1,314	0	637	268	104	6,903	0
Peak Hour	All	0	34	699	30	1	315	718	315	0	58	187	729	0	321	131	57	3,595	0
	HV	0	1	10	0	0	3	6	13	0	0	4	8	0	5	1	0	51	0
	HV%	-	3%	1%	0%	0%	1%	1%	4%	-	0%	2%	1%	-	2%	1%	0%	1%	0

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	4	6	2	3	15	0	0	0	0	0	0	1	0	1	2
4:15 PM	4	4	8	2	18	0	0	0	0	0	0	1	0	2	3
4:30 PM	6	4	3	2	15	0	0	0	0	0	0	2	1	1	4
4:45 PM	1	9	4	2	16	0	1	0	0	1	0	1	0	0	1
5:00 PM	3	7	1	1	12	0	0	0	0	0	0	0	0	2	2
5:15 PM	1	2	4	1	8	0	0	0	0	0	0	0	1	2	3
5:30 PM	3	5	2	2	12	0	0	0	0	0	0	3	0	2	5
5:45 PM	1	7	4	0	12	0	0	0	0	0	0	1	0	3	4
Count Total	23	44	28	13	108	0	1	0	0	1	0	9	2	13	24
Peak Hour	11	22	12	6	51	0	1	0	0	1	0	3	2	5	10

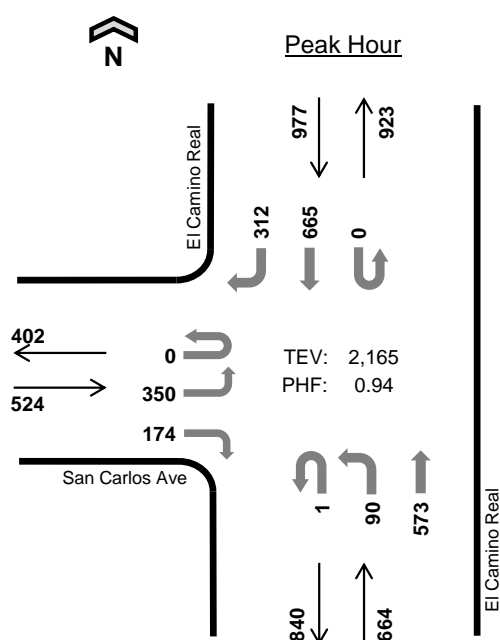
Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Holly St				Holly St				Industrial Rd				Industrial Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	4	0	0	2	3	1	0	0	2	0	0	2	1	0	15	0
4:15 PM	0	1	3	0	0	2	0	2	0	0	5	3	0	1	0	1	18	0
4:30 PM	0	1	5	0	0	0	2	2	0	0	1	2	0	2	0	0	15	0
4:45 PM	0	0	1	0	0	2	2	5	0	0	2	2	0	1	1	0	16	64
5:00 PM	0	0	3	0	0	1	0	6	0	0	0	1	0	1	0	0	12	61
5:15 PM	0	0	1	0	0	0	2	0	0	0	1	3	0	1	0	0	8	51
5:30 PM	0	1	2	0	0	0	3	2	0	0	0	2	0	2	0	0	12	48
5:45 PM	0	1	0	0	0	1	2	4	0	0	3	1	0	0	0	0	12	44
Count Total	0	4	19	0	0	8	14	22	0	0	14	14	0	10	2	1	108	0
Peak Hour	0	1	10	0	0	3	6	13	0	0	4	8	0	5	1	0	51	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Holly St			Holly St			Industrial Rd			Industrial Rd			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
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	1	0	0	0	0	0	0	0	0	0	1	1	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Count Total	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	
Peak Hour	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	

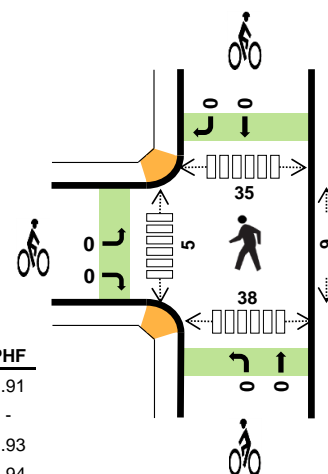
Note: U-Turn volumes for bikes are included in Left-Turn, if any.



## El Camino Real San Carlos Ave



Date: 05/03/2023  
Count Period: 7:00 AM to 9:00 AM  
Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	0.8%	0.91
WB	-	-
NB	3.9%	0.93
SB	4.0%	0.94
TOTAL	3.2%	0.94

### Two-Hour Count Summaries

Interval Start		San Carlos Ave				N/A				El Camino Real				El Camino Real				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	41	0	21	0	0	0	0	0	6	83	0	0	0	65	32	248	0
7:15 AM		0	58	0	16	0	0	0	0	0	17	91	0	0	0	105	44	331	0
7:30 AM		0	48	0	31	0	0	0	0	0	19	115	0	0	0	155	52	420	0
7:45 AM		0	78	0	29	0	0	0	0	1	22	153	0	0	0	153	76	512	1,511
8:00 AM		0	90	0	47	0	0	0	0	0	23	155	0	0	0	169	92	576	1,839
8:15 AM		0	82	0	54	0	0	0	0	0	25	128	0	0	0	159	77	525	2,033
8:30 AM		0	100	0	44	0	0	0	0	0	20	137	0	0	0	184	67	552	2,165
8:45 AM		0	73	0	31	0	0	0	0	0	16	130	0	0	0	177	64	491	2,144
Count Total		0	570	0	273	0	0	0	0	1	148	992	0	0	0	1,167	504	3,655	0
Peak Hour	All	0	350	0	174	0	0	0	0	1	90	573	0	0	0	665	312	2,165	0
	HV	0	1	0	3	0	0	0	0	0	5	21	0	0	0	29	10	69	0
	HV%	-	0%	-	2%	-	-	-	-	0%	6%	4%	-	-	-	4%	3%	3%	0

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

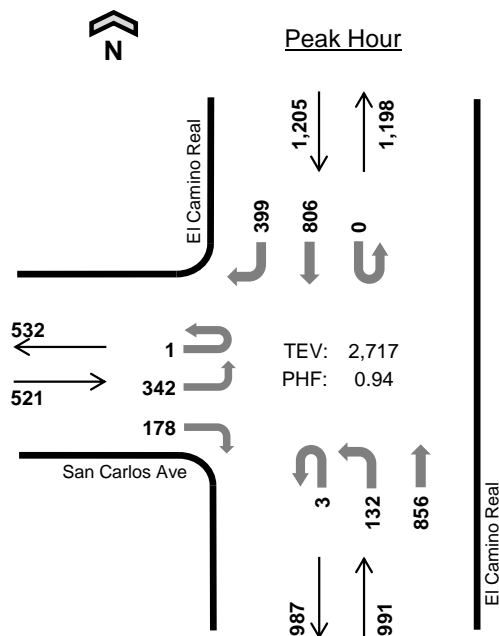
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	5	2	7	0	0	0	0	0	0	1	3	4	8
7:15 AM	2	0	4	7	13	0	0	0	0	0	2	0	8	10	20
7:30 AM	1	0	5	12	18	0	0	0	0	0	0	3	2	8	13
7:45 AM	1	0	11	13	25	0	0	0	0	0	1	0	8	1	10
8:00 AM	2	0	7	11	20	0	0	0	0	0	0	1	4	10	15
8:15 AM	0	0	4	8	12	0	0	0	0	0	4	3	19	16	42
8:30 AM	1	0	4	7	12	0	0	0	0	0	4	1	4	11	20
8:45 AM	0	0	6	14	20	0	0	0	0	0	0	1	8	14	23
Count Total	7	0	46	74	127	0	0	0	0	0	11	10	56	74	151
Peak Hr	4	0	26	39	69	0	0	0	0	0	9	5	35	38	87

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	San Carlos Ave				N/A				El Camino Real				El Camino Real				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	1	4	0	0	0	2	0	7	0
7:15 AM	0	0	0	2	0	0	0	0	0	1	3	0	0	0	6	1	13	0
7:30 AM	0	0	0	1	0	0	0	0	0	1	4	0	0	0	9	3	18	0
7:45 AM	0	1	0	0	0	0	0	0	0	3	8	0	0	0	11	2	25	63
8:00 AM	0	0	0	2	0	0	0	0	0	1	6	0	0	0	7	4	20	76
8:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	6	2	12	75
8:30 AM	0	0	0	1	0	0	0	0	0	1	3	0	0	0	5	2	12	69
8:45 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	9	5	20	64
Count Total	0	1	0	6	0	0	0	0	0	8	38	0	0	0	55	19	127	0
Peak Hour	0	1	0	3	0	0	0	0	0	5	21	0	0	0	29	10	69	0

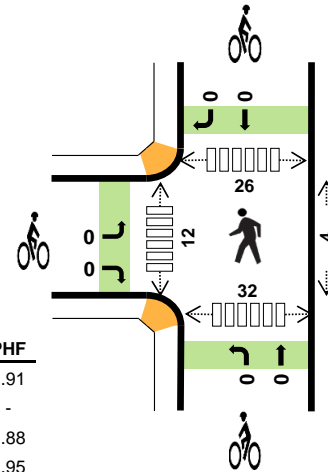
Two-Hour Count Summaries - Bikes																	
Interval Start	San Carlos Ave			N/A			El Camino Real			El Camino Real			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	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
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

## El Camino Real San Carlos Ave



Date: 05/03/2023  
Count Period: 4:00 PM to 6:00 PM  
Peak Hour: 4:15 PM to 5:15 PM



	HV %:	PHF
EB	1.7%	0.91
WB	-	-
NB	2.5%	0.88
SB	1.2%	0.95
TOTAL	1.8%	0.94

### Two-Hour Count Summaries

Interval Start		San Carlos Ave				N/A				El Camino Real				El Camino Real				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	90	0	42	0	0	0	0	3	20	203	0	0	0	218	81	657	0
4:15 PM		0	94	0	49	0	0	0	0	0	33	219	0	0	0	188	97	680	0
4:30 PM		1	90	0	42	0	0	0	0	0	32	209	0	0	0	198	95	667	0
4:45 PM		0	78	0	36	0	0	0	0	2	24	191	0	0	0	216	100	647	2,651
5:00 PM		0	80	0	51	0	0	0	0	1	43	237	0	0	0	204	107	723	2,717
5:15 PM		0	60	0	41	0	0	0	0	3	36	211	0	0	0	191	101	643	2,680
5:30 PM		1	68	0	41	0	0	0	0	0	32	186	0	0	0	213	105	646	2,659
5:45 PM		0	80	0	50	0	0	0	0	2	44	166	0	0	0	168	100	610	2,622
Count Total		2	640	0	352	0	0	0	0	11	264	1,622	0	0	0	1,596	786	5,273	0
Peak Hour	All	1	342	0	178	0	0	0	0	3	132	856	0	0	0	806	399	2,717	0
	HV	0	5	0	4	0	0	0	0	0	4	21	0	0	0	9	5	48	0
	HV%	0%	1%	-	2%	-	-	-	-	0%	3%	2%	-	-	-	1%	1%	2%	0

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	0	5	3	9	0	0	0	1	1	1	3	5	7	16
4:15 PM	1	0	5	3	9	0	0	0	0	0	0	1	10	6	17
4:30 PM	3	0	6	3	12	0	0	0	0	0	0	6	4	10	20
4:45 PM	3	0	4	3	10	0	0	0	0	0	3	3	7	11	24
5:00 PM	2	0	10	5	17	0	0	0	0	0	1	2	5	5	13
5:15 PM	1	0	4	1	6	0	0	0	0	0	2	6	10	10	28
5:30 PM	1	0	4	2	7	0	0	0	0	0	0	3	3	3	9
5:45 PM	2	0	2	3	7	0	0	0	0	0	1	11	7	12	31
Count Total	14	0	40	23	77	0	0	0	1	1	8	35	51	64	158
Peak Hr	9	0	25	14	48	0	0	0	0	0	4	12	26	32	74

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	San Carlos Ave				N/A				El Camino Real				El Camino Real				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	1	0	0	0	0	0	0	5	0	0	0	3	0	9	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	5	0	0	0	1	2	9	0
4:30 PM	0	1	0	2	0	0	0	0	0	2	4	0	0	0	2	1	12	0
4:45 PM	0	1	0	2	0	0	0	0	0	1	3	0	0	0	1	2	10	40
5:00 PM	0	2	0	0	0	0	0	0	0	1	9	0	0	0	5	0	17	48
5:15 PM	0	0	0	1	0	0	0	0	0	1	3	0	0	0	1	0	6	45
5:30 PM	0	1	0	0	0	0	0	0	0	0	4	0	0	0	2	0	7	40
5:45 PM	0	1	0	1	0	0	0	0	0	1	1	0	0	0	3	0	7	37
Count Total	0	7	0	7	0	0	0	0	0	6	34	0	0	0	18	5	77	0
Peak Hour	0	5	0	4	0	0	0	0	0	4	21	0	0	0	9	5	48	0

Two-Hour Count Summaries - Bikes																		
Interval Start	San Carlos Ave			N/A			El Camino Real			El Camino Real			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	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	1				
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				
Count Total	0	0	0	0	0	0	0	0	0	0	1	0	1	0				
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0				

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





Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Brittan Ave				Brittan Ave				El Camino Real				El Camino Real				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	1	0	0	2	6	0	0	0	3	0	0	0	4	0	16	0
7:15 AM	0	0	3	0	0	3	1	2	0	0	1	1	0	2	2	1	16	0
7:30 AM	0	1	0	0	0	2	5	0	0	0	4	0	0	1	14	2	29	0
7:45 AM	0	0	2	1	0	1	2	2	0	0	8	1	0	1	6	0	24	85
8:00 AM	0	0	1	0	0	3	5	1	0	1	5	0	0	1	11	0	28	97
8:15 AM	0	0	1	0	0	8	6	1	0	5	4	0	0	1	1	0	27	108
8:30 AM	0	1	4	0	0	2	10	0	0	1	8	0	0	1	8	0	35	114
8:45 AM	0	0	6	0	0	5	4	0	0	1	4	1	0	2	8	1	32	122
Count Total	0	2	18	1	0	26	39	6	0	8	37	3	0	9	54	4	207	0
Peak Hour	0	1	12	0	0	18	25	2	0	8	21	1	0	5	28	1	122	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Brittan Ave			Brittan Ave			El Camino Real			El Camino Real			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	0				
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	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	1	0	0	0	0	1	3				
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2				
8:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	2	3				
8:30 AM	0	0	1	0	0	0	0	1	0	0	0	0	2	5				
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4				
Count Total	0	3	1	0	0	1	0	2	0	0	0	0	7	0				
Peak Hour	0	2	1	0	0	0	0	1	0	0	0	0	4	0				

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

# El Camino Real Brittan Ave

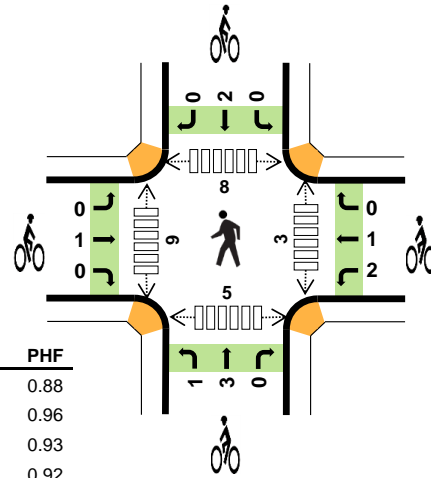
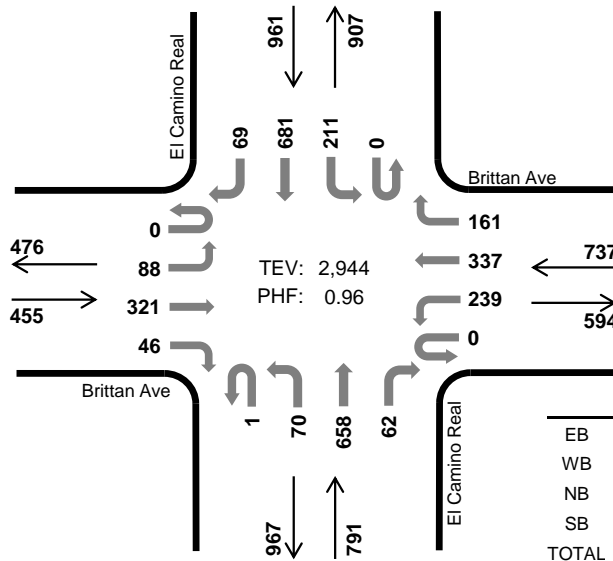


Peak Hour

Date: 04/25/2023

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	1.5%	0.88
WB	1.6%	0.96
NB	2.5%	0.93
SB	1.7%	0.92
TOTAL	1.9%	0.96

## Two-Hour Count Summaries

Interval Start		Brittan Ave				Brittan Ave				El Camino Real				El Camino Real				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	16	72	15	0	43	73	55	0	21	146	15	1	43	166	13	679	0
4:15 PM		0	20	69	11	0	51	71	45	0	17	161	14	0	59	166	15	699	0
4:30 PM		0	24	75	17	0	63	81	44	1	17	156	16	0	54	186	21	755	0
4:45 PM		0	20	96	14	0	59	77	30	0	10	156	21	0	52	145	19	699	2,832
5:00 PM		0	21	83	9	0	62	84	46	0	25	173	14	0	43	189	15	764	2,917
5:15 PM		0	23	67	6	0	55	95	41	0	18	173	11	0	62	161	14	726	2,944
5:30 PM		0	21	71	15	0	61	102	35	1	14	181	9	0	44	157	14	725	2,914
5:45 PM		0	10	60	14	0	54	101	42	0	15	168	12	0	39	180	13	708	2,923
Count Total		0	155	593	101	0	448	684	338	2	137	1,314	112	1	396	1,350	124	5,755	0
Peak Hour	All	0	88	321	46	0	239	337	161	1	70	658	62	0	211	681	69	2,944	0
	HV	0	1	6	0	0	5	5	2	0	0	17	3	0	6	8	2	55	0
	HV%	-	1%	2%	0%	-	2%	1%	1%	0%	0%	3%	5%	-	3%	1%	3%	2%	0

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	10	0	5	3	18	0	0	0	0	0	1	5	0	4	10
4:15 PM	6	2	4	10	22	1	0	0	0	1	0	1	1	5	7
4:30 PM	0	3	3	6	12	0	0	0	1	1	1	5	5	1	12
4:45 PM	6	4	7	4	21	1	2	1	1	5	2	3	2	1	8
5:00 PM	1	3	7	3	14	0	1	3	0	4	0	0	0	1	1
5:15 PM	0	2	3	3	8	0	0	0	0	0	0	1	1	2	4
5:30 PM	2	1	2	3	8	0	1	0	0	1	0	2	3	1	6
5:45 PM	4	0	2	4	10	0	0	0	1	1	0	2	0	1	3
Count Total	29	15	33	36	113	2	4	4	3	13	4	19	12	16	51
Peak Hour	7	12	20	16	55	1	3	4	2	10	3	9	8	5	25

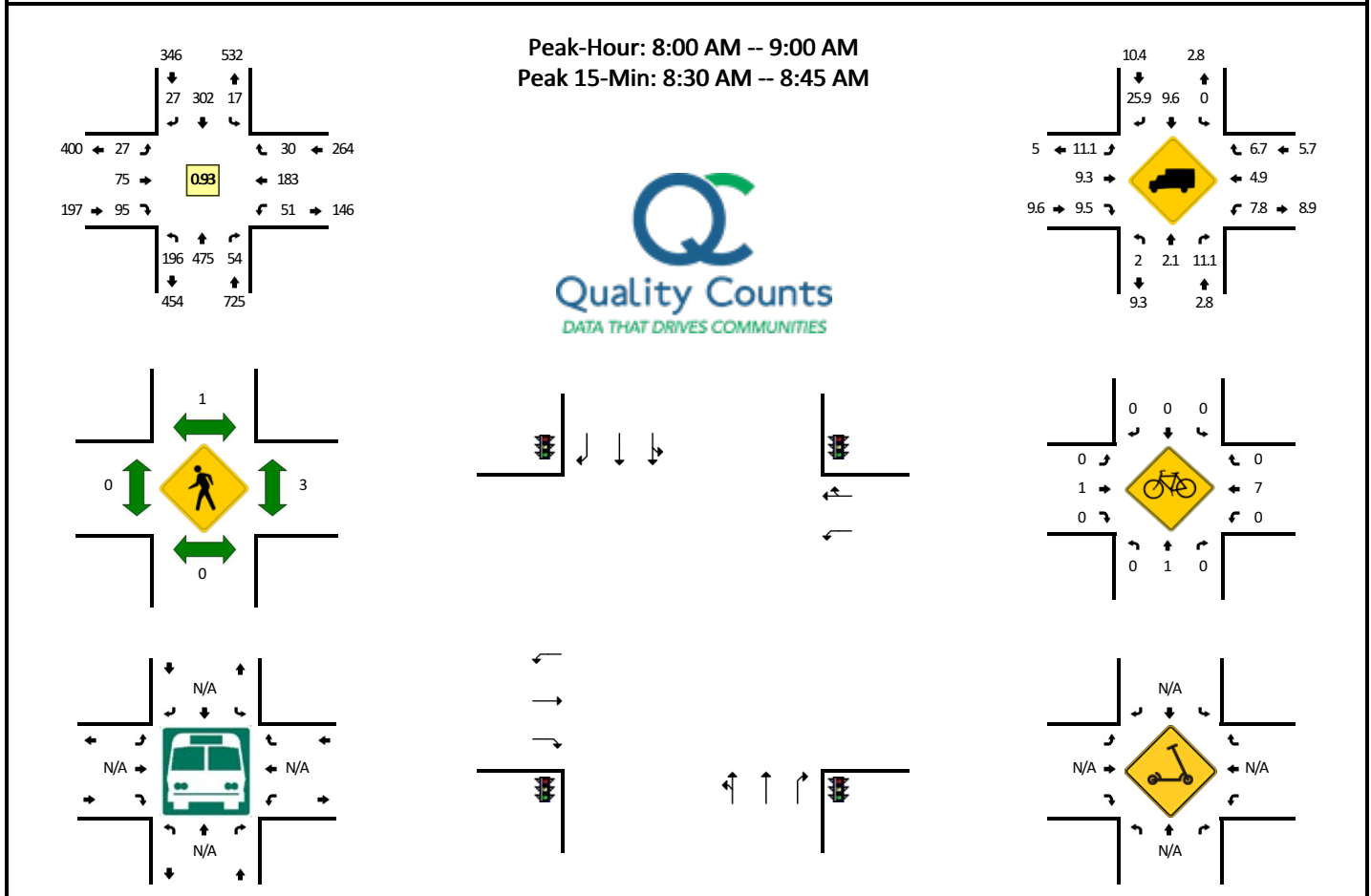
Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Brittan Ave				Brittan Ave				El Camino Real				El Camino Real				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	9	0	0	0	0	0	0	0	5	0	0	1	2	0	18	0
4:15 PM	0	1	5	0	0	0	0	2	0	0	4	0	0	5	5	0	22	0
4:30 PM	0	0	0	0	0	0	2	1	0	0	3	0	0	3	3	0	12	0
4:45 PM	0	1	5	0	0	3	1	0	0	0	7	0	0	1	1	2	21	73
5:00 PM	0	0	1	0	0	2	0	1	0	0	5	2	0	1	2	0	14	69
5:15 PM	0	0	0	0	0	0	2	0	0	0	2	1	0	1	2	0	8	55
5:30 PM	0	0	2	0	0	1	0	0	0	0	2	0	0	0	3	0	8	51
5:45 PM	0	1	3	0	0	0	0	0	0	0	2	0	0	2	1	1	10	40
Count Total	0	4	25	0	0	6	5	4	0	0	30	3	0	14	19	3	113	0
Peak Hour	0	1	6	0	0	5	5	2	0	0	17	3	0	6	8	2	55	0

Two-Hour Count Summaries - Bikes																		
Interval Start	Brittan Ave			Brittan Ave			El Camino Real			El Camino Real			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0				
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0				
4:45 PM	0	1	0	2	0	0	0	1	0	0	1	0	5	7				
5:00 PM	0	0	0	0	1	0	1	2	0	0	0	0	4	11				
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	10				
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	10				
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	6				
Count Total	0	2	0	2	1	1	1	3	0	0	3	0	13	0				
Peak Hour	0	1	0	2	1	0	1	3	0	0	2	0	10	0				

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

**LOCATION:** Brittan Avenue -- Old County Road  
**CITY/STATE:** San Carlos, CA

**QC JOB #:** 16182706  
**DATE:** Thu, May 4 2023

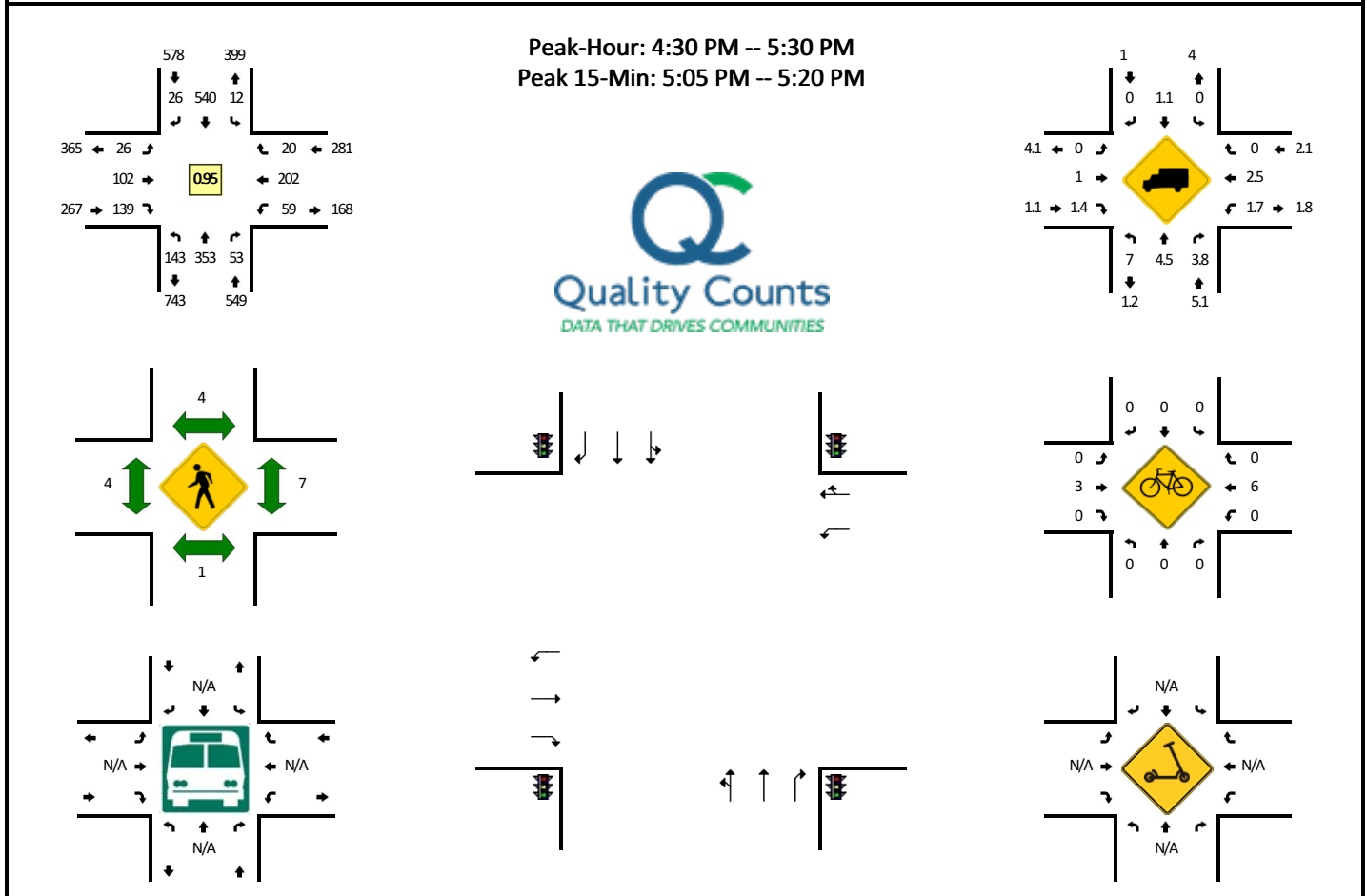


5-Min Count Period Beginning At	Brittan Avenue (Northbound)				Brittan Avenue (Southbound)				Old County Road (Eastbound)				Old County Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	10	16	3	0	0	12	0	0	3	2	4	0	1	7	0	0	58	
7:05 AM	12	30	2	2	0	9	3	0	0	6	4	0	5	7	2	0	82	
7:10 AM	13	22	1	1	2	18	1	0	1	5	3	0	1	7	3	0	78	
7:15 AM	2	18	2	2	2	22	1	0	3	4	8	0	2	8	1	0	75	
7:20 AM	12	27	2	1	1	25	0	0	2	5	3	0	4	7	0	0	89	
7:25 AM	11	33	3	0	2	13	1	0	1	4	3	0	2	12	0	0	85	
7:30 AM	9	32	4	0	0	20	1	0	1	7	8	0	1	10	3	0	96	
7:35 AM	11	37	3	1	0	24	1	0	0	5	5	0	4	12	1	0	104	
7:40 AM	12	50	3	0	4	23	0	0	1	4	12	0	2	18	0	1	130	
7:45 AM	12	30	2	0	1	23	3	0	6	7	9	0	8	20	1	0	122	
7:50 AM	10	19	3	1	1	40	0	0	3	1	5	0	10	20	1	0	114	
7:55 AM	17	40	8	1	1	28	1	0	0	7	5	1	3	10	1	0	123	1156
8:00 AM	16	39	2	1	2	26	0	0	0	5	5	0	1	13	2	0	112	1210
8:05 AM	15	40	1	0	3	28	1	0	1	7	13	0	4	14	2	0	129	1257
8:10 AM	17	38	1	0	2	16	5	0	3	6	15	0	3	12	2	0	120	1299
8:15 AM	10	45	9	0	1	30	2	0	2	9	10	0	3	13	4	0	138	1362
8:20 AM	9	27	4	0	2	26	2	0	2	8	9	0	5	17	3	0	114	1387
8:25 AM	17	36	4	1	0	23	2	0	3	7	11	0	2	13	3	0	122	1424
8:30 AM	24	39	6	1	3	22	7	0	3	5	9	0	5	11	2	0	137	1465
8:35 AM	9	38	6	1	0	30	2	0	3	4	4	0	5	21	6	0	129	1490
8:40 AM	22	56	4	1	3	27	2	0	2	8	3	0	5	15	0	0	148	1508
8:45 AM	17	48	5	1	0	20	1	0	3	7	6	0	8	18	2	0	136	1522
8:50 AM	12	30	7	0	0	14	1	0	2	7	3	0	7	27	2	0	112	1520
8:55 AM	22	39	5	0	1	40	2	0	3	2	7	0	3	9	2	0	135	1532
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	220	532	64	12	24	316	44	0	32	68	64	0	60	188	32	0	1656	
Heavy Trucks	0	8	4		0	16	12		4	4	8		4	8	0		68	
Buses																		
Pedestrians		0				4				0				4			8	
Bicycles	0	4	0		0	0	0		0	0	0		0	12	0		16	
Scooters																		

Comments: 24 hour video available under AM sitecode

**LOCATION:** Brittan Avenue -- Old County Road  
**CITY/STATE:** San Carlos, CA

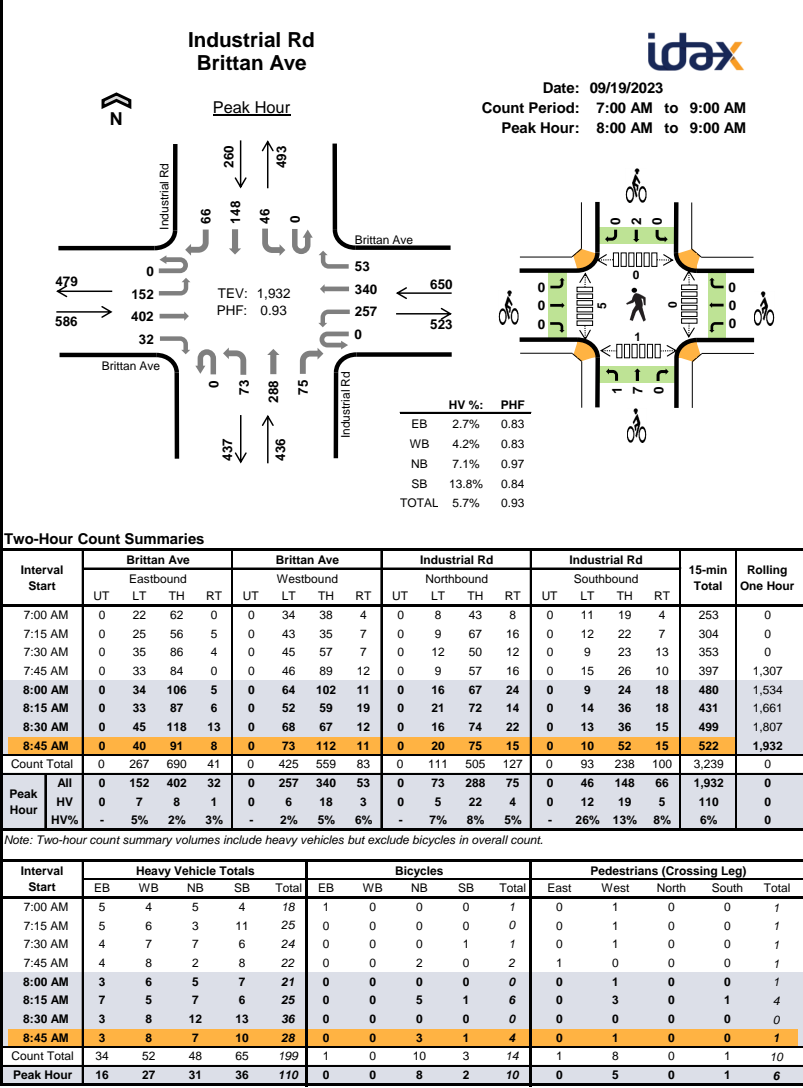
**QC JOB #:** 16182716  
**DATE:** Thu, May 4 2023



5-Min Count Period Beginning At	Brittan Avenue (Northbound)				Brittan Avenue (Southbound)				Old County Road (Eastbound)				Old County Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	11	29	5	1	1	38	4	0	4	6	8	0	10	14	2	0	133	
4:05 PM	15	41	2	0	1	31	7	0	5	8	10	0	7	20	1	0	148	
4:10 PM	12	31	8	0	1	33	3	0	6	10	10	0	9	20	1	0	144	
4:15 PM	8	30	5	1	0	59	6	0	1	6	7	0	4	11	2	0	140	
4:20 PM	17	30	10	1	3	29	4	0	4	7	4	0	6	11	0	0	126	
4:25 PM	10	22	5	2	1	32	3	0	0	5	8	0	5	13	3	0	109	
4:30 PM	17	28	3	1	1	47	1	0	2	7	11	0	6	13	1	0	138	
4:35 PM	16	50	7	0	1	38	2	0	3	4	9	0	7	13	1	0	151	
4:40 PM	12	26	4	0	0	40	1	0	3	8	21	0	6	27	2	1	151	
4:45 PM	11	21	5	1	4	48	2	0	3	7	14	0	3	14	3	0	136	
4:50 PM	18	33	7	2	1	46	2	0	0	7	7	0	5	18	0	0	146	
4:55 PM	12	28	6	0	1	39	4	0	2	6	12	0	1	17	0	0	128	
5:00 PM	4	20	1	1	2	54	2	0	3	10	6	0	4	20	3	0	130	1650
5:05 PM	6	30	6	1	1	54	2	0	1	16	17	0	9	14	1	0	158	1657
5:10 PM	16	30	6	0	1	40	0	0	5	9	12	0	4	14	3	0	140	1653
5:15 PM	8	26	4	0	0	38	2	0	1	17	14	0	7	23	4	0	144	1657
5:20 PM	8	30	1	0	0	59	5	0	3	5	6	0	3	12	2	0	134	1665
5:25 PM	9	31	3	0	0	37	3	0	0	6	10	0	3	17	0	0	119	1675
5:30 PM	14	23	3	0	0	44	0	0	1	3	9	0	5	19	2	0	123	1660
5:35 PM	9	25	3	0	0	56	3	0	1	7	7	1	6	15	1	0	134	1643
5:40 PM	14	42	5	0	0	45	3	0	2	6	11	0	6	15	0	0	149	1641
5:45 PM	10	30	2	0	0	38	1	0	1	3	8	0	4	19	1	0	117	1622
5:50 PM	12	19	1	2	0	54	1	0	1	7	6	0	7	10	0	0	120	1596
5:55 PM	14	23	2	0	0	40	1	0	1	5	9	0	3	8	5	0	111	1579
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	120	344	64	4	8	528	16	0	28	168	172	0	80	204	32	0	1768	
Heavy Trucks	12	24	4		0	16	0		0	0	0		4	4	0		64	
Buses																		
Pedestrians		4				4				0				4			12	
Bicycles	0	0	0		0	0	0		0	8	0		0	8	0		16	
Scooters																		

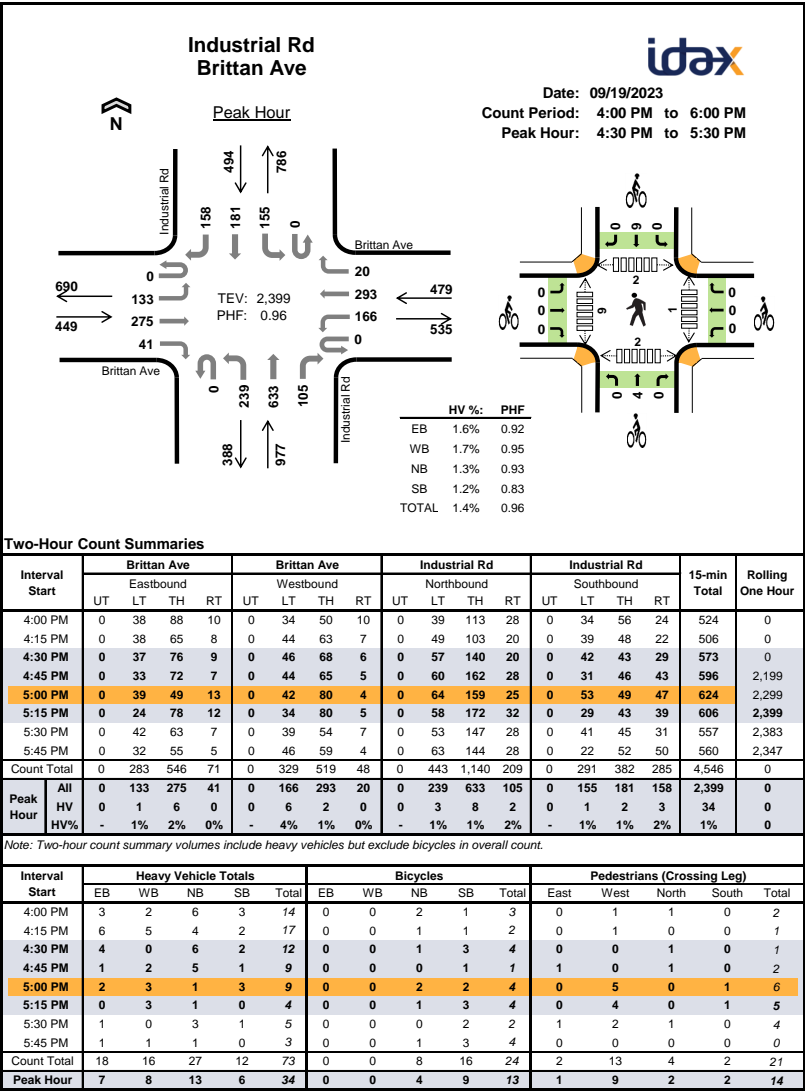
Comments: 24 hour video available under AM sitecode





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Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Brittan Ave				Brittan Ave				Industrial Rd				Industrial Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	3	2	0	0	0	3	1	0	0	5	0	0	0	3	1	18	0
7:15 AM	0	4	0	1	0	5	1	0	0	0	3	0	0	5	5	1	25	0
7:30 AM	0	3	1	0	0	5	2	0	0	2	4	1	0	3	2	1	24	0
7:45 AM	0	1	3	0	0	2	5	1	0	0	2	0	0	5	3	0	22	89
8:00 AM	0	1	2	0	0	1	5	0	0	2	2	1	0	2	2	3	21	92
8:15 AM	0	2	4	1	0	1	3	1	0	2	5	0	0	2	4	0	25	92
8:30 AM	0	3	0	0	0	1	5	2	0	1	8	3	0	6	6	1	36	104
8:45 AM	0	1	2	0	0	3	5	0	0	0	7	0	0	2	7	1	28	110
Count Total	0	18	14	2	0	18	29	5	0	7	36	5	0	25	32	8	199	0
Peak Hour	0	7	8	1	0	6	18	3	0	5	22	4	0	12	19	5	110	0
Two-Hour Count Summaries - Bikes																		
Interval Start	Brittan Ave				Brittan Ave				Industrial Rd				Industrial Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	LT	TH	RT		LT	TH	RT		LT	TH	RT		LT	TH	RT			
7:00 AM	1	0	0		0	0	0		0	0	0		0	0	0		1	0
7:15 AM	0	0	0		0	0	0		0	0	0		0	0	0		0	0
7:30 AM	0	0	0		0	0	0		0	0	0		0	1	0		1	0
7:45 AM	0	0	0		0	0	0		0	2	0		0	0	0		2	4
8:00 AM	0	0	0		0	0	0		0	0	0		0	0	0		0	3
8:15 AM	0	0	0		0	0	0		1	4	0		0	1	0		6	9
8:30 AM	0	0	0		0	0	0		0	0	0		0	0	0		0	8
8:45 AM	0	0	0		0	0	0		0	3	0		0	1	0		4	10
Count Total	1	0	0		0	0	0		1	9	0		0	3	0		14	0
Peak Hour	0	0	0		0	0	0		1	7	0		0	2	0		10	0
Note: U-Turn volumes for bikes are included in Left-Turn, if any.																		



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Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Brittan Ave				Brittan Ave				Industrial Rd				Industrial Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	3	0	0	1	0	1	0	1	5	0	0	1	2	0	14	0
4:15 PM	0	2	4	0	0	2	0	3	0	2	1	1	0	1	1	0	17	0
4:30 PM	0	1	3	0	0	0	0	0	0	3	3	0	0	0	1	1	12	0
4:45 PM	0	0	1	0	0	1	1	0	0	0	4	1	0	1	0	0	9	52
5:00 PM	0	0	2	0	0	2	1	0	0	0	0	1	0	0	1	2	9	47
5:15 PM	0	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	4	34
5:30 PM	0	0	1	0	0	0	0	0	0	1	2	0	0	0	1	0	5	27
5:45 PM	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	3	21
Count Total	0	3	15	0	0	9	3	4	0	7	17	3	0	3	6	3	73	0
Peak Hour	0	1	6	0	0	6	2	0	0	3	8	2	0	1	2	3	34	0
Two-Hour Count Summaries - Bikes																		
Interval Start	Brittan Ave			Brittan Ave			Industrial Rd			Industrial Rd			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	2	0	0	1	0	3	0				
4:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	0				
4:30 PM	0	0	0	0	0	0	0	1	0	0	3	0	4	0				
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	10				
5:00 PM	0	0	0	0	0	0	0	2	0	0	2	0	4	11				
5:15 PM	0	0	0	0	0	0	0	1	0	0	3	0	4	13				
5:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	2	11				
5:45 PM	0	0	0	0	0	0	0	1	0	0	3	0	4	14				
Count Total	0	0	0	0	0	0	0	8	0	0	16	0	24	0				
Peak Hour	0	0	0	0	0	0	0	4	0	0	9	0	13	0				
Note: U-Turn volumes for bikes are included in Left-Turn, if any.																		

# El Camino Real Howard Ave

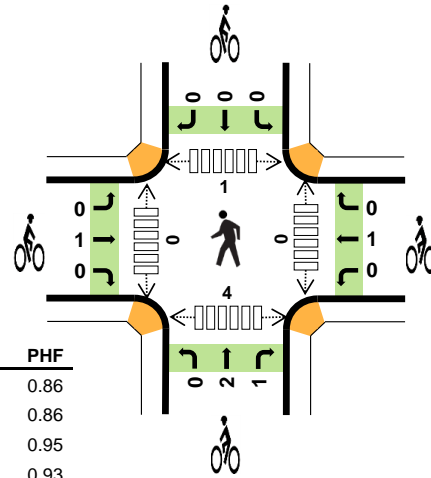
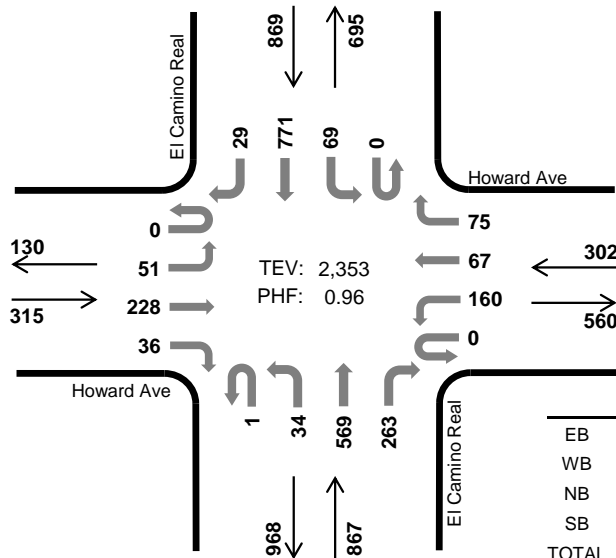


Peak Hour

Date: 10/04/2023

Count Period: 7:00 AM to 9:00 AM

Peak Hour: 8:00 AM to 9:00 AM



	HV %:	PHF
EB	1.0%	0.86
WB	5.6%	0.86
NB	3.5%	0.95
SB	3.8%	0.93
TOTAL	3.5%	0.96

## Two-Hour Count Summaries

Interval Start		Howard Ave				Howard Ave				El Camino Real				El Camino Real				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	6	10	1	0	12	3	6	0	2	76	42	0	7	80	4	249	0
7:15 AM		0	4	25	2	0	26	12	7	0	0	117	46	0	9	98	4	350	0
7:30 AM		0	11	37	4	0	42	12	14	0	7	127	55	0	13	139	4	465	0
7:45 AM		0	15	32	7	0	38	19	30	0	4	146	72	1	17	175	5	561	1,625
8:00 AM		0	16	46	5	0	48	22	18	0	17	139	60	0	11	172	10	564	1,940
8:15 AM		0	17	60	9	0	39	19	18	0	5	153	69	0	24	194	8	615	2,205
8:30 AM		0	10	71	11	0	34	14	20	0	7	155	63	0	18	193	6	602	2,342
8:45 AM		0	8	51	11	0	39	12	19	1	5	122	71	0	16	212	5	572	2,353
Count Total		0	87	332	50	0	278	113	132	1	47	1,035	478	1	115	1,263	46	3,978	0
Peak Hour	All	0	51	228	36	0	160	67	75	1	34	569	263	0	69	771	29	2,353	0
	HV	0	2	1	0	0	6	5	6	0	1	24	5	0	1	31	1	83	0
	HV%	-	4%	0%	0%	-	4%	7%	8%	0%	3%	4%	2%	-	1%	4%	3%	4%	0

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	0	5	4	10	0	0	0	0	0	0	1	0	1	2
7:15 AM	0	1	7	6	14	0	0	0	1	1	0	0	0	1	1
7:30 AM	2	3	6	8	19	1	0	0	0	1	0	0	0	0	0
7:45 AM	0	5	9	12	26	2	0	3	0	5	0	1	0	1	2
8:00 AM	1	2	8	9	20	0	0	0	0	0	0	0	0	0	0
8:15 AM	1	5	9	6	21	0	0	1	0	1	0	0	0	0	0
8:30 AM	0	9	3	8	20	0	1	0	0	1	0	0	0	1	1
8:45 AM	1	1	10	10	22	1	0	2	0	3	0	0	1	3	4
Count Total	6	26	57	63	152	4	1	6	1	12	0	2	1	7	10
Peak Hour	3	17	30	33	83	1	1	3	0	5	0	0	1	4	5

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Howard Ave				Howard Ave				El Camino Real				El Camino Real				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	0	0	0	0	0	0	0	1	4	0	0	0	4	0	10	0
7:15 AM	0	0	0	0	0	0	1	0	0	0	7	0	0	0	5	1	14	0
7:30 AM	0	0	2	0	0	1	2	0	0	0	5	1	0	0	8	0	19	0
7:45 AM	0	0	0	0	0	3	1	1	0	0	7	2	0	0	11	1	26	69
8:00 AM	0	1	0	0	0	1	1	0	0	1	5	2	0	0	9	0	20	79
8:15 AM	0	1	0	0	0	0	1	4	0	0	8	1	0	0	5	1	21	86
8:30 AM	0	0	0	0	0	4	3	2	0	0	3	0	0	0	8	0	20	87
8:45 AM	0	0	1	0	0	1	0	0	0	0	8	2	0	1	9	0	22	83
Count Total	0	3	3	0	0	10	9	7	0	2	47	8	0	1	59	3	152	0
Peak Hour	0	2	1	0	0	6	5	6	0	1	24	5	0	1	31	1	83	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Howard Ave			Howard Ave			El Camino Real			El Camino Real			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0			
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0			
7:45 AM	0	2	0	0	0	0	0	0	3	0	0	0	5	7			
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	7			
8:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	1	7			
8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	7			
8:45 AM	0	1	0	0	0	0	0	2	0	0	0	0	3	5			
Count Total	0	4	0	0	1	0	0	2	4	0	1	0	12	0			
Peak Hour	0	1	0	0	1	0	0	2	1	0	0	0	5	0			

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



# El Camino Real Howard Ave

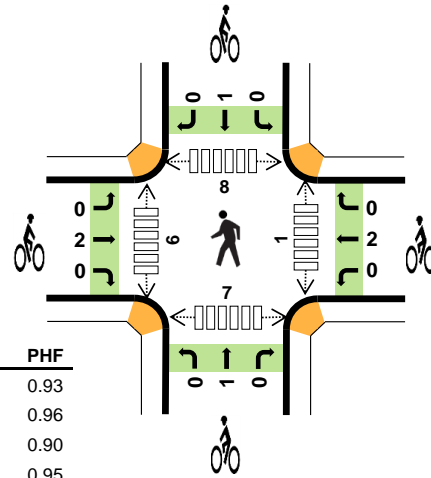
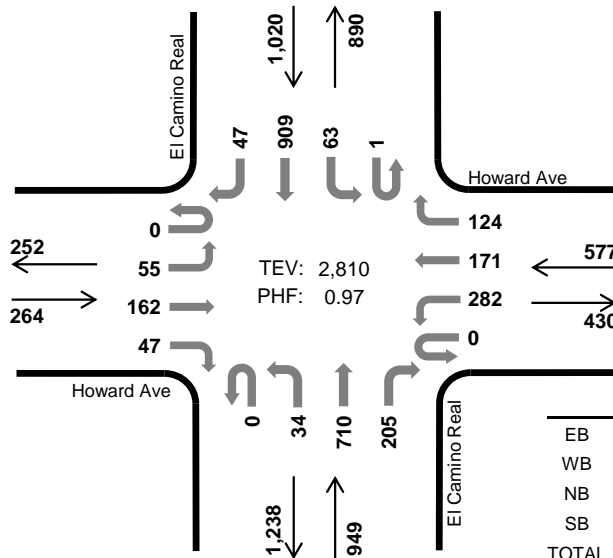


Peak Hour

Date: 10/04/2023

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	0.8%	0.93
WB	0.7%	0.96
NB	1.8%	0.90
SB	1.6%	0.95
TOTAL	1.4%	0.97

## Two-Hour Count Summaries

Interval Start		Howard Ave				Howard Ave				El Camino Real				El Camino Real				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	9	29	9	0	68	34	33	0	3	196	61	0	13	232	4	691	0
4:15 PM		0	15	30	15	0	70	45	25	0	7	187	45	0	14	200	12	665	0
4:30 PM		0	16	30	4	0	58	48	41	0	5	189	47	0	14	218	7	677	0
4:45 PM		0	10	51	10	0	68	47	29	0	11	198	56	0	20	212	12	724	2,757
5:00 PM		0	19	33	15	0	73	41	29	0	10	157	50	0	18	239	12	696	2,762
5:15 PM		0	12	50	7	0	71	34	35	0	7	196	43	1	12	231	12	711	2,808
5:30 PM		0	14	28	15	0	70	49	31	0	6	159	56	0	13	227	11	679	2,810
5:45 PM		0	12	36	4	0	69	56	33	0	12	174	49	0	14	217	5	681	2,767
Count Total		0	107	287	79	0	547	354	256	0	61	1,456	407	1	118	1,776	75	5,524	0
Peak Hour	All	0	55	162	47	0	282	171	124	0	34	710	205	1	63	909	47	2,810	0
	HV	0	0	2	0	0	0	0	4	0	0	16	1	0	0	14	2	39	0
	HV%	-	0%	1%	0%	-	0%	0%	3%	-	0%	2%	0%	0%	0%	2%	4%	1%	0

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	3	3	4	12	0	1	0	0	1	0	4	1	3	8
4:15 PM	2	2	5	2	11	0	0	0	0	0	0	0	0	1	1
4:30 PM	1	1	7	6	15	0	0	0	1	1	0	3	1	0	4
4:45 PM	0	2	6	4	12	0	1	0	1	2	0	0	0	2	2
5:00 PM	2	1	4	3	10	1	1	0	0	2	0	5	2	3	10
5:15 PM	0	1	5	5	11	0	0	1	0	1	0	1	2	2	5
5:30 PM	0	0	2	4	6	1	0	0	0	1	1	0	4	0	5
5:45 PM	2	0	6	4	12	1	2	0	0	3	0	0	3	0	3
Count Total	9	10	38	32	89	3	5	1	2	11	1	13	13	11	38
Peak Hour	2	4	17	16	39	2	2	1	1	6	1	6	8	7	22

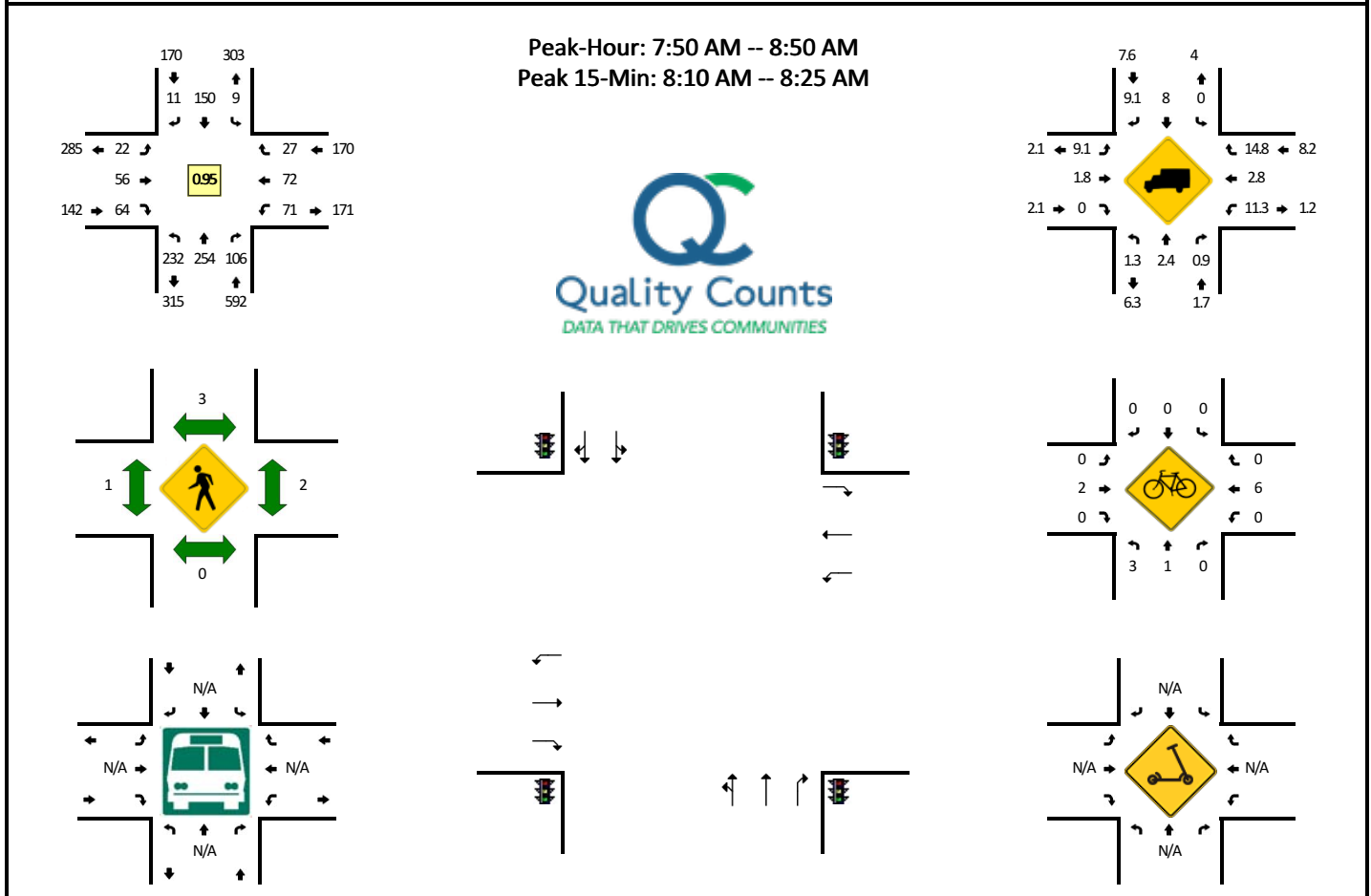
Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Howard Ave				Howard Ave				El Camino Real				El Camino Real				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	2	0	0	1	0	2	0	0	2	1	0	0	4	0	12	0
4:15 PM	0	0	1	1	0	2	0	0	0	0	3	2	0	0	2	0	11	0
4:30 PM	0	0	1	0	0	0	0	1	0	0	6	1	0	1	5	0	15	0
4:45 PM	0	0	0	0	0	0	0	2	0	0	5	1	0	0	4	0	12	50
5:00 PM	0	0	2	0	0	0	0	1	0	0	4	0	0	0	2	1	10	48
5:15 PM	0	0	0	0	0	0	0	1	0	0	5	0	0	0	4	1	11	48
5:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0	6	39
5:45 PM	0	0	2	0	0	0	0	0	0	0	6	0	0	0	4	0	12	39
Count Total	0	0	8	1	0	3	0	7	0	0	33	5	0	1	29	2	89	0
Peak Hour	0	0	2	0	0	0	0	4	0	0	16	1	0	0	14	2	39	0

Two-Hour Count Summaries - Bikes																	
Interval Start	Howard Ave			Howard Ave			El Camino Real			El Camino Real			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	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	1	0	1	0			
4:45 PM	0	0	0	0	1	0	0	0	0	0	1	0	2	4			
5:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	2	5			
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	6			
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	6			
5:45 PM	0	1	0	1	1	0	0	0	0	0	0	0	3	7			
Count Total	0	3	0	1	4	0	0	1	0	0	2	0	11	0			
Peak Hour	0	2	0	0	2	0	0	1	0	0	1	0	6	0			

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

**LOCATION:** Howard Avenue -- Old County Road  
**CITY/STATE:** San Carlos, CA

**QC JOB #:** 16182708  
**DATE:** Thu, May 4 2023

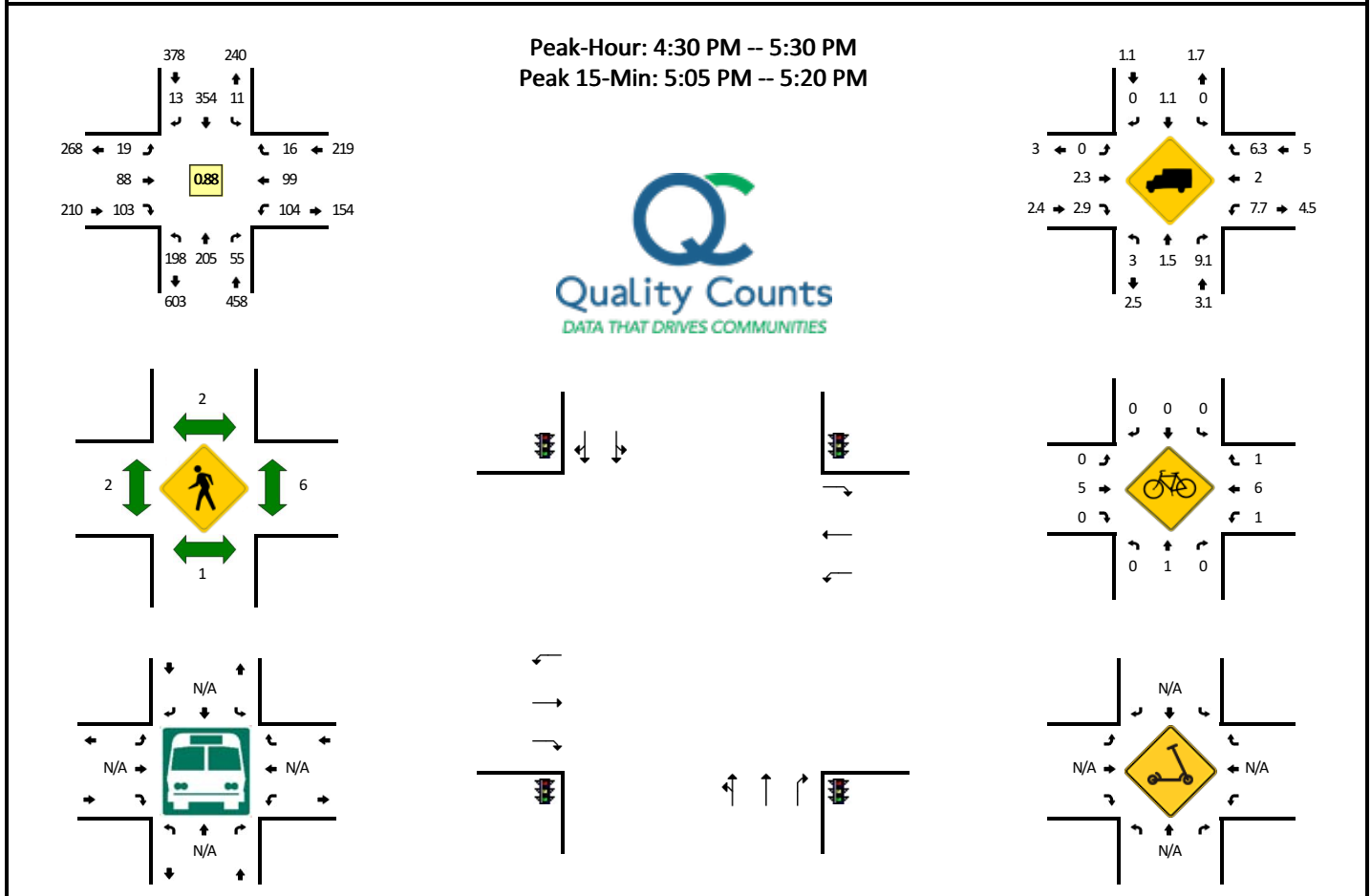


5-Min Count Period Beginning At	Howard Avenue (Northbound)				Howard Avenue (Southbound)				Old County Road (Eastbound)				Old County Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	5	12	5	0	0	2	0	0	2	5	2	0	4	6	3	0	46	
7:05 AM	6	4	4	2	1	7	0	0	1	3	2	0	5	3	1	0	39	
7:10 AM	9	13	7	1	0	8	1	0	0	1	8	0	2	4	0	0	54	
7:15 AM	9	11	2	3	2	6	2	0	0	6	4	0	4	3	2	0	54	
7:20 AM	12	9	6	1	1	13	4	0	0	5	5	0	3	8	2	0	69	
7:25 AM	7	19	6	1	0	5	2	0	1	2	1	0	1	6	1	0	52	
7:30 AM	16	17	5	0	0	5	0	0	3	3	7	0	4	2	1	0	63	
7:35 AM	12	12	3	3	1	11	2	0	0	3	3	0	7	4	2	0	63	
7:40 AM	18	15	7	4	1	6	1	0	0	6	6	0	4	5	2	0	75	
7:45 AM	15	15	9	2	0	11	0	0	2	4	6	0	5	9	0	0	78	
7:50 AM	20	10	11	1	1	8	0	0	2	2	7	0	9	10	1	0	82	
7:55 AM	14	23	10	5	0	7	1	0	1	6	6	0	14	6	2	0	95	770
8:00 AM	12	14	16	2	1	20	0	0	3	3	6	0	6	4	3	0	90	814
8:05 AM	18	15	2	2	3	18	0	0	1	4	3	0	4	6	1	0	77	852
8:10 AM	17	26	8	3	1	19	1	0	3	4	2	0	5	7	2	0	98	896
8:15 AM	12	25	8	1	0	9	0	0	3	3	9	0	9	2	7	0	88	930
8:20 AM	16	29	9	1	0	14	0	0	2	7	8	0	3	5	3	0	97	958
8:25 AM	14	19	9	4	0	14	1	0	1	7	4	0	5	5	3	0	86	992
8:30 AM	14	22	8	2	2	10	4	0	4	3	7	0	6	5	1	0	88	1017
8:35 AM	25	25	11	4	0	5	3	0	1	6	1	0	0	4	1	0	86	1040
8:40 AM	17	27	10	2	0	14	1	0	0	8	6	0	5	10	3	0	103	1068
8:45 AM	23	19	4	3	1	12	0	0	1	3	5	0	5	8	0	0	84	1074
8:50 AM	26	14	4	0	0	12	1	0	4	5	6	0	2	4	0	0	78	1070
8:55 AM	9	12	3	1	4	17	0	0	1	8	4	0	2	10	3	0	74	1049
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	180	320	100	20	4	168	4	0	32	56	76	0	68	56	48	0	1132	
Heavy Trucks	0	4	0		0	16	4		4	0	0		12	0	8		48	
Buses																		
Pedestrians		0				0				4				0			4	
Bicycles	12	0	0		0	0	0		0	0	0		0	0	0		12	
Scooters																		

Comments: 24 hour video available under AM sitecode

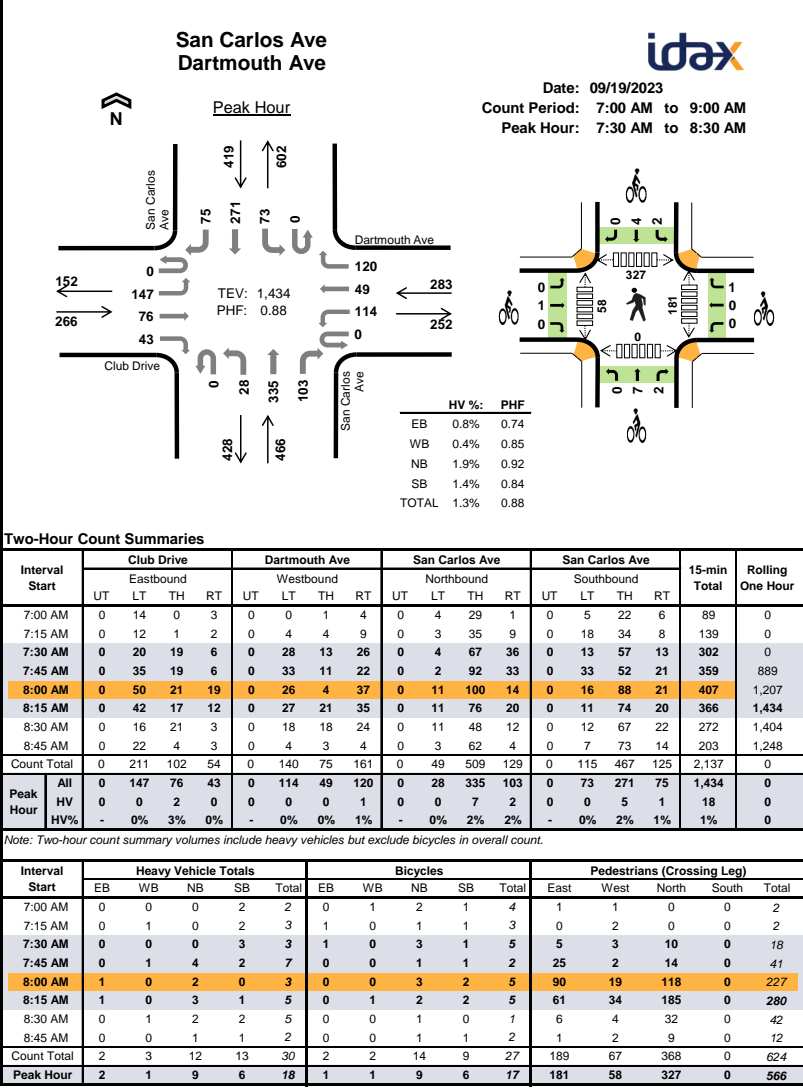
**LOCATION:** Howard Avenue -- Old County Road  
**CITY/STATE:** San Carlos, CA

**QC JOB #:** 16182718  
**DATE:** Thu, May 4 2023



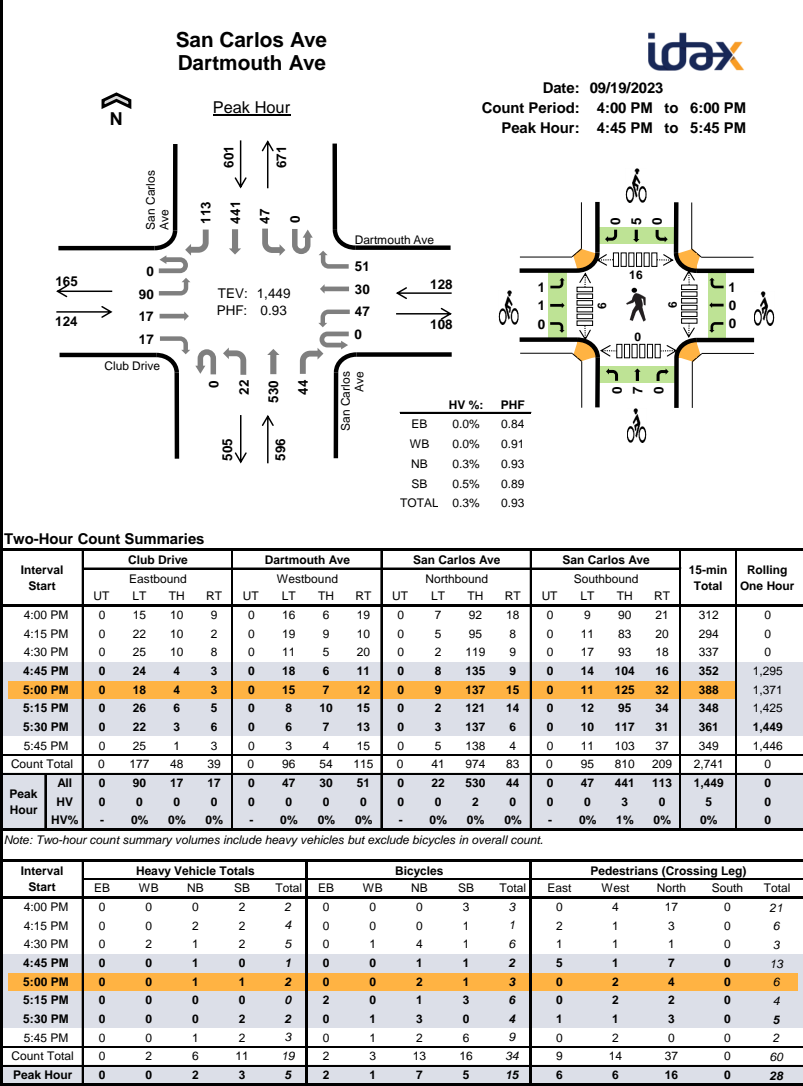
5-Min Count Period Beginning At	Howard Avenue (Northbound)				Howard Avenue (Southbound)				Old County Road (Eastbound)				Old County Road (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	14	24	8	2	2	33	0	0	1	6	8	0	12	15	2	0	127	
4:05 PM	11	10	6	5	1	34	0	0	1	5	6	0	7	7	0	0	93	
4:10 PM	9	24	2	4	2	28	2	0	3	8	7	0	3	9	2	0	103	
4:15 PM	12	14	2	2	2	18	0	0	0	7	6	0	8	5	3	0	79	
4:20 PM	12	15	6	9	1	25	0	0	4	7	8	0	10	4	1	0	102	
4:25 PM	10	10	5	3	2	20	2	0	1	2	5	0	7	2	1	0	70	
4:30 PM	17	16	3	3	2	23	1	0	1	4	7	0	6	3	4	0	90	
4:35 PM	13	18	2	4	1	24	2	0	0	11	10	0	11	17	2	0	115	
4:40 PM	12	16	6	5	1	26	2	0	0	7	7	0	5	5	1	0	93	
4:45 PM	17	17	5	4	1	35	1	0	1	5	8	0	10	4	0	0	108	
4:50 PM	5	14	2	2	0	27	2	0	6	4	14	0	9	12	3	0	100	
4:55 PM	11	23	6	4	0	19	1	0	3	5	9	0	7	6	1	0	95	1175
5:00 PM	20	14	1	2	3	29	0	0	2	8	15	0	9	12	0	0	115	1163
5:05 PM	13	25	7	3	0	45	2	0	1	13	10	0	14	10	3	0	146	1216
5:10 PM	11	16	6	6	0	28	1	0	1	5	7	0	8	7	0	0	96	1209
5:15 PM	14	19	5	3	2	30	0	0	1	14	6	0	13	8	1	0	116	1246
5:20 PM	8	13	3	3	1	50	1	0	0	7	6	0	6	7	0	0	105	1249
5:25 PM	15	14	9	3	0	18	0	0	3	5	4	0	6	8	1	0	86	1265
5:30 PM	11	13	2	1	0	19	3	0	0	1	5	0	6	3	0	1	65	1240
5:35 PM	16	13	8	3	1	34	1	0	1	5	8	0	8	6	1	1	106	1231
5:40 PM	9	20	5	4	1	27	1	0	2	1	6	0	9	14	2	0	101	1239
5:45 PM	13	15	4	4	0	24	1	0	0	3	3	0	8	5	0	0	80	1211
5:50 PM	8	11	4	8	0	34	1	0	0	5	5	0	8	4	3	0	91	1202
5:55 PM	8	11	2	5	0	32	3	0	0	7	6	0	7	7	2	0	90	1197
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	152	240	72	48	8	412	12	0	12	128	92	0	140	100	16	0	1432	
Heavy Trucks	12	8	8		0	4	0		0	0	4		16	0	0		52	
Buses																		
Pedestrians		0				0				0				8			8	
Bicycles	0	4	0		0	0	0		0	12	0		0	8	0		24	
Scooters																		

Comments: 24 hour video available under AM sitecode



Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Club Drive				Dartmouth Ave				San Carlos Ave				San Carlos Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0
7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	3	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	3	1	0	0	2	0	7	15
8:00 AM	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	3	16
8:15 AM	0	0	1	0	0	0	0	0	0	0	2	1	0	0	0	1	5	18
8:30 AM	0	0	0	0	0	1	0	0	0	0	2	0	0	0	1	1	5	20
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	15
Count Total	0	0	2	0	0	2	0	1	0	0	10	2	0	1	8	4	30	0
Peak Hour	0	0	2	0	0	0	0	1	0	0	7	2	0	0	5	1	18	0
Two-Hour Count Summaries - Bikes																		
Interval Start	Club Drive				Dartmouth Ave				San Carlos Ave				San Carlos Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	LT	TH	RT		LT	TH	RT		LT	TH	RT		LT	TH	RT			
7:00 AM	0	0	0		0	0	1		0	2	0		0	1	0		4	0
7:15 AM	0	1	0		0	0	0		0	1	0		0	1	0		3	0
7:30 AM	0	1	0		0	0	0		0	2	1		0	1	0		5	0
7:45 AM	0	0	0		0	0	0		0	1	0		0	1	0		2	14
8:00 AM	0	0	0		0	0	0		0	2	1		1	1	0		5	15
8:15 AM	0	0	0		0	0	1		0	2	0		1	1	0		5	17
8:30 AM	0	0	0		0	0	0		0	0	1		0	0	0		1	13
8:45 AM	0	0	0		0	0	0		0	0	1		0	1	0		2	13
Count Total	0	2	0		0	0	2		0	10	4		2	7	0		27	0
Peak Hour	0	1	0		0	0	1		0	7	2		2	4	0		17	0
Note: U-Turn volumes for bikes are included in Left-Turn, if any.																		





Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Club Drive				Dartmouth Ave				San Carlos Ave				San Carlos Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	4	0
4:30 PM	0	0	0	0	0	0	1	1	0	0	1	0	0	0	1	1	5	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	12
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	12
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	5
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3	7
Count Total	0	0	0	0	0	0	1	1	0	0	6	0	0	0	10	1	19	0
Peak Hour	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	5	0
Two-Hour Count Summaries - Bikes																		
Interval Start	Club Drive				Dartmouth Ave				San Carlos Ave				San Carlos Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	LT	TH	RT		LT	TH	RT		LT	TH	RT		LT	TH	RT			
4:00 PM	0	0	0		0	0	0		0	0	0		0	3	0		3	0
4:15 PM	0	0	0		0	0	0		0	0	0		0	1	0		1	0
4:30 PM	0	0	0		1	0	0		0	4	0		0	1	0		6	0
4:45 PM	0	0	0		0	0	0		0	1	0		0	1	0		2	12
5:00 PM	0	0	0		0	0	0		0	2	0		0	1	0		3	12
5:15 PM	1	1	0		0	0	0		0	1	0		0	3	0		6	17
5:30 PM	0	0	0		0	0	1		0	3	0		0	0	0		4	15
5:45 PM	0	0	0		0	0	1		0	2	0		1	5	0		9	22
Count Total	1	1	0		1	0	2		0	13	0		1	15	0		34	0
Peak Hour	1	1	0		0	0	1		0	7	0		0	5	0		15	0
Note: U-Turn volumes for bikes are included in Left-Turn, if any.																		

# Alameda de las Pulgas San Carlos Ave

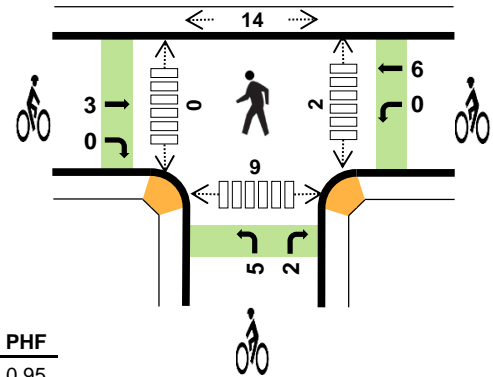
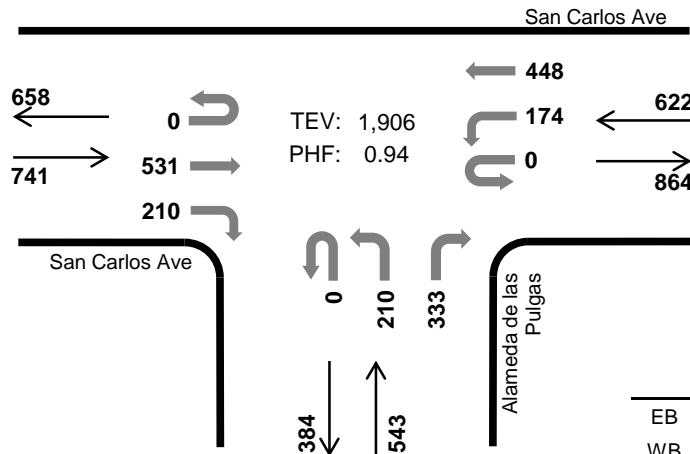


Peak Hour

Date: 10/10/2023

Count Period: 7:00 AM to 9:00 AM

Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	1.1%	0.95
WB	1.6%	0.80
NB	1.3%	0.88
SB	-	-
TOTAL	1.3%	0.94

## Two-Hour Count Summaries

Interval Start		San Carlos Ave				San Carlos Ave				Alameda de las Pulgas				n/a				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	40	15	0	19	26	0	0	14	0	23	0	0	0	0	137	0
7:15 AM		0	0	56	28	0	20	43	0	0	24	0	38	0	0	0	0	209	0
7:30 AM		0	0	70	28	0	41	79	0	0	56	0	47	0	0	0	0	321	0
7:45 AM		0	0	103	53	0	45	150	0	0	83	0	72	0	0	0	0	506	1,173
8:00 AM		0	0	136	60	0	38	136	0	0	52	0	74	0	0	0	0	496	1,532
8:15 AM		0	0	145	49	0	49	103	0	0	39	0	100	0	0	0	0	485	1,808
8:30 AM		0	0	147	48	0	42	59	0	0	36	0	87	0	0	0	0	419	1,906
8:45 AM		0	0	99	42	0	44	63	0	0	38	0	72	0	0	0	0	358	1,758
Count Total		0	0	796	323	0	298	659	0	0	342	0	513	0	0	0	0	2,931	0
Peak Hour	All	0	0	531	210	0	174	448	0	0	210	0	333	0	0	0	0	1,906	0
	HV	0	0	4	4	0	1	9	0	0	5	0	2	0	0	0	0	25	0
	HV%	-	-	1%	2%	-	1%	2%	-	-	2%	-	1%	-	-	-	-	1%	0

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	0	0	0	1	0	1	0	0	1	0	0	2	1	3
7:15 AM	3	1	3	0	7	2	3	0	0	5	0	0	2	3	5
7:30 AM	2	3	2	0	7	0	0	0	0	0	0	0	2	0	2
7:45 AM	2	4	2	0	8	0	0	1	0	1	0	0	3	4	7
8:00 AM	2	2	1	0	5	1	2	3	0	6	0	0	3	1	4
8:15 AM	2	2	3	0	7	2	2	1	0	5	1	0	4	3	8
8:30 AM	2	2	1	0	5	0	2	2	0	4	1	0	4	1	6
8:45 AM	4	2	3	0	9	2	0	0	0	2	1	0	2	0	3
Count Total	18	16	15	0	49	7	10	7	0	24	3	0	22	13	38
Peak Hr	8	10	7	0	25	3	6	7	0	16	2	0	14	9	25

**Two-Hour Count Summaries - Heavy Vehicles**

Interval Start	San Carlos Ave				San Carlos Ave				Alameda de las Pulgas				n/a				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	2	1	0	0	1	0	0	3	0	0	0	0	0	0	7	0
7:30 AM	0	0	2	0	0	2	1	0	0	1	0	1	0	0	0	0	7	0
7:45 AM	0	0	0	2	0	0	4	0	0	2	0	0	0	0	0	0	8	23
8:00 AM	0	0	1	1	0	0	2	0	0	1	0	0	0	0	0	0	5	27
8:15 AM	0	0	1	1	0	1	1	0	0	2	0	1	0	0	0	0	7	27
8:30 AM	0	0	2	0	0	0	2	0	0	0	0	1	0	0	0	0	5	25
8:45 AM	0	0	2	2	0	0	2	0	0	3	0	0	0	0	0	0	9	26
Count Total	0	0	10	8	0	3	13	0	0	12	0	3	0	0	0	0	49	0
Peak Hour	0	0	4	4	0	1	9	0	0	5	0	2	0	0	0	0	25	0

**Two-Hour Count Summaries - Bikes**

Interval Start	San Carlos Ave			San Carlos Ave			Alameda de las Pulgas			n/a			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
7:15 AM	0	2	0	1	2	0	0	0	0	0	0	0	5	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	1	0	0	0	0	0	1	7
8:00 AM	0	1	0	0	2	0	1	0	2	0	0	0	6	12
8:15 AM	0	2	0	0	2	0	1	0	0	0	0	0	5	12
8:30 AM	0	0	0	0	2	0	2	0	0	0	0	0	4	16
8:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	2	17
Count Total	0	7	0	1	9	0	5	0	2	0	0	0	24	0
Peak Hour	0	3	0	0	6	0	5	0	2	0	0	0	16	0

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

# Alameda de las Pulgas San Carlos Ave

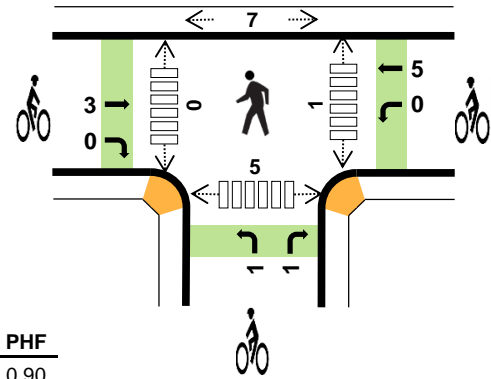
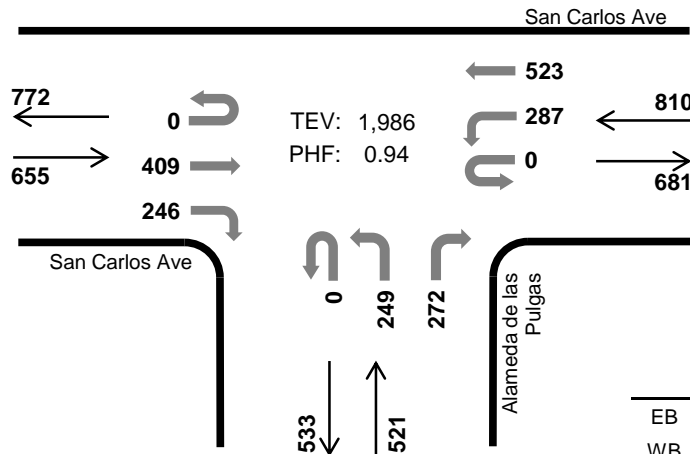


Peak Hour

Date: 10/10/2023

Count Period: 4:00 PM to 6:00 PM

Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	0.9%	0.90
WB	0.5%	0.90
NB	0.2%	0.87
SB	-	-
TOTAL	0.6%	0.94

## Two-Hour Count Summaries

Interval Start		San Carlos Ave				San Carlos Ave				Alameda de las Pulgas				n/a				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	127	56	0	72	108	0	0	38	0	68	0	0	0	0	469	0
4:15 PM		0	0	88	73	0	79	105	0	0	51	0	63	0	0	0	0	459	0
4:30 PM		0	0	84	65	0	49	97	0	0	46	0	42	0	0	0	0	383	0
4:45 PM		0	0	100	47	0	70	145	0	0	56	0	72	0	0	0	0	490	1,801
5:00 PM		0	0	105	77	0	87	137	0	0	61	0	62	0	0	0	0	529	1,861
5:15 PM		0	0	110	63	0	68	124	0	0	77	0	73	0	0	0	0	515	1,917
5:30 PM		0	0	94	59	0	62	117	0	0	55	0	65	0	0	0	0	452	1,986
5:45 PM		0	0	98	55	0	44	127	0	0	68	0	66	0	0	0	0	458	1,954
Count Total		0	0	806	495	0	531	960	0	0	452	0	511	0	0	0	0	3,755	0
Peak Hour	All	0	0	409	246	0	287	523	0	0	249	0	272	0	0	0	0	1,986	0
	HV	0	0	2	4	0	1	3	0	0	1	0	0	0	0	0	0	11	0
	HV%	-	-	0%	2%	-	0%	1%	-	-	0%	-	0%	-	-	-	-	1%	0

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	8	2	0	0	10	0	0	1	0	1	0	0	1	2	3
4:15 PM	2	2	2	0	6	2	0	0	0	2	3	0	4	0	7
4:30 PM	1	1	1	0	3	2	1	1	0	4	0	0	1	1	2
4:45 PM	2	1	0	0	3	1	0	1	0	2	0	0	2	1	3
5:00 PM	1	0	0	0	1	0	0	0	0	0	1	0	3	0	4
5:15 PM	1	2	0	0	3	1	4	1	0	6	0	0	0	3	3
5:30 PM	2	1	1	0	4	1	1	0	0	2	0	0	2	1	3
5:45 PM	1	1	0	0	2	0	2	0	0	2	2	0	2	1	5
Count Total	18	10	4	0	32	7	8	4	0	19	6	0	15	9	30
Peak Hr	6	4	1	0	11	3	5	2	0	10	1	0	7	5	13

**Two-Hour Count Summaries - Heavy Vehicles**

Interval Start	San Carlos Ave				San Carlos Ave				Alameda de las Pulgas				n/a				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	5	3	0	1	1	0	0	0	0	0	0	0	0	0	10	0
4:15 PM	0	0	1	1	0	2	0	0	0	0	0	2	0	0	0	0	6	0
4:30 PM	0	0	1	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0
4:45 PM	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	3	22
5:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	13
5:15 PM	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	3	10
5:30 PM	0	0	2	0	0	0	1	0	0	1	0	0	0	0	0	0	4	11
5:45 PM	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2	10
Count Total	0	0	9	9	0	4	6	0	0	2	0	2	0	0	0	0	32	0
Peak Hour	0	0	2	4	0	1	3	0	0	1	0	0	0	0	0	0	11	0

**Two-Hour Count Summaries - Bikes**

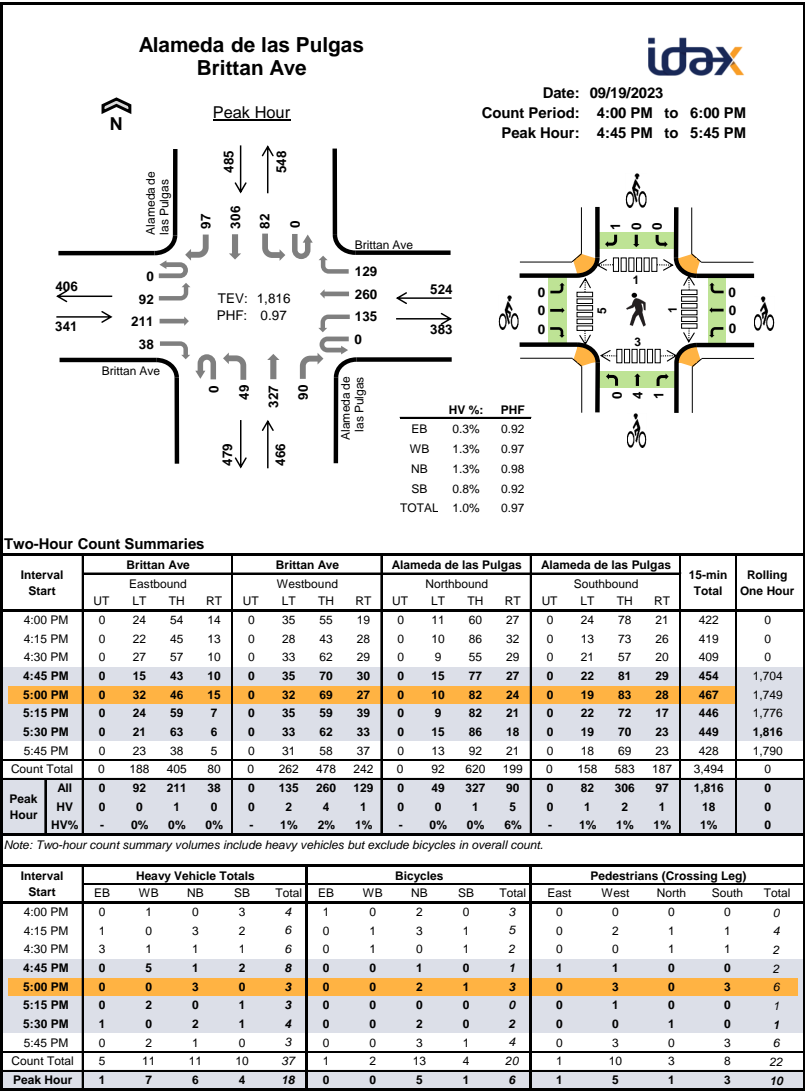
Interval Start	San Carlos Ave			San Carlos Ave			Alameda de las Pulgas			n/a			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	0
4:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
4:30 PM	0	2	0	0	1	0	1	0	0	0	0	0	4	0
4:45 PM	0	1	0	0	0	0	1	0	0	0	0	0	2	9
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	8
5:15 PM	0	1	0	0	4	0	0	0	1	0	0	0	6	12
5:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	2	10
5:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	2	10
Count Total	0	7	0	1	7	0	2	0	2	0	0	0	19	0
Peak Hour	0	3	0	0	5	0	1	0	1	0	0	0	10	0

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





Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	Brittan Ave Eastbound				Brittan Ave Westbound				Alameda de las Pulgas Northbound				Alameda de las Pulgas Southbound				15-min Total	Rolling One Hour	
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
7:00 AM	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	1	4	0	
7:15 AM	0	0	0	0	0	0	0	1	0	0	2	2	0	0	0	1	0	6	0
7:30 AM	0	0	1	0	0	1	2	0	0	0	1	2	0	0	1	1	0	9	0
7:45 AM	0	0	0	0	0	3	3	0	0	0	3	0	0	0	0	0	0	9	28
8:00 AM	0	1	0	1	0	1	3	0	0	0	2	0	0	1	0	0	0	9	33
8:15 AM	0	0	1	0	0	1	4	0	0	1	0	1	0	0	0	1	0	9	36
8:30 AM	0	0	0	0	0	3	1	0	0	1	2	1	0	0	1	0	0	9	36
8:45 AM	0	0	2	0	0	4	1	0	0	0	0	0	0	0	1	1	1	10	37
Count Total	0	1	4	1	0	14	16	1	0	2	10	6	0	4	4	2	0	65	0
Peak Hour	0	1	1	1	0	8	11	0	0	2	7	2	0	2	1	0	0	36	0
Two-Hour Count Summaries - Bikes																			
Interval Start	Brittan Ave Eastbound				Brittan Ave Westbound				Alameda de las Pulgas Northbound				Alameda de las Pulgas Southbound				15-min Total	Rolling One Hour	
	LT	TH	RT		LT	TH	RT		LT	TH	RT		LT	TH	RT				
7:00 AM	0	2	0		0	0	0		0	0	2		0	1	0		5	0	
7:15 AM	0	1	0		0	0	0		0	0	0		0	2	0		3	0	
7:30 AM	0	1	0		0	0	0		0	1	0		0	0	0		2	0	
7:45 AM	0	0	0		0	0	0		0	2	0		0	3	0		5	15	
8:00 AM	0	0	0		0	0	0		0	0	0		0	1	0		1	11	
8:15 AM	1	0	0		1	0	0		0	1	1		0	1	0		5	13	
8:30 AM	0	0	0		0	0	0		0	1	0		0	3	0		4	15	
8:45 AM	0	0	0		0	0	0		0	0	0		0	1	0		1	11	
Count Total	1	4	0		1	0	0		0	5	3		0	12	0		26	0	
Peak Hour	1	0	0		1	0	0		0	4	1		0	8	0		15	0	
Note: U-Turn volumes for bikes are included in Left-Turn, if any.																			



Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	Brittan Ave				Brittan Ave				Alameda de las Pulgas				Alameda de las Pulgas				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	4	0
4:15 PM	0	0	1	0	0	0	0	0	0	0	3	0	0	0	1	1	6	0
4:30 PM	0	0	3	0	0	0	1	0	0	0	1	0	0	1	0	0	6	0
4:45 PM	0	0	0	0	0	1	3	1	0	0	0	1	0	0	1	1	8	24
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3	23
5:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	3	20
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	2	0	1	0	0	4	18
5:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	3	13
Count Total	0	0	5	0	0	3	5	3	0	0	5	6	0	3	5	2	37	0
Peak Hour	0	0	1	0	0	2	4	1	0	0	1	5	0	1	2	1	18	0
Two-Hour Count Summaries - Bikes																		
Interval Start	Brittan Ave				Brittan Ave				Alameda de las Pulgas				Alameda de las Pulgas				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	LT	TH	RT		LT	TH	RT		LT	TH	RT		LT	TH	RT			
4:00 PM	0	1	0		0	0	0		0	1	1		0	0	0		3	0
4:15 PM	0	0	0		0	1	0		0	3	0		0	1	0		5	0
4:30 PM	0	0	0		0	1	0		0	0	0		0	1	0		2	0
4:45 PM	0	0	0		0	0	0		0	1	0		0	0	0		1	11
5:00 PM	0	0	0		0	0	0		0	1	1		0	0	1		3	11
5:15 PM	0	0	0		0	0	0		0	0	0		0	0	0		0	6
5:30 PM	0	0	0		0	0	0		0	2	0		0	0	0		2	6
5:45 PM	0	0	0		0	0	0		0	3	0		0	1	0		4	9
Count Total	0	1	0		0	2	0		0	11	2		0	3	1		20	0
Peak Hour	0	0	0		0	0	0		0	4	1		0	0	1		6	0
Note: U-Turn volumes for bikes are included in Left-Turn, if any.																		

# Appendix B

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## Intersection Level of Service Calculations (Existing Conditions)


























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HCM 6th Signalized Intersection Summary  
1: El Camino Real & Holly Street

11/11/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	441	14	421	259	131	22	548	361	168	561	37
Future Volume (veh/h)	22	441	14	421	259	131	22	548	361	168	561	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	4	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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	23	459	13	439	270	116	23	571	271	175	584	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	27	573	17	928	502	418	230	1330	1036	229	1033	64
Arrive On Green	0.17	0.17	0.17	0.27	0.27	0.27	0.26	0.75	0.75	0.07	0.30	0.30
Sat Flow, veh/h	165	3444	102	3456	1870	1558	1781	3554	2767	3456	3400	209
Grp Volume(v), veh/h	260	0	235	439	270	116	23	571	271	175	305	315
Grp Sat Flow(s), veh/h/ln	1862	0	1849	1728	1870	1558	1781	1777	1384	1728	1777	1833
Q Serve(g_s), s	17.6	0.0	15.8	13.8	16.0	7.6	1.3	7.7	4.0	6.5	18.7	18.8
Cycle Q Clear(g_c), s	17.6	0.0	15.8	13.8	16.0	7.6	1.3	7.7	4.0	6.5	18.7	18.8
Prop In Lane	0.09		0.06	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	310	0	307	928	502	418	230	1330	1036	229	540	557
V/C Ratio(X)	0.84	0.00	0.76	0.47	0.54	0.28	0.10	0.43	0.26	0.76	0.56	0.57
Avail Cap(c_a), veh/h	457	0	454	928	502	418	230	1330	1036	359	540	557
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.00	0.97	0.82	0.82	0.82	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	0.0	51.8	39.8	40.7	37.6	42.5	11.2	10.8	59.7	38.0	38.0
Incr Delay (d2), s/veh	5.6	0.0	2.1	1.4	3.4	1.3	0.1	0.9	0.6	3.9	4.2	4.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	8.8	0.0	7.6	6.2	8.0	3.1	0.6	2.6	1.3	2.9	8.7	9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	58.1	0.0	53.8	41.3	44.0	38.9	42.5	12.1	11.6	63.6	42.3	42.2
LnGrp LOS	E	A	D	D	D	D	D	B	B	E	D	D
Approach Vol, veh/h	495			825			865			795		
Approach Delay, s/veh	56.1			41.8			12.8			46.9		
Approach LOS	E			D			B			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	21.3	44.0		39.0	12.1	53.2		25.7				
Change Period (Y+Rc), s	4.5	* 4.5		4.1	3.5	4.5		4.1				
Max Green Setting (Gmax), s	8.0	* 40		34.9	13.5	33.5		31.9				
Max Q Clear Time (g_c+I1), s	3.3	20.8		18.0	8.5	9.7		19.6				
Green Ext Time (p_c), s	0.0	3.5		5.2	0.2	5.1		1.3				

Intersection Summary

HCM 6th Ctrl Delay	37.1
HCM 6th LOS	D
























Notes

User approved ignoring U-Turning movement.

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

HCM 6th Signalized Intersection Summary  
2: Old Country Rd & Holly Street

11/11/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	756	101	36	606	17	56	130	130	54	137	131
Future Volume (veh/h)	81	756	101	36	606	17	56	130	130	54	137	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.95	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	83	771	103	37	618	17	57	133	133	55	140	134
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	1087	505	39	680	20	397	255	255	71	199	162
Arrive On Green	0.33	0.33	0.33	0.20	0.20	0.20	0.22	0.31	0.31	0.04	0.11	0.11
Sat Flow, veh/h	337	3293	1531	195	3414	98	1781	835	835	1781	1870	1525
Grp Volume(v), veh/h	456	398	103	353	0	319	57	0	266	55	140	134
Grp Sat Flow(s), veh/h/ln	1853	1777	1531	1861	0	1847	1781	0	1670	1781	1870	1525
Q Serve(g_s), s	28.4	25.1	6.3	24.4	0.0	21.7	3.3	0.0	17.1	4.0	9.4	11.2
Cycle Q Clear(g_c), s	28.4	25.1	6.3	24.4	0.0	21.7	3.3	0.0	17.1	4.0	9.4	11.2
Prop In Lane	0.18		1.00	0.10		0.05	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	612	586	505	371	0	368	397	0	510	71	199	162
V/C Ratio(X)	0.75	0.68	0.20	0.95	0.00	0.87	0.14	0.00	0.52	0.78	0.70	0.82
Avail Cap(c_a), veh/h	612	586	505	371	0	368	397	0	510	89	430	351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.78	1.00	0.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	37.6	31.3	51.4	0.0	50.4	40.6	0.0	37.3	61.9	56.1	56.9
Incr Delay (d2), s/veh	6.4	4.9	0.7	36.1	0.0	23.0	0.0	0.0	0.3	21.7	18.8	35.9
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	14.1	11.8	2.5	15.1	0.0	12.5	1.5	0.0	7.1	2.2	5.5	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	45.1	42.5	32.0	87.5	0.0	73.4	40.6	0.0	37.6	83.6	74.9	92.8
LnGrp LOS	D	D	C	F	A	E	D	A	D	F	E	F
Approach Vol, veh/h	957			672			323			329		
Approach Delay, s/veh	42.6			80.8			38.1			83.6		
Approach LOS	D			F			D			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	44.8		30.0	34.1	18.9		47.0				
Change Period (Y+Rc), s	3.0	5.1		4.1	5.1	* 5.1		4.1				
Max Green Setting (Gmax), s	6.5	38.9		25.9	15.0	* 30		42.9				
Max Q Clear Time (g_c+I1), s	6.0	19.1		26.4	5.3	13.2		30.4				
Green Ext Time (p_c), s	0.0	1.0		0.0	0.0	0.7		7.0				

Intersection Summary

HCM 6th Ctrl Delay	59.1
HCM 6th LOS	E

Notes

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

### HCM 6th Signalized Intersection Summary 3: Industrial Rd & Holly St

11/11/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔	↔	↔	↔↔↔	↔	↔	↔	↔	↔	↔↔↔	↔	↔
Traffic Volume (veh/h)	66	847	25	482	633	387	21	87	372	164	90	33
Future Volume (veh/h)	66	847	25	482	633	387	21	87	372	164	90	33
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	66	847	25	482	633	387	21	87	372	164	90	33
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	1406	43	1445	1486	663	44	184	1434	218	353	123
Arrive On Green	0.29	0.29	0.29	0.42	0.42	0.42	0.02	0.10	0.10	0.06	0.14	0.14
Sat Flow, veh/h	357	4889	149	3456	3554	1585	1781	1870	2712	3456	2571	895
Grp Volume(v), veh/h	342	286	310	482	633	387	21	87	372	164	61	62
Grp Sat Flow(s), veh/h/ln	1853	1702	1840	1728	1777	1585	1781	1870	1356	1728	1777	1689
Q Serve(g_s), s	21.0	18.7	18.7	12.3	16.4	24.4	1.5	5.7	10.0	6.1	4.0	4.3
Cycle Q Clear(g_c), s	21.0	18.7	18.7	12.3	16.4	24.4	1.5	5.7	10.0	6.1	4.0	4.3
Prop In Lane	0.19		0.08	1.00		1.00	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	533	490	529	1445	1486	663	44	184	1434	218	244	232
V/C Ratio(X)	0.64	0.58	0.59	0.33	0.43	0.58	0.48	0.47	0.26	0.75	0.25	0.27
Avail Cap(c_a), veh/h	533	490	529	1445	1486	663	226	294	1592	439	279	265
HCM Platoon Ratio	1.00	1.00	1.00	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	40.5	39.6	39.7	25.6	26.8	29.1	62.6	55.4	17.6	59.9	50.1	50.2
Incr Delay (d2), s/veh	5.9	5.0	4.7	0.1	0.1	1.1	3.0	0.7	0.0	2.0	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	10.5	8.6	9.3	5.1	7.0	9.4	0.7	2.7	6.1	2.7	1.8	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	46.3	44.7	44.3	25.7	26.9	30.2	65.6	56.1	17.6	61.8	50.3	50.5
LnGrp LOS	D	D	D	C	C	C	E	E	B	E	D	D
Approach Vol, veh/h		938			1502			480			287	
Approach Delay, s/veh		45.2			27.4			26.7			56.9	
Approach LOS		D			C			C			E	
Timer - Assigned Phs	2	3	4		6	7	8					
Phs Duration (G+Y+Rc), s	58.9	11.7	17.4		42.0	6.7	22.4					
Change Period (Y+Rc), s	4.5	3.5	4.6		4.6	3.5	4.6					
Max Green Setting (Gmax), s	38.5	16.5	20.4		37.4	16.5	20.4					
Max Q Clear Time (g_c+I1), s	26.4	8.1	12.0		23.0	3.5	6.3					
Green Ext Time (p_c), s	5.1	0.2	0.8		4.5	0.0	0.3					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay		35.1										
HCM 6th LOS		D										

### HCM Signalized Intersection Capacity Analysis 4: El Camino Real & San Carlos Avenue

11/11/2024

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔↔	↔	↔	↔↔	↔↔	↔
Traffic Volume (vph)	350	174	91	573	665	312
Future Volume (vph)	350	174	91	573	665	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	3.5	4.4	4.4	4.4
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.93	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1479	1770	3539	3539	1553
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1479	1770	3539	3539	1553
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	372	185	97	610	707	332
RTOR Reduction (vph)	0	80	0	0	0	169
Lane Group Flow (vph)	372	105	97	610	707	163
Confl. Peds. (#/hr)		38				5
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8				2
Actuated Green, G (s)	24.3	24.3	14.5	72.1	54.1	54.1
Effective Green, g (s)	24.3	24.3	14.5	72.1	54.1	54.1
Actuated g/C Ratio	0.19	0.19	0.11	0.55	0.42	0.42
Clearance Time (s)	4.6	4.6	3.5	4.4	4.4	4.4
Vehicle Extension (s)	2.0	2.0	2.5	4.0	4.0	4.0
Lane Grp Cap (vph)	641	276	197	1962	1472	646
v/s Ratio Prot	c0.11		c0.05	0.17	c0.20	
v/s Ratio Perm		0.07				0.10
v/c Ratio	0.58	0.38	0.49	0.31	0.48	0.25
Uniform Delay, d1	48.2	46.3	54.3	15.6	27.7	24.8
Progression Factor	1.00	1.00	1.11	0.96	1.24	2.36
Incremental Delay, d2	0.9	0.3	1.4	0.4	1.0	0.8
Delay (s)	49.1	46.6	61.4	15.3	35.3	59.3
Level of Service	D	D	E	B	D	E
Approach Delay (s)	48.2			21.6	43.0	
Approach LOS	D			C	D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay		37.7		HCM 2000 Level of Service		D
HCM 2000 Volume to Capacity ratio		0.41				
Actuated Cycle Length (s)		130.0		Sum of lost time (s)		15.5
Intersection Capacity Utilization		56.5%		ICU Level of Service		B
Analysis Period (min)		15				
c Critical Lane Group						

HCM 6th Signalized Intersection Summary  
5: El Camino Real & Brittan Avenue

11/11/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔	↔	↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	50	380	41	188	255	87	58	564	114	251	641	45
Future Volume (veh/h)	50	380	41	188	255	87	58	564	114	251	641	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	52	396	41	196	266	55	60	588	97	261	668	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	66	523	57	429	428	381	77	1326	592	314	2083	115
Arrive On Green	0.18	0.18	0.18	0.24	0.24	0.24	0.04	0.37	0.37	0.18	0.84	0.84
Sat Flow, veh/h	372	2960	320	1781	1777	1583	1781	3554	1585	3456	4950	273
Grp Volume(v), veh/h	259	0	230	196	266	55	60	588	97	261	458	247
Grp Sat Flow(s), veh/h/ln	1852	0	1801	1781	1777	1583	1781	1777	1585	1728	1702	1819
Q Serve(g_s), s	17.4	0.0	15.7	12.2	17.4	3.6	4.3	16.2	5.3	9.5	3.8	3.8
Cycle Q Clear(g_c), s	17.4	0.0	15.7	12.2	17.4	3.6	4.3	16.2	5.3	9.5	3.8	3.8
Prop In Lane	0.20		0.18	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	327	0	318	429	428	381	77	1326	592	314	1433	766
V/C Ratio(X)	0.79	0.00	0.72	0.46	0.62	0.14	0.78	0.44	0.16	0.83	0.32	0.32
Avail Cap(c_a), veh/h	453	0	440	429	428	381	164	1326	592	585	1433	766
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.92	0.00	0.92	0.09	0.09	0.09	0.83	0.83	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.2	0.0	50.5	42.1	44.1	38.8	61.6	30.6	27.2	52.2	6.3	6.3
Incr Delay (d2), s/veh	5.1	0.0	2.7	0.3	0.6	0.1	5.2	0.9	0.5	2.2	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	8.5	0.0	7.3	5.4	7.7	1.4	2.1	7.0	2.1	3.8	1.3	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	56.3	0.0	53.2	42.4	44.7	38.9	66.7	31.5	27.7	54.4	6.9	7.4
LnGrp LOS	E	A	D	D	D	D	E	C	C	D	A	A
Approach Vol, veh/h		489			517			745			966	
Approach Delay, s/veh		54.8			43.2			33.8			19.8	
Approach LOS		D			D			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.6	59.2		35.0	14.8	53.0		27.2				
Change Period (Y+Rc), s	3.0	4.5		3.7	3.0	4.5		4.2				
Max Green Setting (Gmax), s	12.0	39.5		31.3	22.0	29.5		31.8				
Max Q Clear Time (g_c+I1), s	6.3	5.8		19.4	11.5	18.2		19.4				
Green Ext Time (p_c), s	0.0	7.1		3.1	0.4	4.2		2.0				
Intersection Summary												
HCM 6th Ctrl Delay				34.4								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary  
6: Old Country Rd & Brittan Avenue

11/11/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔	↔	↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	27	75	95	51	183	30	196	475	54	17	302	27
Future Volume (veh/h)	27	75	95	51	183	30	196	475	54	17	302	27
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			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	81	102	55	197	32	211	511	58	18	325	29
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	471	1411	809	203	774	428	110	358	41	55	407	337
Arrive On Green	0.52	0.52	0.52	0.27	0.27	0.27	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	901	2701	1549	749	2860	1582	1027	1643	187	843	1870	1550
Grp Volume(v), veh/h	59	51	102	135	117	32	211	0	569	18	325	29
Grp Sat Flow(s), veh/h/ln	1825	1777	1549	1833	1777	1582	1027	0	1830	843	1870	1550
Q Serve(g_s), s	2.1	1.8	4.4	7.5	6.7	2.0	6.9	0.0	28.3	0.0	21.4	1.9
Cycle Q Clear(g_c), s	2.1	1.8	4.4	7.5	6.7	2.0	28.3	0.0	28.3	28.3	21.4	1.9
Prop In Lane	0.49		1.00	0.41		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	953	928	809	496	481	428	110	0	398	55	407	337
V/C Ratio(X)	0.06	0.06	0.13	0.27	0.24	0.07	1.92	0.00	1.43	0.32	0.80	0.09
Avail Cap(c_a), veh/h	953	928	809	496	481	428	110	0	398	55	407	337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.69	0.67	0.67	0.67	0.99	0.00	0.99	0.92	0.92	0.92
Uniform Delay (d), s/veh	15.3	15.3	15.9	37.3	37.0	35.3	63.3	0.0	50.9	65.0	48.1	40.5
Incr Delay (d2), s/veh	0.1	0.1	0.2	0.9	0.8	0.2	444.7	0.0	206.8	13.8	13.9	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	0.9	0.8	1.6	3.5	3.1	0.8	17.2	0.0	35.7	0.8	11.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.4	15.4	16.1	38.2	37.8	35.5	507.9	0.0	257.6	78.8	62.1	41.0
LnGrp LOS	B	B	B	D	D	D	F	A	F	E	E	D
Approach Vol, veh/h		212			284			780			372	
Approach Delay, s/veh		15.7			37.7			325.3			61.3	
Approach LOS		B			D			F			E	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		39.6		32.4		72.0		32.4				
Change Period (Y+Rc), s		4.0		4.1		4.1		* 4.1				
Max Green Setting (Gmax), s		22.0		27.9		67.9		* 28				
Max Q Clear Time (g_c+I1), s		9.5		30.3		6.4		30.3				
Green Ext Time (p_c), s		0.8		0.0		0.6		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				176.3								
HCM 6th LOS				F								
Notes												

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

HCM Signalized Intersection Capacity Analysis  
7: Industrial Rd & Brittan Avenue

11/01/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	152	402	32	257	340	53	73	288	75	46	148	66
Future Volume (vph)	152	402	32	257	340	53	73	288	75	46	148	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6				4.6		4.2	4.9	4.9	4.2	4.9	
Lane Util. Factor	0.95				0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00				1.00		1.00	1.00	0.98	1.00	0.99	
Flpb, ped/bikes	1.00				1.00		1.00	1.00	1.00	1.00	1.00	
Frt	0.99				0.99		1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.99				0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3465				3428		1770	3539	1547	1770	3351	
Flt Permitted	0.99				0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3465				3428		1770	3539	1547	1770	3351	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	167	442	35	282	374	58	80	316	82	51	163	73
RTOR Reduction (vph)	0	3	0	0	4	0	0	0	67	0	41	0
Lane Group Flow (vph)	0	641	0	0	710	0	80	316	15	51	195	0
Confl. Peds. (#/hr)									5			2
Confl. Bikes (#/hr)									2			6
Turn Type	Split	NA		Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)		26.0			28.2		8.9	18.2	18.2	7.5	16.8	
Effective Green, g (s)		26.0			28.2		8.9	18.2	18.2	7.5	16.8	
Actuated g/C Ratio		0.26			0.29		0.09	0.19	0.19	0.08	0.17	
Clearance Time (s)		4.6			4.6		4.2	4.9	4.9	4.2	4.9	
Vehicle Extension (s)		4.0			4.0		4.0	6.0	6.0	4.0	6.0	
Lane Grp Cap (vph)		917			984		160	655	286	135	573	
v/s Ratio Prot		c0.18			c0.21		0.05	c0.09		0.03	c0.06	
v/s Ratio Perm									0.01			
v/c Ratio		0.70			0.72		0.50	0.48	0.05	0.38	0.34	
Uniform Delay, d1		32.6			31.5		42.5	35.8	32.9	43.1	35.8	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.5			2.8		3.3	1.6	0.2	2.4	1.0	
Delay (s)		35.1			34.3		45.9	37.4	33.1	45.5	36.8	
Level of Service		D			C		D	D	C	D	D	
Approach Delay (s)		35.1			34.3			38.1			38.4	
Approach LOS		D			C			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay		35.9			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		98.2			Sum of lost time (s)			18.3				
Intersection Capacity Utilization		62.6%			ICU Level of Service			B				
Analysis Period (min)		15										
c Critical Lane Group												

HCM 6th Signalized Intersection Summary  
8: El Camino Real & Howard Ave

11/11/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	51	228	36	160	67	75	35	569	263	69	771	29
Future Volume (veh/h)	51	228	36	160	67	75	35	569	263	69	771	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00		1.00			0.98	1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	238	35	167	70	47	36	593	64	72	803	12
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	166	694	101	292	519	438	45	857	374	646	3075	46
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.03	0.24	0.24	0.36	0.59	0.59
Sat Flow, veh/h	429	2502	365	1103	1870	1580	1781	3554	1551	1781	5182	77
Grp Volume(v), veh/h	170	0	156	167	70	47	36	593	64	72	803	288
Grp Sat Flow(s), veh/h/ln	1668	0	1627	1103	1870	1580	1781	1777	1551	1781	1702	1855
Q Serve(g_s), s	3.4	0.0	7.8	14.4	2.8	2.2	2.0	15.3	3.3	2.7	7.5	7.5
Cycle Q Clear(g_c), s	7.8	0.0	7.8	22.2	2.8	2.2	2.0	15.3	3.3	2.7	7.5	7.5
Prop In Lane	0.31		0.22	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	509	0	451	292	519	438	45	857	374	646	2020	1101
V/C Ratio(X)	0.33	0.00	0.35	0.57	0.14	0.11	0.79	0.69	0.17	0.11	0.26	0.26
Avail Cap(c_a), veh/h	509	0	451	292	519	438	176	1812	791	646	2020	1101
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.91	0.91	0.91	1.00	1.00	1.00	0.95	0.95	0.95
Uniform Delay (d), s/veh	29.1	0.0	29.2	38.0	27.4	27.2	49.0	34.9	30.3	21.4	9.9	9.9
Incr Delay (d2), s/veh	1.8	0.0	2.1	7.2	0.5	0.4	11.0	4.6	1.0	0.0	0.3	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	3.5	0.0	3.3	4.4	1.3	0.9	1.0	7.0	1.3	1.1	2.7	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	30.8	0.0	31.3	45.2	27.9	27.6	60.0	39.4	31.3	21.4	10.2	10.4
LnGrp LOS	C	A	C	D	C	C	E	D	C	C	B	B
Approach Vol, veh/h		326			284			693			887	
Approach Delay, s/veh		31.1			38.0			39.8			11.2	
Approach LOS		C			D			D			B	
<b>Timer - Assigned Phs</b>												
Phs Duration (G+Y+Rc), s	5.6	64.4		31.0	41.1	28.9		31.0				
Change Period (Y+Rc), s	3.0	4.5		3.0	4.5	* 4.5		3.0				
Max Green Setting (Gmax), s	10.0	52.5		28.0	11.0	* 52		26.0				
Max Q Clear Time (g_c+1), s	4.0	9.5		9.8	4.7	17.3		24.2				
Green Ext Time (p_c), s		0.0	8.9	2.5	0.0	6.6		0.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay		26.7										
HCM 6th LOS		C										
<b>Notes</b>												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary  
9: Old Country Rd & Howard Ave

11/11/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	22	53	64	71	72	27	232	254	106	9	150	11
Future Volume (veh/h)	22	53	64	71	72	27	232	254	106	9	150	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.95	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	23	56	67	75	76	28	244	267	112	9	158	12
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	1110	1165	959	106	113	42	246	401	324	139	401	333
Arrive On Green	0.62	0.62	0.62	0.07	0.07	0.07	0.21	0.21	0.21	0.43	0.43	0.43
Sat Flow, veh/h	1781	1870	1540	1431	1530	573	1215	1870	1507	1003	1870	1550
Grp Volume(v), veh/h	23	56	67	94	0	85	244	267	112	9	158	12
Grp Sat Flow(s), veh/h/ln	1781	1870	1540	1799	0	1735	1215	1870	1507	1003	1870	1550
Q Serve(g_s), s	0.6	1.5	2.2	6.7	0.0	6.2	20.4	17.0	8.2	1.0	7.5	0.6
Cycle Q Clear(g_c), s	0.6	1.5	2.2	6.7	0.0	6.2	27.9	17.0	8.2	18.0	7.5	0.6
Prop In Lane	1.00		1.00	0.80		0.33	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1110	1165	959	133	0	128	246	401	324	139	401	333
V/C Ratio(X)	0.02	0.05	0.07	0.71	0.00	0.66	0.99	0.67	0.35	0.06	0.39	0.04
Avail Cap(c_a), veh/h	1110	1165	959	295	0	284	246	401	324	139	401	333
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	0.00	1.00	1.00	1.00	0.71	0.71	0.71	0.71
Uniform Delay (d), s/veh	9.4	9.5	9.7	58.8	0.0	58.6	57.1	46.8	43.3	41.5	31.3	29.3
Incr Delay (d2), s/veh	0.0	0.1	0.1	2.6	0.0	2.2	55.7	8.4	2.9	0.6	2.1	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	0.3	0.6	0.8	3.1	0.0	2.8	11.9	8.8	3.3	0.2	3.3	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.4	9.6	9.8	61.4	0.0	60.8	112.8	55.2	46.2	42.1	33.3	29.3
LnGrp LOS	A	A	A	E	A	E	F	E	D	D	C	C
Approach Vol, veh/h		146			179			623			179	
Approach Delay, s/veh		9.7			61.1			76.1			33.5	
Approach LOS		A			E			E			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		84.7		32.0		13.3		32.0				
Change Period (Y+Rc), s		3.7		4.1		3.7		4.1				
Max Green Setting (Gmax), s		69.3		27.9		21.3		27.9				
Max Q Clear Time (g_c+I), s		4.2		20.0		8.7		29.9				
Green Ext Time (p_c), s		0.3		0.3		0.5		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				58.4								
HCM 6th LOS				E								

HCM 6th Signalized Intersection Summary  
10: Club Dr/Dartmouth Ave & San Carlos Ave

11/11/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	73	271	75	28	335	103	147	76	43	114	49	120
Future Volume (veh/h)	73	271	75	28	335	103	147	76	43	114	49	120
Initial Q (Qb), veh	0	1	0	0	7	0	0	1	1	0	4	2
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.78	1.00		0.48	1.00		0.48
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	83	308	76	32	381	100	167	86	25	130	56	51
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	527	127	81	453	95	211	131	137	225	124	148
Arrive On Green	0.08	0.37	0.37	0.05	0.33	0.33	0.18	0.18	0.18	0.19	0.19	0.19
Sat Flow, veh/h	1781	1427	352	1781	1339	351	1195	615	753	1263	544	762
Grp Volume(v), veh/h	83	0	384	32	0	481	253	0	25	186	0	51
Grp Sat Flow(s), veh/h/ln	1781	0	1779	1781	0	1690	1811	0	753	1807	0	762
Q Serve(g_s), s	3.2	0.0	12.6	1.3	0.0	19.1	9.6	0.0	2.0	6.7	0.0	4.2
Cycle Q Clear(g_c), s	3.2	0.0	12.6	1.3	0.0	19.1	9.6	0.0	2.0	6.7	0.0	4.2
Prop In Lane	1.00		0.20	1.00		0.21	0.66		1.00	0.70		1.00
Lane Grp Cap(c), veh/h	138	0	649	81	0	569	329	0	137	348	0	148
V/C Ratio(X)	0.60	0.00	0.59	0.39	0.00	0.85	0.77	0.00	0.18	0.53	0.00	0.34
Avail Cap(c_a), veh/h	372	0	869	372	0	825	637	0	265	636	0	268
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.2	0.0	18.7	34.5	0.0	25.9	28.4	0.0	25.4	27.3	0.0	26.0
Incr Delay (d2), s/veh	4.2	0.0	0.9	3.1	0.0	5.5	3.8	0.0	0.6	1.3	0.0	1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	7.0	0.3	0.0	0.5	2.0	0.0	2.0
%ile BackOfQ(50%), veh/ln	1.6	0.0	5.1	0.6	0.0	11.1	4.6	0.0	0.5	3.7	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.4	0.0	19.6	37.6	0.0	38.5	32.5	0.0	26.5	30.6	0.0	29.3
LnGrp LOS	D	A	B	D	A	D	C	A	C	C	A	C
Approach Vol, veh/h		467			513			278			237	
Approach Delay, s/veh		22.8			38.4			31.9			30.4	
Approach LOS		C			D			C			C	
Timer - Assigned Phs		1	2		4	5	6		8			
Phs Duration (G+Y+Rc), s		6.8	31.1		17.3	9.2	28.8		16.6			
Change Period (Y+Rc), s		3.5	4.9		3.7	3.5	4.9		3.7			
Max Green Setting (Gmax), s		15.0	35.1		25.3	15.0	35.1		25.3			
Max Q Clear Time (g_c+I), s		3.3	14.6		8.7	5.2	21.1		11.6			
Green Ext Time (p_c), s		0.0	2.4		1.3	0.1	2.8		1.4			
Intersection Summary												
HCM 6th Ctrl Delay					31.1							
HCM 6th LOS					C							

HCM 6th Signalized Intersection Summary  
11: Alameda de las Pulgas & San Carlos Ave

11/11/2024

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	531	210	174	448	210	333
Future Volume (veh/h)	531	210	174	448	210	333
Initial Q (Qb), veh	5	0	0	6	1	0
Ped-Bike Adj(A_pbT)	0.97	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	565	116	185	477	223	317
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	770	633	251	1165	403	587
Arrive On Green	0.41	0.41	0.14	0.62	0.23	0.23
Sat Flow, veh/h	1870	1540	1781	1870	1781	1585
Grp Volume(v), veh/h	565	116	185	477	223	317
Grp Sat Flow(s),veh/h/ln	1870	1540	1781	1870	1781	1585
Q Serve(g_s), s	14.2	2.7	5.5	7.2	6.2	8.8
Cycle Q Clear(g_c), s	14.2	2.7	5.5	7.2	6.2	8.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	770	633	251	1165	403	587
V/C Ratio(X)	0.73	0.18	0.74	0.41	0.55	0.54
Avail Cap(c_a), veh/h	1337	1101	960	1337	954	1073
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.0	10.8	23.7	5.8	19.3	14.1
Incr Delay (d2), s/veh	2.0	0.2	5.9	0.3	1.2	0.8
Initial Q Delay(d3),s/veh	1.1	0.0	0.0	0.3	0.1	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.9	2.7	3.0	2.6	8.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.1	11.0	29.5	6.5	20.5	14.9
LnGrp LOS	B	B	C	A	C	B
Approach Vol, veh/h	681			662	540	
Approach Delay, s/veh	16.9			12.9	17.2	
Approach LOS	B			B	B	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.9	27.0		16.7		38.9
Change Period (Y+Rc), s	4.0	* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s	30.0	* 40		* 30		* 40
Max Q Clear Time (g_c+I1), s	7.5	16.2		10.8		9.2
Green Ext Time (p_c), s	0.8	6.5		1.7		5.0
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay			15.6			
HCM 6th LOS			B			
<b>Notes</b>						

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

HCM 6th Signalized Intersection Summary  
12: Alameda de las Pulgas & Brittan Avenue






















11/11/2024

	↖	→	↘	↙	←	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑	↑	↑	↑		↑	↑	↑	↑	↑	↑	
Traffic Volume (veh/h)	102	186	59	117	194	65	34	308	84	109	307	111	
Future Volume (veh/h)	102	186	59	117	194	65	34	308	84	109	307	111	
Initial Q (Qb), veh	0	0	0	0	0	0	0	1	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	0.97	1.00		1.00	1.00	1.00		0.96	1.00		0.96	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No				No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	106	194	19	122	202	51	35	321	63	114	320	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	138	252	325	337	273	69	63	405	78	146	452	112	
Arrive On Green	0.21	0.21	0.21	0.19	0.19	0.19	0.04	0.27	0.27	0.08	0.31	0.31	
Sat Flow, veh/h	649	1189	1534	1781	1440	364	1781	1506	296	1781	1436	355	
Grp Volume(v), veh/h	300	0	19	122	0	253	35	0	384	114	0	399	
Grp Sat Flow(s),veh/h/ln	1838	0	1534	1781	0	1804	1781	0	1802	1781	0	1791	
Q Serve(g_s), s	10.7	0.0	0.7	4.1	0.0	9.2	1.3	0.0	13.8	4.4	0.0	13.7	
Cycle Q Clear(g_c), s	10.7	0.0	0.7	4.1	0.0	9.2	1.3	0.0	13.8	4.4	0.0	13.7	
Prop In Lane	0.35		1.00	1.00		0.20	1.00		0.16	1.00		0.20	
Lane Grp Cap(c), veh/h	390	0	325	337	0	342	63	0	484	146	0	564	
V/C Ratio(X)	0.77	0.00	0.06	0.36	0.00	0.74	0.56	0.00	0.79	0.78	0.00	0.71	
Avail Cap(c_a), veh/h	1081	0	902	1047	0	1061	770	0	1171	770	0	1164	
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	25.9	0.0	22.0	24.6	0.0	26.7	33.2	0.0	23.8	31.5	0.0	21.0	
Incr Delay (d2), s/veh	3.2	0.0	0.1	0.7	0.0	3.2	2.8	0.0	3.0	3.4	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	0.1	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	4.8	0.0	0.2	1.7	0.0	4.1	0.6	0.0	6.1	2.0	0.0	5.6	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	29.2	0.0	22.0	25.3	0.0	29.9	36.0	0.0	27.0	34.9	0.0	22.7	
LnGrp LOS	C	A	C	C	A	C	D	A	C	C	A	C	
Approach Vol, veh/h		319			375			419			513		
Approach Delay, s/veh		28.7			28.4			27.7			25.4		
Approach LOS		C			C			C			C		
Timer - Assigned Phs		1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s		9.7	23.4		18.9	6.5	26.6		17.4				
Change Period (Y+Rc), s		4.0	4.9		* 4.2	4.0	4.9		4.2				
Max Green Setting (Gmax), s		30.0	45.1		* 41	30.0	45.1		40.8				
Max Q Clear Time (g_c+I1), s		6.4	15.8		12.7	3.3	15.7		11.2				
Green Ext Time (p_c), s		0.0	2.6		1.9	0.0	2.7		1.9				
<b>Intersection Summary</b>													
HCM 6th Ctrl Delay					27.3								
HCM 6th LOS					C								
<b>Notes</b>													

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

HCM 6th Signalized Intersection Summary  
1: El Camino Real & Holly Street

11/11/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	208	26	501	272	242	27	695	390	147	642	45
Future Volume (veh/h)	61	208	26	501	272	242	27	695	390	147	642	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	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	63	214	18	516	280	208	28	716	266	152	662	39
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	85	303	26	1061	574	479	324	1406	1095	206	905	53
Arrive On Green	0.11	0.11	0.11	0.31	0.31	0.31	0.36	0.79	0.79	0.06	0.27	0.27
Sat Flow, veh/h	746	2674	234	3456	1870	1562	1781	3554	2769	3456	3410	201
Grp Volume(v), veh/h	155	0	140	516	280	208	28	716	266	152	345	356
Grp Sat Flow(s), veh/h/ln	1833	0	1821	1728	1870	1562	1781	1777	1384	1728	1777	1834
Q Serve(g_s), s	10.6	0.0	9.6	15.8	15.9	13.8	1.3	9.2	3.2	5.6	23.0	23.0
Cycle Q Clear(g_c), s	10.6	0.0	9.6	15.8	15.9	13.8	1.3	9.2	3.2	5.6	23.0	23.0
Prop In Lane	0.41		0.13	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	208	0	206	1061	574	479	324	1406	1095	206	472	487
V/C Ratio(X)	0.75	0.00	0.68	0.49	0.49	0.43	0.09	0.51	0.24	0.74	0.73	0.73
Avail Cap(c_a), veh/h	450	0	447	1061	574	479	324	1406	1095	359	472	487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.00	0.99	0.74	0.74	0.74	0.88	0.88	0.88	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.8	0.0	55.4	36.7	36.7	36.0	34.2	9.2	8.5	60.1	43.5	43.5
Incr Delay (d2), s/veh	2.0	0.0	1.5	1.2	2.2	2.1	0.0	1.2	0.5	3.8	9.6	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	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	5.1	0.0	4.5	7.0	7.7	5.6	0.6	2.7	1.0	2.6	11.3	11.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	57.8	0.0	56.8	37.9	38.9	38.1	34.3	10.3	9.0	63.9	53.1	52.9
LnGrp LOS	E	A	E	D	D	D	C	B	A	E	D	D
Approach Vol, veh/h	295			1004			1010			853		
Approach Delay, s/veh	57.3			38.2			10.6			55.0		
Approach LOS	E			D			B			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.2	39.0		44.0	11.3	55.9		18.8				
Change Period (Y+Rc), s	4.5	* 4.5		4.1	3.5	4.5		4.1				
Max Green Setting (Gmax), s	8.0	* 35		39.9	13.5	28.5		31.9				
Max Q Clear Time (g_c+I1), s	3.3	25.0		17.9	7.6	11.2		12.6				
Green Ext Time (p_c), s	0.0	2.9		7.0	0.2	5.6		0.8				

Intersection Summary

HCM 6th Ctrl Delay	35.7
HCM 6th LOS	D






















Notes

User approved ignoring U-Turning movement.

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

HCM 6th Signalized Intersection Summary  
2: Old Country Rd & Holly Street

11/11/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	582	61	23	762	14	101	232	124	37	129	138
Future Volume (veh/h)	87	582	61	23	762	14	101	232	124	37	129	138
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			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	606	64	24	794	15	105	242	129	39	134	144
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	111	778	374	25	870	17	454	401	214	50	211	172
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.26	0.36	0.36	0.03	0.11	0.11
Sat Flow, veh/h	452	3172	1523	102	3547	70	1781	1128	601	1781	1870	1528
Grp Volume(v), veh/h	372	325	64	437	0	396	105	0	371	39	134	144
Grp Sat Flow(s), veh/h/ln	1848	1777	1523	1865	0	1854	1781	0	1730	1781	1870	1528
Q Serve(g_s), s	24.7	22.0	4.3	30.0	0.0	26.6	6.1	0.0	22.9	2.8	8.9	12.0
Cycle Q Clear(g_c), s	24.7	22.0	4.3	30.0	0.0	26.6	6.1	0.0	22.9	2.8	8.9	12.0
Prop In Lane	0.24		1.00	0.05		0.04	1.00		0.35	1.00		1.00
Lane Grp Cap(c), veh/h	453	436	374	458	0	455	454	0	615	50	211	172
V/C Ratio(X)	0.82	0.75	0.17	0.96	0.00	0.87	0.23	0.00	0.60	0.78	0.64	0.84
Avail Cap(c_a), veh/h	453	436	374	458	0	455	454	0	615	89	430	351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	1.00	0.00	1.00	0.94	0.00	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.3	45.3	38.6	48.4	0.0	47.1	38.3	0.0	34.3	62.8	55.1	56.5
Incr Delay (d2), s/veh	13.5	9.7	0.9	32.3	0.0	19.7	0.1	0.0	4.1	9.3	13.8	36.0
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	13.1	11.0	1.7	18.2	0.0	14.9	2.7	0.0	10.3	1.4	5.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	59.8	55.0	39.5	80.7	0.0	66.8	38.4	0.0	38.4	72.1	68.9	92.5
LnGrp LOS	E	E	D	F	A	E	D	A	D	E	E	F
Approach Vol, veh/h	761			833			476			317		
Approach Delay, s/veh	56.1			74.1			38.4			80.0		
Approach LOS	E			E			D			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	51.3		36.0	38.3	19.7		36.0				
Change Period (Y+Rc), s	3.0	5.1		4.1	5.1	* 5.1		4.1				
Max Green Setting (Gmax), s	6.5	43.9		31.9	20.0	* 30		31.9				
Max Q Clear Time (g_c+I1), s	4.8	24.9		32.0	8.1	14.0		26.7				
Green Ext Time (p_c), s	0.0	1.5		0.0	0.1	0.6		2.9				

Intersection Summary

HCM 6th Ctrl Delay	62.0
HCM 6th LOS	E

Notes

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



### HCM 6th Signalized Intersection Summary 3: Industrial Rd & Holly St

11/11/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	699	30	316	718	315	58	187	729	321	131	57
Future Volume (veh/h)	34	699	30	316	718	315	58	187	729	321	131	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	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	35	728	31	329	748	328	60	195	759	334	136	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	44	968	42	1402	1442	643	77	349	1641	309	568	234
Arrive On Green	0.20	0.20	0.20	0.41	0.41	0.41	0.04	0.19	0.19	0.09	0.23	0.23
Sat Flow, veh/h	224	4945	217	3456	3554	1585	1781	1870	2733	3456	2441	1006
Grp Volume(v), veh/h	291	242	261	329	748	328	60	195	759	334	97	98
Grp Sat Flow(s),veh/h/ln	1859	1702	1825	1728	1777	1585	1781	1870	1366	1728	1777	1670
Q Serve(g_s), s	20.9	18.7	18.8	8.8	22.2	21.7	4.7	13.3	22.0	12.5	6.2	6.7
Cycle Q Clear(g_c), s	20.9	18.7	18.8	8.8	22.2	21.7	4.7	13.3	22.0	12.5	6.2	6.7
Prop In Lane	0.12		0.12	1.00		1.00	1.00		1.00	1.00		0.60
Lane Grp Cap(c), veh/h	364	333	357	1402	1442	643	77	349	1641	309	413	388
V/C Ratio(X)	0.80	0.73	0.73	0.23	0.52	0.51	0.78	0.56	0.46	1.08	0.23	0.25
Avail Cap(c_a), veh/h	590	540	579	1402	1442	643	210	460	1803	309	413	388
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.7	52.8	52.8	27.3	31.3	31.2	66.3	51.7	16.1	63.8	43.6	43.8
Incr Delay (d2), s/veh	16.7	13.0	12.4	0.4	1.3	2.9	6.2	0.5	0.1	75.0	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	11.6	9.3	9.9	3.8	9.9	8.8	2.2	6.3	13.6	8.7	2.8	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.3	65.8	65.2	27.7	32.7	34.1	72.5	52.2	16.2	138.8	43.7	43.9
LnGrp LOS	E	E	E	C	C	C	E	D	B	F	D	D
Approach Vol, veh/h		794			1405			1014			529	
Approach Delay, s/veh		67.3			31.8			26.5			103.8	
Approach LOS		E			C			C			F	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		61.3	16.0	30.7		32.0	9.6	37.2				
Change Period (Y+Rc), s		4.5	3.5	4.6		4.6	3.5	4.6				
Max Green Setting (Gmax), s		31.5	12.5	34.4		44.4	16.5	20.4				
Max Q Clear Time (g_c+I1), s		24.2	14.5	24.0		22.9	6.7	8.7				
Green Ext Time (p_c), s		3.7	0.0	2.1		4.3	0.0	0.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay		48.1										
HCM 6th LOS		D										

### HCM Signalized Intersection Capacity Analysis 4: El Camino Real & San Carlos Avenue

11/11/2024

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	343	178	135	856	806	399
Future Volume (vph)	343	178	135	856	806	399
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	3.5	4.4	4.4	4.4
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.94	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1493	1770	3539	3539	1536
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1493	1770	3539	3539	1536
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	365	189	144	911	857	424
RTOR Reduction (vph)	0	81	0	0	0	154
Lane Group Flow (vph)	365	108	144	911	857	270
Confl. Peds. (#/hr)		32				12
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8				2
Actuated Green, G (s)	22.1	22.1	15.4	79.7	60.8	60.8
Effective Green, g (s)	22.1	22.1	15.4	79.7	60.8	60.8
Actuated g/C Ratio	0.17	0.17	0.12	0.61	0.47	0.47
Clearance Time (s)	4.6	4.6	3.5	4.4	4.4	4.4
Vehicle Extension (s)	2.0	2.0	2.5	4.0	4.0	4.0
Lane Grp Cap (vph)	583	253	209	2169	1655	718
v/s Ratio Prot	c0.11		c0.08	0.26	c0.24	
v/s Ratio Perm		0.07				0.18
v/c Ratio	0.63	0.43	0.69	0.42	0.52	0.38
Uniform Delay, d1	50.1	48.3	55.0	13.1	24.3	22.3
Progression Factor	1.00	1.00	1.18	0.68	1.18	1.58
Incremental Delay, d2	1.5	0.4	8.1	0.6	1.1	1.4
Delay (s)	51.6	48.7	72.8	9.5	29.6	36.7
Level of Service	D	D	E	A	C	D
Approach Delay (s)	50.6			18.2	32.0	
Approach LOS	D			B	C	
<b>Intersection Summary</b>						
HCM 2000 Control Delay		30.5		HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio		0.49				
Actuated Cycle Length (s)		130.0		Sum of lost time (s)		15.5
Intersection Capacity Utilization		58.7%		ICU Level of Service		B
Analysis Period (min)		15				
c Critical Lane Group						



HCM 6th Signalized Intersection Summary  
5: El Camino Real & Brittan Avenue

11/11/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	88	321	46	239	337	161	71	658	62	211	681	69
Future Volume (veh/h)	88	321	46	239	337	161	71	658	62	211	681	69
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		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	1.00	1.00	1.00
Work Zone On Approach	No				No			No				No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	334	33	249	351	138	74	685	45	220	709	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	115	438	45	363	553	402	94	1361	606	272	1968	157
Arrive On Green	0.16	0.16	0.16	0.26	0.26	0.26	0.05	0.38	0.38	0.16	0.82	0.82
Sat Flow, veh/h	700	2674	275	1416	2160	1570	1781	3554	1581	3456	4812	384
Grp Volume(v), veh/h	241	0	218	316	284	138	74	685	45	220	500	266
Grp Sat Flow(s), veh/h/ln	1835	0	1813	1800	1777	1570	1781	1777	1581	1728	1702	1792
Q Serve(g_s), s	16.5	0.0	14.8	20.6	18.4	9.3	5.3	19.2	2.3	8.0	4.9	5.0
Cycle Q Clear(g_c), s	16.5	0.0	14.8	20.6	18.4	9.3	5.3	19.2	2.3	8.0	4.9	5.0
Prop In Lane	0.38		0.15	0.79		1.00	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	300	0	297	461	455	402	94	1361	606	272	1392	733
V/C Ratio(X)	0.80	0.00	0.73	0.69	0.62	0.34	0.79	0.50	0.07	0.81	0.36	0.36
Avail Cap(c_a), veh/h	449	0	444	461	455	402	164	1361	606	478	1392	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.93	0.00	0.93	0.93	0.93	0.93	0.81	0.81	0.81	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	0.0	51.7	43.6	42.8	39.4	60.9	30.7	25.5	53.8	7.4	7.4
Incr Delay (d2), s/veh	4.8	0.0	2.4	7.5	5.9	2.2	4.4	1.1	0.2	2.2	0.7	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	8.0	0.0	7.0	10.2	8.8	3.9	2.5	8.3	0.9	3.3	1.6	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	57.2	0.0	54.1	51.2	48.7	41.6	65.3	31.7	25.7	56.0	8.2	8.8
LnGrp LOS	E	A	D	D	D	D	E	C	C	E	A	A
Approach Vol, veh/h		459			738			804			986	
Approach Delay, s/veh		55.7			48.4			34.5			19.0	
Approach LOS		E			D			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	57.7		37.0	13.2	54.3		25.5				
Change Period (Y+Rc), s	3.0	4.5		3.7	3.0	4.5		4.2				
Max Green Setting (Gmax), s	12.0	37.5		33.3	18.0	31.5		31.8				
Max Q Clear Time (g_c+I1), s	7.3	7.0		22.6	10.0	21.2		18.5				
Green Ext Time (p_c), s	0.0	7.7		4.2	0.2	4.4		1.9				
Intersection Summary												
HCM 6th Ctrl Delay			36.1									
HCM 6th LOS			D									

HCM 6th Signalized Intersection Summary  
6: Old Country Rd & Brittan Avenue

11/11/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	26	102	139	59	202	20	143	353	53	12	540	26
Future Volume (veh/h)	26	102	139	59	202	20	143	353	53	12	540	26
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		0.97	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	27	107	146	62	213	21	151	372	56	13	568	27
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	79	331	179	415	1521	844	55	405	61	82	479	397
Arrive On Green	0.04	0.04	0.04	0.54	0.54	0.54	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	693	2920	1578	774	2835	1573	843	1581	238	960	1870	1550
Grp Volume(v), veh/h	72	62	146	147	128	21	151	0	428	13	568	27
Grp Sat Flow(s), veh/h/ln	1836	1777	1578	1832	1777	1573	843	0	1819	960	1870	1550
Q Serve(g_s), s	4.9	4.4	11.9	5.2	4.7	0.8	0.0	0.0	29.8	1.7	33.3	1.7
Cycle Q Clear(g_c), s	4.9	4.4	11.9	5.2	4.7	0.8	33.3	0.0	29.8	31.5	33.3	1.7
Prop In Lane	0.38		1.00	0.42		1.00	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	208	202	179	983	953	844	55	0	466	82	479	397
V/C Ratio(X)	0.34	0.31	0.82	0.15	0.13	0.02	2.73	0.00	0.92	0.16	1.19	0.07
Avail Cap(c_a), veh/h	860	832	739	983	953	844	55	0	466	82	479	397
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	0.68	0.65	0.65	0.65	0.99	0.00	0.99	0.85	0.85	0.85
Uniform Delay (d), s/veh	57.8	57.6	61.2	15.2	15.1	14.2	65.0	0.0	47.0	62.3	48.4	36.6
Incr Delay (d2), s/veh	3.0	2.7	23.5	0.2	0.2	0.0	824.7	0.0	25.5	3.5	100.5	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.5	2.2	6.3	2.3	2.0	0.3	14.5	0.0	16.6	0.5	28.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.9	60.3	84.7	15.4	15.2	14.2	889.7	0.0	72.5	65.9	148.8	36.9
LnGrp LOS	E	E	F	B	B	B	F	A	E	E	F	D
Approach Vol, veh/h		280			296			579			608	
Approach Delay, s/veh		73.2			15.2			285.6			142.1	
Approach LOS		E			B			F			F	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		73.7		37.4		18.9		37.4				
Change Period (Y+Rc), s		4.0		4.1		4.1		* 4.1				
Max Green Setting (Gmax), s		24.0		32.9		60.9		* 33				
Max Q Clear Time (g_c+I1), s		7.2		35.3		13.9		35.3				
Green Ext Time (p_c), s		0.9		0.0		0.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay					157.0							
HCM 6th LOS					F							
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM Signalized Intersection Capacity Analysis  
7: Industrial Rd & Brittan Avenue

11/01/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	133	275	41	166	293	20	239	633	105	155	181	158
Future Volume (vph)	133	275	41	166	293	20	239	633	105	155	181	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6			4.6			4.2	4.9	4.9	4.2	4.9	
Lane Util. Factor	0.95			0.95			1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00			1.00			1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes	1.00			1.00			1.00	1.00	1.00	1.00	1.00	
Frt	0.99			0.99			1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.99			0.98			0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3434			3455			1770	3539	1541	1770	3256	
Flt Permitted	0.99			0.98			0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3434			3455			1770	3539	1541	1770	3256	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	139	286	43	173	305	21	249	659	109	161	189	165
RTOR Reduction (vph)	0	6	0	0	2	0	0	0	77	0	119	0
Lane Group Flow (vph)	0	462	0	0	497	0	249	659	32	161	235	0
Confl. Peds. (#/hr)		2			1				4			4
Confl. Bikes (#/hr)			1						9			4
Turn Type	Split	NA		Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)		22.2			23.1		21.1	30.7	30.7	14.8	24.4	
Effective Green, g (s)		22.2			23.1		21.1	30.7	30.7	14.8	24.4	
Actuated g/C Ratio		0.20			0.21		0.19	0.28	0.28	0.14	0.22	
Clearance Time (s)		4.6			4.6		4.2	4.9	4.9	4.2	4.9	
Vehicle Extension (s)		4.0			4.0		4.0	6.0	6.0	4.0	6.0	
Lane Grp Cap (vph)		698			731		342	995	433	240	728	
v/s Ratio Prot		c0.13			c0.14		c0.14	c0.19		c0.09	0.07	
v/s Ratio Perm								0.02				
v/c Ratio		0.66			0.68		0.73	0.66	0.07	0.67	0.32	
Uniform Delay, d1		40.0			39.6		41.3	34.6	28.8	44.8	35.4	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.6			2.8		8.0	2.6	0.2	7.8	0.7	
Delay (s)		42.6			42.3		49.3	37.2	29.0	52.6	36.2	
Level of Service		D			D		D	D	C	D	D	
Approach Delay (s)		42.6			42.3			39.3			41.3	
Approach LOS		D			D			D			D	
<b>Intersection Summary</b>												
HCM 2000 Control Delay		41.0			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		0.67										
Actuated Cycle Length (s)		109.1			Sum of lost time (s)			18.3				
Intersection Capacity Utilization		68.3%			ICU Level of Service			C				
Analysis Period (min)		15										
c Critical Lane Group												
























HCM 6th Signalized Intersection Summary  
8: El Camino Real & Howard Ave

11/11/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	55	162	47	282	171	124	34	710	205	64	909	47
Future Volume (veh/h)	55	162	47	282	171	124	34	710	205	64	909	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	1	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			1.00	1.00		0.99	1.00		0.98	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	57	167	28	291	176	89	35	732	39	66	937	43
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	196	573	101	335	529	444	44	1029	448	546	2931	134
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.02	0.29	0.29	0.31	0.59	0.59
Sat Flow, veh/h	505	2026	357	1185	1870	1568	1781	3554	1547	1781	5000	229
Grp Volume(v), veh/h	124	0	128	291	176	89	35	732	39	66	937	343
Grp Sat Flow(s), veh/h/ln	1252	0	1636	1185	1870	1568	1781	1777	1547	1781	1702	1825
Q Serve(g_s), s	3.9	0.0	6.0	22.0	7.4	4.3	1.9	18.3	1.8	2.6	9.4	9.5
Cycle Q Clear(g_c), s	11.3	0.0	6.0	28.0	7.4	4.3	1.9	18.3	1.8	2.6	9.4	9.5
Prop In Lane	0.46		0.22	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	407	0	463	335	529	444	44	1029	448	546	1995	1070
V/C Ratio(X)	0.30	0.00	0.28	0.87	0.33	0.20	0.79	0.71	0.09	0.12	0.32	0.32
Avail Cap(c_a), veh/h	407	0	463	335	529	444	180	1920	836	547	1995	1070
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.83	0.83	0.83	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	29.7	0.0	27.6	39.6	28.1	27.0	48.0	31.5	25.6	24.7	10.4	10.4
Incr Delay (d2), s/veh	1.9	0.0	1.5	21.4	1.4	0.8	10.8	4.2	0.4	0.0	0.4	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.7	0.0	2.5	9.1	3.5	1.7	1.0	8.2	0.7	1.1	3.3	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	31.6	0.0	29.1	61.0	29.5	27.8	58.8	35.7	26.0	24.8	10.8	11.2
LnGrp LOS	C	A	C	E	C	C	E	D	C	C	B	B
Approach Vol, veh/h		252			556			806			1046	
Approach Delay, s/veh		30.3			45.7			36.2			11.8	
Approach LOS		C			D			D			B	
<b>Timer - Assigned Phs</b>												
Phs Duration (G+Y+Rc), s	5.5	62.5		31.0	34.9	33.1		31.0				
Change Period (Y+Rc), s	3.0	4.5		3.0	4.5	* 4.5		3.0				
Max Green Setting (Gmax), s	10.0	50.5		28.0	7.0	* 54		28.0				
Max Q Clear Time (g_c+1), s	3.9	11.5		13.3	4.6	20.3		30.0				
Green Ext Time (p_c), s	0.0	11.2		1.7	0.0	8.2		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay		28.1										
HCM 6th LOS		C										
<b>Notes</b>												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												









HCM 6th Signalized Intersection Summary  
9: Old Country Rd & Howard Ave

11/11/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	88	103	104	99	16	198	205	55	11	354	13
Future Volume (veh/h)	19	88	103	104	99	16	198	205	55	11	354	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.93	1.00		0.96	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	22	100	117	118	112	18	225	233	62	12	402	15
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	919	965	795	170	176	29	201	560	457	284	560	465
Arrive On Green	0.52	0.52	0.52	0.10	0.10	0.10	0.30	0.30	0.30	0.60	0.60	0.60
Sat Flow, veh/h	1781	1870	1542	1628	1686	274	983	1870	1527	1145	1870	1555
Grp Volume(v), veh/h	22	100	117	130	0	118	225	233	62	12	402	15
Grp Sat Flow(s), veh/h/ln	1781	1870	1542	1789	0	1798	983	1870	1527	1145	1870	1555
Q Serve(g_s), s	0.8	3.6	5.2	9.1	0.0	8.2	19.2	13.0	3.9	0.8	19.7	0.5
Cycle Q Clear(g_c), s	0.8	3.6	5.2	9.1	0.0	8.2	38.9	13.0	3.9	13.8	19.7	0.5
Prop In Lane	1.00		1.00	0.91		0.15	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	919	965	795	186	0	187	201	560	457	284	560	465
V/C Ratio(X)	0.02	0.10	0.15	0.70	0.00	0.63	1.12	0.42	0.14	0.04	0.72	0.03
Avail Cap(c_a), veh/h	919	965	795	617	0	620	201	560	457	284	560	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	0.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86
Uniform Delay (d), s/veh	15.4	16.1	16.5	56.2	0.0	55.8	58.0	36.5	33.3	25.0	22.2	18.4
Incr Delay (d2), s/veh	0.0	0.2	0.4	1.7	0.0	1.3	99.8	2.3	0.6	0.2	6.7	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	0.3	1.6	1.9	4.2	0.0	3.8	12.2	6.3	1.5	0.2	6.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.5	16.3	16.9	58.0	0.0	57.1	157.8	38.7	33.9	25.3	28.9	18.5
LnGrp LOS	B	B	B	E	A	E	F	D	C	C	C	B
Approach Vol, veh/h	239			248			520			429		
Approach Delay, s/veh	16.5			57.6			89.7			28.5		
Approach LOS	B			E			F			C		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	70.3			43.0			16.7			43.0		
Change Period (Y+Rc), s	3.2			4.1			3.2			4.1		
Max Green Setting (Gmax), s	35.8			38.9			44.8			38.9		
Max Q Clear Time (g_c+I1), s	7.2			21.7			11.1			40.9		
Green Ext Time (p_c), s	0.6			1.4			1.0			0.0		
Intersection Summary												
HCM 6th Ctrl Delay	53.7											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary  
10: Club Dr/Dartmouth Ave & San Carlos Ave

11/11/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	441	113	22	530	44	90	17	17	47	30	51
Future Volume (veh/h)	47	441	113	22	530	44	90	17	17	47	30	51
Initial Q (Qb), veh	0	0	0	0	1	0	0	1	0	0	1	0
Peak-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			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	474	120	24	570	42	97	18	13	51	32	8
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	113	582	147	66	666	14	168	163	237	122	197	230
Arrive On Green	0.07	0.44	0.44	0.04	0.41	0.41	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	1430	362	1781	1717	127	1514	281	1519	1115	700	1485
Grp Volume(v), veh/h	51	0	594	24	0	612	115	0	13	83	0	8
Grp Sat Flow(s), veh/h/ln	1781	0	1792	1781	0	1844	1795	0	1519	1815	0	1485
Q Serve(g_s), s	1.4	0.0	14.7	0.7	0.0	15.5	3.2	0.0	0.4	2.2	0.0	0.3
Cycle Q Clear(g_c), s	1.4	0.0	14.7	0.7	0.0	15.5	3.2	0.0	0.4	2.2	0.0	0.3
Prop In Lane	1.00		0.20	1.00		0.07	0.84		1.00	0.61		1.00
Lane Grp Cap(c), veh/h	113	0	730	66	0	614	205	0	237	204	0	230
V/C Ratio(X)	0.45	0.00	0.81	0.36	0.00	1.00	0.56	0.00	0.05	0.41	0.00	0.03
Avail Cap(c_a), veh/h	506	0	1192	506	0	1227	850	0	720	860	0	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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.3	0.0	19.8	33.4	0.0	35.6	22.4	0.0	24.5	22.1	0.0	24.5
Incr Delay (d2), s/veh	2.8	0.0	2.3	3.3	0.0	16.0	2.4	0.0	0.1	1.3	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	4.2	0.4	0.0	0.0	0.3	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.9	0.0	8.6	0.5	0.0	19.0	1.6	0.0	0.2	1.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.1	0.0	22.0	36.7	0.0	55.8	25.2	0.0	24.6	23.7	0.0	24.5
LnGrp LOS	D	A	C	D	A	E	C	A	C	C	A	C
Approach Vol, veh/h	645			636			128			91		
Approach Delay, s/veh	23.1			55.1			25.2			23.7		
Approach LOS	C			E			C			C		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.6	28.0	9.6		7.2	26.4	9.6					
Change Period (Y+Rc), s	3.5	4.9	3.7		3.5	4.9	3.7					
Max Green Setting (Gmax), s	15.0	35.1	25.0		15.0	35.1	25.0					
Max Q Clear Time (g_c+I1), s	2.7	16.7	4.2		3.4	17.5	5.2					
Green Ext Time (p_c), s	0.0	4.0	0.4		0.1	4.0	0.6					
Intersection Summary												
HCM 6th Ctrl Delay	36.9											
HCM 6th LOS	D											

HCM 6th Signalized Intersection Summary  
11: Alameda de las Pulgas & San Carlos Ave

11/11/2024

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	409	246	287	523	249	272
Future Volume (veh/h)	409	246	287	523	249	272
Initial Q (Qb), veh	5	0	1	3	0	0
Ped-Bike Adj(A_pbT)	0.97	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	435	149	305	556	265	261
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	646	527	398	1196	366	682
Arrive On Green	0.34	0.34	0.22	0.64	0.21	0.21
Sat Flow, veh/h	1870	1533	1781	1870	1781	1585
Grp Volume(v), veh/h	435	149	305	556	265	261
Grp Sat Flow(s),veh/h/ln	1870	1533	1781	1870	1781	1585
Q Serve(g_s), s	10.8	3.8	8.7	8.3	7.5	6.1
Cycle Q Clear(g_c), s	10.8	3.8	8.7	8.3	7.5	6.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	646	527	398	1196	366	682
V/C Ratio(X)	0.67	0.28	0.77	0.46	0.72	0.38
Avail Cap(c_a), veh/h	1378	1130	989	1378	983	1227
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.2	13.2	20.0	5.2	20.6	10.7
Incr Delay (d2), s/veh	1.7	0.4	4.4	0.4	2.7	0.4
Initial Q Delay(d3),s/veh	1.3	0.0	0.2	0.1	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	1.3	4.0	2.7	3.2	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.3	13.6	24.5	5.6	23.3	11.1
LnGrp LOS	B	B	C	A	C	B
Approach Vol, veh/h	584			861	526	
Approach Delay, s/veh	17.8			12.3	17.3	
Approach LOS	B			B	B	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.0	22.7		15.4		38.7
Change Period (Y+Rc), s	4.0	* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s	30.0	* 40		* 30		* 40
Max Q Clear Time (g_c+I1), s	10.7	12.8		9.5		10.3
Green Ext Time (p_c), s	1.4	5.3		1.7		6.1

Intersection Summary

HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B

Notes

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

HCM 6th Signalized Intersection Summary  
12: Alameda de las Pulgas & Brittan Avenue

11/11/2024

	↖	→	↘	↙	←	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	
Traffic Volume (veh/h)	92	211	38	135	260	129	49	327	90	82	306	97	
Future Volume (veh/h)	92	211	38	135	260	129	49	327	90	82	306	97	
Initial Q (Qb), veh	0	0	0	0	0	0	0	6	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	0.99	1.00		0.97	1.00		0.97	1.00		0.97	1.00	0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	95	218	5	139	268	108	51	337	71	85	315	78	
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	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	266	327	456	322	130	73	423	79	109	428	106	
Arrive On Green	0.21	0.21	0.21	0.26	0.26	0.26	0.04	0.27	0.27	0.06	0.29	0.29	
Sat Flow, veh/h	559	1283	1574	1781	1256	506	1781	1488	314	1781	1435	355	
Grp Volume(v), veh/h	313	0	5	139	0	376	51	0	408	85	0	393	
Grp Sat Flow(s),veh/h/ln	1842	0	1574	1781	0	1763	1781	0	1802	1781	0	1791	
Q Serve(g_s), s	13.8	0.0	0.2	5.4	0.0	17.1	2.4	0.0	18.2	4.0	0.0	17.0	
Cycle Q Clear(g_c), s	13.8	0.0	0.2	5.4	0.0	17.1	2.4	0.0	18.2	4.0	0.0	17.0	
Prop In Lane	0.30		1.00	1.00		0.29	1.00		0.17	1.00		0.20	
Lane Grp Cap(c), veh/h	383	0	327	456	0	451	73	0	502	109	0	534	
V/C Ratio(X)	0.82	0.00	0.02	0.30	0.00	0.83	0.70	0.00	0.81	0.78	0.00	0.74	
Avail Cap(c_a), veh/h	883	0	754	853	0	844	627	0	954	627	0	948	
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	33.6	0.0	27.9	26.6	0.0	31.2	42.0	0.0	30.3	41.0	0.0	27.8	
Incr Delay (d2), s/veh	4.3	0.0	0.0	0.4	0.0	4.1	4.5	0.0	3.2	4.4	0.0	2.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	6.7	0.0	0.1	2.4	0.0	7.9	1.2	0.0	9.9	1.9	0.0	7.5	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	37.9	0.0	28.0	27.0	0.0	35.3	46.5	0.0	39.1	45.5	0.0	29.8	
LnGrp LOS	D	A	C	C	A	D	D	A	D	D	A	C	
Approach Vol, veh/h		318			515			459				478	
Approach Delay, s/veh		37.7			33.1			39.9				32.5	
Approach LOS		D			C			D				C	
Timer - Assigned Phs		1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s		9.2	27.8		22.0	7.5	29.5		26.1				
Change Period (Y+Rc), s		4.0	4.9		* 4.2	4.0	4.9		4.2				
Max Green Setting (Gmax), s		30.0	45.1		* 41	30.0	45.1		40.8				
Max Q Clear Time (g_c+I1), s		6.0	20.2		15.8	4.4	19.0		19.1				
Green Ext Time (p_c), s		0.0	2.7		1.9	0.0	2.6		2.8				

Intersection Summary

HCM 6th Ctrl Delay	35.5
HCM 6th LOS	D

Notes

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

# Appendix C

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## Intersection Level of Service Calculations (Cumulative 2045 General Plan Conditions)



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HCM 6th Signalized Intersection Summary  
1: El Camino Real & Holly Street

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	22	559	85	421	259	131	55	586	501	168	561	37
Future Volume (veh/h)	22	559	85	421	259	131	55	586	501	168	561	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	4	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	23	582	87	439	270	116	57	610	417	175	584	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	25	651	103	633	342	283	201	891	691	356	768	47
Arrive On Green	0.21	0.21	0.21	0.18	0.18	0.18	0.11	0.25	0.25	0.10	0.23	0.23
Sat Flow, veh/h	116	3042	479	3456	1870	1546	1781	3554	2756	3456	3400	209
Grp Volume(v), veh/h	370	0	322	439	270	116	57	610	417	175	305	315
Grp Sat Flow(s), veh/h/ln	1865	0	1773	1728	1870	1546	1781	1777	1378	1728	1777	1833
Q Serve(g_s), s	12.7	0.0	11.3	7.7	9.0	4.3	1.9	10.1	8.7	3.1	10.4	10.5
Cycle Q Clear(g_c), s	12.7	0.0	11.3	7.7	9.0	4.3	1.9	10.1	8.7	3.1	10.4	10.5
Prop In Lane	0.06		0.27	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	399	0	379	633	342	283	201	891	691	356	401	414
V/C Ratio(X)	0.93	0.00	0.85	0.69	0.79	0.41	0.28	0.68	0.60	0.49	0.76	0.76
Avail Cap(c_a), veh/h	399	0	379	633	342	283	201	891	691	372	533	550
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.00	0.97	0.70	0.70	0.70	0.72	0.72	0.72	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	0.0	24.5	24.8	25.3	23.4	26.4	22.0	21.7	27.5	23.5	23.5
Incr Delay (d2), s/veh	26.9	0.0	15.2	4.4	12.2	3.1	0.2	3.1	2.8	0.8	12.7	12.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	8.3	0.0	6.1	3.4	5.0	1.8	0.8	4.2	3.0	1.2	5.4	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.0	0.0	39.8	29.2	37.5	26.5	26.6	25.1	25.1	28.3	36.2	36.0
LnGrp LOS	D	A	D	C	D	C	C	C	C	C	D	D
Approach Vol, veh/h		692			825			1084			795	
Approach Delay, s/veh		46.3			31.6			25.2			34.4	
Approach LOS		D			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.8	19.2		16.0	10.2	20.8		18.0				
Change Period (Y+Rc), s	4.5	* 4.5		4.1	3.5	4.5		4.1				
Max Green Setting (Gmax), s	4.0	* 20		11.9	7.0	16.0		13.9				
Max Q Clear Time (g_c+I1), s	3.9	12.5		11.0	5.1	12.1		14.7				
Green Ext Time (p_c), s	0.0	2.1		0.5	0.1	2.1		0.0				

Intersection Summary

HCM 6th Ctrl Delay	33.2
HCM 6th LOS	C

Notes

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

User approved ignoring U-Turning movement.

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

HCM 6th Signalized Intersection Summary  
2: Old Country Rd & Holly Street

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	283	763	176	67	606	64	56	153	131	54	310	131
Future Volume (veh/h)	283	763	176	67	606	64	56	153	131	54	310	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.95	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		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	779	180	68	618	65	57	156	134	55	316	134
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	235	675	386	80	759	84	150	237	204	70	362	299
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.08	0.26	0.26	0.04	0.19	0.19
Sat Flow, veh/h	930	2670	1524	316	3002	331	1781	903	775	1781	1870	1544
Grp Volume(v), veh/h	567	501	180	399	0	352	57	0	290	55	316	134
Grp Sat Flow(s), veh/h/ln	1824	1777	1524	1855	0	1795	1781	0	1678	1781	1870	1544
Q Serve(g_s), s	21.5	21.5	8.5	17.4	0.0	15.5	2.6	0.0	13.1	2.6	13.9	6.5
Cycle Q Clear(g_c), s	21.5	21.5	8.5	17.4	0.0	15.5	2.6	0.0	13.1	2.6	13.9	6.5
Prop In Lane	0.51		1.00	0.17		0.18	1.00		0.46	1.00		1.00
Lane Grp Cap(c), veh/h	461	449	386	469	0	454	150	0	441	70	362	299
V/C Ratio(X)	1.23	1.12	0.47	0.85	0.00	0.78	0.38	0.00	0.66	0.78	0.87	0.45
Avail Cap(c_a), veh/h	461	449	386	469	0	454	150	0	441	136	422	349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.64	0.64	0.64	1.00	0.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.8	31.8	26.9	30.2	0.0	29.5	36.8	0.0	27.9	40.5	33.3	30.3
Incr Delay (d2), s/veh	114.8	70.3	2.6	17.4	0.0	12.2	0.1	0.0	0.7	6.9	24.0	4.8
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	23.9	17.8	3.3	9.9	0.0	8.1	1.1	0.0	5.2	1.3	8.6	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	146.5	102.0	29.5	47.6	0.0	41.7	36.9	0.0	28.6	47.4	57.2	35.1
LnGrp LOS	F	F	C	D	A	D	D	A	C	D	E	D
Approach Vol, veh/h		1248			751			347			505	
Approach Delay, s/veh		111.8			44.8			30.0			50.3	
Approach LOS		F			D			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	27.4		25.6	12.2	21.6		25.6				
Change Period (Y+Rc), s	3.0	5.1		4.1	5.1	* 5.1		4.1				
Max Green Setting (Gmax), s	6.5	19.2		21.5	6.5	* 19		21.5				
Max Q Clear Time (g_c+I1), s	4.6	15.1		19.4	4.6	15.9		23.5				
Green Ext Time (p_c), s	0.0	0.5		0.9	0.0	0.5		0.0				

Intersection Summary

HCM 6th Ctrl Delay	73.3
HCM 6th LOS	E

Notes

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










### HCM 6th Signalized Intersection Summary 3: Industrial Rd & Holly St

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔↔		↔↔	↔↔	↔↔	↔↔	↔	↔↔	↔↔	↔↔	
Traffic Volume (veh/h)	202	847	25	482	633	464	21	716	372	296	341	79
Future Volume (veh/h)	202	847	25	482	633	464	21	716	372	296	341	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	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	202	847	25	482	633	464	21	716	372	296	341	79
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	217	982	30	768	790	352	43	643	1563	269	1138	260
Arrive On Green	0.23	0.23	0.23	0.22	0.22	0.22	0.02	0.34	0.34	0.08	0.40	0.40
Sat Flow, veh/h	949	4290	129	3456	3554	1585	1781	1870	2744	3456	2864	654
Grp Volume(v), veh/h	388	329	357	482	633	464	21	716	372	296	210	210
Grp Sat Flow(s), veh/h/ln	1823	1702	1843	1728	1777	1585	1781	1870	1372	1728	1777	1741
Q Serve(g_s), s	28.2	25.0	25.0	17.0	22.8	30.0	1.6	46.4	9.2	10.5	10.9	11.2
Cycle Q Clear(g_c), s	28.2	25.0	25.0	17.0	22.8	30.0	1.6	46.4	9.2	10.5	10.9	11.2
Prop In Lane	0.52		0.07	1.00		1.00	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	417	390	422	768	790	352	43	643	1563	269	706	692
V/C Ratio(X)	0.93	0.84	0.85	0.63	0.80	1.32	0.49	1.11	0.24	1.10	0.30	0.30
Avail Cap(c_a), veh/h	417	390	422	768	790	352	92	643	1563	269	706	692
HCM Platoon Ratio	1.00	1.00	1.00	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	51.0	49.8	49.8	47.5	49.7	52.5	65.0	44.3	14.7	62.3	27.8	27.9
Incr Delay (d2), s/veh	29.6	19.6	18.5	1.5	5.8	161.5	3.1	71.0	0.0	84.7	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	16.4	12.8	13.8	7.5	10.8	27.6	0.7	33.7	4.6	7.7	4.6	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.6	69.4	68.2	48.9	55.4	214.0	68.2	115.3	14.7	147.0	27.9	28.0
LnGrp LOS	F	E	E	D	E	F	E	F	B	F	C	C
Approach Vol, veh/h	1074			1579			1109			716		
Approach Delay, s/veh	73.0			100.1			80.7			77.2		
Approach LOS	E			F			F			E		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	34.5		14.0	51.0		35.5		6.8	58.2			
Change Period (Y+Rc), s	4.5		3.5	4.6		4.6		3.5	4.6			
Max Green Setting (Gmax), s	30.0		10.5	46.4		30.9		7.0	49.9			
Max Q Clear Time (g_c+I1), s	32.0		12.5	48.4		30.2		3.6	13.2			
Green Ext Time (p_c), s	0.0		0.0	0.0		0.5		0.0	1.6			
Intersection Summary												
HCM 6th Ctrl Delay	85.1											
HCM 6th LOS	F											

### HCM Signalized Intersection Capacity Analysis 4: El Camino Real & San Carlos Avenue

10/31/2024

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	 			 	 	
Traffic Volume (vph)	735	250	439	573	665	326
Future Volume (vph)	735	250	439	573	665	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	3.5	4.4	4.4	4.4
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1505	1770	3539	3539	1556
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1505	1770	3539	3539	1556
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	782	266	467	610	707	347
RTOR Reduction (vph)	0	67	0	0	0	261
Lane Group Flow (vph)	782	199	467	610	707	86
Confl. Peds. (#/hr)	38			5		
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases	8			2		
Actuated Green, G (s)	22.4	22.4	23.7	49.6	22.4	22.4
Effective Green, g (s)	22.4	22.4	23.7	49.6	22.4	22.4
Actuated g/C Ratio	0.25	0.25	0.26	0.55	0.25	0.25
Clearance Time (s)	4.6	4.6	3.5	4.4	4.4	4.4
Vehicle Extension (s)	2.0	2.0	2.5	4.0	4.0	4.0
Lane Grp Cap (vph)	854	374	466	1950	880	387
v/s Ratio Prot	c0.23		c0.26	0.17	c0.20	
v/s Ratio Perm		0.13				0.06
v/c Ratio	0.92	0.53	1.00	0.31	0.80	0.22
Uniform Delay, d1	32.9	29.3	33.1	11.0	31.7	26.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.0	0.7	42.2	0.4	7.7	1.3
Delay (s)	46.9	30.0	75.4	11.4	39.4	28.2
Level of Service	D	C	E	B	D	C
Approach Delay (s)	42.6			39.1	35.7	
Approach LOS	D			D	D	
Intersection Summary						
HCM 2000 Control Delay	39.1			HCM 2000 Level of Service		D
HCM 2000 Volume to Capacity ratio	0.84					
Actuated Cycle Length (s)	90.0			Sum of lost time (s)		15.5
Intersection Capacity Utilization	78.9%			ICU Level of Service		D
Analysis Period (min)	15					
c Critical Lane Group						



HCM 6th Signalized Intersection Summary  
5: El Camino Real & Brittan Avenue

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Traffic Volume (veh/h)	50	402	41	188	255	92	58	661	230	262	641	45
Future Volume (veh/h)	50	402	41	188	255	92	58	661	230	262	641	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	52	419	41	196	266	60	60	689	218	273	668	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	64	537	55	318	317	282	75	983	438	377	1700	94
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.04	0.28	0.28	0.11	0.34	0.34
Sat Flow, veh/h	356	2994	307	1781	1777	1582	1781	3554	1585	3456	4950	273
Grp Volume(v), veh/h	271	0	241	196	266	60	60	689	218	273	458	247
Grp Sat Flow(s), veh/h/ln	1853	0	1804	1781	1777	1582	1781	1777	1585	1728	1702	1819
Q Serve(g_s), s	8.4	0.0	7.6	6.1	8.7	1.9	2.0	10.4	6.9	4.6	6.1	6.2
Cycle Q Clear(g_c), s	8.4	0.0	7.6	6.1	8.7	1.9	2.0	10.4	6.9	4.6	6.1	6.2
Prop In Lane	0.19		0.17	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	332	0	324	318	317	282	75	983	438	377	1169	624
V/C Ratio(X)	0.81	0.00	0.75	0.62	0.84	0.21	0.80	0.70	0.50	0.72	0.39	0.40
Avail Cap(c_a), veh/h	352	0	343	318	317	282	178	983	438	403	1169	624
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.00	0.92	0.88	0.88	0.88	0.81	0.81	0.81	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	23.3	22.8	23.8	21.1	28.5	19.5	18.2	25.9	14.9	15.0
Incr Delay (d2), s/veh	11.8	0.0	7.1	7.7	20.4	1.5	5.7	3.4	3.2	4.9	1.0	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	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4.5	0.0	3.6	3.1	5.2	0.8	0.9	4.3	2.7	2.0	2.2	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.4	0.0	30.4	30.4	44.2	22.6	34.2	22.9	21.4	30.8	15.9	16.8
LnGrp LOS	D	A	C	C	D	C	C	C	C	C	B	B
Approach Vol, veh/h		512			522			967			978	
Approach Delay, s/veh		33.1			36.6			23.3			20.3	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	25.1		14.4	9.5	21.1		15.0				
Change Period (Y+Rc), s	3.0	4.5		3.7	3.0	4.5		4.2				
Max Green Setting (Gmax), s	6.0	16.5		10.7	7.0	15.5		11.4				
Max Q Clear Time (g_c+I1), s	4.0	8.2		10.7	6.6	12.4		10.4				
Green Ext Time (p_c), s	0.0	3.5		0.0	0.0	1.9		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				26.3								
HCM 6th LOS				C								
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 6th Signalized Intersection Summary  
6: Old Country Rd & Brittan Avenue

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Traffic Volume (veh/h)	83	162	114	51	183	34	196	908	72	47	465	27
Future Volume (veh/h)	83	162	114	51	183	34	196	908	72	47	465	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	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	89	174	123	55	197	37	211	976	77	51	500	29
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	209	441	279	219	837	463	390	921	73	65	1008	841
Arrive On Green	0.18	0.18	0.18	0.29	0.29	0.29	0.54	0.54	0.54	0.54	0.54	0.54
Sat Flow, veh/h	1154	2435	1542	749	2860	1582	874	1708	135	536	1870	1559
Grp Volume(v), veh/h	140	123	123	135	117	37	211	0	1053	51	500	29
Grp Sat Flow(s), veh/h/ln	1813	1777	1542	1833	1777	1582	874	0	1843	536	1870	1559
Q Serve(g_s), s	7.5	6.7	7.8	6.2	5.5	1.9	22.0	0.0	59.3	0.0	18.5	1.0
Cycle Q Clear(g_c), s	7.5	6.7	7.8	6.2	5.5	1.9	40.5	0.0	59.3	59.3	18.5	1.0
Prop In Lane	0.64		1.00	0.41		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	328	321	279	537	520	463	390	0	993	65	1008	841
V/C Ratio(X)	0.43	0.38	0.44	0.25	0.23	0.08	0.54	0.00	1.06	0.78	0.50	0.03
Avail Cap(c_a), veh/h	328	321	279	537	520	463	390	0	993	65	1008	841
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.69	0.09	0.09	0.09	0.85	0.00	0.85	0.78	0.78	0.78
Uniform Delay (d), s/veh	40.0	39.7	40.1	29.7	29.5	28.2	28.7	0.0	25.4	55.0	15.9	11.9
Incr Delay (d2), s/veh	2.8	2.4	3.5	0.1	0.1	0.0	4.5	0.0	43.8	50.3	1.4	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	3.6	3.1	3.2	2.7	2.4	0.7	5.0	0.0	35.8	2.3	7.9	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.8	42.0	43.6	29.8	29.6	28.2	33.2	0.0	69.1	105.3	17.3	12.0
LnGrp LOS	D	D	D	C	C	C	A	F	F	F	B	B
Approach Vol, veh/h		386			289			1264			580	
Approach Delay, s/veh		42.8			29.5			63.1			24.8	
Approach LOS		D			C			E			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.6		63.4		24.0		63.4				
Change Period (Y+Rc), s		4.0		4.1		4.1		* 4.1				
Max Green Setting (Gmax), s		19.0		58.9		19.9		* 59				
Max Q Clear Time (g_c+I1), s		8.2		61.3		9.8		61.3				
Green Ext Time (p_c), s		0.7		0.0		0.9		0.0				
Intersection Summary												
HCM 6th Ctrl Delay					47.3							
HCM 6th LOS					D							
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM Signalized Intersection Capacity Analysis  
7: Industrial Rd & Brittan Avenue

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	
Traffic Volume (vph)	610	402	32	257	340	336	73	494	75	70	169	72
Future Volume (vph)	610	402	32	257	340	336	73	494	75	70	169	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.2	4.9	4.9	4.2	4.9	
Lane Util. Factor		0.95			0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00			1.00		1.00	1.00	0.98	1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00			0.95		1.00	1.00	0.85	1.00	0.96	
Flt Protected		0.97			0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3423			3303		1770	3539	1544	1770	3357	
Flt Permitted		0.97			0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3423			3303		1770	3539	1544	1770	3357	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	670	442	35	282	374	369	80	543	82	77	186	79
RTOR Reduction (vph)	0	2	0	0	65	0	0	0	67	0	40	0
Lane Group Flow (vph)	0	1145	0	0	960	0	80	543	15	77	225	0
Confl. Peds. (#/hr)									5			2
Confl. Bikes (#/hr)									2			6
Turn Type	Split	NA		Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)		39.4			34.4		6.8	21.5	21.5	6.4	21.1	
Effective Green, g (s)		39.4			34.4		6.8	21.5	21.5	6.4	21.1	
Actuated g/C Ratio		0.33			0.29		0.06	0.18	0.18	0.05	0.18	
Clearance Time (s)		4.6			4.6		4.2	4.9	4.9	4.2	4.9	
Vehicle Extension (s)		4.0			4.0		4.0	6.0	6.0	4.0	6.0	
Lane Grp Cap (vph)		1123			946		100	634	276	94	590	
v/s Ratio Prot		c0.33			c0.29		0.05	c0.15		c0.04	0.07	
v/s Ratio Perm									0.01			
v/c Ratio		1.15d1			1.01		0.80	0.86	0.05	0.82	0.38	
Uniform Delay, d1		40.3			42.8		55.9	47.8	40.8	56.2	43.7	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		31.9			33.0		36.8	12.5	0.2	42.0	1.2	
Delay (s)		72.2			75.8		92.7	60.2	41.0	98.2	44.9	
Level of Service		E			E		F	E	D	F	D	
Approach Delay (s)		72.2			75.8			61.7			56.9	
Approach LOS		E			E			E			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay		69.4			HCM 2000 Level of Service			E				
HCM 2000 Volume to Capacity ratio		0.97										
Actuated Cycle Length (s)		120.0			Sum of lost time (s)			18.3				
Intersection Capacity Utilization		94.3%			ICU Level of Service			F				
Analysis Period (min)		15										
d1 Defacto Left Lane. Recode with 1 though lane as a left lane.												
c Critical Lane Group												

HCM 6th Signalized Intersection Summary  
8: El Camino Real & Howard Ave

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔		↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	79	277	46	160	67	75	119	751	272	69	771	29
Future Volume (veh/h)	79	277	46	160	67	75	119	751	272	69	771	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.98	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		No		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	289	45	167	70	47	124	782	73	72	803	12
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	250	817	126	362	648	548	157	1105	483	325	2202	33
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.09	0.31	0.31	0.18	0.42	0.42
Sat Flow, veh/h	530	2356	365	1044	1870	1581	1781	3554	1551	1781	5182	77
Grp Volume(v), veh/h	215	0	201	167	70	47	124	782	73	72	527	288
Grp Sat Flow(s),veh/h/ln	1622	0	1628	1044	1870	1581	1781	1777	1551	1781	1702	1855
Q Serve(g_s), s	3.8	0.0	6.9	10.6	1.9	1.5	5.1	14.6	2.6	2.6	7.9	7.9
Cycle Q Clear(g_c), s	7.0	0.0	6.9	17.5	1.9	1.5	5.1	14.6	2.6	2.6	7.9	7.9
Prop In Lane	0.38		0.22	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	628	0	564	362	648	548	157	1105	483	325	1446	788
V/C Ratio(X)	0.34	0.00	0.36	0.46	0.11	0.09	0.79	0.71	0.15	0.22	0.36	0.37
Avail Cap(c_a), veh/h	628	0	564	362	648	548	280	1493	652	325	1446	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.91	0.91	0.91	1.00	1.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	18.2	0.0	18.3	24.8	16.6	16.5	33.5	22.8	18.7	26.1	14.7	14.7
Incr Delay (d2), s/veh	1.5	0.0	1.8	3.8	0.3	0.3	3.3	3.8	0.7	0.1	0.6	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	2.9	0.0	2.7	2.9	0.8	0.6	2.3	6.2	0.9	1.1	2.9	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.7	0.0	20.0	28.6	16.9	16.8	36.8	26.6	19.3	26.2	15.3	15.9
LnGrp LOS	B	A	C	C	B	B	D	C	B	C	B	B
Approach Vol, veh/h		416			284			979			887	
Approach Delay, s/veh		19.8			23.8			27.4			16.4	
Approach LOS		B			C			C			B	
<b>Timer - Assigned Phs</b>												
Phs Duration (G+Y+Rc), s	9.6	36.4		29.0	18.2	27.8		29.0				
Change Period (Y+Rc), s	3.0	4.5		3.0	4.5	* 4.5		3.0				
Max Green Setting (Gmax), s	11.8	26.7		26.0	7.0	* 32		26.0				
Max Q Clear Time (g_c+1), s	7.1	9.9		9.0	4.6	16.6		19.5				
Green Ext Time (p_c), s	0.1	6.4		3.2	0.0	6.4		0.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay		22.0										
HCM 6th LOS		C										
<b>Notes</b>												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary  
9: Old Country Rd & Howard Ave

10/31/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	60	73	64	71	72	54	232	608	127	173	186	11
Future Volume (veh/h)	60	73	64	71	72	54	232	608	127	173	186	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	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	63	77	67	75	76	57	244	640	134	182	196	12
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	581	610	498	112	116	89	538	850	696	199	850	708
Arrive On Green	0.33	0.33	0.33	0.09	0.09	0.09	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	1781	1870	1528	1224	1266	967	1174	1870	1532	696	1870	1558
Grp Volume(v), veh/h	63	77	67	111	0	97	244	640	134	182	196	12
Grp Sat Flow(s), veh/h/ln	1781	1870	1528	1809	0	1649	1174	1870	1532	696	1870	1558
Q Serve(g_s), s	2.2	2.6	2.8	5.3	0.0	5.1	14.4	25.5	4.7	15.4	5.7	0.4
Cycle Q Clear(g_c), s	2.2	2.6	2.8	5.3	0.0	5.1	20.1	25.5	4.7	40.9	5.7	0.4
Prop In Lane	1.00		1.00	0.68		0.59	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	581	610	498	166	0	151	538	850	696	199	850	708
V/C Ratio(X)	0.11	0.13	0.13	0.67	0.00	0.64	0.45	0.75	0.19	0.92	0.23	0.02
Avail Cap(c_a), veh/h	581	610	498	378	0	344	538	850	696	199	850	708
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	0.00	1.00	1.00	1.00	0.88	0.88	0.88	0.88
Uniform Delay (d), s/veh	21.2	21.3	21.4	39.6	0.0	39.5	21.1	20.4	14.7	40.0	15.0	13.5
Incr Delay (d2), s/veh	0.4	0.4	0.5	1.7	0.0	1.7	2.7	6.1	0.6	41.3	0.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.0	1.2	1.1	2.4	0.0	2.1	4.1	11.7	1.7	6.3	2.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.5	21.7	21.9	41.3	0.0	41.2	23.8	26.5	15.3	81.3	15.5	13.5
LnGrp LOS	C	C	C	D	A	D	C	C	B	F	B	B
Approach Vol, veh/h		207			208			1018			390	
Approach Delay, s/veh		21.7			41.2			24.4			46.2	
Approach LOS		C			D			C			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		33.1		45.0		11.9		45.0				
Change Period (Y+Rc), s		3.7		4.1		3.7		4.1				
Max Green Setting (Gmax), s		18.8		40.9		18.8		40.9				
Max Q Clear Time (g_c+I), s		4.8		42.9		7.3		27.5				
Green Ext Time (p_c), s		0.4		0.0		0.6		3.1				
Intersection Summary												
HCM 6th Ctrl Delay				30.7								
HCM 6th LOS				C								

HCM 6th Signalized Intersection Summary  
10: Club Dr/Dartmouth Ave & San Carlos Ave

10/31/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	109	271	170	40	501	103	192	76	43	114	61	156
Future Volume (veh/h)	109	271	170	40	501	103	192	76	43	114	61	156
Initial Q (Qb), veh	0	1	0	0	7	0	0	1	1	0	4	2
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.74	1.00		0.49	1.00		0.49
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	124	308	184	45	569	100	218	86	25	130	69	53
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	368	45	103	400	22	259	209	160	221	229	156
Arrive On Green	0.09	0.31	0.31	0.06	0.27	0.27	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	1063	635	1781	1459	256	1295	511	777	1183	628	771
Grp Volume(v), veh/h	124	0	492	45	0	669	304	0	25	199	0	53
Grp Sat Flow(s), veh/h/ln	1781	0	1698	1781	0	1716	1806	0	777	1811	0	771
Q Serve(g_s), s	4.6	0.0	19.3	1.7	0.0	18.6	11.0	0.0	1.8	6.8	0.0	4.0
Cycle Q Clear(g_c), s	4.6	0.0	19.3	1.7	0.0	18.6	11.0	0.0	1.8	6.8	0.0	4.0
Prop In Lane	1.00		0.37	1.00		0.15	0.72		1.00	0.65		1.00
Lane Grp Cap(c), veh/h	162	0	488	103	0	425	372	0	160	364	0	156
V/C Ratio(X)	0.77	0.00	1.01	0.44	0.00	1.57	0.82	0.00	0.16	0.55	0.00	0.34
Avail Cap(c_a), veh/h	209	0	521	209	0	468	498	0	214	499	0	213
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.0	0.0	28.9	32.8	0.0	30.2	26.1	0.0	22.5	25.0	0.0	23.8
Incr Delay (d2), s/veh	11.8	0.0	41.0	2.9	0.0	268.8	7.8	0.0	0.5	1.3	0.0	1.3
Initial Q Delay(d3), s/veh	0.0	0.0	7.4	0.0	0.0	59.2	0.3	0.0	0.3	1.9	0.0	1.8
%ile BackOfQ(50%), veh/ln	2.6	0.0	15.3	0.8	0.0	46.5	5.5	0.0	0.4	3.5	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	43.8	0.0	77.3	35.7	0.0	358.2	34.1	0.0	23.3	28.2	0.0	26.9
LnGrp LOS	D	A	F	D	A	F	C	A	C	C	A	C
Approach Vol, veh/h		616			714		329			252		
Approach Delay, s/veh		70.5			337.9		33.3			27.9		
Approach LOS		E			F		C			C		
Timer - Assigned Phs		1	2		4	5	6		8			
Phs Duration (G+Y+Rc), s		7.5	25.8		17.2	9.8	23.5		17.7			
Change Period (Y+Rc), s		3.5	4.9		3.7	3.5	4.9		3.7			
Max Green Setting (Gmax), s		8.0	18.6		18.8	8.0	18.6		18.8			
Max Q Clear Time (g_c+I), s		3.7	21.3		8.8	6.6	20.6		13.0			
Green Ext Time (p_c), s		0.0	0.0		1.1	0.0	0.0		1.0			
Intersection Summary												
HCM 6th Ctrl Delay					158.4							
HCM 6th LOS					F							

HCM 6th Signalized Intersection Summary  
11: Alameda de las Pulgas & San Carlos Ave

10/31/2024

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗	↘	↙	↖	↗	↘
Traffic Volume (veh/h)	573	242	174	466	248	333
Future Volume (veh/h)	573	242	174	466	248	333
Initial Q (Qb), veh	5	0	0	6	1	0
Ped-Bike Adj(A_pbT)	0.97	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	610	150	185	496	264	317
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	768	638	234	1156	409	584
Arrive On Green	0.42	0.42	0.13	0.62	0.23	0.23
Sat Flow, veh/h	1870	1540	1781	1870	1781	1585
Grp Volume(v), veh/h	610	150	185	496	264	317
Grp Sat Flow(s),veh/h/ln	1870	1540	1781	1870	1781	1585
Q Serve(g_s), s	15.7	3.5	5.6	7.6	7.5	8.9
Cycle Q Clear(g_c), s	15.7	3.5	5.6	7.6	7.5	8.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	768	638	234	1156	409	584
V/C Ratio(X)	0.79	0.24	0.79	0.43	0.65	0.54
Avail Cap(c_a), veh/h	1030	848	321	1501	866	979
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.0	11.0	24.3	6.0	19.5	14.2
Incr Delay (d2), s/veh	3.8	0.3	10.9	0.4	1.7	0.8
Initial Q Delay(d3),s/veh	1.5	0.0	0.0	0.3	0.1	0.0
%ile BackOfQ(50%),veh/ln	8.2	1.2	3.0	3.0	3.1	8.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.3	11.3	35.1	6.7	21.4	15.0
LnGrp LOS	C	B	D	A	C	B
Approach Vol, veh/h	760			681	581	
Approach Delay, s/veh	19.3			14.4	17.9	
Approach LOS	B			B	B	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.3	27.4		16.9		38.7
Change Period (Y+Rc), s	4.0	* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s	10.0	* 31		* 27		* 45
Max Q Clear Time (g_c+I1), s	7.6	17.7		10.9		9.6
Green Ext Time (p_c), s	0.2	5.3		1.8		5.5
Intersection Summary						
HCM 6th Ctrl Delay			17.3			
HCM 6th LOS			B			
Notes						

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

HCM 6th Signalized Intersection Summary  
12: Alameda de las Pulgas & Brittan Avenue
























10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	224	134	163	231	72	53	450	84	109	380	117
Future Volume (veh/h)	185	224	134	163	231	72	53	450	84	109	380	117
Initial Q (Qb), veh	0	0	0	0	0	0	0	1	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	193	233	98	170	241	58	55	469	63	114	396	85
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	200	242	372	339	277	67	73	497	61	135	504	108
Arrive On Green	0.24	0.24	0.24	0.19	0.19	0.19	0.04	0.31	0.31	0.08	0.34	0.34
Sat Flow, veh/h	829	1000	1536	1781	1456	350	1781	1606	216	1781	1482	318
Grp Volume(v), veh/h	426	0	98	170	0	299	55	0	532	114	0	481
Grp Sat Flow(s),veh/h/ln	1829	0	1536	1781	0	1806	1781	0	1821	1781	0	1800
Q Serve(g_s), s	21.3	0.0	4.8	7.9	0.0	14.9	2.8	0.0	26.5	5.9	0.0	22.3
Cycle Q Clear(g_c), s	21.3	0.0	4.8	7.9	0.0	14.9	2.8	0.0	26.5	5.9	0.0	22.3
Prop In Lane	0.45		1.00	1.00		0.19	1.00		0.12	1.00		0.18
Lane Grp Cap(c), veh/h	442	0	372	339	0	344	73	0	558	135	0	612
V/C Ratio(X)	0.96	0.00	0.26	0.50	0.00	0.87	0.76	0.00	0.95	0.85	0.00	0.79
Avail Cap(c_a), veh/h	442	0	372	385	0	390	106	0	556	135	0	612
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.7	0.0	28.4	33.6	0.0	36.4	44.0	0.0	31.6	42.3	0.0	27.5
Incr Delay (d2), s/veh	33.3	0.0	0.4	1.1	0.0	17.1	8.3	0.0	27.1	35.2	0.0	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	0.0	1.8	3.5	0.0	8.1	1.4	0.0	15.6	3.9	0.0	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.1	0.0	28.8	34.7	0.0	53.5	52.3	0.0	59.2	77.5	0.0	34.2
LnGrp LOS	E	A	C	C	A	D	D	A	E	E	A	C
Approach Vol, veh/h		524			469			587			595	
Approach Delay, s/veh		60.7			46.7			58.5			42.5	
Approach LOS		E			D			E			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	33.2		26.6	7.8	36.4		21.8				
Change Period (Y+Rc), s	4.0	4.9		* 4.2	4.0	4.9		4.2				
Max Green Setting (Gmax), s	7.0	28.3		* 22	5.5	29.8		20.0				
Max Q Clear Time (g_c+I1), s	7.9	28.5		23.3	4.8	24.3		16.9				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	1.5		0.7				
Intersection Summary												
HCM 6th Ctrl Delay			52.1									
HCM 6th LOS			D									
Notes												

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

HCM 6th Signalized Intersection Summary  
1: El Camino Real & Holly Street

10/31/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	208	42	648	624	242	70	695	390	147	649	70
Future Volume (veh/h)	61	208	42	648	624	242	70	695	390	147	649	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	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	63	214	34	668	643	208	72	716	266	152	669	65
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	85	301	50	1103	597	499	339	1305	1016	202	742	72
Arrive On Green	0.12	0.12	0.12	0.32	0.32	0.32	0.19	0.37	0.37	0.06	0.23	0.23
Sat Flow, veh/h	705	2501	413	3456	1870	1563	1781	3554	2767	3456	3272	318
Grp Volume(v), veh/h	164	0	147	668	643	208	72	716	266	152	363	371
Grp Sat Flow(s), veh/h/ln	1835	0	1783	1728	1870	1563	1781	1777	1383	1728	1777	1813
Q Serve(g_s), s	10.4	0.0	9.5	19.6	38.3	12.5	4.1	19.2	8.1	5.2	23.8	23.9
Cycle Q Clear(g_c), s	10.4	0.0	9.5	19.6	38.3	12.5	4.1	19.2	8.1	5.2	23.8	23.9
Prop In Lane	0.38		0.23	1.00		1.00	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	221	0	214	1103	597	499	339	1305	1016	202	403	411
V/C Ratio(X)	0.74	0.00	0.69	0.61	1.08	0.42	0.21	0.55	0.26	0.75	0.90	0.90
Avail Cap(c_a), veh/h	474	0	461	1103	597	499	339	1305	1016	202	429	438
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.00	0.99	0.21	0.21	0.21	0.87	0.87	0.87	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	0.0	50.6	34.5	40.8	32.1	41.0	30.1	26.6	55.7	45.1	45.1
Incr Delay (d2), s/veh	1.8	0.0	1.4	0.5	42.0	0.5	0.1	1.4	0.5	14.2	25.8	25.6
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	4.9	0.0	4.4	8.4	24.5	4.9	1.8	8.3	2.7	2.6	13.2	13.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.8	0.0	52.0	35.0	82.9	32.6	41.1	31.5	27.1	69.9	70.9	70.7
LnGrp LOS	D	A	D	D	F	C	D	C	C	E	E	E
Approach Vol, veh/h	311			1519			1054			886		
Approach Delay, s/veh	52.5			54.9			31.1			70.6		
Approach LOS	D			D			C			E		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.4	31.7		42.4	10.5	48.6		18.5				
Change Period (Y+Rc), s	4.5	* 4.5		4.1	3.5	4.5		4.1				
Max Green Setting (Gmax), s	6.0	* 29		38.3	7.0	27.5		31.0				
Max Q Clear Time (g_c+I1), s	6.1	25.9		40.3	7.2	21.2		12.4				
Green Ext Time (p_c), s	0.0	1.3		0.0	0.0	3.0		0.9				

Intersection Summary

HCM 6th Ctrl Delay	51.8
HCM 6th LOS	D





















Notes

User approved ignoring U-Turning movement.

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

HCM 6th Signalized Intersection Summary  
2: Old Country Rd & Holly Street

10/31/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	582	61	35	1081	32	101	376	201	128	294	293
Future Volume (veh/h)	87	582	61	35	1081	32	101	376	201	128	294	293
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.95	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	91	606	64	36	1126	33	105	392	209	133	306	305
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	603	288	33	1075	33	292	357	190	138	404	334
Arrive On Green	0.19	0.19	0.19	0.31	0.31	0.31	0.16	0.32	0.32	0.08	0.22	0.22
Sat Flow, veh/h	452	3172	1515	107	3497	108	1781	1126	601	1781	1870	1546
Grp Volume(v), veh/h	372	325	64	629	0	566	105	0	601	133	306	305
Grp Sat Flow(s), veh/h/ln	1848	1777	1515	1865	0	1846	1781	0	1727	1781	1870	1546
Q Serve(g_s), s	28.5	27.2	5.4	46.1	0.0	46.0	7.9	0.0	47.5	11.2	23.0	28.9
Cycle Q Clear(g_c), s	28.5	27.2	5.4	46.1	0.0	46.0	7.9	0.0	47.5	11.2	23.0	28.9
Prop In Lane	0.24		1.00	0.06		0.06	1.00		0.35	1.00		1.00
Lane Grp Cap(c), veh/h	351	338	288	573	0	567	292	0	547	138	404	334
V/C Ratio(X)	1.06	0.96	0.22	1.10	0.00	1.00	0.36	0.00	1.10	0.97	0.76	0.91
Avail Cap(c_a), veh/h	351	338	288	573	0	567	292	0	547	138	532	440
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	1.00	0.00	1.00	0.88	0.00	0.88	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.8	60.2	51.4	52.0	0.0	51.9	55.7	0.0	51.3	69.0	55.1	57.4
Incr Delay (d2), s/veh	61.0	37.1	1.5	66.7	0.0	37.4	0.2	0.0	66.2	65.6	12.5	31.5
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	19.4	15.8	2.2	32.3	0.0	27.3	3.6	0.0	30.5	7.6	12.3	14.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	121.8	97.3	52.9	118.6	0.0	89.3	55.9	0.0	117.4	134.6	67.6	89.0
LnGrp LOS	F	F	D	F	A	F	E	A	F	F	E	F
Approach Vol, veh/h	761			1195			706			744		
Approach Delay, s/veh	105.5			104.7			108.3			88.4		
Approach LOS	F			F			F			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.6	52.6		50.2	29.7	37.5		32.6				
Change Period (Y+Rc), s	3.0	5.1		4.1	5.1	* 5.1		4.1				
Max Green Setting (Gmax), s	11.6	47.5		46.1	16.4	* 43		28.5				
Max Q Clear Time (g_c+I1), s	13.2	49.5		48.1	9.9	30.9		30.5				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.1	1.5		0.0				

Intersection Summary

HCM 6th Ctrl Delay	102.1
HCM 6th LOS	F

Notes

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

### HCM 6th Signalized Intersection Summary 3: Industrial Rd & Holly St

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔↔	↔	↔	↔↔↔	↔	↔	↔	↔	↔	↔↔↔	↔	↔
Traffic Volume (veh/h)	118	730	99	380	790	397	143	537	729	504	823	324
Future Volume (veh/h)	118	730	99	380	790	397	143	537	729	504	823	324
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		0.98	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	123	760	103	396	823	414	149	559	759	525	857	338
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	130	857	119	787	809	361	168	547	1437	527	869	341
Arrive On Green	0.21	0.21	0.21	0.23	0.23	0.23	0.09	0.29	0.29	0.15	0.35	0.35
Sat Flow, veh/h	622	4100	570	3456	3554	1585	1781	1870	2741	3456	2480	974
Grp Volume(v), veh/h	364	306	317	396	823	414	149	559	759	525	613	582
Grp Sat Flow(s),veh/h/ln	1839	1702	1751	1728	1777	1585	1781	1870	1371	1728	1777	1678
Q Serve(g_s), s	28.3	25.1	25.3	14.5	33.0	33.0	12.0	42.4	26.6	22.0	49.6	50.0
Cycle Q Clear(g_c), s	28.3	25.1	25.3	14.5	33.0	33.0	12.0	42.4	26.6	22.0	49.6	50.0
Prop In Lane	0.34		0.33	1.00		1.00	1.00		1.00	1.00		0.58
Lane Grp Cap(c), veh/h	384	356	366	787	809	361	168	547	1437	527	623	588
V/C Ratio(X)	0.95	0.86	0.87	0.50	1.02	1.15	0.89	1.02	0.53	1.00	0.98	0.99
Avail Cap(c_a), veh/h	384	356	366	787	809	361	168	547	1437	527	623	588
HCM Platoon Ratio	1.00	1.00	1.00	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	55.3	55.4	48.8	56.0	56.0	64.9	51.3	23.1	61.4	46.7	46.8
Incr Delay (d2), s/veh	34.2	22.8	23.0	2.3	36.0	93.7	37.7	44.2	0.2	38.3	32.0	34.4
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	16.9	13.1	13.6	6.6	18.8	22.5	7.2	26.3	13.4	12.4	27.1	26.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.8	78.1	78.4	51.1	92.0	149.7	102.5	95.5	23.3	99.7	78.7	81.3
LnGrp LOS	F	E	E	D	F	F	F	F	C	F	E	F
Approach Vol, veh/h		986			1633			1467			1720	
Approach Delay, s/veh		82.9			96.7			58.8			86.0	
Approach LOS		F			F			E			F	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		37.5	25.6	47.0		34.9	17.2	55.4				
Change Period (Y+Rc), s		4.5	3.5	4.6		4.6	3.5	4.6				
Max Green Setting (Gmax), s		33.0	22.1	42.4		30.3	13.7	50.8				
Max Q Clear Time (g_c+I1), s		35.0	24.0	44.4		30.3	14.0	52.0				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			81.6									
HCM 6th LOS			F									

### HCM Signalized Intersection Capacity Analysis 4: El Camino Real & San Carlos Avenue

10/31/2024

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔↔	↔	↔	↔↔	↔↔	↔
Traffic Volume (vph)	343	546	203	856	806	701
Future Volume (vph)	343	546	203	856	806	701
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	3.5	4.4	4.4	4.4
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.97	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1528	1770	3539	3539	1550
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1528	1770	3539	3539	1550
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	365	581	216	911	857	746
RTOR Reduction (vph)	0	454	0	0	0	467
Lane Group Flow (vph)	365	127	216	911	857	279
Confl. Peds. (#/hr)		32				12
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8				2
Actuated Green, G (s)	10.3	10.3	10.9	38.7	24.3	24.3
Effective Green, g (s)	10.3	10.3	10.9	38.7	24.3	24.3
Actuated g/C Ratio	0.16	0.16	0.17	0.60	0.37	0.37
Clearance Time (s)	4.6	4.6	3.5	4.4	4.4	4.4
Vehicle Extension (s)	2.0	2.0	2.5	4.0	4.0	4.0
Lane Grp Cap (vph)	543	242	296	2107	1323	579
v/s Ratio Prot	c0.11		c0.12	0.26	c0.24	
v/s Ratio Perm		0.08				0.18
v/c Ratio	0.67	0.52	0.73	0.43	0.65	0.48
Uniform Delay, d1	25.8	25.1	25.7	7.2	16.8	15.5
Progression Factor	1.00	1.00	1.19	0.86	1.00	1.00
Incremental Delay, d2	2.6	0.9	7.9	0.6	2.5	2.9
Delay (s)	28.3	26.0	38.4	6.8	19.3	18.4
Level of Service	C	C	D	A	B	B
Approach Delay (s)	26.9			12.9	18.9	
Approach LOS	C			B	B	
<b>Intersection Summary</b>						
HCM 2000 Control Delay		19.1		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio		0.62				
Actuated Cycle Length (s)		65.0		Sum of lost time (s)		15.5
Intersection Capacity Utilization		66.4%		ICU Level of Service		C
Analysis Period (min)		15				
c Critical Lane Group						

HCM 6th Signalized Intersection Summary  
5: El Camino Real & Brittan Avenue

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	88	321	57	326	422	161	90	658	62	211	704	69
Future Volume (veh/h)	88	321	57	326	422	161	90	658	62	211	704	69
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		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	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	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	334	44	340	440	138	94	685	45	220	733	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	105	399	55	474	473	418	120	946	420	266	1329	103
Arrive On Green	0.15	0.15	0.15	0.27	0.27	0.27	0.07	0.27	0.27	0.03	0.09	0.09
Sat Flow, veh/h	681	2595	356	1781	1777	1571	1781	3554	1580	3456	4824	373
Grp Volume(v), veh/h	248	0	222	340	440	138	94	685	45	220	516	274
Grp Sat Flow(s), veh/h/ln	1836	0	1796	1781	1777	1571	1781	1777	1580	1728	1702	1793
Q Serve(g_s), s	8.6	0.0	7.8	11.3	15.7	4.6	3.4	11.4	1.4	4.1	9.4	9.5
Cycle Q Clear(g_c), s	8.6	0.0	7.8	11.3	15.7	4.6	3.4	11.4	1.4	4.1	9.4	9.5
Prop In Lane	0.37		0.20	1.00		1.00	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	283	0	276	474	473	418	120	946	420	266	938	494
V/C Ratio(X)	0.88	0.00	0.80	0.72	0.93	0.33	0.78	0.72	0.11	0.83	0.55	0.55
Avail Cap(c_a), veh/h	283	0	276	474	473	418	137	946	420	266	938	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.93	0.00	0.93	0.86	0.86	0.86	0.83	0.83	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.9	0.0	26.6	21.6	23.3	19.2	29.8	21.7	18.0	31.2	25.7	25.7
Incr Delay (d2), s/veh	23.6	0.0	14.3	7.8	24.5	1.8	16.1	4.0	0.4	18.0	2.3	4.4
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	5.4	0.0	4.2	5.4	9.3	1.8	1.9	4.8	0.5	2.4	4.3	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	50.6	0.0	40.8	29.4	47.8	21.0	45.9	25.7	18.4	49.3	28.0	30.2
LnGrp LOS	D	A	D	C	D	C	D	C	B	D	C	C
Approach Vol, veh/h		470			918			824			1010	
Approach Delay, s/veh		46.0			37.0			27.6			33.2	
Approach LOS		D			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	22.4		21.0	8.0	21.8		14.2				
Change Period (Y+Rc), s	3.0	4.5		3.7	3.0	4.5		4.2				
Max Green Setting (Gmax), s	5.0	17.3		17.3	5.0	17.3		10.0				
Max Q Clear Time (g_c+I1), s	5.4	11.5		17.7	6.1	13.4		10.6				
Green Ext Time (p_c), s	0.0	3.0		0.0	0.0	2.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	34.7
HCM 6th LOS	C

Notes

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

HCM 6th Signalized Intersection Summary  
6: Old Country Rd & Brittan Avenue

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	33	102	139	59	202	223	143	460	53	12	945	173
Future Volume (veh/h)	33	102	139	59	202	223	143	460	53	12	945	173
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		0.98	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				
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	107	146	62	213	235	151	484	56	13	995	182
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	91	299	171	129	472	258	179	1047	121	472	1193	995
Arrive On Green	0.11	0.11	0.11	0.17	0.17	0.17	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	845	2760	1578	776	2833	1547	566	1642	190	866	1870	1559
Grp Volume(v), veh/h	76	66	146	146	129	235	151	0	540	13	995	182
Grp Sat Flow(s), veh/h/ln	1828	1777	1578	1832	1777	1547	566	0	1832	866	1870	1559
Q Serve(g_s), s	5.4	4.8	12.7	10.1	9.1	20.9	31.7	0.0	21.2	1.1	57.6	6.7
Cycle Q Clear(g_c), s	5.4	4.8	12.7	10.1	9.1	20.9	89.3	0.0	21.2	22.3	57.6	6.7
Prop In Lane	0.46		1.00	0.42		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	198	192	171	305	296	258	179	0	1168	472	1193	995
V/C Ratio(X)	0.38	0.34	0.85	0.48	0.43	0.91	0.84	0.00	0.46	0.03	0.83	0.18
Avail Cap(c_a), veh/h	260	253	224	305	296	258	179	0	1168	472	1193	995
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.48	0.48	0.40	0.40	0.40	0.99	0.00	0.99	0.62	0.62	0.62
Uniform Delay (d), s/veh	58.1	57.8	61.3	52.8	52.4	57.3	56.6	0.0	13.0	18.7	19.6	10.4
Incr Delay (d2), s/veh	2.7	2.3	22.2	2.2	1.9	19.3	35.3	0.0	1.3	0.1	4.4	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	2.7	2.3	6.2	4.9	4.2	9.6	7.2	0.0	8.8	0.2	24.9	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	60.7	60.1	83.5	55.0	54.3	76.7	91.8	0.0	14.3	18.8	24.1	10.6
LnGrp LOS	E	E	F	D	D	E	F	A	B	B	C	B
Approach Vol, veh/h		288			510			691			1190	
Approach Delay, s/veh		72.1			64.8			31.3			21.9	
Approach LOS		E			E			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.3		93.4		19.3		93.4				
Change Period (Y+Rc), s		4.0		4.1		4.1		* 4.1				
Max Green Setting (Gmax), s		19.0		88.9		19.9		* 89				
Max Q Clear Time (g_c+I1), s		22.9		59.6		14.7		91.3				
Green Ext Time (p_c), s		0.0		6.1		0.4		0.0				

Intersection Summary

HCM 6th Ctrl Delay	37.9
HCM 6th LOS	D

Notes

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



HCM Signalized Intersection Capacity Analysis  
7: Industrial Rd & Brittan Avenue

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	
Traffic Volume (vph)	211	275	41	166	293	103	239	834	105	319	390	615
Future Volume (vph)	211	275	41	166	293	103	239	834	105	319	390	615
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6			4.2	4.9		4.2	4.9
Lane Util. Factor		0.95			0.95			1.00	0.95		1.00	0.95
Frpb, ped/bikes		1.00			1.00			1.00	1.00		0.97	1.00
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.99			0.97			1.00	1.00		0.85	1.00
Flt Protected		0.98			0.99			0.95	1.00		1.00	0.95
Satd. Flow (prot)		3425			3384			1770	3539		1540	3170
Flt Permitted		0.98			0.99			0.95	1.00		1.00	0.95
Satd. Flow (perm)		3425			3384			1770	3539		1540	3170
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	220	286	43	173	305	107	249	869	109	332	406	641
RTOR Reduction (vph)	0	6	0	0	17	0	0	0	83	0	257	0
Lane Group Flow (vph)	0	543	0	0	568	0	249	869	26	332	790	0
Confl. Peds. (#/hr)		2			1				4			4
Confl. Bikes (#/hr)			1						9			4
Turn Type	Split	NA		Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)		21.5			22.1		16.2	25.9	25.9	19.8	29.5	
Effective Green, g (s)		21.5			22.1		16.2	25.9	25.9	19.8	29.5	
Actuated g/C Ratio		0.20			0.21		0.15	0.24	0.24	0.18	0.27	
Clearance Time (s)		4.6			4.6		4.2	4.9	4.9	4.2	4.9	
Vehicle Extension (s)		4.0			4.0		4.0	6.0	6.0	4.0	6.0	
Lane Grp Cap (vph)		684			695		266	851	370	325	869	
v/s Ratio Prot		c0.16			c0.17		0.14	c0.25		c0.19	0.25	
v/s Ratio Perm								0.02				
v/c Ratio		0.79			0.82		0.94	1.02	0.07	1.02	0.91	
Uniform Delay, d1		40.9			40.8		45.2	40.8	31.6	43.9	37.8	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		6.7			7.7		38.3	36.3	0.2	55.5	14.4	
Delay (s)		47.6			48.6		83.5	77.1	31.8	99.4	52.2	
Level of Service		D			D		F	E	C	F	D	
Approach Delay (s)		47.6			48.6			74.4			63.5	
Approach LOS		D			D			E			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay		62.4			HCM 2000 Level of Service			E				
HCM 2000 Volume to Capacity ratio		0.92										
Actuated Cycle Length (s)		107.6			Sum of lost time (s)			18.3				
Intersection Capacity Utilization		91.0%			ICU Level of Service			E				
Analysis Period (min)		15										
c Critical Lane Group												

HCM 6th Signalized Intersection Summary  
8: El Camino Real & Howard Ave

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	63	164	152	282	228	124	36	710	205	64	999	92
Future Volume (veh/h)	63	164	152	282	228	124	36	710	205	64	999	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	1	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.99	1.00		0.98	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		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	169	137	291	235	89	37	732	39	66	1030	90
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	204	496	410	388	673	566	51	1047	456	330	2250	196
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.03	0.29	0.29	0.19	0.47	0.47
Sat Flow, veh/h	388	1377	1139	1071	1870	1572	1781	3554	1547	1781	4774	416
Grp Volume(v), veh/h	191	0	180	291	235	89	37	732	39	66	734	386
Grp Sat Flow(s),veh/h/ln	1412	0	1493	1071	1870	1572	1781	1777	1547	1781	1702	1787
Q Serve(g_s), s	2.4	0.0	6.6	20.3	6.9	2.9	1.5	13.7	1.4	2.3	10.9	10.9
Cycle Q Clear(g_c), s	9.3	0.0	6.6	26.9	6.9	2.9	1.5	13.7	1.4	2.3	10.9	10.9
Prop In Lane	0.34		0.76	1.00		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	573	0	537	388	673	566	51	1047	456	330	1604	842
V/C Ratio(X)	0.33	0.00	0.33	0.75	0.35	0.16	0.72	0.70	0.09	0.20	0.46	0.46
Avail Cap(c_a), veh/h	573	0	537	388	673	566	154	1464	638	331	1604	842
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.37	0.37	0.37	1.00	1.00	1.00	0.80	0.80	0.80
Uniform Delay (d), s/veh	17.9	0.0	17.5	27.2	17.6	16.3	36.1	23.5	19.1	25.9	13.4	13.4
Incr Delay (d2), s/veh	1.6	0.0	1.7	4.9	0.5	0.2	7.0	3.9	0.4	0.1	0.8	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	2.4	5.4	2.9	1.0	0.7	5.9	0.5	1.0	3.9	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.4	0.0	19.1	32.2	18.1	16.5	43.2	27.4	19.5	25.9	14.1	14.8
LnGrp LOS	B	A	B	C	B	B	D	C	B	C	B	B
Approach Vol, veh/h		371			615			808			1186	
Approach Delay, s/veh		19.3			24.5			27.8			15.0	
Approach LOS		B			C			C			B	
<b>Timer - Assigned Phs</b>												
Phs Duration (G+Y+Rc), s	5.1	39.9		30.0	18.4	26.6		30.0				
Change Period (Y+Rc), s	3.0	4.5		3.0	4.5	* 4.5		3.0				
Max Green Setting (Gmax), s	6.5	31.0		27.0	6.6	* 31		27.0				
Max Q Clear Time (g_c+1), s	3.5	12.9		11.3	4.3	15.7		28.9				
Green Ext Time (p_c), s	0.0	9.3		2.8	0.0	5.9		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay		21.0										
HCM 6th LOS		C										
<b>Notes</b>												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												



HCM 6th Signalized Intersection Summary  
9: Old Country Rd & Howard Ave

10/31/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	19	88	103	171	154	104	198	213	55	44	711	24
Future Volume (veh/h)	19	88	103	171	154	104	198	213	55	44	711	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	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	22	100	117	194	175	118	225	242	62	50	808	27
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	374	304	220	208	144	199	1031	848	608	1031	860
Arrive On Green	0.20	0.20	0.20	0.17	0.17	0.17	0.55	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	1781	1870	1524	1332	1258	873	675	1870	1539	1136	1870	1560
Grp Volume(v), veh/h	22	100	117	263	0	224	225	242	62	50	808	27
Grp Sat Flow(s), veh/h/ln	1781	1870	1524	1804	0	1660	675	1870	1539	1136	1870	1560
Q Serve(g_s), s	1.3	5.7	8.3	17.8	0.0	16.3	26.2	8.3	2.4	3.0	42.7	1.0
Cycle Q Clear(g_c), s	1.3	5.7	8.3	17.8	0.0	16.3	68.9	8.3	2.4	11.3	42.7	1.0
Prop In Lane	1.00		1.00	0.74		0.53	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	374	304	298	0	274	199	1031	848	608	1031	860
V/C Ratio(X)	0.06	0.27	0.38	0.88	0.00	0.82	1.13	0.23	0.07	0.08	0.78	0.03
Avail Cap(c_a), veh/h	356	374	304	329	0	303	199	1031	848	608	1031	860
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	0.00	1.00	1.00	1.00	0.59	0.59	0.59	0.59
Uniform Delay (d), s/veh	40.5	42.3	43.4	51.0	0.0	50.4	53.2	14.5	13.1	17.4	22.2	12.8
Incr Delay (d2), s/veh	0.3	1.7	3.5	20.5	0.0	13.3	103.0	0.5	0.2	0.2	3.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.6	2.8	3.5	9.7	0.0	7.8	12.0	3.6	0.8	0.8	18.8	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.8	44.0	46.9	71.5	0.0	63.7	156.1	15.0	13.3	17.5	25.8	12.9
LnGrp LOS	D	D	D	E	A	E	F	B	B	B	C	B
Approach Vol, veh/h		239			487			529			885	
Approach Delay, s/veh		45.1			67.9			74.8			24.9	
Approach LOS		D			E			E			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		28.2		73.0		23.8		73.0				
Change Period (Y+Rc), s		3.2		4.1		3.2		4.1				
Max Green Setting (Gmax), s		22.8		68.9		22.8		68.9				
Max Q Clear Time (g_c+I1), s		10.3		44.7		19.8		70.9				
Green Ext Time (p_c), s		0.5		4.0		0.6		0.0				
Intersection Summary												
HCM 6th Ctrl Delay		49.3										
HCM 6th LOS		D										

HCM 6th Signalized Intersection Summary  
10: Club Dr/Dartmouth Ave & San Carlos Ave

10/31/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	66	691	163	22	543	44	210	21	24	54	32	96
Future Volume (veh/h)	66	691	163	22	543	44	210	21	24	54	32	96
Initial Q (Qb), veh	0	0	0	0	1	0	0	1	0	0	1	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.97	1.00		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			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	743	173	24	584	42	226	23	21	58	34	56
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	112	799	186	62	897	64	248	36	250	95	65	126
Arrive On Green	0.06	0.55	0.55	0.03	0.52	0.52	0.16	0.16	0.16	0.08	0.08	0.08
Sat Flow, veh/h	1781	1458	340	1781	1721	124	1624	165	1532	1143	670	1445
Grp Volume(v), veh/h	71	0	916	24	0	626	249	0	21	92	0	56
Grp Sat Flow(s), veh/h/ln	1781	0	1798	1781	0	1844	1789	0	1532	1813	0	1445
Q Serve(g_s), s	3.6	0.0	43.9	1.2	0.0	23.1	12.7	0.0	1.1	4.6	0.0	3.5
Cycle Q Clear(g_c), s	3.6	0.0	43.9	1.2	0.0	23.1	12.7	0.0	1.1	4.6	0.0	3.5
Prop In Lane	1.00		0.19	1.00		0.07	0.91		1.00	0.63		1.00
Lane Grp Cap(c), veh/h	112	0	985	62	0	961	293	0	250	155	0	126
V/C Ratio(X)	0.64	0.00	0.93	0.39	0.00	0.65	0.85	0.00	0.08	0.59	0.00	0.45
Avail Cap(c_a), veh/h	154	0	1111	154	0	1140	369	0	315	366	0	292
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.3	0.0	19.7	44.7	0.0	16.5	38.9	0.0	33.6	41.6	0.0	41.0
Incr Delay (d2), s/veh	5.9	0.0	12.5	4.0	0.0	1.0	14.2	0.0	0.1	3.6	0.0	2.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.7	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.8	0.0	20.3	0.6	0.0	9.6	7.0	0.0	0.4	2.4	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	49.2	0.0	32.3	48.6	0.0	17.5	53.7	0.0	33.7	45.8	0.0	43.4
LnGrp LOS	D	A	C	D	A	B	D	A	C	D	A	D
Approach Vol, veh/h		987			650		270			148		
Approach Delay, s/veh		33.5			18.6		52.2			44.9		
Approach LOS		C			B		D			D		
Timer - Assigned Phs		1	2		4	5	6			8		
Phs Duration (G+Y+Rc), s		6.8	56.4		11.6	9.4	53.7			19.0		
Change Period (Y+Rc), s		3.5	4.9		3.7	3.5	4.9			3.7		
Max Green Setting (Gmax), s		8.1	57.9		18.9	8.1	57.9			19.3		
Max Q Clear Time (g_c+I1), s		3.2	45.9		6.6	5.6	25.1			14.7		
Green Ext Time (p_c), s		0.0	5.6		0.5	0.0	4.9			0.6		
Intersection Summary												
HCM 6th Ctrl Delay		32.1										
HCM 6th LOS		C										

HCM 6th Signalized Intersection Summary  
11: Alameda de las Pulgas & San Carlos Ave

10/31/2024

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	415	306	304	552	313	281
Future Volume (veh/h)	415	306	304	552	313	281
Initial Q (Qb), veh	5	0	1	3	0	0
Ped-Bike Adj(A_pbT)		0.97	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	441	213	323	587	333	271
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	621	516	365	1142	428	712
Arrive On Green	0.33	0.33	0.21	0.61	0.24	0.24
Sat Flow, veh/h	1870	1532	1781	1870	1781	1585
Grp Volume(v), veh/h	441	213	323	587	333	271
Grp Sat Flow(s),veh/h/ln	1870	1532	1781	1870	1781	1585
Q Serve(g_s), s	11.8	6.2	9.9	10.1	9.9	6.4
Cycle Q Clear(g_c), s	11.8	6.2	9.9	10.1	9.9	6.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	621	516	365	1142	428	712
V/C Ratio(X)	0.71	0.41	0.89	0.51	0.78	0.38
Avail Cap(c_a), veh/h	912	747	409	1473	849	1092
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	17.0	14.8	23.5	6.4	20.7	10.7
Incr Delay (d2), s/veh	2.1	0.8	19.6	0.5	3.1	0.3
Initial Q Delay(d3),s/veh	1.6	0.0	0.5	0.1	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	2.1	6.3	3.4	4.2	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.8	15.6	43.5	7.0	23.8	11.0
LnGrp LOS	C	B	D	A	C	B
Approach Vol, veh/h	654			910	604	
Approach Delay, s/veh	19.1			20.0	18.1	
Approach LOS	B			B	B	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.0	22.7		17.9		38.7
Change Period (Y+Rc), s	4.0	* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s	13.0	* 28		* 27		* 45
Max Q Clear Time (g_c+I1), s	11.9	13.8		11.9		12.1
Green Ext Time (p_c), s	0.2	4.4		1.8		6.7
Intersection Summary						
HCM 6th Ctrl Delay			19.2			
HCM 6th LOS			B			
Notes						

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

HCM 6th Signalized Intersection Summary  
12: Alameda de las Pulgas & Brittan Avenue

10/31/2024

	↖	→	↘	↙	←	↖	↗	↑	↘	↙	↓	↖
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑		↑	↑		↑	↑	↑
Traffic Volume (veh/h)	115	228	40	135	337	138	75	413	98	118	435	195
Future Volume (veh/h)	115	228	40	135	337	138	75	413	98	118	435	195
Initial Q (Qb), veh	0	0	0	0	0	0	0	6	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	119	235	7	139	347	117	77	426	79	122	448	179
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	118	233	299	446	332	112	90	563	78	143	450	180
Arrive On Green	0.19	0.19	0.19	0.25	0.25	0.25	0.05	0.33	0.33	0.08	0.36	0.36
Sat Flow, veh/h	618	1221	1573	1781	1327	448	1781	1526	283	1781	1257	502
Grp Volume(v), veh/h	354	0	7	139	0	464	77	0	505	122	0	627
Grp Sat Flow(s),veh/h/ln	1839	0	1573	1781	0	1775	1781	0	1809	1781	0	1760
Q Serve(g_s), s	21.9	0.0	0.4	7.3	0.0	28.8	4.9	0.0	29.9	7.8	0.0	40.9
Cycle Q Clear(g_c), s	21.9	0.0	0.4	7.3	0.0	28.8	4.9	0.0	29.9	7.8	0.0	40.9
Prop In Lane	0.34		1.00	1.00		0.25	1.00		0.16	1.00		0.29
Lane Grp Cap(c), veh/h	350	0	299	446	0	445	90	0	598	143	0	630
V/C Ratio(X)	1.01	0.00	0.02	0.31	0.00	1.04	0.86	0.00	0.84	0.86	0.00	0.99
Avail Cap(c_a), veh/h	350	0	299	446	0	445	90	0	595	143	0	630
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.6	0.0	37.9	35.0	0.0	43.1	54.2	0.0	36.6	52.2	0.0	36.8
Incr Delay (d2), s/veh	50.8	0.0	0.0	0.4	0.0	54.6	49.9	0.0	10.8	35.6	0.0	34.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.9	0.0	0.2	3.2	0.0	19.2	3.5	0.0	16.4	4.9	0.0	23.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.3	0.0	37.9	35.4	0.0	97.7	104.1	0.0	52.0	87.9	0.0	71.2
LnGrp LOS	F	A	D	D	A	F	F	A	D	F	A	E
Approach Vol, veh/h		361			603			582			749	
Approach Delay, s/veh		96.2			83.3			58.9			73.9	
Approach LOS		F			F			E			E	
Timer - Assigned Phs		1	2		4	5	6		8			
Phs Duration (G+Y+Rc), s		13.2	42.7		26.1	9.8	46.1		33.0			
Change Period (Y+Rc), s		4.0	4.9		* 4.2	4.0	4.9		4.2			
Max Green Setting (Gmax), s		9.2	37.8		* 22	5.8	41.2		28.8			
Max Q Clear Time (g_c+I1), s		9.8	31.9		23.9	6.9	42.9		30.8			
Green Ext Time (p_c), s		0.0	1.6		0.0	0.0	0.0		0.0			
Intersection Summary												
HCM 6th Ctrl Delay					76.1							
HCM 6th LOS					E							
Notes												

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

## Appendix D

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### Intersection Level of Service Calculations (Cumulative General Plan Reset Conditions)



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# HCM 6th Signalized Intersection Summary 1: El Camino Real & Holly Street

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	22	608	71	421	259	131	68	579	557	168	561	37
Future Volume (veh/h)	22	608	71	421	259	131	68	579	557	168	561	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	4	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	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	23	633	72	439	270	116	71	603	475	175	584	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	25	726	87	633	342	283	178	836	648	356	758	47
Arrive On Green	0.23	0.23	0.23	0.18	0.18	0.18	0.10	0.24	0.24	0.10	0.22	0.22
Sat Flow, veh/h	111	3168	380	3456	1870	1546	1781	3554	2754	3456	3400	209
Grp Volume(v), veh/h	388	0	340	439	270	116	71	603	475	175	305	315
Grp Sat Flow(s), veh/h/ln	1865	0	1793	1728	1870	1546	1781	1777	1377	1728	1777	1833
Q Serve(g_s), s	13.2	0.0	11.7	7.7	9.0	4.3	2.4	10.2	10.4	3.1	10.5	10.5
Cycle Q Clear(g_c), s	13.2	0.0	11.7	7.7	9.0	4.3	2.4	10.2	10.4	3.1	10.5	10.5
Prop In Lane	0.06		0.21	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	427	0	411	633	342	283	178	836	648	356	396	409
V/C Ratio(X)	0.91	0.00	0.83	0.69	0.79	0.41	0.40	0.72	0.73	0.49	0.77	0.77
Avail Cap(c_a), veh/h	427	0	411	633	342	283	178	836	648	372	506	522
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.00	0.97	0.47	0.47	0.47	0.72	0.72	0.72	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	23.8	24.8	25.3	23.4	27.4	22.9	23.1	27.5	23.7	23.7
Incr Delay (d2), s/veh	21.8	0.0	12.0	3.0	8.5	2.1	0.4	3.9	5.3	0.8	13.4	13.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	0.0	6.1	3.3	4.6	1.7	1.0	4.3	3.8	1.2	5.5	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.1	0.0	35.9	27.8	33.8	25.5	27.8	26.8	29.4	28.3	37.1	36.8
LnGrp LOS	D	A	D	C	C	C	C	C	C	C	D	D
Approach Vol, veh/h		728			825			1149			795	
Approach Delay, s/veh		41.3			29.5			27.9			35.1	
Approach LOS		D			C			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	19.0		16.0	10.2	19.8		19.0				
Change Period (Y+Rc), s	4.5	* 4.5		4.1	3.5	4.5		4.1				
Max Green Setting (Gmax), s	4.0	* 19		11.9	7.0	15.0		14.9				
Max Q Clear Time (g_c+I1), s	4.4	12.5		11.0	5.1	12.4		15.2				
Green Ext Time (p_c), s	0.0	1.9		0.5	0.1	1.5		0.0				

## Intersection Summary

HCM 6th Ctrl Delay	32.7
HCM 6th LOS	C

## Notes

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

# HCM 6th Signalized Intersection Summary 2: Old Country Rd & Holly Street

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	356	756	219	110	606	106	56	150	130	54	222	131
Future Volume (veh/h)	356	756	219	110	606	106	56	150	130	54	222	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	363	771	223	112	618	108	57	153	133	55	227	134
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	352	801	491	110	632	116	182	206	179	71	272	223
Arrive On Green	0.32	0.32	0.32	0.24	0.24	0.24	0.10	0.23	0.23	0.04	0.15	0.15
Sat Flow, veh/h	1096	2496	1530	461	2657	488	1781	894	777	1781	1870	1536
Grp Volume(v), veh/h	601	533	223	449	0	389	57	0	286	55	227	134
Grp Sat Flow(s), veh/h/ln	1816	1777	1530	1847	0	1758	1781	0	1671	1781	1870	1536
Q Serve(g_s), s	30.5	27.6	11.0	22.6	0.0	20.6	2.8	0.0	15.1	2.9	11.2	7.8
Cycle Q Clear(g_c), s	30.5	27.6	11.0	22.6	0.0	20.6	2.8	0.0	15.1	2.9	11.2	7.8
Prop In Lane	0.60		1.00	0.25		0.28	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	583	570	491	439	0	418	182	0	384	71	272	223
V/C Ratio(X)	1.03	0.93	0.45	1.02	0.00	0.93	0.31	0.00	0.74	0.78	0.84	0.60
Avail Cap(c_a), veh/h	583	570	491	439	0	418	182	0	384	122	376	309
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.62	0.62	0.62	1.00	0.00	1.00	0.17	0.00	0.17	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.3	31.3	25.6	36.2	0.0	35.4	39.6	0.0	34.0	45.2	39.5	38.0
Incr Delay (d2), s/veh	37.7	17.5	1.9	48.5	0.0	29.6	0.1	0.0	2.3	6.8	25.1	11.4
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	19.2	14.4	4.2	16.0	0.0	12.1	1.2	0.0	6.3	1.4	7.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.9	48.7	27.5	84.7	0.0	65.0	39.6	0.0	36.3	52.0	64.6	49.4
LnGrp LOS	F	D	C	F	A	E	D	A	D	D	E	D
Approach Vol, veh/h		1357			838			343			416	
Approach Delay, s/veh		54.6			75.5			36.8			58.0	
Approach LOS		D			E			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	26.9		26.7	14.8	18.9		34.6				
Change Period (Y+Rc), s	3.0	5.1		4.1	5.1	* 5.1		4.1				
Max Green Setting (Gmax), s	6.5	19.1		22.6	6.5	* 19		30.5				
Max Q Clear Time (g_c+I1), s	4.9	17.1		24.6	4.8	13.2		32.5				
Green Ext Time (p_c), s	0.0	0.2		0.0	0.0	0.6		0.0				

## Intersection Summary











































HCM 6th Ctrl Delay	59.0
HCM 6th LOS	E

## Notes

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










### HCM 6th Signalized Intersection Summary 3: Industrial Rd & Holly St

10/31/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  		  	  	  	  	  	  	  	  	  
Traffic Volume (veh/h)	268	847	25	482	633	570	21	698	372	258	303	178
Future Volume (veh/h)	268	847	25	482	633	570	21	698	372	258	303	178
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		0.98	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	268	847	25	482	633	570	21	698	372	258	303	178
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	288	986	30	829	853	380	44	575	1512	249	767	438
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.02	0.31	0.31	0.07	0.35	0.35
Sat Flow, veh/h	1184	4053	121	3456	3554	1585	1781	1870	2742	3456	2166	1237
Grp Volume(v), veh/h	410	350	380	482	633	570	21	698	372	258	247	234
Grp Sat Flow(s), veh/h/ln	1811	1702	1845	1728	1777	1585	1781	1870	1371	1728	1777	1626
Q Serve(g_s), s	27.7	24.5	24.5	15.4	20.6	30.0	1.5	38.4	8.9	9.0	13.0	13.6
Cycle Q Clear(g_c), s	27.7	24.5	24.5	15.4	20.6	30.0	1.5	38.4	8.9	9.0	13.0	13.6
Prop In Lane	0.65		0.07	1.00		1.00	1.00		1.00	1.00		0.76
Lane Grp Cap(c), veh/h	440	414	449	829	853	380	44	575	1512	249	630	576
V/C Ratio(X)	0.93	0.85	0.85	0.58	0.74	1.50	0.47	1.21	0.25	1.04	0.39	0.41
Avail Cap(c_a), veh/h	440	414	449	829	853	380	100	575	1512	249	630	576
HCM Platoon Ratio	1.00	1.00	1.00	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	45.1	45.1	42.0	43.9	47.5	60.1	43.3	14.8	58.0	30.3	30.4
Incr Delay (d2), s/veh	28.7	18.8	17.6	0.9	3.3	237.7	2.9	112.0	0.0	67.0	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.0	12.6	13.5	6.7	9.4	36.8	0.7	35.2	4.5	6.2	5.6	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.9	63.8	62.7	42.8	47.3	285.2	63.1	155.3	14.9	125.0	30.4	30.6
LnGrp LOS	E	E	E	D	D	F	E	F	B	F	C	C
Approach Vol, veh/h	1140			1685			1091			739		
Approach Delay, s/veh	67.4			126.5			105.6			63.5		
Approach LOS	E			F			F			E		
Timer - Assigned Phs	2		3		4		6		7		8	
Phs Duration (G+Y+Rc), s	34.5		12.5		43.0		35.0		6.6		48.9	
Change Period (Y+Rc), s	4.5		3.5		4.6		4.6		3.5		4.6	
Max Green Setting (Gmax), s	30.0		9.0		38.4		30.4		7.0		40.4	
Max Q Clear Time (g_c+I1), s	32.0		11.0		40.4		29.7		3.5		15.6	
Green Ext Time (p_c), s	0.0		0.0		0.0		0.5		0.0		1.9	
Intersection Summary												
HCM 6th Ctrl Delay	97.1											
HCM 6th LOS	F											

### HCM Signalized Intersection Capacity Analysis 4: El Camino Real & San Carlos Avenue

10/31/2024

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	 			 	 	
Traffic Volume (vph)	700	255	391	664	665	312
Future Volume (vph)	700	255	391	664	665	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	3.5	4.4	4.4	4.4
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.95	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1505	1770	3539	3539	1556
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1505	1770	3539	3539	1556
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	745	271	416	706	707	332
RTOR Reduction (vph)	0	73	0	0	0	240
Lane Group Flow (vph)	745	198	416	706	707	92
Confl. Peds. (#/hr)	38		5			
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases	8		2			
Actuated Green, G (s)	21.2	21.2	22.3	50.8	25.0	25.0
Effective Green, g (s)	21.2	21.2	22.3	50.8	25.0	25.0
Actuated g/C Ratio	0.24	0.24	0.25	0.56	0.28	0.28
Clearance Time (s)	4.6	4.6	3.5	4.4	4.4	4.4
Vehicle Extension (s)	2.0	2.0	2.5	4.0	4.0	4.0
Lane Grp Cap (vph)	808	354	438	1997	983	432
v/s Ratio Prot	c0.22		c0.24	0.20	c0.20	
v/s Ratio Perm		0.13				0.06
v/c Ratio	0.92	0.56	0.95	0.35	0.72	0.21
Uniform Delay, d1	33.6	30.3	33.3	10.7	29.3	25.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.6	1.2	30.1	0.5	4.5	1.1
Delay (s)	49.2	31.5	63.4	11.2	33.9	26.1
Level of Service	D	C	E	B	C	C
Approach Delay (s)	44.5			30.5	31.4	
Approach LOS	D			C	C	
Intersection Summary						
HCM 2000 Control Delay	35.3		HCM 2000 Level of Service		D	
HCM 2000 Volume to Capacity ratio	0.79					
Actuated Cycle Length (s)	90.0		Sum of lost time (s)		15.5	
Intersection Capacity Utilization	75.9%		ICU Level of Service		D	
Analysis Period (min)	15					
c Critical Lane Group						

HCM 6th Signalized Intersection Summary  
5: El Camino Real & Brittan Avenue

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	50	415	41	188	255	94	58	623	274	262	641	45
Future Volume (veh/h)	50	415	41	188	255	94	58	623	274	262	641	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	52	432	41	196	266	62	60	649	263	273	668	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	64	554	55	318	317	282	75	967	431	377	1677	92
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.04	0.27	0.27	0.11	0.34	0.34
Sat Flow, veh/h	347	3012	299	1781	1777	1582	1781	3554	1585	3456	4950	273
Grp Volume(v), veh/h	278	0	247	196	266	62	60	649	263	273	458	247
Grp Sat Flow(s), veh/h/ln	1853	0	1805	1781	1777	1582	1781	1777	1585	1728	1702	1819
Q Serve(g_s), s	8.6	0.0	7.8	6.1	8.7	2.0	2.0	9.8	8.7	4.6	6.2	6.2
Cycle Q Clear(g_c), s	8.6	0.0	7.8	6.1	8.7	2.0	2.0	9.8	8.7	4.6	6.2	6.2
Prop In Lane	0.19		0.17	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	341	0	332	318	317	282	75	967	431	377	1153	616
V/C Ratio(X)	0.81	0.00	0.74	0.62	0.84	0.22	0.80	0.67	0.61	0.72	0.40	0.40
Avail Cap(c_a), veh/h	364	0	355	318	317	282	178	967	431	403	1153	616
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.00	0.92	0.85	0.85	0.85	0.81	0.81	0.81	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	0.0	23.1	22.8	23.8	21.1	28.5	19.5	19.1	25.9	15.2	15.2
Incr Delay (d2), s/veh	11.3	0.0	6.8	7.4	19.8	1.5	5.7	3.0	5.1	4.9	1.0	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	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	4.6	0.0	3.7	3.0	5.1	0.8	0.9	4.0	3.5	2.0	2.3	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.7	0.0	29.9	30.2	43.6	22.6	34.2	22.5	24.2	30.8	16.2	17.1
LnGrp LOS	C	A	C	C	D	C	C	C	C	C	B	B
Approach Vol, veh/h		525			524			972			978	
Approach Delay, s/veh		32.5			36.1			23.7			20.5	
Approach LOS		C			D			C			C	

<b>Timer - Assigned Phs</b>												
Phs Duration (G+Y+Rc), s	5.5	24.8		14.4	9.5	20.8		15.2				
Change Period (Y+Rc), s	3.0	4.5		3.7	3.0	4.5		4.2				
Max Green Setting (Gmax), s	6.0	16.1		10.7	7.0	15.1		11.8				
Max Q Clear Time (g_c+I1), s	4.0	8.2		10.7	6.6	11.8		10.6				
Green Ext Time (p_c), s	0.0	3.4		0.0	0.0	2.0		0.3				

<b>Intersection Summary</b>												
HCM 6th Ctrl Delay		26.3										
HCM 6th LOS		C										

Notes

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

HCM 6th Signalized Intersection Summary  
6: Old Country Rd & Brittan Avenue

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	73	185	157	123	183	119	196	877	91	35	415	27
Future Volume (veh/h)	73	185	157	123	183	119	196	877	91	35	415	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	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	78	199	169	132	197	128	211	943	98	38	446	29
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	462	270	400	648	463	435	905	94	65	1018	849
Arrive On Green	0.18	0.18	0.18	0.29	0.29	0.29	0.54	0.54	0.54	0.54	0.54	0.54
Sat Flow, veh/h	965	2634	1541	1365	2214	1582	919	1662	173	542	1870	1560
Grp Volume(v), veh/h	147	130	169	174	155	128	211	0	1041	38	446	29
Grp Sat Flow(s), veh/h/ln	1822	1777	1541	1802	1777	1582	919	0	1835	542	1870	1560
Q Serve(g_s), s	8.0	7.1	11.2	8.3	7.4	6.8	19.6	0.0	59.9	0.0	15.7	0.9
Cycle Q Clear(g_c), s	8.0	7.1	11.2	8.3	7.4	6.8	35.3	0.0	59.9	0.0	15.7	0.9
Prop In Lane	0.53		1.00	0.76		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	320	312	270	528	520	463	435	0	999	65	1018	849
V/C Ratio(X)	0.46	0.42	0.62	0.33	0.30	0.28	0.49	0.00	1.04	0.58	0.44	0.03
Avail Cap(c_a), veh/h	320	312	270	528	520	463	435	0	999	65	1018	849
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	0.68	0.09	0.09	0.09	0.87	0.00	0.87	0.84	0.84	0.84
Uniform Delay (d), s/veh	40.7	40.3	42.0	30.5	30.1	29.9	25.5	0.0	25.1	55.0	15.0	11.6
Incr Delay (d2), s/veh	3.2	2.8	7.2	0.2	0.1	0.1	3.3	0.0	38.1	27.9	1.2	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	3.9	3.4	4.8	3.6	3.2	2.6	4.6	0.0	34.3	1.5	6.6	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	43.9	43.1	49.2	30.6	30.3	30.1	28.9	0.0	63.1	82.9	16.1	11.7
LnGrp LOS	D	D	D	C	C	C	A	F	F	F	B	B
Approach Vol, veh/h		446			457		1252				513	
Approach Delay, s/veh		45.7			30.3		57.3				20.8	
Approach LOS		D			C		E				C	

<b>Timer - Assigned Phs</b>												
Phs Duration (G+Y+Rc), s		36.6		64.0		23.4		64.0				
Change Period (Y+Rc), s		4.0		4.1		4.1		* 4.1				
Max Green Setting (Gmax), s		19.0		59.5		19.3		* 60				
Max Q Clear Time (g_c+I1), s		10.3		61.9		13.2		61.9				
Green Ext Time (p_c), s		1.0		0.0		0.8		0.0				

Notes

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

HCM Signalized Intersection Capacity Analysis  
7: Industrial Rd & Brittan Avenue

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	
Traffic Volume (vph)	546	417	32	310	384	759	73	483	80	46	148	66
Future Volume (vph)	546	417	32	310	384	759	73	483	80	46	148	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6		4.2	4.9	4.9	4.2	4.9	
Lane Util. Factor		0.95			0.95		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00			1.00		1.00	1.00	0.97	1.00	0.99	
Flpb, ped/bikes		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt		1.00			0.92		1.00	1.00	0.85	1.00	0.95	
Flt Protected		0.97			0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3428			3228		1770	3539	1540	1770	3348	
Flt Permitted		0.97			0.99		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		3428			3228		1770	3539	1540	1770	3348	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	600	458	35	341	422	834	80	531	88	51	163	73
RTOR Reduction (vph)	0	1	0	0	69	0	0	0	68	0	34	0
Lane Group Flow (vph)	0	1092	0	0	1528	0	80	531	20	51	202	0
Confl. Peds. (#/hr)									5			2
Confl. Bikes (#/hr)									2			6
Turn Type	Split	NA		Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)		41.4			60.4		7.3	24.6	24.6	5.3	22.6	
Effective Green, g (s)		41.4			60.4		7.3	24.6	24.6	5.3	22.6	
Actuated g/C Ratio		0.28			0.40		0.05	0.16	0.16	0.04	0.15	
Clearance Time (s)		4.6			4.6		4.2	4.9	4.9	4.2	4.9	
Vehicle Extension (s)		4.0			4.0		4.0	6.0	6.0	4.0	6.0	
Lane Grp Cap (vph)		946			1299		86	580	252	62	504	
v/s Ratio Prot		c0.32			c0.47		0.05	c0.15		c0.03	0.06	
v/s Ratio Perm								0.01				
v/c Ratio		1.23dl			1.18		0.93	0.92	0.08	0.82	0.40	
Uniform Delay, d1		54.3			44.8		71.1	61.7	53.1	71.9	57.6	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		81.4			87.6		74.6	20.6	0.4	58.2	1.5	
Delay (s)		135.7			132.4		145.7	82.3	53.5	130.1	59.1	
Level of Service		F			F		F	F	D	F	E	
Approach Delay (s)		135.7			132.4			85.9			71.7	
Approach LOS		F			F			F			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay		119.8			HCM 2000 Level of Service				F			
HCM 2000 Volume to Capacity ratio		1.11										
Actuated Cycle Length (s)		150.0			Sum of lost time (s)				18.3			
Intersection Capacity Utilization		106.4%			ICU Level of Service				G			
Analysis Period (min)		15										
dl Defacto Left Lane. Recode with 1 though lane as a left lane.												
c Critical Lane Group												

HCM 6th Signalized Intersection Summary  
8: El Camino Real & Howard Ave

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	78	293	39	160	67	75	110	748	290	69	771	35
Future Volume (veh/h)	78	293	39	160	67	75	110	748	290	69	771	35
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		0.98	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		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	81	305	38	167	70	47	115	779	92	72	803	18
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	244	850	105	358	648	548	147	1106	483	324	2214	50
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.08	0.31	0.31	0.18	0.43	0.43
Sat Flow, veh/h	513	2453	304	1035	1870	1581	1781	3554	1551	1781	5137	115
Grp Volume(v), veh/h	219	0	205	167	70	47	115	779	92	72	532	289
Grp Sat Flow(s),veh/h/ln	1629	0	1641	1035	1870	1581	1781	1777	1551	1781	1702	1847
Q Serve(g_s), s	3.7	0.0	7.0	10.8	1.9	1.5	4.8	14.5	3.3	2.6	7.9	7.9
Cycle Q Clear(g_c), s	7.1	0.0	7.0	17.8	1.9	1.5	4.8	14.5	3.3	2.6	7.9	7.9
Prop In Lane	0.37		0.19	1.00		1.00	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	631	0	569	358	648	548	147	1106	483	324	1467	796
V/C Ratio(X)	0.35	0.00	0.36	0.47	0.11	0.09	0.78	0.70	0.19	0.22	0.36	0.36
Avail Cap(c_a), veh/h	631	0	569	358	648	548	247	1493	652	324	1467	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	0.00	1.00	0.90	0.90	0.90	1.00	1.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	18.2	0.0	18.3	24.9	16.6	16.5	33.8	22.8	18.9	26.1	14.4	14.4
Incr Delay (d2), s/veh	1.5	0.0	1.8	3.9	0.3	0.3	3.5	3.8	0.9	0.1	0.6	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	2.9	0.0	2.8	2.9	0.8	0.6	2.1	6.2	1.2	1.1	2.9	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.7	0.0	20.1	28.8	16.9	16.8	37.2	26.6	19.8	26.3	15.0	15.6
LnGrp LOS	B	A	C	C	B	B	D	C	B	C	B	B
Approach Vol, veh/h		424			284			986			893	
Approach Delay, s/veh		19.9			23.9			27.2			16.1	
Approach LOS		B			C			C			B	
<b>Timer - Assigned Phs</b>												
Phs Duration (G+Y+Rc), s	9.2	36.8		29.0	18.2	27.8		29.0				
Change Period (Y+Rc), s	3.0	4.5		3.0	4.5	* 4.5		3.0				
Max Green Setting (Gmax), s	10.4	28.1		26.0	7.0	* 32		26.0				
Max Q Clear Time (g_c+1), s	6.8	9.9		9.1	4.6	16.5		19.8				
Green Ext Time (p_c), s		0.0	6.7		3.2	0.0	6.5		0.9			
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay		21.8										
HCM 6th LOS		C										
<b>Notes</b>												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												



HCM 6th Signalized Intersection Summary  
9: Old Country Rd & Howard Ave

10/31/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	78	93	64	71	72	81	232	566	116	233	185	11
Future Volume (veh/h)	78	93	64	71	72	81	232	566	116	233	185	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	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	82	98	67	75	76	85	244	596	122	245	195	12
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	565	593	484	108	110	125	539	850	696	226	850	708
Arrive On Green	0.32	0.32	0.32	0.10	0.10	0.10	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	1781	1870	1527	1072	1093	1240	1175	1870	1532	734	1870	1558
Grp Volume(v), veh/h	82	98	67	127	0	109	244	596	122	245	195	12
Grp Sat Flow(s), veh/h/ln	1781	1870	1527	1817	0	1589	1175	1870	1532	734	1870	1558
Q Serve(g_s), s	3.0	3.4	2.8	6.1	0.0	6.0	14.4	23.0	4.2	17.9	5.7	0.4
Cycle Q Clear(g_c), s	3.0	3.4	2.8	6.1	0.0	6.0	20.1	23.0	4.2	40.9	5.7	0.4
Prop In Lane	1.00		1.00	0.59		0.78	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	565	593	484	183	0	160	539	850	696	226	850	708
V/C Ratio(X)	0.15	0.17	0.14	0.69	0.00	0.68	0.45	0.70	0.18	1.08	0.23	0.02
Avail Cap(c_a), veh/h	565	593	484	380	0	332	539	850	696	226	850	708
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	0.00	1.00	1.00	1.00	1.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	22.0	22.1	21.9	39.1	0.0	39.1	21.1	19.7	14.6	39.2	15.0	13.5
Incr Delay (d2), s/veh	0.5	0.6	0.6	1.8	0.0	1.9	2.7	4.8	0.5	80.6	0.6	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.3	1.6	1.1	2.8	0.0	2.4	4.1	10.3	1.5	10.0	2.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.5	22.7	22.5	40.9	0.0	41.0	23.8	24.5	15.1	119.8	15.5	13.5
LnGrp LOS	C	C	C	D	A	D	C	C	B	F	B	B
Approach Vol, veh/h		247			236			962			452	
Approach Delay, s/veh		22.6			40.9			23.1			72.0	
Approach LOS		C			D			C			E	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.2		45.0		12.8		45.0				
Change Period (Y+Rc), s		3.7		4.1		3.7		4.1				
Max Green Setting (Gmax), s		18.8		40.9		18.8		40.9				
Max Q Clear Time (g_c+I1), s		5.4		42.9		8.1		25.0				
Green Ext Time (p_c), s		0.5		0.0		0.6		3.0				
Intersection Summary												
HCM 6th Ctrl Delay			36.9									
HCM 6th LOS			D									

HCM 6th Signalized Intersection Summary  
10: Club Dr/Dartmouth Ave & San Carlos Ave

10/31/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	93	347	173	33	528	103	174	76	43	114	51	169
Future Volume (veh/h)	93	347	173	33	528	103	174	76	43	114	51	169
Initial Q (Qb), veh	0	1	0	0	7	0	0	1	1	0	4	2
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.77	1.00		0.48	1.00		0.48
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	106	394	188	38	600	100	198	86	25	130	58	68
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	421	48	90	449	24	234	194	147	229	246	151
Arrive On Green	0.09	0.34	0.34	0.05	0.31	0.31	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1781	1167	557	1781	1488	248	1260	547	765	1250	558	764
Grp Volume(v), veh/h	106	0	582	38	0	700	284	0	25	188	0	68
Grp Sat Flow(s), veh/h/ln	1781	0	1724	1781	0	1736	1807	0	765	1808	0	764
Q Serve(g_s), s	4.1	0.0	23.8	1.5	0.0	22.1	10.7	0.0	1.9	6.7	0.0	5.6
Cycle Q Clear(g_c), s	4.1	0.0	23.8	1.5	0.0	22.1	10.7	0.0	1.9	6.7	0.0	5.6
Prop In Lane	1.00		0.32	1.00		0.14	0.70		1.00	0.69		1.00
Lane Grp Cap(c), veh/h	147	0	504	90	0	451	348	0	147	353	0	151
V/C Ratio(X)	0.72	0.00	1.15	0.42	0.00	1.55	0.82	0.00	0.17	0.53	0.00	0.45
Avail Cap(c_a), veh/h	200	0	593	200	0	538	476	0	202	641	0	271
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.8	0.0	32.1	35.7	0.0	33.3	27.9	0.0	24.4	26.3	0.0	25.8
Incr Delay (d2), s/veh	8.0	0.0	89.8	3.1	0.0	259.8	7.7	0.0	0.5	1.2	0.0	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	7.1	0.0	0.0	55.9	0.3	0.0	0.4	2.0	0.0	2.3
%ile BackOfQ(50%), veh/ln	2.2	0.0	24.0	0.8	0.0	48.9	5.4	0.0	0.5	3.5	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.7	0.0	129.0	38.8	0.0	349.0	35.9	0.0	25.3	29.5	0.0	30.2
LnGrp LOS	D	A	F	D	A	F	D	A	C	C	A	C
Approach Vol, veh/h		688			738			309			256	
Approach Delay, s/veh		115.7			333.0			35.0			29.7	
Approach LOS		F			F			D			C	
Timer - Assigned Phs		1	2		4	5	6		8			
Phs Duration (G+Y+Rc), s		7.2	29.4		17.3	9.6	27.0		17.4			
Change Period (Y+Rc), s		3.5	4.9		3.7	3.5	4.9		3.7			
Max Green Setting (Gmax), s		8.0	22.1		25.3	8.0	22.1		18.8			
Max Q Clear Time (g_c+I1), s		3.5	25.8		8.7	6.1	24.1		12.7			
Green Ext Time (p_c), s		0.0	0.0		1.5	0.0	0.0		1.0			
Intersection Summary												
HCM 6th Ctrl Delay			172.7									
HCM 6th LOS			F									

HCM 6th Signalized Intersection Summary  
11: Alameda de las Pulgas & San Carlos Ave

10/31/2024

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗	↘	↙	↖	↗	↘
Traffic Volume (veh/h)	588	242	174	453	334	333
Future Volume (veh/h)	588	242	174	453	334	333
Initial Q (Qb), veh	5	0	0	6	1	0
Ped-Bike Adj(A_pbT)	0.97	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	626	150	185	482	355	317
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	758	629	231	1133	452	618
Arrive On Green	0.41	0.41	0.13	0.61	0.25	0.25
Sat Flow, veh/h	1870	1540	1781	1870	1781	1585
Grp Volume(v), veh/h	626	150	185	482	355	317
Grp Sat Flow(s),veh/h/ln	1870	1540	1781	1870	1781	1585
Q Serve(g_s), s	17.8	3.8	6.1	8.2	11.2	9.3
Cycle Q Clear(g_c), s	17.8	3.8	6.1	8.2	11.2	9.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	758	629	231	1133	452	618
V/C Ratio(X)	0.83	0.24	0.80	0.43	0.78	0.51
Avail Cap(c_a), veh/h	950	782	296	1385	798	917
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	17.7	12.1	26.2	6.7	21.1	14.4
Incr Delay (d2), s/veh	5.6	0.3	13.2	0.4	3.0	0.7
Initial Q Delay(d3),s/veh	1.8	0.0	0.0	0.4	0.2	0.0
%ile BackOfQ(50%),veh/ln	9.7	1.3	3.4	3.4	4.8	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	25.0	12.3	39.4	7.4	24.3	15.0
LnGrp LOS	C	B	D	A	C	B
Approach Vol, veh/h	776			667	672	
Approach Delay, s/veh	22.6			16.3	19.9	
Approach LOS	C			B	B	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.8	29.0		19.4		40.8
Change Period (Y+Rc), s	4.0	* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s	10.0	* 31		* 27		* 45
Max Q Clear Time (g_c+I1), s	8.1	19.8		13.2		10.2
Green Ext Time (p_c), s	0.1	4.8		2.0		5.2
<b>Intersection Summary</b>						
HCM 6th Ctrl Delay				19.8		
HCM 6th LOS				B		
<b>Notes</b>						

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

HCM 6th Signalized Intersection Summary  
12: Alameda de las Pulgas & Brittan Avenue

10/31/2024

	↖	→	↘	↙	←	↖	↗	↘	↙	↖	↗	↘	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↗	↘	↙	↖		↗	↘	↙	↖	↗	↘	
Traffic Volume (veh/h)	179	229	145	183	247	72	59	474	90	109	387	113	
Future Volume (veh/h)	179	229	145	183	247	72	59	474	90	109	387	113	
Initial Q (Qb), veh	0	0	0	0	0	0	0	1	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00	0.97	1.00		1.00	1.00	1.00		0.96	1.00		0.97	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No		No		No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h	186	239	109	191	257	58	61	494	69	114	403	81	
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	193	248	370	340	282	64	78	528	69	132	537	108	
Arrive On Green	0.24	0.24	0.24	0.19	0.19	0.19	0.04	0.33	0.33	0.07	0.36	0.36	
Sat Flow, veh/h	801	1029	1536	1781	1476	333	1781	1597	223	1781	1502	302	
Grp Volume(v), veh/h	425	0	109	191	0	315	61	0	563	114	0	484	
Grp Sat Flow(s),veh/h/ln	1830	0	1536	1781	0	1809	1781	0	1820	1781	0	1803	
Q Serve(g_s), s	23.8	0.0	6.0	10.1	0.0	17.7	3.5	0.0	31.3	6.6	0.0	24.4	
Cycle Q Clear(g_c), s	23.8	0.0	6.0	10.1	0.0	17.7	3.5	0.0	31.3	6.6	0.0	24.4	
Prop In Lane	0.44		1.00	1.00		0.18	1.00		0.12	1.00		0.17	
Lane Grp Cap(c), veh/h	441	0	370	340	0	345	78	0	597	132	0	645	
V/C Ratio(X)	0.96	0.00	0.29	0.56	0.00	0.91	0.78	0.00	0.94	0.86	0.00	0.75	
Avail Cap(c_a), veh/h	441	0	370	344	0	349	100	0	614	132	0	644	
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	1.00	0.00	1.00	
Uniform Delay (d), s/veh	39.0	0.0	32.2	38.1	0.0	41.2	49.1	0.0	34.1	47.5	0.0	29.3	
Incr Delay (d2), s/veh	33.5	0.0	0.4	2.0	0.0	27.3	19.3	0.0	22.9	39.1	0.0	4.9	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	14.6	0.0	0.2	4.6	0.0	10.4	2.0	0.0	17.4	4.3	0.0	11.2	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	72.5	0.0	32.6	40.1	0.0	68.4	68.4	0.0	57.4	86.6	0.0	34.2	
LnGrp LOS	E	A	C	D	A	E	E	A	E	F	A	C	
Approach Vol, veh/h		534			506			624			598		
Approach Delay, s/veh		64.4			57.8			58.4			44.2		
Approach LOS		E			E			E			D		
Timer - Assigned Phs		1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s		11.7	38.8		29.2	8.6	42.0		24.0				
Change Period (Y+Rc), s		4.0	4.9		* 4.2	4.0	4.9		4.2				
Max Green Setting (Gmax), s		7.7	35.0		* 25	5.8	36.9		20.0				
Max Q Clear Time (g_c+I1), s		8.6	33.3		25.8	5.5	26.4		19.7				
Green Ext Time (p_c), s		0.0	0.7		0.0	0.0	2.3		0.1				
<b>Intersection Summary</b>													
HCM 6th Ctrl Delay					55.9								
HCM 6th LOS					E								
<b>Notes</b>													

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

HCM 6th Signalized Intersection Summary  
1: El Camino Real & Holly Street

10/31/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔		↔	↔	↔	↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	61	208	33	776	684	242	35	695	390	147	643	50
Future Volume (veh/h)	61	208	33	776	684	242	35	695	390	147	643	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	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	63	214	25	800	705	208	36	716	266	152	663	45
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	84	299	36	1273	689	577	293	1200	934	186	742	50
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.16	0.34	0.34	0.05	0.22	0.22
Sat Flow, veh/h	728	2595	315	3456	1870	1566	1781	3554	2765	3456	3377	229
Grp Volume(v), veh/h	159	0	143	800	705	208	36	716	266	152	349	359
Grp Sat Flow(s), veh/h/ln	1834	0	1804	1728	1870	1566	1781	1777	1382	1728	1777	1829
Q Serve(g_s), s	10.9	0.0	9.9	28.6	47.9	15.9	2.2	21.7	9.2	5.7	24.8	24.8
Cycle Q Clear(g_c), s	10.9	0.0	9.9	28.6	47.9	15.9	2.2	21.7	9.2	5.7	24.8	24.8
Prop In Lane	0.40		0.17	1.00		1.00	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	211	0	208	1273	689	577	293	1200	934	186	390	402
V/C Ratio(X)	0.75	0.00	0.69	0.63	1.02	0.36	0.12	0.60	0.28	0.82	0.89	0.89
Avail Cap(c_a), veh/h	437	0	430	1273	689	577	293	1200	934	186	429	442
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.00	0.99	0.09	0.09	0.09	0.88	0.88	0.88	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.7	0.0	55.3	48.6	57.1	43.0	46.3	35.7	31.5	60.9	49.2	49.3
Incr Delay (d2), s/veh	2.0	0.0	1.5	0.2	16.8	0.2	0.1	1.9	0.7	23.3	25.2	24.9
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	5.2	0.0	4.6	13.4	27.4	6.7	1.0	9.6	3.1	3.1	13.6	14.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	57.7	0.0	56.8	48.8	73.9	43.2	46.4	37.6	32.2	84.2	74.5	74.1
LnGrp LOS	E	A	E	D	F	D	D	D	C	F	E	E
Approach Vol, veh/h		302			1713			1018			860	
Approach Delay, s/veh		57.3			58.5			36.5			76.0	
Approach LOS		E			E			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.9	33.1		52.0	10.5	48.4		19.1				
Change Period (Y+Rc), s	4.5	* 4.5		4.1	3.5	4.5		4.1				
Max Green Setting (Gmax), s	4.0	* 31		47.9	7.0	27.9		31.0				
Max Q Clear Time (g_c+I1), s	4.2	26.8		49.9	7.7	23.7		12.9				
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	2.2		0.9				
Intersection Summary												
HCM 6th Ctrl Delay				56.5								
HCM 6th LOS				E								
Notes												
User approved ignoring U-Turning movement.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary  
2: Old Country Rd & Holly Street

10/31/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔		↔	↔	↔	↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	87	582	61	30	1194	19	154	311	240	123	287	362
Future Volume (veh/h)	87	582	61	30	1194	19	154	311	240	123	287	362
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.96	1.00		0.95	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	91	606	64	31	1244	20	160	324	250	128	299	377
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	83	583	278	27	1126	19	190	293	226	123	473	392
Arrive On Green	0.06	0.06	0.06	0.31	0.31	0.31	0.11	0.31	0.31	0.07	0.25	0.25
Sat Flow, veh/h	452	3172	1513	85	3578	60	1781	956	737	1781	1870	1549
Grp Volume(v), veh/h	372	325	64	679	0	616	160	0	574	128	299	377
Grp Sat Flow(s), veh/h/ln	1848	1777	1513	1866	0	1857	1781	0	1693	1781	1870	1549
Q Serve(g_s), s	23.9	23.8	5.2	40.9	0.0	40.9	11.5	0.0	39.9	9.0	18.5	31.2
Cycle Q Clear(g_c), s	23.9	23.8	5.2	40.9	0.0	40.9	11.5	0.0	39.9	9.0	18.5	31.2
Prop In Lane	0.24		1.00	0.05		0.03	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	340	327	278	587	0	584	190	0	520	123	473	392
V/C Ratio(X)	1.09	1.00	0.23	1.16	0.00	1.05	0.84	0.00	1.10	1.04	0.63	0.96
Avail Cap(c_a), veh/h	340	327	278	587	0	584	219	0	520	123	473	392
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	1.00	0.00	1.00	0.87	0.00	0.87	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.1	61.0	52.3	44.6	0.0	44.6	57.0	0.0	45.1	60.5	43.2	47.9
Incr Delay (d2), s/veh	73.0	44.8	1.6	88.8	0.0	52.2	17.5	0.0	68.8	91.5	6.3	36.8
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	18.8	15.5	2.2	33.4	0.0	27.3	6.1	0.0	26.5	7.2	9.4	16.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	134.0	105.8	53.9	133.3	0.0	96.7	74.4	0.0	113.8	152.0	49.4	84.7
LnGrp LOS	F	F	D	F	A	F	E	A	F	F	D	F
Approach Vol, veh/h		761			1295			734			804	
Approach Delay, s/veh		115.2			115.9			105.2			82.3	
Approach LOS		F			F			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	45.0		45.0	19.0	38.0		28.0				
Change Period (Y+Rc), s	3.0	5.1		4.1	5.1	* 5.1		4.1				
Max Green Setting (Gmax), s	9.0	39.9		40.9	16.0	* 33		23.9				
Max Q Clear Time (g_c+I1), s	11.0	41.9		42.9	13.5	33.2		25.9				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.1	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				106.1								
HCM 6th LOS				F								
Notes												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

### HCM 6th Signalized Intersection Summary 3: Industrial Rd & Holly St

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↩↩↩	↩	↩	↩↩↩	↩	↩	↩	↩	↩	↩↩↩	↩	↩
Traffic Volume (veh/h)	101	777	91	332	812	325	196	577	729	555	714	334
Future Volume (veh/h)	101	777	91	332	812	325	196	577	729	555	714	334
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.98	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	105	809	95	346	846	339	204	601	759	578	744	348
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	869	105	767	789	352	225	556	1434	548	771	360
Arrive On Green	0.20	0.20	0.20	0.22	0.22	0.22	0.13	0.30	0.30	0.16	0.33	0.33
Sat Flow, veh/h	520	4272	515	3456	3554	1585	1781	1870	2742	3456	2339	1093
Grp Volume(v), veh/h	372	312	325	346	846	339	204	601	759	578	565	527
Grp Sat Flow(s),veh/h/ln	1844	1702	1762	1728	1777	1585	1781	1870	1371	1728	1777	1654
Q Serve(g_s), s	29.2	25.9	26.1	12.6	32.2	30.7	16.4	43.1	26.7	23.0	45.3	45.4
Cycle Q Clear(g_c), s	29.2	25.9	26.1	12.6	32.2	30.7	16.4	43.1	26.7	23.0	45.3	45.4
Prop In Lane	0.28		0.29	1.00		1.00	1.00		1.00	1.00		0.66
Lane Grp Cap(c), veh/h	375	346	358	767	789	352	225	556	1434	548	586	545
V/C Ratio(X)	0.99	0.90	0.91	0.45	1.07	0.96	0.91	1.08	0.53	1.05	0.96	0.97
Avail Cap(c_a), veh/h	375	346	358	767	789	352	225	556	1434	548	586	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.6	56.3	56.4	48.8	56.4	55.8	62.5	51.0	23.2	61.0	47.8	47.8
Incr Delay (d2), s/veh	44.4	28.8	28.8	1.9	53.1	39.5	35.3	61.9	0.2	53.6	28.2	29.9
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	18.3	14.0	14.6	5.7	20.2	16.0	9.6	29.5	13.3	14.1	24.4	23.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	102.1	85.1	85.2	50.7	109.5	95.3	97.8	112.9	23.4	114.6	76.0	77.7
LnGrp LOS	F	F	F	D	F	F	F	F	C	F	E	E
Approach Vol, veh/h		1009			1531			1564			1670	
Approach Delay, s/veh		91.4			93.1			67.5			89.9	
Approach LOS		F			F			E			F	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		36.7	26.5	47.7		34.1	21.8	52.4				
Change Period (Y+Rc), s		4.5	3.5	4.6		4.6	3.5	4.6				
Max Green Setting (Gmax), s		32.2	23.0	43.1		29.5	18.3	47.8				
Max Q Clear Time (g_c+I1), s		34.2	25.0	45.1		31.2	18.4	47.4				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			84.9									
HCM 6th LOS			F									

### HCM Signalized Intersection Capacity Analysis 4: El Camino Real & San Carlos Avenue

10/31/2024

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↩↩	↩	↩	↩↩	↩↩	↩
Traffic Volume (vph)	343	578	198	856	856	738
Future Volume (vph)	343	578	198	856	856	738
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	3.5	4.4	4.4	4.4
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	0.96	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1526	1770	3539	3539	1549
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1526	1770	3539	3539	1549
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	365	615	211	911	911	785
RTOR Reduction (vph)	0	439	0	0	0	477
Lane Group Flow (vph)	365	176	211	911	911	308
Confl. Peds. (#/hr)		32				12
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8				2
Actuated Green, G (s)	11.7	11.7	11.3	42.3	27.5	27.5
Effective Green, g (s)	11.7	11.7	11.3	42.3	27.5	27.5
Actuated g/C Ratio	0.17	0.17	0.16	0.60	0.39	0.39
Clearance Time (s)	4.6	4.6	3.5	4.4	4.4	4.4
Vehicle Extension (s)	2.0	2.0	2.5	4.0	4.0	4.0
Lane Grp Cap (vph)	573	255	285	2138	1390	608
v/s Ratio Prot	0.11		c0.12	0.26	c0.26	
v/s Ratio Perm		c0.12				0.20
v/c Ratio	0.64	0.69	0.74	0.43	0.66	0.51
Uniform Delay, d1	27.2	27.4	28.0	7.4	17.4	16.1
Progression Factor	1.18	2.51	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.7	6.3	9.4	0.6	2.4	3.0
Delay (s)	33.7	75.2	37.4	8.0	19.8	19.1
Level of Service	C	E	D	A	B	B
Approach Delay (s)	59.7			13.5	19.5	
Approach LOS	E			B	B	
<b>Intersection Summary</b>						
HCM 2000 Control Delay		28.1		HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio		0.63				
Actuated Cycle Length (s)		70.0		Sum of lost time (s)		15.5
Intersection Capacity Utilization		69.8%		ICU Level of Service		C
Analysis Period (min)		15				
c Critical Lane Group						

HCM 6th Signalized Intersection Summary  
5: El Camino Real & Brittan Avenue

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	88	321	46	319	445	193	71	658	62	214	792	79
Future Volume (veh/h)	88	321	46	319	445	193	71	658	62	214	792	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	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	1.00	1.00	1.00
Work Zone On Approach	No				No			No				No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	334	33	332	464	171	74	685	45	223	825	67
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	446	46	363	549	400	94	847	376	288	1293	104
Arrive On Green	0.17	0.17	0.17	0.25	0.25	0.25	0.05	0.24	0.24	0.08	0.27	0.27
Sat Flow, veh/h	700	2674	275	1425	2151	1570	1781	3554	1579	3456	4805	388
Grp Volume(v), veh/h	241	0	218	419	377	171	74	685	45	223	583	309
Grp Sat Flow(s), veh/h/ln	1835	0	1814	1799	1777	1570	1781	1777	1579	1728	1702	1789
Q Serve(g_s), s	7.6	0.0	6.8	13.6	12.0	5.5	2.5	10.9	1.3	3.8	9.1	9.1
Cycle Q Clear(g_c), s	7.6	0.0	6.8	13.6	12.0	5.5	2.5	10.9	1.3	3.8	9.1	9.1
Prop In Lane	0.38		0.15	0.79		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	306	0	302	459	453	400	94	847	376	288	916	481
V/C Ratio(X)	0.79	0.00	0.72	0.91	0.83	0.43	0.79	0.81	0.12	0.77	0.64	0.64
Avail Cap(c_a), veh/h	306	0	302	459	453	400	119	847	376	288	916	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.00	0.93	0.87	0.87	0.87	0.83	0.83	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	0.0	23.7	21.7	21.1	18.7	28.1	21.6	17.9	26.9	19.3	19.4
Incr Delay (d2), s/veh	11.8	0.0	7.2	22.8	14.3	2.9	15.6	6.9	0.5	11.3	3.4	6.4
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	0.0	3.3	8.1	6.4	2.1	1.4	4.9	0.5	1.9	3.6	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.8	0.0	30.8	44.5	35.5	21.6	43.7	28.4	18.4	38.2	22.7	25.8
LnGrp LOS	D	A	C	D	D	C	D	C	B	D	C	C
Approach Vol, veh/h		459			967			804			1115	
Approach Delay, s/veh		33.4			36.9			29.3			26.7	
Approach LOS		C			D			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	20.6		19.0	8.0	18.8		14.2				
Change Period (Y+Rc), s	3.0	4.5		3.7	3.0	4.5		4.2				
Max Green Setting (Gmax), s	4.0	15.3		15.3	5.0	14.3		10.0				
Max Q Clear Time (g_c+I1), s	4.5	11.1		15.6	5.8	12.9		9.6				
Green Ext Time (p_c), s		0.0	2.5		0.0	0.8		0.1				

Intersection Summary

HCM 6th Ctrl Delay	31.2
HCM 6th LOS	C

Notes

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

HCM 6th Signalized Intersection Summary  
6: Old Country Rd & Brittan Avenue

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	32	102	139	59	202	227	143	478	53	12	948	251
Future Volume (veh/h)	32	102	139	59	202	227	143	478	53	12	948	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		0.97	1.00		0.98	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	34	107	146	62	213	239	151	503	56	13	998	264
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	88	297	169	116	424	231	203	1092	122	485	1238	1032
Arrive On Green	0.11	0.11	0.11	0.15	0.15	0.15	0.66	0.66	0.66	0.66	0.66	0.66
Sat Flow, veh/h	827	2779	1578	776	2833	1543	564	1649	184	850	1870	1560
Grp Volume(v), veh/h	75	66	146	146	129	239	151	0	559	13	998	264
Grp Sat Flow(s), veh/h/ln	1829	1777	1578	1832	1777	1543	564	0	1833	850	1870	1560
Q Serve(g_s), s	5.7	5.1	13.7	11.1	10.0	22.5	39.7	0.0	22.2	1.1	58.0	10.3
Cycle Q Clear(g_c), s	5.7	5.1	13.7	11.1	10.0	22.5	39.7	0.0	22.2	23.4	58.0	10.3
Prop In Lane	0.45		1.00	0.42		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	196	190	169	274	266	231	203	0	1214	485	1238	1032
V/C Ratio(X)	0.38	0.35	0.87	0.53	0.48	1.03	0.74	0.00	0.46	0.03	0.81	0.26
Avail Cap(c_a), veh/h	243	236	209	274	266	231	203	0	1214	485	1238	1032
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	0.59	0.22	0.22	0.22	0.99	0.00	0.99	0.64	0.64	0.64
Uniform Delay (d), s/veh	62.4	62.1	65.9	58.9	58.4	63.8	53.8	0.0	12.3	18.0	18.4	10.3
Incr Delay (d2), s/veh	3.4	2.9	27.8	1.6	1.4	37.0	21.3	0.0	1.2	0.1	3.7	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	2.9	2.5	6.8	5.3	4.6	11.2	6.8	0.0	9.3	0.2	24.8	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	65.7	65.1	93.7	60.6	59.8	100.8	75.1	0.0	13.6	18.1	22.1	10.7
LnGrp LOS	E	E	F	E	E	F	E	A	B	B	C	B
Approach Vol, veh/h		287			514			710			1275	
Approach Delay, s/veh		79.8			79.1			26.7			19.7	
Approach LOS		E			E			C			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.5		103.4		20.1		103.4				
Change Period (Y+Rc), s		4.0		4.1		4.1		* 4.1				
Max Green Setting (Gmax), s		19.0		98.9		19.9		* 99				
Max Q Clear Time (g_c+I1), s		24.5		60.0		15.7		99.7				
Green Ext Time (p_c), s		0.0		6.5		0.3		0.0				

Intersection Summary

HCM 6th Ctrl Delay	38.6
HCM 6th LOS	D

Notes

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

HCM Signalized Intersection Capacity Analysis  
7: Industrial Rd & Brittan Avenue

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	
Traffic Volume (vph)	230	275	41	166	293	122	239	881	105	399	384	644
Future Volume (vph)	230	275	41	166	293	122	239	881	105	399	384	644
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6			4.6			4.2	4.9		4.2	4.9
Lane Util. Factor		0.95			0.95			1.00	0.95		1.00	0.95
Frpb, ped/bikes		1.00			1.00			1.00	1.00		0.97	1.00
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		0.99			0.97			1.00	1.00		0.85	1.00
Flt Protected		0.98			0.99			0.95	1.00		1.00	0.95
Satd. Flow (prot)		3423			3370			1770	3539		1538	3159
Flt Permitted		0.98			0.99			0.95	1.00		1.00	0.95
Satd. Flow (perm)		3423			3370			1770	3539		1538	3159
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	240	286	43	173	305	127	249	918	109	416	400	671
RTOR Reduction (vph)	0	5	0	0	18	0	0	0	68	0	228	0
Lane Group Flow (vph)	0	564	0	0	587	0	249	918	41	416	843	0
Confl. Peds. (#/hr)		2			1				4			4
Confl. Bikes (#/hr)		1							9			4
Turn Type	Split	NA		Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases									2			
Actuated Green, G (s)		23.0			23.0		21.9	34.9	34.9	30.8	43.8	
Effective Green, g (s)		23.0			23.0		21.9	34.9	34.9	30.8	43.8	
Actuated g/C Ratio		0.18			0.18		0.17	0.27	0.27	0.24	0.34	
Clearance Time (s)		4.6			4.6		4.2	4.9	4.9	4.2	4.9	
Vehicle Extension (s)		4.0			4.0		4.0	6.0	6.0	4.0	6.0	
Lane Grp Cap (vph)		605			596		298	950	412	419	1064	
v/s Ratio Prot		c0.16			c0.17		0.14	c0.26		c0.24	0.27	
v/s Ratio Perm								0.03				
v/c Ratio		0.93			0.98		0.84	0.97	0.10	0.99	0.89dr	
Uniform Delay, d1		52.7			53.3		52.3	47.0	35.7	49.5	39.0	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		21.6			32.8		18.7	21.8	0.3	41.9	5.0	
Delay (s)		74.4			86.1		71.0	68.7	36.0	91.4	44.0	
Level of Service		E			F		E	E	D	F	D	
Approach Delay (s)		74.4			86.1			66.4			57.3	
Approach LOS		E			F			E			E	
<b>Intersection Summary</b>												
HCM 2000 Control Delay		67.1			HCM 2000 Level of Service			E				
HCM 2000 Volume to Capacity ratio		0.97										
Actuated Cycle Length (s)		130.0			Sum of lost time (s)			18.3				
Intersection Capacity Utilization		94.5%			ICU Level of Service			F				
Analysis Period (min)		15										
dr Defacto Right Lane. Recode with 1 though lane as a right lane.												
c Critical Lane Group												

HCM 6th Signalized Intersection Summary  
8: El Camino Real & Howard Ave

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	64	164	159	282	248	124	34	710	205	64	1046	90
Future Volume (veh/h)	64	164	159	282	248	124	34	710	205	64	1046	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	1	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00		0.99	1.00		0.98	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	66	169	144	291	256	89	35	732	39	66	1078	88
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	198	474	418	383	673	566	49	1047	456	330	2269	185
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.03	0.29	0.29	0.19	0.47	0.47
Sat Flow, veh/h	371	1318	1162	1065	1870	1572	1781	3554	1547	1781	4804	392
Grp Volume(v), veh/h	195	0	184	291	256	89	35	732	39	66	763	403
Grp Sat Flow(s),veh/h/ln	1362	0	1488	1065	1870	1572	1781	1777	1547	1781	1702	1792
Q Serve(g_s), s	2.7	0.0	6.8	20.2	7.6	2.9	1.5	13.7	1.4	2.3	11.4	11.5
Cycle Q Clear(g_c), s	10.3	0.0	6.8	27.0	7.6	2.9	1.5	13.7	1.4	2.3	11.4	11.5
Prop In Lane	0.34		0.78	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	555	0	536	383	673	566	49	1047	456	330	1608	846
V/C Ratio(X)	0.35	0.00	0.34	0.76	0.38	0.16	0.71	0.70	0.09	0.20	0.47	0.48
Avail Cap(c_a), veh/h	555	0	536	383	673	566	154	1464	638	331	1608	846
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.52	0.52	0.52	1.00	1.00	1.00	0.72	0.72	0.72
Uniform Delay (d), s/veh	18.1	0.0	17.5	27.5	17.8	16.3	36.2	23.5	19.1	25.9	13.5	13.5
Incr Delay (d2), s/veh	1.7	0.0	1.8	7.3	0.9	0.3	6.9	3.9	0.4	0.1	0.7	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	2.5	5.7	3.3	1.0	0.7	5.9	0.5	1.0	4.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.9	0.0	19.3	34.8	18.6	16.6	43.1	27.4	19.5	25.9	14.2	14.8
LnGrp LOS	B	A	B	C	B	B	D	C	B	C	B	B
Approach Vol, veh/h		379			636			806			1232	
Approach Delay, s/veh		19.6			25.7			27.7			15.0	
Approach LOS		B			C			C			B	
<b>Timer - Assigned Phs</b>												
Phs Duration (G+Y+Rc), s	5.1	39.9		30.0	18.4	26.6		30.0				
Change Period (Y+Rc), s	3.0	4.5		3.0	4.5	* 4.5		3.0				
Max Green Setting (Gmax), s	6.5	31.0		27.0	6.6	* 31		27.0				
Max Q Clear Time (g_c+1), s	3.5	13.5		12.3	4.3	15.7		29.0				
Green Ext Time (p_c), s	0.0	9.5		2.8	0.0	5.9		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay		21.2										
HCM 6th LOS		C										
<b>Notes</b>												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 6th Signalized Intersection Summary  
9: Old Country Rd & Howard Ave

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	19	88	103	123	164	133	198	205	55	105	640	32
Future Volume (veh/h)	19	88	103	123	164	133	198	205	55	105	640	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.95	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	22	100	117	140	186	151	225	233	62	119	727	36
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	332	349	284	158	215	182	270	1061	873	637	1061	885
Arrive On Green	0.19	0.19	0.19	0.16	0.16	0.16	0.57	0.57	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1781	1870	1522	976	1325	1121	728	1870	1539	1145	1870	1560
Grp Volume(v), veh/h	22	100	117	261	0	216	225	233	62	119	727	36
Grp Sat Flow(s), veh/h/ln	1781	1870	1522	1822	0	1600	728	1870	1539	1145	1870	1560
Q Serve(g_s), s	1.3	5.7	8.5	17.5	0.0	16.3	36.5	7.7	2.3	7.2	34.4	1.3
Cycle Q Clear(g_c), s	1.3	5.7	8.5	17.5	0.0	16.3	70.9	7.7	2.3	14.9	34.4	1.3
Prop In Lane	1.00		1.00	0.54		0.70	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	332	349	284	296	0	260	270	1061	873	637	1061	885
V/C Ratio(X)	0.07	0.29	0.41	0.88	0.00	0.83	0.83	0.22	0.07	0.19	0.69	0.04
Avail Cap(c_a), veh/h	332	349	284	318	0	279	270	1061	873	637	1061	885
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	0.00	1.00	1.00	1.00	0.61	0.61	0.61	0.61
Uniform Delay (d), s/veh	41.9	43.7	44.8	51.2	0.0	50.7	45.3	13.4	12.2	17.0	19.2	12.0
Incr Delay (d2), s/veh	0.4	2.0	4.2	21.9	0.0	16.2	25.0	0.5	0.2	0.4	2.2	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	2.9	3.5	9.8	0.0	7.7	8.9	3.3	0.8	1.9	14.8	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.3	45.7	49.0	73.1	0.0	66.9	70.2	13.9	12.4	17.4	21.4	12.0
LnGrp LOS	D	D	D	E	A	E	E	B	B	B	C	B
Approach Vol, veh/h		239			477			520			882	
Approach Delay, s/veh		47.0			70.3			38.1			20.5	
Approach LOS		D			E			D			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.5		75.0		23.5		75.0				
Change Period (Y+Rc), s		3.2		4.1		3.2		4.1				
Max Green Setting (Gmax), s		21.8		70.9		21.8		70.9				
Max Q Clear Time (g_c+I1), s		10.5		36.4		19.5		72.9				
Green Ext Time (p_c), s		0.4		3.7		0.5		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				39.0								
HCM 6th LOS				D								

HCM 6th Signalized Intersection Summary  
10: Club Dr/Dartmouth Ave & San Carlos Ave

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱	↰	↑	↱	↰	↑	↱	↰	↑	↱
Traffic Volume (veh/h)	62	733	143	22	711	44	182	18	23	51	30	84
Future Volume (veh/h)	62	733	143	22	711	44	182	18	23	51	30	84
Initial Q (Qb), veh	0	0	0	0	1	0	0	1	0	0	1	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.96	1.00		0.91
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			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	788	152	24	765	42	196	19	20	55	32	43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	830	149	61	924	50	228	92	230	95	121	154
Arrive On Green	0.06	0.56	0.56	0.03	0.53	0.53	0.15	0.15	0.15	0.08	0.08	0.08
Sat Flow, veh/h	1781	1516	292	1781	1754	96	1631	158	1525	1146	667	1446
Grp Volume(v), veh/h	67	0	940	24	0	807	215	0	20	87	0	43
Grp Sat Flow(s), veh/h/ln	1781	0	1808	1781	0	1850	1789	0	1525	1813	0	1446
Q Serve(g_s), s	3.3	0.0	43.3	1.2	0.0	32.9	10.7	0.0	1.0	4.2	0.0	2.6
Cycle Q Clear(g_c), s	3.3	0.0	43.3	1.2	0.0	32.9	10.7	0.0	1.0	4.2	0.0	2.6
Prop In Lane	1.00		0.16	1.00		0.05	0.91		1.00	0.63		1.00
Lane Grp Cap(c), veh/h	107	0	923	61	0	985	263	0	230	156	0	154
V/C Ratio(X)	0.63	0.00	1.02	0.39	0.00	0.82	0.82	0.00	0.09	0.56	0.00	0.28
Avail Cap(c_a), veh/h	158	0	1147	158	0	1174	378	0	323	375	0	299
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.4	0.0	28.9	46.7	0.0	18.0	38.4	0.0	36.0	40.4	0.0	40.4
Incr Delay (d2), s/veh	5.9	0.0	29.8	4.1	0.0	4.0	9.0	0.0	0.2	3.1	0.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.7	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.8	0.0	32.5	0.6	0.0	14.4	5.5	0.0	0.4	2.2	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	51.3	0.0	58.7	50.7	0.0	22.1	48.0	0.0	36.2	44.1	0.0	41.4
LnGrp LOS	D	A	F	D	A	C	D	A	D	D	A	D
Approach Vol, veh/h		1007			831			235			130	
Approach Delay, s/veh		58.2			22.9			47.0			43.2	
Approach LOS		E			C			D			D	
Timer - Assigned Phs		1	2		4	5	6		8			
Phs Duration (G+Y+Rc), s		6.7	56.2		11.4	9.2	53.6		17.0			
Change Period (Y+Rc), s		3.5	4.9		3.7	3.5	4.9		3.7			
Max Green Setting (Gmax), s		8.1	57.9		18.9	8.1	57.9		19.3			
Max Q Clear Time (g_c+I1), s		3.2	45.3		6.2	5.3	34.9		12.7			
Green Ext Time (p_c), s		0.0	6.0		0.4	0.0	6.4		0.7			
Intersection Summary												
HCM 6th Ctrl Delay					42.8							
HCM 6th LOS					D							



HCM 6th Signalized Intersection Summary  
11: Alameda de las Pulgas & San Carlos Ave

10/31/2024

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	409	355	310	574	331	272
Future Volume (veh/h)	409	355	310	574	331	272
Initial Q (Qb), veh	5	0	1	3	0	0
Ped-Bike Adj(A_pbT)		0.97	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	435	265	330	611	352	261
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	615	537	332	1135	439	714
Arrive On Green	0.32	0.32	0.21	0.61	0.25	0.25
Sat Flow, veh/h	1870	1532	1781	1870	1781	1585
Grp Volume(v), veh/h	435	265	330	611	352	261
Grp Sat Flow(s),veh/h/ln	1870	1532	1781	1870	1781	1585
Q Serve(g_s), s	12.0	8.3	10.4	11.2	10.8	6.2
Cycle Q Clear(g_c), s	12.0	8.3	10.4	11.2	10.8	6.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	615	537	332	1135	439	714
V/C Ratio(X)	0.71	0.49	0.99	0.54	0.80	0.37
Avail Cap(c_a), veh/h	884	724	396	1428	823	1071
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	17.6	15.9	28.4	6.8	22.2	11.4
Incr Delay (d2), s/veh	2.1	1.0	41.8	0.6	3.5	0.3
Initial Q Delay(d3),s/veh	1.6	0.0	8.1	0.1	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	2.9	10.0	3.8	4.9	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.4	16.9	78.4	7.5	25.6	11.7
LnGrp LOS	C	B	E	A	C	B
Approach Vol, veh/h	700			941	613	
Approach Delay, s/veh	19.7			32.4	19.7	
Approach LOS	B			C	B	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	16.5	23.1		18.8		39.6
Change Period (Y+Rc), s	4.0	* 4.2		* 4.2		* 4.2
Max Green Setting (Gmax), s	13.0	* 28		* 27		* 45
Max Q Clear Time (g_c+I1), s	12.4	14.0		12.8		13.2
Green Ext Time (p_c), s		0.1	4.6	1.8		7.0
Intersection Summary						
HCM 6th Ctrl Delay			25.0			
HCM 6th LOS			C			
Notes						

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

HCM 6th Signalized Intersection Summary  
12: Alameda de las Pulgas & Brittan Avenue

10/31/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	211	38	135	335	150	77	466	90	122	464	228
Future Volume (veh/h)	118	211	38	135	335	150	77	466	90	122	464	228
Initial Q (Qb), veh	0	0	0	0	0	0	0	6	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	122	218	5	139	345	130	79	480	71	126	478	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	119	213	284	451	325	123	90	622	71	145	470	209
Arrive On Green	0.18	0.18	0.18	0.25	0.25	0.25	0.05	0.36	0.36	0.08	0.39	0.39
Sat Flow, veh/h	659	1178	1572	1781	1284	484	1781	1585	234	1781	1212	540
Grp Volume(v), veh/h	340	0	5	139	0	475	79	0	551	126	0	691
Grp Sat Flow(s),veh/h/ln	1837	0	1572	1781	0	1767	1781	0	1820	1781	0	1752
Q Serve(g_s), s	24.4	0.0	0.4	8.5	0.0	34.2	5.9	0.0	37.7	9.4	0.0	52.3
Cycle Q Clear(g_c), s	24.4	0.0	0.4	8.5	0.0	34.2	5.9	0.0	37.7	9.4	0.0	52.3
Prop In Lane	0.36		1.00	1.00		0.27	1.00		0.13	1.00		0.31
Lane Grp Cap(c), veh/h	332	0	284	451	0	448	90	0	651	145	0	679
V/C Ratio(X)	1.02	0.00	0.02	0.31	0.00	1.06	0.88	0.00	0.85	0.87	0.00	1.02
Avail Cap(c_a), veh/h	332	0	284	451	0	448	90	0	648	145	0	679
HCM Platoon Ratio	1.00	1.00	1.00	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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.3	0.0	45.4	40.8	0.0	50.4	63.7	0.0	40.8	61.3	0.0	41.4
Incr Delay (d2), s/veh	55.6	0.0	0.0	0.4	0.0	59.6	56.3	0.0	10.1	37.8	0.0	39.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.4	0.0	0.1	3.8	0.0	22.5	4.1	0.0	20.4	5.8	0.0	29.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	110.9	0.0	45.5	41.2	0.0	110.0	120.0	0.0	55.0	99.1	0.0	80.5
LnGrp LOS	F	A	D	D	A	F	F	A	D	F	A	F
Approach Vol, veh/h		345			614			630			817	
Approach Delay, s/veh		110.0			94.4			63.1			83.4	
Approach LOS		F			F			E			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	53.0		28.6	10.8	57.2		38.4				
Change Period (Y+Rc), s	4.0	4.9		* 4.2	4.0	4.9		4.2				
Max Green Setting (Gmax), s	11.0	48.1		* 24	6.8	52.3		34.2				
Max Q Clear Time (g_c+I1), s	11.4	39.7		26.4	7.9	54.3		36.2				
Green Ext Time (p_c), s	0.0	2.3		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				84.7								
HCM 6th LOS				F								
Notes												

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



# Appendix E

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## Intersection Level of Service Calculations (Near-Term plus Project Conditions)



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# **CMP ARTERIAL OPERATIONAL ANALYSIS**

## **AM PEAK HOUR**

Description	Direction	Lanes	Type	LOS Std	Capacity	Existing			2045 Existing GP			2045 GPR			
						Volume	v/c	LOS	Volume	v/c	LOS	Volume	v/c	LOS	v/c increase
SR 82 San Carlos City Limit to San Carlos Ave	SB	2	Arterial	E	2200	996	0.453	A	1067	0.485	A	1053	0.479	A	-0.01
SR 82 San Carlos Ave to San Carlos City Limit	NB	2	Arterial	E	2200	701	0.319	A	739	0.336	A	732	0.333	A	0.00

Description	Direction	Lanes	Type	LOS Std	Capacity	Existing			2045 Existing GP			2045 GPR			
						Volume	v/c	LOS	Volume	v/c	LOS	Volume	v/c	LOS	v/c increase
SR 82 San Carlos Ave to Whipple Ave	SB	3	Arterial	E	3300	967	0.293	A	977	0.296	A	970	0.294	A	0.00
SR 82 Whipple Ave to San Carlos Ave	NB	2	Arterial	E	2200	695	0.316	A	905	0.411	A	901	0.410	A	0.00

## **PM PEAK HOUR**

Description	Direction	Lanes	Type	LOS Std	Capacity	Existing			2045 Existing GP			2045 GPR			
						Volume	v/c	LOS	Volume	v/c	LOS	Volume	v/c	LOS	v/c increase
SR 82 San Carlos City Limit to San Carlos Ave	SB	2	Arterial	E	2200	1,169	0.531	A	1339	0.609	B	1452	0.660	B	0.05
SR 82 San Carlos Ave to San Carlos City Limit	NB	2	Arterial	E	2200	998	0.454	A	998	0.454	A	998	0.454	A	0.00

Description	Direction	Lanes	Type	LOS Std	Capacity	Existing			2045 Existing GP			2045 GPR			
						Volume	v/c	LOS	Volume	v/c	LOS	Volume	v/c	LOS	v/c increase
SR 82 San Carlos Ave to Whipple Ave	SB	3	Arterial	E	3300	1,238	0.375	A	1433	0.434	A	1487	0.451	A	0.02
SR 82 Whipple Ave to San Carlos Ave	NB	2	Arterial	E	2200	889	0.404	A	897	0.408	A	898	0.408	A	0.00

Note: Volumes were used at El Camino Real/Holly Street for the northerly segment, and El Camino Real/Howard Ave for the southerly segment



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# Appendix F

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## Intersection Level of Service Calculations (Cumulative plus Project Conditions)



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### CMP FREEWAY OPERATIONAL ANALYSIS

AM PEAK HOUR							Existing			2045 Old GP			2045 GPR				
Line No.		Direction	Lanes	Type	LOS Std	Capacity	Volume	v/c	LOS	Volume	v/c	LOS	Added	Volume	v/c	LOS	v/c increase
1	SR 92 to Whipple Ave	SB	6	Freeway	E	13800	8,897	0.645	C	12,294	0.891	E	158	12,452	0.902	E	0.011
2	Whipple Ave to SR 92	NB	5	Freeway	F	11000	7,118	0.647	C	11,336	1.031	F	272	11,608	1.055	F	0.025
PM PEAK HOUR							Existing			2045 Old GP			2045 GPR				
Line No.		Direction	Lanes	Type	LOS Std	Capacity	Volume	v/c	LOS	Volume	v/c	LOS	Added	Volume	v/c	LOS	v/c increase
1	Holly St to Whipple Ave	SB	6	Freeway	E	13800	8,237	0.597	C	12,213	0.885	D	325	12,538	0.909	E	0.024
2	Whipple Ave to Holly St	NB	5	Freeway	F	11000	7,652	0.696	C	10,403	0.946	E	49	10,452	0.950	E	0.005