

Davis Innovation & Sustainability Campus 2022 (DiSC 2022)

Volume 2 – Traffic Operations Analysis

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1. Introduction

This document presents an analysis of the potential effects of the proposed Davis Innovation & Sustainability Campus 2022 (DiSC 2022) project (the project) with respect to traffic operations (i.e., vehicle delay) on roadway facilities within the vicinity of the project site. This analysis is deliberately separate from the transportation impact study in Volume 1 in accordance with the CEQA Guidelines, which no longer permit the use of vehicle delay or level of service (LOS) for the purposes of identifying environmental impacts for land use projects. This analysis has been prepared for two primary reasons. First, it informs other components of the transportation impact analysis (e.g., potential impacts to transit services) and other topics addressed in the DiSC 2022 EIR Addendum (e.g., air quality, noise, GHG, etc.). Second, it directly addresses the proposed project’s consistency with City of Davis General Plan policies related to traffic operations and level of service.

An accompanying document, the DiSC 2022 Transportation Impact Study (Volume 1) describes existing transportation conditions and analyzes the potential for the proposed project to affect the surrounding transportation environment in accordance with current CEQA Guidelines. This includes potential impacts to vehicle miles traveled (VMT) and transit, bicycle, and pedestrian components of the transportation system that may result from the proposed project, as well as impacts during project construction. Where necessary and feasible, mitigation measures are identified to reduce these impacts.

Analysis Scenarios

The following scenarios are analyzed in this study:

- **Existing Conditions** – Establishes the existing setting, which is used to measure project-specific transportation effects.
- **Existing Plus Project Conditions** – Adds changes to travel demand resulting from buildout of the proposed project to existing conditions.
- **Cumulative No Project Conditions** – Represents cumulative travel demand based on reasonably foreseeable local and regional land use and transportation system changes. For the purposes of this study, the cumulative year is 2036. This scenario assumes the project site remains vacant.
- **Cumulative Plus Project Conditions** – Adds changes to travel demand resulting from buildout of the proposed project to Cumulative No Project conditions.

Evaluations are performed for each element of the transportation system for each of these scenarios.



2. Analysis Methodology

This section describes the methods utilized to analyze roadway traffic operations.

Analysis Locations

Figure 1 displays the locations of the study intersections and roadway segments, which were selected in consultation with City of Davis staff and based on the project's expected travel characteristics (i.e., project location and amount of project trips) as well as facilities susceptible to being affected by the project. This analysis includes the following study locations:

Study Intersections

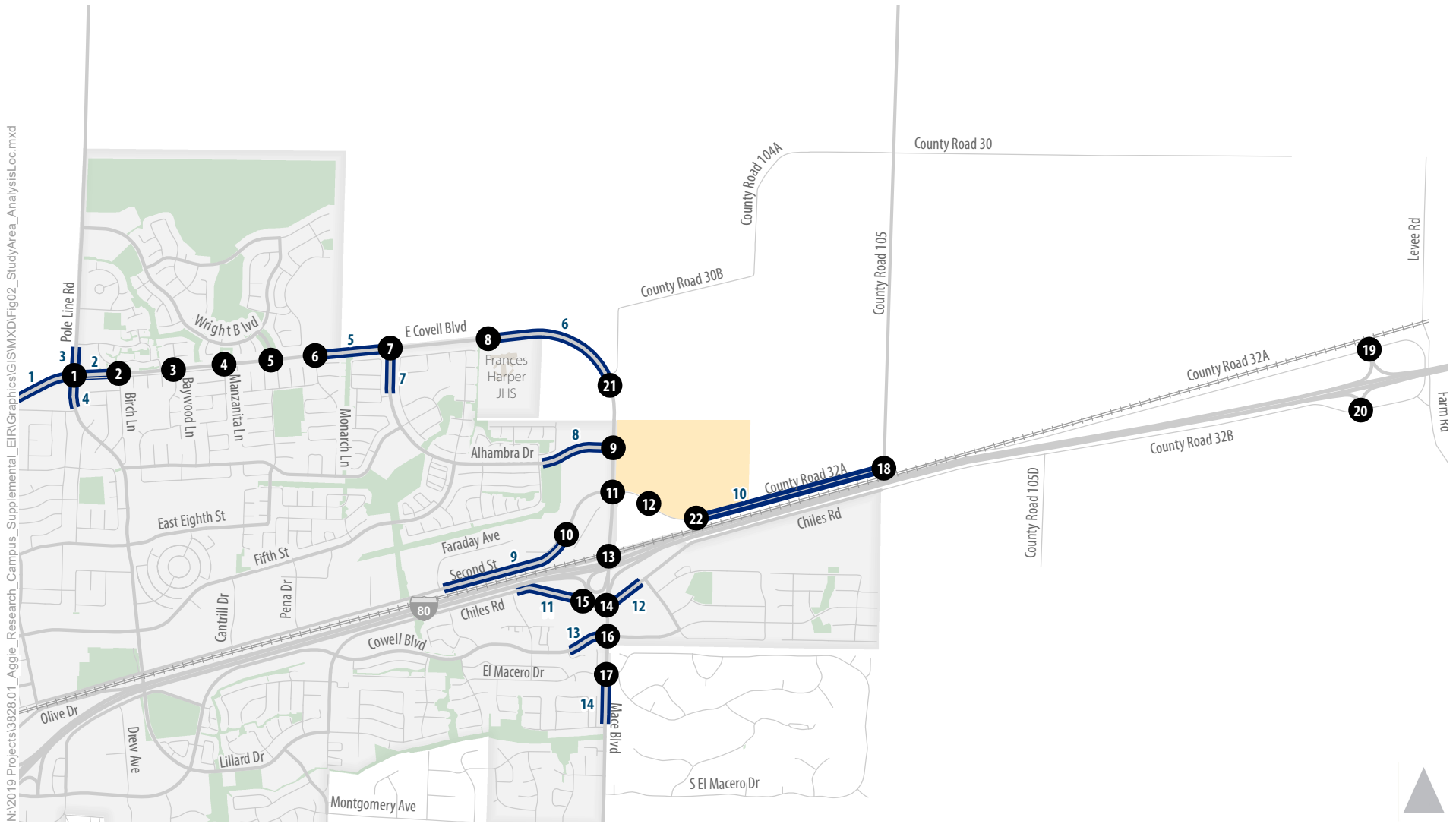
1. East Covell Boulevard/Pole Line Road
2. East Covell Boulevard/Birch Lane
3. East Covell Boulevard/Baywood Lane
4. East Covell Boulevard/Manzanita Lane
5. East Covell Boulevard/Wright Boulevard
6. East Covell Boulevard/Monarch Lane
7. East Covell Boulevard/Alhambra Drive
8. East Covell Boulevard/Harper Junior High School
9. Mace Boulevard/Alhambra Drive/Project Driveway
10. Second Street/Fermi Place/Target Driveway
11. Mace Boulevard/Second Street/County Road 32A
12. County Road 32A/Mace Park-and-Ride Driveway/West Project Driveway
13. Mace Boulevard/I-80 WB Ramps
14. Mace Boulevard/Chiles Road
15. Chiles Road/I-80 EB Ramp
16. Mace Boulevard/Cowell Boulevard
17. Mace Boulevard/El Macero Drive
18. County Road 32A/County Road 105
19. County Road 32A/I-80 WB Ramps
20. County Road 32B/Chiles Road/I-80 EB Ramps
21. Mace Boulevard/County Road 30B
22. County Road 32A/East Project Driveway

Study Roadway Segments

1. East Covell Boulevard: west of Pole Line Road
2. East Covell Boulevard: east of Pole Line Road
3. Pole Line Road: north of East Covell Boulevard
4. Pole Line Road: south of East Covell Boulevard
5. East Covell Boulevard: west of Alhambra Drive
6. East Covell Boulevard: east of Harper Junior High School
7. Alhambra Drive: south of East Covell Boulevard
8. Alhambra Drive: west of Mace Boulevard
9. Second Street: west of the Fermi Place
10. County Road 32A: east of project site
11. Chiles Road: west of I-80 EB Off-Ramp
12. Chiles Road: east of Mace Boulevard
13. Cowell Boulevard: west of Mace Boulevard
14. Mace Boulevard: south of El Macero Drive

These study intersections and roadway segments are identical to those analyzed in the March 2020 traffic operations analysis prepared for the prior version of the DiSC project (formerly known as the Aggie Research Campus project and the Mace Ranch Innovation Center project).





- 1 Study Intersection
- Study Roadway Segment
- Davis City Limit
- Project Site



Figure 1
Study Area and Analysis Locations

Roadway System Operations

This study analyzes roadway operating conditions using intersection level of service (LOS) as a primary measure of operational performance. Motorized vehicle LOS is a qualitative measure of traffic flow from the perspective of motorists and is an indication of the comfort and convenience associated with driving. Typical factors that affect motorized vehicle LOS include speed, travel time, traffic interruptions, and freedom to maneuver. Empirical LOS criteria and methods of calculation have been documented in the *Highway Capacity Manual, 6th Edition* (HCM) published by the Transportation Research Board of the National Academies of Science (Transportation Research Board, 2016). The HCM defines six levels of service ranging from LOS A (representing free-flow vehicular traffic conditions with little to no congestion) to LOS F (oversaturated conditions where traffic demand exceeds capacity resulting in long queues and delays). The LOS definitions and calculations contained in the HCM are the prevailing measurement standard used throughout the United States and are used in this study. Motorized vehicle LOS definitions for signalized and unsignalized intersection are discussed below.

Study Intersections

The LOS at signalized intersections is based on the average control delay (i.e., delay resulting from initial deceleration, queue move-up time, time stopped on an intersection approach, and final acceleration) experienced per vehicle traveling through the intersection. **Table 1** summarizes the relationship between delay and LOS for signalized intersections.



Table 1: Signalized Intersection LOS Criteria

Level of Service	Description	Average Control Delay ¹
A	Volume-to-capacity ratio is low and either progression is exceptionally favorable or cycle length is very short.	≤ 10
B	Volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.	> 10 to 20
C	Progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	> 20 to 35
D	Volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	> 35 to 55
E	Volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.	> 55 to 80
F	Volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	> 80

Note: ¹ Average control delay presented in seconds per vehicle. Delay values are rounded to the nearest second and evaluated for LOS based on the above thresholds (i.e., 10 seconds per vehicle = LOS A).

Source: *Highway Capacity Manual, 6th Edition*, Transportation Research Board, 2016.

Similar to signalized intersections, the HCM 6th Edition methodology for stop-controlled intersections reports the LOS based on the control delay experienced by motorists traveling through the intersection. As shown in **Table 2**, the delay ranges for stop-controlled intersections are lower than for signalized intersections. The HCM anticipates that motorists expect signalized intersections to carry higher traffic volume that results in greater delay than a stop-controlled intersection. Stop controls are associated with more uncertainty as delays are less predictable, which can reduce users' delay tolerance.

Table 2: Stop-Controlled Intersection LOS Criteria

Level of Service	Average Control Delay ¹
A	≤ 10
B	> 10 to 15
C	> 15 to 25
D	> 25 to 35
E	> 35 to 50
F	> 50

Note: ¹ Average control delay presented in seconds per vehicle. Delay values are rounded to the nearest second and evaluated for LOS based on the above thresholds (i.e., 10 seconds per vehicle = LOS A).

Source: *Highway Capacity Manual, 6th Edition*, Transportation Research Board, 2016.

As described in Chapter 21 of the HCM 6th Edition, the LOS for all-way stop controlled intersections is based on the average control delay for the entire intersection. For side-street stop-controlled intersections, the LOS is determined separately for each minor-street movement (or shared movement) and may also be basis on major-street left-turn movements, per Chapter 20 of the HCM 6th Edition. However, in previous City of Davis traffic studies, the LOS for side-street stop-controlled intersections was based on the average control delay for the intersection as a whole.

To be consistent with both the HCM 6th Edition and recent City of Davis studies, this analysis documents the LOS for side-street stop-controlled intersections in two forms:

- Intersection LOS: based on the weighted average of the control delay experienced by each movement of the intersection. Note that this is not a recognized LOS metric for side-street stop-controlled intersections per the HCM 6th Edition. However, the City of Davis has previously expressed side-street stop-controlled intersection delay using this measure.
- Worst-case LOS: based on the movement (or shared movement) with the greatest control delay at the intersection, which may consist of minor-street stop-controlled movements or major street left-turns.

Note that the term LOS only applies to intersection delay as measured per the HCM 6th Edition. Other forms of assessing intersection delay are acceptable but they should not be associated with a LOS term that was only intended for the specific HCM measurement.

Use of Micro-Simulation Traffic Operations Analysis

This study analyzes 11 of the 22 existing study intersections using Trafficware’s Synchro 11 software. Synchro 11 calculates the control delay consistent with the HCM methodology. These intersections are situated along Covell Boulevard between Pole Line Road and the Mace Boulevard curve, as well as along County Roads 32A and 32B. To account for the effects of turn-pocket overflows, vehicle queuing interactions between adjacent intersections, and interactions between vehicles, bicyclists, and pedestrians, micro-simulation analysis was performed for the remaining 12 study intersections along Mace Boulevard and at/near the I-80/Mace Boulevard interchange were analyzed using the SimTraffic micro-simulation software. It captures the nature of driver behavior and models the interaction between vehicles in a study network. SimTraffic better accounts for the effects of turn-pocket queue overflows, queue blocking, queue interactions between adjacent intersections, and pedestrian crossing interactions when compared to conventional, deterministic analysis methods, such as those outlined in the HCM 6th Edition and applied in Synchro 11. The SimTraffic model was calibrated and validated to existing conditions based on travel time data, peak hour volumes, and observed maximum queue lengths.



Because micro-simulation models rely on the random arrival of vehicles into the network, multiple runs are needed to provide a reasonable level of statistical accuracy and validity. The SimTraffic models were run up to twenty times (each using a different random seed number) and ten of those runs were selected and averaged to determine final model outputs. Selected runs were screened to exclude outliers that under- or over-emphasized delay compared to observed conditions.

Study Roadway Segments

The study roadway segments were evaluated based on the a.m. and p.m. peak hour traffic volumes. Roadway segment analysis is included for purposes of evaluating future year traffic operations. Intersections tend to govern peak hour traffic operations of the local roadway network since they represent the location where traffic movements conflict and capacity of the roadway segment is reduced based on the allocation of right-of-way by traffic control devices such as traffic signals. However, performing intersection analysis for future conditions beyond five to ten years can be speculative given the difficulty of accurately predicting inputs such as individual turning movement volumes and traffic signal operations. To gauge the adequacy of roadway capacity for future conditions, roadway segment analysis can be used instead. The specific methodology involves developing roadway segment volume thresholds correlated to peak hour LOS expectations based on the HCM 6th Edition.

The HCM procedures consider a variety of capacity factors associated with the type of roadway and how intersections are controlled but does not require forecasting individual turning movement volumes. The technical calculations used to derive the volume thresholds for each roadway type and LOS value are shown in **Table 3**.

Table 3: Roadway Segment LOS Criteria

Functional Class	Lanes	LOS Volume Threshold ¹				
		A	B	C	D	E
Arterial	2	-	-	980	1,450	1,690
	4	-	-	2,110	2,730	3,310
Collector	2	-	-	560	930	1,190
Highway	2	-	-	450	970	2,130
Freeway	2	1,270	2,070	2,950	3,650	4,160
	2 + Auxiliary	1,670	3,040	3,990	4,720	5,460
	3	1,910	3,120	4,430	5,470	6,240
	3 + Auxiliary	2,220	4,030	5,270	6,220	7,180
	4	2,490	4,070	5,810	7,210	8,230
	4 + Auxiliary	2,800	5,120	6,700	7,930	9,180

Note: Volumes for Arterials, Collectors, and Highways represent the peak hour two-way segment total. Volumes for Freeways represent peak hour one-way segment totals and thresholds are applied separately for each direction of travel.

Source: *Highway Capacity Manual, 6th Edition*, Transportation Research Board, 2016; Fehr & Peers, 2020.

Travel Demand Forecasting

For the purposes of forecasting traffic volumes for the study intersections and roadway segments, the local UC Davis/City of Davis travel demand model was utilized. This model has an original base year of 2016 and forecast years of 2030 and 2036. The model was developed in close coordination with the City of Davis and UC Davis in order to incorporate planned land use and transportation system changes both within the City and its sphere of influence and on the UC Davis campus. The coordination effort included the following elements of model development:

- **TAZ system** – The traffic analysis zone (TAZ) development included review by City and UC Davis staff to ensure sufficient detail for both existing and new growth areas.
- **Land use inputs** – Inputs were initially obtained from the SACOG 2012 parcel database used in developing regional model inputs for the 2016 SACOG MTP/SCS. These inputs were reviewed for each TAZ with City and UC Davis staff to develop a complete inventory representing 2016 conditions, which is the model’s base year. Similarly, land use forecasts for 2030 and 2036 conditions were developed in cooperation with City staff and UC Davis staff. Land use forecasts for 2030 and 2036 were based on future land use changes throughout the region projected in the 2016 SACOG MTP/SCS. The land use forecasts were refined based on input from City staff and UC Davis staff according to planned City of Davis General Plan growth, planned UC Davis 2018 Long



Range Development Plan (LRDP) growth, approved development projects, pipeline development projects, and other reasonably foreseeable land development activities.

- **Roadway network inputs** – The Local Model roadway network was developed from GIS data representing local, collector, arterial, and freeway functional classifications. Input data included the number of travel lanes and free-flow travel speeds based on the previous UC Davis/City of Davis Local Model developed for the 2003 LRDP update, plus new data from field observations and Google Maps imagery. Capacity inputs for each roadway classification were estimated from reference documents including the HCM 6th Edition and the *Travel Demand Forecasting: Parameters and Techniques, National Cooperative Highway Research Program, Report 716*, (Transportation Research Board, 2012). Changes to the roadway networks for future year scenarios were provided by City and UC Davis staff as noted above.
- **Vehicle trip rates** – The vehicle trip rates were derived from a variety of sources including the UC Davis Campus Travel Survey, the California Household Travel Survey, local residential trip generation estimates based on observed traffic counts, and the Trip Generation Manual, 10th Edition (Institute of Transportation Engineers, 2017). The rates were estimated for the following trip purposes.
 - Home-Based Work (HBW): trips between a residence and a workplace
 - Home-Based Shop (HBS): trips between a residence and a retail destination
 - Home-Based School (HBK): trips between a residence and a school (K-12)
 - Home-Based Other (HBO): trips between a residence and any other destination
 - Non-Home-Based (OO): trips that do not begin or end at a residence, such as traveling from a workplace to a restaurant, or from a retail store to a bank
 - College (COLL): trips to and from a Community College
 - UC Davis (UCD): trips to and from UC Davis
 - Highway Commercial (HC): trips to and from highway commercial destinations
- **Vehicle trip lengths and external trip patterns** – The vehicle trip lengths and the proportion of vehicle trips that occur exclusively within the model area versus those that have origins or destinations external to the model area were obtained from the UC Davis Campus Travel Survey, the California Household Travel Survey, and the American Community Survey. This information was extracted for each trip purpose above. Trips traveling through the model area without stopping such as those on I-80, were estimated from the regional SACOG SACSIM model developed for the 2016 SACOG MTP/SCS.

- **Trip assignment** – Trip assignment relies on conventional algorithms that assign trips between origin and destination zones based on travel times that reflect the influence of roadway capacity and speeds. A unique aspect of the assignment process is that UC Davis generated trips had to be associated with parking areas on and off-campus since that is where trips start and end. These parking areas were mapped in collaboration with UC Davis staff and iterative testing of the assignment results was used to refine the association.

The UC Davis/City of Davis travel demand model was applied to generate study intersection traffic volume forecast inputs for the cumulative analysis scenarios described above, as well as to inform the distribution and assignment of project trips under all “plus project” analysis scenarios. Separate model runs were performed for each scenario and the model-produced volume forecasts were extracted for final adjustments to account for differences between the model’s base year volume estimates and observed traffic counts. The adjustment involves isolating the incremental change in volume between the base year model and the future year analysis scenario and adding that difference to the baseline (2019) traffic counts. This adjustment process helps to minimize potential errors in the model’s base year estimates and is based on the methodology contained in *Analytical Travel Forecasting Approaches for Project-Level Planning and Design, National Cooperative Highway Research Program (NCHRP) Report 765* (Transportation Research Board, 2014).

Roadway Operations Performance Criteria

The following criteria are used to identify operational deficiencies based on the traffic operations analysis.

City of Davis

Per the City of Davis General Plan Transportation Element, LOS E is the minimum acceptable LOS for the majority of intersections within the City, and for each City-operated study intersection in the study area. LOS F is acceptable for other areas (e.g., Downtown Davis and the Richards Boulevard corridor) as established in the General Plan and contingent on approval by the City Council. For the purposes of this analysis, adverse effects to City of Davis roadway operations are defined when the addition of project traffic would cause any of the following:

- For signalized intersections, cause overall intersection operations to deteriorate from an acceptable level (LOS E or better) to an unacceptable level (LOS F);
- For signalized intersections, exacerbate unacceptable (LOS F) operations by increasing an intersection’s average delay by five seconds or more;



- For unsignalized intersections, cause the worst-case movement (or average of all movements for all-way stop-controlled intersections) to worsen from an acceptable level (LOS E or better) to an unacceptable level (LOS F) and meet the peak hour signal warrant;
- For unsignalized intersections that operate unacceptably (LOS F) and meet the peak hour signal warrant without the project, worsen operations by increasing the overall intersection's volume served by more than one percent; or
- For unsignalized intersections that operate unacceptably but do not meet the peak hour signal warrant without the project, add sufficient volume to meet the warrant.
- For roadway segments, cause peak hour operations to deteriorate from an acceptable level (LOS E or better) to an unacceptable level (LOS F).
- For roadway segments that operate unacceptably, cause an increase in volume by more than 10 percent. The 10 percent allowance is based on the normal fluctuation in weekday traffic that occurs and the level of variability associated with traffic forecasts.

Yolo County

Per the Yolo County General Plan, LOS C is the minimum acceptable LOS in the unincorporated county, except as specified on designated roadways. LOS D is the minimum acceptable LOS for County Road 32A. For the purposes of this analysis, adverse effects to Yolo County roadway operations are defined when the addition of project traffic would cause any of the following:

- For intersections in the unincorporated county with the exceptions noted below, cause peak hour intersection operations to deteriorate from an acceptable level (LOS C) to an unacceptable level (LOS D or worse);
- For intersections on County Road 32A, cause peak hour intersection operations to deteriorate from an acceptable level (LOS D) to an unacceptable level (LOS E or worse);
- An intersection or roadway segment operates unacceptably under a no project scenario and the project adds 10 or more peak hour trips;
- The project adds 100 daily passenger vehicle trips (or Truck Trip Equivalencies) to an existing roadway that does not meet current County design standards (e.g., structural section, horizontal and vertical curves, lane and shoulder width, etc.); or
- The addition of project traffic causes an all-way stop-controlled or side street stop-controlled intersection to meet MUTCD signal warrant criteria.

Caltrans

Caltrans' Local Development – Intergovernmental Review Program (LD-IGR) provides guidance on the evaluation of traffic effects on State highway facilities. In light of Senate Bill 743 and related changes to

the CEQA Guidelines, Caltrans has announced in its *Caltrans Draft VMT-Focused Transportation Impact Study Guide (Caltrans, February 2020)* that it will use VMT as the CEQA transportation impact metric for projects on the State highway system and has indicated it will rely on the Governor’s Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* when preparing LD-IGR comments on local agency land use projects.

To analyze potential LOS impacts to the State highway system, this study utilizes the performance expectations established in the Caltrans District 3 Interstate 80 Transportation Concept Report (TCR) (August 2017). According to the I-80 TCR, the horizon year LOS for I-80 within the study area (including ramp terminal intersections) is LOS F. Therefore, LOS F is considered the design operating goal on the I-80 mainline and at I-80 ramp terminal intersections. However, for the purposes of this traffic analysis, significant traffic impacts to I-80 are defined when the addition of proposed project traffic causes any of the following:

- For signalized intersections, causes operations to deteriorate to LOS F and increases an intersection’s average delay by five seconds or more;
- For signalized intersections, exacerbate LOS F operations by increasing an intersection’s average delay by five seconds or more;
- For unsignalized intersections, causes the worst-case movement (or average of all movements for all-way stop-controlled intersections) to deteriorate to LOS F and meet the California Manual on Uniform Traffic Control Devices (MUTCD) peak hour signal warrant;
- For unsignalized intersections that operate at LOS F and meet MUTCD’s peak hour signal warrant without the project, exacerbate operations by increasing the overall intersection’s volume by more than one percent;
- For freeway segments, causes operations to deteriorate to LOS F and increases peak hour traffic volume by more than five percent;
- For freeway segments, exacerbate LOS F operations by increasing peak hour traffic volume by more than five percent; or
- Causes off-ramp queues to spill onto freeway mainline.



3. Existing Conditions

Intersection turning movement counts were conducted during the morning (7:00 a.m. to 9:00 a.m.) and evening (4:00 p.m. to 6:00 p.m.) peak periods on Thursday, May 30, 2019 and Thursday, October 16, 2019. Intersection counts included volumes for vehicles, bicyclists, and pedestrians. During the traffic counts, local schools and UC Davis were in regular session and weather conditions were dry and clear. Based on the traffic data collection, the a.m. peak hour within the study area occurred from 7:45 to 8:45 a.m., and the p.m. peak hour occurred from 5:00 to 6:00 p.m.. Peak hour traffic volumes derived from the intersection turning movement counts are illustrated in the Appendix.

Additionally, peak period field observations were conducted by Fehr & Peers staff during the peak period traffic counts. The field observations, including observed maximum queues, were utilized to calibrate the existing conditions traffic operations analysis described in the subsequent section.

Table 4 presents the a.m. and p.m. peak hour LOS for each study intersection under existing conditions.

During the a.m. peak hour, vehicle traffic within the study area generally progresses smoothly. Queues generally do not extend to the adjacent upstream intersection and clear within one cycle at signalized intersections.

During the p.m. peak hour, considerable delay and queuing occurs on local roadways within the vicinity of the Mace Boulevard interchange at I-80. Field observations, data collection, and analysis conducted by Fehr & Peers over the past year indicate that these conditions can be attributed to the following factors:

- Diverted local and regional traffic onto study area roadways due to extended periods of very low travel speeds on eastbound I-80 from the causeway, through Davis, and into Solano County. During congested conditions, low mainline travel speeds substantially increase travel times for motorists on eastbound I-80. Hence, diverting off of I-80 onto local roadways often provides a faster alternative to remaining on the freeway through Davis. Similarly, locally generated traffic utilizing eastbound I-80 can experience faster travel times by accessing I-80 as far east as possible (e.g., motorists departing Downtown Davis for Sacramento accessing I-80 at Mace Boulevard or CR 32A instead of Richards Boulevard). Moreover, the increased prevalence and use of navigation apps (e.g., Google Maps, WAZE, etc.) in recent years provides motorists with real-time and predictive travel time information that can influence route selection.
- Ramp metering at the eastbound I-80 on-ramps controls the amount of study area traffic that can enter the freeway from Mace Boulevard. The ramp meters are designed to improve operating conditions on eastbound I-80 by increasing or decreasing on-ramp flow rates according to

mainline traffic volumes. Therefore, when congested conditions occur on eastbound I-80, flow rates decrease for the Mace Boulevard on-ramps, causing additional delays and queueing on Mace Boulevard and connecting local roadways.

Based on field observations by Fehr & Peers staff and anecdotal information provided by City staff, these conditions are particularly prevalent on Wednesday, Thursday, and Friday afternoons and evenings.

On the day that p.m. peak period traffic counts were collected for this study (Thursday, October 16, 2019), field observations indicated that congested conditions were present on both eastbound I-80 and local roadways surrounding the Mace Boulevard interchange. Queue spillbacks were observed on southbound Mace Boulevard from the eastbound I-80 on-ramp to beyond Alhambra Drive and on northbound Mace Boulevard from the eastbound I-80 on-ramp to beyond San Marino Drive. Queue spillbacks were also observed on eastbound and westbound Chiles Road near the I-80 on-ramp. This congestion is reflected in the results in shown in Table 4.

Note that the existing p.m. peak hour delay and LOS results presented in Table 4 differ from those presented in the March 2020 traffic operations analysis prepared for the prior version of the DiSC project. This can be attributed to the following factors:

- The traffic operations analysis prepared for this study built off of the SimTraffic 10 model prepared for the DiSC EIR by updating the model to SimTraffic 11 and by incorporating model refinements to account for additional network details along the Mace Boulevard corridor south of the I-80 interchange. These refinements were made to support traffic operations analyses performed for other proposed transportation and land development projects located on Mace Boulevard south of I-80 since the DiSC EIR was prepared (e.g., the Mace Boulevard Corridor Improvement Project). Effectively, the micro-simulation model used for this study resembles a different model than that used for the DiSC EIR.
- Variation in analysis results is inherent to micro-simulation analysis, where simulated traffic operations and associated analysis results vary both between micro-simulation runs and between analysis scenarios. It is typical for this variability to be more pronounced in congested study areas such as the Mace Boulevard corridor during the p.m. peak hour due to the instability that occurs when simulating congested conditions (e.g., due to bottlenecks that cascade throughout the study area in a randomized manner).



4. Existing Plus Project Conditions

Project trips were assigned to the study intersections and driveways in accordance with the expected trip generation described in Chapter 5 of Volume 1, and the geographic distribution of project trips, which was determined based existing travel patterns, relative travel times between competing routes, and complementary land uses (i.e., likely residence location for project employees).

Project Effects Within the Project Vicinity

Table 4 displays intersection LOS and delay under existing plus project conditions. Technical calculations are provided in the Appendix.

The project would increase vehicle travel demand and vehicle delay on the Covell Boulevard and Mace Boulevard corridors during the a.m. and p.m. peak hours. During the a.m. peak hour, the project would result in the degradation of intersection operations to unacceptable LOS F conditions at the Mace Boulevard/Alhambra Drive/Project Driveway and Chiles Road/I-80 EB Ramp intersections. Additionally, during the a.m. peak hour, vehicle queues on the I-80 EB off-ramp approach to Chiles Road would spill back onto the freeway mainline.

During the p.m. peak hour, the project would result in the degradation of intersection operations to unacceptable LOS F conditions at intersections on Mace Boulevard between and inclusive of Alhambra Drive and the I-80 WB ramps and at the Chiles Road/I-80 EB Ramp intersections. The micro-simulation model runs showed that motorists traveling eastbound on East Covell Boulevard toward southbound Mace Boulevard would experience considerable queuing due to congestion along the project site frontage. Accordingly, it is expected that some background trips as well as project trips would divert to Alhambra Boulevard (a two-lane collector street) to bypass this congestion. This traffic reassignment was incorporated into the Existing Plus Project analysis.

Table 5 displays the 95th percentile freeway off-ramp queue at the I-80/Mace Boulevard/Chiles Road and I-80/County Road 32A interchanges under Existing Plus Project conditions. Technical calculations are provided in the Appendix. This table indicates that the 95th percentile vehicle queues at the Chiles Road off-ramp would spill back onto the freeway mainline during the a.m. peak hour.

Table 4: Peak Hour Intersection Operations – Existing Plus Project Conditions

Intersection	Traffic Control	Jurisdiction	Existing Conditions				Existing Plus Project Conditions			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. E. Covell Blvd./ Pole Line Road	Signal	City of Davis	24	C	32	C	25	C	35	C
2. E. Covell Blvd./ Birch Lane	TWSC	City of Davis	12	B	14	B	13	B	14	B
3. E. Covell Blvd./ Baywood Lane	TWSC	City of Davis	2 (34)	A (D)	1 (44)	A (E)	2 (52)	A (F)	1 (65)	A (F)
4. E. Covell Blvd./ Manzanita Lane	TWSC	City of Davis	1 (26)	A (D)	1 (35)	A (D)	1 (37)	A (E)	2 (49)	A (E)
5. E. Covell Blvd./ Wright Blvd.	Signal	City of Davis	9	A	8	A	9	A	8	A
6. E. Covell Blvd./ Monarch Lane	TWSC	City of Davis	2 (23)	A (C)	1 (34)	A (D)	2 (34)	A (D)	2 (53)	A (F)
7. E. Covell Blvd./ Alhambra Drive	Signal	City of Davis	10	A	9	A	10	A	9	A
8. E. Covell Blvd./ Harper Jr. H.S.	Signal	City of Davis	11	B	5	A	11	B	4	A
9. Mace Blvd./ Alhambra Dr./Project Driveway	Signal	City of Davis	17	B	20	B	99	F	140	F
10. Second Street/ Fermi Place/ Target Driveway	Signal	City of Davis	7	A	16	B	6	A	84	F
11. Mace Blvd./ Second Street/ CR 32A	Signal	City of Davis	34	C	36	D	71	E	149	F
12. CR 32A/Mace Park-and-Ride Driveway/West Project Driveway	TWSC	Yolo County/City of Davis ²	1 (4)	A (A)	2 (7)	A (A)	3 (10)	A (B)	131 (509)	F (F)
13. Mace Blvd./I-80 WB Ramps	Signal	Caltrans	20	C	65	E	18	B	93	F



14. Mace Blvd./ Chiles Road	Signal	City of Davis	33	C	80	E	54	D	79	E
15. Chiles Road/ I-80 EB Ramp	Signal	Caltrans	11	B	89	F	253	F	139	F
16. Mace Blvd./ Cowell Blvd.	Signal	City of Davis	21	C	103	F	22	C	86	F
17. Mace Blvd./ El Macero Drive	AWSC	City of Davis	8	A	113	F	8	A	58	F
18. CR 32A/CR 105	TWSC	Yolo County	5 (9)	A (A)	7 (10)	A (B)	7 (10)	A (B)	9 (12)	A (B)
19. CR 32A/ I-80 WB Ramps	TWSC	Caltrans	6 (10)	A (A)	4 (12)	A (B)	7 (11)	A (B)	6 (18)	B (C)
20. CR 32B/ Chiles Rd./ I-80 EB Ramps ¹	TWSC	Caltrans	4 (12)	A (B)	5 (9)	A (A)	3 (12)	A (B)	4 (11)	A (B)
21. Mace Blvd./ CR 30B	TWSC	City of Davis	-	-	-	-	20 (52)	C (F)	58 (140)	F (F)
22. CR 32A/East Project Driveway	TWSC	Yolo County/City of Davis ²	-	-	-	-	2 (7)	A (A)	3 (8)	A (A)

Notes: For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For two-way stop-controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches with the delay and LOS for the worst-case movement reported in parentheses.

Shaded cells indicate locations with unacceptable peak hour LOS.

Shaded and bold cells indicate locations where the project would cause adverse effects to peak hour intersection operations in accordance with the performance criteria.

TWSC = Two-Way Stop Control. AWSC = All-Way Stop Control. "-" = Does not exist.

¹ P.M. peak hour LOS does not match observed conditions due to the freeway ramp meter and on-ramp vehicle demand (Synchro traffic operations analysis software cannot capture the operational effects of ramp metering). Field observations indicate that the eastbound left-turn and westbound right-turn operate at LOS F during the p.m. peak hour under existing conditions. The addition of the project would exacerbate these conditions.

² The segment of CR 32A along the project site southern frontage would be annexed into the City of Davis along with the project site. Thus, City of Davis performance criteria related to roadway performance would apply to study intersections #12 and #22 under Existing Plus Project conditions.

Source: Fehr & Peers, 2021.

Table 5: Freeway Off-Ramp Queuing – Existing Plus Project Conditions

Off-Ramp	Off-Ramp Distance ¹	95 th Percentile Queue Length ²			
		Existing Conditions		Existing Plus Project Conditions ³	
		A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour
Mace Boulevard/I-80 WB Off-Ramp	1,200 feet	175 feet	175 feet	175 feet	225 feet
Chiles Road/I-80 EB Off-Ramp	1,100 feet	100 feet	100 feet	1,125 feet	225 feet
CR 32A/I-80 WB Off-Ramp	1,200 feet	25 feet	25 feet	50 feet	50 feet
Chiles Road/CR 32B/I-80 EB Off-Ramp	1,000 feet	25 feet	75 feet	25 feet	25 feet

Notes: ¹ Measured from the intersection stop bar to the gore point of the freeway off-ramp. Does not include auxiliary lane on freeway mainline.

² Results at the Mace Boulevard/Chiles Road interchange are based on results from SimTraffic micro-simulation model. Results at the County Road 32A interchange are based on results from Synchro traffic operations analysis software. Queues are maximum per lane, rounded up to the nearest 25 feet.

³ Shaded cells represent conditions in which the queue would spill onto the freeway mainline.

Source: Fehr & Peers, 2021.



Potential Operational Enhancements

Through an iterative process using the SimTraffic micro-simulation model, the following physical improvements and signal timing changes were identified to enhance roadway operations in the study area under Existing Plus Project conditions (see **Figure 2**):

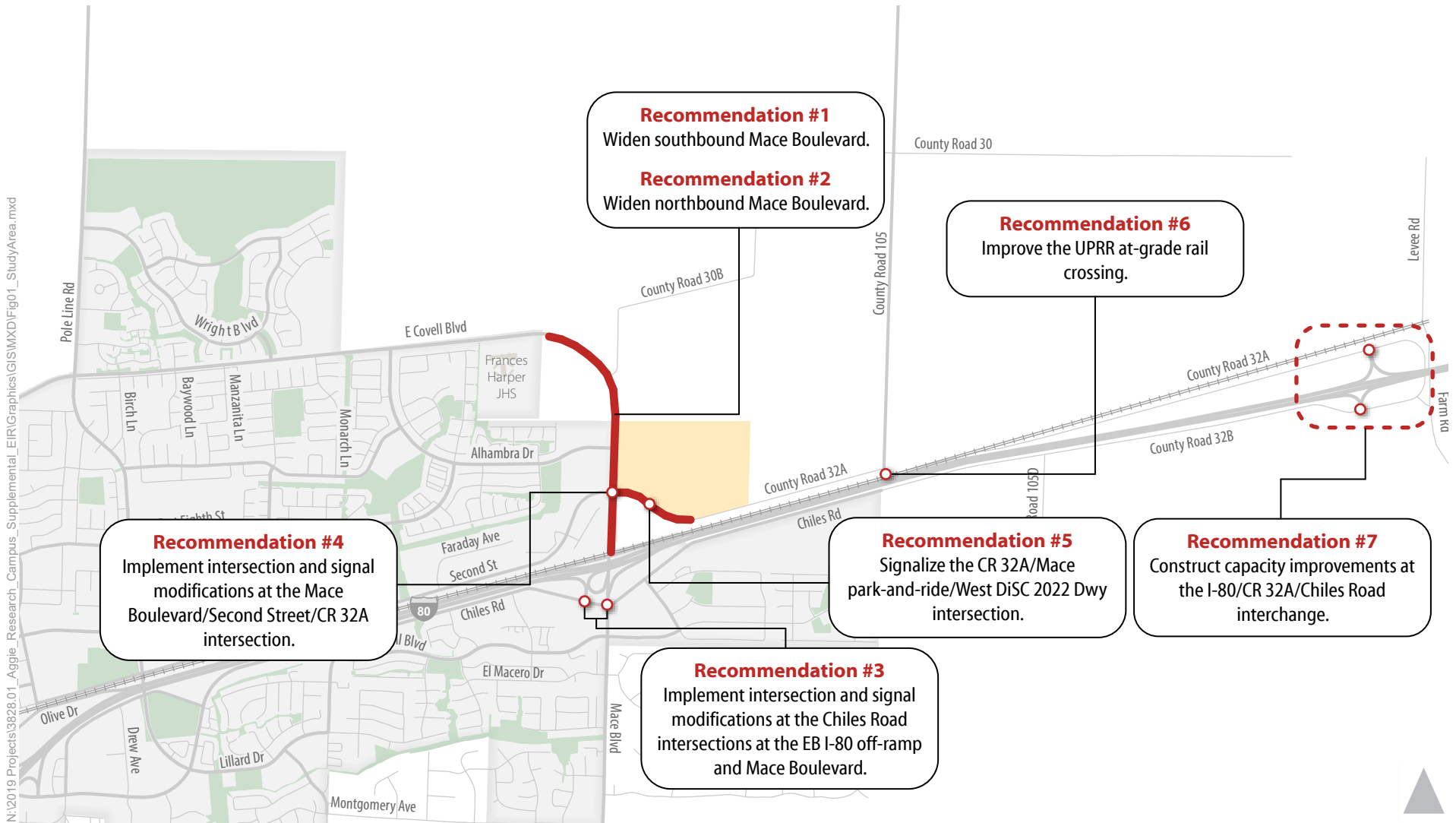
- Southbound Mace Boulevard: Extend the second eastbound/southbound lane from Harper Junior High School to Alhambra Drive. Add a third southbound lane from Second Street to connect with the dedicated right-turn lane onto the I-80 WB on-ramps.
- Northbound Mace Boulevard: Extend the third northbound lane from the I-80 WB off-ramps to connect with a new northbound “trap” right-turn lane at the Mace Boulevard/Second Street/County Road 32A intersection. Add a second northbound/westbound lane from Alhambra Drive to the Harper Junior High School signalized intersection.
- Mace Boulevard/Chiles Road and Chiles Road/I-80 EB Off-Ramp Intersections: This pair of tightly spaced intersections (situated 450 feet apart) requires signal coordination/timing adjustments due to the heavy project-related off-ramp volume during the a.m. peak hour. The east and west approaches would be modified to operate with split phasing. Signal coordination (particularly critical during the a.m. peak hour) would synchronize the green interval for the I-80 off-ramp movement with the eastbound approach on Chiles Road at Mace Boulevard to facilitate the flow of motorists off of I-80. The signal would be modified to operate the southbound left-turn and westbound right-turn during a shared overlap phase. This modification would also require the prohibition of southbound U-turns.
- Mace Boulevard/Second Street/County Road 32A Intersection: Modify the northbound approach to add a “trap” right-turn lane. Modify the westbound approach to two left-turn lanes and a shared through-right lane. Modify westbound County Road 32A between this intersection and the adjacent County Road 32A/Mace park-and-ride/West Project Driveway intersection to two through lanes.
- County Road 32A/Mace park-and-ride/West Project Driveway Intersection: Install a traffic signal. Provide a southbound left-turn lane and a shared through-right lane.

Table 6 displays the resulting intersection delay and LOS under Existing Plus Project conditions with these operational enhancements in place. Technical calculations are provided in the Appendix. This table indicates that the total number of intersections operating with an average intersection LOS of LOS F during one or both peak hours would be decreased from nine to zero.

Note that while the improvements listed above provide benefits to peak hour roadway operations for vehicles, they could diminish the bicycle and pedestrian environment by increasing crossing distances and bicycle and pedestrian exposure times at intersections. Moreover, the additional roadway capacity resulting from these improvements could induce additional vehicle miles traveled (VMT) on study area

roadways. Existing evidence indicates that Covell Boulevard, Mace Boulevard, and connecting roadways such as Second Street and Chiles Road are utilized as regional cut-through routes when I-80 experiences significant speed reductions and delays during p.m. peak periods. Therefore, improving operations and reducing delays along these local roadways could increase the attractiveness of these routes as alternatives to I-80 and induce additional regional cut-through activity on local roadways. Parallel local routes require longer trip distances than remaining on I-80, therefore, regional travel demand use of local routes would yield more VMT than use of I-80.





- Project Site
- Davis City Limit



Figure 2
Proposed Operational Enhancements

Table 6: Peak Hour Intersection Operations – Existing Plus Project Conditions with Potential Operational Enhancements

Intersection	Traffic Control	Jurisdiction	Existing Conditions				Existing Plus Project Conditions				Existing Plus Project Conditions with Potential Operational Enhancements			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
9. Mace Blvd./ Alhambra Dr./ Project Driveway	Signal	City of Davis	17	B	20	B	99	F	140	F	15	B	14	B
10. Second Street/ Fermi Place/ Target Driveway	Signal	City of Davis	7	A	16	B	6	A	84	F	7	A	16	B
11. Mace Blvd./ Second Street/ CR 32A	Signal	City of Davis	34	C	36	D	71	E	149	F	36	D	35	C
12. CR 32A/Mace Park-and-Ride Driveway/West Project Driveway	TWSC/ Signal	Yolo County/City of Davis ¹	1 (4)	A (A)	2 (7)	A (A)	3 (10)	A (B)	131 (509)	F (F)	15	B	12	B
13. Mace Blvd./I-80 WB Ramps	Signal	Caltrans	20	C	65	E	18	B	93	F	26	C	19	B
14. Mace Blvd./ Chiles Road	Signal	City of Davis	33	C	80	E	54	D	79	E	37	D	33	C
15. Chiles Road/ I-80 EB Ramp	Signal	Caltrans	11	B	89	F	253	F	139	F	14	B	10	A



16. Mace Blvd./ Cowell Blvd.	Signal	City of Davis	21	C	103	F	22	C	86	F	22	C	25	C
17. Mace Blvd./ El Macero Drive	AWSC	City of Davis	8	A	113	F	8	A	58	F	8	A	9	A
21. Mace Blvd./ CR 30B	TWSC	Yolo County	-	-	-	-	20 (52)	C (F)	58 (140)	F (F)	3 (13)	A (B)	3 (5)	A (A)
22. CR 32A/East Project Driveway	TWSC	Yolo County/City of Davis ¹	-	-	-	-	2 (7)	A (A)	3 (8)	A (A)	2 (7)	A (A)	4 (9)	A (A)

Notes: For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For two-way stop-controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches with the delay and LOS for the worst-case movement reported in parentheses.

Shaded cells indicate locations with unacceptable peak hour LOS.

Shaded and bold cells indicate locations where the project would cause adverse effects to peak hour intersection operations in accordance with the performance criteria.

TWSC = Two-Way Stop Control. AWSC = All-Way Stop Control. "-" = Does not exist.

¹ The segment of CR 32A along the project site southern frontage would be annexed into the City of Davis along with the project site. Thus, City of Davis performance criteria related to roadway performance would apply to study intersections #12 and #22 under Existing Plus Project conditions.

Source: Fehr & Peers, 2021.

Table 7 summarizes how the percentage of peak hour travel demand is able to be served within the portion of the study area covered by the micro-simulation model (i.e., along Mace Boulevard from east of Harper Junior High School southerly to El Macero Drive and including the connections to I-80, Chiles Road, and County Road 32A). When the percent demand served drops well below 100 percent, the demand for travel cannot be served within a single hour due to either upstream or downstream bottlenecks. This can lead to 'peak hour spreading', which is generally defined as more than one hour of congested, stop-and-go conditions. As shown in the table, the project would cause the system-wide percent demand served to decrease to 93 percent during the a.m. peak hour and 88 percent during the p.m. peak hour. With the potential operational enhancements, these percentages increase to 100 percent during the a.m. and p.m. peak hours, a substantial improvement. This table also shows the substantial benefit these improvements would offer at individual intersections.

Lastly, **Table 8** illustrates how the operational enhancements would benefit freeway off-ramp queuing at the I-80/Mace Boulevard interchange. As shown, vehicle queues would no longer spill back onto the I-80 mainline with implementation of these enhancements.



Table 7: Percent of Peak Hour Demand Served – Existing Plus Project Conditions with Potential Operational Enhancements

Location	Existing Conditions ¹				Existing Plus Project Conditions ¹				Existing Plus Project Conditions with Potential Operational Enhancements ^{1,2}			
	A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
	Hourly Demand	Vehicles Served (%)	Hourly Demand	Vehicles Served (%)	Hourly Demand	Vehicles Served (%)	Hourly Demand	Vehicles Served (%)	Hourly Demand	Vehicles Served (%)	Hourly Demand	Vehicles Served (%)
Overall System ³	14,246	14,231 (100%)	15,332	14,655 (96%)	17,285	16,118 (93%)	18,076	15,935 (88%)	17,285	17,294 (100%)	18,076	18,073 (100%)
Mace Boulevard/ Alhambra Drive	1,767	1,750 (99%)	1,746	1,719 (98%)	2,303	2,175 (94%)	2,360	2,128 (90%)	2,303	2,312 (100%)	2,360	2,358 (100%)
Mace Boulevard/ Second Street	2,655	2,652 (100%)	2,917	2,867 (98%)	3,365	3,166 (94%)	3,583	3,091 (86%)	3,365	3,368 (100%)	3,583	3,586 (100%)
Mace Boulevard/ I-80 WB Ramps	3,172	3,169 (100%)	3,066	2,942 (96%)	3,777	3,531 (93%)	3,607	3,145 (87%)	3,777	3,766 (100%)	3,607	3,592 (100%)
Mace Boulevard/ Chiles Road	2,529	2,535 (100%)	2,746	2,533 (92%)	2,825	2,556 (90%)	2,906	2,586 (89%)	2,825	2,826 (100%)	2,906	2,903 (100%)

Notes: ¹ Based on results of SimTraffic micro-simulation model.
² Refer to Figure 2 for an illustration of potential operational enhancements.
³ Includes study intersections 9 through 17.
Source: Fehr & Peers, 2021.

Table 8: Freeway Off-Ramp Queuing – Existing Plus Project Conditions with Potential Operational Enhancements

Off-Ramp	Off-Ramp Distance ¹	95 th Percentile Queue Length ²					
		Existing Conditions		Existing Plus Project Conditions ³		Existing Plus Project Conditions with Potential Operational Enhancements ³	
		A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour
Mace Boulevard/I-80 WB Off-Ramp	1,200 feet	175 feet	175 feet	175 feet	225 feet	175 feet	175 feet
Chiles Road/I-80 EB Off-Ramp	1,100 feet	100 feet	100 feet	1,125 feet	225 feet	125 feet	100 feet

Notes: ¹ Measured from the intersection stop bar to the gore point of the freeway off-ramp. Does not include auxiliary lane on freeway mainline.

² Results at the Mace Boulevard/Chiles Road interchange are based on results from SimTraffic micro-simulation model.

³ Shaded cells represent conditions in which the queue would spill onto the freeway mainline.

Source: Fehr & Peers, 2021.



Project Effects Beyond the Project Vicinity

The proposed project would add approximately 250 new peak hour vehicle trips between the project site and the I-80/County Road 32A interchange located to the east of the project site. These trips would be generated by project employees and residents traveling between the project site and Sacramento (and surrounding communities) via the I-80 causeway. These trips are expected to utilize the I-80/County Road 32A interchange instead of the I-80/Mace Boulevard interchange due to delays on I-80 east of Mace Boulevard and on Mace Boulevard within the interchange vicinity that would make use of the I-80/County Road 32A interchange more attractive from a travel time standpoint.

These additional project vehicle trips would primarily use County Road 32A to travel between the project site and the I-80/County Road 32A interchange. This would have the following adverse effects on multimodal operations:

- Adverse effects to the UPRR at-grade rail crossing: UPRR operates an at-grade rail crossing of County Road 32A immediately south of the County Road 32A/County Road 105 stop-controlled intersection. It is not uncommon for trespassing events (i.e., vehicles on the tracks) and vehicle-train collisions to occur at this location due to the current physical configuration of the crossing. Yolo County, together with Union Pacific and the City of Davis, is currently evaluating potential modifications to this at-grade crossing to reduce the potential for conflicts with rail operations. The addition of approximately 250 peak hour project vehicle trips could increase the potential for conflicts with rail operations at this location.
- Adverse effects to the I-80/County Road 32A interchange: The I-80/County Road 32A interchange experiences high volumes of vehicle trips during the p.m. peak hour, particularly on days when regional cut-through activity is prevalent. The combination of high travel demand and the ramp meter at the Chiles Road/I-80 EB on-ramp causes substantial peak hour delay and queuing on roadways within the interchange vicinity, particularly on eastbound and westbound Chiles Road near the I-80 EB ramps (near the Yolo Fruit Stand) and eastbound County Road 32A (due to queue spillback from the I-80 EB on-ramp). The addition of approximately 250 peak hour project trips would exacerbate these conditions.

Potential Operational Enhancements

The following operational improvements would lessen the adverse effects of the project described above:

- UPRR at-grade rail crossing improvements: The UPRR track/County Road 32A crossing should be converted from an at-grade crossing to a grade-separated crossing. A near-term improvement prior to provision of the grade separation would consist of relocating the County Road 32A/County Road 105 intersection about 200 feet to the north and installing double gates on the south approach to the grade crossing in order to improve safety and traffic functionality at the grade crossing.

- I-80/County Road 32A interchange improvements: Construct capacity improvements at the County Road 32 interchange and along County Road 32A to allow this interchange to serve more project traffic, including:
 - Reconstruction, widening, and potential relocation to the west, of the eastbound and westbound on- and off-ramps to provide more storage capacity, and to provide traffic signals or roundabouts at the ramp terminal intersections. Provision of an auxiliary lane between the relocated eastbound on-ramp merge and the causeway structure.
 - Re-configuration of the County Road 32A/County Road 105 intersection to provide uninterrupted County Road 32A flow with County Road 105 under stop control.

The improvements described above would require coordination with and approvals by Yolo County, UPRR, and Caltrans. The timing of each improvement relative to the DiSC 2022 project should be addressed in the focused transportation impact studies prepared for each phase of development of the DiSC 2022 project. The project should make a fair share funding contribution towards each improvement.

Project Effects on Freeways

Regional and corridor analysis by SACOG, MTC, and Caltrans have already evaluated I-80 within the vicinity of the project site. These analyses include the following documents:

- 2016 SACOG MTP/SCS (SACOG 2016). This document is the RTP for the six-county Sacramento region, which includes Yolo County.
- District System Management and Development Plan, Caltrans District 3 (Caltrans 2013).
- I-80 and Capital City Freeway Corridor System Management Plan (Caltrans 2009).
- Transportation Concept Report I-80, District 3 (Caltrans 2017).
- Transportation Concept Report SR 113, District 3 (Caltrans 2014).
- Interstate 80/United States 50 Davis to Downtown Sacramento Preliminary Investigation (Caltrans 2014).
- I-80/Richards Blvd Interchange Project Study Report – Project Development Support (PSR-PDS) (Caltrans 2017).
- Plan Bay Area 2040 (MTP and ABAG 2017). This document is the RTP/SCS for the nine-county Bay Area region, which includes Solano County.
- Caltrans District 4 Transportation System Development Plan (Caltrans 2011).
- I-80 East Corridor System Management Plan District 4 (Caltrans 2017).

Of the various studies, Caltrans analysis tends to be the most detailed with regards to roadway operations performance. According to the I-80/United States US 50 Davis to Downtown Sacramento Preliminary Investigation, District 3 (Caltrans 2014), much of the I-80 corridor in the study area has low travel speeds



during the p.m. peak period while the a.m. peak period has a few isolated areas of low travel speeds (see graphic below). As shown in the graphic below, I-80 travelers experience slow speeds (i.e., LOS F conditions) for select westbound locations during the morning peak period and more severe and extended areas of slow speeds in the eastbound direction during the evening peak period. More recent observed conditions reveal that a.m. and p.m. traffic speeds have continued to degrade such that more segments of I-80 perform poorly over extended periods of time.

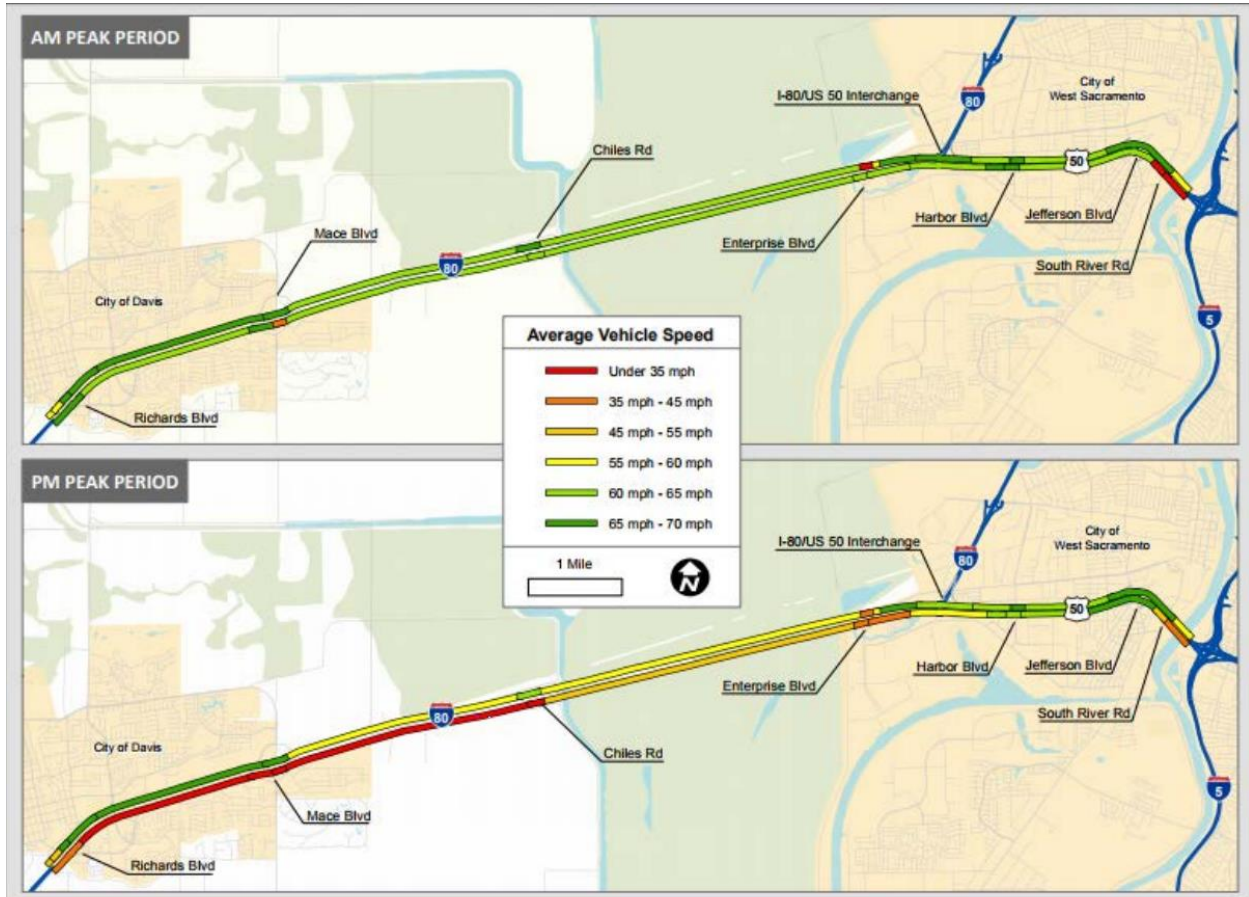


FIGURE 5: Existing Conditions - Segmental Travel Speed (from microsimulation model)

The Caltrans District 3 Interstate 80 Transportation Concept Report (Caltrans 2017) describes existing and anticipated future operating conditions on I-80 throughout the greater Sacramento area. As documented in the I-80 TCR, the segment of I-80 between Mace Boulevard and West Sacramento (Post Mile 2.68 to 9.55) operates at LOS F (see table image below).

SYSTEM CHARACTERISTICS, CONCEPT FACILITY, AND CORRIDOR PERFORMANCE

Figure 2

Segment	County	SYSTEM CHARACTERISTICS AND CONCEPT FACILITY												BASIC SYSTEM OPERATIONS							
		Existing Facility Base Year						Concept Facility Horizon Year						Level of Service (LOS)			Average Daily Traffic (ADT)				
		Base Year (BY)						Build Facility Horizon Year (HY)			Ultimate Facility (HY)			Base Year (BY) 2014	No Build Horizon Year (HY) 2035	Build (HY)	Ultimate Concept	(BY) 2014	No Build (HY) 2035	Build (HY)	
		Facility Type	General Purpose Lanes	Centerline Miles	Lane Miles	Designated Lane	Facility Type	General Purpose Lanes	Centerline Miles	Lane Miles	Designated Lane	General Purpose Lane/Facility Type (project to achieve LOS - Ultimate concept)									
1	YOL	0.000	2.680	6	F	2.68	16.08	-	6	F	2.68	16.08	-	GF	E	F	F	D	122,000	145,000	150,000
2	YOL	2.68	9.55	6	F	6.870	41.22	-	6	F	6.870	41.22	-	GF	F	F	F	E	149,000	177,000	189,000
3	YOL	9.55	11.718	6	F	2.168	11.72	-	6	F	2.170	11.72	-	GF	C	D	D	E	86,000	108,000	109,000

A review of similar information for I-80 in Solano County (e.g., (I-80 East Corridor System Management Plan District 4, [Caltrans 2017]) revealed evidence that slow freeway speeds (i.e., LOS F conditions) occur near the Yolo/Solano County line in the eastbound direction during the evening peak period.

The combination of SACOG and MTC region growth, including that associated with the proposed DiSC 2022 project, would exacerbate the current I-80 performance problems related to slow speeds and unreliable travel times described above. In response, Caltrans, in cooperation with SACOG, developed the carpool lane project on I-80 between Davis and Downtown Sacramento, which is included in the SACOG MTP/SCS as shown below (SACOG 2016). This project would extend between Richards Boulevard in Davis to the I-5/US 50 interchange in Sacramento.

Project ID	Included in DPS	COUNTY	LEAD AGENC	TITLE	PROJECT DESCRIPTION	Completion Timing	TOTAL COST (2015 Dollars)	Status
CAL18812	Yes	Multiple Counties	Caltrans D3	I-80 / U.S. 50 Bus/Carpool Lanes in both directions	Bus/Carpool Lanes in both directions from Richards Blvd. (in Davis) to the I-5/US 50 Interchange. Inc. new bike bridge across the Yolo Causeway.	2021-2036	\$300,000,000	Planned



In addition, as shown below, the SACOG MTP/SCS includes expansion of the Capitol Corridor service from two round trips to ten round trips between Sacramento and Roseville. This expansion would improve the viability of using transit for longer distance trips to/from Davis that would otherwise be using I-80.

Project ID	Included in DPS	COUNTY	LEAD AGENCY	TITLE	PROJECT DESCRIPTION	Completion Timing	TOTAL COST (2015 Dollars)	Status
CAL18320	Yes	Multiple Counties	Capitol Corridor JPA	Sacramento to Roseville Third Main Track - Phase 1	On the Union Pacific mainline, from near the Sacramento and Placer County border to the Roseville Station area in Placer County: Construct a layover facility, install various Union Pacific Railroad Yard track improvements, required signaling, and construct the most northern eight miles of third mainline track between Sacramento and Roseville (largely all in Placer County), which will allow up to two additional round trips (for a total of three round trips) between Sacramento and Roseville.	2021	\$82,980,000	Programmed
VAR56199	Yes	Multiple Counties	Capitol Corridor JPA	Sacramento to Roseville Third Main Track - Phase 2	On the UP mainline, from Sacramento Valley Station approximately 9.8 miles toward the Placer County line: Construct third mainline track including all bridges and required signaling. Project improvements will permit service capacity increases for Capitol Corridor in Placer County, with up to seven additional round trips added to Phase 1-CAL18320 (for a total of ten round trips) between Sacramento to Roseville including track and station improvements.	2021	\$167,820,000	Programmed

The Capitol Corridor projects are already programmed according to the SACOG MTP/SCS and the carpool lane project is projected to have sufficient funding for implementation by 2036. These projects are not expected to eliminate the LOS F conditions on I-80 in the study area but will reduce the severity of congestion and provide more reliable travel options for those opting to carpool or use Capitol Corridor service.

A review of similar information for I-80 in Solano County (e.g., (I-80 East Corridor System Management Plan District 4 [Caltrans 2017]) revealed evidence that slow freeway speeds (i.e., LOS F conditions) near the Yolo/Solano County line in the eastbound direction during the evening peak period will continue to occur under 2030 conditions.

Caltrans analysis of this location contained in the I-80 East Corridor System Management Plan District 4, Caltrans, June 2017, does not include specific improvements to address this problem location. The plan does include the planned expansion of I-80 between Dixon and Davis, as shown in the highlighted text in the graphic labeled "Solano County Table," which is a location that could experience an increase in traffic from the proposed DiSC 2022 project.

SOLANO COUNTY TABLE

CO	RTE	Beg PM	End PM	Project Description/Location	Improv. Type	Project Cost (millions)*	T-2040 Status	RTP #	Facility Type	IRRS Status	Delivery Status	Compl. By (year)	Comments
SOL	080	25.30	28.40	Extend the EB HOV-2 lane from Alamo Dr. to I-505.	HWY	\$19.2	na	na	F	HE	Planned	na	I-80 East CSMP
SOL	080	25.30	28.40	Extend the WB HOV-2 lane from Alamo Dr. to I-505.	HWY	\$32.8	na	na	F	HE	Planned	na	I-80 East CSMP
SOL	080	26.50	27.00	Provide an EB auxiliary lane between Cliffside Dr. and Allison Dr. with a 2-lane off-ramp at Allison Dr.	HWY	\$3.5	na	na	F	HE	Planned	na	I-80 East CSMP
SOL	080	28.40	28.40	I-80/I-505 I/C redesign to accommodate express lane and eliminate lane drop from WB I-80 at I505.	HWY	na	na	na	F	HE	Planned	na	Solano 2040 Additional
SOL	080	30.00	40.00	Provide a 4th EB general purpose lane extending from E. of Leisure Town Rd. to W. of Kidwell Rd. Potentially HOV/HOT lane.	HWY	\$78.0	na	na	F	HE	Planned	na	I-80 East CSMP
SOL	080	30.00	40.00	Provide a 4th WB general purpose lane between W. of Kidwell Rd. and E. of Leisure Town Rd. Potentially HOV/HOT lane.	HWY	\$132.3	na	na	F	HE	Planned	na	I-80 East CSMP
SOL	080	30.90	40.70	Widen I-80 from 6 to 8 lanes, from West of Meridian Rd. to West of Kidwell Road	HWY	\$83.0	na	na	F	HE	Planned	na	
SOL	080	35.35	35.68	I-80/West A Street Interchange Improvements - Ramp and eventually bridge improvements to increase capacity.	HWY	\$25.0	New Com	240248	F	HE		2022	MIS/ Corridor Study
SOL	080	39.74	39.98	I-80/Pedrick Road Interchange Improvements - Ramp and eventually bridge improvements to increase capacity. Roadway provides access to northeast area business park of Dixon	HWY	\$25.0	New Com	240178	F	HE	Planned	2022	
SOL	080	R11.40	19.17	Install ITS gap between Red Top Road and Air Base Parkway. This will consist of CCTV cameras, Highway Advisory Radio and communications infrastructure	HWY	\$6.0	na	na	F	HE	Planned	na	I-80 East CSMP
SOL	080	R11.98	12.85	Provide WB braided ramp configurations as necessary between SR-12 West and I-680 to improve weave and merge maneuvers	HWY	\$4.2	na	na	F	HE	Planned	na	I-80 East CSMP
SOL	080	R25.30	R28.34	Extend ITS in EB direction between Alamo Drive and I-505	HWY	\$2.3	na	na	F	HE	Planned	na	I-80 East CSMP
SOL	080	R25.30	R28.34	Extend ITS in the WB direction between I-505 and Alamo Drive	HWY	\$2.0	na	na	F	HE	Planned	na	I-80 East CSMP

Despite this information, MTC did not include any capacity expansion projects for the I-80 corridor in eastern Solano County as part of Plan Bay Area 2040. As such, regional growth (including the DiSC 2022 project) would likely exacerbate the congested conditions previously identified by Caltrans.

Additional employee and residential growth with the DiSC 2022 project would generate new peak period vehicle trips that would contribute to existing and future LOS F conditions on the I-80 mainline. For example, approximately one-third of peak hours trips generated by the DiSC 2022 project are estimated to travel to/from the Sacramento vicinity on I-80 on the Yolo Causeway (east of Davis), equal to approximately 420 and 450 additional vehicle trips during the a.m. and p.m. peak hours, respectively, under Existing Plus Project conditions. According to the I-80 TCR, this segment of I-80 served 12,200 peak hour trips during the base year (2014). Therefore, the project would increase I-80 mainline volumes on the Yolo Causeway by less than five percent.



5. Cumulative Plus Project Conditions

The cumulative analysis assumes the same roadway system and intersection improvements as is currently present. This is because the City's Capital Improvement Program (CIP) does not include any specific improvements within the study area. Additionally, there are no plans to upgrade the I-80/Mace Boulevard interchange. A high-occupancy-vehicle (HOV) or carpool lane is planned to be added on the adjacent segment of I-80, which has been considered in the traffic forecasts. Consistent with standard practice, traffic signal timings were optimized due to changes in travel demand between current and cumulative conditions.

Table 9 displays intersection LOS and delay under cumulative conditions, without and with the project. Note that the analysis is focused only on the study intersections along the project frontage and near the I-80/Mace Boulevard interchange. Technical calculations are provided in the Appendix. This table indicates that many of the study intersections would operate at LOS F without the project. The addition of the project would cause LOS F conditions or worsen already projected LOS F conditions by five seconds or more at six study intersections.

Table 10 displays the 95th percentile freeway off-ramp queue at the I-80/Mace Boulevard interchange off-ramps under cumulative conditions, without and with the project. This table indicates that vehicle queues would spill back out of both off-ramps onto I-80 under cumulative no project conditions during the a.m. peak hour. The project would exacerbate these queue spillbacks during the a.m. peak hour and also cause the queue to spill back to the freeway during the p.m. peak hour.

Table 9: Peak Hour Intersection Operations – Cumulative Plus Project Conditions

Intersection	Traffic Control	Jurisdiction	Cumulative Conditions				Cumulative Plus Project Conditions			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
9. Mace Blvd./ Alhambra Dr./ Project Driveway	Signal	City of Davis	100	F	163	F	149	F	286	F
10. Second Street/ Fermi Place/ Target Driveway	Signal	City of Davis	16	B	115	F	17	B	109	F
11. Mace Blvd./ Second Street/ CR 32A	Signal	City of Davis	110	F	138	F	113	F	193	F
12. CR 32A/Mace Park-and-Ride Driveway/West Project Driveway	TWSC	Yolo County/City of Davis ¹	1 (4)	A (A)	2 (6)	A (A)	3 (9)	A (A)	149 (622)	F (F)
13. Mace Blvd./I-80 WB Ramps	Signal	Caltrans	168	F	96	F	164	F	94	F
14. Mace Blvd./ Chiles Road	Signal	City of Davis	97	F	151	F	114	F	137	F
15. Chiles Road/ I-80 EB Ramp	Signal	Caltrans	271	F	206	F	350	F	237	F
16. Mace Blvd./ Cowell Blvd.	Signal	City of Davis	62	E	241	F	64	E	196	F
17. Mace Blvd./ El Macero Drive	AWSC	City of Davis	27	D	276	F	23	C	320	F
21. Mace Blvd./ CR 30B	TWSC	Yolo County	-	-	-	-	136 (533)	F (F)	143 (390)	F (F)
22. CR 32A/East Project Driveway	TWSC	Yolo County/City of Davis ¹	-	-	-	-	2 (6)	A (A)	3 (10)	A (A)

Notes: For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For two-way stop-controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches with the delay and LOS for the worst-case movement reported in parentheses.
 Results provided only for intersections analyzed using micro-simulation.
 Shaded cells indicate locations with unacceptable peak hour LOS.
Shaded and bold cells indicate locations where the project would cause adverse effects to peak hour intersection operations in accordance with the performance criteria.
 TWSC = Two-Way Stop Control. AWSC = All-Way Stop Control. "-" = Does not exist.
¹ The segment of CR 32A along the project site southern frontage would be annexed into the City of Davis along with the



project site. Thus, City of Davis performance criteria related to roadway performance would apply to study intersections #12 and #22 under Cumulative Plus Project conditions.

Source: Fehr & Peers, 2021.

Table 10: Freeway Off-Ramp Queuing – Cumulative Plus Project Conditions

Off-Ramp	Off-Ramp Distance ¹	95 th Percentile Queue Length ²			
		Cumulative Conditions		Cumulative Plus Project Conditions ³	
		A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour
Mace Boulevard/I-80 WB Off-Ramp	1,200 feet	2,600 feet	475 feet	2,725 feet	975 feet
Chiles Road/I-80 EB Off-Ramp	1,100 feet	2,175 feet	1,075 feet	3,270 feet	1,300 feet

Notes: ¹ Measured from the intersection stop bar to the gore point of the freeway off-ramp. Does not include auxiliary lane on freeway mainline.

² Results at the Mace Boulevard/Chiles Road interchange are based on results from SimTraffic micro-simulation model.

³ Shaded cells represent conditions in which the queue would spill onto the freeway mainline.

Source: Fehr & Peers, 2021.



Potential Operational Enhancements

The potential operational enhancements illustrated on Figure 2 were tested under cumulative plus project conditions. **Table 11** displays the resulting intersection LOS and delay under cumulative plus project conditions with these operational enhancements in place. **Table 12** summarizes how the percentage of peak hour travel demand is able to be served within the portion of the study area covered by the micro-simulation model. **Table 13** summarizes illustrates how the operational enhancements would affect freeway off-ramp queues at the I-80/Mace Boulevard interchange.

The results in these tables reveal several important conclusions:

- Background traffic growth will require improvements within this portion of the study area regardless of whether the project is developed.
- The project would further worsen operations in this area, though the operational enhancements would provide some benefit. For instance, in the p.m. peak hour, the percent demand served under cumulative plus project conditions would increase from 69 percent to 93 percent with the enhancements. However, the operational enhancements are not sufficient, in and of themselves, to improve conditions to LOS E or better.
- During the a.m. and p.m. peak hours, the operational enhancements would reduce the length of the Chiles Road/I-80 EB off-ramp in a manner where it would spill back onto the freeway mainline.

Table 11: Peak Hour Intersection Operations – Cumulative Plus Project Conditions with Potential Operational Enhancements

Intersection	Traffic Control	Jurisdiction	Cumulative Conditions				Cumulative Plus Project Conditions				Cumulative Plus Project Conditions with Potential Operational Enhancements			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
9. Mace Blvd./ Alhambra Dr./ Project Driveway	Signal	City of Davis	100	F	163	F	149	F	286	F	108	F	45	D
10. Second Street/ Fermi Place/ Target Driveway	Signal	City of Davis	16	B	115	F	17	B	109	F	19	B	93	F
11. Mace Blvd./ Second Street/ CR 32A	Signal	City of Davis	110	F	138	F	113	F	193	F	89	F	121	F
12. CR 32A/Mace Park-and-Ride Driveway/West Project Driveway	TWSC/ Signal	Yolo County/City of Davis ¹	1 (4)	A (A)	2 (6)	A (A)	3 (9)	A (A)	149 (622)	F (F)	17	C	29	C
13. Mace Blvd./I-80 WB Ramps	Signal	Caltrans	168	F	96	F	164	F	94	F	140	F	72	E
14. Mace Blvd./ Chiles Road	Signal	City of Davis	97	F	151	F	114	F	137	F	63	E	47	D
15. Chiles Road/ I-80 EB Ramp	Signal	Caltrans	271	F	206	F	350	F	237	F	119	F	13	B
16. Mace Blvd./ Cowell Blvd.	Signal	City of Davis	62	E	241	F	64	E	196	F	54	D	70	E



17. Mace Blvd./ El Macero Drive	AWSC	City of Davis	27	D	276	F	23	C	320	F	20	C	56	F
21. Mace Blvd./ CR 30B	TWSC	Yolo County	-	-	-	-	136 (533)	F (F)	143 (390)	F (F)	62 (403)	E (F)	7 (8)	A (A)
22. CR 32A/East Project Driveway	TWSC	Yolo County/City of Davis ¹	-	-	-	-	2 (6)	A (A)	3 (10)	A (A)	2 (7)	A (A)	3 (9)	A (A)

Notes: For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For two-way stop-controlled intersections, average intersection delay is reported in seconds per vehicle for all approaches with the delay and LOS for the worst-case movement reported in parentheses.

Results provided only for intersections analyzed using micro-simulation.

Shaded cells indicate locations with unacceptable peak hour LOS.

Shaded and bold cells indicate locations where the project would cause adverse effects to peak hour intersection operations in accordance with the performance criteria.

TWSC = Two-Way Stop Control. AWSC = All-Way Stop Control. "-" = Does not exist.

¹ The segment of CR 32A along the project site southern frontage would be annexed into the City of Davis along with the project site. Thus, City of Davis performance criteria related to roadway performance would apply to study intersections #12 and #22 under Cumulative Plus Project conditions.

Source: Fehr & Peers, 2021

Table 12: Percent of Peak Hour Demand Served – Cumulative Plus Project Conditions with Potential Operational Enhancements

Location	Cumulative Conditions ¹				Cumulative Plus Project Conditions ¹				Cumulative Plus Project Conditions with Potential Operational Enhancements ^{1,2}			
	A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
	Hourly Demand	Vehicles Served (%)	Hourly Demand	Vehicles Served (%)	Hourly Demand	Vehicles Served (%)	Hourly Demand	Vehicles Served (%)	Hourly Demand	Vehicles Served (%)	Hourly Demand	Vehicles Served (%)
Overall System ³	18,350	15,964 (87%)	20,035	14,792 (74%)	21,389	16,757 (78%)	22,779	15,759 (69%)	21,389	19,285 (90%)	22,779	21,154 (93%)

Notes: ¹ Based on results of SimTraffic micro-simulation model.
² Refer to Figure 2 for an illustration of potential operational enhancements.
³ Includes study intersections 9 through 17.

Source: Fehr & Peers, 2021.



Table 13: Freeway Off-Ramp Queuing – Cumulative Plus Project Conditions with Potential Operational Enhancements

Off-Ramp	Off-Ramp Distance ¹	95 th Percentile Queue Length ²					
		Cumulative Conditions		Cumulative Plus Project Conditions ³		Cumulative Plus Project Conditions with Potential Operational Enhancements ³	
		A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour
Mace Boulevard/I-80 WB Off-Ramp	1,200 feet	2,600 feet	475 feet	2,725 feet	975 feet	2,750 feet	300 feet
Chiles Road/I-80 EB Off-Ramp	1,100 feet	2,175 feet	1,075 feet	3,270 feet	1,300 feet	475 feet	125 feet

Notes: ¹ Measured from the intersection stop bar to the gore point of the freeway off-ramp. Does not include auxiliary lane on freeway mainline.

² Results at the Mace Boulevard/Chiles Road interchange are based on results from SimTraffic micro-simulation model.

³ Shaded cells represent conditions in which the queue would spill onto the freeway mainline.

Source: Fehr & Peers, 2021.

6. Comparison to Prior DiSC Project

As noted previously, a traffic operations analysis was prepared in March 2020 for the prior version of the DiSC project (previously referred to as the Aggie Research Campus), which was roughly double the size and scope of the DiSC 2022 project. As shown in **Table 14**, the DiSC 2022 project would generate substantially less a.m. and p.m. peak hour vehicle trips than the prior version of the DiSC project. As such, the DiSC 2022 project would have less pronounced effects on traffic operations throughout the study area when compared to the prior version of the DiSC project (refer to **Table 15**).

Moreover, the DiSC 2022 would require fewer potential operational enhancements in order to address the adverse operational effects that would result from the project. Changes to the potential operational enhancements between the original DiSC project and the DiSC 2022 project are summarized in **Table 16**.

Table 14: Peak Hour Vehicle Trip Generation – Original DiSC Project Compared to DiSC 2022 Project

Original DiSC Project		DiSC 2022 Project	
A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour
2,325	2,561	1,145	1,237

Note: Vehicle trips represent net new external vehicle trips that would be generated by the project.
 Sources: *Aggie Research Campus, Volume 2, Traffic Operations Analysis* (Fehr & Peers, March 2020), Fehr & Peers, 2021.

Table 15: Number of Study Intersections with Adverse Operational Effects – Original DiSC Project Compared to DiSC 2022 Project

Analysis Scenario	Original DiSC Project		DiSC 2022 Project	
	A.M. Peak Hour	P.M. Peak Hour	A.M. Peak Hour	P.M. Peak Hour
Existing Plus Project	4	9	2	7
Cumulative Plus Project	8	9	3	5

Sources: *Aggie Research Campus, Volume 2, Traffic Operations Analysis* (Fehr & Peers, March 2020), Fehr & Peers, 2021.



Table 16: Potential Operational Enhancements – Original DISC Project Compared to DiSC 2022 Project

Operational Enhancement Type	Original DISC Project	DiSC 2022 Project
Enhancement to Address Project Effects Within the Project Vicinity	<p><u>Southbound Mace Boulevard:</u> Extend the second eastbound/southbound lane from Harper Junior High School to Alhambra Drive. Add a third southbound lane from Second Street to connect with the dedicated right-turn lane onto the I-80 WB on-ramps.</p>	<p><u>Southbound Mace Boulevard:</u> Extend the second eastbound/southbound lane from Harper Junior High School to Alhambra Drive. Add a third southbound lane from Second Street to connect with the dedicated right-turn lane onto the I-80 WB on-ramps.</p>
	<p><u>Northbound Mace Boulevard:</u> Extend the third northbound lane from the I-80 WB off-ramps to connect with a new northbound “trap” right-turn lane at the Mace Boulevard/Second Street/County Road 32A intersection. Add a second northbound/westbound lane from Alhambra Drive to the Harper Junior High School signalized intersection.</p>	<p><u>Northbound Mace Boulevard:</u> Extend the third northbound lane from the I-80 WB off-ramps to connect with a new northbound “trap” right-turn lane at the Mace Boulevard/Second Street/County Road 32A intersection. Add a second northbound/westbound lane from Alhambra Drive to the Harper Junior High School signalized intersection.</p>
	<p><u>Mace Boulevard/Chiles Road and Chiles Road/I-80 EB Off-Ramp Intersections:</u> This pair of tightly spaced intersections (situated 450 feet apart) requires signal coordination/timing adjustments and a lane reassignment on the eastbound Chiles Road approach to Mace Boulevard due to the heavy project-related off-ramp volume during the a.m. peak hour. Modifying the eastbound through lane to a shared left/through lane would require the east and west approaches to operate with split phasing. Signal coordination (particularly critical during the a.m. peak hour) would synchronize the green interval for the I-80 off-ramp movement with the eastbound approach on Chiles Road at Mace Boulevard to facilitate the flow of motorists off of I-80. The signal would be modified to operate the southbound left-turn and westbound right-turn during a shared overlap phase. This modification would also require the prohibition of southbound U-turns.</p>	<p><u>Mace Boulevard/Chiles Road and Chiles Road/I-80 EB Off-Ramp Intersections:</u> This pair of tightly spaced intersections (situated 450 feet apart) requires signal coordination/timing adjustments due to the heavy project-related off-ramp volume during the a.m. peak hour. The east and west approaches would be modified to operate with split phasing. Signal coordination (particularly critical during the a.m. peak hour) would synchronize the green interval for the I-80 off-ramp movement with the eastbound approach on Chiles Road at Mace Boulevard to facilitate the flow of motorists off of I-80. The signal would be modified to operate the southbound left-turn and westbound right-turn during a shared overlap phase. This modification would also require the prohibition of southbound U-turns.</p>

<p><u>I-80 Eastbound Loop On-Ramp</u>: This on-ramp consists of a single entry lane from southbound Mace Boulevard, which widens to a metered general purpose lane and an unmetered HOV bypass lane. During the p.m. peak hour, the addition of project trips would cause queue spillback from the ramp meter onto the overpass, thereby causing queue spillback to extend further upstream. The recommended modification from an unmetered HOV bypass lane to a metered general purpose lane was found to provide more ramp metering storage, and reduced effects on the surface street. Similar modifications have been considered by Caltrans elsewhere in the Sacramento region.</p>	<p>Not required.</p>
<p><u>Mace Boulevard/Second Street/County Road 32A Intersection</u>: Modify the northbound approach to add a “trap” right-turn lane. Modify the westbound approach to two left-turn lanes and a shared through-right lane. Modify westbound County Road 32A between this intersection and the adjacent County Road 32A/Mace park-and-ride/West ARC Driveway intersection to two through lanes.</p>	<p><u>Mace Boulevard/Second Street/County Road 32A Intersection</u>: Modify the northbound approach to add a “trap” right-turn lane. Modify the westbound approach to two left-turn lanes and a shared through-right lane. Modify westbound County Road 32A between this intersection and the adjacent County Road 32A/Mace park-and-ride/West Project Driveway intersection to two through lanes.</p>
<p><u>Mace Boulevard/Alhambra Drive/South ARC Driveway Intersection</u>: Modify the westbound approach to two left-turn lanes and a shared through-right lane. Provide a southbound left-turn lane, two through lanes, and a right-turn lane.</p>	<p>Not required.</p>
<p><u>Mace Boulevard/County Road 30B/North ARC Driveway Intersection</u>: Install a traffic signal. Provide a southbound left-turn lane and two through lanes. Provide a northbound through lane and shared through-right lane. Provide an eastbound left-turn lane.</p>	<p>Not required.</p>
<p><u>County Road 32A/Mace park-and-ride/West ARC Driveway Intersection</u>: Install a traffic signal. Provide a southbound left-turn lane and a shared through-right lane.</p>	<p><u>County Road 32A/Mace park-and-ride/West Project Driveway Intersection</u>: Install a traffic signal. Provide a southbound left-turn lane and a shared through-right lane.</p>



	<p><u>UPRR at-grade rail crossing improvements:</u> The UPRR track/County Road 32A crossing should be converted from an at-grade crossing to a grade-separated crossing. A near-term improvement prior to provision of the grade separation would consist of relocating the County Road 32A/County Road 105 intersection about 200 feet to the north and installing double gates on the south approach to the grade crossing in order to improve safety and traffic functionality at the grade crossing. [Fair Share Contribution]</p>	<p><u>UPRR at-grade rail crossing improvements:</u> The UPRR track/County Road 32A crossing should be converted from an at-grade crossing to a grade-separated crossing. A near-term improvement prior to provision of the grade separation would consist of relocating the County Road 32A/County Road 105 intersection about 200 feet to the north and installing double gates on the south approach to the grade crossing in order to improve safety and traffic functionality at the grade crossing. [Fair Share Contribution]</p>
<p>Enhancement to Address Project Effects Beyond the Project Vicinity</p>	<p><u>I-80/County Road 32A interchange improvements:</u> Construct capacity improvements at the County Road 32 interchange and along County Road 32A to allow this interchange to serve more project traffic, including:</p> <ul style="list-style-type: none"> • Reconstruction, widening, and potential relocation to the west, of the eastbound and westbound on- and off-ramps to provide more storage capacity, and to provide traffic signals or roundabouts at the ramp terminal intersections. Provision of an auxiliary lane between the relocated eastbound on-ramp merge and the causeway structure. • Re-configuration of the County Road 32A/County Road 105 intersection to provide uninterrupted County Road 32A flow with County Road 105 under stop control. <p>[Fair Share Contribution]</p>	<p><u>I-80/County Road 32A interchange improvements:</u> Construct capacity improvements at the County Road 32 interchange and along County Road 32A to allow this interchange to serve more project traffic, including:</p> <ul style="list-style-type: none"> • Reconstruction, widening, and potential relocation to the west, of the eastbound and westbound on- and off-ramps to provide more storage capacity, and to provide traffic signals or roundabouts at the ramp terminal intersections. Provision of an auxiliary lane between the relocated eastbound on-ramp merge and the causeway structure. • Re-configuration of the County Road 32A/County Road 105 intersection to provide uninterrupted County Road 32A flow with County Road 105 under stop control. <p>[Fair Share Contribution]</p>

<p>Enhancement to Address Project Effects on Freeways</p>	<p>At the time of the issuance of the first certificate of occupancy and as a component of the ARC TDM program, the Master Owners’ Association (MOA) for the Project should establish the baseline peak hour I-80 mainline vehicle trips by which to determine the project’s change to peak hour I-80 vehicle trips. Baseline a.m. and p.m. peak hour vehicle trips on I-80 shall be calculated on the following segments:</p> <ol style="list-style-type: none"> 1. Between Pedrick Road and Kidwell Road 2. Between Richards Boulevard and Mace Boulevard 3. East of Chiles Road (i.e., the Yolo Causeway) <p>During the annual TDM reporting, the MOA should determine the number of a.m. and p.m. peak hour project vehicle trips that utilize I-80 on the segments listed above. In instances where these figures exceed baseline levels by five percent or more, the MOA should institute TDM strategies to reduce project-related peak hour vehicle trips on I-80. The implementation of TDM strategies should reduce peak hour project vehicle trips on I-80 to an amount less than five percent of baseline levels, to the extent feasible.</p> <p>TDM strategies that would reduce peak hour vehicle trips on I-80 include strategies to reduce commute and business vehicle trips to and from ARC using I-80. If these TDM strategies are not sufficient to reduce peak hour trips to baseline levels, additional TDM measures or adjustments to existing measures should be implemented, as needed to reduce peak hour trips to an amount less than five percent of baseline levels.</p>	<p>Not required.</p>
	<p>The MOA for the Project should contribute a proportional share to the local contribution portion of freeway improvement projects to construct carpool lanes on I-80 between Richards Boulevard and West Sacramento.</p>	<p>Not required.</p>

Sources: *Aggie Research Campus, Volume 2, Traffic Operations Analysis* (Fehr & Peers, March 2020), Fehr & Peers, 2021.



Technical Appendix

HCM 6th Signalized Intersection Summary
1: Pole Line Rd & E Covell Blvd

Existing Conditions
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	153	442	132	91	462	105	114	192	40	2	179	358
Future Volume (veh/h)	153	442	132	91	462	105	114	192	40	2	179	358
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.96		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
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
Adj Flow Rate, veh/h	168	486	0	100	508	0	125	211	4		197	393
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91		0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2		2	2
Cap, veh/h	221	949		133	773		166	395	323		254	486
Arrive On Green	0.12	0.27	0.00	0.07	0.22	0.00	0.09	0.21	0.21		0.14	0.26
Sat Flow, veh/h	1781	3647	0	1781	3647	0	1781	1870	1529		1781	1870
Grp Volume(v), veh/h	168	486	0	100	508	0	125	211	4		197	393
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	0	1781	1870	1529		1781	1870
Q Serve(g_s), s	5.4	6.9	0.0	3.3	7.7	0.0	4.0	5.9	0.1		6.3	11.6
Cycle Q Clear(g_c), s	5.4	6.9	0.0	3.3	7.7	0.0	4.0	5.9	0.1		6.3	11.6
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00		1.00	
Lane Grp Cap(c), veh/h	221	949		133	773		166	395	323		254	486
V/C Ratio(X)	0.76	0.51		0.75	0.66		0.75	0.53	0.01		0.78	0.81
Avail Cap(c_a), veh/h	1055	2346		905	1745		754	728	595		694	728
HCM Platoon Ratio	1.00	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	0.00	1.00	1.00	0.00	1.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	25.0	18.4	0.0	26.8	21.1	0.0	26.1	20.7	18.4		24.4	20.5
Incr Delay (d2), s/veh	5.3	0.4	0.0	8.2	1.0	0.0	6.7	1.1	0.0		5.1	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.6	0.0	1.6	3.0	0.0	1.9	2.5	0.0		2.8	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	18.8	0.0	34.9	22.1	0.0	32.8	21.9	18.4		29.5	24.6
LnGrp LOS	C	B		C	C		C	C	B		C	C
Approach Vol, veh/h		654	A		608	A		340				630
Approach Delay, s/veh		21.8			24.2			25.8				25.6
Approach LOS		C			C			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.3	17.9	9.5	20.4	8.4	20.8	12.4	17.5				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	35.0	29.0	25.0	23.0	30.0	39.0	23.0	23.0				
Max Q Clear Time (g_c+I1), s	7.4	9.7	6.0	13.6	5.3	8.9	8.3	7.9				
Green Ext Time (p_c), s	0.5	3.1	0.3	1.7	0.2	3.4	0.5	1.0				

Intersection Summary

HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved ignoring U-Turning movement.
- Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 1: Pole Line Rd & E Covell Blvd

Existing Conditions
 AM Peak Hour

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	225
Future Volume (veh/h)	225
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	40
Peak Hour Factor	0.91
Percent Heavy Veh, %	2
Cap, veh/h	412
Arrive On Green	0.26
Sat Flow, veh/h	1585
Grp Volume(v), veh/h	40
Grp Sat Flow(s),veh/h/ln	1585
Q Serve(g_s), s	1.1
Cycle Q Clear(g_c), s	1.1
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	412
V/C Ratio(X)	0.10
Avail Cap(c_a), veh/h	617
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	16.6
Incr Delay (d2), s/veh	0.1
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.4
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	16.7
LnGrp LOS	B
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

HCM 6th Signalized Intersection Summary
2: Birch Ln & E Covell Blvd

Existing Conditions
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↔	↑↑		↔		↔		↑	
Traffic Volume (veh/h)	0	604	57	65	589	0	69	0	27	0	69	0
Future Volume (veh/h)	0	604	57	65	589	0	69	0	27	0	69	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	0	1870	0	1870	0
Adj Flow Rate, veh/h	0	657	62	71	640	0	75	0	29	0	75	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0	2	0	2	0	2	0
Cap, veh/h	0	1028	97	118	1674	0	159	0	0	0	307	0
Arrive On Green	0.00	0.31	0.31	0.07	0.47	0.00	0.09	0.00	0.00	0.00	0.16	0.00
Sat Flow, veh/h	0	3376	309	1781	3647	0	1781	75		0	1870	0
Grp Volume(v), veh/h	0	355	364	71	640	0	75	21.0		0	75	0
Grp Sat Flow(s),veh/h/ln	0	1777	1815	1781	1777	0	1781	C		0	1870	0
Q Serve(g_s), s	0.0	7.5	7.5	1.7	5.1	0.0	1.7			0.0	1.5	0.0
Cycle Q Clear(g_c), s	0.0	7.5	7.5	1.7	5.1	0.0	1.7			0.0	1.5	0.0
Prop In Lane	0.00		0.17	1.00		0.00	1.00			0.00		0.00
Lane Grp Cap(c), veh/h	0	557	569	118	1674	0	159			0	307	0
V/C Ratio(X)	0.00	0.64	0.64	0.60	0.38	0.00	0.47			0.00	0.24	0.00
Avail Cap(c_a), veh/h	0	1141	1165	653	2118	0	1062			0	901	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00			0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	12.9	12.9	19.8	7.4	0.0	18.9			0.0	15.9	0.0
Incr Delay (d2), s/veh	0.0	1.2	1.2	4.9	0.1	0.0	2.1			0.0	0.4	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
%ile BackOfQ(50%),veh/ln	0.0	2.5	2.6	0.8	1.3	0.0	0.7			0.0	0.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	14.1	14.1	24.7	7.6	0.0	21.0			0.0	16.3	0.0
LnGrp LOS	A	B	B	C	A	A	C			A	B	A
Approach Vol, veh/h		719			711						75	
Approach Delay, s/veh		14.1			9.3						16.3	
Approach LOS		B			A						B	
Timer - Assigned Phs	1	2	3	4		6						
Phs Duration (G+Y+Rc), s	6.9	17.7	7.9	11.2		24.6						
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0		4.0						
Max Green Setting (Gmax), s	16.0	28.0	26.0	21.0		26.0						
Max Q Clear Time (g_c+I), s	13.5	9.5	3.7	3.5		7.1						
Green Ext Time (p_c), s	0.1	4.2	0.2	0.3		4.1						
Intersection Summary												
HCM 6th Ctrl Delay				12.4								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗			↖	↖		↖↗	
Traffic Vol, veh/h	12	612	20	32	593	3	29	0	25	8	0	24
Future Vol, veh/h	12	612	20	32	593	3	29	0	25	8	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	Stop
Storage Length	100	-	-	100	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	665	22	35	645	3	32	0	27	9	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	645	0	0	687	0	0	1095	1417	344	1074	1428	323
Stage 1	-	-	-	-	-	-	702	702	-	715	715	-
Stage 2	-	-	-	-	-	-	393	715	-	359	713	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	936	-	-	903	-	0	168	136	652	174	134	673
Stage 1	-	-	-	-	-	0	395	439	-	388	433	-
Stage 2	-	-	-	-	-	0	603	433	-	632	434	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	936	-	-	903	-	-	155	129	652	160	127	673
Mov Cap-2 Maneuver	-	-	-	-	-	-	155	129	-	160	127	-
Stage 1	-	-	-	-	-	-	389	433	-	383	416	-
Stage 2	-	-	-	-	-	-	557	416	-	597	428	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.5			23.3			10.9		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	155	652	936	-	-	903	-	640
HCM Lane V/C Ratio	0.203	0.042	0.014	-	-	0.039	-	0.054
HCM Control Delay (s)	34.1	10.8	8.9	-	-	9.1	-	10.9
HCM Lane LOS	D	B	A	-	-	A	-	B
HCM 95th %tile Q(veh)	0.7	0.1	0	-	-	0.1	-	0.2

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	↖
Traffic Vol, veh/h	620	25	17	587	41	25
Future Vol, veh/h	620	25	17	587	41	25
Conflicting Peds, #/hr	0	1	2	0	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	25
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	674	27	18	638	45	27

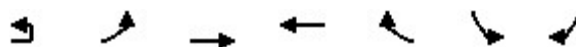
Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	703	0	1045 358
Stage 1	-	-	-	-	690 -
Stage 2	-	-	-	-	355 -
Critical Hdwy	-	-	4.14	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	-	-	2.22	-	3.52 3.32
Pot Cap-1 Maneuver	-	-	890	-	224 638
Stage 1	-	-	-	-	459 -
Stage 2	-	-	-	-	681 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	889	-	219 634
Mov Cap-2 Maneuver	-	-	-	-	219 -
Stage 1	-	-	-	-	458 -
Stage 2	-	-	-	-	667 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	20
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	219	634	-	-	889	-
HCM Lane V/C Ratio	0.203	0.043	-	-	0.021	-
HCM Control Delay (s)	25.6	10.9	-	-	9.1	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0.1	-

HCM 6th Signalized Intersection Summary
5: E Covell Blvd & Wright Blvd

Existing Conditions
AM Peak Hour



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↶↶	↶↶		↶	↶
Traffic Volume (veh/h)	1	40	604	472	69	171	131
Future Volume (veh/h)	1	40	604	472	69	171	131
Initial Q (Qb), veh		0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00			1.00	1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No	No		No	
Adj Sat Flow, veh/h/ln		1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h		46	694	543	0	197	0
Peak Hour Factor		0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %		3	3	3	3	3	3
Cap, veh/h		73	1904	1362		266	
Arrive On Green		0.04	0.54	0.39	0.00	0.15	0.00
Sat Flow, veh/h		1767	3618	3711	0	1767	1572
Grp Volume(v), veh/h		46	694	543	0	197	0
Grp Sat Flow(s),veh/h/ln		1767	1763	1763	0	1767	1572
Q Serve(g_s), s		0.9	4.0	4.0	0.0	3.8	0.0
Cycle Q Clear(g_c), s		0.9	4.0	4.0	0.0	3.8	0.0
Prop In Lane		1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h		73	1904	1362		266	
V/C Ratio(X)		0.63	0.36	0.40		0.74	
Avail Cap(c_a), veh/h		647	3969	3969		995	
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)		1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh		16.8	4.7	7.9	0.0	14.4	0.0
Incr Delay (d2), s/veh		8.8	0.3	0.4	0.0	4.0	0.0
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		0.5	0.7	1.0	0.0	1.5	0.0
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh		25.6	4.9	8.3	0.0	18.5	0.0
LnGrp LOS		C	A	A		B	
Approach Vol, veh/h			740	543	A	197	A
Approach Delay, s/veh			6.2	8.3		18.5	
Approach LOS			A	A		B	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		25.2		10.3	5.5	19.7	
Change Period (Y+Rc), s		6.0		5.0	4.0	6.0	
Max Green Setting (Gmax), s		40.0		20.0	13.0	40.0	
Max Q Clear Time (g_c+I1), s		6.0		5.8	2.9	6.0	
Green Ext Time (p_c), s		10.0		0.4	0.0	7.3	

Intersection Summary

HCM 6th Ctrl Delay	8.6
HCM 6th LOS	A

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑	↑↑			↔			↔	
Traffic Vol, veh/h	0	749	26	18	514	0	25	0	58	0	0	2
Future Vol, veh/h	0	749	26	18	514	0	25	0	58	0	0	2
Conflicting Peds, #/hr	0	0	7	0	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	85	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	832	29	20	571	0	28	0	64	0	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	868	0	0	1180	1472	438	1034	1486	293
Stage 1	-	-	-	-	-	-	854	854	-	618	618	-
Stage 2	-	-	-	-	-	-	326	618	-	416	868	-
Critical Hdwy	-	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	-	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	0	-	-	765	-	-	144	125	564	185	122	700
Stage 1	0	-	-	-	-	-	318	371	-	441	477	-
Stage 2	0	-	-	-	-	-	658	477	-	582	365	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	761	-	-	140	120	561	159	117	696
Mov Cap-2 Maneuver	-	-	-	-	-	-	140	120	-	159	117	-
Stage 1	-	-	-	-	-	-	318	369	-	441	462	-
Stage 2	-	-	-	-	-	-	639	462	-	515	363	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.3			22.7			10.2		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	294	-	-	761	-	-	696
HCM Lane V/C Ratio	0.314	-	-	0.026	-	-	0.003
HCM Control Delay (s)	22.7	-	-	9.9	-	-	10.2
HCM Lane LOS	C	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.3	-	-	0.1	-	-	0

HCM 6th Signalized Intersection Summary
7: Alhambra Blvd & E Covell Blvd

Existing Conditions
AM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	699	108	30	385	147	46
Future Volume (veh/h)	699	108	30	385	147	46
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900
Adj Flow Rate, veh/h	803	0	34	443	169	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	1220		141	988	390	
Arrive On Green	0.34	0.00	0.08	0.53	0.22	0.00
Sat Flow, veh/h	3647	1585	1781	1870	1771	0
Grp Volume(v), veh/h	803	0	34	443	170	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1870	1782	0
Q Serve(g_s), s	7.2	0.0	0.7	5.5	3.1	0.0
Cycle Q Clear(g_c), s	7.2	0.0	0.7	5.5	3.1	0.0
Prop In Lane		1.00	1.00		0.99	0.00
Lane Grp Cap(c), veh/h	1220		141	988	392	
V/C Ratio(X)	0.66		0.24	0.45	0.43	
Avail Cap(c_a), veh/h	3291		1037	1732	1179	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.5	0.0	16.3	5.5	12.7	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.3	0.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.2	1.0	1.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.8	0.0	16.7	5.6	13.0	0.0
LnGrp LOS	B		B	A	B	
Approach Vol, veh/h	803	A		477	170	A
Approach Delay, s/veh	10.8			6.4	13.0	
Approach LOS	B			A	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	7.0	18.5			25.5	12.3
Change Period (Y+Rc), s	4.0	5.5			5.5	4.0
Max Green Setting (Gmax), s	22.0	35.0			35.0	25.0
Max Q Clear Time (g_c+I1), s	2.7	9.2			7.5	5.1
Green Ext Time (p_c), s	0.0	3.6			1.6	0.2

Intersection Summary

HCM 6th Ctrl Delay		9.6	
HCM 6th LOS		A	

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
8: Harper JR HS Access & E Covell Blvd

Existing Conditions
AM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	618	127	165	320	95	8
Future Volume (veh/h)	618	127	165	320	95	8
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1900	1900
Adj Flow Rate, veh/h	824	40	220	427	127	6
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	1516	673	319	1305	185	9
Arrive On Green	0.43	0.43	0.18	0.70	0.11	0.11
Sat Flow, veh/h	3618	1565	1767	1856	1666	79
Grp Volume(v), veh/h	824	40	220	427	134	0
Grp Sat Flow(s),veh/h/ln	1763	1565	1767	1856	1758	0
Q Serve(g_s), s	7.5	0.6	5.0	3.8	3.2	0.0
Cycle Q Clear(g_c), s	7.5	0.6	5.0	3.8	3.2	0.0
Prop In Lane		1.00	1.00		0.95	0.04
Lane Grp Cap(c), veh/h	1516	673	319	1305	196	0
V/C Ratio(X)	0.54	0.06	0.69	0.33	0.69	0.00
Avail Cap(c_a), veh/h	3354	1489	1066	1765	1061	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.1	7.2	16.5	2.5	18.4	0.0
Incr Delay (d2), s/veh	0.4	0.1	5.6	0.2	4.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.2	2.1	0.2	1.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.6	7.2	22.1	2.7	22.6	0.0
LnGrp LOS	A	A	C	A	C	A
Approach Vol, veh/h	864			647	134	
Approach Delay, s/veh	9.5			9.3	22.6	
Approach LOS	A			A	C	
Timer - Assigned Phs	1	2		6	8	
Phs Duration (G+Y+Rc), s	1.8	22.5		34.3	8.8	
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s	26.0	41.0		41.0	26.0	
Max Q Clear Time (g_c+1), s	9.5			5.8	5.2	
Green Ext Time (p_c), s	1.3	9.0		4.0	0.3	

Intersection Summary

HCM 6th Ctrl Delay		10.5			
HCM 6th LOS		B			

Notes

User approved volume balancing among the lanes for turning movement.

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing Conditions
AM Peak Hour

Intersection 9 **Mace Blvd/Alhambra Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	111	110	98.7%	34.5	3.5	C
	Through	470	460	97.9%	11.6	1.9	B
	Right Turn						
	Subtotal	581	570	98.1%	16.1	1.8	B
SB	Left Turn						
	Through	797	790	99.1%	23.9	2.1	C
	Right Turn	32	35	109.4%	9.5	2.2	A
	Subtotal	829	825	99.5%	23.3	2.0	C
EB	Left Turn	15	15	97.3%	44.3	12.1	D
	Through						
	Right Turn	342	341	99.6%	2.9	0.3	A
	Subtotal	357	355	99.5%	4.5	0.5	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,767	1,750	99.0%	17.0	1.3	B

Intersection 10 **Second St/Fermi Place** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	3	3	100.0%	11.5	13.4	B
	Through	1	2	160.0%	2.3	7.3	A
	Right Turn	14	17	122.9%	4.1	1.2	A
	Subtotal	18	22	121.1%	6.3	2.4	A
SB	Left Turn	33	32	96.7%	16.3	4.9	B
	Through						
	Right Turn	14	15	106.4%	5.5	3.3	A
	Subtotal	47	47	99.6%	13.2	3.9	B
EB	Left Turn	21	22	106.7%	15.1	5.4	B
	Through	248	249	100.4%	5.6	1.2	A
	Right Turn	10	9	89.0%	3.6	3.1	A
	Subtotal	279	280	100.5%	6.5	1.4	A
WB	Left Turn	82	86	104.6%	17.4	4.6	B
	Through	525	522	99.4%	4.8	1.5	A
	Right Turn	65	71	108.9%	0.9	0.4	A
	Subtotal	672	679	101.0%	6.0	1.5	A
Total		1,016	1,027	101.1%	6.5	1.4	A

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing Conditions
AM Peak Hour

Intersection 11 Mace Blvd/Second St-Co Rd 32A Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	544	553	101.7%	32.7	14.3	C
	Through	549	540	98.3%	6.2	2.0	A
	Right Turn	24	26	106.7%	2.6	1.5	A
	Subtotal	1,117	1,119	100.2%	19.6	8.5	B
SB	Left Turn	39	37	95.6%	55.1	13.6	E
	Through	1,020	1,006	98.6%	57.6	14.4	E
	Right Turn	72	72	100.6%	24.1	10.3	C
	Subtotal	1,131	1,115	98.6%	55.4	14.2	E
EB	Left Turn	23	21	92.6%	41.8	15.9	D
	Through	18	23	125.0%	38.7	10.0	D
	Right Turn	299	306	102.2%	4.1	0.8	A
	Subtotal	340	349	102.8%	8.7	1.3	A
WB	Left Turn	16	16	101.3%	43.9	12.0	D
	Through	39	40	103.1%	39.8	8.9	D
	Right Turn	12	12	98.3%	18.5	15.3	B
	Subtotal	67	68	101.8%	37.1	6.4	D
Total		2,655	2,652	99.9%	33.9	7.6	C

Intersection 12 Mace Park and Ride Entrance/Co Rd 32A Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	3	3	90.0%	4.1	2.0	A
	Through						
	Right Turn	1	2	210.0%	4.1	1.8	A
	Subtotal	4	5	120.0%	4.2	3.1	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	71	74	104.4%	1.4	0.4	A
	Right Turn	8	9	110.0%	1.0	1.0	A
	Subtotal	79	83	104.9%	1.4	0.3	A
WB	Left Turn	2	2	90.0%	0.6	1.0	A
	Through	64	65	100.9%	0.2	0.2	A
	Right Turn						
	Subtotal	66	66	100.6%	0.3	0.1	A
Total		149	154	103.4%	1.1	0.3	A

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing Conditions
AM Peak Hour

Intersection 13 Mace Blvd/I-80 WB Ramps Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	413	405	98.0%	34.1	5.1	C
	Through	615	610	99.1%	6.7	1.6	A
	Right Turn						
	Subtotal	1,028	1,014	98.6%	17.8	2.2	B
SB	Left Turn						
	Through	1,119	1,112	99.3%	29.2	7.4	C
	Right Turn	216	224	103.5%	13.6	2.3	B
	Subtotal	1,335	1,335	100.0%	26.6	6.5	C
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	304	311	102.4%	30.2	2.2	C
	Through	3	3	96.7%	7.8	10.6	A
	Right Turn	502	505	100.6%	3.5	0.4	A
	Subtotal	809	819	101.3%	14.0	1.4	B
Total		3,172	3,169	99.9%	20.3	3.1	C

Intersection 14 Mace Blvd/Chiles Rd Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	9	9	98.9%	39.4	21.3	D
	Through	589	588	99.8%	33.4	3.0	C
	Right Turn	40	43	108.0%	13.5	3.7	B
	Subtotal	638	640	100.3%	32.2	2.9	C
SB	Left Turn	194	205	105.8%	50.8	15.1	D
	Through	302	307	101.7%	22.8	3.2	C
	Right Turn	227	220	96.8%	10.0	3.3	A
	Subtotal	723	732	101.3%	27.9	6.0	C
EB	Left Turn	447	443	99.0%	70.8	27.2	E
	Through	154	155	100.9%	24.7	4.8	C
	Right Turn	148	149	100.6%	1.9	0.2	A
	Subtotal	749	747	99.7%	47.1	17.1	D
WB	Left Turn	29	27	91.7%	36.5	7.1	D
	Through	90	88	97.9%	29.2	5.1	C
	Right Turn	300	301	100.4%	14.3	1.4	B
	Subtotal	419	416	99.3%	19.0	1.4	B
Total		2,529	2,535	100.2%	33.4	5.5	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing Conditions
AM Peak Hour

Intersection 15 I-80 EB Off-Ramp/Chiles Rd Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	331	326	98.6%	5.3	1.0	A
	Through						
	Right Turn	75	77	102.4%	2.9	0.6	A
	Subtotal	406	403	99.3%	4.8	0.8	A
EB	Left Turn						
	Through	418	421	100.8%	15.9	4.7	B
	Right Turn						
	Subtotal	418	421	100.8%	15.9	4.7	B
WB	Left Turn						
	Through	326	319	97.8%	10.7	1.6	B
	Right Turn						
	Subtotal	326	319	97.8%	10.7	1.6	B
Total		1,150	1,143	99.4%	10.5	1.9	B

Intersection 16 Mace Blvd/Cowell Blvd Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	16	14	88.1%	40.1	13.1	D
	Through	281	289	102.8%	23.2	3.2	C
	Right Turn	61	60	97.7%	16.3	3.8	B
	Subtotal	358	363	101.3%	22.6	3.2	C
SB	Left Turn	98	90	91.8%	31.4	5.7	C
	Through	206	205	99.7%	15.2	3.0	B
	Right Turn	28	30	107.5%	6.5	1.6	A
	Subtotal	332	326	98.0%	19.1	2.4	B
EB	Left Turn	132	125	94.5%	27.1	4.8	C
	Through	96	96	99.5%	16.3	4.4	B
	Right Turn	12	13	105.0%	8.7	5.6	A
	Subtotal	240	233	97.0%	21.8	3.5	C
WB	Left Turn	31	30	96.8%	34.5	8.7	C
	Through	79	78	98.6%	22.2	4.5	C
	Right Turn	123	121	98.3%	13.3	4.4	B
	Subtotal	233	229	98.2%	18.8	4.5	B
Total		1,163	1,150	98.8%	20.6	2.6	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing Conditions
AM Peak Hour

Intersection 17

Mace Blvd/El Marcero Dr

All-way Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	11	12	105.5%	5.1	1.8	A
	Through	238	250	105.0%	9.2	1.0	A
	Right Turn	2	3	140.0%	3.1	3.9	A
	Subtotal	251	264	105.3%	9.0	1.0	A
SB	Left Turn	62	59	95.6%	7.4	1.2	A
	Through	176	174	99.0%	10.2	1.0	B
	Right Turn	11	14	130.9%	5.1	2.2	A
	Subtotal	249	248	99.6%	9.3	0.9	A
EB	Left Turn	23	21	92.6%	4.9	0.5	A
	Through	5	5	100.0%	3.6	2.5	A
	Right Turn	5	6	112.0%	1.9	1.7	A
	Subtotal	33	32	96.7%	4.7	0.4	A
WB	Left Turn	4	3	82.5%	4.0	3.6	A
	Through	11	13	121.8%	6.9	2.7	A
	Right Turn	97	91	94.2%	4.2	1.1	A
	Subtotal	112	108	96.5%	4.6	1.2	A
Total		645	652	101.1%	8.3	0.8	A

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	14	56	46	25	34	18
Future Vol, veh/h	14	56	46	25	34	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	18	18	18	18	18	18
Mvmt Flow	17	69	57	31	42	22

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	198	53	64	0	0
Stage 1	53	-	-	-	-
Stage 2	145	-	-	-	-
Critical Hdwy	6.58	6.38	4.28	-	-
Critical Hdwy Stg 1	5.58	-	-	-	-
Critical Hdwy Stg 2	5.58	-	-	-	-
Follow-up Hdwy	3.662	3.462	2.362	-	-
Pot Cap-1 Maneuver	756	971	1442	-	-
Stage 1	930	-	-	-	-
Stage 2	845	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	726	971	1442	-	-
Mov Cap-2 Maneuver	726	-	-	-	-
Stage 1	893	-	-	-	-
Stage 2	845	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	4.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1442	-	910	-	-
HCM Lane V/C Ratio	0.039	-	0.095	-	-
HCM Control Delay (s)	7.6	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection							
Int Delay, s/veh	5.6						
Movement	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	94	1	4	5	1	66	72
Future Vol, veh/h	94	1	4	5	1	66	72
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	None	-	None	-	-	None
Storage Length	-	-	-	-	-	0	25
Veh in Median Storage, #	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89
Heavy Vehicles, %	15	15	15	15	15	15	15
Mvmt Flow	106	1	4	6	1	74	81

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3	Minor4
Conflicting Flow All	0	0	107	0	0	121
Stage 1	-	-	-	-	0	107
Stage 2	-	-	-	-	0	14
Critical Hdwy	-	-	4.25	-	-	6.55
Critical Hdwy Stg 1	-	-	-	-	-	5.55
Critical Hdwy Stg 2	-	-	-	-	-	5.55
Follow-up Hdwy	-	-	2.335	-	-	3.635
Pot Cap-1 Maneuver	-	-	1406	-	0	844
Stage 1	-	-	-	-	0	886
Stage 2	-	-	-	-	0	976
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1406	-	0	841
Mov Cap-2 Maneuver	-	-	-	-	0	841
Stage 1	-	-	-	-	0	886
Stage 2	-	-	-	-	0	973

Approach	EB	WB	NB
HCM Control Delay, s	0	3.4	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	841	913	-	-	1406	-
HCM Lane V/C Ratio	0.088	0.089	-	-	0.003	-
HCM Control Delay (s)	9.7	9.3	-	-	7.6	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0	-

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	121	6	60	95	5	4
Future Vol, veh/h	121	6	60	95	5	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	30
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	132	7	65	103	5	4

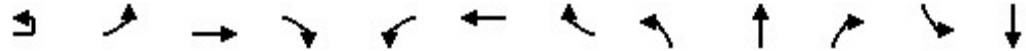
Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	168	0	-	0	388 117
Stage 1	-	-	-	-	117 -
Stage 2	-	-	-	-	271 -
Critical Hdwy	4.16	-	-	-	6.46 6.26
Critical Hdwy Stg 1	-	-	-	-	5.46 -
Critical Hdwy Stg 2	-	-	-	-	5.46 -
Follow-up Hdwy	2.254	-	-	-	3.554 3.354
Pot Cap-1 Maneuver	1386	-	-	-	608 924
Stage 1	-	-	-	-	898 -
Stage 2	-	-	-	-	765 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1386	-	-	-	550 924
Mov Cap-2 Maneuver	-	-	-	-	550 -
Stage 1	-	-	-	-	812 -
Stage 2	-	-	-	-	765 -

Approach	EB	WB	SB
HCM Control Delay, s	7.5	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1386	-	-	-	550	924
HCM Lane V/C Ratio	0.095	-	-	-	0.01	0.005
HCM Control Delay (s)	7.9	0	-	-	11.6	8.9
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.3	-	-	-	0	0

HCM 6th Signalized Intersection Summary
1: Pole Line Rd & E Covell Blvd

Existing Conditions
PM Peak Hour



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	1	321	617	174	97	480	143	180	319	40	188	289
Future Volume (veh/h)	1	321	617	174	97	480	143	180	319	40	188	289
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		1.00	1.00		0.94	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
Work Zone On Approach			No		No			No				No
Adj Sat Flow, veh/h/ln		1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h		338	649	0	102	505	0	189	336	7	198	304
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
Percent Heavy Veh, %		1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h		391	1203		134	692		234	437	347	243	446
Arrive On Green		0.22	0.34	0.00	0.07	0.19	0.00	0.13	0.23	0.23	0.14	0.24
Sat Flow, veh/h		1795	3676	0	1795	3676	0	1795	1885	1497	1795	1885
Grp Volume(v), veh/h		338	649	0	102	505	0	189	336	7	198	304
Grp Sat Flow(s),veh/h/ln		1795	1791	0	1795	1791	0	1795	1885	1497	1795	1885
Q Serve(g_s), s		14.7	11.9	0.0	4.5	10.7	0.0	8.3	13.5	0.3	8.7	11.9
Cycle Q Clear(g_c), s		14.7	11.9	0.0	4.5	10.7	0.0	8.3	13.5	0.3	8.7	11.9
Prop In Lane		1.00		0.00	1.00		0.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h		391	1203		134	692		234	437	347	243	446
V/C Ratio(X)		0.87	0.54		0.76	0.73		0.81	0.77	0.02	0.81	0.68
Avail Cap(c_a), veh/h		776	1724		665	1282		554	535	425	510	535
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)		1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		30.6	21.8	0.0	36.8	30.7	0.0	34.2	29.1	24.0	34.0	28.1
Incr Delay (d2), s/veh		5.8	0.4	0.0	8.4	1.5	0.0	6.5	5.4	0.0	6.5	2.7
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		6.7	4.8	0.0	2.2	4.6	0.0	3.9	6.6	0.1	4.1	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		36.4	22.2	0.0	45.2	32.2	0.0	40.7	34.6	24.1	40.5	30.9
LnGrp LOS		D	C		D	C		D	C	C	D	C
Approach Vol, veh/h			987	A		607	A		532			688
Approach Delay, s/veh			27.1			34.4			36.6			32.8
Approach LOS			C			C			D			C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.6	20.7	14.6	24.2	10.1	32.2	15.0	23.8				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	35.0	29.0	25.0	23.0	30.0	39.0	23.0	23.0				
Max Q Clear Time (g_c+I1), s	16.7	12.7	10.3	13.9	6.5	13.9	10.7	15.5				
Green Ext Time (p_c), s	0.9	2.9	0.4	1.7	0.2	4.5	0.4	1.2				

Intersection Summary

HCM 6th Ctrl Delay	31.8
HCM 6th LOS	C

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved ignoring U-Turning movement.
- Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 1: Pole Line Rd & E Covell Blvd

Existing Conditions
 PM Peak Hour

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	223
Future Volume (veh/h)	223
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1885
Adj Flow Rate, veh/h	186
Peak Hour Factor	0.95
Percent Heavy Veh, %	1
Cap, veh/h	378
Arrive On Green	0.24
Sat Flow, veh/h	1596
Grp Volume(v), veh/h	186
Grp Sat Flow(s),veh/h/ln	1596
Q Serve(g_s), s	8.2
Cycle Q Clear(g_c), s	8.2
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	378
V/C Ratio(X)	0.49
Avail Cap(c_a), veh/h	453
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	26.7
Incr Delay (d2), s/veh	1.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	3.1
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	27.7
LnGrp LOS	C
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

HCM 6th Signalized Intersection Summary
2: Birch Ln & E Covell Blvd

Existing Conditions
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↔	↑↑		↔		↔		↑	
Traffic Volume (veh/h)	0	815	30	37	680	0	40	0	11	0	3	0
Future Volume (veh/h)	0	815	30	37	680	0	40	0	11	0	3	0
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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	0	1870	0	1870	0
Adj Flow Rate, veh/h	0	867	32	39	723	0	43	0	12	0	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2	2	2	0	2	0	2	0	2	0
Cap, veh/h	0	1221	45	74	1667	0	113	0	0	0	437	0
Arrive On Green	0.00	0.35	0.35	0.04	0.47	0.00	0.06	0.00	0.00	0.00	0.23	0.00
Sat Flow, veh/h	0	3585	129	1781	3647	0	1781	43		0	1870	0
Grp Volume(v), veh/h	0	441	458	39	723	0	43	25.2		0	3	0
Grp Sat Flow(s),veh/h/ln	0	1777	1844	1781	1777	0	1781	C		0	1870	0
Q Serve(g_s), s	0.0	11.0	11.0	1.1	7.0	0.0	1.2			0.0	0.1	0.0
Cycle Q Clear(g_c), s	0.0	11.0	11.0	1.1	7.0	0.0	1.2			0.0	0.1	0.0
Prop In Lane	0.00		0.07	1.00		0.00	1.00			0.00		0.00
Lane Grp Cap(c), veh/h	0	621	645	74	1667	0	113			0	437	0
V/C Ratio(X)	0.00	0.71	0.71	0.53	0.43	0.00	0.38			0.00	0.01	0.00
Avail Cap(c_a), veh/h	0	969	1005	555	1799	0	902			0	765	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	1.00	1.00	0.00	1.00			0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	14.4	14.4	24.1	9.1	0.0	23.1			0.0	15.1	0.0
Incr Delay (d2), s/veh	0.0	1.5	1.5	5.7	0.2	0.0	2.1			0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr0.0	0.0	3.9	4.0	0.5	2.1	0.0	0.5			0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.0	15.9	29.8	9.3	0.0	25.2			0.0	15.1	0.0
LnGrp LOS	A	B	B	C	A	A	C			A	B	A
Approach Vol, veh/h		899			762						3	
Approach Delay, s/veh		15.9			10.3						15.1	
Approach LOS		B			B						B	
Timer - Assigned Phs	1	2	3	4		6						
Phs Duration (G+Y+Rc), s6.1	22.0	7.3	16.0		28.1							
Change Period (Y+Rc), s 4.0	4.0	4.0	4.0	4.0	4.0							
Max Green Setting (Gmax), s 16.0	28.0	26.0	21.0		26.0							
Max Q Clear Time (g_c+1), s 13.5	13.0	3.2	2.1		9.0							
Green Ext Time (p_c), s 0.0	4.9	0.1	0.0		4.5							

Intersection Summary

HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

HCM 6th TWSC
3: Baywood Ln & E Covell Blvd

Existing Conditions
PM Peak Hour

Intersection													
Int Delay, s/veh	1												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↕		↕	↕			↕	↕		↕	
Traffic Vol, veh/h	8	12	779	39	12	688	3	21	1	2	5	0	4
Future Vol, veh/h	8	12	779	39	12	688	3	21	1	2	5	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	Free	-	-	None	-	-	Stop
Storage Length	-	100	-	-	100	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	13	829	41	13	732	3	22	1	2	5	0	4

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	732	732	0	0	870	0	0	1286	1652	435	1217	1672	366
Stage 1	-	-	-	-	-	-	-	894	894	-	758	758	-
Stage 2	-	-	-	-	-	-	-	392	758	-	459	914	-
Critical Hdwy	6.44	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	493	868	-	-	770	-	0	122	98	569	137	95	631
Stage 1	-	-	-	-	-	-	0	302	358	-	365	413	-
Stage 2	-	-	-	-	-	-	0	604	413	-	551	350	-
Platoon blocked, %			-	-	-								
Mov Cap-1 Maneuver	663	663	-	-	770	-	-	117	93	569	130	90	631
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	117	93	-	130	90	-
Stage 1	-	-	-	-	-	-	-	292	347	-	353	406	-
Stage 2	-	-	-	-	-	-	-	590	406	-	530	339	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	41	21
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	116	569	663	-	-	770	-	234
HCM Lane V/C Ratio	0.202	0.004	0.032	-	-	0.017	-	0.041
HCM Control Delay (s)	43.7	11.4	10.6	-	-	9.8	-	21
HCM Lane LOS	E	B	B	-	-	A	-	C
HCM 95th %tile Q(veh)	0.7	0	0.1	-	-	0.1	-	0.1

Intersection							
Int Delay, s/veh	1.2						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↔	↑↑	↔	↔
Traffic Vol, veh/h	733	53	1	29	663	40	23
Future Vol, veh/h	733	53	1	29	663	40	23
Conflicting Peds, #/hr	0	1	1	0	0	0	4
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	100	-	0	25
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	780	56	1	31	705	43	24

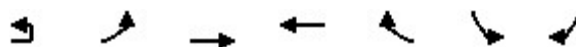
Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	836
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.44	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	2.52	2.22
Pot Cap-1 Maneuver	-	423	793
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	768	768
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	26.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	164	577	-	-	768	-
HCM Lane V/C Ratio	0.259	0.042	-	-	0.042	-
HCM Control Delay (s)	34.5	11.5	-	-	9.9	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	1	0.1	-	-	0.1	-

HCM 6th Signalized Intersection Summary
5: E Covell Blvd & Wright Blvd

Existing Conditions
PM Peak Hour



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↵	↕↕	↕↕		↵	↵
Traffic Volume (veh/h)	1	85	671	633	133	116	59
Future Volume (veh/h)	1	85	671	633	133	116	59
Initial Q (Qb), veh		0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00			1.00	1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No	No		No	
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		89	699	659	0	121	0
Peak Hour Factor		0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %		2	2	2	2	2	2
Cap, veh/h		115	2161	1548		171	
Arrive On Green		0.06	0.61	0.44	0.00	0.10	0.00
Sat Flow, veh/h		1781	3647	3741	0	1781	1585
Grp Volume(v), veh/h		89	699	659	0	121	0
Grp Sat Flow(s),veh/h/ln		1781	1777	1777	0	1781	1585
Q Serve(g_s), s		1.8	3.6	4.8	0.0	2.4	0.0
Cycle Q Clear(g_c), s		1.8	3.6	4.8	0.0	2.4	0.0
Prop In Lane		1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h		115	2161	1548		171	
V/C Ratio(X)		0.77	0.32	0.43		0.71	
Avail Cap(c_a), veh/h		623	3826	3826		959	
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh		17.1	3.6	7.3	0.0	16.3	0.0
Incr Delay (d2), s/veh		10.4	0.2	0.4	0.0	5.3	0.0
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		0.9	0.5	1.1	0.0	1.1	0.0
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh		27.5	3.7	7.7	0.0	21.6	0.0
LnGrp LOS		C	A	A		C	
Approach Vol, veh/h			788	659	A	121	A
Approach Delay, s/veh			6.4	7.7		21.6	
Approach LOS			A	A		C	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		28.6		8.6	6.4	22.2	
Change Period (Y+Rc), s		6.0		5.0	4.0	6.0	
Max Green Setting (Gmax), s		40.0		20.0	13.0	40.0	
Max Q Clear Time (g_c+I1), s		5.6		4.4	3.8	6.8	
Green Ext Time (p_c), s		10.1		0.2	0.1	9.0	

Intersection Summary

HCM 6th Ctrl Delay	8.1
HCM 6th LOS	A

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑	↑↑		↑				↔	
Traffic Vol, veh/h	0	743	44	39	738	0	27	0	16	0	0	1
Future Vol, veh/h	0	743	44	39	738	0	27	0	16	0	0	1
Conflicting Peds, #/hr	0	0	4	0	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	85	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	782	46	41	777	0	28	0	17	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	832	0	0	1280	-	418	1254	1695	393
Stage 1	-	-	-	-	-	-	809	-	-	863	863	-
Stage 2	-	-	-	-	-	-	471	-	-	391	832	-
Critical Hdwy	-	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	-	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	0	-	-	796	-	-	123	0	584	128	92	606
Stage 1	0	-	-	-	-	-	340	0	-	316	370	-
Stage 2	0	-	-	-	-	-	542	0	-	605	382	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	793	-	-	118	-	582	119	87	604
Mov Cap-2 Maneuver	-	-	-	-	-	-	118	-	-	119	87	-
Stage 1	-	-	-	-	-	-	340	-	-	316	350	-
Stage 2	-	-	-	-	-	-	513	-	-	587	381	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.5			34.2			11		
HCM LOS							D			B		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	168	-	-	793	-	-	604
HCM Lane V/C Ratio	0.269	-	-	0.052	-	-	0.002
HCM Control Delay (s)	34.2	-	-	9.8	-	-	11
HCM Lane LOS	D	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1	-	-	0.2	-	-	0

HCM 6th Signalized Intersection Summary
7: Alhambra Blvd & E Covell Blvd

Existing Conditions
PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	614	145	13	644	133	11
Future Volume (veh/h)	614	145	13	644	133	11
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900
Adj Flow Rate, veh/h	646	0	14	678	140	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	1141		65	901	394	
Arrive On Green	0.32	0.00	0.04	0.48	0.22	0.00
Sat Flow, veh/h	3647	1585	1781	1870	1769	0
Grp Volume(v), veh/h	646	0	14	678	141	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1870	1782	0
Q Serve(g_s), s	4.9	0.0	0.2	9.5	2.1	0.0
Cycle Q Clear(g_c), s	4.9	0.0	0.2	9.5	2.1	0.0
Prop In Lane		1.00	1.00		0.99	0.00
Lane Grp Cap(c), veh/h	1141		65	901	397	
V/C Ratio(X)	0.57		0.22	0.75	0.36	
Avail Cap(c_a), veh/h	3868		1219	2036	1385	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.1	0.0	15.0	6.8	10.5	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.6	0.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.1	1.5	0.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.2	0.0	15.7	7.3	10.8	0.0
LnGrp LOS	A		B	A	B	
Approach Vol, veh/h	646	A		692	141	A
Approach Delay, s/veh	9.2			7.4	10.8	
Approach LOS	A			A	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.2	15.8			21.0	11.2
Change Period (Y+Rc), s	4.0	5.5			5.5	4.0
Max Green Setting (Gmax), s	22.0	35.0			35.0	25.0
Max Q Clear Time (g_c+I1), s	2.2	6.9			11.5	4.1
Green Ext Time (p_c), s	0.0	2.8			2.8	0.2

Intersection Summary

HCM 6th Ctrl Delay	8.5
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
8: Harper JR HS Access & E Covell Blvd

Existing Conditions
PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	606	19	22	620	37	8
Future Volume (veh/h)	606	19	22	620	37	8
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	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	1885	1885	1885	1885	1900	1900
Adj Flow Rate, veh/h	652	12	24	667	40	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	0	0
Cap, veh/h	1624	709	66	1207	103	0
Arrive On Green	0.45	0.45	0.04	0.64	0.06	0.00
Sat Flow, veh/h	3676	1564	1795	1885	1754	0
Grp Volume(v), veh/h	652	12	24	667	41	0
Grp Sat Flow(s),veh/h/ln	1791	1564	1795	1885	1797	0
Q Serve(g_s), s	3.2	0.1	0.3	5.2	0.6	0.0
Cycle Q Clear(g_c), s	3.2	0.1	0.3	5.2	0.6	0.0
Prop In Lane		1.00	1.00		0.98	0.00
Lane Grp Cap(c), veh/h	1624	709	66	1207	106	0
V/C Ratio(X)	0.40	0.02	0.36	0.55	0.39	0.00
Avail Cap(c_a), veh/h	5519	2410	1754	2905	1756	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	4.9	4.0	12.5	2.7	12.1	0.0
Incr Delay (d2), s/veh	0.2	0.0	7.1	0.6	2.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr	0.3	0.0	0.2	0.2	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.1	4.0	19.6	3.2	14.4	0.0
LnGrp LOS	A	A	B	A	B	A
Approach Vol, veh/h	664			691	41	
Approach Delay, s/veh	5.1			3.8	14.4	
Approach LOS	A			A	B	
Timer - Assigned Phs	1	2		6	8	
Phs Duration (G+Y+Rc), s	5.0	16.1		21.0	5.6	
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s	26.0	41.0		41.0	26.0	
Max Q Clear Time (g_c+1), s	12.3	5.2		7.2	2.6	
Green Ext Time (p_c), s	0.1	6.8		7.2	0.1	

Intersection Summary

HCM 6th Ctrl Delay		4.7				
HCM 6th LOS		A				

Notes

User approved volume balancing among the lanes for turning movement.

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing Conditions
PM Peak Hour

Intersection 9 Mace Blvd/Alhambra Dr Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	252	252	100.1%	43.1	9.4	D
	Through	609	593	97.4%	12.9	2.2	B
	Right Turn						
	Subtotal	861	846	98.2%	22.3	3.6	C
SB	Left Turn						
	Through	651	637	97.9%	21.1	2.5	C
	Right Turn	23	23	100.0%	7.0	2.9	A
	Subtotal	674	660	98.0%	20.6	2.4	C
EB	Left Turn	12	12	100.8%	32.9	17.7	C
	Through						
	Right Turn	199	201	100.9%	2.2	0.2	A
	Subtotal	211	213	100.9%	4.2	1.7	A
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		1,746	1,719	98.4%	19.5	2.3	B

Intersection 11 Mace Blvd/ 2nd Ave-Co Rd 32A Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	367	350	95.3%	23.8	4.3	C
	Through	716	699	97.6%	14.8	2.7	B
	Right Turn	32	33	101.9%	9.9	6.0	A
	Subtotal	1,115	1,081	96.9%	17.6	2.8	B
SB	Left Turn	98	95	96.9%	53.0	13.7	D
	Through	660	652	98.8%	47.4	30.3	D
	Right Turn	93	91	98.0%	13.4	15.6	B
	Subtotal	851	838	98.5%	44.5	27.2	D
EB	Left Turn	124	125	100.7%	34.8	4.6	C
	Through	113	113	100.3%	34.4	6.3	C
	Right Turn	632	628	99.4%	55.9	62.0	E
	Subtotal	869	867	99.7%	49.6	44.1	D
WB	Left Turn	19	19	97.9%	46.9	14.2	D
	Through	22	23	105.9%	40.1	10.1	D
	Right Turn	41	39	95.9%	12.8	8.9	B
	Subtotal	82	81	99.0%	29.0	8.1	C
Total		2,917	2,867	98.3%	35.7	20.1	D

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing Conditions
PM Peak Hour

Intersection 10 Second St/Fermi PI-Target Dwy Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	14	16	116.4%	30.5	9.4	C
	Through	4	4	97.5%	11.8	18.3	B
	Right Turn	33	37	113.0%	9.0	3.4	A
	Subtotal	51	58	112.7%	16.0	5.6	B
SB	Left Turn	172	162	94.3%	25.7	4.5	C
	Through						
	Right Turn	75	76	101.6%	7.3	1.5	A
	Subtotal	247	238	96.5%	19.6	3.3	B
EB	Left Turn	88	88	99.4%	28.9	5.3	C
	Through	610	627	102.7%	13.6	2.9	B
	Right Turn	7	6	88.6%	6.0	6.7	A
	Subtotal	705	720	102.2%	15.5	3.0	B
WB	Left Turn	56	55	98.8%	32.9	4.4	C
	Through	270	258	95.6%	14.7	3.0	B
	Right Turn	120	116	96.8%	3.0	0.5	A
	Subtotal	446	430	96.3%	13.9	2.1	B
Total		1,449	1,446	99.8%	15.7	2.3	B

Intersection 12 Mace Park and Ride Entrance/Co Rd 32A Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	22	20	90.0%	6.7	1.8	A
	Through						
	Right Turn	12	12	97.5%	3.9	1.8	A
	Subtotal	34	32	92.6%	5.5	1.3	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	225	223	99.1%	2.3	0.3	A
	Right Turn	14	15	104.3%	1.5	0.6	A
	Subtotal	239	238	99.4%	2.2	0.3	A
WB	Left Turn	2	2	75.0%	0.6	1.0	A
	Through	60	59	97.8%	0.3	0.3	A
	Right Turn						
	Subtotal	62	60	97.1%	0.3	0.4	A
Total		335	329	98.3%	2.2	0.3	A

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing Conditions
PM Peak Hour

Intersection 13 Mace Blvd/I-80 WB Ramps Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	253	232	91.7%	38.5	7.3	D
	Through	446	416	93.2%	7.3	3.1	A
	Right Turn						
	Subtotal	699	648	92.6%	18.5	2.6	B
SB	Left Turn						
	Through	1,092	1,042	95.4%	137.1	78.3	F
	Right Turn	219	209	95.3%	77.0	57.4	E
	Subtotal	1,311	1,251	95.4%	126.9	74.6	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	387	379	97.9%	33.0	7.8	C
	Through						
	Right Turn	669	665	99.4%	4.1	0.6	A
	Subtotal	1,056	1,044	98.8%	14.9	3.1	B
Total		3,066	2,942	96.0%	64.6	33.7	E

Intersection 14 Mace Blvd/Chiles Rd Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	24	20	82.9%	123.1	31.9	F
	Through	518	445	85.9%	148.4	38.9	F
	Right Turn	162	142	87.6%	127.8	34.9	F
	Subtotal	704	607	86.2%	142.7	37.3	F
SB	Left Turn	259	246	94.8%	90.4	27.7	F
	Through	430	409	95.2%	44.7	9.2	D
	Right Turn	289	276	95.3%	31.6	9.6	C
	Subtotal	978	930	95.1%	52.8	12.9	D
EB	Left Turn	339	303	89.3%	166.5	17.3	F
	Through	275	252	91.6%	30.4	4.1	C
	Right Turn	85	82	96.9%	2.4	0.3	A
	Subtotal	699	637	91.1%	92.4	8.9	F
WB	Left Turn	46	44	96.1%	43.1	11.2	D
	Through	56	56	99.1%	34.6	15.2	C
	Right Turn	263	259	98.5%	41.2	29.2	D
	Subtotal	365	359	98.3%	41.0	25.1	D
Total		2,746	2,533	92.2%	79.8	10.2	E

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing Conditions
PM Peak Hour

Intersection 15 Chiles Blvd/I-80 EB Ramps Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	175	176	100.5%	27.6	12.4	C
	Through						
	Right Turn	29	31	106.2%	3.4	1.7	A
	Subtotal	204	207	101.3%	24.5	10.5	C
EB	Left Turn						
	Through	524	468	89.2%	192.2	148.9	F
	Right Turn						
	Subtotal	524	468	89.2%	192.2	148.9	F
WB	Left Turn						
	Through	369	350	94.8%	8.9	1.6	A
	Right Turn						
	Subtotal	369	350	94.8%	8.9	1.6	A
Total		1,097	1,024	93.3%	88.6	61.9	F

Intersection 16 Mace Blvd/Cowell Blvd Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	15	14	90.7%	266.0	57.8	F
	Through	358	292	81.4%	332.1	123.8	F
	Right Turn	27	22	80.4%	330.3	110.3	F
	Subtotal	400	327	81.7%	329.2	119.0	F
SB	Left Turn	142	137	96.7%	39.0	3.6	D
	Through	225	215	95.3%	17.9	5.5	B
	Right Turn	67	61	91.3%	7.1	2.6	A
	Subtotal	434	413	95.2%	22.7	2.6	C
EB	Left Turn	119	108	91.1%	80.8	43.9	F
	Through	102	102	100.1%	39.9	27.1	D
	Right Turn	24	21	86.3%	29.4	23.6	C
	Subtotal	245	231	94.4%	58.7	32.0	E
WB	Left Turn	21	19	92.4%	61.4	37.7	E
	Through	47	43	91.9%	55.0	39.9	E
	Right Turn	98	95	96.4%	57.5	34.9	E
	Subtotal	166	157	94.6%	57.3	35.5	E
Total		1,245	1,128	90.6%	103.2	16.3	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing Conditions
PM Peak Hour

Intersection 17

Mace Blvd/El Marcero

All-way Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	14	12	86.4%	160.7	173.7	F
	Through	329	289	87.8%	275.0	121.0	F
	Right Turn	9	7	78.9%	195.1	162.3	F
	Subtotal	352	308	87.5%	273.4	120.1	F
SB	Left Turn	99	92	92.6%	8.3	1.0	A
	Through	162	154	94.8%	10.5	1.0	B
	Right Turn	9	10	107.8%	8.8	4.7	A
	Subtotal	270	255	94.4%	9.6	0.9	A
EB	Left Turn	4	3	82.5%	31.7	35.9	D
	Through	7	7	95.7%	4.5	1.7	A
	Right Turn	10	13	132.0%	5.1	5.9	A
	Subtotal	21	23	110.5%	11.2	11.4	B
WB	Left Turn	7	4	61.4%	56.7	60.7	F
	Through	14	14	97.1%	58.8	62.4	F
	Right Turn	67	63	93.3%	106.2	67.6	F
	Subtotal	88	80	91.4%	94.6	62.1	F
Total		731	667	91.2%	113.1	32.8	F

Intersection						
Int Delay, s/veh	6.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	5	218	43	56	44	9
Future Vol, veh/h	5	218	43	56	44	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	266	52	68	54	11

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	232	60	65	0	0
Stage 1	60	-	-	-	-
Stage 2	172	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	756	1005	1537	-	-
Stage 1	963	-	-	-	-
Stage 2	858	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	730	1005	1537	-	-
Mov Cap-2 Maneuver	730	-	-	-	-
Stage 1	929	-	-	-	-
Stage 2	858	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	3.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1537	-	997	-	-
HCM Lane V/C Ratio	0.034	-	0.273	-	-
HCM Control Delay (s)	7.4	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.1	-	-

Intersection						
Int Delay, s/veh	4.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	265	2	3	6	88	79
Future Vol, veh/h	265	2	3	6	88	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	25
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	340	3	4	8	113	101

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	343	0	358
Stage 1	-	-	-	-	342
Stage 2	-	-	-	-	16
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1216	-	640
Stage 1	-	-	-	-	719
Stage 2	-	-	-	-	1007
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1216	-	638
Mov Cap-2 Maneuver	-	-	-	-	638
Stage 1	-	-	-	-	719
Stage 2	-	-	-	-	1004

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	638	701	-	-	1216	-
HCM Lane V/C Ratio	0.177	0.144	-	-	0.003	-
HCM Control Delay (s)	11.9	11	-	-	8	0
HCM Lane LOS	B	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	0.5	-	-	0	-

Intersection						
Int Delay, s/veh	4.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	320	3	73	268	0	2
Future Vol, veh/h	320	3	73	268	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	30
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	348	3	79	291	0	2

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	370	0	-	0	924 225
Stage 1	-	-	-	-	225 -
Stage 2	-	-	-	-	699 -
Critical Hdwy	4.13	-	-	-	6.43 6.23
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	2.227	-	-	-	3.527 3.327
Pot Cap-1 Maneuver	1183	-	-	-	298 812
Stage 1	-	-	-	-	810 -
Stage 2	-	-	-	-	491 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1183	-	-	-	210 812
Mov Cap-2 Maneuver	-	-	-	-	210 -
Stage 1	-	-	-	-	571 -
Stage 2	-	-	-	-	491 -

Approach	EB	WB	SB
HCM Control Delay, s	9.2	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1183	-	-	-	-	812
HCM Lane V/C Ratio	0.294	-	-	-	-	0.003
HCM Control Delay (s)	9.3	0	-	-	0	9.4
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	-	-	0

HCM 6th Signalized Intersection Summary
1: Pole Line Rd & E Covell Blvd

Existing + Project
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	153	560	132	91	480	111	114	192	40	2	245	358
Future Volume (veh/h)	153	560	132	91	480	111	114	192	40	2	245	358
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.96		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
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
Adj Flow Rate, veh/h	168	615	0	100	527	0	125	211	4		269	393
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91		0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2		2	2
Cap, veh/h	220	978		133	805		166	331	269		330	503
Arrive On Green	0.12	0.28	0.00	0.07	0.23	0.00	0.09	0.18	0.18		0.19	0.27
Sat Flow, veh/h	1781	3647	0	1781	3647	0	1781	1870	1522		1781	1870
Grp Volume(v), veh/h	168	615	0	100	527	0	125	211	4		269	393
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	0	1781	1870	1522		1781	1870
Q Serve(g_s), s	5.7	9.5	0.0	3.4	8.4	0.0	4.3	6.5	0.1		9.1	12.2
Cycle Q Clear(g_c), s	5.7	9.5	0.0	3.4	8.4	0.0	4.3	6.5	0.1		9.1	12.2
Prop In Lane	1.00		0.00	1.00		0.00	1.00		1.00		1.00	
Lane Grp Cap(c), veh/h	220	978		133	805		166	331	269		330	503
V/C Ratio(X)	0.76	0.63		0.75	0.65		0.75	0.64	0.01		0.82	0.78
Avail Cap(c_a), veh/h	997	2216		854	1648		712	688	560		655	688
HCM Platoon Ratio	1.00	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	0.00	1.00	1.00	0.00	1.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	26.5	19.9	0.0	28.4	22.0	0.0	27.7	23.9	21.2		24.5	21.1
Incr Delay (d2), s/veh	5.5	0.7	0.0	8.2	0.9	0.0	6.8	2.0	0.0		4.9	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	3.6	0.0	1.7	3.3	0.0	2.0	2.9	0.0		4.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	20.5	0.0	36.6	22.9	0.0	34.5	25.9	21.3		29.4	25.2
LnGrp LOS	C	C		D	C		C	C	C		C	C
Approach Vol, veh/h		783	A		627	A		340				702
Approach Delay, s/veh		23.0			25.1			29.0				26.3
Approach LOS		C			C			C				C
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.7	19.2	9.8	21.8	8.7	22.2	15.6	16.1				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	35.0	29.0	25.0	23.0	30.0	39.0	23.0	23.0				
Max Q Clear Time (g_c+I1), s	7.7	10.4	6.3	14.2	5.4	11.5	11.1	8.5				
Green Ext Time (p_c), s	0.5	3.2	0.3	1.7	0.2	4.3	0.6	1.0				

Intersection Summary

HCM 6th Ctrl Delay	25.3
HCM 6th LOS	C

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved ignoring U-Turning movement.
- Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 1: Pole Line Rd & E Covell Blvd



















Existing + Project
 AM Peak Hour

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	225
Future Volume (veh/h)	225
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	40
Peak Hour Factor	0.91
Percent Heavy Veh, %	2
Cap, veh/h	427
Arrive On Green	0.27
Sat Flow, veh/h	1585
Grp Volume(v), veh/h	40
Grp Sat Flow(s),veh/h/ln	1585
Q Serve(g_s), s	1.2
Cycle Q Clear(g_c), s	1.2
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	427
V/C Ratio(X)	0.09
Avail Cap(c_a), veh/h	583
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	17.1
Incr Delay (d2), s/veh	0.1
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.4
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	17.2
LnGrp LOS	B
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

HCM 6th Signalized Intersection Summary

2: Birch Ln & E Covell Blvd

Existing + Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	788	57	65	613	0	69	0	27	0	69	0
Future Volume (veh/h)	0	788	57	65	613	0	69	0	27	0	69	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	0	1870	0	1870	0
Adj Flow Rate, veh/h	0	857	62	71	666	0	75	0	29	0	75	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0	2	0	2	0	2	0
Cap, veh/h	0	1226	89	113	1815	0	151	0	0	0	294	0
Arrive On Green	0.00	0.36	0.36	0.06	0.51	0.00	0.08	0.00	0.00	0.00	0.16	0.00
Sat Flow, veh/h	0	3454	243	1781	3647	0	1781	75		0	1870	0
Grp Volume(v), veh/h	0	453	466	71	666	0	75	23.7		0	75	0
Grp Sat Flow(s),veh/h/ln	0	1777	1827	1781	1777	0	1781	C		0	1870	0
Q Serve(g_s), s	0.0	10.6	10.6	1.9	5.5	0.0	2.0			0.0	1.7	0.0
Cycle Q Clear(g_c), s	0.0	10.6	10.6	1.9	5.5	0.0	2.0			0.0	1.7	0.0
Prop In Lane	0.00		0.13	1.00		0.00	1.00			0.00		0.00
Lane Grp Cap(c), veh/h	0	648	666	113	1815	0	151			0	294	0
V/C Ratio(X)	0.00	0.70	0.70	0.63	0.37	0.00	0.50			0.00	0.25	0.00
Avail Cap(c_a), veh/h	0	1025	1054	587	1904	0	955			0	810	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	1.00	1.00	0.00	1.00			0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	13.1	13.1	22.2	7.1	0.0	21.2			0.0	17.9	0.0
Incr Delay (d2), s/veh	0.0	1.4	1.3	5.6	0.1	0.0	2.5			0.0	0.5	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
%ile BackOfQ(50%),veh/ln	0.0	3.6	3.7	0.9	1.5	0.0	0.8			0.0	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	14.5	14.5	27.8	7.3	0.0	23.7			0.0	18.4	0.0
LnGrp LOS	A	B	B	C	A	A	C			A	B	A
Approach Vol, veh/h		919			737						75	
Approach Delay, s/veh		14.5			9.2						18.4	
Approach LOS		B			A						B	
Timer - Assigned Phs	1	2	3	4	6							
Phs Duration (G+Y+Rc), s	7.1	21.7	8.1	11.6	28.8							
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0							
Max Green Setting (Gmax), s	16.0	28.0	26.0	21.0	26.0							
Max Q Clear Time (g_c+I1), s	3.9	12.6	4.0	3.7	7.5							
Green Ext Time (p_c), s	0.1	5.1	0.2	0.3	4.2							
Intersection Summary												
HCM 6th Ctrl Delay				12.9								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗			↖	↖		↖↗	
Traffic Vol, veh/h	12	796	20	32	617	3	29	0	27	8	0	24
Future Vol, veh/h	12	796	20	32	617	3	29	0	27	8	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	Stop
Storage Length	100	-	-	100	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	865	22	35	671	3	32	0	29	9	0	26

Major/Minor	Major1		Major2		Minor1			Minor2				
Conflicting Flow All	671	0	0	887	0	0	1308	1643	444	1200	1654	336
Stage 1	-	-	-	-	-	-	902	902	-	741	741	-
Stage 2	-	-	-	-	-	-	406	741	-	459	913	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	915	-	-	759	-	0	117	99	561	141	97	660
Stage 1	-	-	-	-	-	0	299	355	-	374	421	-
Stage 2	-	-	-	-	-	0	593	421	-	551	350	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	915	-	-	759	-	-	107	93	561	127	91	660
Mov Cap-2 Maneuver	-	-	-	-	-	-	107	93	-	127	91	-
Stage 1	-	-	-	-	-	-	295	350	-	369	402	-
Stage 2	-	-	-	-	-	-	543	402	-	515	345	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.1		0.5		32.7		12.6	
HCM LOS					D		B	

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	107	561	915	-	-	759	-	508
HCM Lane V/C Ratio	0.295	0.052	0.014	-	-	0.046	-	0.068
HCM Control Delay (s)	52.1	11.8	9	-	-	10	-	12.6
HCM Lane LOS	F	B	A	-	-	A	-	B
HCM 95th %tile Q(veh)	1.1	0.2	0	-	-	0.1	-	0.2

Intersection

Int Delay, s/veh 1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	↖
Traffic Vol, veh/h	806	25	17	611	41	25
Future Vol, veh/h	806	25	17	611	41	25
Conflicting Peds, #/hr	0	1	2	0	0	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	25
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	876	27	18	664	45	27

Major/Minor

	Major1	Major2	Minor1		
Conflicting Flow All	0	0	905	0	1260
Stage 1	-	-	-	-	892
Stage 2	-	-	-	-	368
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	747	-	162
Stage 1	-	-	-	-	361
Stage 2	-	-	-	-	670
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	746	-	158
Mov Cap-2 Maneuver	-	-	-	-	158
Stage 1	-	-	-	-	360
Stage 2	-	-	-	-	654

Approach

	EB	WB	NB
HCM Control Delay, s	0	0.3	27.2
HCM LOS			D

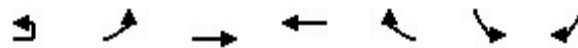
Minor Lane/Major Mvmt

	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	158	546	-	-	746	-
HCM Lane V/C Ratio	0.282	0.05	-	-	0.025	-
HCM Control Delay (s)	36.5	11.9	-	-	9.9	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	1.1	0.2	-	-	0.1	-

HCM 6th Signalized Intersection Summary

5: E Covell Blvd & Wright Blvd

Existing + Project
AM Peak Hour



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↵	↕↕	↕↕		↵	↵
Traffic Volume (veh/h)	1	40	790	496	72	181	131
Future Volume (veh/h)	1	40	790	496	72	181	131
Initial Q (Qb), veh		0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00			1.00	1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No	No		No	
Adj Sat Flow, veh/h/ln		1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h		46	908	570	0	208	0
Peak Hour Factor		0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %		3	3	3	3	3	3
Cap, veh/h		71	1962	1453		278	
Arrive On Green		0.04	0.56	0.41	0.00	0.16	0.00
Sat Flow, veh/h		1767	3618	3711	0	1767	1572
Grp Volume(v), veh/h		46	908	570	0	208	0
Grp Sat Flow(s),veh/h/ln		1767	1763	1763	0	1767	1572
Q Serve(g_s), s		1.0	5.9	4.4	0.0	4.3	0.0
Cycle Q Clear(g_c), s		1.0	5.9	4.4	0.0	4.3	0.0
Prop In Lane		1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h		71	1962	1453		278	
V/C Ratio(X)		0.64	0.46	0.39		0.75	
Avail Cap(c_a), veh/h		597	3665	3665		918	
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh		18.2	5.1	7.9	0.0	15.5	0.0
Incr Delay (d2), s/veh		9.3	0.4	0.4	0.0	4.0	0.0
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		0.5	1.1	1.1	0.0	1.8	0.0
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh		27.5	5.5	8.3	0.0	19.5	0.0
LnGrp LOS		C	A	A		B	
Approach Vol, veh/h			954	570	A	208	A
Approach Delay, s/veh			6.5	8.3		19.5	
Approach LOS			A	A		B	
Timer - Assigned Phs		2		4	5		6
Phs Duration (G+Y+Rc), s		27.4		11.1	5.6		21.9
Change Period (Y+Rc), s		6.0		5.0	4.0		6.0
Max Green Setting (Gmax), s		40.0		20.0	13.0		40.0
Max Q Clear Time (g_c+I1), s		7.9		6.3	3.0		6.4
Green Ext Time (p_c), s		13.5		0.5	0.0		7.7

Intersection Summary

HCM 6th Ctrl Delay	8.7
HCM 6th LOS	A

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑	↑↑			↔			↔	
Traffic Vol, veh/h	0	945	26	18	541	0	25	0	58	0	0	2
Future Vol, veh/h	0	945	26	18	541	0	25	0	58	0	0	2
Conflicting Peds, #/hr	0	0	7	0	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	85	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	1050	29	20	601	0	28	0	64	0	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	1086	0	0	1413	1720	547	1173	1734	308
Stage 1	-	-	-	-	-	-	1072	1072	-	648	648	-
Stage 2	-	-	-	-	-	-	341	648	-	525	1086	-
Critical Hdwy	-	-	-	4.16	-	-	7.56	6.56	6.96	7.56	6.56	6.96
Critical Hdwy Stg 1	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.56	5.56	-	6.56	5.56	-
Follow-up Hdwy	-	-	-	2.23	-	-	3.53	4.03	3.33	3.53	4.03	3.33
Pot Cap-1 Maneuver	0	-	-	632	-	-	97	88	478	146	86	685
Stage 1	0	-	-	-	-	-	234	293	-	423	462	-
Stage 2	0	-	-	-	-	-	645	462	-	501	288	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	628	-	-	94	84	475	122	82	681
Mov Cap-2 Maneuver	-	-	-	-	-	-	94	84	-	122	82	-
Stage 1	-	-	-	-	-	-	234	291	-	423	444	-
Stage 2	-	-	-	-	-	-	622	444	-	433	286	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.4			34			10.3		
HCM LOS							D			B		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	214	-	-	628	-	-	681
HCM Lane V/C Ratio	0.431	-	-	0.032	-	-	0.003
HCM Control Delay (s)	34	-	-	10.9	-	-	10.3
HCM Lane LOS	D	-	-	B	-	-	B
HCM 95th %tile Q(veh)	2	-	-	0.1	-	-	0

HCM 6th Signalized Intersection Summary
 7: Alhambra Blvd & E Covell Blvd

Existing + Project
 AM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	895	108	30	412	147	48
Future Volume (veh/h)	895	108	30	412	147	48
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1029	0	34	474	169	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1432		138	1074	360	
Arrive On Green	0.40	0.00	0.08	0.57	0.20	0.00
Sat Flow, veh/h	3647	1585	1781	1870	1771	0
Grp Volume(v), veh/h	1029	0	34	474	170	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1870	1782	0
Q Serve(g_s), s	10.4	0.0	0.8	6.2	3.6	0.0
Cycle Q Clear(g_c), s	10.4	0.0	0.8	6.2	3.6	0.0
Prop In Lane		1.00	1.00		0.99	0.00
Lane Grp Cap(c), veh/h	1432		138	1074	362	
V/C Ratio(X)	0.72		0.25	0.44	0.47	
Avail Cap(c_a), veh/h	2914		918	1533	1043	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.7	0.0	18.5	5.2	15.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.3	0.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.3	1.1	1.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.0	0.0	18.8	5.3	15.3	0.0
LnGrp LOS	B		B	A	B	
Approach Vol, veh/h	1029	A		508	170	A
Approach Delay, s/veh	11.0			6.2	15.3	
Approach LOS	B			A	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	7.3	22.7			30.0	12.7
Change Period (Y+Rc), s	4.0	5.5			5.5	4.0
Max Green Setting (Gmax), s	22.0	35.0			35.0	25.0
Max Q Clear Time (g_c+I1), s	2.8	12.4			8.2	5.6
Green Ext Time (p_c), s	0.0	4.8			1.7	0.2

Intersection Summary

HCM 6th Ctrl Delay	10.0
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.
 Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
8: Harper JR HS Access & E Covell Blvd

Existing + Project
AM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	816	127	165	347	95	8
Future Volume (veh/h)	816	127	165	347	95	8
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1088	40	220	463	127	6
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1742	774	307	1382	169	8
Arrive On Green	0.49	0.49	0.17	0.74	0.10	0.10
Sat Flow, veh/h	3618	1566	1767	1856	1666	79
Grp Volume(v), veh/h	1088	40	220	463	134	0
Grp Sat Flow(s),veh/h/ln	1763	1566	1767	1856	1758	0
Q Serve(g_s), s	11.8	0.7	6.1	4.4	3.9	0.0
Cycle Q Clear(g_c), s	11.8	0.7	6.1	4.4	3.9	0.0
Prop In Lane		1.00	1.00		0.95	0.04
Lane Grp Cap(c), veh/h	1742	774	307	1382	179	0
V/C Ratio(X)	0.62	0.05	0.72	0.34	0.75	0.00
Avail Cap(c_a), veh/h	2777	1233	883	1461	878	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	9.6	6.8	20.3	2.3	22.7	0.0
Incr Delay (d2), s/veh	0.5	0.0	6.5	0.2	6.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.2	2.7	0.3	1.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.2	6.9	26.8	2.5	28.9	0.0
LnGrp LOS	B	A	C	A	C	A
Approach Vol, veh/h	1128			683	134	
Approach Delay, s/veh	10.0			10.3	28.9	
Approach LOS	B			B	C	
Timer - Assigned Phs	1	2		6	8	
Phs Duration (G+Y+Rc), s	3.0	29.7		42.8	9.3	
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s	26.0	41.0		41.0	26.0	
Max Q Clear Time (g_c+1.0), s	13.8	13.8		6.4	5.9	
Green Ext Time (p_c), s	1.3	12.0		4.4	0.3	

Intersection Summary

HCM 6th Ctrl Delay		11.4	
HCM 6th LOS		B	

Notes

User approved volume balancing among the lanes for turning movement.

Intersection 9 **Mace Blvd/Alhambra Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	112	105	94.1%	31.4	2.9	C
	Through	473	460	97.2%	21.0	4.3	C
	Right Turn	160	150	93.8%	12.3	2.8	B
	Subtotal	745	715	96.0%	20.7	3.2	C
SB	Left Turn	179	172	95.9%	137.9	63.0	F
	Through	832	762	91.6%	205.0	57.6	F
	Right Turn	32	30	93.4%	176.2	69.1	F
	Subtotal	1,043	963	92.4%	191.9	58.8	F
EB	Left Turn	15	15	100.0%	30.7	7.6	C
	Through	41	43	105.1%	32.2	6.0	C
	Right Turn	346	329	95.1%	9.2	6.6	A
	Subtotal	402	387	96.3%	12.6	5.6	B
WB	Left Turn	67	65	96.9%	124.5	65.3	F
	Through	22	21	93.6%	22.0	7.3	C
	Right Turn	24	24	98.3%	1.7	0.1	A
	Subtotal	113	109	96.5%	75.9	38.3	E
Total		2,303	2,175	94.4%	98.9	26.3	F

Intersection 10 **Second St/Fermi Place** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	3	3	90.0%	4.1	6.8	A
	Through	1	1	130.0%	1.1	2.5	A
	Right Turn	14	15	105.7%	4.6	1.8	A
	Subtotal	18	19	104.4%	5.5	2.3	A
SB	Left Turn	35	31	89.7%	18.2	4.3	B
	Through						
	Right Turn	14	15	110.0%	4.0	1.1	A
	Subtotal	49	47	95.5%	13.3	2.4	B
EB	Left Turn	21	21	98.1%	18.1	5.8	B
	Through	278	286	102.9%	5.4	1.2	A
	Right Turn	10	9	89.0%	1.8	1.5	A
	Subtotal	309	316	102.1%	6.2	1.3	A
WB	Left Turn	82	77	94.4%	16.6	5.3	B
	Through	548	528	96.3%	4.7	1.4	A
	Right Turn	72	67	93.3%	1.2	0.4	A
	Subtotal	702	672	95.8%	5.8	1.6	A
Total		1,078	1,054	97.7%	6.2	1.3	A

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project
AM Peak Hour

Intersection 11

Mace Blvd/Second St-Co Rd 32A

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	544	524	96.3%	44.5	11.1	D
	Through	699	667	95.4%	16.4	2.2	B
	Right Turn	316	305	96.6%	11.3	2.6	B
	Subtotal	1,559	1,496	96.0%	25.4	4.8	C
SB	Left Turn	78	69	87.8%	140.7	6.0	F
	Through	1,078	954	88.5%	164.4	5.5	F
	Right Turn	82	73	88.4%	116.1	4.9	F
	Subtotal	1,238	1,095	88.5%	159.9	5.4	F
EB	Left Turn	33	35	106.4%	39.5	9.1	D
	Through	40	43	108.0%	42.3	4.5	D
	Right Turn	299	301	100.7%	5.4	1.9	A
	Subtotal	372	379	102.0%	12.9	2.0	B
WB	Left Turn	121	119	98.2%	39.4	4.4	D
	Through	59	60	101.5%	34.5	7.3	C
	Right Turn	16	17	108.8%	13.9	9.2	B
	Subtotal	196	196	100.1%	36.2	3.8	D
Total		3,365	3,166	94.1%	71.0	4.2	E

Intersection 12

Mace Park and Ride Entrance/Co Rd 32A

Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	14	14	96.4%	6.9	4.1	A
	Through						
	Right Turn	3	3	103.3%	1.6	2.4	A
	Subtotal	17	17	97.6%	7.3	3.4	A
SB	Left Turn	11	11	103.6%	10.4	4.9	B
	Through	1	1	100.0%	2.7	4.6	A
	Right Turn	70	69	98.3%	3.5	0.5	A
	Subtotal	82	81	99.0%	4.6	1.3	A
EB	Left Turn	223	212	95.0%	3.8	0.4	A
	Through	136	129	95.0%	3.8	0.6	A
	Right Turn	73	71	97.5%	2.4	0.5	A
	Subtotal	432	412	95.4%	3.5	0.3	A
WB	Left Turn	14	12	86.4%	2.7	1.7	A
	Through	112	115	102.3%	0.9	0.2	A
	Right Turn	39	42	106.4%	0.5	0.3	A
	Subtotal	165	168	101.9%	0.9	0.2	A
Total		696	678	97.4%	3.1	0.3	A

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project
AM Peak Hour

Intersection 13 **Mace Blvd/I-80 WB Ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	413	371	89.7%	33.4	6.2	C
	Through	882	812	92.1%	6.7	1.0	A
	Right Turn						
	Subtotal	1,295	1,183	91.3%	15.0	2.1	B
SB	Left Turn						
	Through	1,215	1,110	91.4%	28.0	6.7	C
	Right Turn	283	260	91.9%	13.1	1.9	B
	Subtotal	1,498	1,371	91.5%	25.2	5.9	C
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	304	301	99.1%	27.5	3.0	C
	Through	3	3	93.3%	11.1	22.0	B
	Right Turn	677	674	99.5%	4.6	0.3	A
	Subtotal	984	978	99.4%	12.1	1.1	B
Total		3,777	3,531	93.5%	18.0	2.8	B

Intersection 14 **Mace Blvd/Chiles Rd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	9	9	100.0%	48.0	19.0	D
	Through	610	619	101.5%	36.3	4.3	D
	Right Turn	40	37	93.0%	16.5	5.8	B
	Subtotal	659	665	100.9%	35.4	4.3	D
SB	Left Turn	201	188	93.6%	46.9	9.4	D
	Through	309	290	93.8%	22.9	2.2	C
	Right Turn	242	232	95.8%	10.2	3.1	B
	Subtotal	752	710	94.4%	25.4	4.1	C
EB	Left Turn	683	518	75.9%	163.7	8.3	F
	Through	154	123	79.8%	29.1	6.4	C
	Right Turn	148	113	76.0%	2.3	0.4	A
	Subtotal	985	754	76.5%	121.1	8.6	F
WB	Left Turn	29	28	97.9%	37.5	9.2	D
	Through	90	86	95.8%	29.4	5.5	C
	Right Turn	310	313	100.9%	22.3	7.5	C
	Subtotal	429	427	99.6%	25.0	5.9	C
Total		2,825	2,556	90.5%	53.9	2.4	D

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project
AM Peak Hour

Intersection 15

I-80 EB Off-Ramp/Chiles Rd

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	530	468	88.3%	297.1	50.4	F
	Through						
	Right Turn	75	77	102.3%	46.7	36.5	D
	Subtotal	605	545	90.1%	266.5	46.0	F
EB	Left Turn						
	Through	455	289	63.5%	512.0	26.4	F
	Right Turn						
	Subtotal	455	289	63.5%	512.0	26.4	F
WB	Left Turn						
	Through	341	327	95.9%	13.9	2.4	B
	Right Turn						
	Subtotal	341	327	95.9%	13.9	2.4	B
Total		1,401	1,161	82.9%	252.5	21.9	F

Intersection 16

Mace Blvd/Cowell Blvd

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	16	15	93.1%	33.6	12.6	C
	Through	290	297	102.5%	24.0	5.0	C
	Right Turn	61	61	100.0%	18.4	6.9	B
	Subtotal	367	373	101.7%	23.6	5.1	C
SB	Left Turn	98	81	82.6%	32.3	4.3	C
	Through	206	186	90.0%	17.9	2.5	B
	Right Turn	31	30	95.8%	6.6	1.3	A
	Subtotal	335	296	88.4%	21.1	2.1	C
EB	Left Turn	140	139	99.1%	26.8	4.6	C
	Through	96	96	100.1%	19.0	5.1	B
	Right Turn	12	14	113.3%	9.9	8.9	A
	Subtotal	248	249	100.2%	23.2	3.6	C
WB	Left Turn	31	29	94.8%	26.8	8.6	C
	Through	79	83	105.1%	23.1	3.5	C
	Right Turn	126	127	101.1%	12.3	3.7	B
	Subtotal	236	240	101.6%	18.1	3.3	B
Total		1,186	1,158	97.6%	21.8	3.0	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project
AM Peak Hour

Intersection 17

Mace Blvd/El Marcero Dr

All-way Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	11	11	103.6%	5.4	1.1	A
	Through	241	249	103.4%	9.3	1.0	A
	Right Turn	2	3	135.0%	2.1	2.3	A
	Subtotal	254	263	103.7%	9.1	1.0	A
SB	Left Turn	62	53	86.1%	7.5	0.5	A
	Through	176	162	91.9%	10.1	0.5	B
	Right Turn	11	13	121.8%	5.2	1.2	A
	Subtotal	249	229	91.8%	9.3	0.4	A
EB	Left Turn	26	26	101.2%	4.9	0.7	A
	Through	5	4	80.0%	3.7	2.6	A
	Right Turn	5	5	92.0%	2.1	1.6	A
	Subtotal	36	35	96.9%	4.6	0.6	A
WB	Left Turn	4	3	82.5%	3.3	2.7	A
	Through	11	10	90.9%	5.5	2.4	A
	Right Turn	100	99	99.3%	4.3	0.8	A
	Subtotal	115	113	97.9%	4.5	0.8	A
Total		654	639	97.8%	8.2	0.5	A

Intersection						
Int Delay, s/veh	6.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	14	99	173	25	34	18
Future Vol, veh/h	14	99	173	25	34	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	18	18	18	18	18	18
Mvmt Flow	17	122	214	31	42	22

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	512	53	64	0	0
Stage 1	53	-	-	-	-
Stage 2	459	-	-	-	-
Critical Hdwy	6.58	6.38	4.28	-	-
Critical Hdwy Stg 1	5.58	-	-	-	-
Critical Hdwy Stg 2	5.58	-	-	-	-
Follow-up Hdwy	3.662	3.462	2.362	-	-
Pot Cap-1 Maneuver	495	971	1442	-	-
Stage 1	930	-	-	-	-
Stage 2	604	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	420	971	1442	-	-
Mov Cap-2 Maneuver	420	-	-	-	-
Stage 1	790	-	-	-	-
Stage 2	604	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	6.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1442	-	835	-	-
HCM Lane V/C Ratio	0.148	-	0.167	-	-
HCM Control Delay (s)	7.9	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.5	-	0.6	-	-

Intersection							
Int Delay, s/veh	7.1						
Movement	EBT	EBR	WBL	WBT	NBU	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	132	1	4	5	1	193	72
Future Vol, veh/h	132	1	4	5	1	193	72
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	None	-	None	-	-	None
Storage Length	-	-	-	-	-	0	25
Veh in Median Storage, #	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89
Heavy Vehicles, %	15	15	15	15	15	15	15
Mvmt Flow	148	1	4	6	1	217	81

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	149	0	0	163
Stage 1	-	-	-	-	0	149
Stage 2	-	-	-	-	0	14
Critical Hdwy	-	-	4.25	-	-	6.55
Critical Hdwy Stg 1	-	-	-	-	-	5.55
Critical Hdwy Stg 2	-	-	-	-	-	5.55
Follow-up Hdwy	-	-	2.335	-	-	3.635
Pot Cap-1 Maneuver	-	-	1357	-	0	798
Stage 1	-	-	-	-	0	848
Stage 2	-	-	-	-	0	976
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1357	-	0	796
Mov Cap-2 Maneuver	-	-	-	-	0	796
Stage 1	-	-	-	-	0	848
Stage 2	-	-	-	-	0	973

Approach	EB	WB	NB
HCM Control Delay, s	0	3.4	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	796	864	-	-	1357	-
HCM Lane V/C Ratio	0.272	0.094	-	-	0.003	-
HCM Control Delay (s)	11.2	9.6	-	-	7.7	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	1.1	0.3	-	-	0	-

Intersection

Int Delay, s/veh 3.1

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	121	6	60	144	5	4
Future Vol, veh/h	121	6	60	144	5	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	30
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	132	7	65	157	5	4

Major/Minor Major1 Major2 Minor2

Conflicting Flow All	222	0	-	0	415	144
Stage 1	-	-	-	-	144	-
Stage 2	-	-	-	-	271	-
Critical Hdwy	4.16	-	-	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	2.254	-	-	-	3.554	3.354
Pot Cap-1 Maneuver	1324	-	-	-	586	893
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	765	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1324	-	-	-	527	893
Mov Cap-2 Maneuver	-	-	-	-	527	-
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	765	-

Approach EB WB SB

HCM Control Delay, s 7.6 0 10.7
HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1 SBLn2

Capacity (veh/h)	1324	-	-	-	527	893
HCM Lane V/C Ratio	0.099	-	-	-	0.01	0.005
HCM Control Delay (s)	8	0	-	-	11.9	9.1
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.3	-	-	-	0	0

Intersection 21 **Covell Blvd-Mace Blvd/Co Rd 30B** **Side-street Stop**

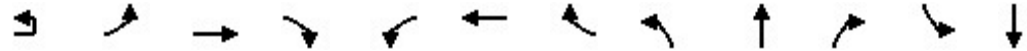
Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	512	499	97.4%	4.3	0.4	A
	Right Turn						
	Subtotal	512	499	97.4%	4.3	0.4	A
SB	Left Turn						
	Through	1,035	1,028	99.4%	28.3	51.0	D
	Right Turn						
	Subtotal	1,035	1,028	99.4%	28.3	51.0	D
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	8	5	66.3%	52.1	136.9	F
	Through						
	Right Turn						
	Subtotal	8	5	66.3%	7.8	10.6	A
Total		1,555	1,532	98.5%	20.1	33.9	C

Intersection 22 **East Project Dwy/Co Rd 32A** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	28	25	90.0%	7.0	2.5	A
	Through						
	Right Turn	48	50	103.1%	3.8	1.2	A
	Subtotal	76	75	98.3%	4.8	1.4	A
EB	Left Turn	65	63	96.8%	3.2	0.5	A
	Through	85	80	94.2%	1.2	0.6	A
	Right Turn						
	Subtotal	150	143	95.3%	2.1	0.5	A
WB	Left Turn						
	Through	117	118	100.8%	0.9	0.4	A
	Right Turn	74	72	97.0%	0.5	0.2	A
	Subtotal	191	190	99.3%	0.7	0.3	A
Total		417	407	97.7%	1.9	0.4	A

HCM 6th Signalized Intersection Summary
1: Pole Line Rd & E Covell Blvd

Existing + Project
PM Peak Hour



Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	1	321	689	174	98	593	211	180	319	40	194	289
Future Volume (veh/h)	1	321	689	174	98	593	211	180	319	40	194	289
Initial Q (Qb), veh		0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00	1.00		1.00	1.00		0.93	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
Work Zone On Approach			No		No			No				No
Adj Sat Flow, veh/h/ln		1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h		338	725	0	103	624	0	189	336	7	204	304
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
Percent Heavy Veh, %		1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h		386	1300		135	799		231	419	332	246	435
Arrive On Green		0.21	0.36	0.00	0.08	0.22	0.00	0.13	0.22	0.22	0.14	0.23
Sat Flow, veh/h		1795	3676	0	1795	3676	0	1795	1885	1493	1795	1885
Grp Volume(v), veh/h		338	725	0	103	624	0	189	336	7	204	304
Grp Sat Flow(s),veh/h/ln		1795	1791	0	1795	1791	0	1795	1885	1493	1795	1885
Q Serve(g_s), s		16.2	14.4	0.0	5.0	14.6	0.0	9.1	15.0	0.3	9.8	13.1
Cycle Q Clear(g_c), s		16.2	14.4	0.0	5.0	14.6	0.0	9.1	15.0	0.3	9.8	13.1
Prop In Lane		1.00		0.00	1.00		0.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h		386	1300		135	799		231	419	332	246	435
V/C Ratio(X)		0.88	0.56		0.76	0.78		0.82	0.80	0.02	0.83	0.70
Avail Cap(c_a), veh/h		707	1572		606	1169		505	488	387	465	488
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)		1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		33.7	22.6	0.0	40.3	32.5	0.0	37.7	32.7	27.0	37.3	31.3
Incr Delay (d2), s/veh		6.4	0.4	0.0	8.7	2.1	0.0	7.0	8.1	0.0	7.1	3.8
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
%ile BackOfQ(50%),veh/ln		7.5	5.8	0.0	2.5	6.3	0.0	4.4	7.6	0.1	4.7	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		40.1	23.0	0.0	49.0	34.6	0.0	44.7	40.8	27.0	44.4	35.1
LnGrp LOS		D	C		D	C		D	D	C	D	D
Approach Vol, veh/h			1063	A		727	A		532			694
Approach Delay, s/veh			28.4			36.6			42.0			36.7
Approach LOS			C			D			D			D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.1	24.8	15.4	25.5	10.7	37.3	16.2	24.8				
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0				
Max Green Setting (Gmax), s	35.0	29.0	25.0	23.0	30.0	39.0	23.0	23.0				
Max Q Clear Time (g_c+I1), s	18.2	16.6	11.1	15.1	7.0	16.4	11.8	17.0				
Green Ext Time (p_c), s	0.9	3.3	0.4	1.5	0.2	5.0	0.4	1.0				

Intersection Summary

HCM 6th Ctrl Delay	34.7
HCM 6th LOS	C

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved ignoring U-Turning movement.
- Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.













HCM 6th Signalized Intersection Summary
 1: Pole Line Rd & E Covell Blvd

Existing + Project
 PM Peak Hour

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	223
Future Volume (veh/h)	223
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1885
Adj Flow Rate, veh/h	186
Peak Hour Factor	0.95
Percent Heavy Veh, %	1
Cap, veh/h	368
Arrive On Green	0.23
Sat Flow, veh/h	1596
Grp Volume(v), veh/h	186
Grp Sat Flow(s),veh/h/ln	1596
Q Serve(g_s), s	9.0
Cycle Q Clear(g_c), s	9.0
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	368
V/C Ratio(X)	0.50
Avail Cap(c_a), veh/h	413
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	29.8
Incr Delay (d2), s/veh	1.1
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	3.5
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	30.8
LnGrp LOS	C
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

HCM 6th Signalized Intersection Summary
2: Birch Ln & E Covell Blvd

Existing + Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑		↑↑	↑↑		↑		↑		↑	
Traffic Volume (veh/h)	0	893	30	37	862	0	40	0	11	0	3	0
Future Volume (veh/h)	0	893	30	37	862	0	40	0	11	0	3	0
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		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	0	1870	1870	1870	1870	0	1870	0	1870	0	1870	0
Adj Flow Rate, veh/h	0	950	32	39	917	0	43	0	12	0	3	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	2	2	2	2	0	2	0	2	0	2	0
Cap, veh/h	0	1295	44	73	1727	0	111	0	0	0	422	0
Arrive On Green	0.00	0.37	0.37	0.04	0.49	0.00	0.06	0.00	0.00	0.00	0.23	0.00
Sat Flow, veh/h	0	3598	118	1781	3647	0	1781	43		0	1870	0
Grp Volume(v), veh/h	0	482	500	39	917	0	43	26.1		0	3	0
Grp Sat Flow(s),veh/h/ln	0	1777	1846	1781	1777	0	1781	C		0	1870	0
Q Serve(g_s), s	0.0	12.5	12.5	1.1	9.5	0.0	1.2			0.0	0.1	0.0
Cycle Q Clear(g_c), s	0.0	12.5	12.5	1.1	9.5	0.0	1.2			0.0	0.1	0.0
Prop In Lane	0.00		0.06	1.00		0.00	1.00			0.00		0.00
Lane Grp Cap(c), veh/h	0	657	682	73	1727	0	111			0	422	0
V/C Ratio(X)	0.00	0.73	0.73	0.53	0.53	0.00	0.39			0.00	0.01	0.00
Avail Cap(c_a), veh/h	0	937	973	536	1739	0	872			0	739	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(l)	0.00	1.00	1.00	1.00	1.00	0.00	1.00			0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	14.5	14.5	25.0	9.5	0.0	23.9			0.0	15.9	0.0
Incr Delay (d2), s/veh	0.0	1.8	1.7	5.9	0.3	0.0	2.2			0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.4	4.6	0.6	2.8	0.0	0.6			0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.3	16.2	30.8	9.8	0.0	26.1			0.0	15.9	0.0
LnGrp LOS	A	B	B	C	A	A	C			A	B	A
Approach Vol, veh/h		982			956							3
Approach Delay, s/veh		16.2			10.6							15.9
Approach LOS		B			B							B
Timer - Assigned Phs	1	2	3	4	6							
Phs Duration (G+Y+Rc), s	6.2	23.6	7.3	16.0	29.8							
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0							
Max Green Setting (Gmax), s	16.0	28.0	26.0	21.0	26.0							
Max Q Clear Time (g_c+I1), s	3.1	14.5	3.2	2.1	11.5							
Green Ext Time (p_c), s	0.0	5.2	0.1	0.0	5.4							
Intersection Summary												
HCM 6th Ctrl Delay				13.7								
HCM 6th LOS				B								

Intersection													
Int Delay, s/veh	1.1												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↕		↕	↕			↕	↕		↕	
Traffic Vol, veh/h	8	12	857	39	12	873	3	21	1	2	5	0	4
Future Vol, veh/h	8	12	857	39	12	873	3	21	1	2	5	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	Free	-	-	None	-	-	Stop
Storage Length	-	100	-	-	100	-	-	-	-	50	-	-	-
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	13	912	41	13	929	3	22	1	2	5	0	4

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	929	929	0	0	953	0	0	1468	1932	477	1456	1952	465
Stage 1	-	-	-	-	-	-	-	977	977	-	955	955	-
Stage 2	-	-	-	-	-	-	-	491	955	-	501	997	-
Critical Hdwy	6.44	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.52	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	369	732	-	-	717	-	0	89	65	534	91	63	544
Stage 1	-	-	-	-	-	-	0	269	327	-	278	335	-
Stage 2	-	-	-	-	-	-	0	528	335	-	521	320	-
Platoon blocked, %			-	-									
Mov Cap-1 Maneuver	523	523	-	-	717	-	-	84	61	534	86	59	544
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	84	61	-	86	59	-
Stage 1	-	-	-	-	-	-	-	258	314	-	267	329	-
Stage 2	-	-	-	-	-	-	-	514	329	-	496	307	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	60.2	29.7
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	83	534	523	-	-	717	-	155
HCM Lane V/C Ratio	0.282	0.004	0.041	-	-	0.018	-	0.062
HCM Control Delay (s)	64.6	11.8	12.2	-	-	10.1	-	29.7
HCM Lane LOS	F	B	B	-	-	B	-	D
HCM 95th %tile Q(veh)	1	0	0.1	-	-	0.1	-	0.2

Intersection							
Int Delay, s/veh	1.4						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↓	↑↑	↑	↑
Traffic Vol, veh/h	811	53	1	29	848	40	23
Future Vol, veh/h	811	53	1	29	848	40	23
Conflicting Peds, #/hr	0	1	1	0	0	0	4
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	100	-	0	25
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	863	56	1	31	902	43	24

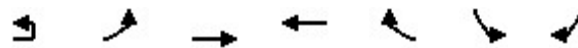
Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1407
Stage 1	-	-	892
Stage 2	-	-	515
Critical Hdwy	-	6.44	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.52	3.52
Pot Cap-1 Maneuver	-	374	544
Stage 1	-	-	361
Stage 2	-	-	565
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	712	542
Mov Cap-2 Maneuver	-	-	124
Stage 1	-	-	361
Stage 2	-	-	540

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	35.2
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	124	542	-	-	712	-
HCM Lane V/C Ratio	0.343	0.045	-	-	0.045	-
HCM Control Delay (s)	48.5	12	-	-	10.3	-
HCM Lane LOS	E	B	-	-	B	-
HCM 95th %tile Q(veh)	1.4	0.1	-	-	0.1	-

HCM 6th Signalized Intersection Summary
5: E Covell Blvd & Wright Blvd

Existing + Project
PM Peak Hour



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↵	↕↕	↕↕		↵	↵
Traffic Volume (veh/h)	1	85	749	818	148	118	59
Future Volume (veh/h)	1	85	749	818	148	118	59
Initial Q (Qb), veh		0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00			1.00	1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No	No		No	
Adj Sat Flow, veh/h/ln		1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		89	780	852	0	123	0
Peak Hour Factor		0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %		2	2	2	2	2	2
Cap, veh/h		115	2312	1751		164	
Arrive On Green		0.06	0.65	0.49	0.00	0.09	0.00
Sat Flow, veh/h		1781	3647	3741	0	1781	1585
Grp Volume(v), veh/h		89	780	852	0	123	0
Grp Sat Flow(s),veh/h/ln		1781	1777	1777	0	1781	1585
Q Serve(g_s), s		2.1	4.2	6.8	0.0	2.9	0.0
Cycle Q Clear(g_c), s		2.1	4.2	6.8	0.0	2.9	0.0
Prop In Lane		1.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h		115	2312	1751		164	
V/C Ratio(X)		0.78	0.34	0.49		0.75	
Avail Cap(c_a), veh/h		542	3325	3325		833	
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)		1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh		19.7	3.3	7.2	0.0	18.9	0.0
Incr Delay (d2), s/veh		10.7	0.2	0.4	0.0	6.7	0.0
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		1.1	0.6	1.6	0.0	1.4	0.0
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh		30.4	3.5	7.7	0.0	25.6	0.0
LnGrp LOS		C	A	A		C	
Approach Vol, veh/h			869	852	A	123	A
Approach Delay, s/veh			6.3	7.7		25.6	
Approach LOS			A	A		C	
Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		33.8		8.9	6.7	27.1	
Change Period (Y+Rc), s		6.0		5.0	4.0	6.0	
Max Green Setting (Gmax), s		40.0		20.0	13.0	40.0	
Max Q Clear Time (g_c+I1), s		6.2		4.9	4.1	8.8	
Green Ext Time (p_c), s		11.5		0.2	0.1	12.0	

Intersection Summary

HCM 6th Ctrl Delay	8.2
HCM 6th LOS	A

Notes

User approved ignoring U-Turning movement.
Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↓		↔	↑↓		↔				↔	
Traffic Vol, veh/h	0	823	44	47	938	0	27	0	16	0	0	1
Future Vol, veh/h	0	823	44	47	938	0	27	0	16	0	0	1
Conflicting Peds, #/hr	0	0	4	0	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	85	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	866	46	49	987	0	28	0	17	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	916	0	0	1485	-	460	1522	2005	498
Stage 1	-	-	-	-	-	-	893	-	-	1089	1089	-
Stage 2	-	-	-	-	-	-	592	-	-	433	916	-
Critical Hdwy	-	-	-	4.14	-	-	7.54	-	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	-	-	6.54	5.54	-
Follow-up Hdwy	-	-	-	2.22	-	-	3.52	-	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	0	-	-	740	-	-	86	0	548	81	59	518
Stage 1	0	-	-	-	-	-	303	0	-	230	290	-
Stage 2	0	-	-	-	-	-	460	0	-	571	349	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	738	-	-	81	-	546	74	55	516
Mov Cap-2 Maneuver	-	-	-	-	-	-	81	-	-	74	55	-
Stage 1	-	-	-	-	-	-	303	-	-	230	270	-
Stage 2	-	-	-	-	-	-	429	-	-	553	348	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.5			52.7			12		
HCM LOS							F			B		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	119	-	-	738	-	-	516
HCM Lane V/C Ratio	0.38	-	-	0.067	-	-	0.002
HCM Control Delay (s)	52.7	-	-	10.2	-	-	12
HCM Lane LOS	F	-	-	B	-	-	B
HCM 95th %tile Q(veh)	1.6	-	-	0.2	-	-	0

HCM 6th Signalized Intersection Summary
7: Alhambra Blvd & E Covell Blvd

Existing + Project
PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	694	145	13	852	133	11
Future Volume (veh/h)	694	145	13	852	133	11
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	731	0	14	897	140	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1490		64	1043	354	
Arrive On Green	0.42	0.00	0.04	0.56	0.20	0.00
Sat Flow, veh/h	3647	1585	1781	1870	1769	0
Grp Volume(v), veh/h	731	0	14	897	141	0
Grp Sat Flow(s),veh/h/ln	1777	1585	1781	1870	1782	0
Q Serve(g_s), s	5.9	0.0	0.3	16.0	2.7	0.0
Cycle Q Clear(g_c), s	5.9	0.0	0.3	16.0	2.7	0.0
Prop In Lane		1.00	1.00		0.99	0.00
Lane Grp Cap(c), veh/h	1490		64	1043	357	
V/C Ratio(X)	0.49		0.22	0.86	0.40	
Avail Cap(c_a), veh/h	3173		1000	1670	1136	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.3	0.0	18.4	7.4	13.6	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.6	1.5	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.1	3.0	0.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.4	0.0	19.0	8.9	13.9	0.0
LnGrp LOS	A		B	A	B	
Approach Vol, veh/h	731	A		911	141	A
Approach Delay, s/veh	8.4			9.1	13.9	
Approach LOS	A			A	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.4	21.9			27.4	11.8
Change Period (Y+Rc), s	4.0	5.5			5.5	4.0
Max Green Setting (Gmax), s	22.0	35.0			35.0	25.0
Max Q Clear Time (g_c+I1), s	2.3	7.9			18.0	4.7
Green Ext Time (p_c), s	0.0	3.2			3.9	0.2

Intersection Summary

HCM 6th Ctrl Delay		9.2	
HCM 6th LOS		A	

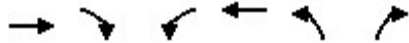
Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
8: Harper JR HS Access & E Covell Blvd

Existing + Project
PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	686	19	22	828	37	0
Future Volume (veh/h)	686	19	22	828	37	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	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	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	738	12	24	890	890	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	1792	783	63	1204	9999	9999
Arrive On Green	0.50	0.50	0.04	0.64	0.15	0.15
Sat Flow, veh/h	3676	1564	1795	1795	1795	1795
Grp Volume(v), veh/h	738	12	24	890	890	3
Grp Sat Flow(s),veh/h/ln	1791	1564	1795	1885	1795	1598
Q Serve(g_s), s	5.0	0.1	0.5	12.5	0.0	0.0
Cycle Q Clear(g_c), s	5.0	0.1	0.5	12.5	0.0	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1792	783	63	1204	9999	9999
V/C Ratio(X)	0.41	0.02	0.38	0.74	0.00	0.00
Avail Cap(c_a), veh/h	3790	1656	1206	1596	9999	9999
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	6.1	4.9	18.3	4.8	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	7.8	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.3	1.3	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.3	4.9	26.1	6.1	0.0	0.0
LnGrp LOS	A	A	C	A	A	A
Approach Vol, veh/h	750			914	893	
Approach Delay, s/veh	6.3			6.6	0.0	
Approach LOS	A			A	A	
Timer - Assigned Phs	1	2		6	8	
Phs Duration (G+Y+Rc), s	5.4	23.4		28.7	10.0	
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	
Max Green Setting (Gmax), s	26.0	41.0		41.0	26.0	
Max Q Clear Time (g_c+I), s	12.5	7.0		14.5	2.0	
Green Ext Time (p_c), s	0.1	7.9		10.2	3.7	

Intersection Summary

HCM 6th Ctrl Delay	4.2
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project
PM Peak Hour

Intersection 9 **Mace Blvd/Alhambra Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	258	244	94.7%	31.3	4.5	C
	Through	643	599	93.1%	12.8	1.8	B
	Right Turn	60	57	95.5%	8.8	3.6	A
	Subtotal	961	900	93.7%	17.5	1.8	B
SB	Left Turn	72	61	85.1%	279.9	64.5	F
	Through	660	539	81.6%	378.2	83.2	F
	Right Turn	23	19	82.6%	330.8	116.1	F
	Subtotal	755	619	82.0%	368.2	78.3	F
EB	Left Turn	12	13	107.5%	32.2	14.5	C
	Through	22	24	108.6%	31.3	9.8	C
	Right Turn	200	202	100.9%	24.0	44.8	C
	Subtotal	234	239	101.9%	27.1	40.5	C
WB	Left Turn	156	122	78.1%	414.4	87.1	F
	Through	64	57	88.6%	254.4	119.9	F
	Right Turn	190	192	101.0%	14.6	13.2	B
	Subtotal	410	370	90.3%	177.7	59.5	F
Total		2,360	2,128	90.2%	140.0	21.8	F

Intersection 10 **Second St/Fermi Place** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	14	12	87.9%	35.2	14.9	D
	Through	4	4	92.5%	25.5	17.3	C
	Right Turn	33	35	105.2%	44.8	35.1	D
	Subtotal	51	51	99.4%	42.0	26.7	D
SB	Left Turn	179	169	94.4%	128.2	90.7	F
	Through						
	Right Turn	75	69	91.5%	8.5	2.5	A
	Subtotal	254	238	93.5%	96.1	71.9	F
EB	Left Turn	88	76	85.8%	94.9	47.0	F
	Through	647	562	86.9%	147.5	89.5	F
	Right Turn	7	8	108.6%	165.4	103.4	F
	Subtotal	742	645	87.0%	141.7	84.0	F
WB	Left Turn	56	52	92.1%	78.0	85.2	E
	Through	299	284	94.9%	19.6	9.7	B
	Right Turn	122	111	90.7%	3.4	0.8	A
	Subtotal	477	446	93.5%	22.2	15.5	C
Total		1,524	1,380	90.5%	84.2	44.1	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project
PM Peak Hour

Intersection 11 Mace Blvd/Second St-Co Rd 32A Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	367	359	97.7%	34.5	4.9	C
	Through	763	736	96.5%	23.3	4.6	C
	Right Turn	137	131	95.5%	16.5	6.3	B
	Subtotal	1,267	1,226	96.7%	26.1	4.4	C
SB	Left Turn	108	83	76.8%	211.6	22.8	F
	Through	806	647	80.3%	247.7	26.2	F
	Right Turn	103	93	90.0%	167.1	17.3	F
	Subtotal	1,017	823	80.9%	235.8	25.4	F
EB	Left Turn	137	123	89.7%	143.0	57.0	F
	Through	144	119	82.7%	144.8	59.6	F
	Right Turn	632	520	82.2%	263.2	122.3	F
	Subtotal	913	762	83.4%	226.4	102.7	F
WB	Left Turn	262	192	73.4%	335.8	50.5	F
	Through	43	32	75.1%	231.8	104.3	F
	Right Turn	81	56	69.0%	228.8	45.8	F
	Subtotal	386	281	72.7%	306.1	49.5	F
Total		3,583	3,091	86.3%	148.6	18.3	F

Intersection 12 Mace Park and Ride Entrance/Co Rd 32A Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	76	62	81.2%	349.0	135.5	F
	Through	1	1	80.0%	60.9	117.5	F
	Right Turn	26	24	92.3%	321.4	115.4	F
	Subtotal	103	87	84.0%	324.4	97.6	F
SB	Left Turn	64	33	51.3%	509.2	150.4	F
	Through						
	Right Turn	189	112	59.2%	507.1	118.8	F
	Subtotal	253	145	57.2%	500.2	107.1	F
EB	Left Turn	87	74	85.2%	43.5	38.8	E
	Through	272	230	84.6%	42.4	47.4	E
	Right Turn	26	21	80.4%	38.1	53.4	E
	Subtotal	385	325	84.4%	42.2	45.9	E
WB	Left Turn	4	4	92.5%	22.5	31.2	C
	Through	121	120	98.9%	19.6	18.3	C
	Right Turn	10	12	117.0%	18.2	31.9	C
	Subtotal	135	135	100.1%	20.3	19.3	C
Total		876	691	78.9%	130.6	27.0	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project
PM Peak Hour

Intersection 13

Mace Blvd/I-80 WB Ramps

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	253	234	92.6%	43.4	6.3	D
	Through	531	498	93.8%	7.7	1.9	A
	Right Turn						
	Subtotal	784	732	93.4%	17.9	1.4	B
SB	Left Turn						
	Through	1,300	992	76.3%	216.8	18.7	F
	Right Turn	400	309	77.2%	136.0	11.2	F
	Subtotal	1,700	1,301	76.5%	197.6	16.7	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	387	381	98.5%	37.9	2.8	D
	Through						
	Right Turn	736	730	99.2%	4.4	0.4	A
	Subtotal	1,123	1,112	99.0%	15.9	1.6	B
Total		3,607	3,145	87.2%	93.2	6.2	F

Intersection 14

Mace Blvd/Chiles Rd

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	24	25	102.1%	105.9	34.7	F
	Through	532	481	90.5%	126.5	39.1	F
	Right Turn	162	145	89.6%	105.7	40.7	F
	Subtotal	718	651	90.7%	121.1	39.3	F
SB	Left Turn	270	231	85.7%	74.1	12.5	E
	Through	457	394	86.3%	48.3	2.6	D
	Right Turn	326	263	80.8%	38.1	2.6	D
	Subtotal	1,053	889	84.4%	51.8	4.7	D
EB	Left Turn	399	343	85.8%	183.6	19.1	F
	Through	275	249	90.5%	28.2	7.7	C
	Right Turn	85	78	91.5%	2.1	0.4	A
	Subtotal	759	669	88.2%	108.9	10.1	F
WB	Left Turn	46	46	99.8%	37.1	17.6	D
	Through	56	56	100.7%	32.6	16.1	C
	Right Turn	274	275	100.3%	42.8	28.1	D
	Subtotal	376	377	100.3%	40.4	23.9	D
Total		2,906	2,586	89.0%	79.1	9.0	E

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project
PM Peak Hour

Intersection 15 **I-80 EB Off-Ramp/Chiles Rd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	198	195	98.5%	71.5	54.7	E
	Through						
	Right Turn	29	29	99.3%	3.4	1.5	A
	Subtotal	227	224	98.6%	61.7	44.5	E
EB	Left Turn						
	Through	561	484	86.2%	344.4	136.0	F
	Right Turn						
	Subtotal	561	484	86.2%	344.4	136.0	F
WB	Left Turn						
	Through	406	345	84.9%	11.1	2.4	B
	Right Turn						
	Subtotal	406	345	84.9%	11.1	2.4	B
Total		1,194	1,052	88.1%	139.2	39.1	F

Intersection 16 **Mace Blvd/Cowell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	15	15	96.7%	166.3	114.3	F
	Through	362	321	88.7%	221.3	164.5	F
	Right Turn	27	28	102.2%	245.1	230.8	F
	Subtotal	404	363	89.9%	221.9	166.4	F
SB	Left Turn	146	128	87.9%	37.6	8.1	D
	Through	237	209	88.3%	18.5	3.2	B
	Right Turn	76	67	88.3%	7.8	2.8	A
	Subtotal	459	405	88.2%	22.9	3.8	C
EB	Left Turn	122	113	92.4%	90.9	109.8	F
	Through	102	95	92.9%	51.4	78.0	D
	Right Turn	24	24	101.3%	57.8	113.5	E
	Subtotal	248	232	93.5%	72.5	98.4	E
WB	Left Turn	21	19	89.5%	65.5	46.5	E
	Through	47	45	96.6%	60.4	48.5	E
	Right Turn	100	100	100.2%	65.9	51.6	E
	Subtotal	168	164	97.9%	64.6	49.3	E
Total		1,279	1,164	91.0%	86.1	55.0	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project
PM Peak Hour

Intersection 17

Mace Blvd/El Marcero Dr

All-way Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	14	13	92.1%	86.0	110.6	F
	Through	333	314	94.4%	126.2	136.2	F
	Right Turn	9	10	114.4%	77.0	110.6	F
	Subtotal	356	338	94.8%	122.9	133.0	F
SB	Left Turn	103	90	87.8%	7.9	0.7	A
	Through	166	148	89.3%	10.0	0.7	A
	Right Turn	13	14	110.0%	5.1	1.3	A
	Subtotal	282	253	89.7%	9.0	0.6	A
EB	Left Turn	4	4	95.0%	22.9	37.6	C
	Through	7	9	124.3%	7.8	8.7	A
	Right Turn	10	11	106.0%	4.4	5.0	A
	Subtotal	21	23	110.0%	10.3	12.0	B
WB	Left Turn	7	6	90.0%	26.9	48.2	D
	Through	14	16	114.3%	19.5	40.1	C
	Right Turn	67	62	92.1%	56.3	75.8	F
	Subtotal	88	84	95.5%	44.8	56.4	E
Total		747	698	93.4%	57.7	59.0	F

Intersection						
Int Delay, s/veh	9.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	5	408	99	56	44	9
Future Vol, veh/h	5	408	99	56	44	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	498	121	68	54	11

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	370	60	65	0	0
Stage 1	60	-	-	-	-
Stage 2	310	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	630	1005	1537	-	-
Stage 1	963	-	-	-	-
Stage 2	744	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	578	1005	1537	-	-
Mov Cap-2 Maneuver	578	-	-	-	-
Stage 1	884	-	-	-	-
Stage 2	744	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	4.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1537	-	996	-	-
HCM Lane V/C Ratio	0.079	-	0.506	-	-
HCM Control Delay (s)	7.5	0	12.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.3	-	2.9	-	-

Intersection

Int Delay, s/veh 5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	450	2	3	6	149	79
Future Vol, veh/h	450	2	3	6	149	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	25
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	577	3	4	8	191	101

Major/Minor

	Major1	Major2	Minor1		
Conflicting Flow All	0	0	580	0	595
Stage 1	-	-	-	-	579
Stage 2	-	-	-	-	16
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	994	-	467
Stage 1	-	-	-	-	560
Stage 2	-	-	-	-	1007
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	994	-	465
Mov Cap-2 Maneuver	-	-	-	-	465
Stage 1	-	-	-	-	560
Stage 2	-	-	-	-	1003

Approach

	EB	WB	NB
HCM Control Delay, s	0	2.9	16.5
HCM LOS			C

Minor Lane/Major Mvmt

	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	465	515	-	-	994	-
HCM Lane V/C Ratio	0.411	0.197	-	-	0.004	-
HCM Control Delay (s)	18	13.7	-	-	8.6	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	2	0.7	-	-	0	-

Intersection

Int Delay, s/veh 4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	320	3	73	456	0	2
Future Vol, veh/h	320	3	73	456	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	30
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	348	3	79	496	0	2

Major/Minor

	Major1	Major2	Minor2		
Conflicting Flow All	575	0	0	1026	327
Stage 1	-	-	-	327	-
Stage 2	-	-	-	699	-
Critical Hdwy	4.13	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	3.527	3.327
Pot Cap-1 Maneuver	993	-	-	259	712
Stage 1	-	-	-	728	-
Stage 2	-	-	-	491	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	993	-	-	168	712
Mov Cap-2 Maneuver	-	-	-	168	-
Stage 1	-	-	-	472	-
Stage 2	-	-	-	491	-

Approach

	EB	WB	SB
HCM Control Delay, s	10.5	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	993	-	-	-	-	712
HCM Lane V/C Ratio	0.35	-	-	-	-	0.003
HCM Control Delay (s)	10.6	0	-	-	0	10.1
HCM Lane LOS	B	A	-	-	A	B
HCM 95th %tile Q(veh)	1.6	-	-	-	-	0

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project
PM Peak Hour

Intersection 21

Covell Blvd-Mace Blvd/Co Rd 30B

Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	845	806	95.4%	5.6	1.0	A
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	754	716	94.9%	139.8	121.2	F
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	1	1	70.0%	79.5	251.3	F
	Through						
	Right Turn						
	Subtotal						
Total		1,605	1,529	95.3%	58.5	44.8	F

Intersection 22

East Project Dwy/Co Rd 32A

Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	98	96	97.8%	8.3	2.2	A
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn	47	35	74.0%	3.0	0.6	A
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	74	74	100.5%	0.7	0.3	A
	Through						
	Right Turn						
	Subtotal						
Total		629	552	87.7%	3.1	0.9	A

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project w/ Mitigation
AM Peak Hour

Intersection 9 **Mace Blvd/Alhambra Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	112	109	97.7%	27.7	5.6	C
	Through	473	479	101.2%	10.5	2.3	B
	Right Turn	160	158	98.5%	4.9	0.6	A
	Subtotal	745	746	100.1%	11.9	2.1	B
SB	Left Turn	179	177	98.6%	35.3	5.2	D
	Through	832	845	101.6%	15.7	3.0	B
	Right Turn	32	35	110.3%	8.0	1.4	A
	Subtotal	1,043	1,057	101.3%	18.6	2.9	B
EB	Left Turn	15	12	76.7%	37.3	16.3	D
	Through	41	41	100.0%	27.2	6.9	C
	Right Turn	346	346	100.0%	3.1	0.4	A
	Subtotal	402	398	99.1%	6.7	1.0	A
WB	Left Turn	67	64	95.7%	34.0	3.7	C
	Through	22	21	96.8%	21.9	7.9	C
	Right Turn	24	26	106.7%	1.6	0.2	A
	Subtotal	113	111	98.2%	24.2	2.9	C
Total		2,303	2,312	100.4%	14.6	1.7	B

Intersection 10 **Second St/Fermi Place** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	3	2	56.7%	3.7	8.8	A
	Through	1	1	100.0%	3.3	6.0	A
	Right Turn	14	19	134.3%	4.6	1.7	A
	Subtotal	18	22	119.4%	5.3	2.1	A
SB	Left Turn	35	33	94.6%	16.4	5.0	B
	Through						
	Right Turn	14	15	107.1%	6.2	3.2	A
	Subtotal	49	48	98.2%	13.4	4.1	B
EB	Left Turn	21	20	94.8%	18.2	6.7	B
	Through	278	277	99.7%	5.8	1.1	A
	Right Turn	10	10	100.0%	3.1	3.3	A
	Subtotal	309	307	99.4%	6.6	1.1	A
WB	Left Turn	82	77	94.0%	15.9	2.5	B
	Through	548	549	100.3%	6.0	1.1	A
	Right Turn	72	77	107.2%	1.0	0.5	A
	Subtotal	702	704	100.2%	6.6	1.0	A
Total		1,078	1,080	100.2%	7.0	0.9	A

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project w/ Mitigation
AM Peak Hour

Intersection 11

Mace Blvd/Second St-Co Rd 32A

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	544	533	98.0%	56.8	15.1	E
	Through	699	703	100.6%	15.1	3.4	B
	Right Turn	316	317	100.4%	7.3	1.8	A
	Subtotal	1,559	1,553	99.6%	27.6	6.6	C
SB	Left Turn	78	79	101.8%	68.7	12.7	E
	Through	1,078	1,083	100.4%	51.4	14.8	D
	Right Turn	82	87	106.6%	23.3	12.9	C
	Subtotal	1,238	1,250	100.9%	50.4	14.4	D
EB	Left Turn	33	31	94.2%	60.2	18.8	E
	Through	40	39	98.5%	52.7	7.6	D
	Right Turn	299	298	99.7%	7.6	1.2	A
	Subtotal	372	369	99.1%	16.3	2.4	B
WB	Left Turn	121	117	96.9%	63.3	10.8	E
	Through	59	64	108.0%	44.8	8.9	D
	Right Turn	16	16	99.4%	27.8	16.0	C
	Subtotal	196	197	100.5%	53.2	7.4	D
Total		3,365	3,368	100.1%	36.4	6.6	D

Intersection 12

Mace Park and Ride Entrance/Co Rd 32A

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	14	14	100.0%	17.2	4.6	C
	Through						
	Right Turn	3	2	66.7%	2.3	2.8	A
	Subtotal	17	16	94.1%	15.3	4.2	C
SB	Left Turn	11	10	92.7%	17.1	12.7	C
	Through	1	1	130.0%	4.1	8.6	A
	Right Turn	70	69	98.7%	3.9	1.0	A
	Subtotal	82	81	98.3%	6.4	2.4	A
EB	Left Turn	223	220	98.8%	26.2	4.0	D
	Through	136	139	101.9%	10.3	2.2	B
	Right Turn	73	76	104.5%	5.1	1.5	A
	Subtotal	432	435	100.7%	17.7	3.6	C
WB	Left Turn	14	14	97.1%	19.5	9.7	C
	Through	112	114	101.4%	11.7	1.9	B
	Right Turn	39	39	101.0%	6.2	1.8	A
	Subtotal	165	167	101.0%	11.1	1.6	B
Total		696	698	100.3%	14.8	2.2	B

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project w/ Mitigation
AM Peak Hour

Intersection 13 **Mace Blvd/I-80 WB Ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	413	406	98.4%	35.6	3.1	D
	Through	882	870	98.7%	6.9	0.8	A
	Right Turn						
	Subtotal	1,295	1,277	98.6%	16.0	1.1	B
SB	Left Turn						
	Through	1,215	1,213	99.9%	47.9	15.2	D
	Right Turn	283	285	100.6%	10.2	1.4	B
	Subtotal	1,498	1,498	100.0%	41.0	12.6	D
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	304	308	101.3%	29.9	3.5	C
	Through	3	4	126.7%	14.8	19.8	B
	Right Turn	677	680	100.4%	4.9	0.7	A
	Subtotal	984	992	100.8%	12.7	1.1	B
Total		3,777	3,766	99.7%	25.6	5.8	C

Intersection 14 **Mace Blvd/Chiles Rd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	9	9	102.2%	61.6	24.8	E
	Through	610	600	98.4%	54.3	5.4	D
	Right Turn	40	43	107.8%	28.2	7.2	C
	Subtotal	659	653	99.0%	52.8	5.5	D
SB	Left Turn	201	203	101.0%	54.3	7.9	D
	Through	309	311	100.7%	28.2	3.2	C
	Right Turn	242	244	100.6%	10.6	0.9	B
	Subtotal	752	758	100.8%	29.5	3.9	C
EB	Left Turn	683	681	99.7%	44.5	7.8	D
	Through	154	156	101.2%	31.3	4.3	C
	Right Turn	148	144	97.3%	1.9	0.2	A
	Subtotal	985	981	99.6%	36.6	5.9	D
WB	Left Turn	29	26	90.0%	42.9	17.1	D
	Through	90	91	101.6%	41.3	6.1	D
	Right Turn	310	318	102.5%	25.1	5.2	C
	Subtotal	429	435	101.4%	29.7	4.4	C
Total		2,825	2,826	100.0%	37.3	2.4	D

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project w/ Mitigation
AM Peak Hour

Intersection 15 **I-80 EB Off-Ramp/Chiles Rd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	530	527	99.4%	6.4	1.4	A
	Through						
	Right Turn	75	75	100.5%	3.2	0.7	A
	Subtotal	605	602	99.5%	6.0	1.3	A
EB	Left Turn						
	Through	455	455	99.9%	25.0	8.5	C
	Right Turn						
	Subtotal	455	455	99.9%	25.0	8.5	C
WB	Left Turn						
	Through	341	344	100.9%	13.7	2.1	B
	Right Turn						
	Subtotal	341	344	100.9%	13.7	2.1	B
Total		1,401	1,401	100.0%	13.9	2.9	B

Intersection 16 **Mace Blvd/Cowell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	16	16	97.5%	35.3	5.6	D
	Through	290	285	98.4%	24.8	3.0	C
	Right Turn	61	64	104.1%	15.5	3.8	B
	Subtotal	367	365	99.3%	23.6	3.3	C
SB	Left Turn	98	100	101.6%	33.9	3.6	C
	Through	206	208	100.9%	17.4	2.9	B
	Right Turn	31	34	109.0%	7.1	1.0	A
	Subtotal	335	341	101.9%	21.5	2.3	C
EB	Left Turn	140	142	101.6%	25.0	2.3	C
	Through	96	97	101.4%	17.7	2.7	B
	Right Turn	12	11	92.5%	10.2	5.9	B
	Subtotal	248	251	101.0%	21.2	1.6	C
WB	Left Turn	31	30	97.1%	35.8	6.9	D
	Through	79	80	101.8%	23.9	4.7	C
	Right Turn	126	126	99.7%	14.3	5.2	B
	Subtotal	236	236	100.0%	20.2	4.0	C
Total		1,186	1,193	100.5%	21.8	1.5	C

Intersection 17

Mace Blvd/El Marcero Dr

All-way Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	11	10	90.0%	4.3	2.9	A
	Through	241	238	98.9%	8.9	0.8	A
	Right Turn	2	3	155.0%	3.7	2.9	A
	Subtotal	254	251	99.0%	8.8	0.8	A
SB	Left Turn	62	59	95.2%	8.6	1.5	A
	Through	176	178	101.3%	10.7	0.7	B
	Right Turn	11	12	110.0%	7.6	4.1	A
	Subtotal	249	249	100.1%	9.9	0.7	A
EB	Left Turn	26	29	111.5%	5.2	1.3	A
	Through	5	5	96.0%	3.9	3.1	A
	Right Turn	5	5	108.0%	2.2	1.7	A
	Subtotal	36	39	108.9%	5.2	1.3	A
WB	Left Turn	4	3	72.5%	1.2	2.3	A
	Through	11	10	86.4%	5.1	1.2	A
	Right Turn	100	97	97.3%	4.5	1.0	A
	Subtotal	115	110	95.4%	4.6	0.8	A
Total		654	650	99.3%	8.3	0.6	A

Intersection 21

Covell Blvd-Mace Blvd/Co Rd 32B

Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	512	514	100.4%	2.5	0.4	A
	Right Turn						
Subtotal		512	514	100.4%	2.5	0.4	A
SB	Left Turn						
	Through	1,035	1,047	101.1%	2.9	0.4	A
	Right Turn						
Subtotal		1,035	1,047	101.1%	2.9	0.4	A
EB	Left Turn						
	Through						
	Right Turn						
Subtotal							
WB	Left Turn	8	10	121.3%	13.0	9.6	B
	Through						
	Right Turn						
Subtotal		8	10	121.3%	13.0	9.6	B
Total		1,555	1,571	101.0%	2.8	0.3	A

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project w/ Mitigation
AM Peak Hour

Intersection 22

East Project Dwy/Co Rd 32A

Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	28	29	105.0%	6.7	1.7	A
	Through						
	Right Turn	48	46	96.5%	3.0	0.6	A
	Subtotal	76	76	99.6%	4.5	1.1	A
EB	Left Turn	65	66	102.2%	3.8	0.6	A
	Through	85	85	100.1%	2.5	0.7	A
	Right Turn						
	Subtotal	150	152	101.0%	3.2	0.5	A
WB	Left Turn						
	Through	117	121	103.1%	1.0	0.4	A
	Right Turn	74	75	101.8%	0.6	0.3	A
	Subtotal	191	196	102.6%	0.8	0.3	A
Total		417	423	101.5%	2.4	0.3	A

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project w/ Mitigation
PM Peak Hour

Intersection 9 **Mace Blvd/Alhambra Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	258	256	99.1%	28.2	4.9	C
	Through	643	643	100.0%	6.7	1.9	A
	Right Turn	60	58	96.7%	2.7	0.4	A
	Subtotal	961	957	99.5%	12.3	2.0	B
SB	Left Turn	72	64	88.5%	20.4	6.8	C
	Through	660	657	99.5%	17.2	2.1	B
	Right Turn	23	23	98.3%	3.5	1.0	A
	Subtotal	755	743	98.4%	17.0	2.3	B
EB	Left Turn	12	13	110.0%	30.4	8.9	C
	Through	22	23	103.6%	31.2	13.8	C
	Right Turn	200	204	102.1%	2.2	0.3	A
	Subtotal	234	240	102.6%	6.4	1.8	A
WB	Left Turn	156	159	101.7%	27.7	4.2	C
	Through	64	65	100.9%	20.4	4.2	C
	Right Turn	190	195	102.8%	2.5	0.3	A
	Subtotal	410	419	102.1%	14.9	2.3	B
Total		2,360	2,358	99.9%	13.7	1.5	B

Intersection 10 **Second St/Fermi Place** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	14	14	97.9%	27.1	14.0	C
	Through	4	4	97.5%	36.8	30.2	D
	Right Turn	33	35	104.8%	9.5	4.2	A
	Subtotal	51	52	102.4%	18.0	5.6	B
SB	Left Turn	179	177	99.0%	24.1	2.8	C
	Through						
	Right Turn	75	74	98.7%	7.5	2.1	A
	Subtotal	254	251	98.9%	19.1	2.3	B
EB	Left Turn	88	85	96.9%	29.3	6.4	C
	Through	647	644	99.5%	14.0	1.6	B
	Right Turn	7	6	91.4%	9.9	11.7	A
	Subtotal	742	735	99.1%	15.6	1.8	B
WB	Left Turn	56	55	97.7%	33.2	7.6	C
	Through	299	300	100.3%	13.9	4.5	B
	Right Turn	122	124	101.2%	3.6	1.2	A
	Subtotal	477	478	100.2%	13.4	3.2	B
Total		1,524	1,517	99.5%	15.6	2.1	B

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project w/ Mitigation
PM Peak Hour

Intersection 11

Mace Blvd/Second St-Co Rd 32A

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	367	369	100.5%	59.6	26.4	E
	Through	763	758	99.3%	21.5	2.7	C
	Right Turn	137	140	102.5%	7.3	1.7	A
	Subtotal	1,267	1,267	100.0%	31.2	9.0	C
SB	Left Turn	108	104	96.3%	52.2	9.4	D
	Through	806	813	100.9%	45.9	5.4	D
	Right Turn	103	103	99.7%	11.1	2.2	B
	Subtotal	1,017	1,020	100.3%	43.2	5.5	D
EB	Left Turn	137	140	102.0%	43.3	8.3	D
	Through	144	139	96.7%	31.0	4.2	C
	Right Turn	632	633	100.2%	23.5	7.6	C
	Subtotal	913	912	99.9%	27.7	5.7	C
WB	Left Turn	262	261	99.7%	51.9	13.7	D
	Through	43	42	97.4%	31.9	5.5	C
	Right Turn	81	84	103.7%	13.8	3.4	B
	Subtotal	386	387	100.3%	41.1	9.1	D
Total		3,583	3,586	100.1%	34.9	5.0	C

Intersection 12

Mace Park and Ride Entrance/Co Rd 32A

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	76	76	100.3%	17.2	3.0	C
	Through	1	1	50.0%	1.3	2.9	A
	Right Turn	26	29	112.3%	4.1	1.2	A
	Subtotal	103	106	102.8%	13.6	2.2	B
SB	Left Turn	64	67	104.5%	19.3	2.1	C
	Through						
	Right Turn	189	188	99.4%	4.5	0.7	A
	Subtotal	253	255	100.7%	8.6	0.7	A
EB	Left Turn	87	85	97.1%	23.1	2.3	C
	Through	272	271	99.7%	11.2	2.2	B
	Right Turn	26	24	92.3%	7.0	2.1	A
	Subtotal	385	380	98.6%	13.5	1.7	B
WB	Left Turn	4	2	52.5%	9.2	14.6	A
	Through	121	121	99.9%	10.5	2.0	B
	Right Turn	10	10	98.0%	3.6	2.4	A
	Subtotal	135	133	98.4%	10.2	1.8	B
Total		876	873	99.7%	11.6	0.7	B

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project w/ Mitigation
PM Peak Hour

Intersection 13 **Mace Blvd/I-80 WB Ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	253	249	98.2%	32.9	5.1	C
	Through	531	524	98.8%	6.3	0.9	A
	Right Turn						
	Subtotal	784	773	98.6%	15.3	2.2	B
SB	Left Turn						
	Through	1,300	1,304	100.3%	28.9	8.3	C
	Right Turn	400	404	101.1%	11.2	1.1	B
	Subtotal	1,700	1,708	100.5%	24.8	6.6	C
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	387	374	96.7%	28.2	1.5	C
	Through						
	Right Turn	736	737	100.2%	4.8	0.6	A
	Subtotal	1,123	1,112	99.0%	12.5	0.6	B
Total		3,607	3,592	99.6%	19.0	3.3	B

Intersection 14 **Mace Blvd/Chiles Rd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	24	24	99.6%	61.1	20.5	E
	Through	532	533	100.1%	54.8	15.8	D
	Right Turn	162	162	100.1%	33.3	13.0	C
	Subtotal	718	719	100.1%	50.5	14.7	D
SB	Left Turn	270	254	94.1%	69.6	18.3	E
	Through	457	455	99.5%	28.9	3.3	C
	Right Turn	326	332	101.7%	8.3	1.4	A
	Subtotal	1,053	1,040	98.8%	32.0	4.7	C
EB	Left Turn	399	397	99.6%	28.2	2.3	C
	Through	275	278	101.1%	27.5	3.7	C
	Right Turn	85	90	105.6%	1.9	0.3	A
	Subtotal	759	765	100.8%	24.8	2.3	C
WB	Left Turn	46	44	94.8%	39.3	7.2	D
	Through	56	55	98.2%	34.5	6.3	C
	Right Turn	274	280	102.1%	15.2	3.6	B
	Subtotal	376	378	100.6%	20.7	3.3	C
Total		2,906	2,903	99.9%	33.1	4.1	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project w/ Mitigation
PM Peak Hour

Intersection 15

I-80 EB Off-Ramp/Chiles Rd

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	198	206	104.0%	5.8	0.7	A
	Through						
	Right Turn	29	34	117.2%	3.2	0.8	A
	Subtotal	227	240	105.7%	5.5	0.6	A
EB	Left Turn						
	Through	561	561	99.9%	11.8	1.8	B
	Right Turn						
	Subtotal	561	561	99.9%	11.8	1.8	B
WB	Left Turn						
	Through	406	412	101.5%	9.0	1.2	A
	Right Turn						
	Subtotal	406	412	101.5%	9.0	1.2	A
Total		1,194	1,213	101.6%	9.6	1.0	A

Intersection 16

Mace Blvd/Cowell Blvd

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	15	16	104.7%	40.6	12.7	D
	Through	362	364	100.4%	36.4	11.4	D
	Right Turn	27	28	101.9%	22.4	8.3	C
	Subtotal	404	407	100.7%	35.5	11.0	D
SB	Left Turn	146	145	99.2%	33.6	6.1	C
	Through	237	238	100.3%	16.6	3.4	B
	Right Turn	76	72	95.3%	7.7	1.1	A
	Subtotal	459	455	99.2%	20.3	3.7	C
EB	Left Turn	122	112	92.1%	27.0	5.8	C
	Through	102	100	98.1%	16.5	3.7	B
	Right Turn	24	26	107.9%	8.6	3.8	A
	Subtotal	248	238	96.1%	20.6	2.6	C
WB	Left Turn	21	24	115.7%	32.1	5.4	C
	Through	47	48	101.9%	23.7	5.7	C
	Right Turn	100	102	102.4%	12.4	3.1	B
	Subtotal	168	175	103.9%	18.0	3.6	B
Total		1,279	1,275	99.7%	24.9	5.1	C

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project w/ Mitigation
PM Peak Hour

Intersection 17

Mace Blvd/El Marcero Dr

All-way Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	14	14	100.0%	6.4	1.1	A
	Through	333	336	100.8%	10.6	0.9	B
	Right Turn	9	11	121.1%	5.4	2.0	A
	Subtotal	356	361	101.3%	10.2	0.9	B
SB	Left Turn	103	101	98.3%	8.5	0.7	A
	Through	166	171	103.1%	10.6	0.9	B
	Right Turn	13	14	110.8%	5.8	1.6	A
	Subtotal	282	287	101.7%	9.6	0.7	A
EB	Left Turn	4	3	82.5%	4.3	2.5	A
	Through	7	7	104.3%	5.6	2.3	A
	Right Turn	10	10	96.0%	3.1	1.5	A
	Subtotal	21	20	96.2%	4.8	0.9	A
WB	Left Turn	7	6	84.3%	4.2	2.4	A
	Through	14	14	96.4%	6.8	1.8	A
	Right Turn	67	69	102.7%	4.3	0.9	A
	Subtotal	88	88	100.2%	4.7	0.9	A
Total		747	756	101.2%	9.1	0.6	A

Intersection 21

Covell Blvd-Mace Blvd/Co Rd 30B

Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	845	851	100.7%	3.6	0.4	A
	Right Turn						
Subtotal		845	851	100.7%	3.6	0.4	A
SB	Left Turn						
	Through	754	748	99.1%	1.9	0.2	A
	Right Turn						
Subtotal		754	748	99.1%	1.9	0.2	A
EB	Left Turn						
	Through						
	Right Turn						
Subtotal							
WB	Left Turn	1	1	50.0%	2.4	4.4	A
	Through						
	Right Turn	5	7	130.0%	5.0	3.3	A
Subtotal		6	7	116.7%	4.9	2.9	A
Total		1,605	1,606	100.0%	2.8	0.2	A

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Campus
Existing + Project w/ Mitigation
PM Peak Hour

Intersection 22

East Project Dwy/Co Rd 32A

Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	98	94	96.0%	9.1	2.7	A
	Through						
	Right Turn	61	59	96.7%	4.7	1.3	A
	Subtotal	159	153	96.3%	7.7	2.3	A
EB	Left Turn	47	47	100.2%	4.1	0.6	A
	Through	315	319	101.3%	2.5	0.5	A
	Right Turn						
	Subtotal	362	366	101.1%	2.7	0.5	A
WB	Left Turn						
	Through	74	73	99.1%	0.5	0.3	A
	Right Turn	34	36	105.9%	0.4	0.6	A
	Subtotal	108	109	101.2%	0.4	0.2	A
Total		629	629	99.9%	3.5	0.7	A

Queuing and Blocking Report

Intersection: 13: Mace Blvd & I-80 WB Ramps

Movement	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	L	L	T	T	T	T	R
Maximum Queue (ft)	177	180	204	211	164	112	370	430	285
Average Queue (ft)	88	87	105	122	63	44	148	196	45
95th Queue (ft)	150	154	170	180	136	96	328	381	164
Link Distance (ft)		1936			438	438	530	530	
Upstream Blk Time (%)									0
Queuing Penalty (veh)									1
Storage Bay Dist (ft)	675		275	275					325
Storage Blk Time (%)			0	0					2
Queuing Penalty (veh)			0	0					5

Intersection: 15: Chiles Rd & I-80 EB Off-Ramp

Movement	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	253	109	127	84	102	63
Average Queue (ft)	108	41	55	32	49	23
95th Queue (ft)	197	90	99	69	91	51
Link Distance (ft)	2374	377	377	1115	1115	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						800
Storage Blk Time (%)						
Queuing Penalty (veh)						

Queuing and Blocking Report

Intersection: 13: Mace Blvd & I-80 WB Ramps

Movement	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	L	L	T	T	T	T	R
Maximum Queue (ft)	189	205	127	146	121	119	508	524	352
Average Queue (ft)	109	99	65	84	47	45	245	279	124
95th Queue (ft)	173	168	114	131	104	99	576	592	397
Link Distance (ft)		1936			438	438	530	530	
Upstream Blk Time (%)							13	14	
Queuing Penalty (veh)							82	89	
Storage Bay Dist (ft)	675		275	275					325
Storage Blk Time (%)								20	
Queuing Penalty (veh)								43	

Intersection: 15: Chiles Rd & I-80 EB Off-Ramp

Movement	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	759	103	125	65	108	51
Average Queue (ft)	213	33	51	17	44	14
95th Queue (ft)	764	81	97	48	89	41
Link Distance (ft)	2374	377	377	1115	1115	
Upstream Blk Time (%)	1					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)						800
Storage Blk Time (%)						
Queuing Penalty (veh)						

Queuing and Blocking Report

Intersection: 13: Mace Blvd & I-80 WB Ramps

Movement	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	L	L	T	T	T	T	R
Maximum Queue (ft)	173	188	170	192	166	156	387	410	179
Average Queue (ft)	84	86	96	114	67	66	151	202	47
95th Queue (ft)	144	151	151	168	142	134	332	381	161
Link Distance (ft)		1936			438	438	530	530	
Upstream Blk Time (%)								0	
Queuing Penalty (veh)								1	
Storage Bay Dist (ft)	675		275	275					325
Storage Blk Time (%)								3	
Queuing Penalty (veh)								8	

Intersection: 15: Chiles Rd & I-80 EB Off-Ramp

Movement	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	2424	126	143	1103	1131	889
Average Queue (ft)	1817	49	67	604	669	206
95th Queue (ft)	3053	104	115	1142	1223	782
Link Distance (ft)	2374	377	377	1115	1115	
Upstream Blk Time (%)	49			3	11	
Queuing Penalty (veh)	0			0	0	
Storage Bay Dist (ft)						800
Storage Blk Time (%)					30	
Queuing Penalty (veh)					22	

Queuing and Blocking Report

Intersection: 13: Mace Blvd & I-80 WB Ramps

Movement	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	L	L	T	T	T	T	R
Maximum Queue (ft)	236	274	149	154	164	167	637	639	415
Average Queue (ft)	117	124	75	90	57	60	552	558	370
95th Queue (ft)	193	220	131	141	128	129	781	765	567
Link Distance (ft)		1936			438	438	530	530	
Upstream Blk Time (%)							60	61	
Queuing Penalty (veh)							513	516	
Storage Bay Dist (ft)	675		275	275					325
Storage Blk Time (%)								71	
Queuing Penalty (veh)								283	

Intersection: 15: Chiles Rd & I-80 EB Off-Ramp

Movement	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	2109	115	130	120	266	50
Average Queue (ft)	671	38	53	24	85	13
95th Queue (ft)	1980	88	102	67	224	42
Link Distance (ft)	2374	377	377	1115	1115	
Upstream Blk Time (%)	10					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)						800
Storage Blk Time (%)						
Queuing Penalty (veh)						

Queuing and Blocking Report

Intersection: 13: Mace Blvd & I-80 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	184	182	20	201	217	190	181	554	587	268
Average Queue (ft)	93	89	1	114	131	75	74	291	334	60
95th Queue (ft)	154	155	13	185	198	152	150	569	588	163
Link Distance (ft)		1936	1936			438	438	1193	1193	1193
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	675			275	275					
Storage Blk Time (%)					0					
Queuing Penalty (veh)					0					

Intersection: 15: Chiles Rd & I-80 EB Off-Ramp

Movement	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	321	120	126	125	151	66
Average Queue (ft)	151	49	64	50	71	23
95th Queue (ft)	268	101	106	93	121	55
Link Distance (ft)	2374	377	377	1115	1115	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)					800	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Queuing and Blocking Report

Intersection: 13: Mace Blvd & I-80 WB Ramps

Movement	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	L	L	T	T	T	T	R
Maximum Queue (ft)	197	182	140	148	151	124	409	432	156
Average Queue (ft)	105	100	71	86	57	46	198	246	63
95th Queue (ft)	172	164	123	132	123	100	369	407	126
Link Distance (ft)		1936			438	438	1193	1193	1193
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	675		275	275					
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 15: Chiles Rd & I-80 EB Off-Ramp

Movement	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	286	105	121	68	106	44
Average Queue (ft)	119	37	57	19	44	14
95th Queue (ft)	219	84	98	53	84	41
Link Distance (ft)	2374	377	377	1115	1115	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)					800	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection 9 **Mace Blvd/Alhambra Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	320	266	83.0%	60.4	21.3	E
	Through	550	460	83.7%	14.4	4.5	B
	Right Turn						
	Subtotal	870	726	83.4%	31.5	11.4	C
SB	Left Turn						
	Through	840	778	92.7%	210.3	91.6	F
	Right Turn	50	48	95.4%	185.1	105.7	F
	Subtotal	890	826	92.8%	208.8	92.6	F
EB	Left Turn	20	20	100.0%	45.1	17.4	D
	Through						
	Right Turn	440	428	97.3%	21.7	31.6	C
	Subtotal	460	448	97.4%	22.7	30.3	C
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,220	2,000	90.1%	99.6	34.5	F

Intersection 10 **Second St/Fermi Place** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	10	9	94.0%	27.0	13.5	C
	Through	10	9	94.0%	23.9	14.1	C
	Right Turn	50	55	109.0%	6.5	1.9	A
	Subtotal	70	73	104.7%	12.0	4.2	B
SB	Left Turn	80	77	96.1%	22.0	1.4	C
	Through	10	13	126.0%	19.5	7.5	B
	Right Turn	20	20	98.0%	9.2	5.6	A
	Subtotal	110	109	99.2%	18.8	1.7	B
EB	Left Turn	40	36	90.5%	30.5	8.6	C
	Through	310	300	96.8%	12.8	2.8	B
	Right Turn	30	31	102.7%	7.9	4.2	A
	Subtotal	380	367	96.6%	14.1	3.0	B
WB	Left Turn	155	136	87.9%	33.5	4.6	C
	Through	670	564	84.1%	15.5	2.4	B
	Right Turn	150	130	86.3%	7.1	0.3	A
	Subtotal	975	829	85.0%	17.4	2.5	B
Total		1,535	1,379	89.8%	16.3	2.2	B

Intersection 11 **Mace Blvd/Second St-Co Rd 32A** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	790	655	83.0%	161.4	7.3	F
	Through	810	669	82.6%	69.6	4.2	E
	Right Turn	30	28	93.7%	66.9	5.0	E
	Subtotal	1,630	1,352	83.0%	115.3	6.1	F
SB	Left Turn	40	36	90.5%	133.1	19.4	F
	Through	1,100	988	89.8%	155.4	21.3	F
	Right Turn	130	118	90.8%	107.1	16.4	F
	Subtotal	1,270	1,143	90.0%	149.4	20.4	F
EB	Left Turn	40	35	87.8%	40.6	11.8	D
	Through	20	21	102.5%	41.6	19.1	D
	Right Turn	430	417	96.9%	9.4	5.5	A
	Subtotal	490	472	96.4%	13.4	4.8	B
WB	Left Turn	20	19	96.5%	36.5	13.1	D
	Through	40	42	105.5%	31.0	5.8	C
	Right Turn	20	20	100.0%	12.6	7.3	B
	Subtotal	80	82	101.9%	27.3	4.9	C
Total		3,470	3,049	87.9%	109.9	7.6	F

Intersection 12 **Mace Park and Ride Entrance/Co Rd 32A** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	10	9	94.0%	4.1	1.7	A
	Through						
	Right Turn	10	11	111.0%	2.3	0.6	A
	Subtotal	20	21	102.5%	3.1	0.6	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	80	73	91.5%	1.5	0.4	A
	Right Turn	10	12	123.0%	1.2	0.6	A
	Subtotal	90	86	95.0%	1.5	0.3	A
WB	Left Turn	10	11	108.0%	2.0	1.4	A
	Through	70	72	102.1%	0.3	0.2	A
	Right Turn						
	Subtotal	80	82	102.9%	0.6	0.3	A
Total		190	188	99.1%	1.3	0.2	A

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Center
Cumulative No Project
AM Peak Hour

Intersection 13 Mace Blvd/I-80 WB Ramps Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	380	309	81.4%	128.4	22.5	F
	Through	770	628	81.6%	186.2	43.9	F
	Right Turn						
	Subtotal	1,150	938	81.5%	167.5	37.4	F
SB	Left Turn						
	Through	1,290	1,157	89.7%	153.5	52.6	F
	Right Turn	260	239	92.0%	92.4	39.8	F
	Subtotal	1,550	1,396	90.1%	143.3	51.1	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	520	469	90.2%	118.6	15.3	F
	Through	10	11	111.0%	121.5	57.6	F
	Right Turn	860	745	86.6%	251.5	22.4	F
	Subtotal	1,390	1,225	88.1%	200.5	18.7	F
Total		4,090	3,559	87.0%	167.7	25.5	F

Intersection 14 Mace Blvd/Chiles Rd Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	10	10	99.0%	84.6	25.0	F
	Through	635	598	94.2%	101.3	33.5	F
	Right Turn	50	49	98.0%	66.2	26.5	E
	Subtotal	695	657	94.5%	98.7	33.4	F
SB	Left Turn	280	255	91.1%	128.6	72.2	F
	Through	350	311	88.8%	48.5	20.2	D
	Right Turn	350	312	89.2%	29.4	14.4	C
	Subtotal	980	878	89.6%	66.4	34.8	E
EB	Left Turn	640	409	63.9%	223.7	35.3	F
	Through	220	140	63.8%	33.2	7.0	C
	Right Turn	150	91	60.3%	2.3	0.2	A
	Subtotal	1,010	640	63.3%	150.7	19.7	F
WB	Left Turn	30	28	91.7%	84.7	42.4	F
	Through	110	103	94.0%	80.7	48.0	F
	Right Turn	390	387	99.3%	96.4	57.3	F
	Subtotal	530	518	97.8%	93.0	54.7	F
Total		3,215	2,692	83.7%	97.1	21.8	F

Intersection 15 **I-80 EB Off-Ramp/Chiles Rd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	480	391	81.4%	396.0	83.0	F
	Through						
	Right Turn	120	111	92.8%	270.3	135.0	F
	Subtotal	600	502	83.7%	366.4	95.7	F
EB	Left Turn						
	Through	530	250	47.1%	581.1	50.8	F
	Right Turn						
	Subtotal	530	250	47.1%	581.1	50.8	F
WB	Left Turn						
	Through	470	424	90.2%	14.7	1.7	B
	Right Turn						
	Subtotal	470	424	90.2%	14.7	1.7	B
Total		1,600	1,175	73.5%	270.5	40.4	F

Intersection 16 **Mace Blvd/Cowell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	10	10	103.0%	92.9	81.8	F
	Through	290	282	97.3%	112.2	85.4	F
	Right Turn	70	71	101.7%	95.3	65.0	F
	Subtotal	370	364	98.3%	108.8	81.0	F
SB	Left Turn	90	72	79.7%	36.6	7.8	D
	Through	220	188	85.5%	16.8	4.7	B
	Right Turn	70	59	83.6%	7.6	1.5	A
	Subtotal	380	318	83.8%	19.2	3.4	B
EB	Left Turn	190	190	99.8%	67.5	53.5	E
	Through	100	97	97.1%	46.1	49.2	D
	Right Turn	20	20	101.0%	41.6	61.9	D
	Subtotal	310	307	99.0%	60.5	52.5	E
WB	Left Turn	40	37	92.3%	45.9	20.8	D
	Through	90	90	99.4%	47.9	33.4	D
	Right Turn	110	107	96.8%	44.3	38.9	D
	Subtotal	240	233	97.0%	46.7	33.4	D
Total		1,300	1,222	94.0%	62.4	40.2	E

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Center
Cumulative No Project
AM Peak Hour

Intersection 17

Mace Blvd/El Marcero Dr

All-way Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	20	19	96.5%	37.3	70.1	E
	Through	240	242	100.9%	47.2	76.6	E
	Right Turn	10	10	97.0%	40.6	77.3	E
	Subtotal	270	271	100.4%	46.0	75.7	E
SB	Left Turn	70	64	91.1%	8.3	1.3	A
	Through	200	170	84.9%	10.3	0.8	B
	Right Turn	10	10	100.0%	4.7	1.8	A
	Subtotal	280	244	87.0%	9.6	0.8	A
EB	Left Turn	30	30	101.3%	9.5	7.4	A
	Through	10	12	121.0%	5.8	1.6	A
	Right Turn	10	11	107.0%	2.9	1.7	A
	Subtotal	50	53	106.4%	7.6	4.5	A
WB	Left Turn	10	12	116.0%	4.5	1.8	A
	Through	20	20	98.0%	11.1	10.1	B
	Right Turn	100	100	100.1%	12.5	14.6	B
	Subtotal	130	131	101.0%	11.9	12.5	B
Total		730	699	95.8%	27.0	41.5	D

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Center
Cumulative No Project
PM Peak Hour

Intersection 9 **Mace Blvd/Alhambra Blvd-DiSC Dwy** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	470	411	87.4%	33.7	10.8	C
	Through	680	595	87.6%	11.6	4.7	B
	Right Turn						
	Subtotal	1,150	1,006	87.5%	20.9	7.7	C
SB	Left Turn						
	Through	700	528	75.4%	422.3	81.8	F
	Right Turn	40	34	86.0%	363.4	85.7	F
	Subtotal	740	562	76.0%	418.5	80.0	F
EB	Left Turn	10	10	95.0%	147.1	85.3	F
	Through						
	Right Turn	390	352	90.3%	252.0	159.9	F
	Subtotal	400	362	90.5%	249.2	158.4	F
WB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
Total		2,290	1,930	84.3%	163.0	33.7	F

Intersection 10 **Second St/Fermi Place** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	30	30	98.3%	41.5	12.1	D
	Through	10	11	109.0%	47.5	32.1	D
	Right Turn	110	110	100.2%	59.9	42.8	E
	Subtotal	150	151	100.4%	56.2	32.9	E
SB	Left Turn	290	165	56.8%	247.0	55.5	F
	Through	10	8	76.0%	39.7	32.5	D
	Right Turn	90	51	56.3%	8.7	10.3	A
	Subtotal	390	223	57.2%	192.0	45.1	F
EB	Left Turn	110	74	67.5%	131.6	27.6	F
	Through	720	496	68.8%	230.4	81.0	F
	Right Turn						
	Subtotal	830	570	68.7%	215.6	71.5	F
WB	Left Turn	115	99	86.3%	92.0	56.8	F
	Through	330	284	86.1%	37.7	23.1	D
	Right Turn	190	162	85.1%	10.2	4.6	B
	Subtotal	635	545	85.8%	39.7	23.6	D
Total		2,005	1,489	74.2%	115.0	23.1	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Center
Cumulative No Project
PM Peak Hour

Intersection 11 **Mace Blvd/Second St-Co Rd 32A** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	510	445	87.2%	37.5	9.9	D
	Through	960	854	88.9%	26.8	16.5	C
	Right Turn	40	35	88.3%	20.5	13.2	C
	Subtotal	1,510	1,334	88.3%	30.3	13.1	C
SB	Left Turn	100	77	77.1%	204.7	47.5	F
	Through	850	653	76.9%	250.1	66.8	F
	Right Turn	140	111	79.2%	172.4	49.5	F
	Subtotal	1,090	841	77.2%	236.1	64.0	F
EB	Left Turn	165	115	69.8%	165.8	34.7	F
	Through	120	86	71.5%	165.2	35.9	F
	Right Turn	890	573	64.3%	298.8	65.3	F
	Subtotal	1,175	774	65.8%	267.4	59.5	F
WB	Left Turn	30	27	91.0%	56.6	15.3	E
	Through	20	21	105.5%	42.0	16.5	D
	Right Turn	50	55	110.2%	17.0	5.0	B
	Subtotal	100	104	103.5%	31.8	5.4	C
Total		3,875	3,052	78.8%	137.7	12.6	F

Intersection 12 **Mace Park and Ride Entrance/Co Rd 32A** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	30	30	99.0%	5.5	1.0	A
	Through						
	Right Turn	20	21	102.5%	3.9	1.4	A
	Subtotal	50	50	100.4%	4.8	1.0	A
SB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
EB	Left Turn						
	Through	240	183	76.2%	2.4	0.6	A
	Right Turn	20	16	79.0%	2.0	0.7	A
	Subtotal	260	199	76.4%	2.4	0.6	A
WB	Left Turn	10	9	93.0%	2.2	0.9	A
	Through	70	73	104.7%	0.2	0.2	A
	Right Turn						
	Subtotal	80	83	103.3%	0.4	0.2	A
Total		390	332	85.0%	2.3	0.5	A

Intersection 13 **Mace Blvd/I-80 WB Ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	330	215	65.2%	44.8	4.2	D
	Through	550	357	64.8%	10.9	1.8	B
	Right Turn						
	Subtotal	880	572	65.0%	23.2	2.4	C
SB	Left Turn						
	Through	1,370	930	67.9%	237.0	34.1	F
	Right Turn	400	274	68.5%	151.0	21.3	F
	Subtotal	1,770	1,204	68.0%	218.9	32.2	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	580	568	98.0%	81.0	43.0	F
	Through						
	Right Turn	960	969	100.9%	8.3	0.8	A
	Subtotal	1,540	1,537	99.8%	34.8	15.8	C
Total		4,190	3,313	79.1%	95.5	12.3	F

Intersection 14 **Mace Blvd/Chiles Rd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	30	13	44.3%	178.3	32.8	F
	Through	630	307	48.7%	216.4	43.6	F
	Right Turn	180	83	46.1%	199.8	47.9	F
	Subtotal	840	403	48.0%	211.7	44.3	F
SB	Left Turn	345	272	78.8%	206.9	45.3	F
	Through	570	469	82.3%	79.7	18.2	E
	Right Turn	340	279	82.0%	52.9	13.6	D
	Subtotal	1,255	1,020	81.3%	107.6	25.2	F
EB	Left Turn	430	250	58.0%	191.9	14.3	F
	Through	320	185	57.7%	33.3	9.8	C
	Right Turn	90	53	58.3%	1.8	0.4	A
	Subtotal	840	487	58.0%	120.4	17.2	F
WB	Left Turn	80	69	85.8%	227.8	59.5	F
	Through	60	54	90.3%	211.3	55.6	F
	Right Turn	420	359	85.5%	238.4	48.7	F
	Subtotal	560	482	86.0%	234.4	49.6	F
Total		3,495	2,392	68.4%	151.1	19.1	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Center
Cumulative No Project
PM Peak Hour

Intersection 15 **I-80 EB Off-Ramp/Chiles Rd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	270	241	89.1%	256.2	104.6	F
	Through						
	Right Turn	100	102	101.7%	20.7	37.2	C
	Subtotal	370	342	92.5%	182.6	77.7	F
EB	Left Turn						
	Through	570	246	43.2%	585.9	76.3	F
	Right Turn						
	Subtotal	570	246	43.2%	585.9	76.3	F
WB	Left Turn						
	Through	430	346	80.5%	14.2	2.1	B
	Right Turn						
	Subtotal	430	346	80.5%	14.2	2.1	B
Total		1,370	935	68.2%	206.0	37.3	F

Intersection 16 **Mace Blvd/Cowell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	20	5	26.0%	585.1	229.7	F
	Through	380	99	26.1%	774.6	381.1	F
	Right Turn	30	9	28.3%	773.3	404.6	F
	Subtotal	430	113	26.3%	777.6	378.7	F
SB	Left Turn	140	106	75.9%	53.0	12.4	D
	Through	260	214	82.5%	26.6	6.5	C
	Right Turn	210	169	80.2%	14.4	4.3	B
	Subtotal	610	489	80.2%	28.3	5.6	C
EB	Left Turn	240	110	45.8%	519.0	74.5	F
	Through	120	59	49.0%	510.3	89.9	F
	Right Turn	30	13	42.7%	553.6	157.0	F
	Subtotal	390	182	46.6%	518.2	73.5	F
WB	Left Turn	20	16	82.0%	391.7	214.6	F
	Through	60	51	84.5%	342.4	149.7	F
	Right Turn	90	79	87.9%	352.2	165.0	F
	Subtotal	170	146	86.0%	354.4	158.5	F
Total		1,600	930	58.1%	240.5	26.2	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Center
Cumulative No Project
PM Peak Hour

Intersection 17

Mace Blvd/El Marcero Dr

All-way Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	20	5	23.5%	1153.7	361.0	F
	Through	350	85	24.4%	1324.4	223.0	F
	Right Turn	10	2	21.0%	1036.1	353.2	F
	Subtotal	380	92	24.2%	1319.5	222.6	F
SB	Left Turn	110	84	75.9%	8.5	1.3	A
	Through	190	152	79.8%	11.3	1.4	B
	Right Turn	10	8	75.0%	6.3	4.4	A
	Subtotal	310	243	78.3%	10.3	1.3	B
EB	Left Turn	10	10	102.0%	130.3	106.5	F
	Through	10	9	94.0%	99.7	149.6	F
	Right Turn	10	11	105.0%	85.5	138.3	F
	Subtotal	30	30	100.3%	99.7	121.3	F
WB	Left Turn	10	6	59.0%	599.4	220.9	F
	Through	20	11	54.0%	511.1	210.0	F
	Right Turn	70	38	53.9%	546.8	147.4	F
	Subtotal	100	54	54.4%	455.4	182.0	F
Total		820	419	51.1%	275.7	73.4	F

Intersection 9 **Mace Blvd/Alhambra Blvd-DiSC Dwy** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	321	239	74.5%	58.9	21.8	E
	Through	553	439	79.4%	16.6	3.4	B
	Right Turn	160	125	78.2%	11.7	3.2	B
	Subtotal	1,034	803	77.7%	28.4	6.7	C
SB	Left Turn	179	140	78.2%	264.0	39.1	F
	Through	875	637	72.8%	336.2	33.0	F
	Right Turn	50	38	75.0%	303.6	82.7	F
	Subtotal	1,104	814	73.7%	322.1	33.1	F
EB	Left Turn	20	17	87.0%	71.6	43.5	E
	Through	41	43	105.4%	63.2	30.7	E
	Right Turn	444	431	97.1%	101.1	58.6	F
	Subtotal	505	492	97.4%	96.9	54.8	F
WB	Left Turn	67	60	89.7%	212.8	131.6	F
	Through	22	19	87.3%	32.1	22.7	C
	Right Turn	24	26	107.9%	6.2	2.8	A
	Subtotal	113	105	93.1%	128.5	79.0	F
Total		2,756	2,214	80.3%	149.1	13.4	F

Intersection 10 **Second St/Fermi Place** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	10	10	104.0%	32.1	7.1	C
	Through	10	11	105.0%	23.3	14.5	C
	Right Turn	50	51	101.6%	5.6	2.0	A
	Subtotal	70	72	102.4%	12.8	4.4	B
SB	Left Turn	82	80	97.2%	22.5	4.1	C
	Through	10	10	98.0%	18.8	12.7	B
	Right Turn	20	19	95.5%	6.4	3.7	A
	Subtotal	112	109	97.0%	19.6	3.2	B
EB	Left Turn	40	38	95.5%	29.5	7.3	C
	Through	340	330	97.1%	11.8	3.1	B
	Right Turn	30	30	100.0%	7.7	3.9	A
	Subtotal	410	398	97.1%	13.4	2.9	B
WB	Left Turn	155	117	75.7%	35.0	3.1	D
	Through	693	536	77.3%	16.6	2.8	B
	Right Turn	157	123	78.4%	7.3	0.9	A
	Subtotal	1,005	776	77.2%	17.9	2.1	B
Total		1,597	1,355	84.8%	16.5	1.8	B

Intersection 11 **Mace Blvd/Second St-Co Rd 32A** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	790	590	74.6%	171.5	8.1	F
	Through	960	724	75.5%	78.4	10.6	E
	Right Turn	322	245	76.0%	72.5	9.6	E
	Subtotal	2,072	1,559	75.2%	114.1	9.4	F
SB	Left Turn	79	61	76.8%	145.2	11.3	F
	Through	1,158	906	78.2%	175.1	15.5	F
	Right Turn	140	114	81.4%	123.2	10.9	F
	Subtotal	1,377	1,081	78.5%	167.6	15.0	F
EB	Left Turn	50	47	93.8%	39.2	7.9	D
	Through	42	41	96.4%	45.0	12.0	D
	Right Turn	430	415	96.5%	23.2	24.2	C
	Subtotal	522	502	96.2%	26.8	20.1	C
WB	Left Turn	125	126	100.7%	46.5	22.7	D
	Through	60	60	99.7%	41.2	9.8	D
	Right Turn	24	27	110.8%	17.1	8.6	B
	Subtotal	209	212	101.6%	40.2	7.3	D
Total		4,180	3,354	80.2%	113.0	7.6	F

Intersection 12 **DiSC Dwy-Mace Park and Ride Entrance/Co Rd 32A** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	21	21	99.0%	8.6	3.5	A
	Through						
	Right Turn	12	10	85.8%	3.1	2.2	A
	Subtotal	33	31	94.2%	7.6	3.4	A
SB	Left Turn	11	13	114.5%	8.1	3.6	A
	Through	1	1	130.0%	2.0	4.2	A
	Right Turn	70	71	101.9%	3.7	0.6	A
	Subtotal	82	85	103.9%	4.2	0.8	A
EB	Left Turn	223	173	77.6%	3.7	0.4	A
	Through	145	114	78.7%	3.5	0.8	A
	Right Turn	75	61	80.8%	2.0	0.7	A
	Subtotal	443	348	78.5%	3.3	0.4	A
WB	Left Turn	22	24	108.2%	3.9	0.6	A
	Through	118	121	102.5%	2.0	0.3	A
	Right Turn	39	37	94.1%	1.6	0.3	A
	Subtotal	179	182	101.4%	2.2	0.3	A
Total		737	646	87.6%	3.4	0.3	A

SimTraffic Post-Processor
Average Results from 10 Runs
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Intersection 13 **Mace Blvd/I-80 WB Ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	380	269	70.7%	136.9	27.2	F
	Through	1,037	724	69.9%	196.5	41.5	F
	Right Turn						
	Subtotal	1,417	993	70.1%	180.8	38.9	F
SB	Left Turn						
	Through	1,386	1,154	83.3%	135.7	40.9	F
	Right Turn	327	264	80.8%	79.3	35.8	E
	Subtotal	1,713	1,418	82.8%	125.9	40.5	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	520	443	85.2%	129.9	14.2	F
	Through	10	9	91.0%	120.4	73.2	F
	Right Turn	1,035	844	81.6%	235.6	25.9	F
	Subtotal	1,565	1,297	82.8%	199.6	21.3	F
Total		4,695	3,708	79.0%	163.8	15.8	F

Intersection 14 **Mace Blvd/Chiles Rd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	10	8	81.0%	84.7	28.8	F
	Through	656	608	92.7%	107.6	30.9	F
	Right Turn	50	48	95.6%	75.4	21.9	E
	Subtotal	716	664	92.7%	105.2	30.2	F
SB	Left Turn	287	243	84.7%	83.5	33.3	F
	Through	357	295	82.6%	33.9	4.1	C
	Right Turn	365	307	84.2%	22.5	3.2	C
	Subtotal	1,009	845	83.8%	44.0	11.8	D
EB	Left Turn	876	396	45.2%	220.7	42.4	F
	Through	220	95	43.1%	36.2	4.8	D
	Right Turn	150	61	40.5%	2.3	0.4	A
	Subtotal	1,246	552	44.3%	162.6	24.6	F
WB	Left Turn	30	30	98.7%	144.5	39.1	F
	Through	110	100	91.1%	188.2	56.6	F
	Right Turn	400	370	92.4%	214.5	71.3	F
	Subtotal	540	499	92.5%	206.1	64.6	F
Total		3,511	2,560	72.9%	113.7	15.0	F

Intersection 15 **I-80 EB Off-Ramp/Chiles Rd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	679	349	51.4%	620.1	52.5	F
	Through						
	Right Turn	120	58	48.0%	564.8	75.1	F
	Subtotal	799	407	50.9%	611.5	51.7	F
EB	Left Turn						
	Through	567	204	35.9%	619.6	62.9	F
	Right Turn						
	Subtotal	567	204	35.9%	619.6	62.9	F
WB	Left Turn						
	Through	485	414	85.4%	14.9	2.1	B
	Right Turn						
	Subtotal	485	414	85.4%	14.9	2.1	B
Total		1,851	1,025	55.4%	350.3	22.6	F

Intersection 16 **Mace Blvd/Cowell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	10	11	107.0%	129.7	92.7	F
	Through	299	291	97.4%	124.9	84.2	F
	Right Turn	70	66	94.6%	123.8	89.6	F
	Subtotal	379	368	97.1%	124.7	84.5	F
SB	Left Turn	90	65	72.2%	39.0	8.9	D
	Through	220	163	74.3%	20.0	3.9	C
	Right Turn	73	52	71.8%	7.3	1.7	A
	Subtotal	383	281	73.3%	21.7	2.9	C
EB	Left Turn	198	198	100.1%	73.9	62.3	E
	Through	100	96	96.4%	48.4	42.6	D
	Right Turn	20	21	103.0%	46.2	63.8	D
	Subtotal	318	315	99.1%	63.2	54.2	E
WB	Left Turn	40	41	101.3%	42.9	13.4	D
	Through	90	87	96.9%	31.7	8.2	C
	Right Turn	113	113	99.8%	32.3	18.7	C
	Subtotal	243	241	99.0%	34.1	13.9	C
Total		1,323	1,205	91.1%	63.9	36.3	E

SimTraffic Post-Processor
Average Results from 10 Runs
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Intersection 17

Mace Blvd/El Marcero Dr

All-way Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	20	18	89.5%	20.2	43.7	C
	Through	243	251	103.2%	43.3	79.9	E
	Right Turn	10	11	113.0%	29.9	78.6	D
	Subtotal	273	280	102.6%	40.9	76.7	E
SB	Left Turn	70	51	72.4%	7.8	0.6	A
	Through	200	166	83.2%	10.5	1.4	B
	Right Turn	10	7	71.0%	5.4	2.7	A
	Subtotal	280	224	80.0%	9.7	1.1	A
EB	Left Turn	33	34	103.9%	14.9	21.2	B
	Through	10	10	100.0%	14.7	28.0	B
	Right Turn	10	11	112.0%	5.1	7.4	A
	Subtotal	53	56	104.7%	12.4	16.8	B
WB	Left Turn	10	9	94.0%	17.0	24.4	C
	Through	20	22	112.0%	16.5	22.2	C
	Right Turn	103	99	95.6%	17.5	24.6	C
	Subtotal	133	130	98.0%	17.2	24.0	C
Total		739	690	93.4%	23.1	33.8	C

Intersection 21 **Covell Blvd/Co Rd 30B** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	597	483	80.9%	2.6	0.3	A
	Right Turn						
	Subtotal	597	483	80.9%	2.6	0.3	A
SB	Left Turn						
	Through	1,088	889	81.7%	214.6	22.6	F
	Right Turn						
	Subtotal	1,088	889	81.7%	214.6	22.6	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	16	7	43.8%	533.4	250.2	F
	Through						
	Right Turn	10	7	66.0%	517.1	285.1	F
	Subtotal	26	14	52.3%	118.5	220.2	F
Total		1,711	1,385	81.0%	135.7	10.8	F

Intersection 22 **East Project Dwy/Co Rd 32A** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	28	23	83.2%	5.9	1.2	A
	Through						
	Right Turn	48	48	100.4%	3.4	0.7	A
	Subtotal	76	72	94.1%	4.2	0.8	A
EB	Left Turn	65	49	74.9%	2.9	0.5	A
	Through	103	88	85.6%	0.6	0.3	A
	Right Turn						
	Subtotal	168	137	81.5%	1.4	0.4	A
WB	Left Turn						
	Through	131	132	100.8%	1.0	0.2	A
	Right Turn	74	77	104.3%	0.5	0.3	A
	Subtotal	205	209	102.1%	0.8	0.2	A
Total		449	418	93.0%	1.6	0.3	A

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

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Intersection 9 Mace Blvd/Alhambra Blvd-DiSC Dwy Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	476	393	82.5%	41.4	16.3	D
	Through	714	594	83.2%	17.5	5.8	B
	Right Turn	60	51	84.3%	13.3	5.2	B
	Subtotal	1,250	1,038	83.0%	26.8	10.0	C
SB	Left Turn	72	35	49.2%	890.2	75.6	F
	Through	709	362	51.0%	943.3	67.4	F
	Right Turn	40	18	45.8%	884.9	134.3	F
	Subtotal	821	416	50.6%	935.6	65.1	F
EB	Left Turn	10	7	74.0%	319.6	77.3	F
	Through	22	21	96.4%	320.5	75.5	F
	Right Turn	391	303	77.5%	450.7	73.5	F
	Subtotal	423	332	78.4%	439.0	75.3	F
WB	Left Turn	156	89	57.2%	521.8	114.0	F
	Through	64	43	67.5%	375.4	120.2	F
	Right Turn	190	146	76.8%	49.7	21.1	D
	Subtotal	410	278	67.9%	251.1	52.2	F
Total		2,904	2,063	71.1%	285.5	18.0	F

Intersection 10 Second St/Fermi Place Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	30	29	96.0%	42.2	14.0	D
	Through	10	10	101.0%	85.7	40.8	F
	Right Turn	110	106	96.5%	61.4	38.6	E
	Subtotal	150	145	96.7%	58.8	26.0	E
SB	Left Turn	297	177	59.4%	254.5	111.1	F
	Through	10	6	59.0%	22.2	26.7	C
	Right Turn	90	54	59.7%	9.9	8.3	A
	Subtotal	397	236	59.5%	200.7	106.9	F
EB	Left Turn	110	71	64.3%	116.4	16.3	F
	Through	757	491	64.8%	168.6	37.1	F
	Right Turn						
	Subtotal	867	561	64.7%	162.0	33.6	F
WB	Left Turn	115	92	79.7%	95.2	72.3	F
	Through	359	282	78.4%	41.1	38.8	D
	Right Turn	192	152	79.3%	10.5	8.4	B
	Subtotal	666	525	78.9%	43.1	39.5	D
Total		2,080	1,468	70.6%	108.7	27.2	F

Intersection 11 **Mace Blvd/Second St-Co Rd 32A** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	510	437	85.7%	120.9	54.7	F
	Through	1,007	887	88.1%	110.5	56.8	F
	Right Turn	145	119	82.2%	122.8	80.2	F
	Subtotal	1,662	1,443	86.8%	115.6	54.9	F
SB	Left Turn	110	59	53.5%	263.1	70.1	F
	Through	996	600	60.2%	269.9	51.2	F
	Right Turn	150	90	59.7%	185.4	33.9	F
	Subtotal	1,256	748	59.6%	259.6	49.2	F
EB	Left Turn	178	121	67.7%	186.4	35.3	F
	Through	151	96	63.6%	229.1	78.4	F
	Right Turn	890	563	63.2%	294.1	69.1	F
	Subtotal	1,219	779	63.9%	269.9	59.8	F
WB	Left Turn	273	153	56.2%	320.7	79.2	F
	Through	41	22	54.6%	230.7	55.2	F
	Right Turn	90	47	52.6%	246.3	80.1	F
	Subtotal	404	223	55.2%	300.8	78.0	F
Total		4,541	3,194	70.3%	193.2	33.1	F

Intersection 12 **DiSC Dwy-Mace Park and Ride Entrance/Co Rd 32A** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	84	43	51.0%	529.8	287.0	F
	Through	1	0	10.0%	0.0	0.0	A
	Right Turn	34	19	55.0%	538.8	305.3	F
	Subtotal	119	62	51.8%	436.4	296.7	F
SB	Left Turn	64	23	35.8%	579.4	185.2	F
	Through						
	Right Turn	189	61	32.3%	621.5	207.0	F
	Subtotal	253	84	33.2%	521.4	248.3	F
EB	Left Turn	87	58	66.6%	152.4	119.6	F
	Through	287	179	62.5%	107.0	87.7	F
	Right Turn	32	20	61.3%	140.8	123.5	F
	Subtotal	406	257	63.3%	119.2	96.6	F
WB	Left Turn	12	11	93.3%	51.0	60.4	F
	Through	131	129	98.8%	42.1	42.9	E
	Right Turn	10	9	90.0%	27.9	33.0	D
	Subtotal	153	150	97.8%	42.3	43.0	E
Total		931	552	59.3%	149.4	38.2	F

Intersection 13 **Mace Blvd/I-80 WB Ramps** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	330	222	67.3%	41.3	7.3	D
	Through	635	415	65.3%	14.7	4.6	B
	Right Turn						
	Subtotal	965	637	66.0%	23.9	3.5	C
SB	Left Turn						
	Through	1,578	927	58.8%	219.7	29.7	F
	Right Turn	581	337	58.0%	134.4	21.5	F
	Subtotal	2,159	1,264	58.6%	196.9	29.4	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	580	572	98.6%	58.1	22.8	E
	Through						
	Right Turn	1,027	1,040	101.2%	35.1	54.7	D
	Subtotal	1,607	1,611	100.3%	44.0	40.6	D
Total		4,731	3,512	74.2%	93.7	20.2	F

Intersection 14 **Mace Blvd/Chiles Rd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	30	16	52.0%	138.8	17.1	F
	Through	644	337	52.3%	175.9	25.1	F
	Right Turn	180	95	52.9%	153.7	28.3	F
	Subtotal	854	448	52.4%	169.6	24.6	F
SB	Left Turn	356	268	75.4%	190.8	46.2	F
	Through	597	458	76.7%	72.8	20.1	E
	Right Turn	377	286	76.0%	49.6	15.5	D
	Subtotal	1,330	1,013	76.1%	98.0	28.0	F
EB	Left Turn	490	265	54.1%	190.4	16.2	F
	Through	320	164	51.3%	31.7	6.5	C
	Right Turn	90	47	51.7%	2.4	0.7	A
	Subtotal	900	476	52.8%	114.8	7.3	F
WB	Left Turn	80	70	87.1%	198.2	34.7	F
	Through	60	54	90.7%	191.7	33.8	F
	Right Turn	431	377	87.5%	217.4	30.1	F
	Subtotal	571	501	87.8%	211.3	29.7	F
Total		3,655	2,437	66.7%	136.5	15.5	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

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Intersection 15 I-80 EB Off-Ramp/Chiles Rd Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	293	235	80.1%	332.0	74.0	F
	Through						
	Right Turn	100	93	93.1%	83.9	57.2	F
	Subtotal	393	328	83.4%	274.4	80.7	F
EB	Left Turn						
	Through	607	240	39.5%	536.8	45.9	F
	Right Turn						
	Subtotal	607	240	39.5%	536.8	45.9	F
WB	Left Turn						
	Through	467	355	76.0%	14.5	1.8	B
	Right Turn						
	Subtotal	467	355	76.0%	14.5	1.8	B
Total		1,467	922	62.9%	236.9	28.5	F

Intersection 16 Mace Blvd/Cowell Blvd Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	20	8	40.0%	350.9	118.7	F
	Through	384	170	44.3%	465.2	104.1	F
	Right Turn	30	13	44.7%	462.4	178.3	F
	Subtotal	434	192	44.1%	463.5	104.5	F
SB	Left Turn	144	106	73.9%	44.0	8.6	D
	Through	272	197	72.5%	19.7	3.2	B
	Right Turn	219	166	75.6%	8.3	1.9	A
	Subtotal	635	469	73.9%	21.1	3.3	C
EB	Left Turn	243	164	67.7%	429.9	55.3	F
	Through	120	84	70.2%	409.6	45.0	F
	Right Turn	30	21	70.7%	382.4	69.8	F
	Subtotal	393	270	68.7%	423.9	46.0	F
WB	Left Turn	20	18	90.0%	96.1	91.3	F
	Through	60	57	95.2%	111.5	87.2	F
	Right Turn	92	95	103.2%	118.5	83.5	F
	Subtotal	172	170	98.8%	112.6	80.9	F
Total		1,634	1,101	67.4%	196.4	21.7	F

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Center
Cumulative Plus Project
PM Peak Hour

Intersection 17

Mace Blvd/El Marcero Dr

All-way Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	20	8	39.0%	1017.2	283.1	F
	Through	354	140	39.6%	1088.6	173.5	F
	Right Turn	10	4	44.0%	880.6	310.6	F
	Subtotal	384	152	39.7%	1081.6	175.0	F
SB	Left Turn	114	82	72.1%	9.1	1.9	A
	Through	194	144	74.4%	11.2	1.3	B
	Right Turn	14	10	71.4%	7.8	3.8	A
	Subtotal	322	237	73.4%	10.3	1.3	B
EB	Left Turn	10	10	104.0%	86.6	80.6	F
	Through	10	10	100.0%	21.5	35.5	C
	Right Turn	10	10	102.0%	55.0	104.3	F
	Subtotal	30	31	102.0%	55.7	62.9	F
WB	Left Turn	10	9	94.0%	279.2	227.9	F
	Through	20	19	93.5%	208.8	168.7	F
	Right Turn	70	63	89.9%	268.5	170.3	F
	Subtotal	100	91	91.0%	255.4	169.8	F
Total		836	510	61.1%	320.3	49.0	F

Intersection 21 Covell Blvd-Mace Blvd/Co Rd 30B Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	914	749	82.0%	2.9	0.4	A
	Through						
	Right Turn						
	Subtotal	914	749	82.0%	2.9	0.4	A
SB	Left Turn	820	501	61.0%	390.4	40.2	F
	Through						
	Right Turn						
	Subtotal	820	501	61.0%	390.4	40.2	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	1	0	10.0%	0.0	0.0	A
	Through						
	Right Turn						
	Subtotal	5	5	96.0%	6.8	7.3	A
Total		1,739	1,255	72.1%	143.1	10.5	F

Intersection 21 East Project Dwy/Co Rd 32A Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)								
			Average	Percent	Average	Std. Dev.	LOS						
NB	Left Turn												
	Through												
	Right Turn												
	Subtotal												
SB	Left Turn	98	99	100.9%	9.5	6.5	A						
	Through												
	Right Turn							61	63	103.4%	6.6	4.5	A
	Subtotal	159	162	101.9%	8.3	5.4	A						
EB	Left Turn	47	23	49.6%	3.1	1.1	A						
	Through							338	198	58.6%	1.9	0.9	A
	Right Turn												
	Subtotal	385	221	57.5%	2.0	0.9	A						
WB	Left Turn	92	97	105.7%	0.5	0.2	A						
	Through												
	Right Turn							34	34	100.0%	0.2	0.2	A
	Subtotal	126	131	104.1%	0.4	0.2	A						
Total		670	515	76.8%	3.4	1.7	A						

Intersection 9 **Mace Blvd/Alhambra Blvd-DiSC Dwy** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	321	273	85.0%	40.3	5.4	D
	Through	553	466	84.3%	15.0	2.4	B
	Right Turn	160	141	88.2%	4.0	0.6	A
	Subtotal	1,034	880	85.1%	21.2	2.7	C
SB	Left Turn	179	159	88.9%	199.6	61.6	F
	Through	875	766	87.6%	268.7	62.5	F
	Right Turn	50	43	86.6%	251.9	96.8	F
	Subtotal	1,104	969	87.7%	256.9	63.2	F
EB	Left Turn	20	20	97.5%	50.1	7.0	D
	Through	41	37	91.0%	35.7	11.4	D
	Right Turn	444	447	100.7%	18.4	16.1	B
	Subtotal	505	504	99.7%	21.0	14.2	C
WB	Left Turn	67	71	105.2%	62.6	20.3	E
	Through	22	21	96.8%	25.3	8.8	C
	Right Turn	24	25	105.8%	1.7	0.2	A
	Subtotal	113	117	103.7%	42.4	12.6	D
Total		2,756	2,470	89.6%	107.8	20.2	F

Intersection 10 **Second St/Fermi Place** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	10	9	93.0%	30.1	16.8	C
	Through	10	11	105.0%	25.7	10.7	C
	Right Turn	50	50	99.0%	6.7	2.4	A
	Subtotal	70	69	99.0%	14.6	4.3	B
SB	Left Turn	82	84	102.0%	24.3	4.6	C
	Through	10	12	116.0%	17.5	14.3	B
	Right Turn	20	18	89.5%	8.2	5.1	A
	Subtotal	112	113	101.0%	21.9	3.8	C
EB	Left Turn	40	37	92.3%	26.4	8.4	C
	Through	340	338	99.3%	11.7	2.9	B
	Right Turn	30	31	102.0%	6.5	3.4	A
	Subtotal	410	405	98.8%	12.6	2.8	B
WB	Left Turn	155	137	88.2%	36.3	3.6	D
	Through	693	609	87.8%	20.5	3.7	C
	Right Turn	157	138	87.6%	8.6	1.5	A
	Subtotal	1,005	883	87.8%	21.2	3.2	C
Total		1,597	1,470	92.1%	18.5	2.5	B

Intersection 11

Mace Blvd/Second St-Co Rd 32A

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	790	674	85.3%	156.3	5.7	F
	Through	960	803	83.7%	33.9	4.7	C
	Right Turn	322	275	85.3%	20.3	2.7	C
	Subtotal	2,072	1,752	84.5%	77.8	5.0	E
SB	Left Turn	79	77	97.8%	130.0	11.6	F
	Through	1,158	1,034	89.3%	139.7	18.7	F
	Right Turn	140	127	90.6%	96.2	13.6	F
	Subtotal	1,377	1,238	89.9%	134.9	17.8	F
EB	Left Turn	50	48	96.0%	60.3	12.5	E
	Through	42	46	110.5%	57.8	18.5	E
	Right Turn	430	421	97.8%	14.3	3.6	B
	Subtotal	522	515	98.7%	22.5	3.4	C
WB	Left Turn	125	117	93.8%	114.1	45.3	F
	Through	60	61	101.8%	45.7	5.8	D
	Right Turn	24	24	98.3%	24.8	11.6	C
	Subtotal	209	202	96.7%	84.1	28.5	F
Total		4,180	3,707	88.7%	88.6	4.8	F

Intersection 12

DiSC Dwy-Mace Park and Ride Entrance/Co Rd 32A

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	21	20	96.7%	14.6	4.6	B
	Through						
	Right Turn	12	17	142.5%	2.2	1.2	A
	Subtotal	33	37	113.3%	8.8	4.6	A
SB	Left Turn	11	11	100.0%	24.1	12.8	C
	Through	1	1	80.0%	5.4	9.5	A
	Right Turn	70	68	96.9%	3.9	0.8	A
	Subtotal	82	80	97.1%	7.0	2.3	A
EB	Left Turn	223	196	88.1%	30.9	7.4	C
	Through	145	131	90.3%	12.6	2.4	B
	Right Turn	75	71	94.7%	7.3	3.0	A
	Subtotal	443	398	89.9%	21.1	5.3	C
WB	Left Turn	22	21	97.3%	25.7	8.9	C
	Through	118	119	100.9%	14.5	2.8	B
	Right Turn	39	35	90.8%	7.1	2.5	A
	Subtotal	179	176	98.3%	14.3	1.7	B
Total		737	691	93.8%	17.0	3.6	B

Intersection 13

Mace Blvd/I-80 WB Ramps

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	380	352	92.7%	67.0	27.2	E
	Through	1,037	947	91.3%	83.8	38.3	F
	Right Turn						
	Subtotal	1,417	1,299	91.7%	79.7	35.6	E
SB	Left Turn						
	Through	1,386	1,223	88.3%	169.9	20.6	F
	Right Turn	327	291	89.0%	55.6	22.9	E
	Subtotal	1,713	1,514	88.4%	148.3	21.2	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	520	432	83.0%	128.1	11.2	F
	Through	10	9	85.0%	110.0	46.5	F
	Right Turn	1,035	822	79.4%	228.2	21.7	F
	Subtotal	1,565	1,262	80.6%	194.4	19.3	F
Total		4,695	4,075	86.8%	139.8	13.6	F

Intersection 14

Mace Blvd/Chiles Rd

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	10	8	79.0%	86.5	25.0	F
	Through	656	620	94.5%	96.7	21.8	F
	Right Turn	50	47	93.8%	75.4	19.9	E
	Subtotal	716	675	94.3%	95.1	20.9	F
SB	Left Turn	287	246	85.6%	67.3	23.8	E
	Through	357	309	86.6%	31.0	5.8	C
	Right Turn	365	309	84.6%	12.7	1.2	B
	Subtotal	1,009	864	85.6%	36.2	10.3	D
EB	Left Turn	876	785	89.6%	87.4	10.4	F
	Through	220	200	91.1%	41.5	7.4	D
	Right Turn	150	138	91.7%	2.0	0.1	A
	Subtotal	1,246	1,123	90.1%	69.0	9.9	E
WB	Left Turn	30	27	91.3%	59.5	19.8	E
	Through	110	112	102.1%	68.3	25.5	E
	Right Turn	400	409	102.3%	45.2	25.2	D
	Subtotal	540	549	101.6%	50.3	24.4	D
Total		3,511	3,211	91.4%	62.5	9.4	E

Intersection 15 **I-80 EB Off-Ramp/Chiles Rd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	679	671	98.8%	24.8	13.4	C
	Through						
	Right Turn	120	126	104.9%	5.8	1.0	A
	Subtotal	799	797	99.7%	21.9	11.1	C
EB	Left Turn						
	Through	567	456	80.4%	387.1	44.6	F
	Right Turn						
	Subtotal	567	456	80.4%	387.1	44.6	F
WB	Left Turn						
	Through	485	429	88.5%	12.0	1.1	B
	Right Turn						
	Subtotal	485	429	88.5%	12.0	1.1	B
Total		1,851	1,681	90.8%	118.9	6.9	F

Intersection 16 **Mace Blvd/Cowell Blvd** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	10	10	99.0%	96.1	116.5	F
	Through	299	287	96.0%	108.1	109.8	F
	Right Turn	70	71	101.4%	97.2	101.6	F
	Subtotal	379	368	97.1%	106.2	108.6	F
SB	Left Turn	90	78	87.0%	38.8	7.4	D
	Through	220	199	90.5%	17.9	4.3	B
	Right Turn	73	69	94.1%	7.0	0.9	A
	Subtotal	383	346	90.3%	21.1	3.7	C
EB	Left Turn	198	187	94.3%	52.4	40.8	D
	Through	100	98	97.7%	35.1	36.8	D
	Right Turn	20	23	115.5%	33.2	51.9	C
	Subtotal	318	308	96.7%	45.4	40.5	D
WB	Left Turn	40	42	104.5%	46.4	26.6	D
	Through	90	86	95.2%	39.0	27.4	D
	Right Turn	113	116	102.3%	32.1	36.7	C
	Subtotal	243	243	100.0%	36.6	31.7	D
Total		1,323	1,265	95.6%	54.0	42.9	D

Intersection 17 **Mace Blvd/El Marcero Dr** **All-way Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	20	19	94.5%	19.6	46.6	C
	Through	243	235	96.6%	38.2	83.6	E
	Right Turn	10	11	112.0%	30.4	78.1	D
	Subtotal	273	265	97.0%	36.0	78.5	E
SB	Left Turn	70	66	94.9%	8.1	1.0	A
	Through	200	185	92.3%	10.7	1.0	B
	Right Turn	10	11	109.0%	7.3	2.8	A
	Subtotal	280	262	93.5%	9.9	0.8	A
EB	Left Turn	33	31	94.2%	11.9	13.6	B
	Through	10	10	104.0%	5.0	3.1	A
	Right Turn	10	11	107.0%	6.6	7.7	A
	Subtotal	53	52	98.5%	9.6	9.8	A
WB	Left Turn	10	8	81.0%	39.1	102.2	E
	Through	20	19	94.0%	26.1	61.6	D
	Right Turn	103	109	106.0%	26.1	64.5	D
	Subtotal	133	136	102.3%	26.7	65.7	D
Total		739	715	96.7%	19.8	32.5	C

Intersection 21 **Covell Blvd-Mace Blvd/Co Rd 30B** **Side-street Stop**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	597	518	86.7%	2.8	0.3	A
	Right Turn						
Subtotal		597	518	86.7%	2.8	0.3	A
SB	Left Turn						
	Through	1,088	1,039	95.5%	100.7	113.7	F
	Right Turn						
Subtotal		1,088	1,039	95.5%	100.7	113.7	F
EB	Left Turn						
	Through						
	Right Turn						
Subtotal							
WB	Left Turn	16	11	68.8%	402.5	318.3	F
	Through						
	Right Turn	10	8	83.0%	270.8	287.7	F
Subtotal		26	19	74.2%	74.8	156.7	F
Total		1,711	1,576	92.1%	61.5	65.7	F

Intersection 22

East Project Dwy/Co Rd 32A

Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	28	24	84.3%	7.4	3.7	A
	Through						
	Right Turn	48	48	99.2%	3.6	2.1	A
	Subtotal	76	71	93.7%	4.9	2.7	A
EB	Left Turn	65	57	88.2%	4.4	0.7	A
	Through	103	101	97.7%	2.3	0.7	A
	Right Turn						
	Subtotal	168	158	94.0%	3.1	0.7	A
WB	Left Turn						
	Through	131	127	97.0%	0.9	0.3	A
	Right Turn	74	78	105.5%	0.4	0.2	A
	Subtotal	205	205	100.1%	0.7	0.2	A
Total		449	434	96.7%	2.2	0.6	A

Intersection 9 **Mace Blvd/Alhambra Blvd-DiSC Dwy** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	476	450	94.5%	34.8	7.3	C
	Through	714	696	97.4%	13.2	1.9	B
	Right Turn	60	57	95.3%	4.9	0.8	A
	Subtotal	1,250	1,203	96.2%	20.9	3.3	C
SB	Left Turn	72	72	100.3%	114.6	56.5	F
	Through	709	702	99.0%	112.1	72.7	F
	Right Turn	40	42	104.5%	73.2	71.1	E
	Subtotal	821	816	99.4%	110.5	70.9	F
EB	Left Turn	10	9	91.0%	47.5	22.9	D
	Through	22	22	98.6%	42.1	21.6	D
	Right Turn	391	379	97.0%	4.6	2.3	A
	Subtotal	423	410	97.0%	7.4	2.1	A
WB	Left Turn	156	154	98.5%	48.3	18.1	D
	Through	64	60	93.1%	31.2	6.7	C
	Right Turn	190	191	100.5%	4.5	2.2	A
	Subtotal	410	404	98.6%	24.7	6.8	C
Total		2,904	2,833	97.6%	45.1	20.9	D

Intersection 10 **Second St/Fermi Place** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	30	31	103.0%	40.6	6.7	D
	Through	10	9	92.0%	72.7	40.9	E
	Right Turn	110	111	100.9%	48.8	21.3	D
	Subtotal	150	151	100.7%	48.6	18.9	D
SB	Left Turn	297	195	65.8%	210.8	62.8	F
	Through	10	8	76.0%	24.5	32.2	C
	Right Turn	90	68	75.8%	12.8	7.8	B
	Subtotal	397	271	68.3%	160.7	63.2	F
EB	Left Turn	110	83	75.3%	100.6	10.3	F
	Through	757	586	77.4%	149.1	29.4	F
	Right Turn						
	Subtotal	867	669	77.1%	144.5	27.5	F
WB	Left Turn	115	108	94.3%	76.7	35.3	E
	Through	359	343	95.6%	33.1	11.8	C
	Right Turn	192	181	94.4%	10.1	2.6	B
	Subtotal	666	633	95.0%	34.4	14.1	C
Total		2,080	1,724	82.9%	92.6	11.8	F

Intersection 11 **Mace Blvd/Second St-Co Rd 32A** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	510	487	95.4%	99.9	39.2	F
	Through	1,007	995	98.8%	70.2	35.2	E
	Right Turn	145	149	102.8%	8.9	4.3	A
	Subtotal	1,662	1,630	98.1%	74.0	28.5	E
SB	Left Turn	110	106	96.1%	125.9	16.0	F
	Through	996	958	96.2%	124.1	17.9	F
	Right Turn	150	149	99.2%	78.6	16.9	E
	Subtotal	1,256	1,212	96.5%	119.0	17.9	F
EB	Left Turn	178	141	79.0%	221.7	95.8	F
	Through	151	116	77.1%	154.6	39.6	F
	Right Turn	890	665	74.7%	219.2	26.0	F
	Subtotal	1,219	922	75.6%	212.1	30.5	F
WB	Left Turn	273	252	92.3%	190.7	85.7	F
	Through	41	42	101.2%	53.4	18.8	D
	Right Turn	90	85	94.6%	39.6	9.6	D
	Subtotal	404	379	93.7%	139.1	59.3	F
Total		4,541	4,143	91.2%	121.2	14.0	F

Intersection 12 **DiSC Dwy-Mace Park and Ride Entrance/Co Rd 32A** **Signal**

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	84	79	94.3%	74.2	86.1	E
	Through	1	1	130.0%	0.4	1.1	A
	Right Turn	34	35	101.8%	2.9	1.5	A
	Subtotal	119	115	96.7%	44.2	41.1	D
SB	Left Turn	64	61	95.2%	54.9	53.8	D
	Through						
	Right Turn	189	185	97.8%	31.6	51.4	C
	Subtotal	253	246	97.1%	37.2	50.8	D
EB	Left Turn	87	78	90.0%	45.2	43.0	D
	Through	287	264	91.8%	17.5	11.0	B
	Right Turn	32	26	82.2%	15.7	15.3	B
	Subtotal	406	368	90.7%	22.4	15.8	C
WB	Left Turn	12	13	110.0%	21.6	11.0	C
	Through	131	128	97.9%	21.3	18.1	C
	Right Turn	10	12	119.0%	18.6	36.4	B
	Subtotal	153	153	100.2%	21.5	17.6	C
Total		931	882	94.8%	28.5	24.5	C

Intersection 13

Mace Blvd/I-80 WB Ramps

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	330	319	96.6%	64.5	16.3	E
	Through	635	607	95.5%	10.8	3.0	B
	Right Turn						
	Subtotal	965	926	95.9%	29.6	6.1	C
SB	Left Turn						
	Through	1,578	1,309	82.9%	163.3	10.8	F
	Right Turn	581	506	87.1%	67.3	7.0	E
	Subtotal	2,159	1,815	84.0%	137.4	9.9	F
EB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
WB	Left Turn	580	579	99.9%	36.6	3.6	D
	Through						
	Right Turn	1,027	1,039	101.2%	14.8	21.9	B
	Subtotal	1,607	1,618	100.7%	22.7	15.0	C
Total		4,731	4,358	92.1%	72.0	4.7	E

Intersection 14

Mace Blvd/Chiles Rd

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		LOS
			Average	Percent	Average	Std. Dev.	
NB	Left Turn	30	28	93.3%	82.7	9.1	F
	Through	644	584	90.7%	80.7	9.0	F
	Right Turn	180	165	91.5%	56.9	9.3	E
	Subtotal	854	777	90.9%	75.5	8.5	E
SB	Left Turn	356	320	89.8%	76.5	26.4	E
	Through	597	544	91.1%	32.9	3.9	C
	Right Turn	377	336	89.2%	12.9	2.7	B
	Subtotal	1,330	1,200	90.2%	38.9	9.6	D
EB	Left Turn	490	493	100.6%	46.0	4.3	D
	Through	320	314	98.2%	45.9	5.1	D
	Right Turn	90	92	101.8%	2.2	0.5	A
	Subtotal	900	899	99.8%	41.9	3.0	D
WB	Left Turn	80	77	96.6%	51.3	11.2	D
	Through	60	64	107.3%	54.2	12.5	D
	Right Turn	431	445	103.1%	27.9	9.7	C
	Subtotal	571	586	102.7%	34.0	8.6	C
Total		3,655	3,462	94.7%	47.0	4.3	D

Intersection 15

I-80 EB Off-Ramp/Chiles Rd

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	293	293	99.9%	6.4	1.5	A
	Through						
	Right Turn	100	98	98.3%	3.4	0.7	A
	Subtotal	393	391	99.5%	5.6	1.2	A
EB	Left Turn						
	Through	607	607	100.0%	18.7	11.3	B
	Right Turn						
	Subtotal	607	607	100.0%	18.7	11.3	B
WB	Left Turn						
	Through	467	429	91.8%	10.4	0.9	B
	Right Turn						
	Subtotal	467	429	91.8%	10.4	0.9	B
Total		1,467	1,426	97.2%	12.7	5.6	B

Intersection 16

Mace Blvd/Cowell Blvd

Signal

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	20	19	96.5%	143.4	69.1	F
	Through	384	350	91.0%	147.4	73.5	F
	Right Turn	30	30	100.3%	133.9	65.5	F
	Subtotal	434	399	91.9%	146.0	72.5	F
SB	Left Turn	144	131	90.9%	43.7	7.0	D
	Through	272	245	89.9%	21.6	4.5	C
	Right Turn	219	208	95.0%	10.1	2.2	B
	Subtotal	635	584	91.9%	22.7	3.5	C
EB	Left Turn	243	235	96.9%	89.1	41.4	F
	Through	120	117	97.3%	70.9	41.9	E
	Right Turn	30	33	110.0%	60.0	40.6	E
	Subtotal	393	385	98.0%	81.9	41.5	F
WB	Left Turn	20	18	89.5%	40.0	12.0	D
	Through	60	66	109.5%	37.8	10.1	D
	Right Turn	92	90	97.9%	23.7	9.7	C
	Subtotal	172	174	101.0%	30.5	8.2	C
Total		1,634	1,541	94.3%	69.7	26.2	E

Intersection 17

Mace Blvd/El Marcero Dr

All-way Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn	20	20	101.5%	67.5	111.1	F
	Through	354	337	95.1%	104.4	140.0	F
	Right Turn	10	10	101.0%	98.5	124.8	F
	Subtotal	384	367	95.6%	102.6	137.9	F
SB	Left Turn	114	105	91.8%	9.8	1.4	A
	Through	194	178	91.6%	12.0	0.7	B
	Right Turn	14	14	98.6%	6.5	3.3	A
	Subtotal	322	296	92.0%	11.1	0.8	B
EB	Left Turn	10	9	87.0%	9.9	11.3	A
	Through	10	8	82.0%	5.4	3.5	A
	Right Turn	10	9	91.0%	3.5	1.5	A
	Subtotal	30	26	86.7%	8.4	7.4	A
WB	Left Turn	10	9	92.0%	7.0	4.2	A
	Through	20	18	91.5%	14.2	15.9	B
	Right Turn	70	68	96.9%	16.2	12.6	C
	Subtotal	100	95	95.3%	15.6	12.5	C
Total		836	785	93.8%	55.8	70.6	F

Intersection 21

Covell Blvd-Mace Blvd/Co Rd 30B

Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through	914	893	97.7%	8.3	0.9	A
	Right Turn						
Subtotal		914	893	97.7%	8.3	0.9	A
SB	Left Turn						
	Through	820	841	102.5%	4.8	0.5	A
	Right Turn						
Subtotal		820	841	102.5%	4.8	0.5	A
EB	Left Turn						
	Through						
	Right Turn						
Subtotal							
WB	Left Turn	1	1	50.0%	4.3	11.4	A
	Through						
	Right Turn	4	4	107.5%	6.0	5.0	A
Subtotal		5	5	96.0%	7.7	6.0	A
Total		1,739	1,739	100.0%	6.6	0.5	A

SimTraffic Post-Processor
Average Results from 10 Runs
Volume and Delay by Movement

Davis Innovation Sustainability Center
Cumulative Plus Project w/ Mitigation
PM Peak Hour

Intersection 22

East Project Dwy/Co Rd 32A

Side-street Stop

Direction	Movement	Demand Volume (vph)	Served Volume (vph)		Total Delay (sec/veh)		
			Average	Percent	Average	Std. Dev.	LOS
NB	Left Turn						
	Through						
	Right Turn						
	Subtotal						
SB	Left Turn	98	98	99.9%	9.2	1.8	A
	Through						
	Right Turn	61	60	98.2%	5.4	1.8	A
	Subtotal	159	158	99.2%	7.7	1.7	A
EB	Left Turn	47	41	86.6%	3.9	0.5	A
	Through	338	318	94.2%	2.4	0.3	A
	Right Turn						
	Subtotal	385	359	93.2%	2.6	0.3	A
WB	Left Turn						
	Through	92	94	102.4%	0.4	0.3	A
	Right Turn	34	37	107.4%	0.2	0.3	A
	Subtotal	126	131	103.7%	0.4	0.2	A
Total		670	648	96.6%	3.4	0.7	A

Queuing and Blocking Report

Intersection: 13: Mace Blvd & I-80 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	370	1985	1982	220	335	548	512	628	635	415
Average Queue (ft)	138	1101	1222	109	271	402	297	517	531	335
95th Queue (ft)	253	2523	2604	185	431	692	581	747	742	587
Link Distance (ft)		1936	1936			438	438	530	530	
Upstream Blk Time (%)		32	37			51	21	38	42	
Queuing Penalty (veh)		0	0			294	118	297	325	
Storage Bay Dist (ft)	675			275	275					325
Storage Blk Time (%)		0		0	0	62			57	
Queuing Penalty (veh)		0		0	1	235			148	

Intersection: 15: Chiles Rd & I-80 EB Off-Ramp

Movement	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	2416	161	167	2126	2194	890
Average Queue (ft)	1997	68	83	736	1031	371
95th Queue (ft)	3094	132	140	1981	2177	1060
Link Distance (ft)	2371	379	379	2595	2595	
Upstream Blk Time (%)	66			2	3	
Queuing Penalty (veh)	0			0	0	
Storage Bay Dist (ft)						800
Storage Blk Time (%)					48	
Queuing Penalty (veh)					57	

Queuing and Blocking Report

Intersection: 13: Mace Blvd & I-80 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	500	493	44	145	155	150	140	639	637	415
Average Queue (ft)	242	228	0	73	88	61	57	591	594	398
95th Queue (ft)	458	425	0	127	138	125	117	712	702	523
Link Distance (ft)		1936	1936			438	438	530	530	
Upstream Blk Time (%)								72	73	
Queuing Penalty (veh)								640	642	
Storage Bay Dist (ft)	675			275	275					325
Storage Blk Time (%)	0								80	
Queuing Penalty (veh)	1								321	

Intersection: 15: Chiles Rd & I-80 EB Off-Ramp

Movement	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	2420	136	162	598	961	643
Average Queue (ft)	1944	54	70	73	515	132
95th Queue (ft)	3216	113	129	418	1066	590
Link Distance (ft)	2374	377	377	1115	1115	
Upstream Blk Time (%)	68			1	4	
Queuing Penalty (veh)	0			0	0	
Storage Bay Dist (ft)						800
Storage Blk Time (%)					17	
Queuing Penalty (veh)					17	

Queuing and Blocking Report

Intersection: 13: Mace Blvd & I-80 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	265	1990	1990	198	335	555	541	628	634	415
Average Queue (ft)	126	1402	1530	95	295	455	436	468	492	298
95th Queue (ft)	227	2723	2649	163	436	684	662	762	753	583
Link Distance (ft)		1936	1936			438	438	530	530	
Upstream Blk Time (%)		55	56			62	64	31	35	
Queuing Penalty (veh)		0	0			444	456	259	298	
Storage Bay Dist (ft)	675			275	275					325
Storage Blk Time (%)		0			0	71			50	
Queuing Penalty (veh)		0		0	270				164	

Intersection: 15: Chiles Rd & I-80 EB Off-Ramp

Movement	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	2421	147	172	2645	2641	890
Average Queue (ft)	2346	65	84	2242	2294	632
95th Queue (ft)	2592	128	146	3270	3172	1293
Link Distance (ft)	2371	379	379	2595	2595	
Upstream Blk Time (%)	88			57	64	
Queuing Penalty (veh)	0			0	0	
Storage Bay Dist (ft)						800
Storage Blk Time (%)					97	
Queuing Penalty (veh)					117	

Queuing and Blocking Report

Intersection: 13: Mace Blvd & I-80 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	414	780	715	160	166	152	159	638	640	415
Average Queue (ft)	211	298	172	77	91	67	67	594	598	403
95th Queue (ft)	371	924	962	139	149	133	131	691	684	506
Link Distance (ft)		1936	1936			438	438	530	530	
Upstream Blk Time (%)		1	1					67	69	
Queuing Penalty (veh)		0	0					730	742	
Storage Bay Dist (ft)	675			275	275					325
Storage Blk Time (%)		0							78	0
Queuing Penalty (veh)		0							456	0

Intersection: 15: Chiles Rd & I-80 EB Off-Ramp

Movement	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	2420	148	160	873	1093	809
Average Queue (ft)	2077	56	75	253	642	223
95th Queue (ft)	3127	121	139	957	1277	816
Link Distance (ft)	2374	377	377	1115	1115	
Upstream Blk Time (%)	73			7	24	
Queuing Penalty (veh)	0			0	0	
Storage Bay Dist (ft)						800
Storage Blk Time (%)					33	
Queuing Penalty (veh)					33	

Queuing and Blocking Report

Intersection: 13: Mace Blvd & I-80 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	413	1990	1986	237	335	542	521	1211	1212	1276
Average Queue (ft)	136	1428	1576	120	251	383	356	988	1001	756
95th Queue (ft)	277	2735	2640	200	420	638	593	1365	1369	1452
Link Distance (ft)		1936	1936			438	438	1193	1193	1193
Upstream Blk Time (%)		56	58			26	22	1	3	5
Queuing Penalty (veh)		0	0			184	154	8	15	26
Storage Bay Dist (ft)	675			275	275					
Storage Blk Time (%)		0		0	0	39				
Queuing Penalty (veh)		0		0	1	148				

Intersection: 15: Chiles Rd & I-80 EB Off-Ramp

Movement	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	2414	122	142	322	458	96
Average Queue (ft)	1877	48	68	104	214	39
95th Queue (ft)	3023	100	117	240	451	74
Link Distance (ft)	2371	379	379	2595	2595	
Upstream Blk Time (%)	47					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)						800
Storage Blk Time (%)					0	
Queuing Penalty (veh)					0	

Queuing and Blocking Report

Intersection: 13: Mace Blvd & I-80 WB Ramps

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	L	L	T	T	T	T	R
Maximum Queue (ft)	290	300	237	241	262	253	202	1211	1224	1286
Average Queue (ft)	177	172	33	135	147	93	85	994	1008	862
95th Queue (ft)	261	254	284	214	229	193	166	1443	1440	1627
Link Distance (ft)		1936	1936			438	438	1191	1191	1191
Upstream Blk Time (%)						0		3	5	12
Queuing Penalty (veh)						0		20	32	84
Storage Bay Dist (ft)	675			275	275					
Storage Blk Time (%)				0	1					
Queuing Penalty (veh)				0	2					

Intersection: 15: Chiles Rd & I-80 EB Off-Ramp

Movement	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	L	L	R
Maximum Queue (ft)	371	123	120	68	146	80
Average Queue (ft)	168	53	65	23	61	31
95th Queue (ft)	316	103	106	57	111	63
Link Distance (ft)	2374	377	377	1115	1115	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						800
Storage Blk Time (%)						
Queuing Penalty (veh)						