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Technical Memorandum

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CC: Mike Moran, Director of Engineering and Public Works

RE: Safe Route to Acalanes High School

PLEASANT HILL ROAD MULTI-USE PATHWAY CONCEPT DESIGN STUDY

Contents

Executive Summary

The Pleasant Hill Road Multi-Use Pathway between Deer Hill Road/Stanley Boulevard and Mt Diablo Boulevard presents an exciting opportunity to transform Pleasant Hill Road to a safer and more comfortable street for walking and biking.

Kittelson & Associates, Inc. (Kittelson) conducted a transportation study to investigate the feasibility of installing a multi-use pathway (MUP) within the median of Pleasant Hill Road between Deer Hill Road/Stanley Boulevard and Mt Diablo Boulevard. The design concepts feature a 14-foot wide MUP that would be separated from vehicle traffic by vertical barriers on either side. The design concepts maintain or increase the overall existing roadway width (curb-to-curb) and maintain the vehicle travel lane numbers within the Caltrans' jurisdiction boundary. Additionally, the proposed cross sections conform to applicable Caltrans' design standards. A strip map showing the MUP design concepts for the project corridor is presented in Appendix C.

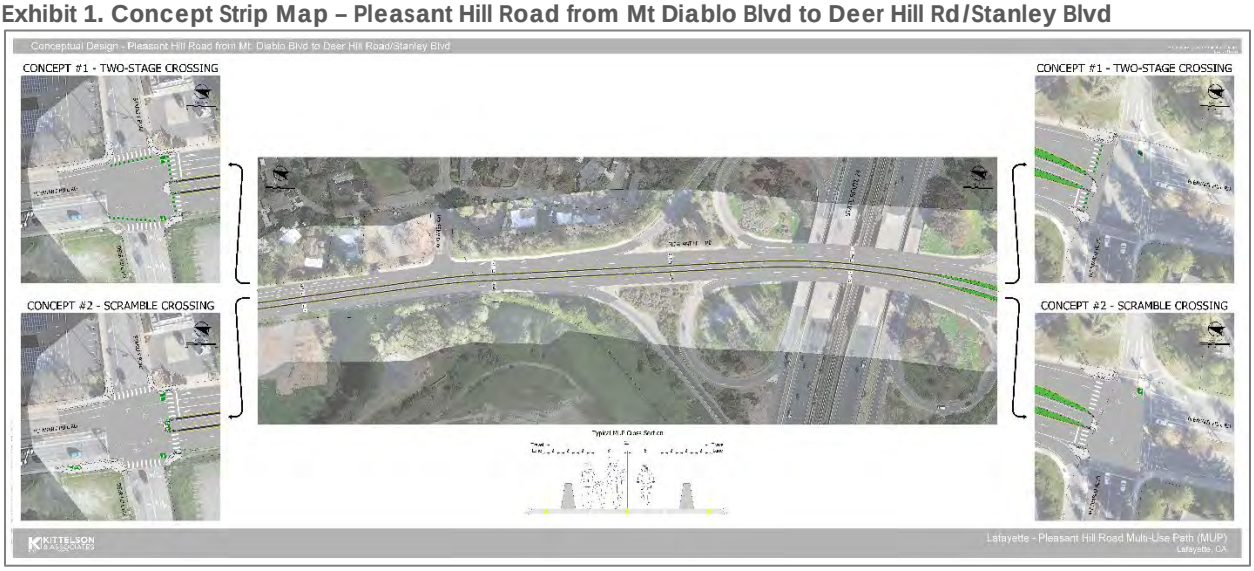
This study includes an analysis of existing and future vehicle traffic and parking conditions to support development and refinement of concept designs and evaluate the potential effects of the project on peak hour vehicle delay and queue lengths. This study presents an evaluation of the concepts and scenarios illustrated in Exhibits #1 through #6 and described as follows:

- **Baseline Conditions**. The baseline scenario represents existing conditions along Pleasant Hill Road. The street is configured as a four-lane divided north-south roadway with two through vehicle lanes in each direction and a median with left-turn lanes. The northbound direction of travel has a right-turn lane at Deer Hill Road/Stanley Boulevard. The northbound left-turn lane at Deer Hill Road/Stanley Boulevard would be lengthened relative to existing conditions, consistent with the proposed design for the Terraces of Lafayette project. Class II bike lanes and Class III sharrows and on-street vehicle parking are provided in some locations on both sides of the street.
- **Concept #1 – Staged Crossing**. Concept #1 would install a center-running two-way multi-use path that would result in the removal of the northbound right-turn lane at Deer Hill Road/Stanley Boulevard. In addition, the existing bike facilities in the northbound and southbound directions would be eliminated. This design concept would provide conventional crosswalk layouts and signal phasing. Pedestrians and cyclists would access the MUP by crossing to the median via a new crosswalk on the north leg at Mt Diablo Boulevard and via the existing crosswalk on the south leg at Deer Hill Road/Stanley Boulevard. This concept would require relatively minor changes to the existing signal phasing schemes and timing at each intersection.
- **Concept #2 – Scramble Crossing**. Similar to Concept #1, Concept #2 would install a center-running two-way multi-use path and remove the northbound right-turn lane at Deer Hill Road/Stanley Boulevard. In addition, the existing bike facilities in the northbound and southbound directions would be eliminated. However, this design concept would provide an exclusive pedestrian phase, commonly referred to as a "pedestrian scramble," in which all vehicles are stopped when pedestrians are given a WALK indication. This signal phasing scheme would reduce the potential for conflict between pedestrians and cyclists with drivers as they cross between the existing sidewalk and the proposed MUP. Under this concept, pedestrians and cyclists may cross diagonally to the MUP in the median.
- **Other Alternatives Considered.** Along with the two primary concepts, two alternatives were considered and evaluated.
    - **Alternative #1. Retain Northbound Right-Turn Lane at Deer Hill Road/Stanley Boulevard.** This alternative examines Concept #1 and Concept #2 with the retention of the dedicated right-turn lane at Deer Hill Road/Stanley Boulevard. Since this alternative requires additional

right-of-way, two concepts were developed for this option. One concept takes right-of-way from the west side of Pleasant Hill Road (Alternative 2a) and the other concept takes right-of-way from the east side of Pleasant Hill Road (Alternative 2b).

- **Alternative #2. Multi-Use Pathway Extension.** This alternative would extend the MUP north of the Deer Hill Road/Stanley Boulevard intersection by widening the sidewalk on the east side of Pleasant Hill Road along the high school frontage. This alternative would extend the dedicated facility connection for pedestrians and bicyclists traveling to and from Acalanes High School, Springhill Elementary School, and other destinations north and south of the proposed project.

Exhibit 1. Concept Strip Map – Pleasant Hill Road from Mt Diablo Blvd to Deer Hill Rd/Stanley Blvd



Note: See Appendix C for full-size version

Exhibit 2. Baseline Conditions – Pleasant Hill Road Cross Section (Northern Section)

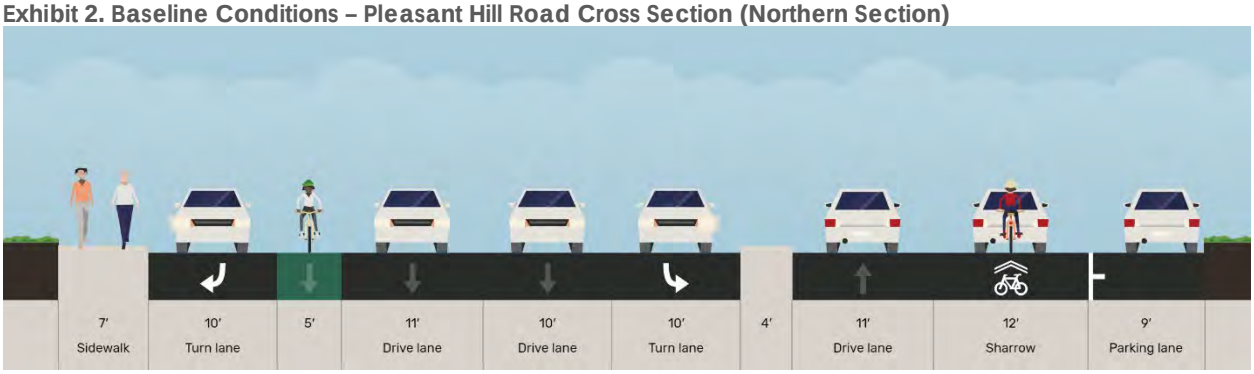


Exhibit 3. Baseline Conditions – Pleasant Hill Road Cross Section (Interchange Section)

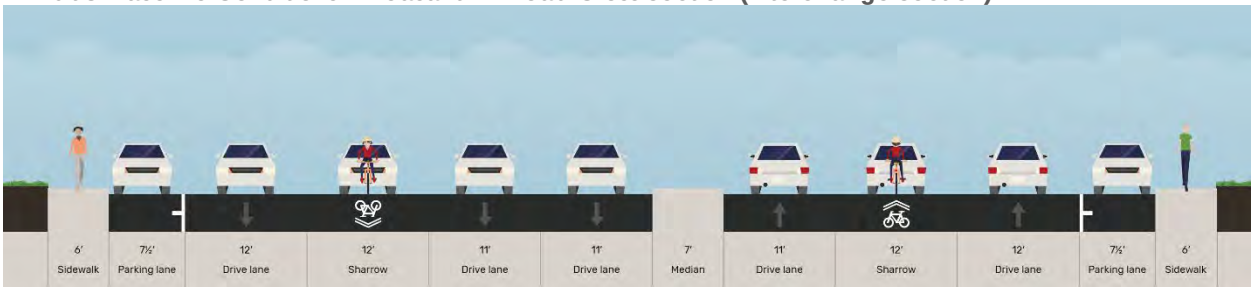


Exhibit 4. Concepts 1 & 2 – Pleasant Hill Road Cross Section (Northern Section)

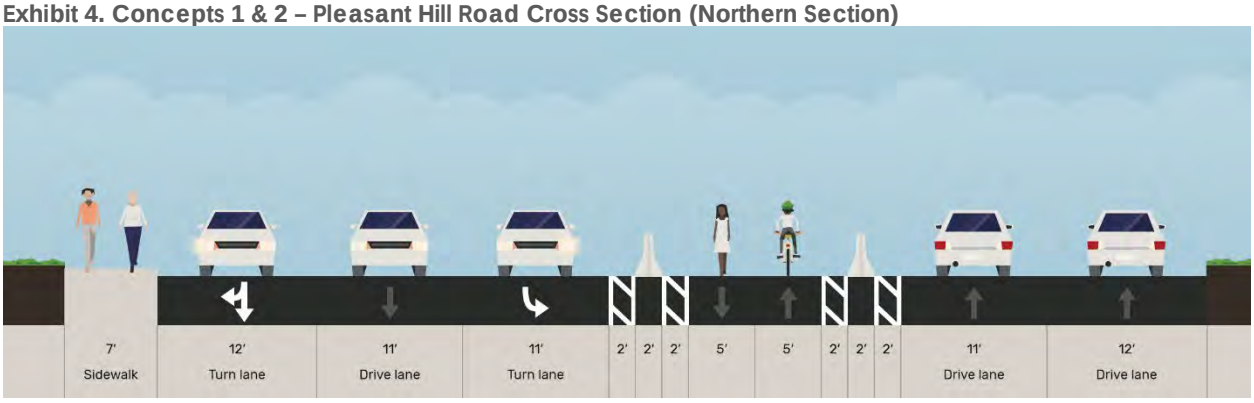


Exhibit 5. Concepts 1 & 2 with Alternative 2 – Pleasant Hill Road Cross Section (Northern Section) Retain NB Right-Turn Lane

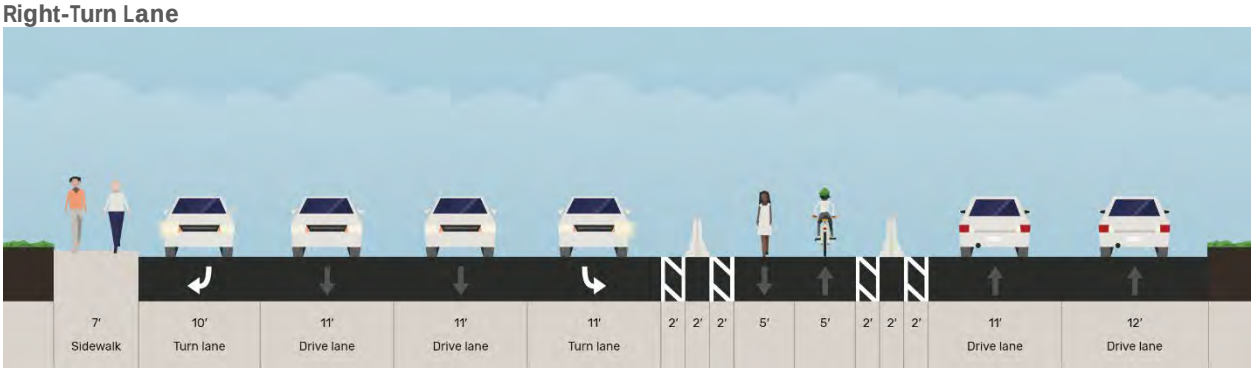
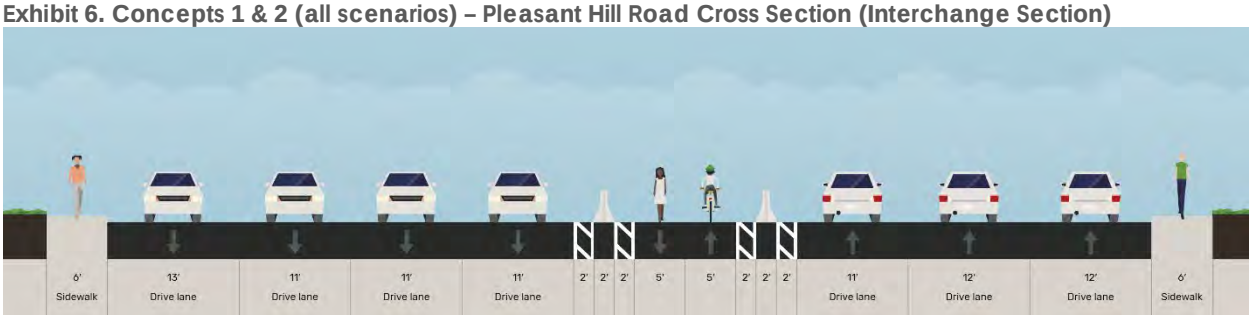


Exhibit 6. Concepts 1 & 2 (all scenarios) – Pleasant Hill Road Cross Section (Interchange Section)



KEY FINDINGS

This analysis resulted in the following key findings.

Existing Parking Utilization

- An inventory of available vehicle parking spaces on the project corridor and adjacent streets within the project vicinity identified a total supply of approximately 328 spaces. Utilization counts revealed the occupancy ranges between 14% and 30% over the course of a typical day. Occupancy rates for the on-street parking on Pleasant Hill Road averaged 15%, with a peak utilization of 20% (49 of 61 spaces available).

Pedestrians & Bicyclists

- The project area includes incomplete or discontinuous pedestrian and bicycle facilities. Sidewalks are not provided on the west side of Pleasant Hill Road between Deer Hill Road and the on-ramp to State Route 24, a distance of approximately 720 feet. A mix of Class II and Class III facilities are provided on the segment.
- Pleasant Hill Road is an arterial roadway characterized by high traffic volumes and vehicular speeds. The proposed multi-use path would separate people walking and biking from vehicle traffic by concrete barriers on both sides.
- Pleasant Hill Road provides the most direct route for people walking and biking to areas north and south of the State Route 24 interchange, such as the Lafayette-Moraga Regional Trail.
- Access to the multi-use path would be provided at the intersections of Pleasant Hill Road with Mount Diablo Boulevard and Deer Hill Road/Stanley Boulevard. Bicyclists and pedestrians traveling to or from Acalanes Avenue would be required to travel approximately 1,200 feet (or 0.25-mile) out-of-direction to access the path and people walking on the east sidewalk would no longer have a five-foot-wide bicycle lane separating them from vehicle traffic.
- The proposed project may result in the relocation or removal of the existing passenger pick-up/drop-off zone on the southwest corner of the Pleasant Hill Road/Deer Hill Road/Stanley Boulevard intersection.
- The multi-use path would represent a significant addition to the city's low-stress pedestrian and bicycle network and would upgrade an important connection across a major barrier, providing an important piece of an interconnected network of safe facilities that link all parts of the community.

Student Pick-up/Drop-Off

Both concepts would require the removal or relocation of the passenger loading zone located on the southwest corner of the Pleasant Hill Road/Deer Hill Road/Stanley Boulevard intersection, which is currently used by Acalanes High School students for pick-up/drop-off. Retention of this passenger loading zone would require acquisition of approximately 300 sq. ft. of right-of-way and relocation of utility poles. The undergrounding of the utility poles and reconstruction of the passenger loading zone may be completed as part of the Terraces of Lafayette development project. If the Terraces of Lafayette development project moves forward this feature will be constructed.

Transit

A County Connection bus stop for Route 625 is located on the west side of Pleasant Hill Road under CA-24 north of Mount Diablo Boulevard. Route 625 is a school route that only operates Monday through Friday and makes one daily stop at the Pleasant Hill Road bus stop at 3:46 PM. The project would eliminate the shoulder on the west side of Pleasant Hill Road which acts as a bus pull-out for its one daily weekday stop. The City has discussed this with County Connection and County Connection is open to the idea of consolidating service at this bus stop with the bus stop located at Mount Diablo Court/Mount Diablo Boulevard, less than 0.25-mile away.

The nearest BART station to the Project is located off Deer Hill Road and Happy Valley Road, approximately 1.5 miles west of the project study area.

Vehicle Delay and Queue Analysis

TRAFFIC COUNTS

Intersection turning movement counts were conducted at the study intersections on Thursday, February 3, 2022 during the morning commute peak (7:00 a.m. to 9:00 a.m.) and school/evening commute peak (2:30 p.m. to 6:30 p.m.). However, since these counts were collected during a time when traffic patterns may have been impacted by the COVID-19 pandemic, adjustments were made to the data to estimate non-COVID conditions. The newly collected counts were increased by 25% to match previous counts collected at the two signalized study intersections for a traffic study in 2018[1]. This adjustment retains the existing proportions between turning movements (as of February 2022) but increases the volumes to provide a conservative estimate of pre-COVID conditions.

This analysis does not explicitly include the vehicle trips expected to be generated by the proposed Terraces of Lafayette project, located on the southwest corner of Pleasant Hill Road/Deer Hill Road/Stanley Boulevard. Since the Terraces project has been in development and litigation for over 10 years, it is uncertain whether it will be constructed in the near term. To understand how volumes associated with this development may impact traffic operations in the area, a sensitivity analysis was completed. This analysis showed that the added volumes would have no impact to the Pleasant Hill Road/Mt Diablo Boulevard intersection and would have minimal impact on the Pleasant Hill Road/Deer Hill Road/Stanley Boulevard intersection.

PLEASANT HILL ROAD AT DEER HILL ROAD/STANLEY BOULEVARD

Baseline Conditions

- **Overall Intersection Operations** – The intersection currently operates acceptably during the AM peak period with drivers experiencing about 46 seconds of delay on average. However, during the PM peak period, delay reaches over 80 seconds as the demand exceeds the intersection's capacity.
- **Pleasant Hill Road Approaches** – During the AM peak period, vehicle delay for northbound and southbound through and right movements are relatively low, ranging from 25 to 50 seconds. Left turn movements for both northbound and southbound vehicles see longer delays of around 1 minute, 10 seconds. 95th percentile vehicles queues[2] are longest for the through movements, with the

[1] *Terraces of Lafayette* Traffic Impact Study (2018)
[2] A 95th percentile queue length represents the length (in feet or vehicle lengths) of vehicles stopped at an intersection that would not be exceeded in 95% of signal cycles. In general, it represents the "worst-case scenario" for traffic queues. In this report, any reference to "queues" refers to 95th percentile queue lengths.

northbound through movement seeing about 450 feet (about 18 vehicle lengths) and the southbound queue seeing about 1,075 feet (about 43 vehicle lengths).

During the PM peak period, operations for the northbound through movement degrade considerably, with delay reaching almost 2 minutes, 30 seconds. This movement also sees the longest queue during the PM peak hour, reaching back about 1,575 feet (63 vehicle lengths), at times to the CA-24 WB loop ramps. Other movements experience delays similar to those seen during the AM peak hour.

- **Deer Hill Road/Stanley Boulevard Approaches** – During the AM peak period, delay for eastbound movements range from 61 to 63 seconds and delay for westbound movements range from 62 to 73 seconds. Eastbound 95th percentile queues range from 200 to 250 feet (8 to 10 vehicle lengths) and westbound queues range from 200 to 350 feet (8 to 14 vehicle lengths).

  During the PM peak period, delay for eastbound movements range from 39 to 49 seconds, and delay for westbound movements range from 59 to 63 seconds. The eastbound approach sees higher queues during the PM peak period, reaching back 525 feet (21 vehicle lengths) for the left turn movement, far exceeding the storage provided by the dual left turn lanes.

Concept #1 (Staged Crosswalk Signal Phasing)

- **Overall Intersection Operations** – Concept #1 results in a slight increase in overall intersection delay compared to existing conditions. On average, drivers would expect to see less than 2 seconds of added delay during the AM peak hour and about 7 seconds of added delay during the PM peak hour. Signal timing was optimized to account for the removal of the exclusive northbound right turn lane, but the cycle length remained the same as existing conditions for both peak periods. Additional discussion of operations on each approach under Concept #1 is summarized in the following bullets. Under baseline conditions it is assumed that right turn drivers have 25 to 30 seconds of delay in making the turn as the volumes are comparatively low. With the elimination of the right turn lane these drivers will experience an increase in delay of about 2 minutes.

- **Pleasant Hill Road Approaches** – During the AM Peak hour, delay for each northbound movement (northbound left-turn, northbound through, and northbound right-turn) would increase by 3 to 9 seconds. Delay on the southbound left-turn movement would increase by 8 seconds while delay for the other two southbound movements (southbound through and southbound right-turn) would decrease slightly. The 95th percentile queues for the northbound through/right movement would extend an additional 225 feet (about 9 vehicle lengths), possibly stretching past Acalanes Avenue. The vehicle queue lengths on the other movements would increase or decrease by about 1 vehicle length (25 feet).

  During the PM peak hour, delay for northbound drivers traveling through or making a left turn would not change. However, with the removal of the northbound right turn lane, northbound drivers taking a right turn onto Stanley Boulevard would see a substantial increase in delay of about 2 minutes, essentially matching the through movement delay under existing conditions. Delay on the southbound left-turn movement would increase by 22 seconds. Delay for the other southbound movements (southbound through and southbound right-turn) would change by less than 2 seconds. Similar to the AM peak hour, during the PM peak hour, queues on the northbound through/right movement would increase by about 9 vehicle lengths and queues on the other movements would increase or decrease by about 1 vehicle length (25 feet).

- **Deer Hill Road/Stanley Boulevard Approaches** – Automobile delay and queuing for eastbound movements is expected to remain the same as under existing conditions. Drivers traveling westbound on Stanley Boulevard would experience minimal changes to delay and queueing during the AM peak hour. During the PM peak hour, delay for westbound left and through movements would increase by about 20 seconds, from about 59 seconds to 80 seconds, and delay for westbound right turn movements would increase by 80 seconds, from about 63 seconds to 143 seconds. The 95th percentile westbound queue lengths would extend an additional 1 to 4 vehicle lengths (25 to 100 feet) during the PM peak hour.

Concept #2 (Pedestrian Scramble Signal Phasing)

- **Overall Intersection Operations** – Concept #2 results in worse vehicle operations performance than existing conditions and Concept #1. On average, drivers would see approximately 22 seconds of added delay during the AM peak hour and about 86 seconds of added delay during the PM peak hour. The length of the signal cycle increases from 150 seconds to 170 seconds in the AM peak period and from 135 seconds to 180 seconds in the PM peak period. An additional signal phase was added to accommodate the exclusive pedestrian movement and timing was optimized. The pedestrian scramble phase was modeled to assume activation in accordance with existing pedestrian volumes. Based on these existing volumes, the pedestrian phase is expected to be activated about once every two cycles during the AM peak hour and about every cycle during the PM peak hour. Additional discussion of operations on each approach under Concept #2 is summarized in the following bullets.
- **Pleasant Hill Road Approaches** – Drivers traveling northbound or southbound on Pleasant Hill Road would experience substantial changes in delay and queue lengths during both the AM and PM peak hours compared to existing conditions.

  During the AM peak hour, drivers making a northbound left turn at the intersection would experience an additional 35 seconds of delay; northbound drivers traveling through or turning right would experience about 20 to 23 more seconds of delay. Southbound left and through movements would experience increases of between 24 and 26 seconds, and the southbound right turn would experience an increase of about 8 seconds. The 95th percentile queues would increase by about 375 feet (or about 15 vehicle lengths) for northbound through/right movements and 275 feet (or about 11 vehicle lengths) for southbound through movements. Southbound left queues increase by about 75 feet to a total of 350 feet, possibly extending past the available left turn pocket storage.

  During the PM peak hour, delays on the northbound through and southbound left-turn movements that experience the highest delay under existing conditions would increase by about 2 minutes (northbound through) and over 3 minutes (southbound left). The northbound right turn would see increases in delay of over 4 minutes and the 95th percentile northbound through/right queues would increase by over 1,000 feet (or 42 vehicle lengths), extending to Old Tunnel Rd. (Figure 13).

  It is likely that drivers would select an alternate route if delays worsened to this degree. For example, drivers that exited the freeway at this location in the PM peak hour (1,115 northbound vehicles) may choose to exit at a different location if they observed or experienced this level of queue spillback and delays on Pleasant Hill Road. However, it is important to note that very few desirable alternate routes exist for Northeast Lafayette residents. Possible routes include Deer Hill Road or the I-680 exit at Treat Boulevard/Geary Road; however, these routes would either be impacted by the Project itself or be too extreme and not applicable to all vehicles.
- **Deer Hill Road/Stanley Boulevard Approaches** – During the AM peak hour, the westbound left and through movements would experience about 45 additional seconds of delay, with the 95th percentile queues increasing by about 100 feet (or 4 vehicle lengths). Drivers traveling eastbound would experience an increase of between 13 to 18 seconds of delay, depending on the movement, and an increase in queue length of around 50 feet (2 vehicle lengths).

  During the PM peak hour, delay for westbound drivers would increase by between about 2 minutes (left and through movements) to almost 4 minutes (right turn movement). Queues increase for eastbound and westbound approaches between 75 and 250 feet (3 to 10 vehicle lengths), potentially stretching past the second driveway to Acalanes High School on the westbound approach on Stanley Boulevard.

PLEASANT HILL ROAD AT MT DIABLO BOULEVARD

Baseline Conditions

- **Overall Intersection Operations** – The intersection currently operates acceptably during both the AM and PM peak periods with drivers experiencing between 22 (AM) and 29 seconds (PM) of delay on average.
- **Pleasant Hill Road Approaches** – During the AM peak hour, vehicle delay for northbound and southbound through and right movements are relatively low, ranging from 6 to 17 seconds. The northbound left turn movement sees longer delays of around 49 seconds. Vehicles queues range from 125 feet (5 vehicle lengths) for the northbound through movement to 300 feet (12 vehicle lengths) for the northbound left turn, which extends into the intersection with Old Tunnel Road.

  Traffic operations during the PM peak period are similar to the AM peak period. Delay for the northbound through, northbound right, and southbound through movements are all below 26 seconds, and delay for the northbound left turn reaches about 40 seconds. Queuing is also similar to the AM peak period, ranging from 175 feet (7 vehicles lengths) for the northbound through movement to 225 feet (9 vehicle lengths) for the northbound left turn.
- **Mt Diablo Boulevard Approach** – Vehicles approaching the intersection from Mt Diablo Boulevard experience between 46 and 48 seconds of delay during the AM peak period for all movements. Maximum queues extend about 225 feet (9 vehicle lengths); given that there is room for approximately 8 vehicles (200 feet) to queue in the eastbound left-turn lane, queues may occasionally extend beyond the turn pocket.

  During the PM peak period, eastbound through and eastbound right movements experience 44 and 49 seconds of delay, respectively, and left turn movements experience 29 seconds of delay. Similar to the AM peak period, the left turn storage area (200 feet or 8 vehicles) may not be able to contain the maximum left turn queue lengths (225 feet or 9 vehicle lengths). Queuing for the eastbound through and eastbound right turns are higher than during the AM peak period, extending 400 feet (16 vehicles) and 375 feet (15 vehicles), respectively.

Concept #1 (Staged Crosswalk Signal Phasing)

- **Overall Intersection Operations** – Concept #1 results in minor changes to overall intersection operations. On average, drivers would expect to experience less than 5 seconds of added delay during the AM peak hour and about 4 seconds of added delay during the PM peak hour. During the both the AM and PM peak periods, increases in 95th percentile queue length on the eastbound approach may extend beyond the existing left-turn pocket and block the through travel lane.

  To reduce the delays and risk of rear-end crashes that may result from queue spillback, the northbound left turn pocket could be extended by an additional 100 feet, providing 300 feet of storage (12 vehicle lengths), which would better accommodate queues. Additional evaluation would need to be conducted to assess the feasibility of removing the existing landscaped median while optimizing signal timing to manage queues.
- **Pleasant Hill Road Approaches** – During the AM peak period, delay for northbound movements increases by about 4 to 13 seconds and delay for southbound movements would increase by about 5 seconds. The 95th percentile queue lengths would increase by 1 to 3 vehicle lengths (25 to 75 feet).

  During the PM peak period, delay *decreases* slightly for all movements except for the northbound left, which would increase by about 17 seconds. The 95th percentile queues increase by between 1 and 2 vehicle lengths (25 to 50 feet).
- **Mt Diablo Boulevard Approach** – During the AM peak hour, drivers making a left turn from Mt Diablo Boulevard to Pleasant Hill Road would experience an increase in delay of about 24 seconds and an increase in queue lengths of about 2 vehicles (50 feet). The other movements would have slightly shorter delays and queues than under existing conditions.

During the PM peak hour, drivers making an eastbound left turn would experience about 43 additional seconds of delay compared to existing conditions. The 95th percentile queues would extend an additional 6 vehicle lengths (150 feet) to 375 feet (15 vehicle lengths). Given that there is room for approximately 8 vehicles (200 feet) to queue on the eastbound approach, queues may extend beyond the turn pocket and block the through lane. Delay for the other movements (eastbound through and eastbound left) decreases slightly and queues increase by about 25 feet (1 vehicle).

Concept #2 (Pedestrian Scramble Signal Phasing)

- **Overall Intersection Operations** – Concept #2 results in worse vehicle operations performance than existing conditions and Concept #1. On average, drivers would expect to experience approximately 9 seconds of added delay during the AM peak hour and about 16 seconds of added delay during the PM peak hour. During the AM and PM peak hour, delays for drivers on the northbound approach would increase by 6 seconds (AM) and 12 seconds (PM), the southbound approach by 5 seconds (AM) and 12 seconds (PM), and the eastbound approach by 18 seconds (AM) and 24 seconds (PM).

  Similar to Concept #1, increases in 95th percentile queue length on the eastbound approach may extend beyond the existing left-turn pocket and block the through travel lane. The turn pocket could potentially be extended by up to 100 feet. Additional evaluation would need to be conducted to assess the feasibility of removing the existing median and optimizing signal timing to manage queues.

- **Pleasant Hill Road Approaches** – Increases in delays for northbound and southbound through movements (compared to existing conditions) are less than 10 seconds during the AM and PM peak hours. Delay impacts for the northbound left-turn movement are more substantial, with increases of 20 and 24 seconds during the AM and PM peak hours, respectively. Queue lengths in the northbound left-turn lane would increase by an additional 100 feet, extending well beyond the Old Tunnel Road intersection.

- **Mt Diablo Boulevard Approach** – During the AM peak hour, eastbound drivers approaching Pleasant Hill Road would experience an increase in delay of about 17 to 19 seconds and an increase in queue lengths of about 2 to 3 vehicles (50 to 75 feet) during the AM peak hour.

  During the PM peak hour, eastbound drivers would experience about 17 (left turn movement) to 27 (right turn movement) additional seconds of delay compared to existing conditions. The 95th percentile queues for the eastbound left turn would extend an additional 125 feet for a total queue length of about 350 feet (14 vehicle lengths). Given that there is room for approximately 8 vehicles (200 feet) to queue on the eastbound approach, queues may extend beyond the turn pocket and block the through lane. Queues would extend an additional 7 to 8 vehicles (175 to 200 feet) for eastbound through and right movements.

CHANGES TO TRAVEL TIME

Changes in travel time are shown in Table ES-1.

Concept #1 would result in minor changes to travel times of less than 20 seconds on most routes during the AM and PM peak hours. However, travel times for drivers making an eastbound left-turn at Mt Diablo Boulevard and heading through or turning right at Deer Hill Road/Stanley Boulevard see a much higher increase between 31 and 161 seconds. The eastbound left turn at Mt Diablo and northbound right turn at Stanley Boulevard during the PM peak hour is the route with the greatest increase in travel time, seeing almost three minutes of added delay (161 seconds).

Concept #2 would increase travel times by between 18 and 50 seconds during the AM peak hour and by between 27 and 263 seconds during the PM peak hour. The PM peak hour sees much greater impacts to travel time; similar to Concept #1, the eastbound left turn at Mt Diablo and northbound right turn at Stanley

Boulevard during the PM peak hour is impacted the most, with over 4 minutes of added delay (263 seconds).

Table ES-1. Changes in Travel Time

Scenario	Route/Movements	Concept #1 Change in Travel Time (Sec/Veh)	Concept #2 Change in Travel Time (Sec/Veh)
AM PEAK HOUR	NB Thru @ Mt Diablo Blvd; NB Thru @ Deer Hill Rd/Stanley Blvd	14	26
	SB Thru @ Deer Hill Rd/Stanley Blvd; SB Thru @ Mt Diablo Blvd	2	29
	EB Left @ Mt Diablo Blvd; NB Thru @ Deer Hill Rd/Stanley Blvd	31	38
	EB Left @ Mt Diablo Blvd; NB Right @ Deer Hill Rd/Stanley Blvd	33	40
	EB Right @ Deer Hill Rd; SB Thru @ Mt Diablo Blvd	5	18
	WB Left @ Stanley Blvd; SB Thru @ Mt Diablo Blvd	7	50
PM PEAK HOUR	NB Thru @ Mt Diablo Blvd; NB Thru @ Deer Hill Rd/Stanley Blvd	-1	136
	SB Thru @ Deer Hill Rd/Stanley Blvd SB Thru @ Mt Diablo Blvd;	-4	29
	EB Left @ Mt Diablo Blvd; NB Thru @ Deer Hill Rd/Stanley Blvd	43	144
	EB Left @ Mt Diablo Blvd; NB Right @ Deer Hill Rd/Stanley Blvd	161	263
	EB Right @ Deer Hill Rd; SB Thru @ Mt Diablo Blvd	0	27
	WB Left @ Stanley Blvd; SB Thru @ Mt Diablo Blvd	20	147

Other Considerations

CUT-THROUGH TRAFFIC

Because the project significantly increases travel times for vehicles making a right turn onto Stanley Boulevard, it is reasonable to assume that some drivers may choose to use Acalanes Avenue to detour through the neighborhood east of Pleasant Hill Road to avoid the added delay and intersection queues. This route (east on Acalanes Avenue from Pleasant Hill Road, north on Nogales Street, and north on Camino Diablo to Stanley Boulevard) may save travelers between 1 and 2 minutes of travel time. To deter traffic from using Acalanes Avenue, Nogales Street, and Camino Diablo as a detour, a sign reading “Local Traffic Only” or “No Thru Traffic” could be installed on Pleasant Hill Road/Acalanes Avenue. Alternatively, some drivers might be discouraged from using Acalanes Avenue if traffic calming measures were installed along the roadway.

RETAIN NORTHBOUND RIGHT TURN LANE AT STANLEY BOULEVARD

Both concepts were further evaluated to understand operational implications of keeping the dedicated northbound right turn lane at Pleasant Hill Road/Deer Hill Road/Stanley Boulevard. Under Concept #1, intersection operations are impacted very little during the AM peak period and are improved compared to existing conditions during the PM peak period. Under Concept #2, intersection operations degrade significantly compared to existing conditions, although they are improved slightly compared to the original Concept #2 (with the removal of the NBR lane).

POTENTIAL ACALANES HIGH SCHOOL FRONTAGE IMPROVEMENTS

A cross section was developed showing a potential extension of the multi-use pathway north of Deer Hill Road/Stanley Boulevard 250 feet to the Acalanes High School driveway. The existing sidewalk on the east side of the roadway could be widened, either by (1) widening the existing sidewalk west to the school's fence or by (2) widening the existing sidewalk east, eliminating the existing bicycle lane. Expanding the sidewalk to the edge of the parking lot fence would require removal of four large trees that separate the fence from the sidewalk. Additionally, there are a couple of signs and a signal pole that would need to be relocated to provide for continuous clear width of the facility.

A potential extension of the MUP is under consideration along the west side of Pleasant Hill Road from Deer Hill Road/Stanley Boulevard to Springhill Road and Springhill School. Additional work would be required to determine the feasibility of both options.

Introduction

PROJECT BACKGROUND & SCOPE

The Pleasant Hill Road Multi-Use Pathway between Deer Hill Road/Stanley Boulevard and Mt Diablo Boulevard presents an exciting opportunity to transform Pleasant Hill Road to a safer and more connected street for walking and biking. The community-proposed center-running two-way multi-use path is an innovative design concept that would separate people walking and biking and eliminate conflicts with freeway-bound traffic at the ramp intersections. Construction of a separated facility on this segment would enable people of all ages and abilities to walk, bike, and roll between regional trails and major destinations and provide a connection that unlocks access to the city's growing low-stress active transportation network.

The purpose of this transportation study is to investigate the feasibility of installing a multi-use pathway within the median of Pleasant Hill Road between Deer Hill Road/Stanley Boulevard and Mt Diablo Boulevard. Also included within the study area is the CA-24 interchange, with an eastbound entrance ramp that intersects Pleasant Hill Road opposite the Mt Diablo Boulevard intersection, and additional loop ramps and diagonal ramps intersecting the roadway at uncontrolled terminal locations between the signals.

Figure 1 displays the project location and right-of-way jurisdictions within the study area.

This memorandum is organized as follows:

- Executive Summary
- Introduction
- Existing Conditions

- Design Concepts
- Multimodal Analysis
  - Pedestrians
  - Bicyclists
  - Student Pick-up/Drop-off
  - Drivers

Figure 1. Project Location Map

ANALYSIS METHODOLOGY

A number of performance measures are used to gauge the overall quality of the driver travel experience through an intersection or roadway segment as it is perceived by the traveler. Intersection operations for drivers were evaluated using the Highway Capacity Manual, 6th Edition, as implemented by Vistro 2022. A brief description of the key performance measures used in this report is provided below:

- *Volume-to-capacity ratio* (V/C) compares the volume of traffic to the theoretical capacity of the facility to accommodate traffic. A V/C ratio of 1.0 indicates an intersection is operating at capacity. A V/C ratio over 1.0 indicates the intersection's capacity is exceeded, meaning that a vehicle may have to wait more than one signal cycle length at a signalized intersection before moving through the intersection.
- *Level of service* (LOS) uses an "A" to "F" ranking based on the average control delay experienced by motorists. LOS "A" conditions have very low vehicle delay times (10 seconds or less), while LOS "F" conditions have high delay times that are considered unacceptable to most drivers. Table 1 provides a more detailed description of the LOS criteria.

Table 1. Intersection Level of Service Definitions

LOS	Description of Traffic Conditions	Average Delay per Vehicle (seconds)	
		Signalized Intersection	Unsignalized Intersection
A	LOS A represents free flow travel with excellent levels of comfort and convenience and the freedom to maneuver.	≤10.0	≤10.0
B	LOS B has stable operating conditions, but the presence of other road users causes a noticeable, though slight, reduction in comfort, convenience, and maneuvering freedom.	>10.0 and ≤20.0	>10.0 and ≤15.0
C	LOS C has stable operating conditions, but the operation of individual users is substantially affected by the interaction with others in the traffic stream.	>20.0 and ≤35.0	>15.0 and ≤25.0
D	LOS D represents high-density, but stable flow. Users experience severe restriction in speed and freedom to maneuver, with poor levels of comfort and convenience.	>35.0 and ≤55.0	>25.0 and ≤35.0
E	LOS E represents operating conditions at or near capacity. Speeds are reduced to a low but relatively uniform value. Freedom to maneuver is difficult with users experiencing frustration and poor comfort and convenience. Unstable operation is frequent, and minor disturbances in traffic flow can cause breakdown conditions.	>55.0 and ≤80.0	>35.0 and ≤50.0
F	LOS F is used to define forced or breakdown conditions. This condition exists wherever the volume of traffic exceeds the capacity of the roadway. Long queues can form behind these bottleneck points with queued traffic traveling in a stop-and-go fashion.	>80.0	>50.0

Existing Conditions

The existing conditions analysis identifies field conditions and current operational, traffic control, and geometric characteristics of transportation facilities within the study area. Kittelson visited the project area and inventoried the existing roadway to identify lane configurations, traffic control devices, bicycle and pedestrian facilities, transit stops, geometric features, sight distances, and adjacent land uses.

PEDESTRIAN AND BICYCLE FACILITIES

Sidewalks are present along both sides of Pleasant Hill Road from Mt Diablo to just south of Acalanes Avenue. North of Acalanes Avenue to Deer Hill Road/Stanley Boulevard, sidewalks are only present on the east side. Marked crosswalks are provided at the two signalized study intersections, except for the north legs at both Mt Diablo Boulevard and Deer Hill Road/Stanley Boulevard. Additionally marked crosswalks across the CA-24 entrance and exit ramps are provided at each of the unsignalized ramp terminal locations. There are no crossings of Pleasant Hill Road within the segment between Deer Hill Road/Stanley Boulevard and Mt Diablo Boulevard. A passenger loading zone is located on the southwest corner of the Pleasant Hill Road/Deer Hill Road/Stanley Boulevard intersection.

Class II bicycle lanes are present along the east side of Pleasant Hill Road, except between the CA-24 loop ramps and along the west side, south of the CA-24 EB loop on-ramp where a shared travel lane (Class III facility) is marked for bicycle use. Between Acalanes Avenue and the start of the northbound right turn lane, plastic delineators are present to separate bicyclists from vehicle traffic and prevent vehicles from using the bike lane to access the right turn lane. Due to the interchange configuration and resulting entering, exiting, and weaving of vehicle traffic to/from the CA-24 ramps, there are several segments along Pleasant Hill Road on which bicycles and vehicles are in a shared lane. Given the volume, speed, and complexity of vehicle traffic movements in this segment, the shared roadway creates potential for conflicts between people biking and driving. These conditions result in a high-stress environment for bicyclists and, according to Lafayette residents, serves as a deterrent for biking along this section of Pleasant Hill Road. Avoiding the freeway on-ramps and off-ramps and the weaving vehicle traffic associated with them, was the primary reason a center median multi-use path project was suggested.

During the AM peak hour, pedestrian volumes at the intersection of Pleasant Hill Road/Deer Hill Road/Stanley Boulevard peak between 20 and 30 pedestrian crossings per hour; the afternoon school commute period sees the highest pedestrian volumes, peaking between 50 and 60 pedestrian crossings per hour between 2:45 p.m. and 4:00 p.m. Bicycle volumes are relatively low, with between 5 and 8 bicyclists moving through the intersection per hour during the weekday AM and PM periods.

At the Pleasant Hill Road/Mt Diablo Boulevard intersection, pedestrian volumes peak between 20 and 25 pedestrian crossings per hour during the AM peak and between 55 and 60 pedestrian crossings per hour during the afternoon school commute period. There are fewer people observed crossing during the traditional PM peak. Bicycle volumes peak around 10 per hour during both the AM peak and the afternoon school commute peak.

TRANSIT

Local bus service is provided by County Connection, which serves several communities in central Contra Costa County with fixed-route and paratransit bus service. Currently, the only local fixed route in the immediate vicinity of the Project is Route 625 – a school route that serves several area schools, including Acalanes High School on Pleasant Hill Road. A bus stop is present under CA-24 on the west side of Pleasant Hill Road. This bus stop is only utilized on school days (Monday through Friday) for one daily stop at 3:46 PM.

The nearest BART station to the Project is located off Deer Hill Road and Happy Valley Road, approximately 1.5 miles west of the project study area.

VEHICLES

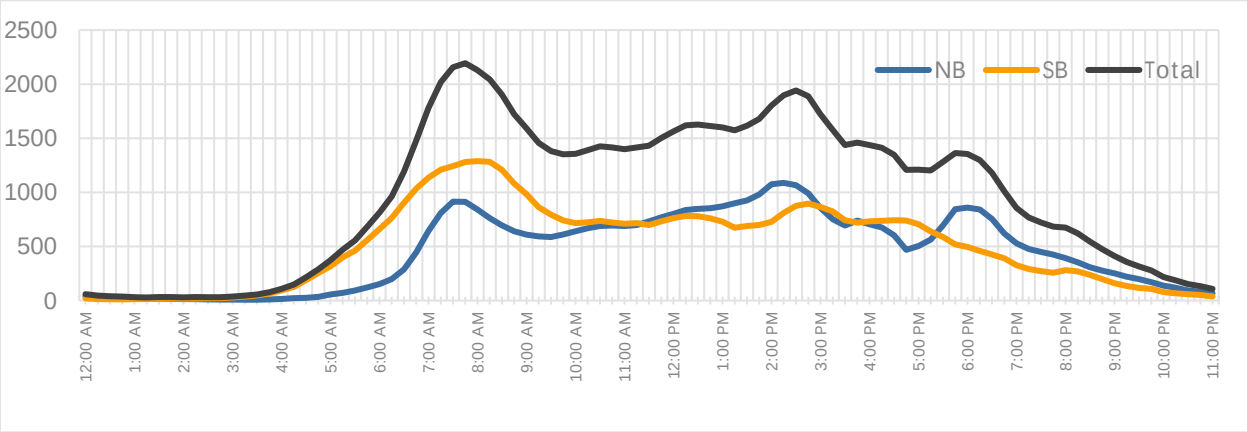
Daily Traffic Counts

Twenty-four (24) hour vehicle counts were conducted along Pleasant Hill Road between Mt Diablo Boulevard and Deer Hill Road/Stanley Boulevard on Tuesday, February 8th and Wednesday, February 9th, 2022. Data collected includes vehicle volumes, speeds, and classification – see Appendix A for volume and speed data sheets.

Average daily traffic[3] (ADT) along the corridor is 22,670 vehicles per day (10,780 northbound and 11,890 southbound). Southbound traffic peaks during the morning between 7:00 a.m. and 9:00 a.m. with a secondary peak occurring around 3:00 p.m., coinciding with the school departures. Northbound vehicle traffic peaks around 2:45 p.m., with smaller peaks occurring during the morning (around 7:30 a.m.) and evening (around 4:30 p.m. and 7:00 p.m.) hours. Figure 2 shows the hourly vehicle traffic flow profile over the 24-hour period.

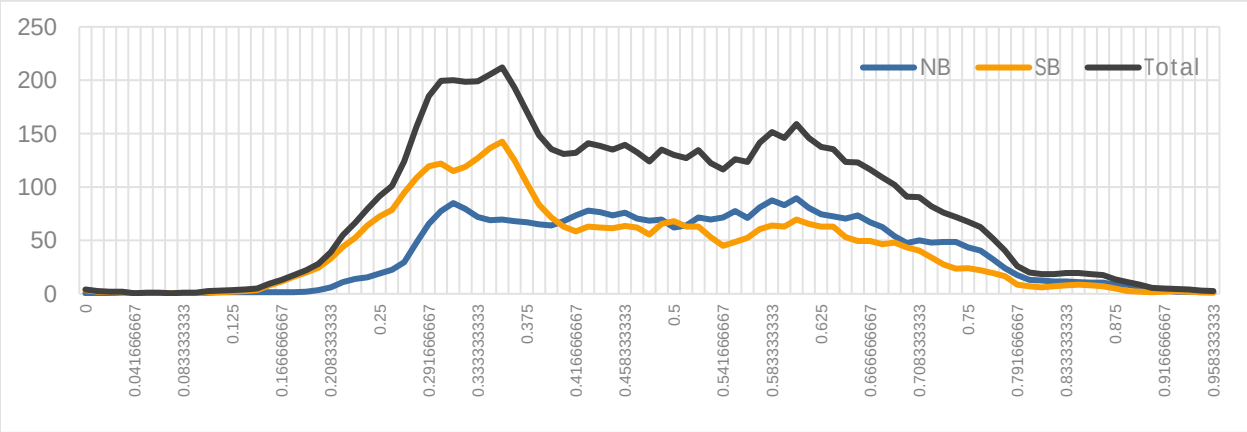
The corridor sees about 1,855 heavy vehicles daily (including about 880 northbound and 975 southbound. On average, about 8% of northbound and southbound traffic is heavy trucks. Heavy vehicle percentage is lowest during the evening hours between 6:00 p.m. and 11:00 p.m. Figure 3 shows hourly heavy vehicle volumes.

Figure 2. Average Weekday Hourly Traffic Volumes – Pleasant Hill Road



[3] Unadjusted February 2022 counts

Figure 3. Heavy Vehicle Hourly Volumes – Pleasant Hill Road

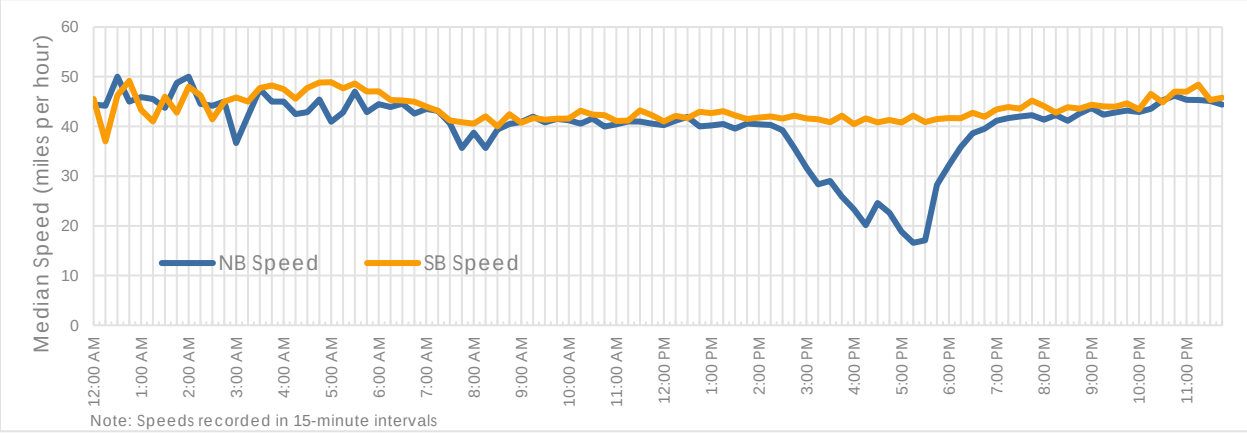


Vehicle Speeds

Vehicle speeds during the morning were observed to be between 40 and 50 miles per hour for both southbound and northbound traffic with a posted speed limit of 35 miles per hour. Northbound traffic was observed to slow by around 5 miles per hour between 7:30 a.m. and 8:00 a.m. while southbound average vehicle speeds remained relatively consistent. Starting around 2:15 p.m., northbound traffic was observed to steadily slow, dropping to average speeds below 20 miles per hour between approximately 4:45 p.m. and 6:15 p.m.

Maximum speeds observed on the corridor were 61 to 65 miles per hour northbound (observed 8 times over two days) and greater than 76 miles per hour southbound (observed once over two days). Speeds more than 20 miles per hour greater than the posted 35-mile-per-hour speed limit are fairly common, observed 74 times northbound and 211 times southbound over two days.

Figure 4. Median Speeds - Pleasant Hill Road



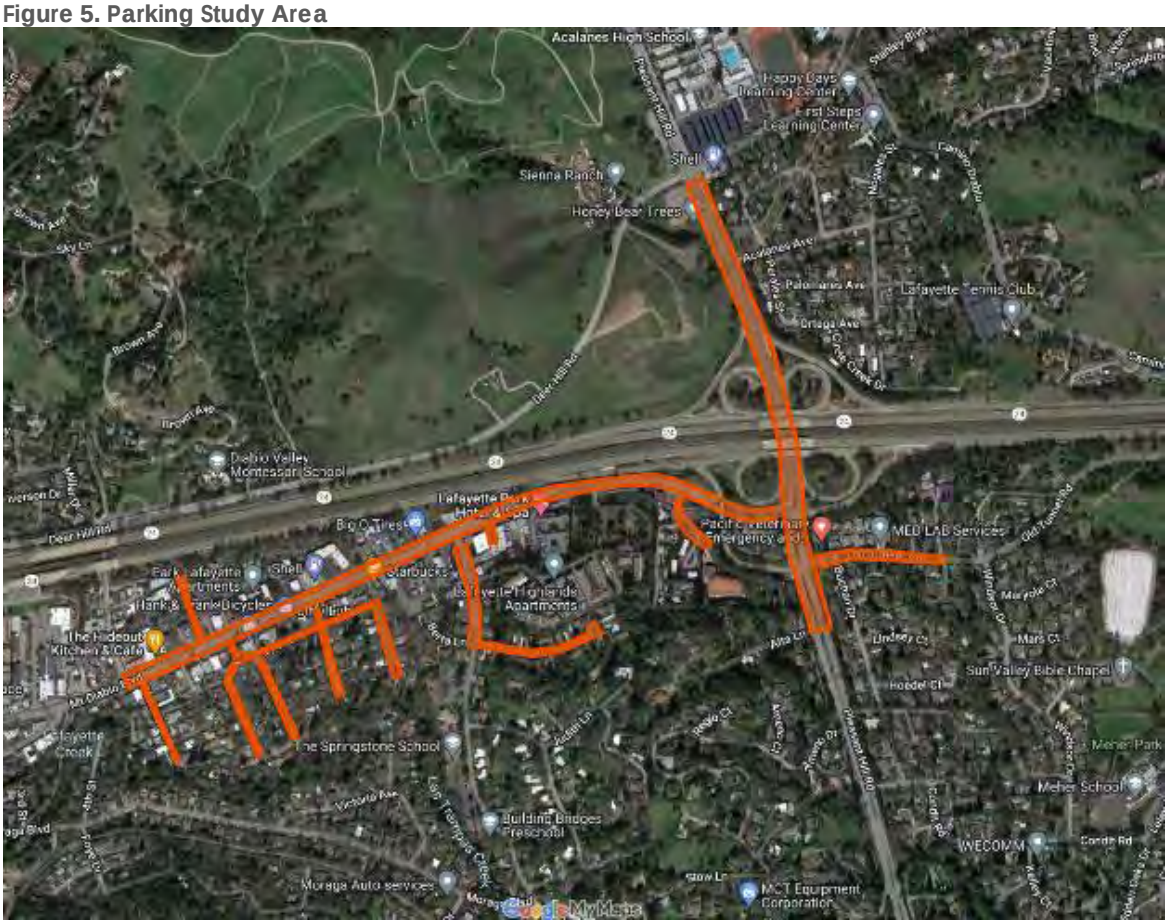
Parking Utilization Counts

Parking data was collected to understand the existing inventory and availability of parking spaces near the study corridor. Because construction of the multi-use path would result in the removal of on-street vehicle parking spaces on Pleasant Hill Road that have historically been used by employees of the Lafayette Park Hotel & Spa, the parking data was obtained to understand the potential effect of the project on parking supply availability for employees and visitors to businesses on Mt Diablo Boulevard. Information regarding

the existing vehicle parking regulations or restrictions was collected along with an inventory of parking spaces for the study corridor (Pleasant Hill Road from Mt Diablo Boulevard to Deer Hill Road/Stanley Boulevard), as well as along roadways within a 10-minute walk of the Lafayette Park Hotel & Spa, located at 3287 Mt Diablo Boulevard. Vehicle occupancy data was collected on a weekday in February between 6:00 a.m. and 7:00 p.m. for the following roadway segments, which are illustrated in Figure 5.

- Pleasant Hill Road – Alta Lane to Stanley Boulevard/Deer Hill Road
- Mt Diablo Boulevard – Brown Avenue to Pleasant Hill Road
- Almanor Lane – Mt Diablo Boulevard to just south of Orchard Valley Lane
- Dyer Drive – Mt Diablo Boulevard to dead end
- Marlene Drive – Carol Lane to dead end
- Public parking lot on Mt Diablo Boulevard

Figure 5. Parking Study Area



A total of 328 parking spaces were counted within the study area. The occupancy rate for the entire area ranges between 14% (282 spaces available) and 30% (230 spaces available), averaging around 25% with 246 spaces available. The highest occupancy rates occurred at the public parking lot on Mt Diablo Boulevard west of Carol Lane, where occupancy rates reach 81% between 2:00 and 4:00 p.m. (3 of 16 spaces available). Occupancy rates for parking on Pleasant Hill Road remain relatively low throughout the day, averaging around 15% (52 spaces available) and peaking midday at 20% with 49 of the 61 spaces available. Table 2 provides the number and percent of parking spaces available, as collected between 7:00 a.m. and 6:00 p.m. during a midweek day in February 2022.

Table 2. Parking Availability – Percent and Number of Spaces Available

Roadway / Parking Area		7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	11-Hour Avg.
Mt Diablo Blvd. *Brown Ave to Pleasant Hill Rd*[1]	%	88%	79%	74%	70%	66%	68%	67%	68%	74%	75%	79%	79%	74%
	#	92	83	78	73	69	71	70	71	78	79	83	83	78
Almanor Ln. *Mt Diablo Blvd to Orchard Valley Ln*	%	79%	85%	79%	67%	64%	61%	64%	64%	67%	61%	67%	64%	68%
	#	26	28	26	22	21	20	21	21	22	20	22	21	22
Dyer Dr. *Mt Diablo Blvd to dead end*[2]	%	89%	81%	76%	81%	83%	74%	80%	80%	80%	80%	91%	93%	82%
	#	48	44	41	44	45	40	43	43	43	43	49	50	44
Marlene Dr. *Carol Ln to dead end*	%	76%	76%	75%	73%	76%	78%	73%	71%	71%	68%	69%	69%	73%
	#	45	45	44	43	45	46	43	42	42	40	41	41	43
Public Lot. *Mt Diablo Blvd*	%	94%	75%	81%	75%	50%	31%	37%	19%	19%	37%	31%	50%	50%
	#	15	12	13	12	8	5	6	3	3	6	5	8	8
Pleasant Hill Rd. *Alta Ln to Deer Hill Rd*	%	90%	85%	84%	85%	82%	80%	80%	87%	77%	90%	92%	90%	85%
	#	55	52	51	52	50	49	49	53	47	55	56	55	52
Study Area	**%**	**86%**	**80%**	**77%**	**75%**	**73%**	**70%**	**71%**	**71%**	**72%**	**74%**	**78%**	**79%**	**75%**
	#	**282**	**262**	**253**	**246**	**239**	**230**	**233**	**233**	**236**	**243**	**256**	**259**	**246**

Note: Restrictions below are present along at least a portion of the roadway extent.
[1] North side – No parking 3AM to 6AM; 2-hour parking 7AM to 6PM. South side – 2-hour parking 7AM to 6PM; 4-hour parking 7AM to 6PM
[2] North side – No parking 3AM to 6AM. South side – 4-hour parking 7AM to 6PM

Intersection Turning Movement Counts

Intersection turning movement counts were conducted at the study intersections on Thursday, February 3, 2022 during the morning commute peak (7:00 a.m. to 9:00 a.m.) and school/evening commute peak (2:30 p.m. to 6:30 p.m.).

See Appendix A for volume and speed data sheets.

COVID-19 Volume Adjustments

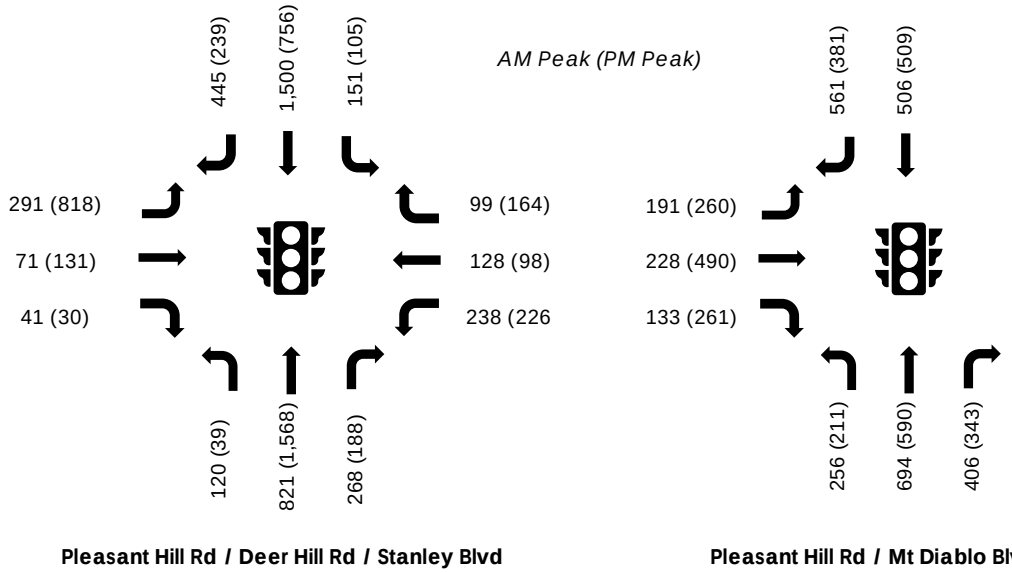
Because the traffic counts were collected during a time when traffic patterns may have been impacted by the ongoing COVID-19 pandemic, adjustments were made to the data to estimate non-COVID conditions. The newly collected counts were compared to traffic counts at the two signalized intersections (Mt Diablo Boulevard; Deer Hill Road/Stanley Boulevard) from a traffic study completed for the *Terraces of Lafayette* project ("Terraces"), a proposed development on the southwest corner of Pleasant Hill Road/Deer Hill Road/Stanley Boulevard. The Terraces traffic study was completed in late 2018 and used adjusted traffic volumes grown from counts collected in 2011.

The volumes used for the Terraces project were significantly higher than the counts collected in February 2022. To grow the new counts to a level consistent with the Terraces project, a 25% growth factor was applied to the AM and PM volumes. This adjustment retains the existing proportions between turning movements (as of February 2022) but increases the volumes to provide a conservative estimate of pre-COVID conditions.

This adjustment represents a very conservative approach given that opportunities for working-from-home for many workers, at least on some days of the week, may result in a long-term reduction in peak hour traffic volumes both in Lafayette and regionally.

Figure 6 shows the adjusted AM and PM peak hour volumes for the two signalized intersections.

Figure 6. Analysis Volumes (AM & PM Peak Hour)



Terraces Project In-Process Volumes

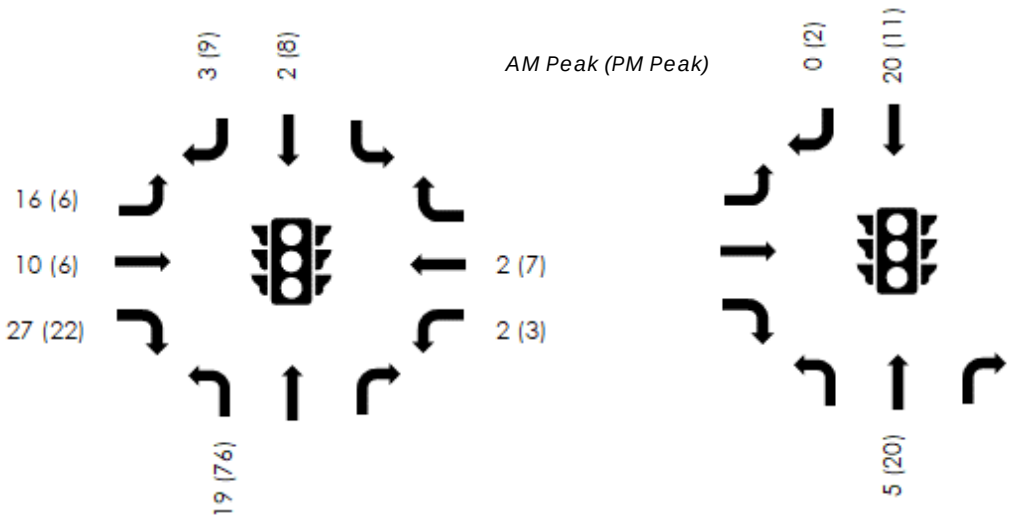
This analysis does not explicitly include the vehicle trips expected to be generated by the Terraces project described above. Since the Terraces project has been in development and litigation for over 10 years, it is uncertain whether it will be constructed in the near term. The vehicle trip generation and assignment associated with the Terraces represents a small portion of traffic volumes at the two study intersections. Given the conservative approach to developing vehicle traffic volumes for this study, the Terraces project is not expected to change results of the analysis.

As shown in Figure 7, the Pleasant Hill Road/Deer Hill Road/Stanley Boulevard intersection would see an additional 81 trips during the AM peak hour and 137 trips during the PM peak hour if the Terraces project was assumed complete; the Pleasant Hill Road/Mt Diablo Boulevard intersection would see an additional 25 trips during the AM peak hour and 33 trips during the PM peak hour. During the AM peak hour, this represents less than 2% of total entering volume for both intersections; during the PM peak hour, this represents about 3% of total entering volume for Pleasant Hill Road/Deer Hill Road/Stanley Boulevard and less than 2% for Pleasant Hill Road/Mt Diablo Boulevard.

A sensitivity analysis was performed to understand how these volumes would impact traffic operations. The results from this analysis are described briefly below. See Appendix F for Vistro traffic analysis worksheets.

- Compared to existing conditions, the Pleasant Hill Road/Deer Hill Road/Stanley Boulevard intersection would experience approximately 4 added seconds of delay during the AM peak hour and 1 added second of delay during the PM peak hour. The largest increases in delay during the AM peak hour is for the southbound-left movement, which would see about 9 seconds of added delay. The largest increases in delay during the PM peak hour are for the northbound-through movements, which would see about 3 seconds of added delay, and for the southbound-through and southbound-right movements, which would see about 5 seconds of added delay.
- Compared to existing conditions, the Pleasant Hill Road/Mt Diablo Boulevard intersection would experience no added delay during both the AM and PM peak hours.

Figure 7. Terraces Project Traffic Volumes at Study Intersections (AM & PM Peak Hour)



Pleasant Hill Rd / Deer Hill Rd / Stanley Blvd **Pleasant Hill Rd / Mt Diablo Blvd**

Vehicle Delay and Queue Analysis

EXISTING CONDITIONS

The level-of-service and volume-to-capacity ratio results for the study intersections under the weekday AM and PM peak hours are shown in Table 3.

Table 4 and Table 5 provide the average delay and 95th percentile queue lengths for each individual movement, respectively. See Appendix B for Vistro outputs for existing conditions.

As shown in Table 3 and Table 4, both signalized intersections operate at acceptable levels of service during the study time periods, with the exception of Pleasant Hill Road/Deer Hill Road/Stanley Boulevard during the PM peak hour. The intersection capacity is exceeded, and the overall delay increases to over 82 seconds in the PM peak hour.

During the AM and PM peak hour, drivers approaching the intersection of Pleasant Hill Road/Deer Hill Road/Stanley Boulevard experience about 31 seconds (AM) and 135 seconds (PM) of delay on the northbound approach, 46 seconds (AM) and 34 seconds (PM) of delay on the southbound approach, 62 seconds (AM) and 47 seconds (PM) on the eastbound approach, and 70 seconds (AM) and 60 seconds (PM) on the westbound approach. At Pleasant Hill Road/Mt Diablo Boulevard, drivers experience about 15 seconds (AM) and 19 seconds (PM) of delay on the northbound approach, 17 seconds (AM) and 26 seconds (PM) of delay on the southbound approach, and 47 seconds (AM) and 42 seconds (PM) of delay on the eastbound approach.

Table 5 shows 95th percentile queue lengths for the two study intersections. At Pleasant Hill Road/Deer Hill Road/Stanley Boulevard, maximum queue lengths are observed at the southbound through movement (1,075 feet or about 43 vehicles) during the AM peak hour and at the northbound through movement (1,575 feet or about 63 vehicles) during the PM peak hour. 95th percentile queue lengths at the eastbound approach extend 525 feet (21 vehicle lengths) for the left turn movement, exceeding the storage provided by the dual left turn lanes. At Pleasant Hill Road/Mt Diablo Boulevard, maximum queue lengths are observed at the northbound left movement (300 feet or about 12 vehicles) during the AM peak hour and at the eastbound through movement (400 feet or about 16 vehicles) during the PM peak hour. Maximum queues at the eastbound left turn (225 feet or 9 vehicle lengths during AM and PM peak periods) may extend past the available 200-foot left turn storage.

Table 3. Vehicle Delay and Level of Service Summary – Existing Conditions

Scenario	Intersection	V/C	Delay	LOS
AM PEAK HOUR	Pleasant Hill Rd / Deer Hill Rd / Stanley Blvd	0.884	46.1	D
	Pleasant Hill Rd / Mt Diablo Blvd	0.460	22.6	C
PM PEAK HOUR	Pleasant Hill Rd / Deer Hill Rd / Stanley Blvd	1.026	82.2	F
	Pleasant Hill Rd / Mt Diablo Blvd	0.608	28.7	C

Table 4. Vehicle Delay by Movement (sec/veh) – Existing Conditions

Scenario	Intersection	EB			WB			NB			SB		
		L	T	R	L	T	R	L	T	R	L	T	R
AM PEAK HOUR	Pleasant Hill Rd / Deer Hill Rd / Stanley Blvd	62.9	61.4	61.4	72.5	72.2	62.1	72.4	27.4	25.3	71.4	48.3	30.1
	Pleasant Hill Rd / Mt Diablo Blvd	46.7	46.6	47.3	-	-	-	49.2	6.4	7.7	-	17.0	0.0
PM PEAK HOUR	Pleasant Hill Rd / Deer Hill Rd / Stanley Blvd	48.9	39.1	39.1	59.0	58.9	62.6	65.8	148.1	29.8	72.4	30.4	28.5
	Pleasant Hill Rd / Mt Diablo Blvd	29.2	44.4	48.5	-	-	-	39.8	13.0	15.4	-	25.5	0.0

Table 5. 95th Percentile Queue Lengths (ft/ln) – Existing Conditions

Scenario	Intersection	EB			WB			NB			SB		
		L	T	R	L	T	R	L	T	R	L	T	R
AM PEAK HOUR	Pleasant Hill Rd / Deer Hill Rd / Stanley Blvd	250	-	200	325	350	200	225	450	300	275	1075	525
	Pleasant Hill Rd / Mt Diablo Blvd	225	225	225	-	-	-	300	125	175	175	-	-
PM PEAK HOUR	Pleasant Hill Rd / Deer Hill Rd / Stanley Blvd	525	-	200	225	250	250	75	1,575	200	175	375	250
	Pleasant Hill Rd / Mt Diablo Blvd	225	400	375	-	-	-	225	175	200	200	-	-

Design Concepts

CONCEPT DEVELOPMENT AND SCREENING

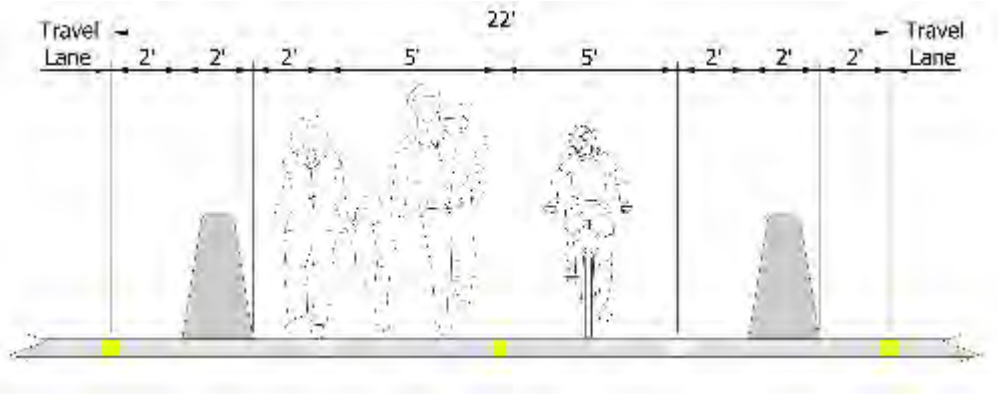
This report presents two preferred concepts that were developed as part of a screening process that included several alternatives. This section provides a brief background on these alternatives and the screening process.

- **One-way bicycle lanes rather than a center median MUP:** Under existing conditions, Class II bicycle lanes are present along the east side of Pleasant Hill Road between Mt Diablo Boulevard and Deer Hill Road, except between the CA-24 loop ramps where bicyclists must merge and share a lane with vehicle traffic. On the west side of Pleasant Hill Road there are shared lane marking for cyclists. The lane configuration of this section, as well as the volume, speed, and complexity of the traffic movements, make upgrading these Class II and Class III facilities to separated (Class IV) bicycle lanes infeasible. The west side of Pleasant Hill Road has on-street parking; this right-of-way could be restriped as bicycle lanes, but it would present the same issue as the east side regarding the section between the freeway ramps.
- **Removal of Northbound Left Turn Lane with a center median MUP:** Both preferred concepts include the removal of the dedicated northbound right-turn lane at the intersection of Pleasant Hill Road and Deer Hill Road/Stanley Boulevard to provide adequate right-of-way for the multi-use path. Removing the northbound *left* turn lane was considered as an alternative option; however, the changes in signal timing required to accommodate this lane removal (i.e., change to split phase) dramatically increased the delays in the intersection and as such this alternative was infeasible.
- **Other considerations:** The preferred concepts were selected, in part, due to the following limitations and considerations:
  - *Right-of-way limitations* – this project is limited by the right-of-way available along Pleasant Hill Road. The preferred concepts include a re-arrangement of the existing traveled way (i.e. removal of the northbound right turn lane at Stanley Boulevard and the removal of a passenger loading zone used exclusively by Acalanes High School students); further discussion of right-of-way takings to retain existing lane configurations is included later in this report.
  - *Requirement for Class I Bicycle Facility* – the grant received from the State of California specifies that the facility must provide a safe path for people of all ages and abilities, which indicates requirement to provide exclusive right-of-way for pedestrians and cyclists away from the roadway and vehicle traffic.
  - *Alignment with project goals* – this project stems from a desire to reduce emissions, advance safe routes to school and reduce collisions and injuries for pedestrians and bicyclists, and develop a more expansive regional bikeway network.
  - *Alignment with local and regional policies* – this includes the city's Vision Zero policy, the Contra Costa County Countywide Bicycle Plan, and the Lamorinda Action Plan.

PREFERRED CONCEPTS

Working together with the City of Lafayette engineering staff, Kittelson developed a design concept for a center-running two-way multi-use path (MUP) within the median of Pleasant Hill Road between Mt Diablo Boulevard and Deer Hill Road/Stanley Boulevard. The design concept features a 14-foot wide MUP that would be protected from traffic by concrete barriers on either side (10-foot striped width plus 2-foot shy on each side). The proposed cross section for the MUP is presented in Figure 8.

Figure 8. Typical Pleasant Hill Road Multi-Use Path Cross Section



The proposed design concept would maintain the overall existing roadway width (curb-to-curb) and lane numbers within the Caltrans' jurisdiction boundary. Additionally, the proposed cross section conforms exceeds to applicable Caltrans' design standards for Pleasant Hill Road, including:

- 13-foot width for travel lanes adjacent to exterior curbs.
- 11-foot travel lane width for interior lanes.
- 2-foot shy distance between travel lane and concrete barrier.

A strip map showing the MUP design concept for the project corridor is presented in Appendix C.

At the signalized intersections at either end of the project area, the team developed and evaluated two general concepts for addressing pedestrian and bicycle crossings from the exterior corners to the MUP in the median, as described below.

- **Concept #1 – Staged Crossing**. This concept would provide conventional crosswalk layouts and signal phasing. Pedestrians and cyclists would access the MUP by crossing to the median via a new crosswalk on the north leg of the Pleasant Hill Road/Mt Diablo Boulevard intersection and via the existing crosswalk on the south leg at the Pleasant Hill Road/Deer Hill Road/Stanley Boulevard intersection. This concept would require relatively minor changes to the existing signal phasing schemes and timing at each intersection.
- **Concept #2 – Scramble Crossing**. This concept would provide an exclusive pedestrian phase, commonly referred to as a "pedestrian scramble," in which all vehicles are stopped when pedestrians are given a WALK indication. Under this concept, pedestrians and cyclists may cross diagonally to the MUP in the median. This Concept would reduce the time and distance required for pedestrians and bicyclists to access the median, compared to the two-staged crossing required for Concept #1.

Figures 9-12 display design concept for the two study intersections under each of the two design concepts, respectively.

An additional three alternatives were also considered in addition to the two major concepts. One is an alternative to include a new lane configuration for the westbound approach of Pleasant Hill Road/Deer Hill Road/Stanley Boulevard, based on a potential City of Lafayette project. Another is an alternative to retain the northbound right turn lane at Stanley Boulevard. The last alternative is to extend the multi-use pathway north of Deer Hill Road/Stanley Boulevard by widening the sidewalk along the east side of the roadway. These alternatives are discussed and evaluated later in this report.

Figure 9. Pleasant Hill Road/Deer Hill Road/Stanley Boulevard Intersection Design Concept 1 - Staged Crossing

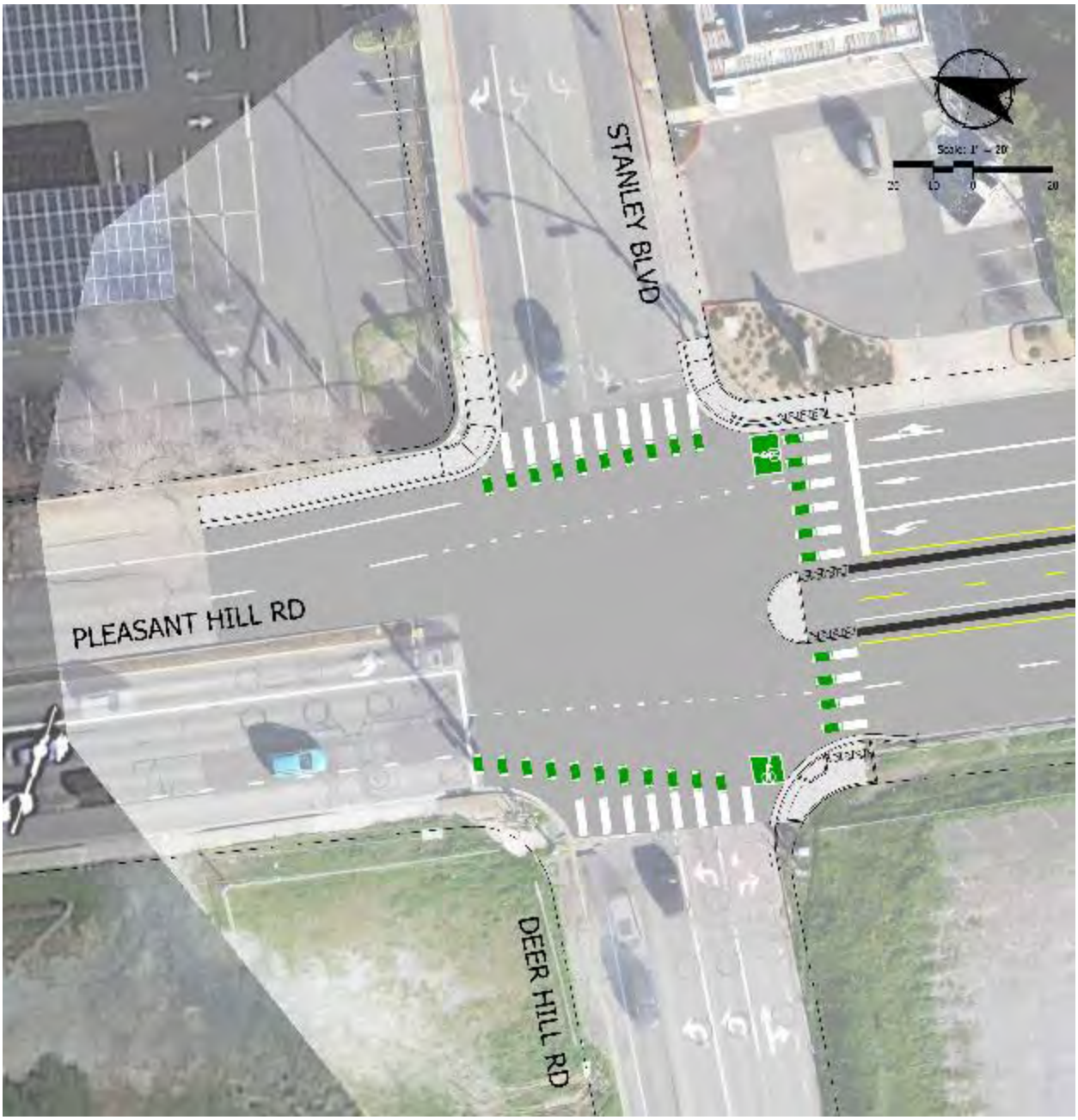


Figure 10. Pleasant Hill Road/Mt Diablo Boulevard Intersection Design Concept 1 - Staged Crossing

Figure 11. Pleasant Hill Road/Deer Hill Road/Stanley Boulevard Design Concept 2 – "Scramble" Crossing

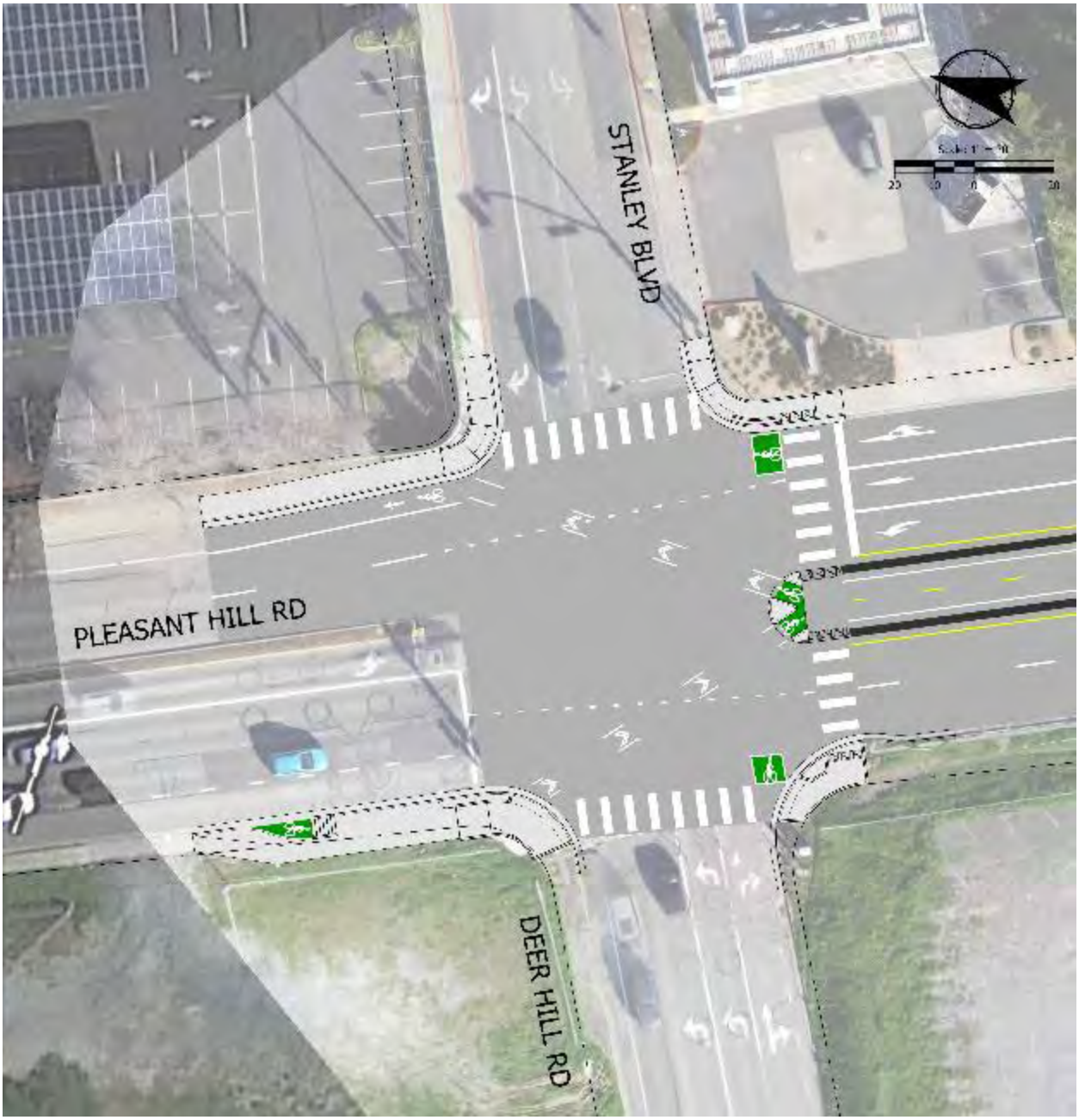


Figure 12. Pleasant Hill Road/Mt Diablo Boulevard Intersection Design Concept 2 - "Scramble" Crossing

Multimodal Analysis

PEDESTRIANS & BICYCLISTS

Alternative Bicycle Routes

The project offers bicyclists a more protected and direct route between Mt Diablo Boulevard, south of CA-24, and Acalanes High School and residential areas north of the freeway.

Presently, bicyclists generally have two alternate options that require lengthy and inconvenient detours for cyclists:

Deer Hill Road via Brown Avenue

This option uses Brown Avenue to cross under the freeway. Brown Avenue is a local roadway and signed Class III bike route with a speed limit of 25 miles per hour. Brown Avenue connects to Deer Hill Road, which is a 45-mph roadway with unprotected Class II bicycle lanes and a steep ascent between Brown Avenue and Pleasant Hill Road.

Cons: High vehicle speeds and steep terrain on Deer Hill Road; detour of 1.5 miles (1.9 miles compared to 0.4 miles along Pleasant Hill Road)

Camino Diablo via Old Tunnel Road/El Curtola Boulevard

This option crosses the freeway using the El Curtola Boulevard overpass, connecting Old Tunnel Road to Camino Diablo. The bridge has no dedicated bicycle facilities or shoulders and a four-foot sidewalk on one side. Old Tunnel Road and Camino Diablo have no dedicated bicycle facilities and feature rolling hills; however, Class III facilities are planned for Old Tunnel Road, El Curtola Boulevard, and Camino Diablo.

Cons: Circuitous route; no separation between vehicle traffic; steep terrain/rolling hills; detour of 1.3 miles (1.7 miles compared to 0.4 miles along Pleasant Hill Road)

As described above, the existing options for cyclists do not offer separation from vehicles and take circuitous routes with steep terrain. Pleasant Hill Road (under existing conditions) presents bicyclists with potential conflicts with vehicles at freeway ramps. The figure below shows the proposed MUP in orange, and the two alternate options in green and blue).

Access to/from Acalanes Avenue

The multi-use path is separated from vehicle traffic by concrete barriers on both sides, restricting access to the intersections with Mount Diablo Boulevard and Deer Hill Road/Stanley Boulevard. People walking and biking to or from Acalanes Avenue would be required to travel approximately 1,200 feet (0.25-mile) out-of-direction to access the path.

The following describes how various users of the roadway system will be impacted:

- Northbound bicyclists and pedestrians traveling ***to*** Acalanes Avenue will need to travel approximately 600 feet farther north to the intersection with Deer Hill Road/Stanley Boulevard. From there, they could either use the sidewalk along the east side of Pleasant Hill Road to travel the 600 feet back to Acalanes Avenue, adding ¼ mile to their trip. Or they could access the neighborhood by traveling east of Stanley Boulevard, turning right on Camino Diablo, adding ½ mile to their trip. Stanley Blvd. has no shoulder or sidewalk on the south side. For pedestrians, these options add 6 to 11 minutes to trip travel time.
- Northbound bicyclists and pedestrians traveling ***from*** Acalanes Avenue will not be able to access the multi-use path. Bicyclists would need to utilize the sidewalk since the dedicated bike lane will be eliminated. For pedestrians, the distance is the same as that under existing conditions, except the removal of the five-foot-wide bicycle lane reduces the buffer between them and vehicle traffic, increasing the level of stress for users of the sidewalk.
- Southbound bicyclists and pedestrian traveling ***to*** Acalanes Avenue will need to use the sidewalk on the east side of Pleasant Hill Road, the same as they would under existing conditions. The only difference is that the removal of the northbound bike lane would eliminate the existing five-foot-wide buffer between bicyclists and pedestrians on the sidewalk and vehicle traffic.
- Southbound bicyclists traveling ***from*** Acalanes Avenue would either use the existing sidewalk on the east side of the roadway or travel the approximately 600 feet north to the intersection with Deer Hill Road/Stanley Boulevard to access the multi-use path.

STUDENT PICK-UP/DROP-OFF

Presently, there is a signed, passenger loading zone at the southwest corner of the Pleasant Hill Road/Deer Hill Road intersection that is used as a student pick-up/drop-off location for Acalanes High School. Just

south of the intersection, the roadway widens slightly and an unpaved driveway to the vacant lot is present just north of where on-street parking begins. The addition of the project would delete the passenger loading zone and utilize this existing right-of-way as a southbound through lane; if loading activities continue at the same location, drivers would be forced to stop in the through lane, delaying vehicles behind them and causing a potential safety hazard. Retention of the passenger loading zone would require acquisition of approximately 300 square feet of right-of-way and relocation of utility poles. The concepts presented in this report eliminate an existing passenger loading zone. The undergrounding of the utility poles and reconstruction of the passenger loading zone may be completed as part of the Terraces of Lafayette development project. If the Terraces of Lafayette development project moves forward this feature will be constructed.

TRANSIT

A County Connection bus stop for Route 625 is located on the west side of Pleasant Hill Road under CA-24 north of Mount Diablo Boulevard. Route 625 is a school route that only operates Monday through Friday and makes one daily stop at the Pleasant Hill Road bus stop at 3:46 PM. The project would eliminate the shoulder on the west side of Pleasant Hill Road which acts as a bus pull-out for its one daily weekday stop. One option is that this bus stop be eliminated in conjunction with the Project; another stop is located less than 1/4 mile away at Mount Diablo Court/Mount Diablo Boulevard that would reasonably serve the same users.

The nearest BART station to the Project is located off Deer Hill Road and Happy Valley Road, approximately 1.5 miles west of the project study area.

VEHICLE DELAY AND QUEUE ANALYSIS

Pleasant Hill Road at Deer Hill Road/Stanley Boulevard

CONCEPT #1 – CONVENTIONAL CROSSWALK SIGNAL PHASING

The following traffic operations assumptions were made to the Pleasant Hill Road/Deer Hill Road/Stanley Boulevard intersection for Concept #1:

- Northbound right turn lane removed.
- Outside northbound through lane converted to a **combined through/right lane.**
- Signal timing optimized.

With the assumed changes associated with Concept #1, overall intersection delay increased slightly compared to existing conditions. Level of service was maintained during both the AM (LOS D) and PM (LOS F) peak hours. One notable change to traffic operations was the increase in 95th percentile queue lengths for the northbound through movement – from 450 feet (18 vehicles) to 675 feet (27 vehicles) during the AM peak period and from 1,575 feet (63 vehicles) to 1,650 feet (66 vehicles) during the PM peak period (see Figure 13 for a visual depiction of queue lengths). Northbound drivers turning right on Stanley Boulevard would see a five-fold increase in delay during the PM peak hour, to levels comparable to those experienced by drivers traveling through under existing conditions. During the PM peak hour, this would impact roughly 188 drivers, or about 10% of vehicles approaching the intersection from the south (188 / 1,794).The westbound right movement sees an increase in delay of 80 seconds during the PM peak hour, from about 63 seconds to 143 seconds; the westbound through and left movements see increases in delay

of about 21 seconds, from 59 seconds to 80 seconds. Potential impacts to traffic operations associated with a proposed lane configuration change for the westbound approach is discussed later in this report.

Tables 6-10 provide an overview of the traffic operations and queueing analysis for Concept #1, as compared to existing conditions. See Appendix D for Vistro outputs for Concept #1.

CONCEPT #2 – PEDESTRIAN SCRAMBLE SIGNAL PHASING

The following traffic operations assumptions were made to the Pleasant Hill Road/Deer Hill Road/Stanley Boulevard intersection for Concept #2:

- Northbound right turn lane removed.
- Outside northbound through lane converted to a **combined through/right lane.**
- Signal cycle length increased to include a **pedestrian scramble phase[4].**
- Signal timing optimized.

Traffic operations under Concept #2 are worse than under Concept #1 and Existing Conditions. Compared to Existing Conditions, intersection delay increases by 22 seconds in the AM peak period (dropping to LOS E) and by about 80 seconds in the PM peak period (double the minimum threshold for LOS F). The westbound approach sees a considerable increase in delay in both the AM and PM peak periods, degrading to LOS F in both scenarios. The northbound approach retains LOS F through all three scenarios, with delay nearly doubling between existing conditions and Concept #2 (135 seconds to 266 seconds). Delay for the northbound right-turn movement during the PM peak period increases considerably compared to existing conditions (increases by more than 4 minutes, or almost ten-fold) and Concept #1 (increases by more than 2 minutes). As stated in the discussion for Concept #1, this would impact roughly 188 drivers, or about 10% of vehicles approaching the intersection from the south (188 / 1,794). Queue lengths increase significantly for most movements; most notably, the northbound through/right 95th percentile queue length, which increases from about 1,500 feet to over 2,600 feet. It should be noted that many of the turning movements most impacted by this concept are to/from the neighborhood to the east; access to this neighborhood via Stanley Boulevard may become more congested.

Tables 6-10 provide an overview of the traffic operations and queueing analysis for Concept #2, as compared to existing conditions. See Appendix E for Vistro outputs for Concept #2.

Around 25% of northbound vehicles entering the intersection during the PM peak period originate from CA-24 and do not travel through the Mt Diablo Boulevard intersection and it cannot be assumed that the entire northbound queue would extend back on Pleasant Hill Road. The intersection queues could spillback onto the freeway ramps. However, it is unknown how the changes to the intersection may impact driver behavior and queues and delay may result in freeway drivers choosing not to exit on Pleasant Hill Road and use an alternative route. See Figure 13 for a visual depiction of queue lengths for the two concepts.

[4] The pedestrian scramble phase was modeled to assume activation in accordance with existing pedestrian volumes. Based on these existing volumes, the pedestrian phase is expected to be activated about once every two cycles during the AM peak hour and about every cycle during the PM peak hour.

Table 6. Vehicle Delay and Level of Service - Pleasant Hill Rd/Deer Hill Rd/Stanley Blvd

Scenario	Alt.	Cycle Length (sec)	V/C	Delay	LOS
AM PEAK HOUR	Existing	150	0.88	46.1	D
	Concept #1	150	0.88	47.5	D
	Concept #2	170	0.87	68.3	E
PM PEAK HOUR	Existing	135	**1.03**	**82.2**	**F**
	Concept #1	135	**1.09**	**88.9**	**F**
	Concept #2	180	**1.05**	**168.2**	**F**

Table 7. Vehicle Delay by Movement - Pleasant Hill Rd/Deer Hill Rd/Stanley Blvd

Scenario	Alt.	EB		WB			NB			SB		
		L	T/R	L	T	R	L	T	R	L	T	R
AM PEAK HOUR	Existing	62.9	61.4	72.5	72.2	62.1	72.4	27.4	25.3	71.4	48.3	30.1
	Concept #1	62.8	61.3	74.1	73.8	62.4	75.5	34.2		79.7	45.8	29.2
	Concept #2	76.4	73.7	116.9	116.3	73.6	107.4	47.7		97.2	72.2	38.8
PM PEAK HOUR	Existing	48.9	39.1	59.0	58.9	62.6	65.8	148.1	29.8	72.4	30.4	28.5
	Concept #1	49.4	39.4	80.1	80.4	143.2	65.6	147.7		94.4	26.8	25.1
	Concept #2	69.4	54.2	193.7	193.5	294.3	90.4	275.6		256.6	47.7	44.5

Table 8. Vehicle Delay by Movement for Pleasant Hill Rd/Deer Hill Rd/Stanley Blvd – Change from Existing Conditions

Scenario	Alt.	EB		WB			NB			SB		
		L	T/R	L	T	R	L	T	R	L	T	R
AM PEAK HOUR	Concept #1	-0.1	-0.1	1.6	1.6	0.3	3.1	6.8	8.9	8.3	-2.5	-0.9
	Concept #2	13.5	12.3	44.4	44.1	11.5	35	20.3	22.4	25.8	23.9	8.7
PM PEAK HOUR	Concept #1	0.5	0.3	21.1	21.5	80.6	-0.2	-0.4	117.9	22	-3.6	-3.4
	Concept #2	20.5	15.1	134.7	134.6	231.7	24.6	127.5	245.8	184.2	17.3	16

Table 9. 95th Percentile Queue Lengths (ft/lane) - Pleasant Hill Rd/Deer Hill Rd/Stanley Blvd

Scenario	Alt.	EB		WB			NB			SB		
		L	T/R	L	T	R	L	T	R	L	T	R
AM PEAK HOUR	Existing	250	200	325	350	200	225	450	300	275	1075	525
	Concept #1	250	200	325	350	200	250	675		300	1050	500
	Concept #2	300	250	425	450	225	300	825		350	1350	625
PM PEAK HOUR	Existing	525	200	225	250	250	75	1,575	200	175	375	250
	Concept #1	525	200	275	275	350	75	1,800		200	350	225
	Concept #2	700	275	425	425	500	75	2,625		325	525	350

Table 10. 95th Percentile Queue Lengths (ft/lane) for Pleasant Hill Rd/Deer Hill Rd/Stanley Blvd - Change from Existing Conditions

Scenario	Alt.	EB		WB			NB		SB		
		L	T/R	L	T	R	L	T/R	L	T	R
AM PEAK HOUR	Concept #1	0	0	0	0	0	25	225	25	-25	-25
	Concept #2	50	50	100	100	25	75	375	75	275	100
PM PEAK HOUR	Concept #1	0	0	50	25	100	0	225	25	-25	-25
	Concept #2	175	75	200	175	250	0	1,050	150	150	100

Figure 13. 95th Percentile Queue Lengths - NBT/NBR @ Pleasant Hill Rd & Deer Hill Rd/Stanley Blvd

Pleasant Hill Road at Mt Diablo Boulevard

CONCEPT #1 – STAGED CROSSING WITH CONVENTIONAL CROSSWALK SIGNAL PHASING

The following traffic operations assumptions were made to the Pleasant Hill Road/Mt Diablo Boulevard intersection for Concept #1:

- Crosswalk added to north leg**.**
- Signal cycle length increased during PM peak to include additional pedestrian phase.
- Signal timing optimized.

Concept #1 results in minor impacts to traffic operations at the Mt Diablo intersection. Overall intersection delay increases slightly during the AM (~5 sec) and PM peak periods (~4 sec). Signal timing adjustments were required to include pedestrian signal phasing for the north leg for entry to the multi-use path. Because there is no concurrent westbound vehicle movement associated with the north leg crossing, green time was taken from the eastbound left (EBL) movement. 95th percentile queues for the EBL movement increase by about 50 feet (2 vehicles) in the AM peak period and by about 150 feet (6 vehicles) in the PM peak period. Northbound queues increase between 25 feet and 75 feet during the AM and PM peak periods. Tables 11-15 provide an overview of the traffic operations and queueing analysis for Concept #1, as compared to existing conditions. See Appendix D for Vistro outputs for Concept #1.

CONCEPT #2 – PEDESTRIAN SCRAMBLE SIGNAL PHASING

The following traffic operations assumptions were made to the Pleasant Hill Road/Mt Diablo Boulevard intersection for Concept #2:

- Crosswalk added to north leg.
- Signal cycle length increased to include **pedestrian scramble phase.**
- Signal timing optimized.

Concept #2 results in minor impacts to traffic operations during the AM peak period – intersection delay increases by about 9 seconds and 95th percentile queues increase by 50 to 100 feet (2 to 4 vehicles). During the PM peak period, intersection delay increases from 28.7 seconds to 44.8 seconds, dropping the level of service from LOS C to LOS D. 95th percentile queue lengths for the eastbound movement increase to about 600 feet, which would extend almost to Mt Diablo Court. Tables 11-15 provide an overview of the traffic operations and queueing analysis for Concept #2, as compared to existing conditions. See Appendix E for Vistro outputs for Concept #2.

Table 11. Vehicle Delay and Level of Service – Pleasant Hill Rd/Mt Diablo Blvd

Scenario	Alt.	Cycle Length (sec)	V/C	Delay	LOS
AM PEAK HOUR	Existing	110	0.46	22.6	C
	Concept #1	110	0.46	27.5	C
	Concept #2	140	0.45	31.2	C
PM PEAK HOUR	Existing	85	0.61	28.7	C
	Concept #1	115	0.59	32.6	C
	Concept #2	135	0.58	44.8	D

Table 12. Vehicle Delay by Movement – Pleasant Hill Rd/Mt Diablo Blvd

Scenario	Alt.	EB			WB			NB			SB		
		L	T	R	L	T	R	L	T	R	L	T	R
AM PEAK HOUR	Existing	46.7	46.6	47.3	-	-	-	49.2	6.4	7.7	-	17.0	0.0
	Concept #1	70.8	37.0	37.2	-	-	-	62.8	10.4	14.3	-	21.9	0.0
	Concept #2	64.3	63.8	65.8	-	-	-	68.8	9.3	10.8	-	22.3	0.0
PM PEAK HOUR	Existing	29.2	44.4	48.5	-	-	-	39.8	13.0	15.4	-	25.5	0.0
	Concept #1	72.2	40.9	41.6	-	-	-	56.4	12.8	14.8	-	24.8	0.0
	Concept #2	46.0	69.4	75.3	-	-	-	63.7	21.4	24.6	-	37.6	0.0

Table 13. Vehicle Delay by Movement for Pleasant Hill Rd/Mt Diablo Blvd – Change from Existing Conditions

Scenario	Alt.	EB			WB			NB			SB		
		L	T	R	L	T	R	L	T	R	L	T	R
AM PEAK HOUR	Concept #1	24.1	-9.6	-10.1	-	-	-	13.6	4	6.6	-	4.9	-
	Concept #2	17.6	17.2	18.5	-	-	-	19.6	2.9	3.1	-	5.3	-
PM PEAK HOUR	Concept #1	43	-3.5	-6.9	-	-	-	16.6	-0.2	-0.6	-	-0.7	-
	Concept #2	16.8	25	26.8	-	-	-	23.9	8.4	9.2	-	9.2	-

Table 14. 95th Percentile Queue Lengths (ft/lane) – Pleasant Hill Rd/Mt Diablo Blvd

Scenario	Alt.	EB			WB			NB			SB		
		L	T	R	L	T	R	L	T	R	L	T	R
AM PEAK HOUR	Existing	225	225	225	-	-	-	300	125	175	-	175	-
	Concept #1	275	200	200	-	-	-	325	200	225	-	200	-
	Concept #2	300	300	275	-	-	-	400	200	250	-	225	-
PM PEAK HOUR	Existing	225	400	375	-	-	-	225	175	200	-	200	-
	Concept #1	375	425	400	-	-	-	275	200	225	-	225	-
	Concept #2	350	600	550	-	-	-	325	275	325	-	300	-

Table 15. 95th Percentile Queue Lengths (ft/lane) for Pleasant Hill Rd/Mt Diablo Blvd - Change from Existing Conditions

Scenario	Alt.	EB			WB			NB			SB		
		L	T	R	L	T	R	L	T	R	L	T	R
AM PEAK HOUR	Concept #1	50	-25	-25	-	-	-	25	75	50	-	25	-
	Concept #2	75	75	50	-	-	-	100	75	75	-	50	-
PM PEAK HOUR	Concept #1	150	25	25	-	-	-	50	25	25	-	25	-
	Concept #2	125	200	175	-	-	-	100	100	125	-	100	-

Changes to Travel Time

Table 16 shows estimated changes in vehicle travel times for select routes in the study area. Travel time changes were estimated by combining the expected changes in delay for consecutive movements at the two intersections, as compared to existing conditions.

Table 16. Travel Time Impacts for Select Routes

Scenario	Route/Movements	Concept #1 Change in Travel Time (Sec/Veh)	Concept #2 Change in Travel Time (Sec/Veh)
AM PEAK HOUR	NB Thru @ Mt Diablo Blvd; NB Thru @ Deer Hill Rd/Stanley Blvd	14	26
	SB Thru @ Deer Hill Rd/Stanley Blvd; SB Thru @ Mt Diablo Blvd	2	29
	EB Left @ Mt Diablo Blvd; NB Thru @ Deer Hill Rd/Stanley Blvd	31	38
	EB Left @ Mt Diablo Blvd; NB Right @ Deer Hill Rd/Stanley Blvd	33	40
	EB Right @ Deer Hill Rd; SB Thru @ Mt Diablo Blvd	5	18
	WB Left @ Stanley Blvd; SB Thru @ Mt Diablo Blvd	7	50
PM PEAK HOUR	NB Thru @ Mt Diablo Blvd; NB Thru @ Deer Hill Rd/Stanley Blvd	-1	136
	SB Thru @ Deer Hill Rd/Stanley Blvd SB Thru @ Mt Diablo Blvd;	-4	29
	EB Left @ Mt Diablo Blvd; NB Thru @ Deer Hill Rd/Stanley Blvd	43	144
	EB Left @ Mt Diablo Blvd; NB Right @ Deer Hill Rd/Stanley Blvd	161	263
	EB Right @ Deer Hill Rd; SB Thru @ Mt Diablo Blvd	0	27
	WB Left @ Stanley Blvd; SB Thru @ Mt Diablo Blvd	20	147

As shown in Table 16, Concept #1 would result in minor changes to travel times of less than 20 seconds on most routes during the AM and PM peak hours. However, travel times for drivers making an eastbound left-turn at Mt Diablo Boulevard and heading through or turning right at Deer Hill Road/Stanley Boulevard see a much higher increase between 31 and 161 seconds. The eastbound left turn at Mt Diablo and northbound right turn at Stanley Boulevard during the PM peak hour is the route with the greatest increase in travel time, seeing almost three minutes of added delay (161 seconds).

Concept #2 would increase travel times by between 18 and 50 seconds during the AM peak hour and by between 27 and 263 seconds during the PM peak hour. The PM peak hour sees much greater impacts to travel time; similar to Concept #1, the eastbound left turn at Mt Diablo and northbound right turn at Stanley Boulevard during the PM peak hour is impacted the most, with over 4 minutes of added delay (263 seconds).

OTHER CONSIDERATIONS

Cut-Through Traffic

Both concepts considerably increase delay and travel times for northbound vehicles making a right turn on Stanley Boulevard during the PM peak period. Under existing conditions, the dedicated right-turn lane provides these vehicles a space to avoid the queues created by through-moving vehicles and to execute a right turn on red maneuver; without this dedicated turn lane, these vehicles would be subject to the delay experienced by vehicles heading north through the intersection. There is a potential for some vehicles to choose to bypass this intersection altogether, instead turning right onto Acalanes Avenue and using the local, neighborhood streets to ultimately reach Stanley Boulevard or Camino Diablo.

Based on the signal timing assumed for the intersection of Pleasant Hill Road at Deer Hill Road/Stanley Boulevard under Concept #1 during the PM peak hour, a queued vehicle could travel from Acalanes Avenue through the intersection within one cycle length (135 seconds). From there, based on existing traffic volumes along Stanley Boulevard, a vehicle would need an additional 60 seconds to reach the intersection of Stanley Boulevard and Camino Diablo, for a total travel time of about 3 minutes. If that vehicle instead used Acalanes Avenue, Nogales Street, and Camino Diablo to reach the same intersection, the approximate travel time would be approximately 1 minute. This travel time is based on a travel speed of 25 miles per hour, and a travel distance of about 2,000 feet, with minimal delay at the stop-controlled intersections at Acalanes Avenue/Nogales Street and Camino Diablo/Nogales Street.

Based on the estimated travel time savings, it is reasonable to assume that some drivers will choose to detour through the neighborhood to avoid the intersection queues. Measures could be applied to reduce the level of cut-through traffic are described in this section. First, it should be noted that retaining the dedicated northbound right turn lane at Stanley Boulevard will not result in the described cut-through traffic – this alternative is discussed further in the "Other Considerations" section of this report. Eliminating right turns onto Acalanes Avenue from northbound Pleasant Hill Road is not an option, since Acalanes Avenue acts as the sole access to the residential neighborhood from Pleasant Hill Road. To deter traffic from using Acalanes Avenue, Nogales Street, and Camino Diablo as a detour, a sign reading "Local Traffic Only" or "No Thru Traffic" could be installed on Pleasant Hill Road/Acalanes Avenue. If the Project is completed as proposed, an after study should be conducted to assess how traffic patterns have been impacted and if further measures are necessary (e.g., speed humps on Nogales Street).

Retain Northbound Right Turn Lane at Stanley Boulevard

Both project concepts significantly increase delay and queueing for drivers making a northbound right turn at Pleasant Hill Road and Deer Hill Road/Stanley Boulevard. To understand the feasibility and implications of retaining the northbound right turn lane, the original concepts were adjusted to account for the northbound right turn lane and were evaluated.

Additional right-of-way would be required to preserve the dedicated northbound right turn lane. Two alternative concepts are presented here: one with additional right-of-way taken from the east side of

Pleasant Hill Road and one with right-of-way taken from the west side. See Appendix G for roll plots of the two alternatives.

The first alternative concept shows right-of-way taken from the east side of Pleasant Hill Road. This alternative requires significant right-of-way takings from the fuel station and several homes along Pleasant Hill Road to Acalanes Avenue. The signal poles on the southeast corner of the intersection may also need to be relocated. Additionally, a retaining wall/privacy fence may be required as there are significant grade changes along this stretch of roadway.

The second alternative concept shows right-of-way taken from the west side of Pleasant Hill Road. This alternative would require at least some right-of-way takings (approximately 1,400 square feet) from the currently vacant lot at the southwestern corner of the intersection, part of the proposed Terraces development. Further, several utility poles, as well as the signal poles on the northwest and southwest corners of the intersection, would need to be relocated to widen the roadway.

The following text and Tables 17 through 19 describe the operations results associated with retaining the existing northbound right turn lane under both concepts. See Appendix H for Vistro traffic analysis worksheets.

- For Concept #1, during the AM peak period, keeping the northbound right turn lane does not impact operations. During the PM peak period, overall intersection delay *decreases* compared to existing conditions from about 82 seconds to 68 seconds (LOS F to LOS E). Most movements experience similar delays, while the westbound movements and the southbound left turn see increases in delay.
- For Concept #2, during the AM peak period, intersection delay increases by about 20 seconds compared to existing conditions but remains very similar to the results seen from Concept #2 originally (with the removal of the right turn lane). The movements that see the largest increases in delay compared to existing conditions are the westbound left (over 40 seconds of added delay), the northbound left (over 30 seconds of added delay), and the southbound through (about 20 seconds of added delay). During the PM peak period, intersection operations degrade significantly compared to existing conditions, with intersection delay increasing by about 1 minute, from about 82 seconds to 140 seconds. Although keeping the right-turn lane improves operations compared to the original Concept #2, the northbound through movement, southbound left movement, and westbound movements are still heavily impacted.

Table 17. Vehicle Delay and Level of Service Summary – Pleasant Hill Rd/Deer Hill Rd/Stanley Blvd with Retaining Northbound Right Lane

Scenario	Alt.	Cycle Length (sec)	V/C	Delay	LOS
AM PEAK HOUR	Existing	150	0.88	46.1	D
	Concept #1	150	0.88	47.5	D
	Concept #1 (NBR)	150	0.88	45.3	D
	Concept #2	170	0.87	68.3	E
	Concept #2 (NBR)	170	0.88	64.6	E
PM PEAK HOUR	Existing	135	**1.03**	**82.2**	**F**
	Concept #1	135	**1.09**	**88.9**	**F**
	Concept #1 (NBR)	135	1.03	67.5	E
	Concept #2	180	**1.05**	**168.2**	**F**
	Concept #2 (NBR)	180	**0.99**	**141.1**	**F**

Table 18. Vehicle Delay by Movement - Pleasant Hill Rd/Deer Hill Rd/Stanley Blvd with Retaining Northbound Right Lane

Scenario	Alt.	EB		WB			NB			SB		
		L	T/R	L	T	R	L	T	R	L	T	R
AM PEAK HOUR	Existing	62.9	61.4	72.5	72.2	62.1	72.4	27.4	25.3	71.4	48.3	30.1
	Concept #1	62.8	61.3	74.1	73.8	62.4	75.5	34.2		79.7	45.8	29.2
	Concept #1 (NBR)	62.9	61.4	74.1	73.8	62.4	75.5	27.1	24.5	75.3	45.6	29.2
	Concept #2	76.4	73.7	116.9	116.3	73.6	107.4	47.7		97.2	72.2	38.8
	Concept #2 (NBR)	76.4	73.7	116.9	116.3	73.6	107.4	36.9	33.8	80.3	71.8	38.7
PM PEAK HOUR	Existing	48.9	39.1	59	58.9	62.6	65.8	148.1	29.8	72.4	30.4	28.5
	Concept #1	49.4	39.4	80.1	80.4	143.2	65.6	147.7		94.4	26.8	25.1
	Concept #1 (NBR)	49.8	39.6	68.2	68.0	106.7	65.9	102.7	26.3	94.4	27.4	25.7
	Concept #2	69.4	54.2	193.7	193.5	294.3	90.4	275.6		256.6	47.7	44.5
	Concept #2 (NBR)	68.0	53.7	156.5	156.3	249.6	90.4	233.7	45.2	256.6	49.2	45.8

Table 19. 95th Percentile Queue Lengths (ft/lane) - Pleasant Hill Rd/Deer Hill Rd/Stanley Blvd with Retaining Northbound Right Lane

Scenario	Alt.	EB		WB			NB			SB		
		L	T/R	L	T	R	L	T	R	L	T	R
AM PEAK HOUR	Existing	250	200	325	350	200	225	450	300	275	1075	525
	Concept #1	250	200	325	350	200	250	675		300	1050	500
	Concept #1 (NBR)	250	200	325	350	200	250	450	300	300	1050	500
	Concept #2	300	250	425	450	225	300	825		350	1350	625
	Concept #2 (NBR)	300	250	425	450	225	300	550	350	325	1350	625
PM PEAK HOUR	Existing	525	200	225	250	250	75	1575	200	175	375	250
	Concept #1	525	200	275	275	350	75	1800		200	350	225
	Concept #1 (NBR)	525	200	250	250	300	75	1325	200	200	350	225
	Concept #2	700	275	425	425	500	75	2625		325	525	350
	Concept #2 (NBR)	700	275	375	400	475	100	2175	275	325	525	350

Potential Acalanes High School Frontage Improvements

Under both Concept #1 (traditional signal phasing) and Concept #2 (pedestrian scramble phasing), users of the MUP traveling to and from Acalanes High School are expected to utilize the sidewalk or bicycle lane on the northeast corner of Pleasant Hill Road/Deer Hill Road/Stanley Boulevard to access the school. The existing stretch of sidewalk is approximately 6 feet wide, with an additional three to four feet of landscaping between the school fence. To provide users a final connection between the intersection and the school's Pleasant Hill Road driveway 250 feet north, the sidewalk could be widened to an approximately 9.5-foot-wide multi-use pathway.

Widening of the sidewalk could be achieved through two options:

1. Widen the existing sidewalk east to the school fence. This option may require the removal of four large trees and the relocation of a signal pole and two signs.
2. Widen the existing sidewalk west into the existing bicycle lane. This option would eliminate the on-street bicycle lane but could provide more than 12 feet for a continuous shared path and would not require removing any trees or relocating signal poles and signage. However, this may affect the ability of southbound drivers making a U-turn at the Deer Hill Road/Stanley Boulevard intersection and would eliminate a queueing area for school traffic waiting to turn right into the parking lot.

See Appendix I for a depiction of an example cross section.

A potential extension of the MUP is under consideration along the west side of Pleasant Hill Road from Deer Hill Road/Stanley Boulevard to Springhill Road and Springhill School. Additional work would be required to determine the feasibility of both options.

Appendix A

Volume & Speed Data Sheets

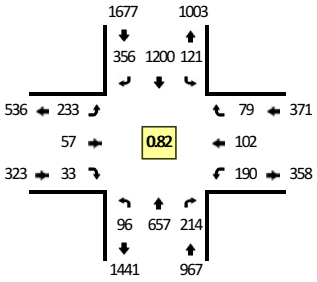
Type of peak hour being reported: Intersection Peak

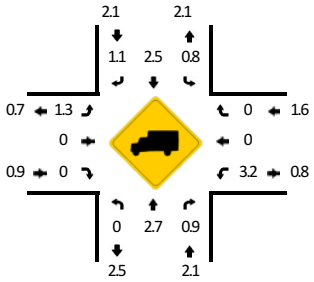
Method for determining peak hour: Total Entering Volume

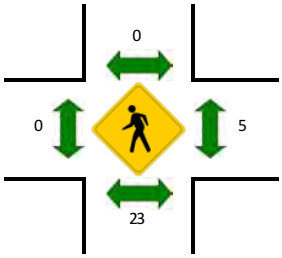
LOCATION: Pleasant Hill Rd -- Stanley Blvd/Deer Hill Rd
CITY/STATE: Lafayette, CA

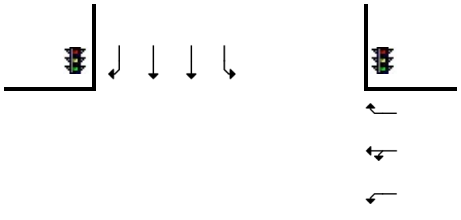
QC JOB #: 15687501
DATE: Thu, Feb 3 2022

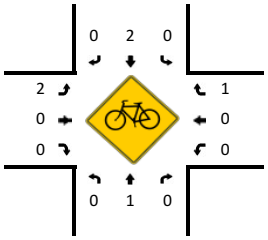
Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

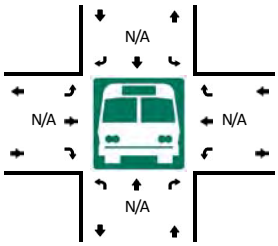


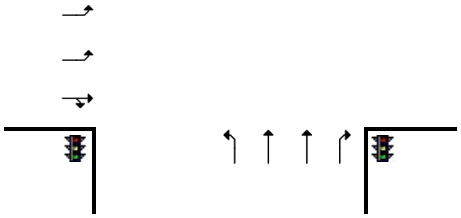


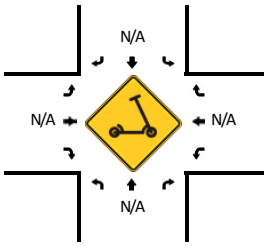












5-Min Count Period Beginning At	Pleasant Hill Rd (Northbound)				Pleasant Hill Rd (Southbound)				Stanley Blvd/Deer Hill Rd (Eastbound)				Stanley Blvd/Deer Hill Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	15	0	0	0	57	18	0	2	1	0	0	6	5	1	0	106	
7:05 AM	2	21	1	1	5	59	11	1	5	3	2	0	2	0	3	0	116	
7:10 AM	2	29	5	1	1	74	17	0	5	1	0	0	1	1	3	0	140	
7:15 AM	4	29	2	0	4	84	23	0	6	1	1	0	4	1	1	0	160	
7:20 AM	0	38	5	0	5	90	21	0	7	1	0	0	8	3	5	0	183	
7:25 AM	1	32	7	2	9	110	24	1	4	5	0	0	5	5	0	0	205	
7:30 AM	1	37	5	0	11	93	28	2	11	4	0	0	1	7	7	0	207	
7:35 AM	0	41	19	1	10	77	25	10	14	7	1	0	20	9	5	0	239	
7:40 AM	0	41	37	3	10	98	32	2	22	5	1	0	14	11	10	0	286	
7:45 AM	4	81	27	0	8	117	32	6	27	14	4	0	17	9	1	0	347	
7:50 AM	3	51	33	2	9	70	25	5	38	13	7	0	35	14	1	0	306	
7:55 AM	5	87	32	1	4	94	47	5	28	4	4	0	33	18	6	0	368	2663
8:00 AM	13	65	16	2	4	97	33	0	10	4	1	0	29	17	6	0	297	2854
8:05 AM	9	50	18	2	3	95	29	1	20	2	2	0	10	11	9	0	261	2999
8:10 AM	12	58	6	3	8	117	26	1	18	2	3	0	12	2	9	0	277	3136
8:15 AM	8	48	10	1	9	115	28	2	9	3	1	0	10	3	9	0	256	3232
8:20 AM	9	42	8	1	5	102	32	0	22	1	2	0	4	1	14	0	243	3292
8:25 AM	6	46	3	1	11	121	25	0	13	1	3	0	2	2	3	0	237	3324
8:30 AM	9	47	5	1	6	97	22	2	12	1	4	0	4	5	6	0	221	3338
8:35 AM	3	38	2	1	6	104	28	0	19	5	1	0	7	6	6	0	226	3325
8:40 AM	7	54	6	4	5	136	28	1	13	1	2	0	2	3	3	0	265	3304
8:45 AM	7	34	9	1	1	106	36	0	11	0	5	0	11	5	4	0	230	3187
8:50 AM	17	49	4	1	15	120	27	1	10	1	1	0	7	4	6	0	263	3144
8:55 AM	3	31	3	2	4	118	48	1	11	3	2	0	10	4	4	0	244	3020

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	48	876	368	12	84	1124	416	64	372	124	60	0	340	164	32	0	4084
Heavy Trucks	0	8	0		4	24	4		0	0	0		12	0	0		52
Buses																	
Pedestrians		80				0				0				8			88
Bicycles	0	0	0		0	0	0		4	0	0		0	0	4		8
Scooters																	

Comments:

Report generated on 2/17/2022 2:41 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Pleasant Hill Rd -- Stanley Blvd/Deer Hill Rd

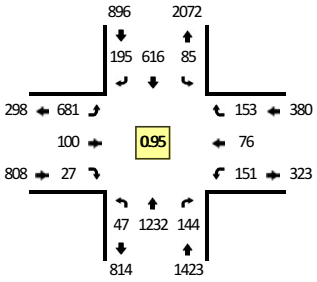
CITY/STATE: Lafayette, CA

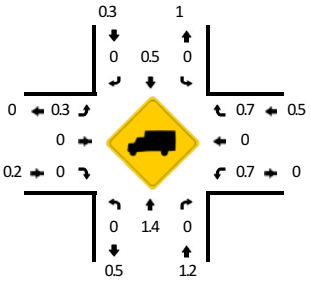
QC JOB #: 15687502

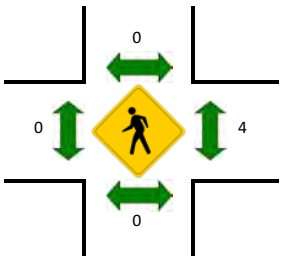
DATE: Thu, Feb 3 2022

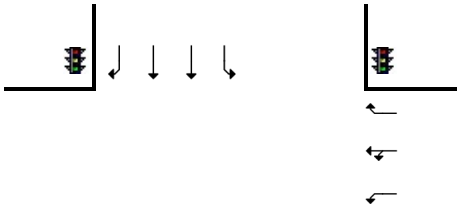
Peak-Hour: 4:35 PM -- 5:35 PM

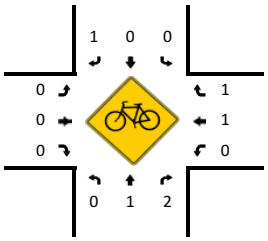
Peak 15-Min: 5:10 PM -- 5:25 PM

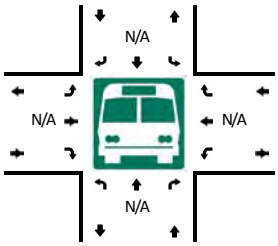


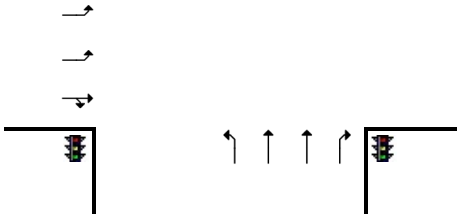


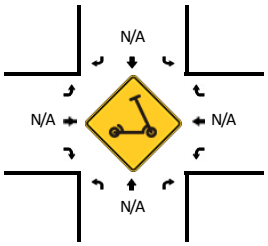












5-Min Count Period Beginning At	Pleasant Hill Rd (Northbound)				Pleasant Hill Rd (Southbound)				Stanley Blvd/Deer Hill Rd (Eastbound)				Stanley Blvd/Deer Hill Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:30 PM	3	53	4	2	2	37	23	1	26	4	4	0	10	9	9	0	187	
2:35 PM	4	96	6	0	7	71	16	4	29	2	4	0	5	0	13	0	257	
2:40 PM	1	106	10	0	4	51	20	0	22	0	3	0	7	2	15	0	241	
2:45 PM	1	88	7	3	10	76	25	6	21	8	0	0	9	2	6	0	262	
2:50 PM	3	81	20	4	16	70	30	9	18	10	0	0	3	6	9	0	279	
2:55 PM	1	78	8	1	12	56	35	2	28	11	6	0	8	1	7	0	254	
3:00 PM	0	97	17	3	5	35	16	0	27	11	4	0	9	5	7	0	236	
3:05 PM	3	98	18	1	5	56	14	0	44	8	5	0	11	5	10	0	278	
3:10 PM	4	96	22	0	5	60	16	3	30	5	4	0	34	14	13	0	306	
3:15 PM	6	117	11	2	4	87	20	0	51	15	8	0	27	12	2	0	362	
3:20 PM	2	78	24	1	15	33	15	1	56	7	2	0	19	13	14	0	280	
3:25 PM	4	144	15	2	4	79	13	1	41	10	1	0	7	4	12	0	337	3279
3:30 PM	4	83	11	3	13	43	13	1	46	11	1	0	13	9	15	0	266	3358
3:35 PM	0	107	19	4	4	63	20	0	37	5	4	0	12	3	14	0	292	3393
3:40 PM	1	114	6	1	4	58	17	0	37	9	7	0	13	5	15	0	287	3439
3:45 PM	1	97	8	0	6	44	19	3	41	4	3	0	8	5	13	0	252	3429
3:50 PM	0	88	7	1	13	47	16	0	59	6	4	0	6	4	14	0	265	3415
3:55 PM	1	107	12	0	10	44	16	3	49	6	4	0	11	4	11	0	278	3439
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4:05 PM	3	109	7	1	8	59	12	0	60	5	2	0	14	2	13	0	295	3506
4:10 PM	2	82	7	0	11	37	18	0	58	5	4	0	13	5	14	0	256	3456
4:15 PM	0	134	10	1	7	63	19	0	49	5	1	0	6	2	11	0	308	3402
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4:25 PM	0	81	9	0	11	57	16	0	52	5	2	0	10	9	17	0	269	3339
4:30 PM	4	105	5	0	11	26	12	0	59	7	1	0	10	4	18	0	262	3335
4:35 PM	7	117	13	1	7	62	12	0	61	8	2	0	5	4	19	0	318	3361
4:40 PM	4	107	8	4	6	50	15	0	65	4	2	0	9	6	10	0	290	3364
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4:55 PM	5	98	16	5	12	62	16	0	63	10	3	0	6	4	12	0	312	3415
5:00 PM	2	94	14	1	4	37	17	1	50	7	3	0	13	5	12	0	260	3389
5:05 PM	1	93	10	1	3	39	12	0	67	12	2	0	18	8	17	0	283	3377
5:10 PM	2	107	9	0	5	65	18	0	60	11	3	0	20	7	11	0	318	3439
5:15 PM	0	116	18	0	9	62	21	0	55	7	3	0	17	2	9	0	319	3450
5:20 PM	1	110	13	1	10	55	19	1	31	3	2	0	19	11	11	0	287	3452
5:25 PM	1	108	14	3	8	48	14	1	52	8	4	0	14	7	12	0	294	3477
5:30 PM	0	117	11	2	4	45	17	2	50	9	1	0	13	13	8	0	292	3507
5:35 PM	2	107	14	0	5	46	19	1	43	9	0	0	14	6	8	0	274	3463

5-Min Count Period Beginning At	Pleasant Hill Rd (Northbound)				Pleasant Hill Rd (Southbound)				Stanley Blvd/Deer Hill Rd (Eastbound)				Stanley Blvd/Deer Hill Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
5:40 PM	0	116	9	0	6	60	6	1	54	3	0	0	28	5	12	0	300	3473
5:45 PM	2	118	13	1	5	40	14	0	51	14	1	0	14	3	7	0	283	3488
5:50 PM	1	89	8	4	12	61	17	0	36	10	4	0	7	0	6	0	255	3477
5:55 PM	3	90	5	2	10	30	11	0	35	7	5	0	14	7	6	0	225	3390
6:00 PM	3	110	7	0	4	40	14	2	35	4	5	0	7	2	7	0	240	3370
6:05 PM	3	95	6	1	8	39	9	0	31	1	1	0	6	2	9	0	211	3298
6:10 PM	2	112	2	0	5	34	19	0	25	2	1	0	5	2	12	0	221	3201
6:15 PM	0	86	7	0	4	30	9	1	34	2	0	0	6	6	15	0	200	3082
6:20 PM	1	87	6	2	6	42	15	0	37	6	5	0	5	4	6	0	222	3017
6:25 PM	2	98	4	1	2	23	18	0	23	4	2	0	3	2	6	0	188	2911

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	1332	160	4	96	728	232	4	584	84	32	0	224	80	124	0	3696
Heavy Trucks	0	8	0		0	4	0		0	0	0		0	0	0		12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	4		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 2/17/2022 2:41 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Pleasant Hill Rd -- Mt Diablo Blvd/CA-24 EB On-Ramp

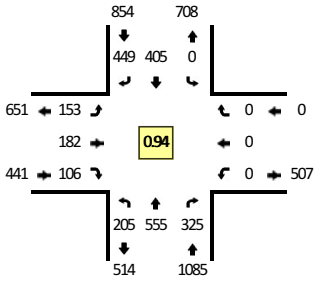
QC JOB #: 15687503

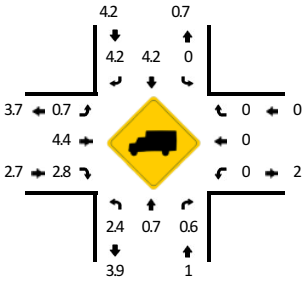
CITY/STATE: Lafayette, CA

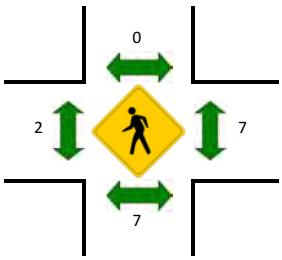
DATE: Thu, Feb 3 2022

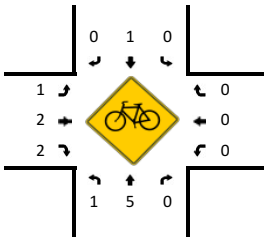
Peak-Hour: 7:45 AM -- 8:45 AM

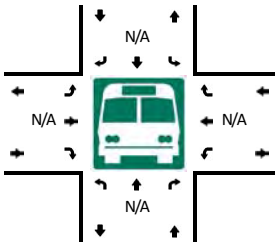
Peak 15-Min: 8:05 AM -- 8:20 AM

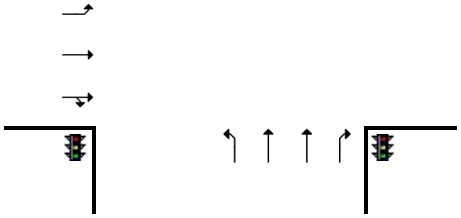


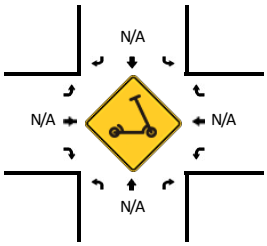












5-Min Count Period Beginning At	Pleasant Hill Rd (Northbound)				Pleasant Hill Rd (Southbound)				Mt Diablo Blvd/CA-24 EB On-Ramp (Eastbound)				Mt Diablo Blvd/CA-24 EB On-Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	5	17	6	0	0	12	25	0	0	7	6	0	0	0	0	0	78	
7:05 AM	4	18	13	0	0	20	20	0	4	6	2	0	0	0	0	0	87	
7:10 AM	5	27	9	0	0	22	22	0	8	7	4	0	0	0	0	0	104	
7:15 AM	4	24	10	0	0	19	22	0	8	9	4	0	0	0	0	0	100	
7:20 AM	3	17	20	0	0	17	26	1	7	8	5	0	0	0	0	0	104	
7:25 AM	7	26	10	1	0	24	29	1	10	7	3	0	0	0	0	0	118	
7:30 AM	3	26	18	0	0	35	27	0	7	9	11	0	0	0	0	0	136	
7:35 AM	5	29	13	0	0	28	36	0	11	14	4	0	0	0	0	0	140	
7:40 AM	3	48	30	0	0	29	32	0	14	13	5	0	0	0	0	0	174	
7:45 AM	6	68	29	0	0	30	41	0	21	12	2	0	0	0	0	0	209	
7:50 AM	21	49	19	0	0	29	38	0	19	6	10	0	0	0	0	0	191	
7:55 AM	14	56	20	0	0	37	43	0	24	13	10	0	0	0	0	0	217	1658
8:00 AM	22	47	25	0	0	44	37	0	7	8	6	0	0	0	0	0	196	1776
8:05 AM	16	45	24	0	0	44	48	0	12	15	11	0	0	0	0	0	215	1904
8:10 AM	25	43	19	0	0	30	33	0	11	17	12	0	0	0	0	0	190	1990
8:15 AM	14	54	41	1	0	35	44	0	15	14	7	0	0	0	0	0	225	2115
8:20 AM	23	34	29	1	0	37	31	0	8	20	13	0	0	0	0	0	196	2207
8:25 AM	19	38	26	1	0	41	29	0	4	21	10	0	0	0	0	0	189	2278
8:30 AM	13	39	31	0	0	19	34	0	16	21	7	0	0	0	0	0	180	2322
8:35 AM	13	48	27	0	0	22	34	0	7	23	9	0	0	0	0	0	183	2365
8:40 AM	16	34	35	0	0	37	37	0	9	12	9	0	0	0	0	0	189	2380
8:45 AM	15	29	30	2	0	21	32	0	18	17	8	0	0	0	0	0	172	2343
8:50 AM	12	43	26	0	0	43	56	0	5	17	12	0	0	0	0	0	214	2366
8:55 AM	16	22	19	0	0	55	43	0	5	13	13	0	0	0	0	0	186	2335

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	220	568	336	4	0	436	500	0	152	184	120	0	0	0	0	0	2520
Heavy Trucks	8	8	4		0	16	28		4	12	4		0	0	0		84
Buses																	
Pedestrians		4				0				0				8			12
Bicycles	0	0	0		0	0	0		0	0	4		0	0	0		4
Scooters																	

Comments:

Report generated on 2/17/2022 2:41 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Pleasant Hill Rd -- Mt Diablo Blvd/CA-24 EB On-Ramp

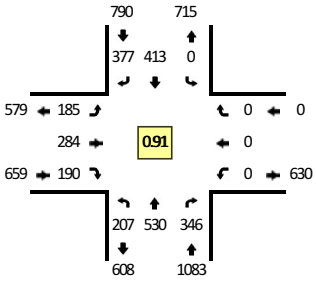
CITY/STATE: Lafayette, CA

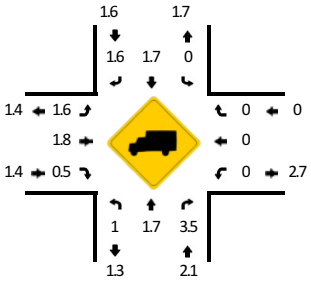
QC JOB #: 15687504

DATE: Thu, Feb 3 2022

Peak-Hour: 2:50 PM -- 3:50 PM

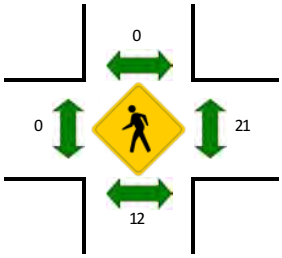
Peak 15-Min: 3:10 PM -- 3:25 PM

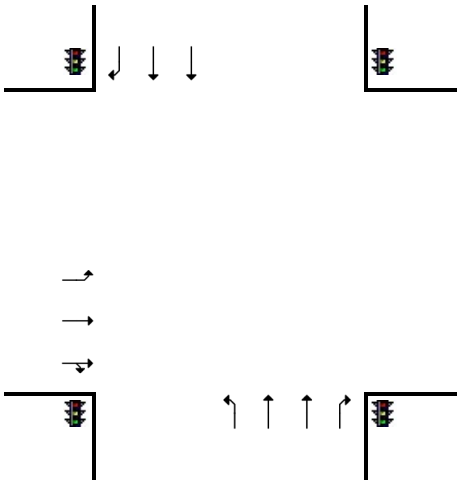


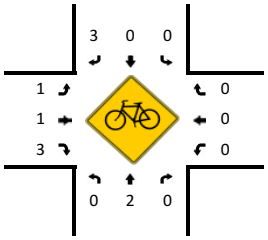


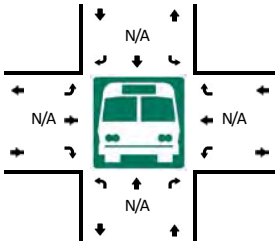
Quality Counts

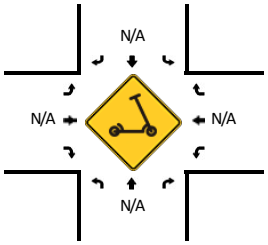
DATA THAT DRIVES COMMUNITIES











5-Min Count Period Beginning At	Pleasant Hill Rd (Northbound)				Pleasant Hill Rd (Southbound)				Mt Diablo Blvd/CA-24 EB On-Ramp (Eastbound)				Mt Diablo Blvd/CA-24 EB On-Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:30 PM	21	30	36	0	0	34	14	0	16	29	22	0	0	0	0	0	202	
2:35 PM	19	32	26	0	0	39	22	0	14	27	14	0	0	0	0	0	193	
2:40 PM	28	39	28	0	0	26	22	0	14	16	21	0	0	0	0	0	194	
2:45 PM	19	47	17	0	0	41	30	0	15	18	16	0	0	0	0	0	203	
2:50 PM	33	47	29	1	0	29	30	0	9	11	15	0	0	0	0	0	204	
2:55 PM	19	38	24	1	0	23	28	0	9	23	13	0	0	0	0	0	178	
3:00 PM	11	33	26	0	0	34	25	0	15	21	18	0	0	0	0	0	183	
3:05 PM	14	39	16	0	0	27	32	0	26	33	17	0	0	0	0	0	204	
3:10 PM	15	70	26	1	0	36	43	0	17	14	15	0	0	0	0	0	237	
3:15 PM	17	38	27	1	0	50	38	0	17	36	16	0	0	0	0	0	240	
3:20 PM	18	40	31	0	0	37	36	0	15	18	22	0	0	0	0	0	217	
3:25 PM	19	36	22	1	0	34	31	0	17	25	14	0	0	0	0	0	199	2454
3:30 PM	15	39	41	0	0	29	30	0	18	25	17	0	0	0	0	0	214	2466
3:35 PM	14	50	28	0	0	38	29	0	16	29	10	0	0	0	0	0	214	2487
3:40 PM	14	53	39	0	0	35	17	0	12	19	13	0	0	0	0	0	202	2495
3:45 PM	13	47	37	0	0	41	38	0	14	30	20	0	0	0	0	0	240	2532
3:50 PM	13	26	32	0	0	31	31	0	13	12	16	0	0	0	0	0	174	2502
3:55 PM	23	42	35	2	0	23	23	0	8	28	14	0	0	0	0	0	198	2522
4:00 PM	4	32	18	0	0	28	28	0	14	33	16	0	0	0	0	0	173	2512
4:05 PM	10	45	29	0	0	35	23	0	9	20	16	0	0	0	0	0	187	2495
4:10 PM	14	30	35	0	0	30	18	0	15	43	20	0	0	0	0	0	205	2463
4:15 PM	12	52	31	0	0	35	21	0	15	36	15	0	0	0	0	0	217	2440
4:20 PM	8	27	21	0	0	33	23	0	23	39	20	0	0	0	0	0	194	2417
4:25 PM	12	48	29	0	0	37	21	0	17	21	17	0	0	0	0	0	202	2420
4:30 PM	15	35	22	0	0	22	19	0	22	37	16	0	0	0	0	0	188	2394
4:35 PM	16	47	27	0	0	21	12	0	12	31	15	0	0	0	0	0	181	2361
4:40 PM	9	30	21	0	0	26	22	0	10	41	25	0	0	0	0	0	184	2343
4:45 PM	17	33	25	0	1	37	22	0	17	22	19	0	0	0	0	0	193	2296
4:50 PM	26	41	17	0	0	20	31	0	18	41	24	0	0	0	0	0	218	2340
4:55 PM	8	36	20	0	0	41	23	0	11	20	18	0	0	0	0	0	177	2319
5:00 PM	18	47	21	1	0	21	19	0	18	41	12	0	0	0	0	0	198	2344
5:05 PM	13	43	20	0	0	30	28	0	19	46	24	0	0	0	0	0	223	2380
5:10 PM	19	51	32	0	0	43	28	0	19	43	13	0	0	0	0	0	248	2423
5:15 PM	15	35	26	0	0	41	30	0	14	25	19	0	0	0	0	0	205	2411
5:20 PM	14	48	32	0	0	34	27	0	20	43	22	0	0	0	0	0	240	2457
5:25 PM	15	28	23	0	0	45	27	0	16	34	14	0	0	0	0	0	202	2457
5:30 PM	6	36	24	2	0	30	25	0	13	25	17	0	0	0	0	0	178	2447

5-Min Count Period Beginning At	Pleasant Hill Rd (Northbound)				Pleasant Hill Rd (Southbound)				Mt Diablo Blvd/CA-24 EB On-Ramp (Eastbound)				Mt Diablo Blvd/CA-24 EB On-Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
5:35 PM	12	32	21	0	0	29	28	0	28	30	18	0	0	0	0	0	198	2464
5:40 PM	11	44	15	0	0	34	21	0	13	21	15	0	0	0	0	0	174	2454
5:45 PM	9	31	23	0	0	39	18	0	19	23	13	0	0	0	0	0	175	2436
5:50 PM	7	29	18	0	0	44	16	0	5	19	7	0	0	0	0	0	145	2363
5:55 PM	9	24	10	0	0	29	16	0	9	34	10	0	0	0	0	0	141	2327
6:00 PM	15	25	34	1	0	37	23	0	5	21	13	0	0	0	0	0	174	2303
6:05 PM	6	32	12	0	0	26	15	0	16	32	13	0	0	0	0	0	152	2232
6:10 PM	7	37	24	0	0	21	15	0	11	28	18	0	0	0	0	0	161	2145
6:15 PM	9	20	17	0	0	26	15	0	6	20	14	0	0	0	0	0	127	2067
6:20 PM	10	22	21	0	0	16	7	0	9	29	9	0	0	0	0	0	123	1950
6:25 PM	6	17	11	0	0	21	17	0	6	20	7	0	0	0	0	0	105	1853

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	200	592	336	8	0	492	468	0	196	272	212	0	0	0	0	0	2776
Heavy Trucks	0	8	8		0	4	8		8	8	4		0	0	0		48
Buses																	
Pedestrians		24				0				0				56			80
Bicycles	0	4	0		0	0	8		0	0	8		0	0	0		20
Scooters																	

Comments:

Report generated on 2/17/2022 2:41 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	2	5	4	2	1	0	0	0	0	14	41-50	9
12:15 AM	0	0	0	0	1	2	4	1	1	0	0	0	0	0	9	36-45	6
12:30 AM	0	0	0	0	0	0	3	0	1	0	0	0	0	0	4	36-45	3
12:45 AM	0	0	0	0	2	3	4	2	1	0	0	0	0	0	12	36-45	7
01:00 AM	0	0	0	0	0	0	4	1	0	0	0	0	0	0	5	41-50	5
01:15 AM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	36-45	4
01:30 AM	0	0	0	0	0	1	0	2	0	0	0	0	0	0	3	41-50	2
01:45 AM	0	0	0	0	1	0	1	3	1	0	0	0	0	0	6	43-52	4
02:00 AM	0	0	0	0	0	0	1	2	1	0	0	0	0	0	4	46-55	3
02:15 AM	0	0	0	0	0	2	3	1	2	0	0	0	0	0	8	36-45	5
02:30 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	31-40	2
02:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
03:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	46-55	1
03:15 AM	0	0	0	0	0	2	1	0	0	0	0	0	0	0	3	36-45	3
03:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	46-55	1
03:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	31-40	2
04:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	36-45	1
04:15 AM	0	0	0	1	0	0	2	1	0	0	0	0	0	0	4	41-50	3
04:30 AM	0	0	0	0	1	1	2	0	0	0	0	0	0	0	4	36-45	3
04:45 AM	0	0	0	0	0	0	1	3	1	0	0	0	0	0	5	43-52	4
05:00 AM	0	0	0	1	2	0	1	0	1	0	0	0	0	0	5	26-35	3
05:15 AM	0	0	0	0	1	2	1	2	0	1	0	0	0	0	7	36-45	3
05:30 AM	0	0	0	0	0	4	6	1	0	1	0	0	0	0	12	36-45	10
05:45 AM	1	0	0	0	4	7	7	7	0	0	0	0	0	0	26	36-45	14
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 AM	0	0	0	2	1	3	6	9	1	1	0	0	0	0	23	41-50	15
06:15 AM	0	0	0	1	2	10	14	6	4	0	0	0	0	0	37	36-45	24
06:30 AM	0	0	0	1	1	9	19	5	0	0	0	0	0	0	35	36-45	28
06:45 AM	1	0	0	2	11	19	20	10	5	0	0	0	0	0	68	36-45	39
07:00 AM	0	0	0	0	6	24	22	11	6	1	0	0	0	0	70	36-45	46
07:15 AM	0	0	0	1	9	47	36	20	3	**3**	0	0	0	0	119	36-45	83
07:30 AM	5	0	8	17	55	**81**	39	**23**	5	3	0	0	0	0	236	31-40	136
07:45 AM	**22**	**18**	**37**	**65**	**66**	64	26	6	1	0	0	0	0	0	**305**	26-35	131
08:00 AM	3	0	2	12	46	68	49	16	3	0	0	0	0	0	199	36-45	117
08:15 AM	4	1	3	9	36	58	36	12	**7**	1	0	0	0	0	167	34-43	94
08:30 AM	6	0	1	20	37	63	41	14	3	2	0	0	0	0	187	36-45	104
08:45 AM	3	0	3	6	35	68	**66**	9	2	0	0	0	0	0	192	36-45	134
09:00 AM	1	2	2	13	18	50	51	21	1	1	0	0	0	0	160	36-45	101
09:15 AM	2	0	1	12	16	44	55	15	5	1	0	0	0	0	151	36-45	99
09:30 AM	1	0	1	9	25	55	40	17	1	2	0	0	0	0	151	36-45	95
09:45 AM	1	1	1	7	22	59	43	13	3	2	0	0	0	0	152	36-45	102
10:00 AM	1	0	0	7	20	56	46	12	3	1	0	0	0	0	146	36-45	102
10:15 AM	1	0	2	11	18	57	43	14	3	0	0	0	0	0	149	36-45	100
10:30 AM	4	0	1	9	24	57	48	21	4	1	0	0	0	0	169	36-45	105
10:45 AM	5	0	3	12	37	67	58	21	1	0	0	0	0	0	204	36-45	125
11:00 AM	4	0	0	9	27	55	43	13	6	1	0	0	0	0	158	36-45	98
11:15 AM	2	0	0	10	35	58	54	13	4	2	0	0	0	0	178	36-45	112
11:30 AM	4	0	2	5	25	65	50	17	3	0	0	0	0	0	171	36-45	115
11:45 AM	4	0	0	10	29	55	65	18	3	0	0	0	0	0	184	36-45	120
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 PM	3	1	2	13	29	65	39	20	3	0	0	0	0	0	175	36-45	104
12:15 PM	3	0	0	7	30	68	64	21	4	0	0	0	0	0	197	36-45	132
12:30 PM	5	0	0	7	29	72	67	23	5	0	0	0	0	0	208	36-45	139
12:45 PM	2	0	4	29	43	68	50	14	1	1	0	0	0	0	212	36-45	118
01:00 PM	3	0	3	12	49	65	54	19	4	0	0	0	0	0	209	36-45	119
01:15 PM	4	0	1	10	33	69	70	20	4	1	0	0	0	0	212	36-45	139
01:30 PM	3	0	6	11	34	86	44	17	1	1	0	0	0	0	203	36-45	130
01:45 PM	4	0	0	17	37	68	69	**29**	3	1	**1**	0	0	0	229	36-45	137
02:00 PM	5	0	0	19	55	75	**84**	16	1	0	0	0	0	0	255	36-45	159
02:15 PM	3	0	2	14	61	**99**	56	15	4	0	0	0	0	0	254	31-40	160
02:30 PM	6	2	5	18	68	91	56	15	**9**	0	0	0	0	0	270	31-40	159
02:45 PM	19	6	37	**60**	76	79	33	9	2	1	0	0	0	0	**322**	31-40	155
03:00 PM	34	29	34	50	47	55	29	5	1	0	0	0	0	0	284	31-40	102
03:15 PM	28	10	28	46	**89**	65	24	5	0	0	0	0	0	0	295	31-40	154
03:30 PM	22	16	33	55	80	64	14	2	0	0	0	0	0	0	286	31-40	144
03:45 PM	43	31	44	57	67	29	13	1	0	0	0	0	0	0	285	26-35	124
04:00 PM	71	27	19	26	31	27	11	3	0	0	0	0	0	0	215	31-40	58
04:15 PM	**93**	34	29	30	15	10	0	0	0	0	0	0	0	0	211	11-20	65
04:30 PM	64	**48**	**51**	45	19	8	2	0	0	0	0	0	0	0	237	16-25	99
04:45 PM	77	9	2	0	0	0	0	0	0	0	0	0	0	0	88	1-10	51
05:00 PM	70	9	4	2	1	0	0	0	0	0	0	0	0	0	86	1-10	47
05:15 PM	58	22	3	2	0	0	0	0	0	0	0	0	0	0	85	11-20	41
05:30 PM	62	4	7	0	1	0	0	0	0	0	0	0	0	0	74	1-10	41
05:45 PM	77	9	1	0	2	0	0	0	0	0	0	0	0	0	89	1-10	51
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

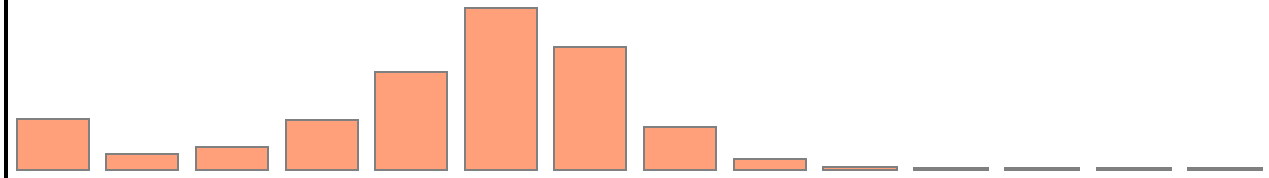
Comments:

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 PM	60	4	5	2	2	0	0	0	0	0	0	0	0	0	73	1-10	40
06:15 PM	36	2	3	17	33	44	15	9	1	0	0	0	0	0	160	31-40	77
06:30 PM	9	0	6	29	81	86	42	3	4	0	0	0	0	0	260	31-40	167
06:45 PM	5	0	1	19	41	71	47	22	3	1	0	0	0	0	210	36-45	118
07:00 PM	0	1	1	7	22	59	47	17	5	1	1	0	0	0	161	36-45	106
07:15 PM	2	0	1	9	17	47	31	12	6	1	0	0	0	0	126	36-45	78
07:30 PM	0	0	0	2	9	48	35	14	1	0	0	0	0	0	109	36-45	83
07:45 PM	0	0	2	7	14	37	28	23	4	0	0	0	0	0	115	36-45	65
08:00 PM	1	0	0	10	20	48	26	9	4	2	0	0	0	0	120	36-45	74
08:15 PM	0	0	0	4	18	28	32	16	6	2	0	0	0	0	106	36-45	60
08:30 PM	1	0	1	5	17	23	24	10	2	0	1	0	0	0	84	36-45	47
08:45 PM	0	0	0	4	9	29	32	4	3	1	0	0	0	0	82	36-45	61
09:00 PM	2	0	0	0	6	16	25	13	5	2	0	0	0	0	69	36-45	41
09:15 PM	0	0	0	2	6	22	17	4	4	0	0	0	0	0	55	36-45	39
09:30 PM	0	0	1	2	8	22	17	8	4	0	0	0	0	0	62	36-45	39
09:45 PM	0	0	0	1	5	11	14	7	4	1	0	0	0	0	43	36-45	25
10:00 PM	1	0	1	1	3	10	10	3	0	1	0	0	0	0	30	36-45	20
10:15 PM	0	1	0	0	2	7	14	7	3	0	0	0	0	0	34	36-45	21
10:30 PM	0	0	0	2	1	3	11	3	3	0	0	0	0	0	23	36-45	14
10:45 PM	0	0	0	0	2	4	7	6	2	0	0	0	0	0	21	41-50	13
11:00 PM	0	0	0	1	1	5	7	7	4	0	0	0	0	0	25	41-50	14
11:15 PM	0	0	0	0	1	1	5	0	0	0	0	0	0	0	7	36-45	6
11:30 PM	0	0	0	0	0	4	4	9	2	0	0	0	0	0	19	41-50	13
11:45 PM	0	0	0	1	2	4	5	5	1	0	0	0	0	0	18	41-50	10
Day Total	951	287	404	907	1829	3014	2295	811	203	42	3	0	0	0	10746	36-45	5309
Percent	8.8%	2.7%	3.8%	8.4%	17%	28%	21.4%	7.5%	1.9%	0.4%	0%	0%	0%	0%			
																	
AM Peak	7:45 AM	7:45 AM	7:45 AM	7:45 AM	7:45 AM	7:30 AM	8:45 AM	7:30 AM	8:15 AM	7:15 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	7:45 AM		
15-min Vol	22	18	37	65	66	81	66	23	7	3	0	0	0	0	305		
PM Peak	4:15 PM	4:30 PM	4:30 PM	2:45 PM	3:15 PM	2:15 PM	2:00 PM	1:45 PM	2:30 PM	8:00 PM	1:45 PM	12:00 PM	12:00 PM	12:00 PM	2:45 PM		
15-min Vol	93	48	51	60	89	99	84	29	9	2	1	0	0	0	322		

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	1	0	0	1	2	3	1	2	1	0	0	0	0	0	11	31-40	5
12:15 AM	0	0	0	0	2	2	2	2	1	0	0	0	0	0	9	31-40	4
12:30 AM	0	0	0	0	0	1	1	3	1	2	0	0	0	0	8	43-52	4
12:45 AM	0	0	0	0	1	1	2	4	1	0	0	0	0	0	9	41-50	6
01:00 AM	0	0	0	0	0	3	1	0	2	0	0	0	0	0	6	36-45	4
01:15 AM	0	0	0	0	1	1	1	2	1	0	0	0	0	0	6	46-55	3
01:30 AM	0	0	0	1	0	2	0	2	0	0	0	0	0	0	5	31-40	2
01:45 AM	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	46-55	2
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
02:15 AM	0	0	0	1	0	1	1	0	0	0	0	0	0	0	3	36-45	2
02:30 AM	0	0	0	0	0	1	1	2	0	0	0	0	0	0	4	41-50	3
02:45 AM	0	0	0	0	0	2	1	0	1	0	0	0	0	0	4	36-45	3
03:00 AM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	31-40	1
03:15 AM	0	0	0	0	2	0	1	0	1	0	0	0	0	0	4	26-35	2
03:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	31-40	1
03:45 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	36-45	1
04:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
04:15 AM	0	0	0	0	0	2	2	0	0	0	0	0	0	0	4	36-45	4
04:30 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	36-45	3
04:45 AM	0	0	0	2	1	1	0	1	2	0	0	0	0	0	7	26-35	3
05:00 AM	0	0	0	1	2	3	3	2	0	0	0	0	0	0	11	36-45	6
05:15 AM	0	0	0	1	2	3	1	2	0	0	0	0	0	0	9	31-40	5
05:30 AM	0	0	0	0	0	2	3	4	4	0	0	0	0	0	13	46-55	8
05:45 AM	0	0	0	1	2	10	8	6	1	0	0	0	0	0	28	36-45	18
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 AM	0	0	1	0	2	7	10	1	3	0	0	0	0	0	24	36-45	17
06:15 AM	0	0	0	0	2	10	6	4	0	0	0	0	0	0	22	36-45	16
06:30 AM	0	0	0	1	2	10	19	11	4	0	0	0	0	0	47	41-50	30
06:45 AM	1	0	0	1	6	13	18	3	3	1	0	0	0	0	46	36-45	31
07:00 AM	0	0	0	2	7	29	19	11	3	0	0	0	0	0	71	36-45	48
07:15 AM	3	0	1	3	9	41	35	18	**8**	0	0	0	0	0	118	36-45	76
07:30 AM	1	0	2	5	18	56	48	22	6	0	0	0	0	0	158	36-45	104
07:45 AM	1	0	2	17	47	72	52	12	6	0	0	0	0	0	209	36-45	124
08:00 AM	4	0	11	30	**73**	**99**	45	9	2	0	0	0	0	0	273	31-40	172
08:15 AM	**23**	**12**	**37**	**50**	68	51	26	12	2	0	0	0	0	0	**281**	31-40	119
08:30 AM	1	0	5	21	44	72	46	13	3	0	0	0	0	0	205	36-45	118
08:45 AM	1	0	2	15	31	65	44	17	2	1	0	0	0	0	178	36-45	109
09:00 AM	2	1	0	12	22	55	47	12	3	0	0	0	0	0	154	36-45	102
09:15 AM	2	2	1	2	20	55	48	**31**	1	1	0	0	0	0	163	36-45	103
09:30 AM	2	0	3	9	22	43	39	11	3	0	0	0	0	0	132	36-45	82
09:45 AM	2	0	0	5	24	48	**57**	13	4	1	0	0	0	0	154	36-45	105
10:00 AM	2	0	0	3	28	54	37	12	0	2	0	0	0	0	138	36-45	91
10:15 AM	2	0	6	10	19	59	41	11	3	0	0	0	0	0	151	36-45	100
10:30 AM	0	0	2	4	20	69	46	16	4	1	**1**	0	0	0	163	36-45	115
10:45 AM	5	2	2	12	23	57	41	15	2	0	0	0	0	0	159	36-45	98
11:00 AM	1	0	6	10	26	81	45	10	2	0	0	0	0	0	181	36-45	126
11:15 AM	2	0	1	9	29	54	50	19	2	0	0	0	0	0	166	36-45	104
11:30 AM	0	0	1	15	27	58	44	22	2	0	0	0	0	0	169	36-45	102
11:45 AM	2	0	4	8	32	71	38	12	2	0	0	0	0	0	169	36-45	109
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 PM	4	0	3	11	30	73	40	21	3	0	0	0	0	0	185	36-45	113
12:15 PM	5	0	2	7	35	83	55	21	5	1	0	0	0	0	214	36-45	138
12:30 PM	0	0	0	11	20	69	**74**	23	6	0	0	0	0	0	203	36-45	143
12:45 PM	3	0	3	5	47	61	64	18	5	1	0	0	0	0	207	36-45	125
01:00 PM	2	2	1	11	45	89	52	18	2	1	0	0	0	0	223	36-45	141
01:15 PM	6	0	1	9	46	90	50	15	2	1	0	0	0	0	220	36-45	140
01:30 PM	6	0	6	18	46	72	56	13	3	0	**1**	0	0	0	221	36-45	128
01:45 PM	6	0	4	13	39	85	57	17	5	0	0	0	0	0	226	36-45	142
02:00 PM	4	0	1	15	41	76	65	**24**	**7**	0	0	0	0	0	233	36-45	141
02:15 PM	5	0	1	9	32	97	60	20	5	1	0	0	0	0	230	36-45	157
02:30 PM	8	0	3	20	57	95	56	20	1	**2**	0	0	0	0	262	31-40	152
02:45 PM	11	1	17	34	**91**	**111**	48	7	3	0	0	0	0	0	**323**	31-40	202
03:00 PM	31	12	27	34	50	47	18	9	2	0	0	0	0	0	230	31-40	97
03:15 PM	**91**	21	16	11	5	1	0	0	0	0	0	0	0	0	145	1-10	61
03:30 PM	62	7	13	6	5	3	0	0	0	0	0	0	0	0	96	1-10	41
03:45 PM	73	7	10	2	0	0	0	0	0	0	0	0	0	0	92	1-10	49
04:00 PM	74	12	2	0	0	0	0	0	0	0	0	0	0	0	88	1-10	49
04:15 PM	87	16	4	4	1	0	0	0	0	0	0	0	0	0	112	1-10	58
04:30 PM	54	**36**	43	50	38	11	2	0	0	0	0	0	0	0	234	21-30	93
04:45 PM	45	32	**54**	48	36	5	1	0	0	0	0	0	0	0	221	21-30	102
05:00 PM	83	36	14	15	6	6	0	0	0	0	0	0	0	0	160	11-20	64
05:15 PM	82	6	5	1	1	0	0	0	0	0	0	0	0	0	95	1-10	55
05:30 PM	86	30	5	6	1	0	0	0	0	0	0	0	0	0	128	11-20	59
05:45 PM	28	18	30	57	84	48	22	2	0	2	0	0	0	0	291	26-35	141
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

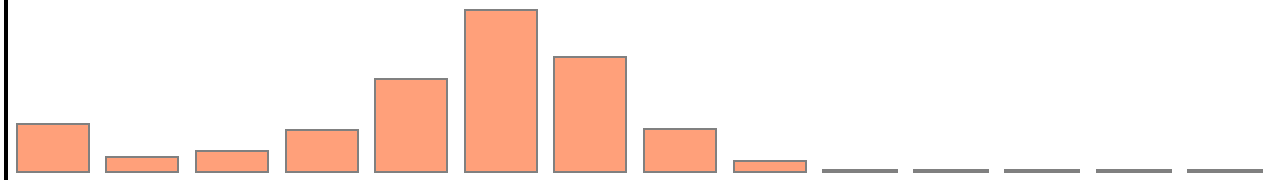
Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 PM	6	1	16	**58**	90	78	32	7	4	0	0	0	0	0	292	31-40	168
06:15 PM	5	3	6	37	81	96	39	12	3	0	0	0	0	0	282	31-40	177
06:30 PM	5	0	2	9	57	90	50	24	4	0	0	0	0	0	241	31-40	147
06:45 PM	5	0	2	16	40	86	32	16	1	0	0	0	0	0	198	31-40	126
07:00 PM	1	0	2	14	31	59	42	17	2	0	0	0	0	0	168	36-45	101
07:15 PM	4	0	0	3	20	39	53	21	3	1	0	0	0	0	144	36-45	92
07:30 PM	0	0	1	5	19	46	33	15	3	0	0	0	0	0	122	36-45	79
07:45 PM	0	0	0	2	17	38	40	13	2	0	0	0	0	0	112	36-45	78
08:00 PM	0	0	1	4	14	35	33	12	3	0	0	0	0	0	102	36-45	68
08:15 PM	2	0	3	2	14	40	31	16	3	0	0	0	0	0	111	36-45	71
08:30 PM	2	0	2	5	16	33	20	14	5	0	0	0	0	0	97	36-45	53
08:45 PM	2	0	0	2	10	21	24	14	5	1	0	0	0	0	79	36-45	45
09:00 PM	0	0	1	2	5	26	27	9	2	1	1	0	0	0	74	36-45	53
09:15 PM	0	0	0	4	9	21	28	11	0	0	0	0	0	0	73	36-45	49
09:30 PM	1	0	0	1	5	17	24	7	2	0	1	0	0	0	58	36-45	41
09:45 PM	1	0	0	2	9	22	22	7	4	1	0	0	0	0	68	36-45	44
10:00 PM	0	0	0	0	5	13	23	8	2	0	0	0	0	0	51	36-45	36
10:15 PM	2	0	1	1	3	11	21	7	1	2	0	0	0	0	49	36-45	32
10:30 PM	0	0	0	0	0	9	20	6	4	0	0	0	0	0	39	36-45	29
10:45 PM	0	0	0	0	3	4	8	5	5	0	1	0	0	0	26	41-50	13
11:00 PM	0	0	0	0	1	6	6	4	1	0	0	0	0	0	18	36-45	12
11:15 PM	0	0	0	1	0	4	10	6	3	0	0	0	0	0	24	41-50	16
11:30 PM	0	0	0	0	2	7	7	3	0	0	0	0	0	0	19	36-45	14
11:45 PM	0	0	0	0	0	1	3	2	0	0	0	0	0	0	6	41-50	5
Day Total	951	257	389	817	1823	3193	2282	834	199	24	5	0	0	0	10774	36-45	5475
Percent	8.8%	2.4%	3.6%	7.6%	16.9%	29.6%	21.2%	7.7%	1.8%	0.2%	0%	0%	0%	0%			
AM Peak	8:15 AM	8:15 AM	8:15 AM	8:15 AM	8:00 AM	8:00 AM	9:45 AM	9:15 AM	7:15 AM	12:30 AM	10:30 AM	12:00 AM	12:00 AM	12:00 AM	8:15 AM		
15-min Vol	23	12	37	50	73	99	57	31	8	2	1	0	0	0	281		
PM Peak	3:15 PM	4:30 PM	4:45 PM	6:00 PM	2:45 PM	2:45 PM	12:30 PM	2:00 PM	2:00 PM	2:30 PM	1:30 PM	12:00 PM	12:00 PM	12:00 PM	2:45 PM		
15-min Vol	91	36	54	58	91	111	74	24	7	2	1	0	0	0	323		



Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

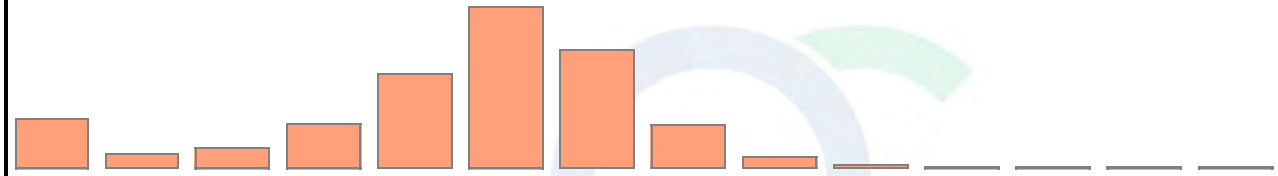
Type of report: Tube Count - Speed Data

SUMMARY - Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd
QC JOB #: 15687513
SPECIFIC LOCATION:
DIRECTION: NB
CITY/STATE: Lafayette, CA
DATE: Feb 8 2022 - Feb 9 2022

Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	1902	544	793	1724	3652	6207	4577	1645	402	66	8	0	0	0	21520	36-45	10784
Percent	8.8%	2.5%	3.7%	8%	17%	28.8%	21.3%	7.6%	1.9%	0.3%	0%	0%	0%	0%			
Cumulative Percent	8.8%	11.4%	15.1%	23.1%	40%	68.9%	90.1%	97.8%	99.7%	100%	100%	100%	100%	100%			

ADT
10760



85th Percentile: 44 MPH
Mean Speed(Average): 36 MPH
Median: 37 MPH
Mode: 38 MPH

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	11	3	0	0	0	0	0	0	0	0	0	0	0	14
12:15 AM	0	9	0	0	0	0	0	0	0	0	0	0	0	0	9
12:30 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
12:45 AM	0	10	1	0	1	0	0	0	0	0	0	0	0	0	12
01:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
01:15 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
01:30 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
01:45 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
02:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
02:15 AM	0	4	4	0	0	0	0	0	0	0	0	0	0	0	8
02:30 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
02:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:15 AM	0	2	0	0	0	0	0	1	0	0	0	0	0	0	3
03:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
03:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
04:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:15 AM	0	3	0	1	0	0	0	0	0	0	0	0	0	0	4
04:30 AM	0	3	0	0	1	0	0	0	0	0	0	0	0	0	4
04:45 AM	0	3	1	0	1	0	0	0	0	0	0	0	0	0	5
05:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
05:15 AM	0	6	0	0	1	0	0	0	0	0	0	0	0	0	7
05:30 AM	0	8	0	0	4	0	0	0	0	0	0	0	0	0	12
05:45 AM	0	16	6	1	2	0	0	0	0	0	0	0	0	1	26
Day Total															
Percent															
ADT 10746															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
06:00 AM	0	12	3	1	6	0	**1**	0	0	0	0	0	0	0	23
06:15 AM	0	29	6	1	1	0	0	0	0	0	0	0	0	0	37
06:30 AM	0	27	6	0	2	0	0	0	0	0	0	0	0	0	35
06:45 AM	0	45	16	0	6	0	0	0	0	0	0	0	0	1	68
07:00 AM	0	44	16	1	8	0	0	1	0	0	0	0	0	0	70
07:15 AM	0	88	20	0	7	0	1	3	0	0	0	0	0	0	119
07:30 AM	0	176	33	**2**	11	1	0	4	1	0	**3**	0	0	5	236
07:45 AM	**2**	**217**	**39**	1	13	**2**	0	**7**	1	**3**	1	0	0	**19**	**305**
08:00 AM	0	144	33	0	15	0	0	4	0	0	0	0	0	3	199
08:15 AM	1	117	26	1	14	2	0	2	0	0	1	0	0	3	167
08:30 AM	0	132	28	1	11	0	1	6	**2**	0	0	0	0	6	187
08:45 AM	0	148	25	1	11	0	0	3	0	1	0	0	0	3	192
09:00 AM	1	114	27	1	11	2	0	3	0	0	0	0	0	1	160
09:15 AM	0	94	34	0	13	1	0	6	0	1	0	0	0	2	151
09:30 AM	0	108	23	1	16	0	0	2	0	0	0	0	0	1	151
09:45 AM	0	108	27	1	12	0	0	3	0	0	0	0	0	1	152
10:00 AM	0	104	29	0	11	0	0	1	0	0	0	0	0	1	146
10:15 AM	0	98	34	1	13	0	0	1	0	0	1	0	0	1	149
10:30 AM	0	106	36	0	**18**	0	0	4	0	1	0	0	0	4	169
10:45 AM	0	145	33	0	13	1	0	4	1	0	1	0	0	6	204
11:00 AM	0	99	32	0	17	0	0	6	0	0	0	0	0	4	158
11:15 AM	0	120	38	1	13	0	0	4	0	0	0	0	0	2	178
11:30 AM	1	127	23	0	10	1	0	5	0	0	0	0	0	4	171
11:45 AM	0	125	29	1	18	1	1	5	0	0	0	0	0	4	184
Day Total															
Percent															
ADT 10746															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 PM	0	129	36	1	4	0	0	2	0	0	0	0	0	3	175
12:15 PM	1	142	39	0	8	0	0	3	0	1	0	0	0	3	197
12:30 PM	0	158	31	0	10	0	0	4	0	0	0	0	0	5	208
12:45 PM	0	160	31	1	14	1	0	3	0	0	0	0	0	2	212
01:00 PM	0	161	26	2	13	0	0	4	0	0	0	0	0	3	209
01:15 PM	1	153	38	2	6	0	0	8	0	0	0	0	0	4	212
01:30 PM	0	144	39	2	10	0	0	2	0	1	**2**	0	0	3	203
01:45 PM	1	163	44	0	14	2	0	1	0	0	0	0	0	4	229
02:00 PM	0	181	44	1	18	0	0	5	0	0	1	0	0	5	255
02:15 PM	1	187	43	1	18	0	0	1	0	0	0	0	0	3	254
02:30 PM	0	208	31	2	14	0	0	7	0	2	1	0	0	5	270
02:45 PM	3	**225**	**56**	2	**21**	1	0	5	0	0	1	**1**	0	7	**322**
03:00 PM	4	194	47	2	7	2	0	4	0	2	0	0	0	22	284
03:15 PM	4	201	43	3	19	0	0	5	**1**	**3**	0	0	0	16	295
03:30 PM	2	200	48	1	12	0	0	**9**	0	1	1	0	**1**	11	286
03:45 PM	1	193	45	1	9	0	**1**	9	1	1	1	0	1	22	285
04:00 PM	6	119	36	**7**	9	1	0	4	0	2	1	0	0	30	215
04:15 PM	4	120	24	6	8	**3**	1	4	0	1	1	0	1	38	211
04:30 PM	4	148	30	5	7	2	1	4	1	3	0	0	0	32	237
04:45 PM	4	35	9	2	4	0	0	1	1	0	1	0	1	30	88
05:00 PM	3	31	15	0	4	1	0	2	0	0	0	0	0	30	86
05:15 PM	4	33	7	2	1	2	1	0	0	1	0	1	0	33	85
05:30 PM	3	22	15	2	2	0	0	0	1	0	0	0	0	29	74
05:45 PM	**11**	19	11	2	4	0	1	1	1	0	0	0	0	**39**	89
Day Total															
Percent															
ADT 10746															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
06:00 PM	5	24	8	0	4	0	0	0	0	0	0	0	0	32	73
06:15 PM	1	107	24	2	8	0	0	1	1	0	0	0	0	16	160
06:30 PM	0	204	34	0	7	0	0	4	0	1	2	0	0	8	260
06:45 PM	0	169	28	0	5	0	0	3	0	0	0	0	0	5	210
07:00 PM	0	129	27	0	5	0	0	0	0	0	0	0	0	0	161
07:15 PM	0	105	14	0	5	0	0	0	0	0	0	0	0	2	126
07:30 PM	0	91	13	0	3	0	0	2	0	0	0	0	0	0	109
07:45 PM	0	105	7	0	2	0	0	1	0	0	0	0	0	0	115
08:00 PM	0	99	18	0	2	0	0	0	0	0	0	0	0	1	120
08:15 PM	0	93	9	0	4	0	0	0	0	0	0	0	0	0	106
08:30 PM	0	71	8	0	2	0	0	2	0	0	0	0	0	1	84
08:45 PM	0	67	12	0	3	0	0	0	0	0	0	0	0	0	82
09:00 PM	0	53	12	0	1	0	0	1	0	0	0	0	0	2	69
09:15 PM	0	47	5	0	3	0	0	0	0	0	0	0	0	0	55
09:30 PM	0	53	5	1	3	0	0	0	0	0	0	0	0	0	62
09:45 PM	0	36	5	0	1	0	0	0	0	0	0	0	0	1	43
10:00 PM	0	28	0	0	1	0	0	0	0	0	0	0	0	1	30
10:15 PM	0	29	4	0	1	0	0	0	0	0	0	0	0	0	34
10:30 PM	0	19	4	0	0	0	0	0	0	0	0	0	0	0	23
10:45 PM	0	19	2	0	0	0	0	0	0	0	0	0	0	0	21
11:00 PM	0	19	5	0	1	0	0	0	0	0	0	0	0	0	25
11:15 PM	0	6	0	0	1	0	0	0	0	0	0	0	0	0	7
11:30 PM	0	18	1	0	0	0	0	0	0	0	0	0	0	0	19
11:45 PM	0	16	2	0	0	0	0	0	0	0	0	0	0	0	18
Day Total	68	7565	1672	67	580	26	9	177	12	25	19	2	4	520	10746
Percent	0.6%	70.4%	15.6%	0.6%	5.4%	0.2%	0.1%	1.6%	0.1%	0.2%	0.2%	0%	0%	4.8%	
ADT 10746															
AM Peak	7:45 AM	7:45 AM	7:45 AM	7:30 AM	10:30 AM	7:45 AM	6:00 AM	7:45 AM	8:30 AM	7:45 AM	7:30 AM	12:00 AM	12:00 AM	7:45 AM	7:45 AM
15-min Vol	2	217	39	2	18	2	1	7	2	3	3	0	0	19	305
PM Peak	5:45 PM	2:45 PM	2:45 PM	4:00 PM	2:45 PM	4:15 PM	3:45 PM	3:30 PM	3:15 PM	3:15 PM	1:30 PM	2:45 PM	3:30 PM	5:45 PM	2:45 PM
15-min Vol	11	225	56	7	21	3	1	9	1	3	2	1	1	39	322

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	1	11
12:15 AM	0	8	1	0	0	0	0	0	0	0	0	0	0	0	9
12:30 AM	0	5	3	0	0	0	0	0	0	0	0	0	0	0	8
12:45 AM	0	6	3	0	0	0	0	0	0	0	0	0	0	0	9
01:00 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
01:15 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
01:30 AM	0	3	1	0	0	0	0	1	0	0	0	0	0	0	5
01:45 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
02:30 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
02:45 AM	0	3	0	0	1	0	0	0	0	0	0	0	0	0	4
03:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2
03:15 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
03:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:45 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
04:30 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
04:45 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
05:00 AM	0	9	2	0	0	0	0	0	0	0	0	0	0	0	11
05:15 AM	0	7	1	0	1	0	0	0	0	0	0	0	0	0	9
05:30 AM	0	10	3	0	0	0	0	0	0	0	0	0	0	0	13
05:45 AM	0	22	3	0	3	0	0	0	0	0	0	0	0	0	28
Day Total															
Percent															
ADT 10774															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
06:00 AM	0	18	4	0	1	1	0	0	0	0	0	0	0	0	24
06:15 AM	0	14	2	1	5	0	0	0	0	0	0	0	0	0	22
06:30 AM	0	27	15	0	4	0	0	1	0	0	0	0	0	0	47
06:45 AM	0	28	10	0	7	0	0	0	0	0	0	0	0	1	46
07:00 AM	0	50	14	0	5	0	0	2	0	0	0	0	0	0	71
07:15 AM	0	87	17	1	7	**2**	0	1	0	0	0	0	0	3	118
07:30 AM	0	104	31	2	15	2	0	2	1	0	0	0	0	1	158
07:45 AM	0	156	32	1	15	0	0	4	0	0	0	0	0	1	209
08:00 AM	**1**	**207**	40	**4**	12	1	0	5	0	0	0	0	0	3	273
08:15 AM	1	201	**43**	1	6	0	**1**	5	1	**2**	0	0	**1**	**19**	**281**
08:30 AM	0	160	32	2	6	0	0	3	0	0	**1**	0	0	1	205
08:45 AM	0	124	36	0	15	0	0	2	0	0	0	0	0	1	178
09:00 AM	1	102	31	0	11	0	0	6	0	0	1	0	0	2	154
09:15 AM	1	117	26	0	15	0	0	2	0	0	0	0	0	2	163
09:30 AM	0	90	29	0	7	1	0	3	0	0	0	0	0	2	132
09:45 AM	0	105	32	1	11	0	1	2	0	0	0	0	0	2	154
10:00 AM	0	87	29	1	**17**	1	0	0	0	0	0	0	0	3	138
10:15 AM	1	99	29	1	15	0	0	4	0	0	0	0	0	2	151
10:30 AM	0	118	29	2	8	0	0	5	0	0	0	0	0	1	163
10:45 AM	0	101	30	2	11	2	0	5	**2**	0	0	0	0	6	159
11:00 AM	0	134	29	0	15	0	0	2	0	0	0	0	0	1	181
11:15 AM	1	121	28	1	13	0	0	1	0	0	0	0	0	1	166
11:30 AM	0	118	35	0	7	0	1	**7**	1	0	0	0	0	0	169
11:45 AM	0	118	28	2	17	0	0	2	0	0	0	0	0	2	169
Day Total															
Percent															
ADT 10774															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 2/15/2022 11:08 AM

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LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

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CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 PM	1	129	30	2	14	0	**1**	4	0	0	1	0	0	3	185
12:15 PM	0	162	30	1	15	0	0	0	0	1	0	0	0	5	214
12:30 PM	0	156	27	1	14	1	0	3	1	0	0	0	0	0	203
12:45 PM	0	157	34	0	10	0	0	3	0	0	0	0	0	3	207
01:00 PM	1	165	41	0	12	0	0	1	0	0	1	0	0	2	223
01:15 PM	0	145	41	2	**19**	0	0	**6**	0	1	0	0	0	6	220
01:30 PM	1	164	38	0	10	1	0	1	0	1	0	0	0	5	221
01:45 PM	0	164	37	0	12	1	1	4	0	0	1	0	0	6	226
02:00 PM	0	166	42	1	13	0	0	5	0	0	1	0	0	5	233
02:15 PM	0	181	33	1	9	0	0	0	0	1	0	0	0	5	230
02:30 PM	1	201	29	1	14	0	0	6	0	1	**2**	0	0	7	262
02:45 PM	2	**240**	**52**	3	7	1	0	6	0	0	1	0	0	11	**323**
03:00 PM	2	161	32	2	11	1	0	4	0	1	0	0	0	16	230
03:15 PM	8	68	21	2	5	1	0	5	0	0	0	0	0	**35**	145
03:30 PM	2	42	14	1	3	1	0	2	0	0	0	0	0	31	96
03:45 PM	7	27	10	**6**	5	0	0	2	0	0	0	0	0	35	92
04:00 PM	5	25	19	3	3	1	0	1	0	0	0	0	0	31	88
04:15 PM	**9**	43	14	3	6	**2**	0	3	0	0	0	**1**	0	31	112
04:30 PM	4	153	37	1	11	1	0	2	0	0	0	0	0	25	234
04:45 PM	4	145	25	3	4	2	0	4	0	0	1	0	0	33	221
05:00 PM	3	94	24	5	3	2	0	2	1	1	1	0	**1**	23	160
05:15 PM	7	30	10	4	9	0	0	0	**2**	0	0	0	0	33	95
05:30 PM	5	54	17	4	13	1	0	2	0	0	0	0	0	32	128
05:45 PM	1	227	26	1	10	2	0	5	1	1	0	0	0	17	291
Day Total															
Percent															
ADT 10774															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

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LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
06:00 PM	0	239	31	0	9	1	0	5	0	0	0	0	0	7	292
06:15 PM	0	226	38	0	5	1	0	5	0	1	0	0	0	6	282
06:30 PM	0	203	22	1	6	1	0	3	0	0	0	0	0	5	241
06:45 PM	0	157	25	0	8	0	0	1	0	2	0	0	0	5	198
07:00 PM	1	140	18	0	6	0	0	2	0	0	0	0	0	1	168
07:15 PM	0	123	14	0	3	0	0	0	0	0	0	0	0	4	144
07:30 PM	0	102	17	0	3	0	0	0	0	0	0	0	0	0	122
07:45 PM	0	92	17	0	3	0	0	0	0	0	0	0	0	0	112
08:00 PM	1	87	12	0	2	0	0	0	0	0	0	0	0	0	102
08:15 PM	0	92	14	0	2	0	0	0	0	1	0	0	0	2	111
08:30 PM	0	80	13	0	2	0	0	0	0	0	0	0	0	2	97
08:45 PM	0	66	8	0	2	0	0	1	0	0	0	0	0	2	79
09:00 PM	0	61	12	0	1	0	0	0	0	0	0	0	0	0	74
09:15 PM	0	61	9	0	3	0	0	0	0	0	0	0	0	0	73
09:30 PM	0	51	4	0	1	0	0	1	0	0	0	0	0	1	58
09:45 PM	0	61	5	0	1	0	0	0	0	0	0	0	0	1	68
10:00 PM	0	44	5	0	2	0	0	0	0	0	0	0	0	0	51
10:15 PM	0	39	7	0	1	0	0	0	0	0	0	0	0	2	49
10:30 PM	0	33	5	0	1	0	0	0	0	0	0	0	0	0	39
10:45 PM	0	24	2	0	0	0	0	0	0	0	0	0	0	0	26
11:00 PM	0	17	1	0	0	0	0	0	0	0	0	0	0	0	18
11:15 PM	0	20	3	0	1	0	0	0	0	0	0	0	0	0	24
11:30 PM	0	16	3	0	0	0	0	0	0	0	0	0	0	0	19
11:45 PM	0	5	1	0	0	0	0	0	0	0	0	0	0	0	6
Day Total	71	7745	1622	70	544	31	5	154	10	14	11	1	2	494	10774
Percent	0.7%	71.9%	15.1%	0.6%	5%	0.3%	0%	1.4%	0.1%	0.1%	0.1%	0%	0%	4.6%	
ADT 10774															
AM Peak	8:00 AM	8:00 AM	8:15 AM	8:00 AM	10:00 AM	7:15 AM	8:15 AM	11:30 AM	10:45 AM	8:15 AM	8:30 AM	12:00 AM	8:15 AM	8:15 AM	8:15 AM
15-min Vol	1	207	43	4	17	2	1	7	2	2	1	0	1	19	281
PM Peak	4:15 PM	2:45 PM	2:45 PM	3:45 PM	1:15 PM	4:15 PM	12:00 PM	1:15 PM	5:15 PM	6:45 PM	2:30 PM	4:15 PM	5:00 PM	3:15 PM	2:45 PM
15-min Vol	9	240	52	6	19	2	1	6	2	2	2	1	1	35	323

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd
QC JOB #: 15687513
SPECIFIC LOCATION:
DIRECTION: NB
CITY/STATE: Lafayette, CA
DATE: Feb 8 2022 - Feb 9 2022

	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	139	15310	3294	137	1124	57	14	331	22	39	30	3	6	1014	21520
Percent	0.6%	71.1%	15.3%	0.6%	5.2%	0.3%	0.1%	1.5%	0.1%	0.2%	0.1%	0%	0%	4.7%	
ADT 10760															

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022 - Feb 9 2022

Start Time	Mon	Tue 8 Feb 22	Wed 9 Feb 22	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 AM		14	11			13			13	
12:15 AM		9	9			9			9	
12:30 AM		4	8			6			6	
12:45 AM		12	9			11			11	
01:00 AM		5	6			6			6	
01:15 AM		4	6			5			5	
01:30 AM		3	5			4			4	
01:45 AM		6	2			4			4	
02:00 AM		4	0			2			2	
02:15 AM		8	3			6			6	
02:30 AM		2	4			3			3	
02:45 AM		0	4			2			2	
03:00 AM		1	2			2			2	
03:15 AM		3	4			4			4	
03:30 AM		1	1			1			1	
03:45 AM		2	2			2			2	
04:00 AM		1	0			1			1	
04:15 AM		4	4			4			4	
04:30 AM		4	3			4			4	
04:45 AM		5	7			6			6	
05:00 AM		5	11			8			8	
05:15 AM		7	9			8			8	
05:30 AM		12	13			13			13	
05:45 AM		26	28			27			27	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022 - Feb 9 2022

Start Time	Mon	Tue 8 Feb 22	Wed 9 Feb 22	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 AM		23	24			24			24	
06:15 AM		37	22			30			30	
06:30 AM		35	47			41			41	
06:45 AM		68	46			57			57	
07:00 AM		70	71			71			71	
07:15 AM		119	118			119			119	
07:30 AM		236	158			197			197	
07:45 AM		**305**	209			**257**			**257**	
08:00 AM		199	273			236			236	
08:15 AM		167	**281**			224			224	
08:30 AM		187	205			196			196	
08:45 AM		192	178			185			185	
09:00 AM		160	154			157			157	
09:15 AM		151	163			157			157	
09:30 AM		151	132			142			142	
09:45 AM		152	154			153			153	
10:00 AM		146	138			142			142	
10:15 AM		149	151			150			150	
10:30 AM		169	163			166			166	
10:45 AM		204	159			182			182	
11:00 AM		158	181			170			170	
11:15 AM		178	166			172			172	
11:30 AM		171	169			170			170	
11:45 AM		184	169			177			177	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022 - Feb 9 2022

Start Time	Mon	Tue 8 Feb 22	Wed 9 Feb 22	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 PM		175	185			180			180	
12:15 PM		197	214			206			206	
12:30 PM		208	203			206			206	
12:45 PM		212	207			210			210	
01:00 PM		209	223			216			216	
01:15 PM		212	220			216			216	
01:30 PM		203	221			212			212	
01:45 PM		229	226			228			228	
02:00 PM		255	233			244			244	
02:15 PM		254	230			242			242	
02:30 PM		270	262			266			266	
02:45 PM		**322**	**323**			**323**			**323**	
03:00 PM		284	230			257			257	
03:15 PM		295	145			220			220	
03:30 PM		286	96			191			191	
03:45 PM		285	92			189			189	
04:00 PM		215	88			152			152	
04:15 PM		211	112			162			162	
04:30 PM		237	234			236			236	
04:45 PM		88	221			155			155	
05:00 PM		86	160			123			123	
05:15 PM		85	95			90			90	
05:30 PM		74	128			101			101	
05:45 PM		89	291			190			190	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022 - Feb 9 2022

Start Time	Mon	Tue 8 Feb 22	Wed 9 Feb 22	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 PM		73	292			183			183	
06:15 PM		160	282			221			221	
06:30 PM		260	241			251			251	
06:45 PM		210	198			204			204	
07:00 PM		161	168			165			165	
07:15 PM		126	144			135			135	
07:30 PM		109	122			116			116	
07:45 PM		115	112			114			114	
08:00 PM		120	102			111			111	
08:15 PM		106	111			109			109	
08:30 PM		84	97			91			91	
08:45 PM		82	79			81			81	
09:00 PM		69	74			72			72	
09:15 PM		55	73			64			64	
09:30 PM		62	58			60			60	
09:45 PM		43	68			56			56	
10:00 PM		30	51			41			41	
10:15 PM		34	49			42			42	
10:30 PM		23	39			31			31	
10:45 PM		21	26			24			24	
11:00 PM		25	18			22			22	
11:15 PM		7	24			16			16	
11:30 PM		19	19			19			19	
11:45 PM		18	6			12			12	
Day Total		10746	10774			10781			10781	
% Weekday Average		99.7%	99.9%							
% Week Average		99.7%	99.9%			100%				
AM Peak 15-min Vol		7:45 AM 305	8:15 AM 281			7:45 AM 257			7:45 AM 257	
PM Peak 15-min Vol		2:45 PM 322	2:45 PM 323			2:45 PM 323			2:45 PM 323	

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB, SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	3	7	7	2	1	0	0	0	0	20	41-50	14
12:15 AM	0	0	0	1	2	5	5	1	1	0	0	0	0	0	15	36-45	10
12:30 AM	0	0	0	0	0	0	5	0	1	0	0	0	0	0	6	36-45	5
12:45 AM	0	0	0	0	2	3	6	4	1	0	0	0	0	0	16	41-50	10
01:00 AM	0	0	0	0	0	1	4	1	0	0	0	0	0	0	6	40-49	5
01:15 AM	0	0	0	0	0	2	5	0	0	0	0	0	0	0	7	36-45	7
01:30 AM	0	0	0	0	0	2	2	3	0	0	0	0	0	0	7	41-50	5
01:45 AM	0	0	0	0	3	1	3	3	1	0	0	0	0	0	11	41-50	6
02:00 AM	0	0	0	0	0	0	1	2	1	0	0	0	0	0	4	46-55	3
02:15 AM	0	0	0	0	2	2	5	3	4	0	0	0	0	0	16	41-50	8
02:30 AM	0	0	0	0	1	3	1	1	0	0	0	0	0	0	6	33-42	4
02:45 AM	0	0	0	0	1	3	0	1	1	0	0	0	0	0	6	31-40	4
03:00 AM	0	0	0	0	1	2	2	1	1	1	0	0	0	0	8	36-45	4
03:15 AM	0	0	0	0	0	3	6	0	0	0	0	0	0	0	9	36-45	9
03:30 AM	0	0	0	0	1	0	0	4	3	0	0	0	0	0	8	46-55	7
03:45 AM	0	0	0	0	0	2	5	0	2	0	0	0	0	0	9	36-45	7
04:00 AM	0	0	0	0	0	1	7	5	1	0	0	0	0	0	14	41-50	12
04:15 AM	0	0	0	1	2	3	7	4	2	1	0	0	0	0	20	41-50	11
04:30 AM	0	0	0	0	1	4	11	7	4	1	0	0	0	0	28	41-50	18
04:45 AM	0	0	0	0	0	1	16	17	6	0	2	**1**	0	0	43	41-50	33
05:00 AM	0	0	0	1	3	6	16	18	9	2	0	0	0	0	55	41-50	34
05:15 AM	0	0	0	0	5	9	24	28	9	3	0	0	0	0	78	41-50	52
05:30 AM	0	0	0	0	1	9	36	32	13	5	2	1	0	0	99	41-50	68
05:45 AM	1	0	0	0	7	26	59	30	6	4	1	0	**1**	0	135	41-50	89
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB, SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 AM	0	0	0	2	4	33	44	34	16	1	**3**	1	0	0	138	41-50	78
06:15 AM	1	0	0	1	21	51	52	42	14	1	1	0	0	0	184	36-45	103
06:30 AM	1	0	0	1	12	58	95	48	14	4	0	0	0	0	233	36-45	153
06:45 AM	2	0	0	3	20	66	97	56	**22**	1	1	0	0	0	268	36-45	163
07:00 AM	7	0	0	0	15	86	100	61	16	1	0	0	0	0	286	36-45	186
07:15 AM	1	0	0	2	32	141	116	**90**	13	**6**	0	0	0	0	401	36-45	257
07:30 AM	13	0	8	30	101	**182**	124	49	13	4	0	0	0	0	524	36-45	306
07:45 AM	**30**	**18**	**37**	**78**	**119**	159	134	37	8	2	0	0	0	0	**622**	36-45	293
08:00 AM	14	0	2	15	109	178	163	46	6	1	0	0	0	0	534	36-45	341
08:15 AM	8	1	3	22	75	180	136	44	19	2	0	0	0	0	490	36-45	316
08:30 AM	20	0	7	53	103	171	116	47	10	2	0	0	0	0	529	36-45	287
08:45 AM	11	0	3	17	59	147	**183**	42	11	3	1	0	0	0	477	36-45	330
09:00 AM	8	2	7	56	77	139	132	50	7	1	1	0	0	0	480	36-45	271
09:15 AM	4	1	1	27	60	146	122	35	12	1	2	0	0	0	411	36-45	268
09:30 AM	12	0	1	12	54	150	96	42	7	3	0	0	0	0	377	36-45	246
09:45 AM	5	1	1	10	67	146	93	27	8	2	0	0	0	0	360	36-45	239
10:00 AM	7	0	0	9	47	129	90	28	5	1	0	0	0	0	316	36-45	219
10:15 AM	2	0	2	11	28	124	107	40	10	0	0	0	0	0	324	36-45	231
10:30 AM	6	0	1	10	43	121	120	41	10	3	0	0	0	0	355	36-45	241
10:45 AM	6	0	3	18	47	141	126	43	5	0	0	0	0	0	389	36-45	267
11:00 AM	5	0	0	11	50	146	100	26	12	1	0	0	0	0	351	36-45	246
11:15 AM	3	1	0	12	54	143	104	29	6	2	0	0	0	0	354	36-45	247
11:30 AM	5	0	2	5	38	125	124	43	8	1	0	0	0	0	351	36-45	249
11:45 AM	8	0	0	17	45	123	123	35	8	1	0	0	0	0	360	36-45	246
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB, SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 PM	8	1	2	16	52	156	83	34	7	0	0	0	0	0	359	36-45	239
12:15 PM	4	0	0	8	59	125	108	40	6	0	0	0	0	0	350	36-45	233
12:30 PM	11	0	0	14	50	166	133	40	7	0	0	0	0	0	421	36-45	299
12:45 PM	7	0	4	33	53	152	103	43	5	**6**	1	0	0	0	407	36-45	255
01:00 PM	6	0	3	12	81	161	125	**57**	**13**	3	1	0	0	0	462	36-45	286
01:15 PM	4	0	1	10	51	131	136	40	8	2	0	0	0	0	383	36-45	267
01:30 PM	6	0	6	13	66	148	108	36	5	2	0	0	0	0	390	36-45	256
01:45 PM	5	0	0	23	78	125	108	45	8	2	1	0	0	0	395	36-45	233
02:00 PM	6	0	0	19	71	112	**152**	29	6	0	0	0	0	0	395	36-45	264
02:15 PM	7	0	2	15	73	**174**	115	38	9	0	0	0	0	0	433	36-45	289
02:30 PM	10	2	5	20	86	150	123	33	10	0	0	0	0	0	439	36-45	273
02:45 PM	21	6	37	**68**	107	157	98	36	6	2	0	0	0	0	**538**	31-40	264
03:00 PM	40	29	34	50	89	147	99	20	8	3	0	0	0	0	519	36-45	246
03:15 PM	35	11	28	56	**130**	135	85	32	0	0	0	0	0	0	512	31-40	265
03:30 PM	25	16	33	59	108	137	80	22	4	3	0	0	0	0	487	31-40	245
03:45 PM	47	31	44	59	96	85	79	19	3	0	1	0	0	0	464	31-40	181
04:00 PM	73	27	19	31	70	126	59	11	0	0	0	0	0	0	416	31-40	196
04:15 PM	**94**	34	30	35	41	91	43	17	4	0	0	0	0	0	389	36-45	134
04:30 PM	66	**49**	**51**	47	50	87	46	10	3	0	0	0	0	0	409	31-40	137
04:45 PM	83	11	2	2	30	68	42	27	3	1	0	0	0	0	269	36-45	110
05:00 PM	70	9	4	12	45	81	57	15	4	1	0	0	0	0	298	36-45	138
05:15 PM	60	22	3	4	12	67	52	24	2	1	0	0	0	0	247	36-45	119
05:30 PM	65	4	7	4	29	73	50	15	2	2	1	0	0	0	252	36-45	123
05:45 PM	81	9	1	1	19	77	36	11	6	0	0	0	0	0	241	36-45	113
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

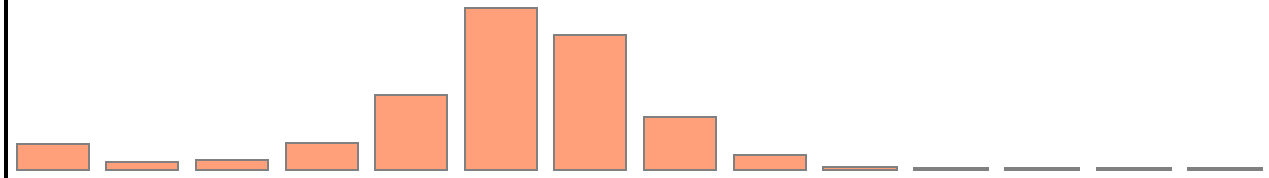
Comments:

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB, SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 PM	61	5	6	6	17	52	27	10	3	2	1	0	0	0	190	36-45	79
06:15 PM	38	2	5	18	48	96	49	25	4	0	0	0	0	0	285	36-45	145
06:30 PM	10	0	7	30	92	115	84	15	7	0	0	0	0	0	360	31-40	207
06:45 PM	7	0	1	21	67	125	87	40	6	3	0	0	0	0	357	36-45	212
07:00 PM	1	1	1	10	29	91	77	28	6	2	2	0	1	0	249	36-45	168
07:15 PM	2	0	1	10	21	75	54	26	8	1	0	0	0	0	198	36-45	129
07:30 PM	0	0	0	2	14	70	71	27	3	0	0	0	0	0	187	36-45	141
07:45 PM	0	0	2	8	16	50	59	33	7	2	0	0	0	0	177	36-45	109
08:00 PM	1	0	0	11	27	71	44	22	6	3	0	0	0	0	185	36-45	115
08:15 PM	0	0	0	5	20	57	46	28	7	2	0	0	0	0	165	36-45	103
08:30 PM	1	0	2	7	20	43	40	22	10	0	1	0	0	0	146	36-45	83
08:45 PM	0	0	0	5	25	68	68	17	8	2	0	0	1	0	194	36-45	136
09:00 PM	2	0	0	2	11	35	37	22	8	5	0	0	0	0	122	36-45	72
09:15 PM	0	0	0	3	10	33	30	12	5	0	0	0	0	0	93	36-45	63
09:30 PM	0	0	1	2	9	24	22	9	5	1	0	0	0	0	73	36-45	46
09:45 PM	1	0	0	2	8	21	30	22	7	1	0	0	0	0	92	41-50	52
10:00 PM	1	0	1	1	5	17	17	7	1	1	0	0	0	0	51	36-45	34
10:15 PM	0	1	0	0	3	10	24	13	5	0	0	0	0	0	56	41-50	37
10:30 PM	0	0	0	3	3	5	15	5	5	0	0	0	0	0	36	36-45	20
10:45 PM	0	0	0	0	4	6	17	14	4	1	0	0	0	0	46	41-50	31
11:00 PM	0	0	0	1	3	6	9	8	5	0	0	0	0	0	32	41-50	17
11:15 PM	0	0	0	0	1	2	12	3	0	0	0	0	0	0	18	41-50	15
11:30 PM	0	0	0	0	0	6	6	11	3	0	0	0	0	0	26	41-50	17
11:45 PM	0	0	0	1	2	6	9	9	1	0	0	0	0	0	28	41-50	18
Day Total	1139	294	421	1184	3313	7191	5984	2329	581	116	23	3	3	0	22581	36-45	13175
Percent	5%	1.3%	1.9%	5.2%	14.7%	31.8%	26.5%	10.3%	2.6%	0.5%	0.1%	0%	0%	0%			
																	
AM Peak	7:45 AM	7:45 AM	7:45 AM	7:45 AM	7:45 AM	7:30 AM	8:45 AM	7:15 AM	6:45 AM	7:15 AM	6:00 AM	4:45 AM	5:45 AM	12:00 AM	7:45 AM		
15-min Vol	30	18	37	78	119	182	183	90	22	6	3	1	1	0	622		
PM Peak	4:15 PM	4:30 PM	4:30 PM	2:45 PM	3:15 PM	2:15 PM	2:00 PM	1:00 PM	1:00 PM	12:45 PM	7:00 PM	12:00 PM	7:00 PM	12:00 PM	2:45 PM		
15-min Vol	94	49	51	68	130	174	152	57	13	6	2	0	1	0	538		

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB, SB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	1	0	0	1	4	6	2	7	2	0	0	0	0	0	23	31-40	10
12:15 AM	0	0	1	1	2	3	3	2	1	0	0	0	0	0	13	36-45	6
12:30 AM	0	0	0	0	1	1	3	5	2	2	0	0	0	0	14	41-50	8
12:45 AM	0	0	0	0	1	1	2	5	2	0	0	0	0	0	11	45-54	7
01:00 AM	0	0	0	0	0	4	1	1	2	0	0	0	0	0	8	36-45	5
01:15 AM	0	0	0	0	1	3	1	2	1	0	0	0	0	0	8	33-42	4
01:30 AM	0	0	0	1	0	2	0	3	0	0	0	0	0	0	6	41-50	3
01:45 AM	0	0	0	0	0	1	1	3	1	0	0	0	0	0	6	43-52	4
02:00 AM	0	0	0	0	0	0	2	3	0	0	0	0	0	0	5	41-50	5
02:15 AM	0	0	0	1	1	1	3	0	0	1	0	0	0	0	7	36-45	4
02:30 AM	0	0	0	0	0	4	1	2	0	0	0	0	0	0	7	36-45	5
02:45 AM	0	0	0	0	0	2	2	0	2	0	0	0	0	0	6	36-45	4
03:00 AM	1	0	0	0	0	3	2	0	0	0	1	0	0	0	7	36-45	5
03:15 AM	0	0	0	0	4	1	2	1	2	1	0	0	0	0	11	31-40	5
03:30 AM	0	0	0	0	0	2	2	1	0	0	0	0	0	0	5	36-45	4
03:45 AM	0	0	0	0	0	1	6	5	2	1	0	0	0	0	15	41-50	11
04:00 AM	0	0	0	0	0	2	6	7	2	0	0	0	0	0	17	41-50	13
04:15 AM	0	0	0	0	1	5	10	6	0	0	0	0	0	0	22	41-50	16
04:30 AM	0	0	0	0	0	1	15	8	2	0	0	0	0	0	26	41-50	23
04:45 AM	0	0	0	4	1	3	10	15	9	0	0	0	0	0	42	41-50	25
05:00 AM	0	0	0	1	4	7	11	19	10	3	1	0	0	0	56	41-50	30
05:15 AM	0	0	0	1	4	11	36	27	15	2	0	0	0	0	96	41-50	63
05:30 AM	0	0	0	0	1	14	39	30	16	5	0	1	0	0	106	41-50	69
05:45 AM	0	0	0	1	4	26	36	34	12	5	1	0	0	0	119	41-50	70
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB, SB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 AM	0	0	1	1	5	29	58	51	14	**6**	**3**	0	0	0	168	41-50	109
06:15 AM	0	0	0	0	4	37	57	47	11	2	0	0	0	0	158	41-50	104
06:30 AM	3	0	0	3	6	55	77	59	**19**	3	0	0	0	0	225	41-50	136
06:45 AM	3	0	0	6	19	52	105	45	15	2	2	0	0	0	249	36-45	157
07:00 AM	4	0	0	5	26	87	113	62	17	3	0	0	0	0	317	36-45	200
07:15 AM	8	0	1	7	50	136	129	52	17	2	0	0	0	0	402	36-45	265
07:30 AM	10	0	2	17	72	178	142	**65**	16	3	0	0	0	0	505	36-45	320
07:45 AM	14	0	2	34	111	144	132	46	15	1	1	0	0	0	500	36-45	276
08:00 AM	20	0	11	**53**	108	183	124	39	8	2	0	0	0	0	548	36-45	307
08:15 AM	**29**	**12**	**37**	50	100	172	128	52	8	0	0	0	0	0	**588**	36-45	300
08:30 AM	9	0	6	33	**120**	197	154	48	9	1	0	0	0	0	577	36-45	351
08:45 AM	6	0	2	16	53	**211**	**170**	48	9	2	0	0	0	0	517	36-45	381
09:00 AM	7	1	0	13	49	167	146	35	9	3	0	0	0	0	430	36-45	313
09:15 AM	2	2	1	4	36	151	135	46	6	1	0	0	0	0	384	36-45	286
09:30 AM	3	0	4	11	50	149	107	33	7	1	0	0	0	0	365	36-45	256
09:45 AM	5	0	1	12	44	120	138	37	10	2	2	0	0	0	371	36-45	258
10:00 AM	5	0	1	3	49	117	111	32	4	3	0	0	0	0	325	36-45	228
10:15 AM	3	1	6	16	40	108	98	35	10	1	0	1	0	0	319	36-45	206
10:30 AM	3	0	2	4	37	151	90	34	6	3	1	0	0	0	331	36-45	241
10:45 AM	5	2	2	14	50	137	104	30	4	1	0	0	0	0	349	36-45	241
11:00 AM	2	2	6	13	66	159	86	19	5	1	0	0	0	0	359	36-45	245
11:15 AM	2	0	1	10	64	156	96	26	4	0	0	0	0	0	359	36-45	252
11:30 AM	1	0	1	15	36	125	92	34	10	0	0	0	0	0	314	36-45	217
11:45 AM	4	0	4	16	48	133	92	34	10	3	1	0	0	0	345	36-45	225
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB, SB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 PM	6	0	3	19	67	152	87	38	10	2	0	0	0	0	384	36-45	239
12:15 PM	6	0	2	9	55	153	120	41	8	1	1	0	0	0	396	36-45	273
12:30 PM	0	0	0	13	42	130	**153**	35	9	1	0	0	0	0	383	36-45	283
12:45 PM	6	0	3	6	66	141	135	46	**13**	**6**	0	0	0	0	422	36-45	276
01:00 PM	4	4	1	13	53	153	126	33	5	1	0	0	0	0	393	36-45	279
01:15 PM	9	0	1	9	55	144	120	33	6	2	0	0	0	0	379	36-45	264
01:30 PM	8	1	6	18	58	141	117	28	9	2	1	0	0	0	389	36-45	258
01:45 PM	12	0	4	14	53	150	130	38	6	0	0	0	0	0	407	36-45	280
02:00 PM	6	2	4	18	81	130	106	**48**	8	1	0	0	0	0	404	36-45	236
02:15 PM	6	2	3	10	57	167	124	38	7	1	0	0	0	0	415	36-45	291
02:30 PM	10	0	6	24	92	178	102	43	9	2	0	0	0	0	466	36-45	280
02:45 PM	11	1	17	40	100	**199**	108	30	7	0	0	0	0	0	**513**	36-45	307
03:00 PM	35	12	28	35	81	141	97	32	8	0	1	0	0	0	470	36-45	238
03:15 PM	**95**	21	16	12	38	117	83	27	13	0	1	0	0	0	423	36-45	200
03:30 PM	65	7	13	8	59	106	43	8	2	0	0	0	0	0	311	31-40	165
03:45 PM	76	7	10	2	18	59	54	21	7	0	0	0	0	0	254	36-45	113
04:00 PM	76	12	2	7	29	91	47	15	2	0	0	0	0	0	281	36-45	138
04:15 PM	90	16	4	10	18	50	58	15	6	0	0	0	0	0	267	36-45	108
04:30 PM	61	36	44	51	72	76	77	15	2	0	0	0	0	0	434	36-45	153
04:45 PM	45	32	**54**	50	67	85	54	14	4	0	0	0	0	0	405	31-40	152
05:00 PM	86	**37**	14	20	48	69	58	12	3	1	0	0	0	0	348	36-45	127
05:15 PM	84	6	5	2	37	62	59	20	5	0	0	0	0	0	280	36-45	121
05:30 PM	89	30	5	18	38	70	39	19	5	0	0	0	0	0	313	36-45	109
05:45 PM	33	18	30	57	98	109	67	22	2	2	0	0	0	0	438	31-40	207
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

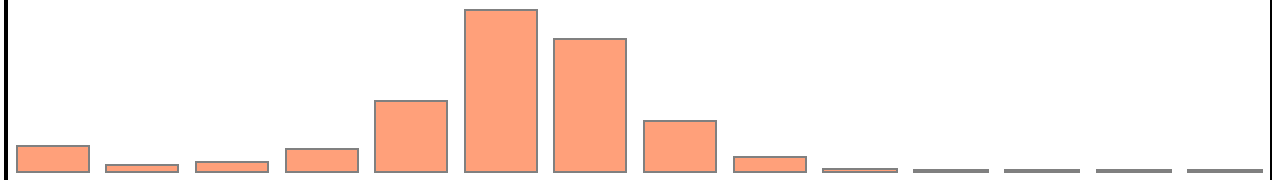
Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB, SB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 PM	7	1	16	**58**	**105**	153	74	22	5	0	0	0	0	0	441	31-40	258
06:15 PM	7	3	6	37	101	138	85	20	4	1	0	0	0	0	402	31-40	239
06:30 PM	7	0	2	12	70	127	94	47	7	0	0	0	0	0	366	36-45	221
06:45 PM	5	0	2	16	51	140	60	28	1	1	0	0	0	0	304	36-45	200
07:00 PM	1	0	2	15	38	94	80	33	6	1	0	0	0	0	270	36-45	174
07:15 PM	5	0	0	3	25	78	95	35	7	3	**2**	0	0	0	253	36-45	173
07:30 PM	0	0	1	6	23	80	58	27	5	0	0	0	0	0	200	36-45	138
07:45 PM	0	0	0	2	21	56	59	29	7	1	0	0	0	0	175	36-45	115
08:00 PM	0	0	1	4	22	48	48	25	7	2	0	0	0	0	157	36-45	96
08:15 PM	3	0	3	2	25	72	48	31	6	1	1	0	0	**1**	193	36-45	120
08:30 PM	3	0	2	5	23	52	46	23	8	1	0	0	0	0	163	36-45	98
08:45 PM	2	0	0	4	15	36	50	20	10	1	2	0	0	0	140	36-45	86
09:00 PM	0	0	1	3	6	38	43	16	5	2	1	0	0	0	115	36-45	81
09:15 PM	0	0	0	4	13	30	44	19	3	0	0	0	0	0	113	36-45	74
09:30 PM	1	0	0	2	11	31	30	15	3	1	2	0	0	0	96	36-45	61
09:45 PM	1	0	0	2	12	34	42	18	6	1	0	0	0	0	116	36-45	76
10:00 PM	0	0	0	1	7	19	34	10	3	0	0	0	0	0	74	36-45	53
10:15 PM	2	0	1	1	4	15	26	14	3	3	0	0	0	0	69	36-45	41
10:30 PM	0	0	0	0	0	16	25	11	6	0	0	0	0	0	58	36-45	41
10:45 PM	0	0	0	0	3	7	14	7	9	0	1	0	0	0	41	36-45	21
11:00 PM	0	0	0	0	2	6	10	9	3	1	0	0	0	0	31	41-50	19
11:15 PM	0	0	0	1	0	7	14	12	4	1	1	**1**	0	0	41	41-50	26
11:30 PM	0	0	1	0	3	9	7	6	2	0	0	0	0	0	28	36-45	16
11:45 PM	0	0	0	0	0	2	4	3	0	0	0	0	0	0	9	41-50	7
Day Total	1113	268	405	1010	3234	7419	6134	2346	602	109	27	3	0	1	22671	36-45	13553
Percent	4.9%	1.2%	1.8%	4.5%	14.3%	32.7%	27.1%	10.3%	2.7%	0.5%	0.1%	0%	0%	0%			
AM Peak	8:15 AM	8:15 AM	8:15 AM	8:00 AM	8:30 AM	8:45 AM	8:45 AM	7:30 AM	6:30 AM	6:00 AM	6:00 AM	5:30 AM	12:00 AM	12:00 AM	8:15 AM		
15-min Vol	29	12	37	53	120	211	170	65	19	6	3	1	0	0	588		
PM Peak	3:15 PM	5:00 PM	4:45 PM	6:00 PM	6:00 PM	2:45 PM	12:30 PM	2:00 PM	12:45 PM	12:45 PM	7:15 PM	11:15 PM	12:00 PM	8:15 PM	2:45 PM		
15-min Vol	95	37	54	58	105	199	153	48	13	6	2	1	0	1	513		



Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

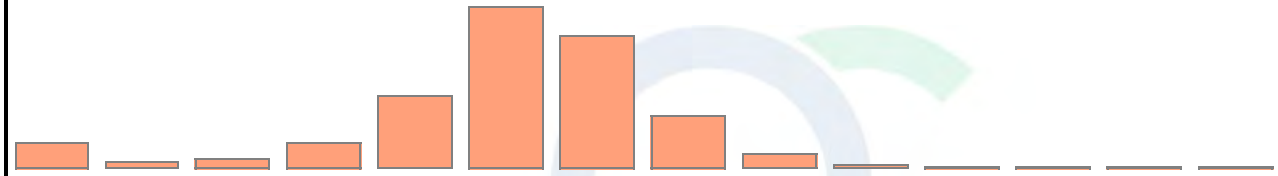
Type of report: Tube Count - Speed Data

SUMMARY - Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd
QC JOB #: 15687513
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Lafayette, CA
DATE: Feb 8 2022 - Feb 9 2022

Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	2252	562	826	2194	6547	14610	12118	4675	1183	225	50	6	3	1	45252	36-45	26728
Percent	5%	1.2%	1.8%	4.8%	14.5%	32.3%	26.8%	10.3%	2.6%	0.5%	0.1%	0%	0%	0%			
Cumulative Percent	5%	6.2%	8%	12.9%	27.4%	59.6%	86.4%	96.8%	99.4%	99.9%	100%	100%	100%	100%			

ADT
22626



85th Percentile: 45 MPH
Mean Speed(Average): 38 MPH
Median: 39 MPH
Mode: 38 MPH

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd
QC JOB #: 15687513
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Lafayette, CA
DATE: Feb 8 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	15	4	0	0	0	0	1	0	0	0	0	0	0	20
12:15 AM	0	15	0	0	0	0	0	0	0	0	0	0	0	0	15
12:30 AM	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
12:45 AM	0	13	1	0	2	0	0	0	0	0	0	0	0	0	16
01:00 AM	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
01:15 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
01:30 AM	0	5	2	0	0	0	0	0	0	0	0	0	0	0	7
01:45 AM	0	8	3	0	0	0	0	0	0	0	0	0	0	0	11
02:00 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
02:15 AM	0	11	5	0	0	0	0	0	0	0	0	0	0	0	16
02:30 AM	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
02:45 AM	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
03:00 AM	0	5	3	0	0	0	0	0	0	0	0	0	0	0	8
03:15 AM	0	4	2	0	2	0	0	1	0	0	0	0	0	0	9
03:30 AM	0	6	1	0	1	0	0	0	0	0	0	0	0	0	8
03:45 AM	0	7	1	0	1	0	0	0	0	0	0	0	0	0	9
04:00 AM	0	10	3	0	0	1	0	0	0	0	0	0	0	0	14
04:15 AM	0	12	5	2	1	0	0	0	0	0	0	0	0	0	20
04:30 AM	0	17	7	0	4	0	0	0	0	0	0	0	0	0	28
04:45 AM	0	29	9	0	4	1	0	0	0	0	0	0	0	0	43
05:00 AM	0	39	11	0	5	0	0	0	0	0	0	0	0	0	55
05:15 AM	0	59	15	0	4	0	0	0	0	0	0	0	0	0	78
05:30 AM	2	63	23	0	11	0	0	0	0	0	0	0	0	0	99
05:45 AM	1	82	32	1	17	0	0	1	0	0	0	0	0	1	135
Day Total															
Percent															
ADT 22581															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd
QC JOB #: 15687513
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Lafayette, CA
DATE: Feb 8 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
06:00 AM	0	85	36	1	14	0	**1**	1	0	0	0	0	0	0	138
06:15 AM	2	134	32	1	11	0	0	3	0	0	0	0	0	1	184
06:30 AM	0	168	40	2	21	0	0	1	0	0	0	0	0	1	233
06:45 AM	1	193	44	3	22	1	0	0	0	1	0	0	0	3	268
07:00 AM	2	199	48	3	19	0	0	4	0	2	0	0	0	9	286
07:15 AM	1	316	43	1	24	0	1	9	0	2	1	0	**2**	1	401
07:30 AM	**5**	383	69	**7**	30	1	0	8	2	0	**5**	0	0	14	524
07:45 AM	4	**449**	80	2	27	**4**	1	**19**	1	**6**	1	**1**	0	**27**	**622**
08:00 AM	4	376	**97**	3	26	1	1	9	0	2	1	0	0	14	534
08:15 AM	5	348	86	1	20	3	0	14	1	1	2	1	0	8	490
08:30 AM	3	362	82	1	**38**	2	1	11	**3**	1	3	0	0	22	529
08:45 AM	3	353	68	2	26	2	0	9	0	1	1	0	0	12	477
09:00 AM	4	340	75	2	29	4	0	12	0	2	1	0	0	11	480
09:15 AM	2	273	83	0	31	1	0	13	1	3	0	0	0	4	411
09:30 AM	3	250	71	2	29	1	1	8	0	0	0	0	0	12	377
09:45 AM	1	253	68	2	21	1	0	8	1	1	0	0	0	4	360
10:00 AM	0	217	67	0	19	0	0	4	0	1	0	0	0	8	316
10:15 AM	0	212	76	1	25	1	0	4	0	1	1	0	0	3	324
10:30 AM	0	248	67	0	22	0	0	8	0	2	2	0	0	6	355
10:45 AM	0	283	69	0	19	2	0	6	2	0	1	0	0	7	389
11:00 AM	0	237	64	1	33	0	0	10	1	0	0	0	0	5	351
11:15 AM	2	241	78	1	22	0	0	8	0	0	0	0	0	2	354
11:30 AM	1	263	50	0	20	2	0	10	0	0	0	0	0	5	351
11:45 AM	4	252	57	2	25	1	1	9	1	1	0	0	0	7	360
Day Total															
Percent															
ADT 22581															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd
QC JOB #: 15687513
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Lafayette, CA
DATE: Feb 8 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 PM	2	272	58	1	9	2	0	6	1	0	0	0	0	8	359
12:15 PM	2	260	65	0	11	1	0	5	1	1	0	0	0	4	350
12:30 PM	5	307	61	1	23	0	0	14	0	1	0	0	0	9	421
12:45 PM	0	306	65	1	20	1	0	7	0	0	0	0	0	7	407
01:00 PM	5	360	57	3	20	1	**1**	8	0	1	0	0	0	6	462
01:15 PM	1	293	63	2	9	0	0	11	0	0	0	0	0	4	383
01:30 PM	1	288	66	2	11	2	0	9	1	1	**2**	0	0	7	390
01:45 PM	3	287	71	0	19	2	0	8	0	0	0	0	0	5	395
02:00 PM	2	279	71	1	25	1	0	8	1	0	1	0	0	6	395
02:15 PM	1	306	85	2	25	1	0	3	**2**	0	1	0	0	7	433
02:30 PM	1	330	55	4	20	0	0	15	0	2	1	0	**1**	10	439
02:45 PM	3	**381**	**97**	2	**32**	2	0	8	1	0	2	**1**	0	9	**538**
03:00 PM	6	375	73	3	17	2	0	9	0	**3**	0	0	0	31	519
03:15 PM	8	362	74	4	29	0	0	6	2	3	0	0	0	24	512
03:30 PM	3	344	85	2	19	0	0	**17**	0	1	1	0	1	14	487
03:45 PM	2	328	75	1	14	1	1	11	1	1	1	0	1	27	464
04:00 PM	8	265	69	**7**	22	2	0	8	0	2	1	0	0	32	416
04:15 PM	5	251	60	6	12	**3**	1	8	1	1	1	0	1	39	389
04:30 PM	6	278	60	5	13	3	1	5	1	3	0	0	0	34	409
04:45 PM	7	168	40	2	10	0	0	2	1	1	1	0	1	36	269
05:00 PM	5	198	44	0	11	1	0	6	0	2	0	0	1	30	298
05:15 PM	5	155	31	2	2	3	1	9	1	2	0	1	0	35	247
05:30 PM	5	160	42	2	7	0	0	3	1	1	0	0	0	31	252
05:45 PM	**12**	137	32	2	10	1	1	2	1	0	0	0	0	**43**	241
Day Total															
Percent															
ADT 22581															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 2/15/2022 11:08 AM

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Type of report: Tube Count - Vehicle Classification Data

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DIRECTION: NB, SB
CITY/STATE: Lafayette, CA
DATE: Feb 8 2022

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06:00 PM	6	120	24	0	6	0	0	1	0	0	0	0	0	33	190
06:15 PM	4	204	40	2	15	0	0	1	1	0	0	0	0	18	285
06:30 PM	0	283	50	0	9	0	0	6	0	1	2	0	0	9	360
06:45 PM	0	272	58	0	10	1	0	9	0	0	0	0	0	7	357
07:00 PM	0	202	39	0	6	0	0	1	0	0	0	0	0	1	249
07:15 PM	0	162	27	0	7	0	0	0	0	0	0	0	0	2	198
07:30 PM	0	158	24	0	3	0	0	2	0	0	0	0	0	0	187
07:45 PM	0	162	11	0	3	0	0	1	0	0	0	0	0	0	177
08:00 PM	0	153	27	0	3	0	0	1	0	0	0	0	0	1	185
08:15 PM	0	141	17	0	7	0	0	0	0	0	0	0	0	0	165
08:30 PM	0	124	16	0	3	0	0	2	0	0	0	0	0	1	146
08:45 PM	1	158	29	0	6	0	0	0	0	0	0	0	0	0	194
09:00 PM	0	99	17	0	2	1	0	1	0	0	0	0	0	2	122
09:15 PM	0	73	15	0	5	0	0	0	0	0	0	0	0	0	93
09:30 PM	0	63	6	1	3	0	0	0	0	0	0	0	0	0	73
09:45 PM	0	77	12	0	1	0	0	0	0	0	0	0	0	2	92
10:00 PM	0	47	2	0	1	0	0	0	0	0	0	0	0	1	51
10:15 PM	0	48	6	0	1	1	0	0	0	0	0	0	0	0	56
10:30 PM	0	30	5	0	1	0	0	0	0	0	0	0	0	0	36
10:45 PM	0	39	6	1	0	0	0	0	0	0	0	0	0	0	46
11:00 PM	0	24	7	0	1	0	0	0	0	0	0	0	0	0	32
11:15 PM	0	14	2	0	2	0	0	0	0	0	0	0	0	0	18
11:30 PM	0	23	3	0	0	0	0	0	0	0	0	0	0	0	26
11:45 PM	0	24	4	0	0	0	0	0	0	0	0	0	0	0	28
Day Total	159	16251	3632	100	1110	61	13	404	30	54	33	4	8	722	22581
Percent	0.7%	72%	16.1%	0.4%	4.9%	0.3%	0.1%	1.8%	0.1%	0.2%	0.1%	0%	0%	3.2%	
ADT 22581															
AM Peak	7:30 AM	7:45 AM	8:00 AM	7:30 AM	8:30 AM	7:45 AM	6:00 AM	7:45 AM	8:30 AM	7:45 AM	7:30 AM	7:45 AM	7:15 AM	7:45 AM	7:45 AM
15-min Vol	5	449	97	7	38	4	1	19	3	6	5	1	2	27	622
PM Peak	5:45 PM	2:45 PM	2:45 PM	4:00 PM	2:45 PM	4:15 PM	1:00 PM	3:30 PM	2:15 PM	3:00 PM	1:30 PM	2:45 PM	2:30 PM	5:45 PM	2:45 PM
15-min Vol	12	381	97	7	32	3	1	17	2	3	2	1	1	43	538

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd
QC JOB #: 15687513
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Lafayette, CA
DATE: Feb 9 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	16	4	0	1	1	0	0	0	0	0	0	0	1	23
12:15 AM	0	9	3	0	0	0	0	0	1	0	0	0	0	0	13
12:30 AM	0	10	3	0	1	0	0	0	0	0	0	0	0	0	14
12:45 AM	0	6	4	0	1	0	0	0	0	0	0	0	0	0	11
01:00 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
01:15 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	0	8
01:30 AM	0	3	2	0	0	0	0	1	0	0	0	0	0	0	6
01:45 AM	0	3	3	0	0	0	0	0	0	0	0	0	0	0	6
02:00 AM	0	3	1	0	1	0	0	0	0	0	0	0	0	0	5
02:15 AM	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
02:30 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
02:45 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	0	6
03:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	1	7
03:15 AM	0	8	3	0	0	0	0	0	0	0	0	0	0	0	11
03:30 AM	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
03:45 AM	0	13	1	0	1	0	0	0	0	0	0	0	0	0	15
04:00 AM	0	13	3	0	1	0	0	0	0	0	0	0	0	0	17
04:15 AM	0	14	6	0	2	0	0	0	0	0	0	0	0	0	22
04:30 AM	0	15	5	0	6	0	0	0	0	0	0	0	0	0	26
04:45 AM	0	31	7	0	4	0	0	0	0	0	0	0	0	0	42
05:00 AM	1	40	9	0	6	0	0	0	0	0	0	0	0	0	56
05:15 AM	1	63	22	0	10	0	0	0	0	0	0	0	0	0	96
05:30 AM	0	74	21	0	11	0	0	0	0	0	0	0	0	0	106
05:45 AM	0	80	27	0	11	0	0	1	0	0	0	0	0	0	119
Day Total															
Percent															
ADT 22671															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 2/15/2022 11:08 AM

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06:00 AM	0	98	44	0	21	2	0	3	0	0	0	0	0	0	168
06:15 AM	3	100	33	1	20	0	0	1	0	0	0	0	0	0	158
06:30 AM	3	155	40	2	16	0	0	5	0	0	0	**1**	0	3	225
06:45 AM	1	172	44	2	26	0	0	0	0	0	0	0	0	4	249
07:00 AM	1	226	51	4	22	2	0	4	0	1	**1**	0	0	5	317
07:15 AM	3	293	54	2	24	**3**	0	14	0	0	0	0	0	9	402
07:30 AM	1	369	63	**5**	32	3	0	16	1	2	1	0	0	12	505
07:45 AM	5	347	83	1	29	1	0	16	2	0	1	0	0	15	500
08:00 AM	3	399	79	5	27	1	0	14	0	1	0	0	0	19	548
08:15 AM	2	427	**91**	2	20	0	1	13	1	3	0	0	**1**	**27**	**588**
08:30 AM	**6**	**428**	83	4	25	1	0	**19**	0	0	1	0	0	10	577
08:45 AM	0	349	88	3	**42**	2	2	16	2	**5**	0	0	0	8	517
09:00 AM	2	286	80	5	27	0	0	19	1	1	1	0	0	8	430
09:15 AM	2	275	56	2	35	2	0	6	2	1	0	0	0	3	384
09:30 AM	0	257	72	0	19	1	0	10	1	0	0	0	0	5	365
09:45 AM	1	267	63	2	23	0	**3**	5	0	1	0	0	0	6	371
10:00 AM	2	205	76	2	29	1	0	3	1	0	0	0	0	6	325
10:15 AM	2	210	66	3	25	0	0	10	0	0	0	0	0	3	319
10:30 AM	3	224	71	2	21	1	0	5	0	0	0	0	0	4	331
10:45 AM	0	229	74	2	24	3	0	8	**3**	0	0	0	0	6	349
11:00 AM	1	261	62	0	25	0	0	8	0	0	0	0	0	2	359
11:15 AM	2	249	72	1	28	1	1	4	0	0	0	0	0	1	359
11:30 AM	2	219	68	0	10	1	1	11	1	0	0	0	0	1	314
11:45 AM	2	249	52	2	29	0	0	7	1	0	0	0	0	3	345
Day Total															
Percent															
ADT 22671															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

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12:00 PM	1	280	52	3	28	3	**2**	7	1	0	1	0	0	6	384
12:15 PM	3	306	51	3	21	2	0	2	0	1	0	**1**	0	6	396
12:30 PM	0	285	58	1	24	2	0	9	**2**	0	1	0	0	1	383
12:45 PM	1	309	66	2	26	3	0	7	2	0	0	0	0	6	422
01:00 PM	5	288	72	0	16	0	1	3	1	**2**	1	0	0	4	393
01:15 PM	2	259	68	2	28	1	0	10	0	1	0	0	0	8	379
01:30 PM	2	283	71	0	16	2	1	4	1	1	0	1	0	7	389
01:45 PM	5	289	72	0	17	1	1	8	0	0	1	0	0	13	407
02:00 PM	2	279	76	1	**30**	0	0	7	0	0	1	1	0	7	404
02:15 PM	6	317	58	1	17	1	0	5	0	1	0	0	0	9	415
02:30 PM	2	337	70	2	30	0	1	11	0	1	**2**	0	0	10	466
02:45 PM	2	**387**	**84**	3	13	2	0	8	1	1	1	0	0	11	**513**
03:00 PM	4	354	60	4	22	1	0	4	0	1	0	0	0	20	470
03:15 PM	8	281	54	3	17	1	0	**16**	1	2	1	0	0	**39**	423
03:30 PM	3	198	53	1	15	2	1	4	0	0	0	0	0	34	311
03:45 PM	10	144	34	**7**	14	1	0	6	0	0	0	0	0	38	254
04:00 PM	8	165	55	4	7	2	1	5	0	0	1	0	0	33	281
04:15 PM	10	162	33	3	14	3	0	6	0	0	0	1	0	35	267
04:30 PM	5	293	72	1	21	3	0	5	1	0	1	0	0	32	434
04:45 PM	7	282	54	5	12	2	0	6	0	2	2	0	0	33	405
05:00 PM	4	242	52	5	7	**4**	0	5	1	1	1	1	**1**	24	348
05:15 PM	8	167	42	5	16	0	0	3	2	0	0	0	0	37	280
05:30 PM	**11**	194	47	4	19	1	0	3	0	0	0	0	0	34	313
05:45 PM	4	329	54	1	17	2	0	7	1	1	0	0	0	22	438
Day Total															
Percent															
ADT 22671															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 2/15/2022 11:08 AM

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06:00 PM	2	362	47	0	14	1	0	6	0	0	2	0	0	7	441
06:15 PM	0	329	48	0	7	1	0	7	0	1	0	0	0	9	402
06:30 PM	1	303	40	1	8	1	0	5	0	0	0	0	0	7	366
06:45 PM	0	239	43	0	12	0	0	3	0	2	0	0	0	5	304
07:00 PM	1	214	41	0	10	0	0	3	0	0	0	0	0	1	270
07:15 PM	0	207	34	0	5	0	0	2	0	0	0	0	0	5	253
07:30 PM	0	171	24	0	5	0	0	0	0	0	0	0	0	0	200
07:45 PM	0	144	27	0	4	0	0	0	0	0	0	0	0	0	175
08:00 PM	1	133	19	0	4	0	0	0	0	0	0	0	0	0	157
08:15 PM	0	161	25	0	2	0	0	1	0	1	0	0	0	3	193
08:30 PM	0	135	20	0	5	0	0	0	0	0	0	0	0	3	163
08:45 PM	0	115	19	0	3	0	0	1	0	0	0	0	0	2	140
09:00 PM	0	94	17	0	4	0	0	0	0	0	0	0	0	0	115
09:15 PM	0	96	13	0	4	0	0	0	0	0	0	0	0	0	113
09:30 PM	0	84	7	0	3	0	0	1	0	0	0	0	0	1	96
09:45 PM	0	102	12	0	1	0	0	0	0	0	0	0	0	1	116
10:00 PM	0	66	6	0	2	0	0	0	0	0	0	0	0	0	74
10:15 PM	0	54	11	0	2	0	0	0	0	0	0	0	0	2	69
10:30 PM	0	46	11	0	1	0	0	0	0	0	0	0	0	0	58
10:45 PM	0	36	5	0	0	0	0	0	0	0	0	0	0	0	41
11:00 PM	0	26	4	0	1	0	0	0	0	0	0	0	0	0	31
11:15 PM	0	33	7	0	1	0	0	0	0	0	0	0	0	0	41
11:30 PM	0	21	7	0	0	0	0	0	0	0	0	0	0	0	28
11:45 PM	0	8	1	0	0	0	0	0	0	0	0	0	0	0	9
Day Total	167	16345	3589	114	1202	68	16	399	31	34	21	6	2	677	22671
Percent	0.7%	72.1%	15.8%	0.5%	5.3%	0.3%	0.1%	1.8%	0.1%	0.1%	0.1%	0%	0%	3%	
ADT 22671															
AM Peak	8:30 AM	8:30 AM	8:15 AM	7:30 AM	8:45 AM	7:15 AM	9:45 AM	8:30 AM	10:45 AM	8:45 AM	7:00 AM	6:30 AM	8:15 AM	8:15 AM	8:15 AM
15-min Vol	6	428	91	5	42	3	3	19	3	5	1	1	1	27	588
PM Peak	5:30 PM	2:45 PM	2:45 PM	3:45 PM	2:00 PM	5:00 PM	12:00 PM	3:15 PM	12:30 PM	1:00 PM	2:30 PM	12:15 PM	5:00 PM	3:15 PM	2:45 PM
15-min Vol	11	387	84	7	30	4	2	16	2	2	2	1	1	39	513

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd
QC JOB #: 15687513
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Lafayette, CA
DATE: Feb 8 2022 - Feb 9 2022

	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	326	32596	7221	214	2312	129	29	803	61	88	54	10	10	1399	45252
Percent	0.7%	72%	16%	0.5%	5.1%	0.3%	0.1%	1.8%	0.1%	0.2%	0.1%	0%	0%	3.1%	
ADT 22626															

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB, SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022 - Feb 9 2022

Start Time	Mon	Tue 8 Feb 22	Wed 9 Feb 22	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 AM		20	23			22			22	
12:15 AM		15	13			14			14	
12:30 AM		6	14			10			10	
12:45 AM		16	11			14			14	
01:00 AM		6	8			7			7	
01:15 AM		7	8			8			8	
01:30 AM		7	6			7			7	
01:45 AM		11	6			9			9	
02:00 AM		4	5			5			5	
02:15 AM		16	7			12			12	
02:30 AM		6	7			7			7	
02:45 AM		6	6			6			6	
03:00 AM		8	7			8			8	
03:15 AM		9	11			10			10	
03:30 AM		8	5			7			7	
03:45 AM		9	15			12			12	
04:00 AM		14	17			16			16	
04:15 AM		20	22			21			21	
04:30 AM		28	26			27			27	
04:45 AM		43	42			43			43	
05:00 AM		55	56			56			56	
05:15 AM		78	96			87			87	
05:30 AM		99	106			103			103	
05:45 AM		135	119			127			127	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB, SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022 - Feb 9 2022

Start Time	Mon	Tue 8 Feb 22	Wed 9 Feb 22	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 AM		138	168			153			153	
06:15 AM		184	158			171			171	
06:30 AM		233	225			229			229	
06:45 AM		268	249			259			259	
07:00 AM		286	317			302			302	
07:15 AM		401	402			402			402	
07:30 AM		524	505			515			515	
07:45 AM		**622**	500			**561**			**561**	
08:00 AM		534	548			541			541	
08:15 AM		490	**588**			539			539	
08:30 AM		529	577			553			553	
08:45 AM		477	517			497			497	
09:00 AM		480	430			455			455	
09:15 AM		411	384			398			398	
09:30 AM		377	365			371			371	
09:45 AM		360	371			366			366	
10:00 AM		316	325			321			321	
10:15 AM		324	319			322			322	
10:30 AM		355	331			343			343	
10:45 AM		389	349			369			369	
11:00 AM		351	359			355			355	
11:15 AM		354	359			357			357	
11:30 AM		351	314			333			333	
11:45 AM		360	345			353			353	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB, SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022 - Feb 9 2022

Start Time	Mon	Tue 8 Feb 22	Wed 9 Feb 22	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 PM		359	384			372			372	
12:15 PM		350	396			373			373	
12:30 PM		421	383			402			402	
12:45 PM		407	422			415			415	
01:00 PM		462	393			428			428	
01:15 PM		383	379			381			381	
01:30 PM		390	389			390			390	
01:45 PM		395	407			401			401	
02:00 PM		395	404			400			400	
02:15 PM		433	415			424			424	
02:30 PM		439	466			453			453	
02:45 PM		**538**	**513**			**526**			**526**	
03:00 PM		519	470			495			495	
03:15 PM		512	423			468			468	
03:30 PM		487	311			399			399	
03:45 PM		464	254			359			359	
04:00 PM		416	281			349			349	
04:15 PM		389	267			328			328	
04:30 PM		409	434			422			422	
04:45 PM		269	405			337			337	
05:00 PM		298	348			323			323	
05:15 PM		247	280			264			264	
05:30 PM		252	313			283			283	
05:45 PM		241	438			340			340	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** NB, SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022 - Feb 9 2022

Start Time	Mon	Tue 8 Feb 22	Wed 9 Feb 22	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 PM		190	441			316			316	
06:15 PM		285	402			344			344	
06:30 PM		360	366			363			363	
06:45 PM		357	304			331			331	
07:00 PM		249	270			260			260	
07:15 PM		198	253			226			226	
07:30 PM		187	200			194			194	
07:45 PM		177	175			176			176	
08:00 PM		185	157			171			171	
08:15 PM		165	193			179			179	
08:30 PM		146	163			155			155	
08:45 PM		194	140			167			167	
09:00 PM		122	115			119			119	
09:15 PM		93	113			103			103	
09:30 PM		73	96			85			85	
09:45 PM		92	116			104			104	
10:00 PM		51	74			63			63	
10:15 PM		56	69			63			63	
10:30 PM		36	58			47			47	
10:45 PM		46	41			44			44	
11:00 PM		32	31			32			32	
11:15 PM		18	41			30			30	
11:30 PM		26	28			27			27	
11:45 PM		28	9			19			19	
Day Total		22581	22671			22653			22653	
% Weekday Average		99.7%	100.1%							
% Week Average		99.7%	100.1%			100%				
AM Peak 15-min Vol		7:45 AM 622	8:15 AM 588			7:45 AM 561			7:45 AM 561	
PM Peak 15-min Vol		2:45 PM 538	2:45 PM 513			2:45 PM 526			2:45 PM 526	

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	1	2	3	0	0	0	0	0	0	6	41-50	5
12:15 AM	0	0	0	1	1	3	1	0	0	0	0	0	0	0	6	33-42	4
12:30 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	36-45	2
12:45 AM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	4	41-50	4
01:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	31-40	1
01:15 AM	0	0	0	0	0	2	1	0	0	0	0	0	0	0	3	36-45	3
01:30 AM	0	0	0	0	0	1	2	1	0	0	0	0	0	0	4	41-50	3
01:45 AM	0	0	0	0	2	1	2	0	0	0	0	0	0	0	5	31-40	3
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
02:15 AM	0	0	0	0	2	0	2	2	2	0	0	0	0	0	8	41-50	4
02:30 AM	0	0	0	0	1	1	1	1	0	0	0	0	0	0	4	31-40	2
02:45 AM	0	0	0	0	1	3	0	1	1	0	0	0	0	0	6	31-40	4
03:00 AM	0	0	0	0	1	2	2	1	0	1	0	0	0	0	7	36-45	4
03:15 AM	0	0	0	0	0	1	5	0	0	0	0	0	0	0	6	36-45	6
03:30 AM	0	0	0	0	1	0	0	4	2	0	0	0	0	0	7	46-55	6
03:45 AM	0	0	0	0	0	0	5	0	2	0	0	0	0	0	7	36-45	5
04:00 AM	0	0	0	0	0	1	6	5	1	0	0	0	0	0	13	41-50	11
04:15 AM	0	0	0	0	2	3	5	3	2	1	0	0	0	0	16	36-45	8
04:30 AM	0	0	0	0	0	3	9	7	4	1	0	0	0	0	24	41-50	16
04:45 AM	0	0	0	0	0	1	15	14	5	0	2	**1**	0	0	38	41-50	29
05:00 AM	0	0	0	0	1	6	15	18	8	2	0	0	0	0	50	41-50	33
05:15 AM	0	0	0	0	4	7	23	26	9	2	0	0	0	0	71	41-50	49
05:30 AM	0	0	0	0	1	5	30	31	13	**4**	2	1	0	0	87	41-50	61
05:45 AM	0	0	0	0	3	19	52	23	6	4	1	0	**1**	0	109	41-50	75
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 AM	0	0	0	0	3	30	38	25	15	0	**3**	1	0	0	115	36-45	68
06:15 AM	1	0	0	0	19	41	38	36	10	1	1	0	0	0	147	36-45	79
06:30 AM	1	0	0	0	11	49	76	43	14	4	0	0	0	0	198	36-45	125
06:45 AM	1	0	0	1	9	47	77	46	**17**	1	1	0	0	0	200	36-45	124
07:00 AM	7	0	0	0	9	62	78	50	10	0	0	0	0	0	216	36-45	140
07:15 AM	1	0	0	1	23	94	80	**70**	10	3	0	0	0	0	282	36-45	174
07:30 AM	8	0	0	13	46	101	85	26	8	1	0	0	0	0	288	36-45	186
07:45 AM	8	0	0	13	53	95	108	31	7	2	0	0	0	0	317	36-45	203
08:00 AM	11	0	0	3	63	110	114	30	3	1	0	0	0	0	335	36-45	224
08:15 AM	4	0	0	13	39	**122**	100	32	12	1	0	0	0	0	323	36-45	222
08:30 AM	**14**	0	**6**	33	**66**	108	75	33	7	0	0	0	0	0	**342**	36-45	183
08:45 AM	8	0	0	11	24	79	**117**	33	9	3	1	0	0	0	285	36-45	196
09:00 AM	7	0	5	**43**	59	89	81	29	6	0	1	0	0	0	320	36-45	170
09:15 AM	2	**1**	0	15	44	102	67	20	7	0	2	0	0	0	260	36-45	169
09:30 AM	11	0	0	3	29	95	56	25	6	1	0	0	0	0	226	36-45	151
09:45 AM	4	0	0	3	45	87	50	14	5	0	0	0	0	0	208	36-45	137
10:00 AM	6	0	0	2	27	73	44	16	2	0	0	0	0	0	170	36-45	117
10:15 AM	1	0	0	0	10	67	64	26	7	0	0	0	0	0	175	36-45	131
10:30 AM	2	0	0	1	19	64	72	20	6	2	0	0	0	0	186	36-45	136
10:45 AM	1	0	0	6	10	74	68	22	4	0	0	0	0	0	185	36-45	142
11:00 AM	1	0	0	2	23	91	57	13	6	0	0	0	0	0	193	36-45	148
11:15 AM	1	1	0	2	19	85	50	16	2	0	0	0	0	0	176	36-45	135
11:30 AM	1	0	0	0	13	60	74	26	5	1	0	0	0	0	180	36-45	134
11:45 AM	4	0	0	7	16	68	58	17	5	1	0	0	0	0	176	36-45	126
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 PM	5	0	0	3	23	91	44	14	4	0	0	0	0	0	184	36-45	135
12:15 PM	1	0	0	1	29	57	44	19	2	0	0	0	0	0	153	36-45	101
12:30 PM	6	0	0	7	21	94	66	17	2	0	0	0	0	0	213	36-45	160
12:45 PM	5	0	0	4	10	84	53	29	4	**5**	**1**	0	0	0	195	36-45	137
01:00 PM	3	0	0	0	32	96	**71**	**38**	**9**	3	1	0	0	0	**253**	36-45	167
01:15 PM	0	0	0	0	18	62	66	20	4	1	0	0	0	0	171	36-45	128
01:30 PM	3	0	0	2	32	62	64	19	4	1	0	0	0	0	187	36-45	126
01:45 PM	1	0	0	6	41	57	39	16	5	1	0	0	0	0	166	31-40	98
02:00 PM	1	0	0	0	16	37	68	13	5	0	0	0	0	0	140	36-45	105
02:15 PM	4	0	0	1	12	75	59	23	5	0	0	0	0	0	179	36-45	134
02:30 PM	4	0	0	2	18	59	67	18	1	0	0	0	0	0	169	36-45	126
02:45 PM	2	0	0	8	31	78	65	27	4	1	0	0	0	0	216	36-45	143
03:00 PM	6	0	0	0	42	92	70	15	7	3	0	0	0	0	235	36-45	162
03:15 PM	**7**	1	0	**10**	41	70	61	27	0	0	0	0	0	0	217	36-45	131
03:30 PM	3	0	0	4	28	73	66	20	4	3	0	0	0	0	201	36-45	139
03:45 PM	4	0	0	2	29	56	66	18	3	0	1	0	0	0	179	36-45	122
04:00 PM	2	0	0	5	39	**99**	48	8	0	0	0	0	0	0	201	36-45	147
04:15 PM	1	0	1	5	26	81	43	17	4	0	0	0	0	0	178	36-45	124
04:30 PM	2	1	0	2	31	79	44	10	3	0	0	0	0	0	172	36-45	123
04:45 PM	6	**2**	0	2	30	68	42	27	3	1	0	0	0	0	181	36-45	110
05:00 PM	0	0	0	10	**44**	81	57	15	4	1	0	0	0	0	212	36-45	138
05:15 PM	2	0	0	2	12	67	52	24	2	1	0	0	0	0	162	36-45	119
05:30 PM	3	0	0	4	28	73	50	15	2	2	1	0	0	0	178	36-45	123
05:45 PM	4	0	0	1	17	77	36	11	6	0	0	0	0	0	152	36-45	113
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

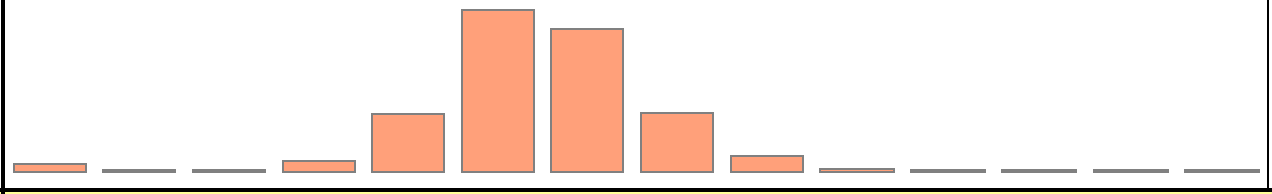
Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 PM	1	1	1	4	15	52	27	10	3	2	1	0	0	0	117	36-45	79
06:15 PM	2	0	2	1	15	52	34	16	3	0	0	0	0	0	125	36-45	86
06:30 PM	1	0	1	1	11	29	42	12	3	0	0	0	0	0	100	36-45	71
06:45 PM	2	0	0	2	26	54	40	18	3	2	0	0	0	0	147	36-45	94
07:00 PM	1	0	0	3	7	32	30	11	1	1	1	0	1	0	88	36-45	62
07:15 PM	0	0	0	1	4	28	23	14	2	0	0	0	0	0	72	36-45	51
07:30 PM	0	0	0	0	5	22	36	13	2	0	0	0	0	0	78	36-45	58
07:45 PM	0	0	0	1	2	13	31	10	3	2	0	0	0	0	62	36-45	44
08:00 PM	0	0	0	1	7	23	18	13	2	1	0	0	0	0	65	36-45	41
08:15 PM	0	0	0	1	2	29	14	12	1	0	0	0	0	0	59	36-45	43
08:30 PM	0	0	1	2	3	20	16	12	8	0	0	0	0	0	62	36-45	36
08:45 PM	0	0	0	1	16	39	36	13	5	1	0	0	1	0	112	36-45	75
09:00 PM	0	0	0	2	5	19	12	9	3	3	0	0	0	0	53	36-45	31
09:15 PM	0	0	0	1	4	11	13	8	1	0	0	0	0	0	38	36-45	24
09:30 PM	0	0	0	0	1	2	5	1	1	1	0	0	0	0	11	36-45	7
09:45 PM	1	0	0	1	3	10	16	15	3	0	0	0	0	0	49	41-50	31
10:00 PM	0	0	0	0	2	7	7	4	1	0	0	0	0	0	21	36-45	14
10:15 PM	0	0	0	0	1	3	10	6	2	0	0	0	0	0	22	41-50	16
10:30 PM	0	0	0	1	2	2	4	2	2	0	0	0	0	0	13	41-50	6
10:45 PM	0	0	0	0	2	2	10	8	2	1	0	0	0	0	25	41-50	18
11:00 PM	0	0	0	0	2	1	2	1	1	0	0	0	0	0	7	31-40	3
11:15 PM	0	0	0	0	0	1	7	3	0	0	0	0	0	0	11	41-50	10
11:30 PM	0	0	0	0	0	2	2	2	1	0	0	0	0	0	7	36-45	4
11:45 PM	0	0	0	0	0	2	4	4	0	0	0	0	0	0	10	41-50	8
Day Total	188	7	17	277	1484	4177	3689	1518	378	74	20	3	3	0	11835	36-45	7866
Percent	1.6%	0.1%	0.1%	2.3%	12.5%	35.3%	31.2%	12.8%	3.2%	0.6%	0.2%	0%	0%	0%			
AM Peak	8:30 AM	9:15 AM	8:30 AM	9:00 AM	8:30 AM	8:15 AM	8:45 AM	7:15 AM	6:45 AM	5:30 AM	6:00 AM	4:45 AM	5:45 AM	12:00 AM	8:30 AM		
15-min Vol	14	1	6	43	66	122	117	70	17	4	3	1	1	0	342		
PM Peak	3:15 PM	4:45 PM	6:15 PM	3:15 PM	5:00 PM	4:00 PM	1:00 PM	1:00 PM	1:00 PM	12:45 PM	12:45 PM	12:00 PM	7:00 PM	12:00 PM	1:00 PM		
15-min Vol	7	2	2	10	44	99	71	38	9	5	1	0	1	0	253		



Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	2	3	1	5	1	0	0	0	0	0	12	44-53	6
12:15 AM	0	0	**1**	1	0	1	1	0	0	0	0	0	0	0	4	21-30	2
12:30 AM	0	0	0	0	1	0	2	2	1	0	0	0	0	0	6	41-50	4
12:45 AM	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	46-55	2
01:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	31-40	1
01:15 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	31-40	2
01:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	41-50	1
01:45 AM	0	0	0	0	0	1	1	2	0	0	0	0	0	0	4	41-50	3
02:00 AM	0	0	0	0	0	0	2	3	0	0	0	0	0	0	5	41-50	5
02:15 AM	0	0	0	0	1	0	2	0	0	1	0	0	0	0	4	36-45	2
02:30 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3	31-40	3
02:45 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	36-45	1
03:00 AM	0	0	0	0	0	2	2	0	0	0	1	0	0	0	5	36-45	4
03:15 AM	0	0	0	0	2	1	1	1	1	1	0	0	0	0	7	31-40	3
03:30 AM	0	0	0	0	0	1	2	1	0	0	0	0	0	0	4	41-50	3
03:45 AM	0	0	0	0	0	1	5	5	1	1	0	0	0	0	13	41-50	10
04:00 AM	0	0	0	0	0	2	6	7	2	0	0	0	0	0	17	41-50	13
04:15 AM	0	0	0	0	1	3	8	6	0	0	0	0	0	0	18	41-50	14
04:30 AM	0	0	0	0	0	1	12	8	2	0	0	0	0	0	23	41-50	20
04:45 AM	0	0	0	2	0	2	10	14	7	0	0	0	0	0	35	41-50	24
05:00 AM	0	0	0	0	2	4	8	17	10	3	1	0	0	0	45	46-55	27
05:15 AM	0	0	0	0	2	8	35	25	**15**	2	0	0	0	0	87	41-50	60
05:30 AM	0	0	0	0	1	12	36	26	12	5	0	**1**	0	0	93	41-50	62
05:45 AM	0	0	0	0	2	16	28	28	11	5	1	0	0	0	91	41-50	56
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 AM	0	0	0	1	3	22	48	50	11	**6**	**3**	0	0	0	144	41-50	98
06:15 AM	0	0	0	0	2	27	51	43	11	2	0	0	0	0	136	41-50	94
06:30 AM	3	0	0	2	4	45	58	48	15	3	0	0	0	0	178	41-50	106
06:45 AM	2	0	0	5	13	39	87	42	12	1	2	0	0	0	203	41-50	129
07:00 AM	4	0	0	3	19	58	94	**51**	14	3	0	0	0	0	246	36-45	152
07:15 AM	5	0	0	4	41	95	94	34	9	2	0	0	0	0	284	36-45	189
07:30 AM	9	0	0	12	54	122	94	43	10	3	0	0	0	0	347	36-45	216
07:45 AM	13	0	0	17	64	72	80	34	9	1	1	0	0	0	291	36-45	152
08:00 AM	**16**	0	0	**23**	35	84	79	30	6	2	0	0	0	0	275	36-45	163
08:15 AM	6	0	0	0	32	121	102	40	6	0	0	0	0	0	307	36-45	223
08:30 AM	8	0	1	12	**76**	125	108	35	6	1	0	0	0	0	**372**	36-45	233
08:45 AM	5	0	0	1	22	**146**	**126**	31	7	1	0	0	0	0	339	36-45	272
09:00 AM	5	0	0	1	27	112	99	23	6	3	0	0	0	0	276	36-45	211
09:15 AM	0	0	0	2	16	96	87	15	5	0	0	0	0	0	221	36-45	183
09:30 AM	1	0	1	2	28	106	68	22	4	1	0	0	0	0	233	36-45	174
09:45 AM	3	0	1	7	20	72	81	24	6	1	2	0	0	0	217	36-45	153
10:00 AM	3	0	1	0	21	63	74	20	4	1	0	0	0	0	187	36-45	137
10:15 AM	1	1	0	6	21	49	57	24	7	1	0	1	0	0	168	36-45	106
10:30 AM	3	0	0	0	17	82	44	18	2	2	0	0	0	0	168	36-45	126
10:45 AM	0	0	0	2	27	80	63	15	2	1	0	0	0	0	190	36-45	143
11:00 AM	1	**2**	0	3	40	78	41	9	3	1	0	0	0	0	178	36-45	119
11:15 AM	0	0	0	1	35	102	46	7	2	0	0	0	0	0	193	36-45	148
11:30 AM	1	0	0	0	9	67	48	12	8	0	0	0	0	0	145	36-45	115
11:45 AM	2	0	0	8	16	62	54	22	8	3	1	0	0	0	176	36-45	116
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 PM	2	0	0	8	37	79	47	17	7	2	0	0	0	0	199	36-45	126
12:15 PM	1	0	0	2	20	70	65	20	3	0	1	0	0	0	182	36-45	135
12:30 PM	0	0	0	2	22	61	79	12	3	1	0	0	0	0	180	36-45	140
12:45 PM	3	0	0	1	19	80	71	**28**	8	**5**	0	0	0	0	215	36-45	151
01:00 PM	2	**2**	0	2	8	64	74	15	3	0	0	0	0	0	170	36-45	138
01:15 PM	3	0	0	0	9	54	70	18	4	1	0	0	0	0	159	36-45	124
01:30 PM	2	1	0	0	12	69	61	15	6	2	0	0	0	0	168	36-45	130
01:45 PM	6	0	0	1	14	65	73	21	1	0	0	0	0	0	181	36-45	138
02:00 PM	2	2	**3**	3	40	54	41	24	1	1	0	0	0	0	171	36-45	95
02:15 PM	1	2	2	1	25	70	64	18	2	0	0	0	0	0	185	36-45	134
02:30 PM	2	0	3	4	35	83	46	23	8	0	0	0	0	0	204	36-45	129
02:45 PM	0	0	0	6	9	88	60	23	4	0	0	0	0	0	190	36-45	148
03:00 PM	4	0	1	1	31	94	79	23	6	0	1	0	0	0	240	36-45	173
03:15 PM	4	0	0	1	33	**116**	**83**	27	**13**	0	1	0	0	0	**278**	36-45	199
03:30 PM	3	0	0	2	**54**	103	43	8	2	0	0	0	0	0	215	31-40	157
03:45 PM	3	0	0	0	18	59	54	21	7	0	0	0	0	0	162	36-45	113
04:00 PM	2	0	0	7	29	91	47	15	2	0	0	0	0	0	193	36-45	138
04:15 PM	3	0	0	6	17	50	58	15	6	0	0	0	0	0	155	36-45	108
04:30 PM	**7**	0	1	1	34	65	75	15	2	0	0	0	0	0	200	36-45	140
04:45 PM	0	0	0	2	31	80	53	14	4	0	0	0	0	0	184	36-45	133
05:00 PM	3	1	0	5	42	63	58	12	3	1	0	0	0	0	188	36-45	121
05:15 PM	2	0	0	1	36	62	59	20	5	0	0	0	0	0	185	36-45	121
05:30 PM	3	0	0	**12**	37	70	39	19	5	0	0	0	0	0	185	36-45	109
05:45 PM	5	0	0	0	14	61	45	20	2	0	0	0	0	0	147	36-45	106
Day Total																	
Percent																	
AM Peak 15-min Vol																	
PM Peak 15-min Vol																	

Comments:

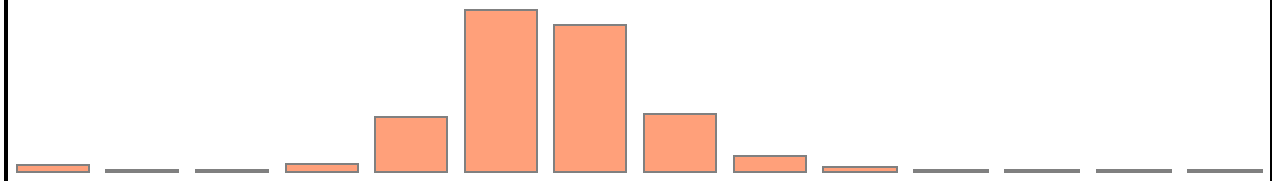
Type of report: Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
06:00 PM	1	0	0	0	15	75	42	15	1	0	0	0	0	0	149	36-45	117
06:15 PM	2	0	0	0	20	42	46	8	1	1	0	0	0	0	120	36-45	88
06:30 PM	2	0	0	3	13	37	44	23	3	0	0	0	0	0	125	36-45	81
06:45 PM	0	0	0	0	11	54	28	12	0	1	0	0	0	0	106	36-45	82
07:00 PM	0	0	0	1	7	35	38	16	4	1	0	0	0	0	102	36-45	73
07:15 PM	1	0	0	0	5	39	42	14	4	2	2	0	0	0	109	36-45	81
07:30 PM	0	0	0	1	4	34	25	12	2	0	0	0	0	0	78	36-45	59
07:45 PM	0	0	0	0	4	18	19	16	5	1	0	0	0	0	63	36-45	37
08:00 PM	0	0	0	0	8	13	15	13	4	2	0	0	0	0	55	40-49	28
08:15 PM	1	0	0	0	11	32	17	15	3	1	1	0	0	1	82	36-45	49
08:30 PM	1	0	0	0	7	19	26	9	3	1	0	0	0	0	66	36-45	45
08:45 PM	0	0	0	2	5	15	26	6	5	0	2	0	0	0	61	36-45	41
09:00 PM	0	0	0	1	1	12	16	7	3	1	0	0	0	0	41	36-45	28
09:15 PM	0	0	0	0	4	9	16	8	3	0	0	0	0	0	40	36-45	25
09:30 PM	0	0	0	1	6	14	6	8	1	1	1	0	0	0	38	31-40	20
09:45 PM	0	0	0	0	3	12	20	11	2	0	0	0	0	0	48	36-45	32
10:00 PM	0	0	0	1	2	6	11	2	1	0	0	0	0	0	23	36-45	17
10:15 PM	0	0	0	0	1	4	5	7	2	1	0	0	0	0	20	41-50	12
10:30 PM	0	0	0	0	0	7	5	5	2	0	0	0	0	0	19	36-45	12
10:45 PM	0	0	0	0	0	3	6	2	4	0	0	0	0	0	15	36-45	9
11:00 PM	0	0	0	0	1	0	4	5	2	1	0	0	0	0	13	41-50	9
11:15 PM	0	0	0	0	0	3	4	6	1	1	1	1	0	0	17	41-50	10
11:30 PM	0	0	1	0	1	2	0	3	2	0	0	0	0	0	9	46-55	5
11:45 PM	0	0	0	0	0	1	1	1	0	0	0	0	0	0	3	36-45	2
Day Total	162	11	16	193	1411	4226	3852	1512	403	85	22	3	0	1	11897	36-45	8078
Percent	1.4%	0.1%	0.1%	1.6%	11.9%	35.5%	32.4%	12.7%	3.4%	0.7%	0.2%	0%	0%	0%			
AM Peak	8:00 AM	11:00 AM	12:15 AM	8:00 AM	8:30 AM	8:45 AM	8:45 AM	7:00 AM	5:15 AM	6:00 AM	6:00 AM	5:30 AM	12:00 AM	12:00 AM	8:30 AM		
15-min Vol	16	2	1	23	76	146	126	51	15	6	3	1	0	0	372		
PM Peak	4:30 PM	1:00 PM	2:00 PM	5:30 PM	3:30 PM	3:15 PM	3:15 PM	12:45 PM	3:15 PM	12:45 PM	7:15 PM	11:15 PM	12:00 PM	8:15 PM	3:15 PM		
15-min Vol	7	2	3	12	54	116	83	28	13	5	2	1	0	1	278		



Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

SUMMARY - Tube Count - Speed Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd
QC JOB #: 15687513
SPECIFIC LOCATION:
DIRECTION: SB
CITY/STATE: Lafayette, CA
DATE: Feb 8 2022 - Feb 9 2022

Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	350	18	33	470	2895	8403	7541	3030	781	159	42	6	3	1	23732	36-45	15944
Percent	1.5%	0.1%	0.1%	2%	12.2%	35.4%	31.8%	12.8%	3.3%	0.7%	0.2%	0%	0%	0%			
Cumulative Percent	1.5%	1.6%	1.7%	3.7%	15.9%	51.3%	83.1%	95.8%	99.1%	99.8%	100%	100%	100%	100%			

ADT
11866

85th Percentile: 46 MPH
Mean Speed(Average): 39 MPH
Median: 40 MPH
Mode: 38 MPH

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	4	1	0	0	0	0	1	0	0	0	0	0	0	6
12:15 AM	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
12:30 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
12:45 AM	0	3	0	0	1	0	0	0	0	0	0	0	0	0	4
01:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:15 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
01:30 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
01:45 AM	0	2	3	0	0	0	0	0	0	0	0	0	0	0	5
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 AM	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
02:30 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
02:45 AM	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
03:00 AM	0	4	3	0	0	0	0	0	0	0	0	0	0	0	7
03:15 AM	0	2	2	0	2	0	0	0	0	0	0	0	0	0	6
03:30 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
03:45 AM	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
04:00 AM	0	9	3	0	0	1	0	0	0	0	0	0	0	0	13
04:15 AM	0	9	5	1	1	0	0	0	0	0	0	0	0	0	16
04:30 AM	0	14	7	0	3	0	0	0	0	0	0	0	0	0	24
04:45 AM	0	26	8	0	3	1	0	0	0	0	0	0	0	0	38
05:00 AM	0	35	10	0	5	0	0	0	0	0	0	0	0	0	50
05:15 AM	0	53	15	0	3	0	0	0	0	0	0	0	0	0	71
05:30 AM	2	55	23	0	7	0	0	0	0	0	0	0	0	0	87
05:45 AM	1	66	26	0	15	0	0	1	0	0	0	0	0	0	109
Day Total															
Percent															
ADT 11835															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
06:00 AM	0	73	33	0	8	0	0	1	0	0	0	0	0	0	115
06:15 AM	2	105	26	0	10	0	0	3	0	0	0	0	0	1	147
06:30 AM	0	141	34	2	19	0	0	1	0	0	0	0	0	1	198
06:45 AM	1	148	28	3	16	1	0	0	0	1	0	0	0	2	200
07:00 AM	2	155	32	2	11	0	0	3	0	2	0	0	0	9	216
07:15 AM	1	228	23	1	17	0	0	6	0	2	1	0	**2**	1	282
07:30 AM	**5**	207	36	**5**	19	0	0	4	**1**	0	2	0	0	9	288
07:45 AM	2	**232**	41	1	14	**2**	**1**	**12**	0	**3**	0	**1**	0	8	317
08:00 AM	4	232	**64**	3	11	1	1	5	0	2	1	0	0	11	335
08:15 AM	4	231	60	0	6	1	0	12	1	1	1	1	0	5	323
08:30 AM	3	230	54	0	**27**	2	0	5	1	1	**3**	0	0	**16**	**342**
08:45 AM	3	205	43	1	15	2	0	6	0	0	1	0	0	9	285
09:00 AM	3	226	48	1	18	2	0	9	0	2	1	0	0	10	320
09:15 AM	2	179	49	0	18	0	0	7	1	2	0	0	0	2	260
09:30 AM	3	142	48	1	13	1	1	6	0	0	0	0	0	11	226
09:45 AM	1	145	41	1	9	1	0	5	1	1	0	0	0	3	208
10:00 AM	0	113	38	0	8	0	0	3	0	1	0	0	0	7	170
10:15 AM	0	114	42	0	12	1	0	3	0	1	0	0	0	2	175
10:30 AM	0	142	31	0	4	0	0	4	0	1	2	0	0	2	186
10:45 AM	0	138	36	0	6	1	0	2	1	0	0	0	0	1	185
11:00 AM	0	138	32	1	16	0	0	4	1	0	0	0	0	1	193
11:15 AM	2	121	40	0	9	0	0	4	0	0	0	0	0	0	176
11:30 AM	0	136	27	0	10	1	0	5	0	0	0	0	0	1	180
11:45 AM	4	127	28	1	7	0	0	4	1	1	0	0	0	3	176
Day Total															
Percent															
ADT 11835															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 PM	2	143	22	0	5	**2**	0	4	1	0	0	0	0	5	184
12:15 PM	1	118	26	0	3	1	0	2	1	0	0	0	0	1	153
12:30 PM	**5**	149	30	1	**13**	0	0	**10**	0	1	0	0	0	4	213
12:45 PM	0	146	34	0	6	0	0	4	0	0	0	0	0	5	195
01:00 PM	5	**199**	31	1	7	1	**1**	4	0	1	0	0	0	3	**253**
01:15 PM	0	140	25	0	3	0	0	3	0	0	0	0	0	0	171
01:30 PM	1	144	27	0	1	2	0	7	1	0	0	0	0	4	187
01:45 PM	2	124	27	0	5	0	0	7	0	0	0	0	0	1	166
02:00 PM	2	98	27	0	7	1	0	3	1	0	0	0	0	1	140
02:15 PM	0	119	**42**	1	7	1	0	2	**2**	0	**1**	0	0	4	179
02:30 PM	1	122	24	**2**	6	0	0	8	0	0	0	0	**1**	5	169
02:45 PM	0	156	41	0	11	1	0	3	1	0	1	0	0	2	216
03:00 PM	2	181	26	1	10	0	0	5	0	1	0	0	0	**9**	235
03:15 PM	4	161	31	1	10	0	0	1	1	0	0	0	0	8	217
03:30 PM	1	144	37	1	7	0	0	8	0	0	0	0	0	3	201
03:45 PM	1	135	30	0	5	1	0	2	0	0	0	0	0	5	179
04:00 PM	2	146	33	0	13	1	0	4	0	0	0	0	0	2	201
04:15 PM	1	131	36	0	4	0	0	4	1	0	0	0	0	1	178
04:30 PM	2	130	30	0	6	1	0	1	0	0	0	0	0	2	172
04:45 PM	3	133	31	0	6	0	0	1	0	1	0	0	0	6	181
05:00 PM	2	167	29	0	7	0	0	4	0	**2**	0	0	1	0	212
05:15 PM	1	122	24	0	1	1	0	9	1	1	0	0	0	2	162
05:30 PM	2	138	27	0	5	0	0	3	0	1	0	0	0	2	178
05:45 PM	1	118	21	0	6	1	0	1	0	0	0	0	0	4	152
Day Total															
Percent															
ADT 11835															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513
SPECIFIC LOCATION: **DIRECTION:** SB
CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
06:00 PM	1	96	16	0	2	0	0	1	0	0	0	0	0	1	117
06:15 PM	3	97	16	0	7	0	0	0	0	0	0	0	0	2	125
06:30 PM	0	79	16	0	2	0	0	2	0	0	0	0	0	1	100
06:45 PM	0	103	30	0	5	1	0	6	0	0	0	0	0	2	147
07:00 PM	0	73	12	0	1	0	0	1	0	0	0	0	0	1	88
07:15 PM	0	57	13	0	2	0	0	0	0	0	0	0	0	0	72
07:30 PM	0	67	11	0	0	0	0	0	0	0	0	0	0	0	78
07:45 PM	0	57	4	0	1	0	0	0	0	0	0	0	0	0	62
08:00 PM	0	54	9	0	1	0	0	1	0	0	0	0	0	0	65
08:15 PM	0	48	8	0	3	0	0	0	0	0	0	0	0	0	59
08:30 PM	0	53	8	0	1	0	0	0	0	0	0	0	0	0	62
08:45 PM	1	91	17	0	3	0	0	0	0	0	0	0	0	0	112
09:00 PM	0	46	5	0	1	1	0	0	0	0	0	0	0	0	53
09:15 PM	0	26	10	0	2	0	0	0	0	0	0	0	0	0	38
09:30 PM	0	10	1	0	0	0	0	0	0	0	0	0	0	0	11
09:45 PM	0	41	7	0	0	0	0	0	0	0	0	0	0	1	49
10:00 PM	0	19	2	0	0	0	0	0	0	0	0	0	0	0	21
10:15 PM	0	19	2	0	0	1	0	0	0	0	0	0	0	0	22
10:30 PM	0	11	1	0	1	0	0	0	0	0	0	0	0	0	13
10:45 PM	0	20	4	1	0	0	0	0	0	0	0	0	0	0	25
11:00 PM	0	5	2	0	0	0	0	0	0	0	0	0	0	0	7
11:15 PM	0	8	2	0	1	0	0	0	0	0	0	0	0	0	11
11:30 PM	0	5	2	0	0	0	0	0	0	0	0	0	0	0	7
11:45 PM	0	8	2	0	0	0	0	0	0	0	0	0	0	0	10
Day Total	91	8686	1960	33	530	35	4	227	18	29	14	2	4	202	11835
Percent	0.8%	73.4%	16.6%	0.3%	4.5%	0.3%	0%	1.9%	0.2%	0.2%	0.1%	0%	0%	1.7%	
ADT 11835															
AM Peak	7:30 AM	7:45 AM	8:00 AM	7:30 AM	8:30 AM	7:45 AM	7:45 AM	7:45 AM	7:30 AM	7:45 AM	8:30 AM	7:45 AM	7:15 AM	8:30 AM	8:30 AM
15-min Vol	5	232	64	5	27	2	1	12	1	3	3	1	2	16	342
PM Peak	12:30 PM	1:00 PM	2:15 PM	2:30 PM	12:30 PM	12:00 PM	1:00 PM	12:30 PM	2:15 PM	5:00 PM	2:15 PM	12:00 PM	2:30 PM	3:00 PM	1:00 PM
15-min Vol	5	199	42	2	13	2	1	10	2	2	1	0	1	9	253

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	8	2	0	1	1	0	0	0	0	0	0	0	0	12
12:15 AM	0	1	2	0	0	0	0	0	1	0	0	0	0	0	4
12:30 AM	0	5	0	0	1	0	0	0	0	0	0	0	0	0	6
12:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2
01:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
01:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
01:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:45 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	0	4
02:00 AM	0	3	1	0	1	0	0	0	0	0	0	0	0	0	5
02:15 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
02:30 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
02:45 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
03:00 AM	0	3	1	0	1	0	0	0	0	0	0	0	0	0	5
03:15 AM	0	5	2	0	0	0	0	0	0	0	0	0	0	0	7
03:30 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
03:45 AM	0	11	1	0	1	0	0	0	0	0	0	0	0	0	13
04:00 AM	0	13	3	0	1	0	0	0	0	0	0	0	0	0	17
04:15 AM	0	10	6	0	2	0	0	0	0	0	0	0	0	0	18
04:30 AM	0	12	5	0	6	0	0	0	0	0	0	0	0	0	23
04:45 AM	0	25	6	0	4	0	0	0	0	0	0	0	0	0	35
05:00 AM	1	31	7	0	6	0	0	0	0	0	0	0	0	0	45
05:15 AM	1	56	21	0	9	0	0	0	0	0	0	0	0	0	87
05:30 AM	0	64	18	0	11	0	0	0	0	0	0	0	0	0	93
05:45 AM	0	58	24	0	8	0	0	1	0	0	0	0	0	0	91
Day Total															
Percent															
ADT 11897															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
06:00 AM	0	80	40	0	20	1	0	3	0	0	0	0	0	0	144
06:15 AM	3	86	31	0	15	0	0	1	0	0	0	0	0	0	136
06:30 AM	3	128	25	2	12	0	0	4	0	0	0	**1**	0	3	178
06:45 AM	1	144	34	2	19	0	0	0	0	0	0	0	0	3	203
07:00 AM	1	176	37	4	17	**2**	0	2	0	1	**1**	0	0	5	246
07:15 AM	3	206	37	1	17	1	0	13	0	0	0	0	0	6	284
07:30 AM	1	265	32	3	17	1	0	14	0	2	1	0	0	11	347
07:45 AM	5	191	51	0	14	1	0	12	**2**	0	1	0	0	14	291
08:00 AM	2	192	39	1	15	0	0	9	0	1	0	0	0	**16**	275
08:15 AM	1	226	48	1	14	0	0	8	0	1	0	0	0	8	307
08:30 AM	**6**	**268**	51	2	19	1	0	**16**	0	0	0	0	0	9	**372**
08:45 AM	0	225	**52**	3	**27**	2	**2**	14	2	**5**	0	0	0	7	339
09:00 AM	1	184	49	**5**	16	0	0	13	1	1	0	0	0	6	276
09:15 AM	1	158	30	2	20	2	0	4	2	1	0	0	0	1	221
09:30 AM	0	167	43	0	12	0	0	7	1	0	0	0	0	3	233
09:45 AM	1	162	31	1	12	0	2	3	0	1	0	0	0	4	217
10:00 AM	2	118	47	1	12	0	0	3	1	0	0	0	0	3	187
10:15 AM	1	111	37	2	10	0	0	6	0	0	0	0	0	1	168
10:30 AM	3	106	42	0	13	1	0	0	0	0	0	0	0	3	168
10:45 AM	0	128	44	0	13	1	0	3	1	0	0	0	0	0	190
11:00 AM	1	127	33	0	10	0	0	6	0	0	0	0	0	1	178
11:15 AM	1	128	44	0	15	1	1	3	0	0	0	0	0	0	193
11:30 AM	2	101	33	0	3	1	0	4	0	0	0	0	0	1	145
11:45 AM	2	131	24	0	12	0	0	5	1	0	0	0	0	1	176
Day Total															
Percent															
ADT 11897															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 PM	0	151	22	1	14	**3**	**1**	3	1	0	0	0	0	3	199
12:15 PM	3	144	21	**2**	6	2	0	2	0	0	0	**1**	0	1	182
12:30 PM	0	129	31	0	10	1	0	6	1	0	1	0	0	1	180
12:45 PM	1	152	32	2	16	3	0	4	**2**	0	0	0	0	3	215
01:00 PM	4	123	31	0	4	0	1	2	1	**2**	0	0	0	2	170
01:15 PM	2	114	27	0	9	1	0	4	0	0	0	0	0	2	159
01:30 PM	1	119	33	0	6	1	1	3	1	0	0	1	0	2	168
01:45 PM	5	125	35	0	5	0	0	4	0	0	0	0	0	**7**	181
02:00 PM	2	113	34	0	**17**	0	0	2	0	0	0	1	0	2	171
02:15 PM	**6**	136	25	0	8	1	0	5	0	0	0	0	0	4	185
02:30 PM	1	136	**41**	1	16	0	1	5	0	0	0	0	0	3	204
02:45 PM	0	147	32	0	6	1	0	2	1	1	0	0	0	0	190
03:00 PM	2	193	28	2	11	0	0	0	0	0	0	0	0	4	240
03:15 PM	0	**213**	33	1	12	0	0	**11**	1	2	1	0	0	4	**278**
03:30 PM	1	156	39	0	12	1	1	2	0	0	0	0	0	3	215
03:45 PM	3	117	24	1	9	1	0	4	0	0	0	0	0	3	162
04:00 PM	3	140	36	1	4	1	1	4	0	0	1	0	0	2	193
04:15 PM	1	119	19	0	8	1	0	3	0	0	0	0	0	4	155
04:30 PM	1	140	35	0	10	2	0	3	1	0	1	0	0	7	200
04:45 PM	3	137	29	2	8	0	0	2	0	2	1	0	0	0	184
05:00 PM	1	148	28	0	4	2	0	3	0	0	0	1	0	1	188
05:15 PM	1	137	32	1	7	0	0	3	0	0	0	0	0	4	185
05:30 PM	6	140	30	0	6	0	0	1	0	0	0	0	0	2	185
05:45 PM	3	102	28	0	7	0	0	2	0	0	0	0	0	5	147
Day Total															
Percent															
ADT															
11897															
AM Peak 15-min Vol															
PM Peak 15-min Vol															

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513
SPECIFIC LOCATION: **DIRECTION:** SB
CITY/STATE: Lafayette, CA **DATE:** Feb 9 2022

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
06:00 PM	2	123	16	0	5	0	0	1	0	0	2	0	0	0	149
06:15 PM	0	103	10	0	2	0	0	2	0	0	0	0	0	3	120
06:30 PM	1	100	18	0	2	0	0	2	0	0	0	0	0	2	125
06:45 PM	0	82	18	0	4	0	0	2	0	0	0	0	0	0	106
07:00 PM	0	74	23	0	4	0	0	1	0	0	0	0	0	0	102
07:15 PM	0	84	20	0	2	0	0	2	0	0	0	0	0	1	109
07:30 PM	0	69	7	0	2	0	0	0	0	0	0	0	0	0	78
07:45 PM	0	52	10	0	1	0	0	0	0	0	0	0	0	0	63
08:00 PM	0	46	7	0	2	0	0	0	0	0	0	0	0	0	55
08:15 PM	0	69	11	0	0	0	0	1	0	0	0	0	0	1	82
08:30 PM	0	55	7	0	3	0	0	0	0	0	0	0	0	1	66
08:45 PM	0	49	11	0	1	0	0	0	0	0	0	0	0	0	61
09:00 PM	0	33	5	0	3	0	0	0	0	0	0	0	0	0	41
09:15 PM	0	35	4	0	1	0	0	0	0	0	0	0	0	0	40
09:30 PM	0	33	3	0	2	0	0	0	0	0	0	0	0	0	38
09:45 PM	0	41	7	0	0	0	0	0	0	0	0	0	0	0	48
10:00 PM	0	22	1	0	0	0	0	0	0	0	0	0	0	0	23
10:15 PM	0	15	4	0	1	0	0	0	0	0	0	0	0	0	20
10:30 PM	0	13	6	0	0	0	0	0	0	0	0	0	0	0	19
10:45 PM	0	12	3	0	0	0	0	0	0	0	0	0	0	0	15
11:00 PM	0	9	3	0	1	0	0	0	0	0	0	0	0	0	13
11:15 PM	0	13	4	0	0	0	0	0	0	0	0	0	0	0	17
11:30 PM	0	5	4	0	0	0	0	0	0	0	0	0	0	0	9
11:45 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
Day Total	96	8600	1967	44	658	37	11	245	21	20	10	5	0	183	11897
Percent	0.8%	72.3%	16.5%	0.4%	5.5%	0.3%	0.1%	2.1%	0.2%	0.2%	0.1%	0%	0%	1.5%	
ADT 11897															
AM Peak	8:30 AM	8:30 AM	8:45 AM	9:00 AM	8:45 AM	7:00 AM	8:45 AM	8:30 AM	7:45 AM	8:45 AM	7:00 AM	6:30 AM	12:00 AM	8:00 AM	8:30 AM
15-min Vol	6	268	52	5	27	2	2	16	2	5	1	1	0	16	372
PM Peak	2:15 PM	3:15 PM	2:30 PM	12:15 PM	2:00 PM	12:00 PM	12:00 PM	3:15 PM	12:45 PM	1:00 PM	6:00 PM	12:15 PM	12:00 PM	1:45 PM	3:15 PM
15-min Vol	6	213	41	2	17	3	1	11	2	2	2	1	0	7	278

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd
QC JOB #: 15687513
SPECIFIC LOCATION:
DIRECTION: SB
CITY/STATE: Lafayette, CA
DATE: Feb 8 2022 - Feb 9 2022

	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	187	17286	3927	77	1188	72	15	472	39	49	24	7	4	385	23732
Percent	0.8%	72.8%	16.5%	0.3%	5%	0.3%	0.1%	2%	0.2%	0.2%	0.1%	0%	0%	1.6%	

ADT
11866

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022 - Feb 9 2022

Start Time	Mon	Tue 8 Feb 22	Wed 9 Feb 22	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 AM		6	12			9			9	
12:15 AM		6	4			5			5	
12:30 AM		2	6			4			4	
12:45 AM		4	2			3			3	
01:00 AM		1	2			2			2	
01:15 AM		3	2			3			3	
01:30 AM		4	1			3			3	
01:45 AM		5	4			5			5	
02:00 AM		0	5			3			3	
02:15 AM		8	4			6			6	
02:30 AM		4	3			4			4	
02:45 AM		6	2			4			4	
03:00 AM		7	5			6			6	
03:15 AM		6	7			7			7	
03:30 AM		7	4			6			6	
03:45 AM		7	13			10			10	
04:00 AM		13	17			15			15	
04:15 AM		16	18			17			17	
04:30 AM		24	23			24			24	
04:45 AM		38	35			37			37	
05:00 AM		50	45			48			48	
05:15 AM		71	87			79			79	
05:30 AM		87	93			90			90	
05:45 AM		109	91			100			100	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022 - Feb 9 2022

Start Time	Mon	Tue 8 Feb 22	Wed 9 Feb 22	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 AM		115	144			130			130	
06:15 AM		147	136			142			142	
06:30 AM		198	178			188			188	
06:45 AM		200	203			202			202	
07:00 AM		216	246			231			231	
07:15 AM		282	284			283			283	
07:30 AM		288	347			318			318	
07:45 AM		317	291			304			304	
08:00 AM		335	275			305			305	
08:15 AM		323	307			315			315	
08:30 AM		**342**	**372**			**357**			**357**	
08:45 AM		285	339			312			312	
09:00 AM		320	276			298			298	
09:15 AM		260	221			241			241	
09:30 AM		226	233			230			230	
09:45 AM		208	217			213			213	
10:00 AM		170	187			179			179	
10:15 AM		175	168			172			172	
10:30 AM		186	168			177			177	
10:45 AM		185	190			188			188	
11:00 AM		193	178			186			186	
11:15 AM		176	193			185			185	
11:30 AM		180	145			163			163	
11:45 AM		176	176			176			176	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022 - Feb 9 2022

Start Time	Mon	Tue 8 Feb 22	Wed 9 Feb 22	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 PM		184	199			192			192	
12:15 PM		153	182			168			168	
12:30 PM		213	180			197			197	
12:45 PM		195	215			205			205	
01:00 PM		**253**	170			212			212	
01:15 PM		171	159			165			165	
01:30 PM		187	168			178			178	
01:45 PM		166	181			174			174	
02:00 PM		140	171			156			156	
02:15 PM		179	185			182			182	
02:30 PM		169	204			187			187	
02:45 PM		216	190			203			203	
03:00 PM		235	240			238			238	
03:15 PM		217	**278**			**248**			**248**	
03:30 PM		201	215			208			208	
03:45 PM		179	162			171			171	
04:00 PM		201	193			197			197	
04:15 PM		178	155			167			167	
04:30 PM		172	200			186			186	
04:45 PM		181	184			183			183	
05:00 PM		212	188			200			200	
05:15 PM		162	185			174			174	
05:30 PM		178	185			182			182	
05:45 PM		152	147			150			150	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Type of report: Tube Count - Volume Data

LOCATION: Pleasant Hill Rd btwn Mt Diablo Blvd and Stanley Blvd/Deer Hill Rd **QC JOB #:** 15687513

SPECIFIC LOCATION: **DIRECTION:** SB

CITY/STATE: Lafayette, CA **DATE:** Feb 8 2022 - Feb 9 2022

Start Time	Mon	Tue 8 Feb 22	Wed 9 Feb 22	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 PM		117	149			133			133	
06:15 PM		125	120			123			123	
06:30 PM		100	125			113			113	
06:45 PM		147	106			127			127	
07:00 PM		88	102			95			95	
07:15 PM		72	109			91			91	
07:30 PM		78	78			78			78	
07:45 PM		62	63			63			63	
08:00 PM		65	55			60			60	
08:15 PM		59	82			71			71	
08:30 PM		62	66			64			64	
08:45 PM		112	61			87			87	
09:00 PM		53	41			47			47	
09:15 PM		38	40			39			39	
09:30 PM		11	38			25			25	
09:45 PM		49	48			49			49	
10:00 PM		21	23			22			22	
10:15 PM		22	20			21			21	
10:30 PM		13	19			16			16	
10:45 PM		25	15			20			20	
11:00 PM		7	13			10			10	
11:15 PM		11	17			14			14	
11:30 PM		7	9			8			8	
11:45 PM		10	3			7			7	
Day Total		11835	11897			11891			11891	
% Weekday Average		99.5%	100.1%							
% Week Average		99.5%	100.1%			100%				
AM Peak 15-min Vol		8:30 AM 342	8:30 AM 372			8:30 AM 357			8:30 AM 357	
PM Peak 15-min Vol		1:00 PM 253	3:15 PM 278			3:15 PM 248			3:15 PM 248	

Comments:

Report generated on 2/15/2022 11:08 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Appendix B

Existing Conditions Intersection Operations – Vistro Worksheets

Vistro File: H:\...\26991_trafficops_20220328.vistro
Report File: H:\...\Existing AM.pdf

Scenario 1 Existing AM
4/14/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Pleasant Hill Road & Stanley Boulevard/Deer Hill Road	Signalized	HCM 6th Edition	SWB Left	0.884	46.1	D
11	Pleasant Hill Rd & Mt Diablo Boulevard	Signalized	HCM 6th Edition	NB Left	0.460	22.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Pleasant Hill Road & Stanley Boulevard/Deer Hill Road

Control Type:	Signalized	Delay (sec / veh):	46.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.884

Intersection Setup

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	185.00	100.00	100.00	257.00	100.00	260.00	175.00	100.00	186.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Base Volume Input [veh/h]	291	71	41	238	128	99	120	821	268	151	1500	445
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	0.00	0.00	1.00	0.00	4.00	1.00	2.00	0.00	0.00	2.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	291	71	41	238	128	99	120	821	268	151	1500	445
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	21	12	70	38	29	35	241	79	44	441	131
Total Analysis Volume [veh/h]	342	84	48	280	151	116	141	966	315	178	1765	524
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	11			0			12			0		
v_di, Inbound Pedestrian Volume crossing major street [	12			0			11			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			3			2			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			2			3			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			1			1			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	75.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	0	8	0	0	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	9	0	7	10	0	8	10	0
Maximum Green [s]	0	30	0	0	30	0	25	60	0	25	60	0
Amber [s]	0.0	4.1	0.0	0.0	3.6	0.0	3.0	4.1	0.0	3.0	4.1	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	33	0	0	27	0	21	59	0	31	69	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.0	0.0	1.5	5.0	0.0	1.5	4.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	0.0	2.6	0.0	2.0	3.1	0.0	2.0	3.1	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	150	150	150	150	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	5.10	5.10	4.60	4.60	4.60	4.00	5.10	5.10	4.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	2.60	2.60	2.60	2.00	3.10	3.10	2.00	3.10	3.10
g_i, Effective Green Time [s]	20	20	20	20	20	14	74	74	17	78	78
g / C, Green / Cycle	0.14	0.14	0.13	0.13	0.13	0.09	0.50	0.50	0.11	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.10	0.08	0.12	0.12	0.08	0.08	0.27	0.20	0.10	0.50	0.33
s, saturation flow rate [veh/h]	3486	1737	1795	1871	1543	1795	3560	1574	1810	3560	1568
c, Capacity [veh/h]	474	236	236	246	203	163	1765	780	202	1838	809
d1, Uniform Delay [s]	62.09	60.61	64.11	64.10	61.10	67.25	26.17	23.69	65.66	34.81	26.08
k, delay calibration	0.04	0.04	0.08	0.08	0.04	0.04	0.50	0.50	0.05	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.79	0.77	8.51	8.16	0.95	5.12	1.23	1.55	5.78	13.49	3.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.72	0.56	0.89	0.89	0.57	0.86	0.55	0.40	0.88	0.96	0.65
d, Delay for Lane Group [s/veh]	62.88	61.38	72.62	72.26	62.05	72.37	27.40	25.25	71.44	48.29	30.06
Lane Group LOS	E	E	E	E	E	E	C	C	E	D	C
Critical Lane Group	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.33	4.78	8.53	8.86	4.23	5.59	12.30	7.42	7.07	33.64	14.33
50th-Percentile Queue Length [ft/ln]	158.34	119.60	213.16	221.41	105.65	139.68	307.44	185.49	176.64	840.92	358.24
95th-Percentile Queue Length [veh/ln]	10.46	8.37	13.32	13.74	7.60	9.46	18.05	11.89	11.43	43.15	20.54
95th-Percentile Queue Length [ft/ln]	261.53	209.27	332.88	343.42	189.94	236.60	451.22	297.17	285.63	1078.7	513.44

Movement, Approach, & Intersection Results

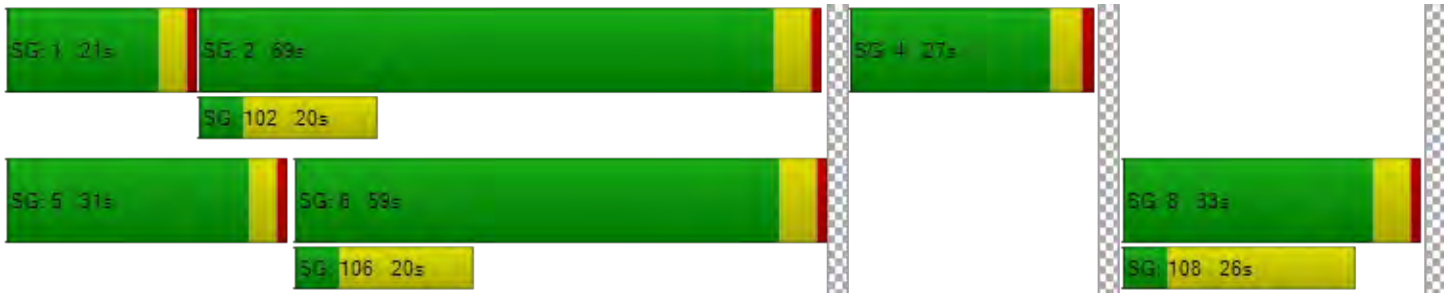
d_M, Delay for Movement [s/veh]	62.88	61.38	61.38	72.53	72.26	62.05	72.37	27.40	25.25	71.44	48.29	30.06
Movement LOS	E	E	E	E	E	E	E	C	C	E	D	C
d_A, Approach Delay [s/veh]	62.46			70.23			31.38			46.09		
Approach LOS	E			E			C			D		
d_I, Intersection Delay [s/veh]	46.10											
Intersection LOS	D											
Intersection V/C	0.884											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	22.4
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	333.89	0.00
d_p, Pedestrian Delay [s]	66.27	66.27	66.27	54.27
l_p,int, Pedestrian LOS Score for Intersection	2.471	2.431	3.050	3.103
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	372	299	719	852
d_b, Bicycle Delay [s]	49.74	54.30	30.80	24.74
l_b,int, Bicycle LOS Score for Intersection	2.342	2.462	2.733	3.595
Bicycle LOS	B	B	B	D

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Pleasant Hill Rd & Mt Diablo Boulevard

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.460

Intersection Setup

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Base Volume Input [veh/h]	256	694	406	0	506	561	191	228	133	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	0.70	0.60	2.00	4.20	4.20	0.70	4.40	2.80	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	256	694	406	0	506	561	191	228	133	0	0	0
Peak Hour Factor	0.9400	0.9400	0.9400	1.0000	0.9400	0.9400	0.9400	0.9400	0.9400	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	68	185	108	0	135	149	51	61	35	0	0	0
Total Analysis Volume [veh/h]	272	738	432	0	538	597	203	243	141	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	4			0			3			0		
v_di, Inbound Pedestrian Volume crossing major street [	3			0			4			0		
v_co, Outbound Pedestrian Volume crossing minor stree	3			1			1			4		
v_ci, Inbound Pedestrian Volume crossing minor street [	4			1			1			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	6			1			5			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Permis	Permis	Unsign	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	5	2	0	0	6	0	0	4	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	7	0	0	7	0	0	9	0	0	0	0
Maximum Green [s]	35	35	0	0	20	0	0	21	0	0	0	0
Amber [s]	3.7	4.4	0.0	0.0	4.4	0.0	0.0	4.1	0.0	0.0	0.0	0.0
All red [s]	1.5	4.0	0.0	0.0	3.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0
Split [s]	36	68	0	0	32	0	0	42	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	16	0	0	28	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	3.2	6.4	0.0	0.0	5.4	0.0	0.0	6.1	0.0	0.0	0.0	0.0
Minimum Recall	No	Yes			Yes			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	0.0	20.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	L	C	C	
C, Cycle Length [s]	110	110	110	110	110	110	110	
L, Total Lost Time per Cycle [s]	5.20	8.40	8.40	7.40	8.10	8.10	8.10	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	3.20	6.40	6.40	5.40	6.10	6.10	6.10	
g_i, Effective Green Time [s]	19	77	77	55	16	16	16	
g / C, Green / Cycle	0.17	0.70	0.70	0.50	0.15	0.15	0.15	
(v / s)_i Volume / Saturation Flow Rate	0.15	0.21	0.27	0.15	0.11	0.11	0.12	
s, saturation flow rate [veh/h]	1775	3598	1585	3498	1800	1834	1569	
c, Capacity [veh/h]	300	2526	1113	1732	266	271	232	
d1, Uniform Delay [s]	44.87	6.14	6.67	16.57	45.02	44.90	45.16	
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.04	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	4.28	0.29	1.02	0.47	1.72	1.55	2.18	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.91	0.29	0.39	0.31	0.76	0.75	0.78	
d, Delay for Lane Group [s/veh]	49.15	6.43	7.69	17.03	46.73	46.44	47.34	
Lane Group LOS	D	A	A	B	D	D	D	
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	7.59	2.99	3.98	4.10	5.43	5.39	4.89	
50th-Percentile Queue Length [ft/ln]	189.73	74.63	99.59	102.39	135.66	134.71	122.37	
95th-Percentile Queue Length [veh/ln]	12.11	5.37	7.17	7.37	9.25	9.20	8.52	
95th-Percentile Queue Length [ft/ln]	302.68	134.33	179.27	184.30	231.17	229.88	213.08	

Movement, Approach, & Intersection Results

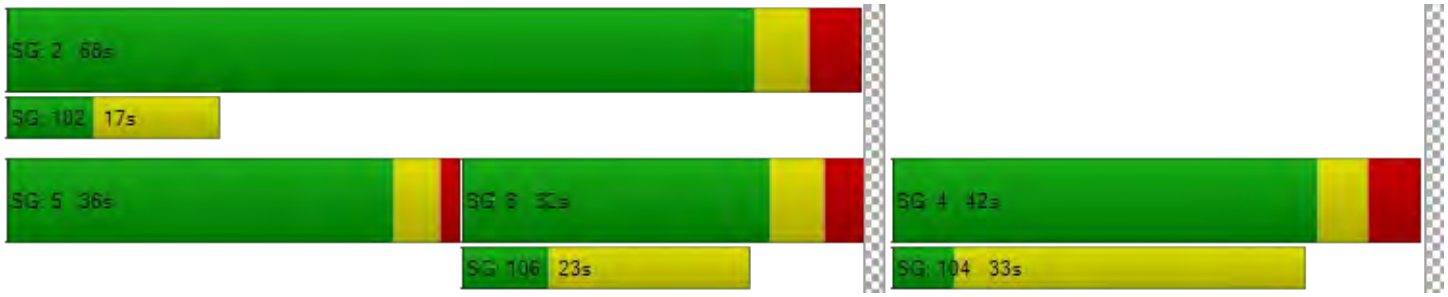
d_M, Delay for Movement [s/veh]	49.15	6.43	7.69	0.00	17.03	0.00	46.73	46.59	47.34	0.00	0.00	0.00
Movement LOS	D	A	A		B		D	D	D			
d_A, Approach Delay [s/veh]	14.87			17.03			46.82			0.00		
Approach LOS	B			B			D			A		
d_I, Intersection Delay [s/veh]	22.63											
Intersection LOS	C											
Intersection V/C	0.460											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	0.00	44.55	44.55
l_p,int, Pedestrian LOS Score for Intersection	2.765	0.000	2.350	2.053
Crosswalk LOS	C	F	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1084	447	616	0
d_b, Bicycle Delay [s]	11.58	33.17	26.39	55.00
l_b,int, Bicycle LOS Score for Intersection	2.749	2.003	2.044	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 2 Existing PM
4/27/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Pleasant Hill Road & Stanley Boulevard/Deer Hill Road	Signalized	HCM 6th Edition	NWB Thru	1.026	82.2	F
11	Pleasant Hill Rd & Mt Diablo Boulevard	Signalized	HCM 6th Edition	EB Right	0.608	28.7	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Pleasant Hill Road & Stanley Boulevard/Deer Hill Road

Control Type:	Signalized	Delay (sec / veh):	82.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.026

Intersection Setup

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	185.00	100.00	100.00	257.00	100.00	260.00	175.00	100.00	186.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Base Volume Input [veh/h]	818	131	30	226	98	164	39	1568	188	105	756	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	0.00	0.00	2.00	0.00	1.00	0.00	1.00	1.00	2.00	1.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	44	7	2	0	0	0	0	107	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	862	138	32	226	98	164	39	1675	188	105	756	239
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	222	36	8	58	25	42	10	432	48	27	195	62
Total Analysis Volume [veh/h]	889	142	33	233	101	169	40	1727	194	108	779	246
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	11			0			11			0		
v_di, Inbound Pedestrian Volume crossing m	11			0			11			0		
v_co, Outbound Pedestrian Volume crossing	1			20			20			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			20			20			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			2			1			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	135
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	9	0	7	10	0	8	10	0
Maximum Green [s]	0	30	0	0	30	0	25	60	0	25	60	0
Amber [s]	0.0	4.1	0.0	0.0	3.6	0.0	3.0	4.1	0.0	3.0	4.1	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	40	0	0	20	0	23	62	0	13	39	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.0	0.0	1.5	5.0	0.0	1.5	4.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	0.0	2.6	0.0	2.0	3.1	0.0	2.0	3.1	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	20.0	0.0	0.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	135	135	135	135	135	135	135	135	135	135	135
L, Total Lost Time per Cycle [s]	5.10	5.10	4.60	4.60	4.60	4.00	5.10	5.10	4.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	2.60	2.60	2.60	2.00	3.10	3.10	2.00	3.10	3.10
g_i, Effective Green Time [s]	37	37	17	17	17	5	53	53	9	57	57
g / C, Green / Cycle	0.28	0.28	0.12	0.12	0.12	0.04	0.39	0.39	0.07	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.25	0.10	0.09	0.09	0.11	0.02	0.48	0.13	0.06	0.22	0.16
s, saturation flow rate [veh/h]	3486	1829	1781	1862	1577	1810	3589	1489	1781	3589	1578
c, Capacity [veh/h]	968	508	219	229	194	74	1411	586	119	1505	662
d1, Uniform Delay [s]	47.28	38.95	57.13	57.13	58.01	63.52	40.96	28.27	62.60	29.08	26.86
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.61	0.15	1.88	1.80	4.60	2.30	107.19	1.52	9.83	1.28	1.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.92	0.34	0.74	0.74	0.87	0.54	1.22	0.33	0.91	0.52	0.37
d, Delay for Lane Group [s/veh]	48.89	39.10	59.01	58.93	62.61	65.83	148.14	29.79	72.43	30.35	28.46
Lane Group LOS	D	D	E	E	E	E	F	C	E	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	14.66	4.71	5.51	5.75	5.92	1.40	44.12	4.63	4.02	9.66	5.78
50th-Percentile Queue Length [ft/ln]	366.46	117.63	137.68	143.81	147.88	35.02	1103.01	115.81	100.42	241.57	144.39
95th-Percentile Queue Length [veh/ln]	20.94	8.26	9.36	9.69	9.90	2.52	62.91	8.16	7.23	14.76	9.72
95th-Percentile Queue Length [ft/ln]	523.43	206.56	233.89	242.14	247.60	63.04	1572.86	204.05	180.75	369.02	242.92

Movement, Approach, & Intersection Results

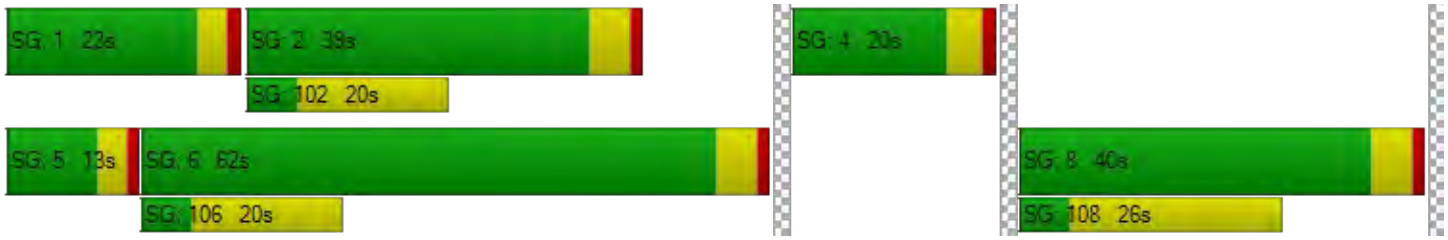
d_M, Delay for Movement [s/veh]	48.89	39.10	39.10	58.99	58.93	62.61	65.83	148.14	29.79	72.43	30.35	28.46
Movement LOS	D	D	D	E	E	E	E	F	C	E	C	C
d_A, Approach Delay [s/veh]	47.28			60.19			134.76			33.95		
Approach LOS	D			E			F			C		
d_I, Intersection Delay [s/veh]	82.24											
Intersection LOS	F											
Intersection V/C	1.026											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	15.4
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	1325.63	73.45	408.96	0.00
d_p, Pedestrian Delay [s]	58.80	58.80	58.80	52.98
l_p,int, Pedestrian LOS Score for Intersection	2.505	2.383	2.962	3.106
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	517	228	843	502
d_b, Bicycle Delay [s]	37.11	53.03	22.60	37.89
l_b,int, Bicycle LOS Score for Intersection	3.315	2.390	3.177	2.494
Bicycle LOS	C	B	C	B

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Pleasant Hill Rd & Mt Diablo Boulevard

Control Type:	Signalized	Delay (sec / veh):	28.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.608

Intersection Setup

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Base Volume Input [veh/h]	211	590	343	0	509	381	260	490	261	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.70	3.50	2.00	1.70	1.60	1.60	1.80	0.50	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	590	343	0	509	381	260	490	261	0	0	0
Peak Hour Factor	0.9100	0.9100	0.9100	1.0000	0.9100	0.9100	0.9100	0.9100	0.9100	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	162	94	0	140	105	71	135	72	0	0	0
Total Analysis Volume [veh/h]	232	648	377	0	559	419	286	538	287	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	6			0			6			0		
v_di, Inbound Pedestrian Volume crossing m	6			0			6			0		
v_co, Outbound Pedestrian Volume crossing	10			0			0			11		
v_ci, Inbound Pedestrian Volume crossing mi	11			0			0			10		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			3			5			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	4	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	7	0	0	7	0	0	9	0	0	0	0
Maximum Green [s]	35	35	0	0	20	0	0	21	0	0	0	0
Amber [s]	3.7	4.4	0.0	0.0	4.4	0.0	0.0	4.1	0.0	0.0	0.0	0.0
All red [s]	1.5	4.0	0.0	0.0	3.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0
Split [s]	29	55	0	0	25	0	0	30	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	16	0	0	28	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	3.2	6.4	0.0	0.0	5.4	0.0	0.0	6.1	0.0	0.0	0.0	0.0
Minimum Recall	No	Yes			Yes			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	0.0	20.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	L	C	C	
C, Cycle Length [s]	88	88	88	88	88	88	88	
L, Total Lost Time per Cycle [s]	5.20	8.40	8.40	7.40	8.10	8.10	8.10	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	3.20	6.40	6.40	5.40	6.10	6.10	6.10	
g_i, Effective Green Time [s]	13	46	46	28	23	23	23	
g / C, Green / Cycle	0.15	0.52	0.52	0.32	0.26	0.26	0.26	
(v / s)_i Volume / Saturation Flow Rate	0.13	0.18	0.24	0.16	0.16	0.23	0.24	
s, saturation flow rate [veh/h]	1795	3569	1550	3569	1787	1873	1618	
c, Capacity [veh/h]	268	1850	804	1147	465	487	421	
d1, Uniform Delay [s]	36.57	12.47	13.43	24.03	28.68	31.43	31.68	
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.23	0.25	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	3.28	0.52	1.96	1.48	0.49	11.95	16.86	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.87	0.35	0.47	0.49	0.62	0.90	0.92	
d, Delay for Lane Group [s/veh]	39.84	12.99	15.40	25.51	29.18	43.38	48.54	
Lane Group LOS	D	B	B	C	C	D	D	
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.02	3.65	4.85	4.78	5.24	10.29	9.72	
50th-Percentile Queue Length [ft/ln]	125.47	91.36	121.23	119.40	131.00	257.25	243.02	
95th-Percentile Queue Length [veh/ln]	8.69	6.58	8.46	8.36	8.99	15.55	14.83	
95th-Percentile Queue Length [ft/ln]	217.32	164.45	211.52	209.00	224.85	388.76	370.85	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.84	12.99	15.40	0.00	25.51	0.00	29.18	44.35	48.54	0.00	0.00	0.00
Movement LOS	D	B	B		C		C	D	D			
d_A, Approach Delay [s/veh]	18.67			25.51			41.53			0.00		
Approach LOS	B			C			D			A		
d_I, Intersection Delay [s/veh]	28.65											
Intersection LOS	C											
Intersection V/C	0.608											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	35.46	0.00	33.69	33.69
l_p,int, Pedestrian LOS Score for Intersection	2.753	0.000	2.457	2.159
Crosswalk LOS	C	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1059	400	498	0
d_b, Bicycle Delay [s]	9.75	28.20	24.89	44.00
l_b,int, Bicycle LOS Score for Intersection	2.597	2.021	2.476	4.132
Bicycle LOS	B	B	B	D

Sequence

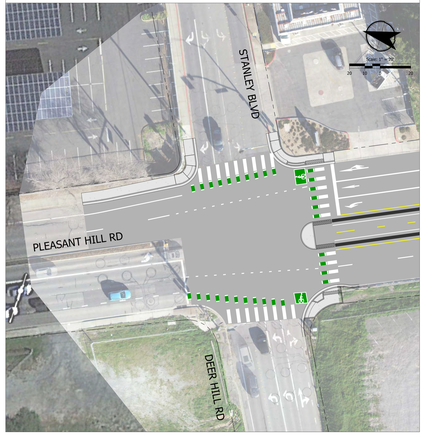
Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix C

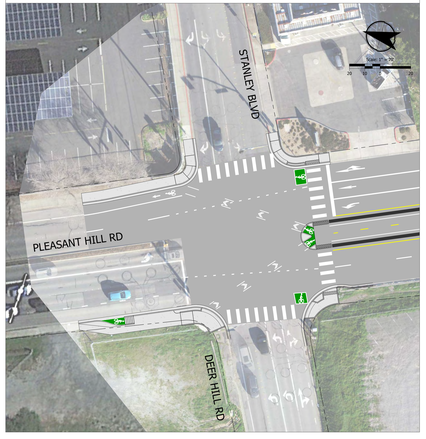
MUP Design Concept Strip Map

Preliminary Design Subject to Change
Date: 04/11/2022

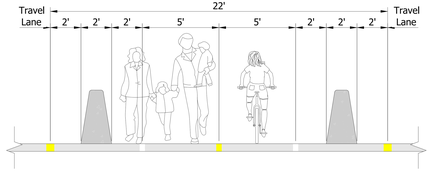
CONCEPT #1 - TWO-STAGE CROSSING



CONCEPT #2 - SCRAMBLE CROSSING

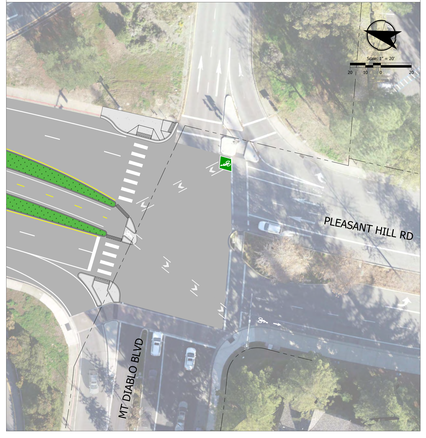


Typical MUP Cross-Section



CONCEPT #1 - TWO-STAGE CROSSING

CONCEPT #2 - SCRAMBLE CROSSING



Appendix D

Concept #1 Intersection Operations – Vistro Worksheets

Vistro File: H:\...\26991_trafficops_20220328.vistro
Report File: H:\...\Concept 1 AM.pdf

Scenario 7 Concept 1 AM
4/14/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Pleasant Hill Road & Stanley Boulevard/Deer Hill Road	Signalized	HCM 6th Edition	SEB Left	0.884	47.5	D
11	Pleasant Hill Rd & Mt Diablo Boulevard	Signalized	HCM 6th Edition	EB Left	0.460	27.5	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Pleasant Hill Road & Stanley Boulevard/Deer Hill Road

Control Type:	Signalized	Delay (sec / veh):	47.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.884

Intersection Setup

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	185.00	100.00	100.00	450.00	100.00	260.00	175.00	100.00	186.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Base Volume Input [veh/h]	291	71	41	238	128	99	120	821	268	151	1500	445
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	0.00	0.00	1.00	0.00	4.00	1.00	2.00	0.00	0.00	2.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	291	71	41	238	128	99	120	821	268	151	1500	445
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	21	12	70	38	29	35	241	79	44	441	131
Total Analysis Volume [veh/h]	342	84	48	280	151	116	141	966	315	178	1765	524
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	11			0			12			0		
v_di, Inbound Pedestrian Volume crossing major street [	12			0			11			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			3			2			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			2			3			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			1			1			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	75.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	0	8	0	0	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	9	0	7	10	0	8	10	0
Maximum Green [s]	0	30	0	0	30	0	25	60	0	25	60	0
Amber [s]	0.0	4.1	0.0	0.0	3.6	0.0	3.0	4.1	0.0	3.0	4.1	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	24	0	17	74	0	20	77	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.0	0.0	1.5	5.0	0.0	1.5	4.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	0.0	2.6	0.0	2.0	3.1	0.0	2.0	3.1	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	150	150	150	150	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	5.10	5.10	4.60	4.60	4.60	4.00	5.10	5.10	4.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	2.60	2.60	2.60	2.00	3.10	3.10	2.00	3.10	3.10
g_i, Effective Green Time [s]	20	20	19	19	19	13	75	75	16	78	78
g / C, Green / Cycle	0.14	0.14	0.13	0.13	0.13	0.09	0.50	0.50	0.11	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.10	0.08	0.12	0.12	0.08	0.08	0.35	0.37	0.10	0.50	0.33
s, saturation flow rate [veh/h]	3486	1737	1795	1871	1543	1795	1870	1691	1810	3560	1568
c, Capacity [veh/h]	475	237	232	242	199	156	939	850	193	1860	819
d1, Uniform Delay [s]	62.03	60.55	64.43	64.43	61.41	67.90	28.76	29.29	66.38	33.93	25.43
k, delay calibration	0.04	0.04	0.08	0.08	0.04	0.04	0.50	0.50	0.08	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.78	0.77	9.77	9.38	1.00	7.58	4.43	5.43	13.27	11.88	3.81
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.72	0.56	0.91	0.91	0.58	0.91	0.71	0.73	0.92	0.95	0.64
d, Delay for Lane Group [s/veh]	62.81	61.31	74.20	73.80	62.41	75.48	33.20	34.72	79.65	45.81	29.24
Lane Group LOS	E	E	E	E	E	E	C	C	E	D	C
Critical Lane Group	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.33	4.78	8.62	8.95	4.24	5.71	19.44	18.67	7.49	32.81	14.10
50th-Percentile Queue Length [ft/ln]	158.29	119.56	215.49	223.77	105.99	142.74	486.12	466.82	187.26	820.31	352.56
95th-Percentile Queue Length [veh/ln]	10.46	8.37	13.43	13.86	7.62	9.63	26.68	25.76	11.98	42.21	20.26
95th-Percentile Queue Length [ft/ln]	261.45	209.22	335.86	346.44	190.40	240.71	666.92	643.99	299.47	1055.1	506.52

Movement, Approach, & Intersection Results

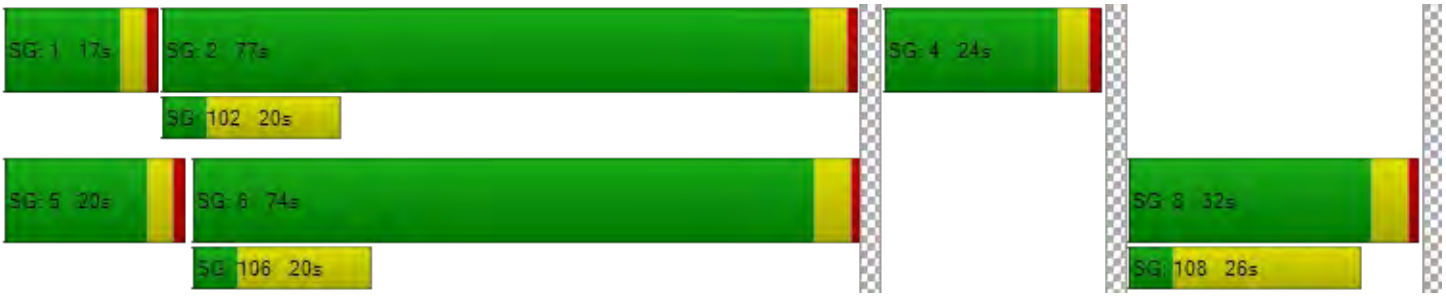
d_M, Delay for Movement [s/veh]	62.81	61.31	61.31	74.11	73.80	62.41	75.48	33.68	34.72	79.65	45.81	29.24
Movement LOS	E	E	E	E	E	E	E	C	C	E	D	C
d_A, Approach Delay [s/veh]	62.39			71.54			38.05			44.73		
Approach LOS	E			E			D			D		
d_I, Intersection Delay [s/veh]	47.49											
Intersection LOS	D											
Intersection V/C	0.884											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	19.4
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	333.89	0.00
d_p, Pedestrian Delay [s]	66.27	66.27	66.27	56.85
I_p,int, Pedestrian LOS Score for Intersection	2.471	2.431	3.011	3.104
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	359	259	919	959
d_b, Bicycle Delay [s]	50.56	56.88	21.94	20.35
I_b,int, Bicycle LOS Score for Intersection	2.342	2.462	2.733	3.595
Bicycle LOS	B	B	B	D

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Pleasant Hill Rd & Mt Diablo Boulevard

Control Type:	Signalized	Delay (sec / veh):	27.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.460

Intersection Setup

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Base Volume Input [veh/h]	256	694	406	0	506	561	191	228	133	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	0.70	0.60	2.00	4.20	4.20	0.70	4.40	2.80	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	256	694	406	0	506	561	191	228	133	0	0	0
Peak Hour Factor	0.9400	0.9400	0.9400	1.0000	0.9400	0.9400	0.9400	0.9400	0.9400	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	68	185	108	0	135	149	51	61	35	0	0	0
Total Analysis Volume [veh/h]	272	738	432	0	538	597	203	243	141	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	4			13			3			12		
v_di, Inbound Pedestrian Volume crossing major street [	3			12			4			13		
v_co, Outbound Pedestrian Volume crossing minor stree	3			1			1			4		
v_ci, Inbound Pedestrian Volume crossing minor street [	4			1			1			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	6			1			5			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Permis	Permis	Unsign	Protect	Permis	Permis	Permis	Permis	Permis
Signal Group	5	2	0	0	6	0	7	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	6	7	0	0	7	0	5	9	0	0	5	0
Maximum Green [s]	35	35	0	0	20	0	30	21	0	0	30	0
Amber [s]	3.7	4.4	0.0	0.0	4.4	0.0	3.7	4.1	0.0	0.0	3.0	0.0
All red [s]	1.5	4.0	0.0	0.0	3.0	0.0	1.5	4.0	0.0	0.0	1.0	0.0
Split [s]	22	53	0	0	31	0	18	57	0	0	39	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	16	0	0	28	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.2	6.4	0.0	0.0	5.4	0.0	3.2	6.1	0.0	0.0	2.0	0.0
Minimum Recall	No	Yes			Yes		No	No			No	
Maximum Recall	No	No			No		No	No			No	
Pedestrian Recall	No	No			No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	0.0	20.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	L	C	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.20	8.40	8.40	7.40	5.20	8.10	8.10	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.20	6.40	6.40	5.40	3.20	6.10	6.10	2.00
g_i, Effective Green Time [s]	17	68	68	47	13	25	25	11
g / C, Green / Cycle	0.15	0.62	0.62	0.43	0.12	0.23	0.23	0.10
(v / s)_i Volume / Saturation Flow Rate	0.15	0.21	0.27	0.15	0.11	0.11	0.11	0.00
s, saturation flow rate [veh/h]	1775	3598	1585	3498	1800	1834	1579	1870
c, Capacity [veh/h]	271	2228	981	1498	209	423	364	195
d1, Uniform Delay [s]	46.60	10.03	10.90	21.24	48.41	36.59	36.78	0.00
k, delay calibration	0.04	0.50	0.50	0.50	0.11	0.04	0.04	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.23	0.40	1.43	0.67	22.41	0.31	0.39	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.00	0.33	0.44	0.36	0.97	0.48	0.50	0.00
d, Delay for Lane Group [s/veh]	62.83	10.43	12.34	21.91	70.81	36.90	37.17	0.00
Lane Group LOS	F	B	B	C	E	D	D	A
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.58	4.17	5.54	4.77	6.82	4.74	4.27	0.00
50th-Percentile Queue Length [ft/ln]	214.59	104.33	138.61	119.18	170.53	118.41	106.85	0.00
95th-Percentile Queue Length [veh/ln]	13.41	7.51	9.41	8.35	11.10	8.31	7.66	0.00
95th-Percentile Queue Length [ft/ln]	335.21	187.79	235.15	208.70	277.62	207.64	191.62	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.83	10.43	12.34	0.00	21.91	0.00	70.81	36.95	37.17	0.00	0.00	0.00
Movement LOS	F	B	B		C		E	D	D		A	
d_A, Approach Delay [s/veh]	20.88			21.91			48.71			0.00		
Approach LOS	C			C			D			A		
d_I, Intersection Delay [s/veh]	27.46											
Intersection LOS	C											
Intersection V/C	0.460											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	284.35	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	44.55	44.55
l_p,int, Pedestrian LOS Score for Intersection	2.765	2.704	2.350	2.169
Crosswalk LOS	C	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	811	429	889	636
d_b, Bicycle Delay [s]	19.50	33.95	17.01	25.57
l_b,int, Bicycle LOS Score for Intersection	2.749	2.003	2.044	1.560
Bicycle LOS	B	B	B	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Report File: H:\...\Concept 1 PM.pdf

Scenario 8 Concept 1 PM
4/14/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Pleasant Hill Road & Stanley Boulevard/Deer Hill Road	Signalized	HCM 6th Edition	NWB Right	1.088	88.9	F
11	Pleasant Hill Rd & Mt Diablo Boulevard	Signalized	HCM 6th Edition	EB Left	0.586	32.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Pleasant Hill Road & Stanley Boulevard/Deer Hill Road

Control Type:	Signalized	Delay (sec / veh):	88.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.088

Intersection Setup

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	185.00	100.00	100.00	450.00	100.00	260.00	175.00	100.00	186.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Base Volume Input [veh/h]	818	131	30	226	98	164	39	1568	188	105	756	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	0.00	0.00	2.00	0.00	1.00	0.00	1.00	1.00	2.00	1.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	44	7	2	0	0	0	0	107	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	862	138	32	226	98	164	39	1675	188	105	756	239
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	222	36	8	58	25	42	10	432	48	27	195	62
Total Analysis Volume [veh/h]	889	142	33	233	101	169	40	1727	194	108	779	246
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	11			0			11			0		
v_di, Inbound Pedestrian Volume crossing major street [	11			0			11			0		
v_co, Outbound Pedestrian Volume crossing minor stree	1			20			20			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			20			20			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			2			1			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	135
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	0	8	0	0	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	9	0	7	10	0	8	10	0
Maximum Green [s]	0	30	0	0	30	0	25	60	0	25	60	0
Amber [s]	0.0	4.1	0.0	0.0	3.6	0.0	3.0	4.1	0.0	3.0	4.1	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	33	0	0	17	0	11	73	0	12	74	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.0	0.0	1.5	5.0	0.0	1.5	4.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	0.0	2.6	0.0	2.0	3.1	0.0	2.0	3.1	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	20.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	135	135	135	135	135	135	135	135	135	135	135
L, Total Lost Time per Cycle [s]	5.10	5.10	4.60	4.60	4.60	4.00	5.10	5.10	4.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	2.60	2.60	2.60	2.00	3.10	3.10	2.00	3.10	3.10
g_i, Effective Green Time [s]	37	37	12	12	12	5	59	59	8	61	61
g / C, Green / Cycle	0.28	0.28	0.09	0.09	0.09	0.04	0.43	0.43	0.06	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.25	0.10	0.09	0.09	0.11	0.02	0.51	0.54	0.06	0.22	0.16
s, saturation flow rate [veh/h]	3486	1829	1781	1862	1575	1810	1885	1791	1781	3589	1578
c, Capacity [veh/h]	960	504	164	171	145	73	819	778	106	1626	715
d1, Uniform Delay [s]	47.58	39.19	61.29	61.29	61.20	63.56	38.19	38.19	63.50	25.78	23.81
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.79	0.15	19.51	19.07	82.00	2.36	90.80	116.71	30.86	1.01	1.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.35	1.00	1.00	1.17	0.55	1.17	1.23	1.02	0.48	0.34
d, Delay for Lane Group [s/veh]	49.36	39.35	80.80	80.36	143.20	65.92	128.98	154.89	94.36	26.79	25.13
Lane Group LOS	D	D	F	F	F	E	F	F	F	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	14.72	4.72	6.49	6.76	8.25	1.40	47.19	50.43	4.54	9.00	5.38
50th-Percentile Queue Length [ft/ln]	368.10	117.99	162.26	169.11	206.34	35.05	1179.6	1260.8	113.47	225.01	134.45
95th-Percentile Queue Length [veh/ln]	21.02	8.28	10.67	11.03	13.69	2.52	65.54	71.78	8.09	13.92	9.18
95th-Percentile Queue Length [ft/ln]	525.42	207.06	266.71	275.74	342.23	63.09	1638.5	1794.4	202.19	348.01	229.53

Movement, Approach, & Intersection Results

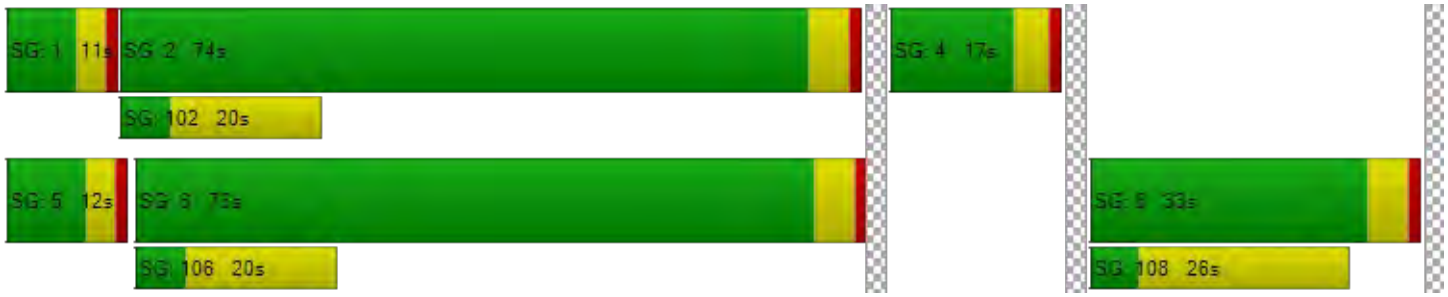
d_M, Delay for Movement [s/veh]	49.36	39.35	39.35	80.67	80.36	143.20	65.92	140.48	154.89	94.36	26.79	25.13
Movement LOS	D	D	D	F	F	F	E	F	F	F	C	C
d_A, Approach Delay [s/veh]	47.72			101.61			140.39			32.87		
Approach LOS	D			F			F			C		
d_I, Intersection Delay [s/veh]	88.91											
Intersection LOS	F											
Intersection V/C	1.088											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	12.4
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	1325.63	73.45	408.96	0.00
d_p, Pedestrian Delay [s]	58.80	58.80	58.80	55.67
I_p,int, Pedestrian LOS Score for Intersection	2.505	2.383	2.907	3.108
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	413	184	1006	1021
d_b, Bicycle Delay [s]	42.48	55.73	16.68	16.20
I_b,int, Bicycle LOS Score for Intersection	3.315	2.390	3.177	2.494
Bicycle LOS	C	B	C	B

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Pleasant Hill Rd & Mt Diablo Boulevard

Control Type:	Signalized	Delay (sec / veh):	32.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.586

Intersection Setup

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Base Volume Input [veh/h]	211	590	343	0	509	381	260	490	261	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.70	3.50	2.00	1.70	1.60	1.60	1.80	0.50	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	590	343	0	509	381	260	490	261	0	0	0
Peak Hour Factor	0.9100	0.9100	0.9100	1.0000	0.9100	0.9100	0.9100	0.9100	0.9100	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	162	94	0	140	105	71	135	72	0	0	0
Total Analysis Volume [veh/h]	232	648	377	0	559	419	286	538	287	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	6			13			6			12		
v_di, Inbound Pedestrian Volume crossing major street [	6			12			6			13		
v_co, Outbound Pedestrian Volume crossing minor stree	10			0			0			11		
v_ci, Inbound Pedestrian Volume crossing minor street [	11			0			0			10		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			3			5			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Permis	Permis	Unsign	Protect	Permis	Permis	Permis	Permis	Permis
Signal Group	5	2	0	0	6	0	7	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	6	7	0	0	7	0	5	9	0	0	5	0
Maximum Green [s]	35	35	0	0	20	0	30	21	0	0	30	0
Amber [s]	3.7	4.4	0.0	0.0	4.4	0.0	3.7	4.1	0.0	0.0	3.0	0.0
All red [s]	1.5	4.0	0.0	0.0	3.0	0.0	1.5	4.0	0.0	0.0	1.0	0.0
Split [s]	21	52	0	0	31	0	24	63	0	0	39	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	16	0	0	28	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.2	6.4	0.0	0.0	5.4	0.0	3.2	6.1	0.0	0.0	2.0	0.0
Minimum Recall	No	Yes			Yes		No	No			No	
Maximum Recall	No	No			No		No	No			No	
Pedestrian Recall	No	No			No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	0.0	20.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	L	C	C	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	5.20	8.40	8.40	7.40	5.20	8.10	8.10	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.20	6.40	6.40	5.40	3.20	6.10	6.10	2.00
g_i, Effective Green Time [s]	16	67	67	47	19	32	32	12
g / C, Green / Cycle	0.14	0.58	0.58	0.41	0.16	0.28	0.28	0.10
(v / s)_i Volume / Saturation Flow Rate	0.13	0.18	0.24	0.16	0.16	0.23	0.24	0.00
s, saturation flow rate [veh/h]	1795	3569	1550	3569	1787	1873	1620	1870
c, Capacity [veh/h]	247	2070	899	1450	292	518	448	193
d1, Uniform Delay [s]	49.14	12.39	13.34	24.04	47.91	39.27	39.58	0.00
k, delay calibration	0.04	0.50	0.50	0.50	0.15	0.04	0.04	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.27	0.40	1.44	0.78	24.31	1.48	2.01	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.31	0.42	0.39	0.98	0.84	0.87	0.00
d, Delay for Lane Group [s/veh]	56.40	12.78	14.78	24.82	72.22	40.75	41.58	0.00
Lane Group LOS	E	B	B	C	E	D	D	A
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.07	4.27	5.57	5.48	10.09	11.77	10.57	0.00
50th-Percentile Queue Length [ft/ln]	176.78	106.81	139.26	136.97	252.23	294.22	264.33	0.00
95th-Percentile Queue Length [veh/ln]	11.43	7.66	9.44	9.32	15.30	17.39	15.91	0.00
95th-Percentile Queue Length [ft/ln]	285.81	191.55	236.03	232.94	382.47	434.87	397.65	0.00

Movement, Approach, & Intersection Results

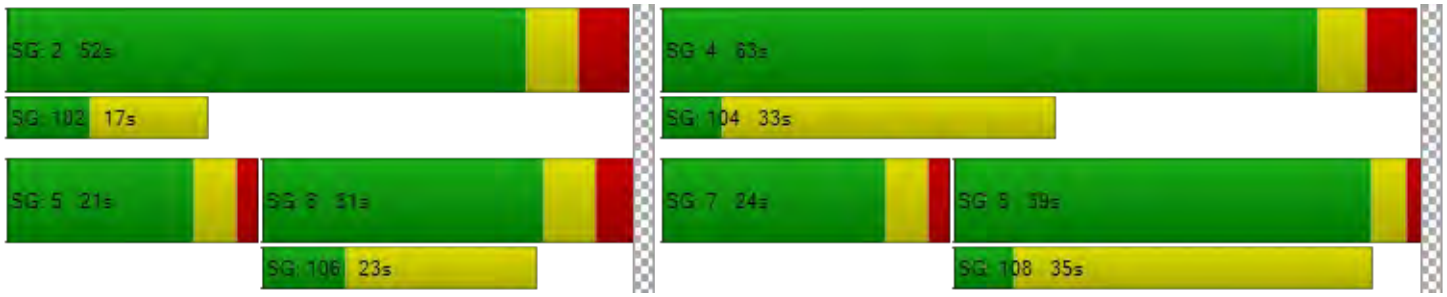
d_M, Delay for Movement [s/veh]	56.40	12.78	14.78	0.00	24.82	0.00	72.22	40.91	41.58	0.00	0.00	0.00
Movement LOS	E	B	B		C		E	D	D		A	
d_A, Approach Delay [s/veh]	21.43			24.82			49.14			0.00		
Approach LOS	C			C			D			A		
d_I, Intersection Delay [s/veh]	32.60											
Intersection LOS	C											
Intersection V/C	0.586											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	271.93	0.00	0.00
d_p, Pedestrian Delay [s]	48.85	48.85	47.03	47.03
l_p,int, Pedestrian LOS Score for Intersection	2.766	2.709	2.470	2.249
Crosswalk LOS	C	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	758	410	955	609
d_b, Bicycle Delay [s]	22.19	36.38	15.74	27.83
l_b,int, Bicycle LOS Score for Intersection	2.597	2.021	2.476	1.560
Bicycle LOS	B	B	B	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Appendix E

Concept #2 Intersection Operations – Vistro Worksheets

Vistro File: H:\...\26991_trafficops_20220328.vistro
Report File: H:\...\Concept 2 AM.pdf

Scenario 9 Concept 2 AM
4/14/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Pleasant Hill Road & Stanley Boulevard/Deer Hill Road	Signalized	HCM 6th Edition	SWB Left	0.872	68.3	E
11	Pleasant Hill Rd & Mt Diablo Boulevard	Signalized	HCM 6th Edition	NB Left	0.451	31.2	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Pleasant Hill Road & Stanley Boulevard/Deer Hill Road

Control Type:	Signalized	Delay (sec / veh):	68.3
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.872

Intersection Setup

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	185.00	100.00	100.00	450.00	100.00	260.00	175.00	100.00	186.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Base Volume Input [veh/h]	291	71	41	238	128	99	120	821	268	151	1500	445
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	0.00	0.00	1.00	0.00	4.00	1.00	2.00	0.00	0.00	2.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	291	71	41	238	128	99	120	821	268	151	1500	445
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	21	12	70	38	29	35	241	79	44	441	131
Total Analysis Volume [veh/h]	342	84	48	280	151	116	141	966	315	178	1765	524
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	11			0			12			0		
v_di, Inbound Pedestrian Volume crossing major street [	12			0			11			0		
v_co, Outbound Pedestrian Volume crossing minor stree	0			3			2			0		
v_ci, Inbound Pedestrian Volume crossing minor street [	0			2			3			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			1			1			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	170
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	75.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	0	8	0	0	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	9	0	7	10	0	8	10	0
Maximum Green [s]	0	30	0	0	30	0	25	60	0	25	60	0
Amber [s]	0.0	4.1	0.0	0.0	3.6	0.0	3.0	4.1	0.0	3.0	4.1	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	24	0	17	57	0	22	62	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.0	0.0	1.5	5.0	0.0	1.5	4.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk												
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	0.0	2.6	0.0	2.0	3.1	0.0	2.0	3.1	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	9
Pedestrian Walk [s]	5
Pedestrian Clearance [s]	30

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	170	170	170	170	170	170	170	170	170	170	170
L, Total Lost Time per Cycle [s]	5.10	5.10	4.60	4.60	4.60	4.00	5.10	5.10	4.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	2.60	2.60	2.60	2.00	3.10	3.10	2.00	3.10	3.10
g_i, Effective Green Time [s]	19	19	19	19	19	13	77	77	18	82	82
g / C, Green / Cycle	0.11	0.11	0.11	0.11	0.11	0.08	0.45	0.45	0.11	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.10	0.08	0.12	0.12	0.08	0.08	0.35	0.36	0.10	0.50	0.33
s, saturation flow rate [veh/h]	3486	1750	1795	1871	1542	1795	1870	1696	1810	3560	1568
c, Capacity [veh/h]	395	198	205	213	176	137	849	770	192	1722	758
d1, Uniform Delay [s]	74.09	72.28	75.30	75.30	72.05	78.50	39.20	39.85	75.37	43.89	33.67
k, delay calibration	0.04	0.04	0.14	0.14	0.04	0.04	0.50	0.50	0.15	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.27	1.44	41.83	40.97	1.57	28.94	7.01	8.67	21.87	28.26	5.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.67	1.03	1.03	0.66	1.03	0.78	0.80	0.93	1.02	0.69
d, Delay for Lane Group [s/veh]	76.36	73.71	117.13	116.27	73.62	107.44	46.21	48.52	97.24	72.15	38.79
Lane Group LOS	E	E	F	F	E	F	D	D	F	F	D
Critical Lane Group	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.52	5.65	11.39	11.82	4.96	7.16	25.10	24.12	8.93	42.57	17.80
50th-Percentile Queue Length [ft/ln]	187.92	141.15	284.70	295.39	123.92	178.94	627.59	603.03	223.25	1064.3	444.99
95th-Percentile Queue Length [veh/ln]	12.01	9.54	17.14	17.68	8.61	11.65	33.32	32.18	13.83	54.37	24.72
95th-Percentile Queue Length [ft/ln]	300.33	238.56	428.62	441.99	215.20	291.36	833.02	804.39	345.77	1359.3	617.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	76.36	73.71	73.71	116.93	116.27	73.62	107.44	46.94	48.52	97.24	72.15	38.79
Movement LOS	E	E	E	F	F	E	F	D	D	F	F	D
d_A, Approach Delay [s/veh]	75.62			107.56			53.29			66.88		
Approach LOS	E			F			D			E		
d_I, Intersection Delay [s/veh]	68.32											
Intersection LOS	E											
Intersection V/C	0.872											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	288.88	0.00
d_p, Pedestrian Delay [s]	76.24	76.24	76.24	76.24
I_p,int, Pedestrian LOS Score for Intersection	2.477	2.436	3.016	3.116
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	316	228	611	669
d_b, Bicycle Delay [s]	60.29	66.74	41.04	37.66
I_b,int, Bicycle LOS Score for Intersection	2.342	2.462	2.733	3.595
Bicycle LOS	B	B	B	D

Sequence

Ring 1	1	2	4	-	9	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Pleasant Hill Rd & Mt Diablo Boulevard

Control Type:	Signalized	Delay (sec / veh):	31.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.451

Intersection Setup

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Base Volume Input [veh/h]	256	694	406	0	506	561	191	228	133	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	0.70	0.60	2.00	4.20	4.20	0.70	4.40	2.80	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	256	694	406	0	506	561	191	228	133	0	0	0
Peak Hour Factor	0.9400	0.9400	0.9400	1.0000	0.9400	0.9400	0.9400	0.9400	0.9400	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	68	185	108	0	135	149	51	61	35	0	0	0
Total Analysis Volume [veh/h]	272	738	432	0	538	597	203	243	141	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major stree	4			0			3			0		
v_di, Inbound Pedestrian Volume crossing major street [	3			0			4			0		
v_co, Outbound Pedestrian Volume crossing minor stree	3			1			1			4		
v_ci, Inbound Pedestrian Volume crossing minor street [	4			1			1			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	6			1			5			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Protect	Permis	Permis	Permis	Permis	Unsign	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	5	2	0	0	6	0	0	4	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	7	0	0	7	0	0	9	0	0	0	0
Maximum Green [s]	35	35	0	0	20	0	0	21	0	0	0	0
Amber [s]	3.7	4.4	0.0	0.0	4.4	0.0	0.0	4.1	0.0	0.0	0.0	0.0
All red [s]	1.5	4.0	0.0	0.0	3.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0
Split [s]	30	61	0	0	31	0	0	42	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	16	0	0	28	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	3.2	6.4	0.0	0.0	5.4	0.0	0.0	6.1	0.0	0.0	0.0	0.0
Minimum Recall	No	Yes			Yes			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	0.0	20.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	9
Pedestrian Walk [s]	5
Pedestrian Clearance [s]	32

Lane Group Calculations

Lane Group	L	C	R	C	L	C	C	
C, Cycle Length [s]	140	140	140	140	140	140	140	
L, Total Lost Time per Cycle [s]	5.20	8.40	8.40	7.40	8.10	8.10	8.10	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	3.20	6.40	6.40	5.40	6.10	6.10	6.10	
g_i, Effective Green Time [s]	23	95	95	68	18	18	18	
g / C, Green / Cycle	0.17	0.68	0.68	0.49	0.13	0.13	0.13	
(v / s)_i Volume / Saturation Flow Rate	0.15	0.21	0.27	0.15	0.11	0.11	0.12	
s, saturation flow rate [veh/h]	1775	3598	1585	3498	1800	1834	1576	
c, Capacity [veh/h]	293	2452	1080	1700	230	235	202	
d1, Uniform Delay [s]	57.59	8.93	9.71	21.84	59.99	59.83	60.15	
k, delay calibration	0.10	0.50	0.50	0.50	0.04	0.04	0.04	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	11.19	0.32	1.11	0.49	4.29	3.63	5.69	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.93	0.30	0.40	0.32	0.88	0.86	0.90	
d, Delay for Lane Group [s/veh]	68.79	9.25	10.82	22.33	64.29	63.46	65.84	
Lane Group LOS	E	A	B	C	E	E	E	
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	10.41	4.51	5.93	5.55	7.37	7.30	6.68	
50th-Percentile Queue Length [ft/ln]	260.32	112.75	148.37	138.63	184.37	182.49	167.11	
95th-Percentile Queue Length [veh/ln]	15.70	7.99	9.93	9.41	11.83	11.73	10.92	
95th-Percentile Queue Length [ft/ln]	392.62	199.83	248.25	235.17	295.71	293.27	273.11	

Movement, Approach, & Intersection Results

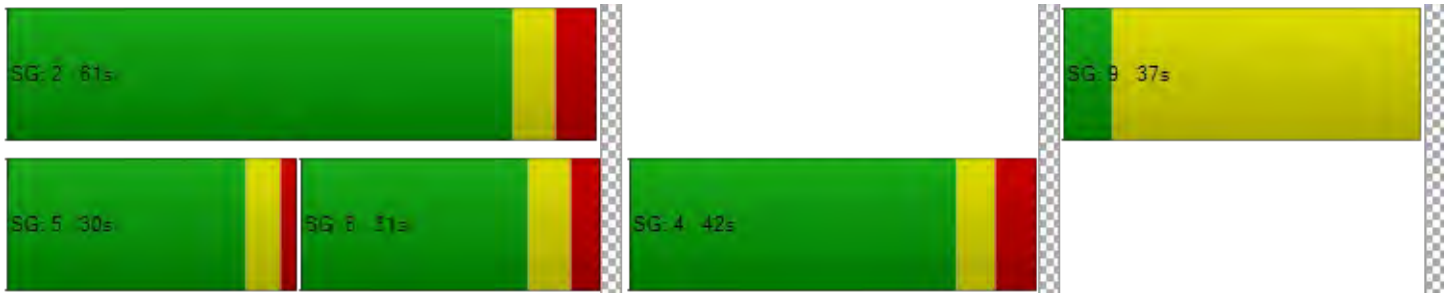
d_M, Delay for Movement [s/veh]	68.79	9.25	10.82	0.00	22.33	0.00	64.29	63.86	65.84	0.00	0.00	0.00
Movement LOS	E	A	B		C		E	E	E			
d_A, Approach Delay [s/veh]	20.95			22.33			64.48			0.00		
Approach LOS	C			C			E			A		
d_I, Intersection Delay [s/veh]	31.19											
Intersection LOS	C											
Intersection V/C	0.451											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	61.29	61.29	61.29	61.29
l_p,int, Pedestrian LOS Score for Intersection	2.776	2.716	2.363	2.066
Crosswalk LOS	C	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	751	337	484	0
d_b, Bicycle Delay [s]	27.36	48.41	40.31	70.00
l_b,int, Bicycle LOS Score for Intersection	2.749	2.003	2.044	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	-	2	-	9	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 10 Concept 2 PM
4/27/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Pleasant Hill Road & Stanley Boulevard/Deer Hill Road	Signalized	HCM 6th Edition	SWB Right	1.046	168.1	F
11	Pleasant Hill Rd & Mt Diablo Boulevard	Signalized	HCM 6th Edition	EB Right	0.577	44.8	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Pleasant Hill Road & Stanley Boulevard/Deer Hill Road

Control Type:	Signalized	Delay (sec / veh):	168.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.046

Intersection Setup

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	185.00	100.00	100.00	450.00	100.00	260.00	175.00	100.00	186.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Base Volume Input [veh/h]	818	131	30	226	98	164	39	1568	188	105	756	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	0.00	0.00	2.00	0.00	1.00	0.00	1.00	1.00	2.00	1.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	44	7	2	0	0	0	0	107	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	862	138	32	226	98	164	39	1675	188	105	756	239
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	222	36	8	58	25	42	10	432	48	27	195	62
Total Analysis Volume [veh/h]	889	142	33	233	101	169	40	1727	194	108	779	246
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	11			0			11			0		
v_di, Inbound Pedestrian Volume crossing m	11			0			11			0		
v_co, Outbound Pedestrian Volume crossing	1			20			20			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			20			20			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			2			1			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	180
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	9	0	7	10	0	8	10	0
Maximum Green [s]	0	30	0	0	30	0	25	60	0	25	60	0
Amber [s]	0.0	4.1	0.0	0.0	3.6	0.0	3.0	4.1	0.0	3.0	4.1	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	35	0	0	18	0	11	80	0	12	81	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.0	0.0	1.5	5.0	0.0	1.5	4.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk												
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	0.0	2.6	0.0	2.0	3.1	0.0	2.0	3.1	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	9
Pedestrian Walk [s]	5
Pedestrian Clearance [s]	30

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	C	L	C	R
C, Cycle Length [s]	180	180	180	180	180	180	180	180	180	180	180
L, Total Lost Time per Cycle [s]	5.10	5.10	4.60	4.60	4.60	4.00	5.10	5.10	4.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	2.60	2.60	2.60	2.00	3.10	3.10	2.00	3.10	3.10
g_i, Effective Green Time [s]	47	47	13	13	13	6	64	64	8	66	66
g / C, Green / Cycle	0.26	0.26	0.07	0.07	0.07	0.03	0.36	0.36	0.04	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.25	0.10	0.09	0.09	0.11	0.02	0.51	0.53	0.06	0.22	0.15
s, saturation flow rate [veh/h]	3486	1829	1781	1862	1573	1810	1885	1811	1781	3589	1594
c, Capacity [veh/h]	918	481	133	139	117	61	675	648	79	1323	588
d1, Uniform Delay [s]	65.57	54.02	83.30	83.30	83.18	85.95	57.79	57.79	86.00	45.81	42.31
k, delay calibration	0.04	0.04	0.05	0.05	0.13	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.81	0.17	110.47	110.19	211.13	4.41	199.20	224.96	170.55	1.93	2.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.97	0.36	1.23	1.23	1.44	0.66	1.42	1.48	1.36	0.59	0.42
d, Delay for Lane Group [s/veh]	69.38	54.19	193.77	193.49	294.31	90.36	256.99	282.74	256.55	47.73	44.49
Lane Group LOS	E	D	F	F	F	F	F	F	F	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	20.73	6.59	10.28	10.74	12.35	1.93	68.06	70.03	7.47	14.63	8.69
50th-Percentile Queue Length [ft/ln]	518.25	164.72	257.11	268.54	308.84	48.33	1701.50	1750.83	186.72	365.79	217.15
95th-Percentile Queue Length [veh/ln]	28.20	10.80	16.64	17.26	20.20	3.48	100.30	104.59	12.89	20.90	13.52
95th-Percentile Queue Length [ft/ln]	704.92	269.97	415.92	431.46	504.96	86.99	2507.55	2614.85	322.13	522.62	337.98

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	69.38	54.19	54.19	193.69	193.49	294.31	90.36	268.42	282.74	256.55	47.73	44.49
Movement LOS	E	D	D	F	F	F	F	F	F	F	D	D
d_A, Approach Delay [s/veh]	66.88			227.46			266.20			66.93		
Approach LOS	E			F			F			E		
d_I, Intersection Delay [s/veh]	168.08											
Intersection LOS	F											
Intersection V/C	1.046											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	17.13	297.83	0.00
d_p, Pedestrian Delay [s]	81.23	81.23	81.23	81.23
l_p,int, Pedestrian LOS Score for Intersection	2.616	2.396	2.920	3.123
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	332	149	832	843
d_b, Bicycle Delay [s]	62.58	77.18	30.70	30.13
l_b,int, Bicycle LOS Score for Intersection	3.315	2.390	3.177	2.494
Bicycle LOS	C	B	C	B

Sequence

Ring 1	1	2	4	-	9	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Pleasant Hill Rd & Mt Diablo Boulevard

Control Type:	Signalized	Delay (sec / veh):	44.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.577

Intersection Setup

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Base Volume Input [veh/h]	211	590	343	0	509	381	260	490	261	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.70	3.50	2.00	1.70	1.60	1.60	1.80	0.50	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	590	343	0	509	381	260	490	261	0	0	0
Peak Hour Factor	0.9100	0.9100	0.9100	1.0000	0.9100	0.9100	0.9100	0.9100	0.9100	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	162	94	0	140	105	71	135	72	0	0	0
Total Analysis Volume [veh/h]	232	648	377	0	559	419	286	538	287	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	6			0			6			0		
v_di, Inbound Pedestrian Volume crossing m	6			0			6			0		
v_co, Outbound Pedestrian Volume crossing	10			0			0			11		
v_ci, Inbound Pedestrian Volume crossing mi	11			0			0			10		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			3			5			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	135
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	4	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	7	0	0	7	0	0	9	0	0	0	0
Maximum Green [s]	35	35	0	0	20	0	0	21	0	0	0	0
Amber [s]	3.7	4.4	0.0	0.0	4.4	0.0	0.0	4.1	0.0	0.0	0.0	0.0
All red [s]	1.5	4.0	0.0	0.0	3.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0
Split [s]	24	55	0	0	31	0	0	43	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	16	0	0	28	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	3.2	6.4	0.0	0.0	5.4	0.0	0.0	6.1	0.0	0.0	0.0	0.0
Minimum Recall	No	Yes			Yes			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	0.0	20.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	9
Pedestrian Walk [s]	5
Pedestrian Clearance [s]	32

Lane Group Calculations

Lane Group	L	C	R	C	L	C	C	
C, Cycle Length [s]	135	135	135	135	135	135	135	
L, Total Lost Time per Cycle [s]	5.20	8.40	8.40	7.40	8.10	8.10	8.10	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	3.20	6.40	6.40	5.40	6.10	6.10	6.10	
g_i, Effective Green Time [s]	19	67	67	44	34	34	34	
g / C, Green / Cycle	0.14	0.50	0.50	0.33	0.25	0.25	0.25	
(v / s)_i Volume / Saturation Flow Rate	0.13	0.18	0.24	0.16	0.16	0.23	0.24	
s, saturation flow rate [veh/h]	1795	3569	1550	3569	1787	1873	1619	
c, Capacity [veh/h]	250	1776	771	1168	448	470	406	
d1, Uniform Delay [s]	57.43	20.82	22.42	36.22	45.11	49.43	49.82	
k, delay calibration	0.04	0.50	0.50	0.50	0.06	0.29	0.31	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	6.23	0.58	2.21	1.41	0.92	18.60	25.44	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.93	0.36	0.49	0.48	0.64	0.93	0.95	
d, Delay for Lane Group [s/veh]	63.66	21.40	24.63	37.63	46.03	68.04	75.26	
Lane Group LOS	E	C	C	D	D	E	E	
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	8.26	6.45	8.38	7.63	8.70	16.81	15.72	
50th-Percentile Queue Length [ft/ln]	206.59	161.28	209.46	190.65	217.47	420.28	393.03	
95th-Percentile Queue Length [veh/ln]	12.98	10.62	13.13	12.16	13.54	23.54	22.22	
95th-Percentile Queue Length [ft/ln]	324.46	265.42	328.13	303.88	338.40	588.38	555.60	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.66	21.40	24.63	0.00	37.63	0.00	46.03	69.39	75.26	0.00	0.00	0.00
Movement LOS	E	C	C		D		D	E	E			
d_A, Approach Delay [s/veh]	30.17			37.63			64.89			0.00		
Approach LOS	C			D			E			A		
d_I, Intersection Delay [s/veh]	44.77											
Intersection LOS	D											
Intersection V/C	0.577											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	58.80	58.80	58.80	58.80
l_p,int, Pedestrian LOS Score for Intersection	2.773	2.716	2.479	2.182
Crosswalk LOS	C	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	690	350	517	0
d_b, Bicycle Delay [s]	28.97	46.03	37.20	67.50
l_b,int, Bicycle LOS Score for Intersection	2.597	2.021	2.476	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	-	2	-	9	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix F

Terraces Project Sensitivity Analysis – Vistro Worksheets

Vistro File: H:\...\26991_trafficops_20220906.vistro
Report File: H:\...\Existing AM Plus Terraces.pdf

Scenario 12 12 Existing AM - Plus Terraces
1/9/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Pleasant Hill Road & Stanley Boulevard/Deer Hill Road	Signalized	HCM 6th Edition	SWB Left	0.907	50.2	D
11	Pleasant Hill Rd & Mt Diablo Boulevard	Signalized	HCM 6th Edition	NB Left	0.467	22.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Pleasant Hill Road & Stanley Boulevard/Deer Hill Road

Control Type:	Signalized	Delay (sec / veh):	50.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.907

Intersection Setup

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	185.00	100.00	100.00	257.00	100.00	260.00	175.00	100.00	186.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Base Volume Input [veh/h]	291	71	41	238	128	99	139	821	268	151	1500	445
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	0.00	0.00	1.00	0.00	4.00	1.00	2.00	0.00	0.00	2.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	16	10	27	2	2	0	0	0	0	0	2	3
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	307	81	68	240	130	99	139	821	268	151	1502	448
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	90	24	20	71	38	29	41	241	79	44	442	132
Total Analysis Volume [veh/h]	361	95	80	282	153	116	164	966	315	178	1767	527
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	11			0			12			0		
v_di, Inbound Pedestrian Volume crossing m	12			0			11			0		
v_co, Outbound Pedestrian Volume crossing	0			3			2			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			3			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			1			1			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	75.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	9	0	7	10	0	8	10	0
Maximum Green [s]	0	30	0	0	30	0	25	60	0	25	60	0
Amber [s]	0.0	4.1	0.0	0.0	3.6	0.0	3.0	4.1	0.0	3.0	4.1	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	33	0	0	27	0	21	59	0	31	69	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.0	0.0	1.5	5.0	0.0	1.5	4.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	0.0	2.6	0.0	2.0	3.1	0.0	2.0	3.1	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	150	150	150	150	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	5.10	5.10	4.60	4.60	4.60	4.00	5.10	5.10	4.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	2.60	2.60	2.60	2.00	3.10	3.10	2.00	3.10	3.10
g_i, Effective Green Time [s]	21	21	20	20	20	16	74	74	17	75	75
g / C, Green / Cycle	0.14	0.14	0.13	0.13	0.13	0.10	0.49	0.49	0.11	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.10	0.10	0.12	0.12	0.08	0.09	0.27	0.20	0.10	0.50	0.34
s, saturation flow rate [veh/h]	3486	1701	1795	1871	1543	1795	3560	1573	1810	3560	1568
c, Capacity [veh/h]	486	237	238	248	204	186	1749	773	202	1777	782
d1, Uniform Delay [s]	61.95	61.91	64.04	64.03	60.96	66.33	26.65	24.13	65.66	37.36	28.04
k, delay calibration	0.04	0.04	0.08	0.08	0.04	0.05	0.50	0.50	0.05	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.85	1.69	8.99	8.61	0.92	6.09	1.26	1.59	5.78	20.07	4.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.74	0.90	0.90	0.57	0.88	0.55	0.41	0.88	0.99	0.67
d, Delay for Lane Group [s/veh]	62.80	63.59	73.03	72.65	61.88	72.41	27.92	25.72	71.44	57.43	32.65
Lane Group LOS	E	E	E	E	E	E	C	C	E	E	C
Critical Lane Group	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.70	6.54	8.64	8.97	4.22	6.54	12.43	7.50	7.07	36.48	15.11
50th-Percentile Queue Length [ft/ln]	167.45	163.62	215.90	224.22	105.50	163.39	310.80	187.51	176.64	911.93	377.85
95th-Percentile Queue Length [veh/ln]	10.94	10.74	13.46	13.88	7.59	10.73	18.21	11.99	11.43	46.38	21.49
95th-Percentile Queue Length [ft/ln]	273.56	268.51	336.38	347.01	189.73	268.21	455.36	299.80	285.63	1159.56	537.24

Movement, Approach, & Intersection Results

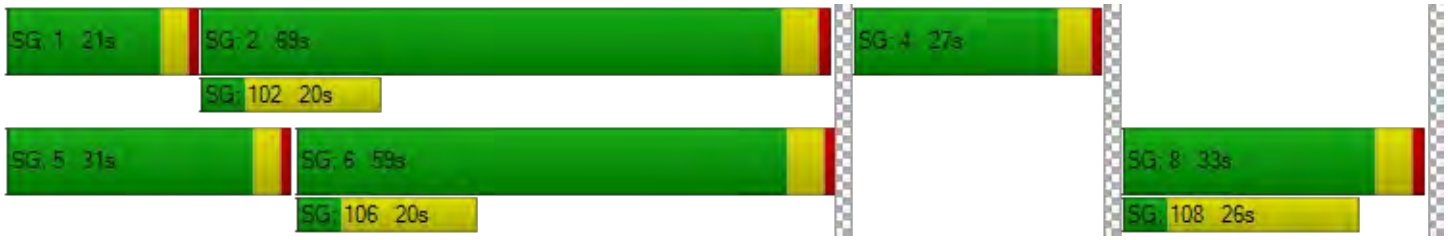
d_M, Delay for Movement [s/veh]	62.80	63.59	63.59	72.94	72.65	61.88	72.41	27.92	25.72	71.44	57.43	32.65
Movement LOS	E	E	E	E	E	E	E	C	C	E	E	C
d_A, Approach Delay [s/veh]	63.06			70.53			32.49			53.16		
Approach LOS	E			E			C			D		
d_I, Intersection Delay [s/veh]	50.16											
Intersection LOS	D											
Intersection V/C	0.907											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	22.4
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	302.54	0.00
d_p, Pedestrian Delay [s]	66.27	66.27	66.27	54.27
l_p,int, Pedestrian LOS Score for Intersection	2.493	2.434	3.059	3.107
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	372	299	719	852
d_b, Bicycle Delay [s]	49.74	54.30	30.80	24.74
l_b,int, Bicycle LOS Score for Intersection	2.444	2.469	2.752	3.599
Bicycle LOS	B	B	C	D

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Pleasant Hill Rd & Mt Diablo Boulevard

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.467

Intersection Setup

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Base Volume Input [veh/h]	256	694	406	0	506	561	191	228	133	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	0.70	0.60	2.00	4.20	4.20	0.70	4.40	2.80	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	5	0	0	20	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	256	699	406	0	526	561	191	228	133	0	0	0
Peak Hour Factor	0.9400	0.9400	0.9400	1.0000	0.9400	0.9400	0.9400	0.9400	0.9400	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	68	186	108	0	140	149	51	61	35	0	0	0
Total Analysis Volume [veh/h]	272	744	432	0	560	597	203	243	141	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	4			0			3			0		
v_di, Inbound Pedestrian Volume crossing m	3			0			4			0		
v_co, Outbound Pedestrian Volume crossing	3			1			1			4		
v_ci, Inbound Pedestrian Volume crossing mi	4			1			1			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	6			1			5			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	4	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	7	0	0	7	0	0	9	0	0	0	0
Maximum Green [s]	35	35	0	0	20	0	0	21	0	0	0	0
Amber [s]	3.7	4.4	0.0	0.0	4.4	0.0	0.0	4.1	0.0	0.0	0.0	0.0
All red [s]	1.5	4.0	0.0	0.0	3.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0
Split [s]	36	68	0	0	32	0	0	42	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	16	0	0	28	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	3.2	6.4	0.0	0.0	5.4	0.0	0.0	6.1	0.0	0.0	0.0	0.0
Minimum Recall	No	Yes			Yes			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	0.0	20.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	L	C	C	
C, Cycle Length [s]	110	110	110	110	110	110	110	
L, Total Lost Time per Cycle [s]	5.20	8.40	8.40	7.40	8.10	8.10	8.10	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	3.20	6.40	6.40	5.40	6.10	6.10	6.10	
g_i, Effective Green Time [s]	19	77	77	55	16	16	16	
g / C, Green / Cycle	0.17	0.70	0.70	0.50	0.15	0.15	0.15	
(v / s)_i Volume / Saturation Flow Rate	0.15	0.21	0.27	0.16	0.11	0.11	0.12	
s, saturation flow rate [veh/h]	1775	3598	1585	3498	1800	1834	1569	
c, Capacity [veh/h]	300	2526	1113	1732	266	271	232	
d1, Uniform Delay [s]	44.87	6.15	6.67	16.69	45.02	44.90	45.16	
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.04	0.04	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	4.28	0.30	1.02	0.50	1.72	1.55	2.18	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.91	0.29	0.39	0.32	0.76	0.75	0.78	
d, Delay for Lane Group [s/veh]	49.15	6.45	7.69	17.19	46.73	46.44	47.34	
Lane Group LOS	D	A	A	B	D	D	D	
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	7.59	3.02	3.98	4.30	5.43	5.39	4.89	
50th-Percentile Queue Length [ft/ln]	189.73	75.40	99.59	107.41	135.66	134.71	122.37	
95th-Percentile Queue Length [veh/ln]	12.11	5.43	7.17	7.70	9.25	9.20	8.52	
95th-Percentile Queue Length [ft/ln]	302.68	135.72	179.27	192.39	231.17	229.88	213.08	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.15	6.45	7.69	0.00	17.19	0.00	46.73	46.59	47.34	0.00	0.00	0.00
Movement LOS	D	A	A		B		D	D	D			
d_A, Approach Delay [s/veh]	14.84			17.19			46.82			0.00		
Approach LOS	B			B			D			A		
d_I, Intersection Delay [s/veh]	22.58											
Intersection LOS	C											
Intersection V/C	0.467											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	0.00	44.55	44.55
l_p,int, Pedestrian LOS Score for Intersection	2.766	0.000	2.350	2.053
Crosswalk LOS	C	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1084	447	616	0
d_b, Bicycle Delay [s]	11.58	33.17	26.39	55.00
l_b,int, Bicycle LOS Score for Intersection	2.754	2.022	2.044	4.132
Bicycle LOS	C	B	B	D

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Report File: H:\...\Existing PM Plus Terraces.pdf

Scenario 13 13 Existing PM - Plus Terraces
1/9/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Pleasant Hill Road & Stanley Boulevard/Deer Hill Road	Signalized	HCM 6th Edition	NWB Thru	1.027	83.6	F
11	Pleasant Hill Rd & Mt Diablo Boulevard	Signalized	HCM 6th Edition	EB Right	0.612	28.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Pleasant Hill Road & Stanley Boulevard/Deer Hill Road

Control Type:	Signalized	Delay (sec / veh):	83.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.027

Intersection Setup

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	185.00	100.00	100.00	257.00	100.00	260.00	175.00	100.00	186.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Base Volume Input [veh/h]	818	131	30	226	98	164	115	1568	188	105	756	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	0.00	0.00	2.00	0.00	1.00	0.00	1.00	1.00	2.00	1.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	6	6	22	3	7	0	0	0	0	0	8	9
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	44	7	2	0	0	0	0	107	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	868	144	54	229	105	164	115	1675	188	105	764	248
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	224	37	14	59	27	42	30	432	48	27	197	64
Total Analysis Volume [veh/h]	895	148	56	236	108	169	119	1727	194	108	788	256
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	11			0			11			0		
v_di, Inbound Pedestrian Volume crossing m	11			0			11			0		
v_co, Outbound Pedestrian Volume crossing	1			20			20			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			20			20			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			2			1			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	135
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	9	0	7	10	0	8	10	0
Maximum Green [s]	0	30	0	0	30	0	25	60	0	25	60	0
Amber [s]	0.0	4.1	0.0	0.0	3.6	0.0	3.0	4.1	0.0	3.0	4.1	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	40	0	0	20	0	23	62	0	13	39	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.0	0.0	1.5	5.0	0.0	1.5	4.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	0.0	2.6	0.0	2.0	3.1	0.0	2.0	3.1	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	20.0	0.0	0.0	20.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	135	135	135	135	135	135	135	135	135	135	135
L, Total Lost Time per Cycle [s]	5.10	5.10	4.60	4.60	4.60	4.00	5.10	5.10	4.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	2.60	2.60	2.60	2.00	3.10	3.10	2.00	3.10	3.10
g_i, Effective Green Time [s]	38	38	17	17	17	11	53	53	9	51	51
g / C, Green / Cycle	0.28	0.28	0.12	0.12	0.12	0.08	0.39	0.39	0.07	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.26	0.11	0.09	0.09	0.11	0.07	0.48	0.13	0.06	0.22	0.16
s, saturation flow rate [veh/h]	3486	1799	1781	1864	1577	1810	3589	1488	1781	3589	1577
c, Capacity [veh/h]	975	503	220	230	194	144	1404	582	119	1358	597
d1, Uniform Delay [s]	47.12	39.50	57.29	57.29	58.00	61.23	41.10	28.47	62.60	33.42	31.00
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.59	0.20	2.11	2.01	4.58	4.56	110.08	1.54	9.83	1.81	2.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.92	0.41	0.77	0.77	0.87	0.83	1.23	0.33	0.91	0.58	0.43
d, Delay for Lane Group [s/veh]	48.71	39.70	59.40	59.30	62.58	65.80	151.18	30.01	72.43	35.24	33.24
Lane Group LOS	D	D	E	E	E	E	F	C	E	D	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	14.74	5.58	5.70	5.95	5.91	4.21	44.46	4.65	4.02	10.65	6.58
50th-Percentile Queue Length [ft/ln]	368.54	139.48	142.38	148.86	147.84	105.32	1111.45	116.30	100.42	266.30	164.62
95th-Percentile Queue Length [veh/ln]	21.04	9.45	9.61	9.96	9.90	7.58	63.53	8.19	7.23	16.00	10.79
95th-Percentile Queue Length [ft/ln]	525.95	236.32	240.22	248.90	247.54	189.47	1588.14	204.73	180.75	400.11	269.83

Movement, Approach, & Intersection Results

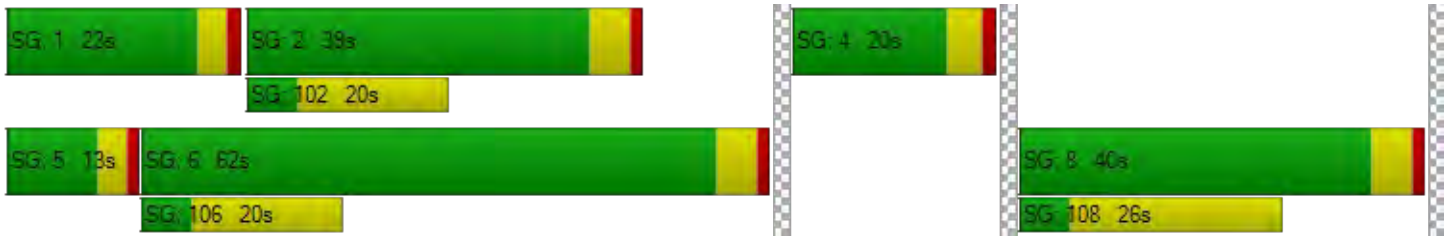
d_M, Delay for Movement [s/veh]	48.71	39.70	39.70	59.37	59.30	62.58	65.80	151.18	30.01	72.43	35.24	33.24
Movement LOS	D	D	D	E	E	E	E	F	C	E	D	C
d_A, Approach Delay [s/veh]	47.04			60.41			134.68			38.28		
Approach LOS	D			E			F			D		
d_I, Intersection Delay [s/veh]	83.58											
Intersection LOS	F											
Intersection V/C	1.027											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	15.4
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	1010.00	73.45	385.39	0.00
d_p, Pedestrian Delay [s]	58.80	58.80	58.80	52.98
l_p,int, Pedestrian LOS Score for Intersection	2.537	2.386	2.981	3.110
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	517	228	843	502
d_b, Bicycle Delay [s]	37.11	53.03	22.60	37.89
l_b,int, Bicycle LOS Score for Intersection	3.373	2.406	3.243	2.510
Bicycle LOS	C	B	C	B

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 11: Pleasant Hill Rd & Mt Diablo Boulevard

Control Type:	Signalized	Delay (sec / veh):	28.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.612

Intersection Setup

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Base Volume Input [veh/h]	211	590	343	0	509	381	260	490	261	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.70	3.50	2.00	1.70	1.60	1.60	1.80	0.50	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	20	0	0	11	2	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	610	343	0	520	383	260	490	261	0	0	0
Peak Hour Factor	0.9100	0.9100	0.9100	1.0000	0.9100	0.9100	0.9100	0.9100	0.9100	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	168	94	0	143	105	71	135	72	0	0	0
Total Analysis Volume [veh/h]	232	670	377	0	571	421	286	538	287	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	6			0			6			0		
v_di, Inbound Pedestrian Volume crossing m	6			0			6			0		
v_co, Outbound Pedestrian Volume crossing	10			0			0			11		
v_ci, Inbound Pedestrian Volume crossing mi	11			0			0			10		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			3			5			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	85
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	4	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	7	0	0	7	0	0	9	0	0	0	0
Maximum Green [s]	35	35	0	0	20	0	0	21	0	0	0	0
Amber [s]	3.7	4.4	0.0	0.0	4.4	0.0	0.0	4.1	0.0	0.0	0.0	0.0
All red [s]	1.5	4.0	0.0	0.0	3.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0
Split [s]	29	55	0	0	25	0	0	30	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	16	0	0	28	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	3.2	6.4	0.0	0.0	5.4	0.0	0.0	6.1	0.0	0.0	0.0	0.0
Minimum Recall	No	Yes			Yes			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	0.0	20.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	L	C	C	
C, Cycle Length [s]	88	88	88	88	88	88	88	
L, Total Lost Time per Cycle [s]	5.20	8.40	8.40	7.40	8.10	8.10	8.10	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	3.20	6.40	6.40	5.40	6.10	6.10	6.10	
g_i, Effective Green Time [s]	13	46	46	28	23	23	23	
g / C, Green / Cycle	0.15	0.52	0.52	0.32	0.26	0.26	0.26	
(v / s)_i Volume / Saturation Flow Rate	0.13	0.19	0.24	0.16	0.16	0.23	0.24	
s, saturation flow rate [veh/h]	1795	3569	1550	3569	1787	1873	1618	
c, Capacity [veh/h]	268	1850	804	1147	465	487	421	
d1, Uniform Delay [s]	36.57	12.57	13.43	24.13	28.68	31.43	31.68	
k, delay calibration	0.04	0.50	0.50	0.50	0.04	0.23	0.25	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	3.28	0.55	1.96	1.55	0.49	11.95	16.86	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.87	0.36	0.47	0.50	0.62	0.90	0.92	
d, Delay for Lane Group [s/veh]	39.84	13.12	15.40	25.67	29.18	43.38	48.54	
Lane Group LOS	D	B	B	C	C	D	D	
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	5.02	3.81	4.85	4.90	5.24	10.29	9.72	
50th-Percentile Queue Length [ft/ln]	125.47	95.22	121.23	122.55	131.00	257.25	243.02	
95th-Percentile Queue Length [veh/ln]	8.69	6.86	8.46	8.53	8.99	15.55	14.83	
95th-Percentile Queue Length [ft/ln]	217.32	171.39	211.52	213.32	224.85	388.76	370.85	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.84	13.12	15.40	0.00	25.67	0.00	29.18	44.35	48.54	0.00	0.00	0.00
Movement LOS	D	B	B		C		C	D	D			
d_A, Approach Delay [s/veh]	18.64			25.67			41.53			0.00		
Approach LOS	B			C			D			A		
d_I, Intersection Delay [s/veh]	28.58											
Intersection LOS	C											
Intersection V/C	0.612											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	35.46	0.00	33.69	33.69
l_p,int, Pedestrian LOS Score for Intersection	2.755	0.000	2.457	2.159
Crosswalk LOS	C	F	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1059	400	498	0
d_b, Bicycle Delay [s]	9.75	28.20	24.89	44.00
l_b,int, Bicycle LOS Score for Intersection	2.615	2.031	2.476	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Vistro File: H:\...\26991_trafficops_20220906.vistro
Report File: H:\...\Concept 1 AM Plus Terraces.pdf

Scenario 14 Concept 1 AM - Plus Terraces
1/9/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Pleasant Hill Road & Stanley Boulevard/Deer Hill Road	Signalized	HCM 6th Edition	SWB Thru	0.945	54.3	D
11	Pleasant Hill Rd & Mt Diablo Boulevard	Signalized	HCM 6th Edition	EB Left	0.466	27.4	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Pleasant Hill Road & Stanley Boulevard/Deer Hill Road

Control Type:	Signalized	Delay (sec / veh):	54.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.945

Intersection Setup

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	185.00	100.00	100.00	450.00	100.00	260.00	175.00	100.00	186.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Base Volume Input [veh/h]	291	71	41	238	128	99	139	821	268	151	1500	445
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	0.00	0.00	1.00	0.00	4.00	1.00	2.00	0.00	0.00	2.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	16	10	27	2	2	0	0	0	0	0	2	3
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	307	81	68	240	130	99	139	821	268	151	1502	448
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	90	24	20	71	38	29	41	241	79	44	442	132
Total Analysis Volume [veh/h]	361	95	80	282	153	116	164	966	315	178	1767	527
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	11			0			12			0		
v_di, Inbound Pedestrian Volume crossing m	12			0			11			0		
v_co, Outbound Pedestrian Volume crossing	0			3			2			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			3			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			1			1			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	75.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	9	0	7	10	0	8	10	0
Maximum Green [s]	0	30	0	0	30	0	25	60	0	25	60	0
Amber [s]	0.0	4.1	0.0	0.0	3.6	0.0	3.0	4.1	0.0	3.0	4.1	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	24	0	17	74	0	20	77	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.0	0.0	1.5	5.0	0.0	1.5	4.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	0.0	2.6	0.0	2.0	3.1	0.0	2.0	3.1	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	150	150	150	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	5.10	5.10	4.60	4.60	4.00	5.10	5.10	4.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	2.60	2.60	2.00	3.10	3.10	2.00	3.10	3.10
g_i, Effective Green Time [s]	21	21	19	19	13	75	75	16	78	78
g / C, Green / Cycle	0.14	0.14	0.13	0.13	0.09	0.50	0.50	0.11	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.10	0.10	0.08	0.15	0.09	0.35	0.37	0.10	0.50	0.34
s, saturation flow rate [veh/h]	3486	1701	3486	1754	1795	1870	1691	1810	3560	1568
c, Capacity [veh/h]	488	238	451	227	156	933	844	193	1847	813
d1, Uniform Delay [s]	61.89	61.85	61.86	65.30	68.50	29.16	29.72	66.38	34.48	25.88
k, delay calibration	0.04	0.04	0.04	0.23	0.05	0.50	0.50	0.08	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.84	1.66	0.53	102.50	37.92	4.55	5.62	13.27	12.93	3.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.74	0.63	1.19	1.05	0.71	0.73	0.92	0.96	0.65
d, Delay for Lane Group [s/veh]	62.73	63.51	62.39	167.80	106.42	33.72	35.35	79.65	47.41	29.85
Lane Group LOS	E	E	E	F	F	C	D	E	D	C
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.70	6.54	5.16	15.16	7.63	19.60	18.88	7.49	33.39	14.36
50th-Percentile Queue Length [ft/ln]	167.40	163.55	128.91	379.03	190.75	489.89	472.06	187.26	834.82	359.08
95th-Percentile Queue Length [veh/ln]	10.94	10.74	8.88	23.16	12.40	26.86	26.01	11.98	42.87	20.58
95th-Percentile Queue Length [ft/ln]	273.49	268.42	222.01	579.12	309.90	671.38	650.22	299.47	1071.74	514.46

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.73	63.51	63.51	62.39	167.80	167.80	106.42	34.23	35.35	79.65	47.41	29.85
Movement LOS	E	E	E	E	F	F	F	C	D	E	D	C
d_A, Approach Delay [s/veh]	62.99			113.85			42.66			45.99		
Approach LOS	E			F			D			D		
d_I, Intersection Delay [s/veh]	54.32											
Intersection LOS	D											
Intersection V/C	0.945											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	19.4
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	302.54	0.00
d_p, Pedestrian Delay [s]	66.27	66.27	66.27	56.85
l_p,int, Pedestrian LOS Score for Intersection	2.493	2.434	3.022	3.108
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	359	259	919	959
d_b, Bicycle Delay [s]	50.56	56.88	21.94	20.35
l_b,int, Bicycle LOS Score for Intersection	2.444	2.469	2.752	3.599
Bicycle LOS	B	B	C	D

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Pleasant Hill Rd & Mt Diablo Boulevard

Control Type:	Signalized	Delay (sec / veh):	27.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.466

Intersection Setup

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Base Volume Input [veh/h]	256	694	406	0	506	561	191	228	133	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	0.70	0.60	2.00	4.20	4.20	0.70	4.40	2.80	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	5	0	0	20	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	256	699	406	0	526	561	191	228	133	0	0	0
Peak Hour Factor	0.9400	0.9400	0.9400	1.0000	0.9400	0.9400	0.9400	0.9400	0.9400	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	68	186	108	0	140	149	51	61	35	0	0	0
Total Analysis Volume [veh/h]	272	744	432	0	560	597	203	243	141	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	4			13			3			12		
v_di, Inbound Pedestrian Volume crossing m	3			12			4			13		
v_co, Outbound Pedestrian Volume crossing	3			1			1			4		
v_ci, Inbound Pedestrian Volume crossing mi	4			1			1			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	6			1			5			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	7	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	6	7	0	0	7	0	5	9	0	0	5	0
Maximum Green [s]	35	35	0	0	20	0	30	21	0	0	30	0
Amber [s]	3.7	4.4	0.0	0.0	4.4	0.0	3.7	4.1	0.0	0.0	3.0	0.0
All red [s]	1.5	4.0	0.0	0.0	3.0	0.0	1.5	4.0	0.0	0.0	1.0	0.0
Split [s]	22	53	0	0	31	0	18	57	0	0	39	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	16	0	0	28	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.2	6.4	0.0	0.0	5.4	0.0	3.2	6.1	0.0	0.0	2.0	0.0
Minimum Recall	No	Yes			Yes		No	No			No	
Maximum Recall	No	No			No		No	No			No	
Pedestrian Recall	No	No			No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	0.0	20.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	L	C	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.20	8.40	8.40	7.40	5.20	8.10	8.10	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.20	6.40	6.40	5.40	3.20	6.10	6.10	2.00
g_i, Effective Green Time [s]	17	68	68	47	13	25	25	11
g / C, Green / Cycle	0.15	0.62	0.62	0.43	0.12	0.23	0.23	0.10
(v / s)_i Volume / Saturation Flow Rate	0.15	0.21	0.27	0.16	0.11	0.11	0.11	0.00
s, saturation flow rate [veh/h]	1775	3598	1585	3498	1800	1834	1579	1870
c, Capacity [veh/h]	271	2228	981	1498	209	423	364	195
d1, Uniform Delay [s]	46.60	10.05	10.90	21.40	48.41	36.59	36.78	0.00
k, delay calibration	0.04	0.50	0.50	0.50	0.11	0.04	0.04	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.23	0.40	1.43	0.72	22.41	0.31	0.39	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.00	0.33	0.44	0.37	0.97	0.48	0.50	0.00
d, Delay for Lane Group [s/veh]	62.83	10.45	12.34	22.11	70.81	36.90	37.17	0.00
Lane Group LOS	F	B	B	C	E	D	D	A
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.58	4.22	5.54	5.00	6.82	4.74	4.27	0.00
50th-Percentile Queue Length [ft/ln]	214.59	105.40	138.61	125.04	170.53	118.41	106.85	0.00
95th-Percentile Queue Length [veh/ln]	13.41	7.58	9.41	8.67	11.10	8.31	7.66	0.00
95th-Percentile Queue Length [ft/ln]	335.21	189.59	235.15	216.73	277.62	207.64	191.62	0.00

Movement, Approach, & Intersection Results

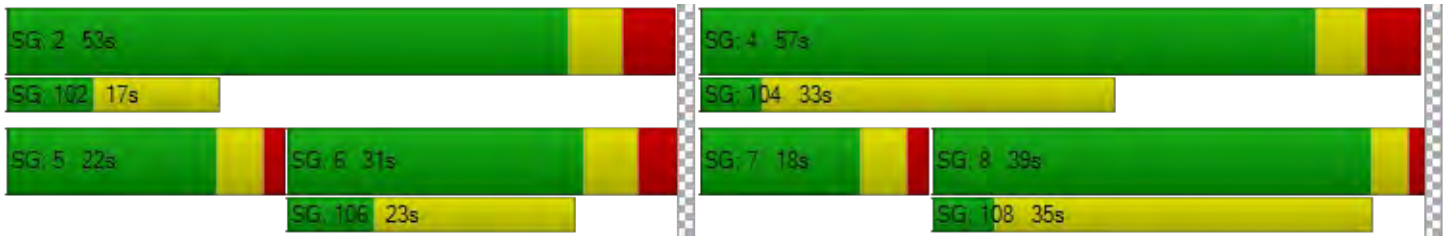
d_M, Delay for Movement [s/veh]	62.83	10.45	12.34	0.00	22.11	0.00	70.81	36.95	37.17	0.00	0.00	0.00
Movement LOS	F	B	B		C		E	D	D		A	
d_A, Approach Delay [s/veh]	20.85			22.11			48.71			0.00		
Approach LOS	C			C			D			A		
d_I, Intersection Delay [s/veh]	27.43											
Intersection LOS	C											
Intersection V/C	0.466											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	284.35	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	44.55	44.55
l_p,int, Pedestrian LOS Score for Intersection	2.766	2.709	2.350	2.169
Crosswalk LOS	C	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	811	429	889	636
d_b, Bicycle Delay [s]	19.50	33.95	17.01	25.57
l_b,int, Bicycle LOS Score for Intersection	2.754	2.022	2.044	1.560
Bicycle LOS	C	B	B	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 15 Concept 1 PM - Plus Terraces
1/9/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Pleasant Hill Road & Stanley Boulevard/Deer Hill Road	Signalized	HCM 6th Edition	SWB Right	1.154	108.8	F
11	Pleasant Hill Rd & Mt Diablo Boulevard	Signalized	HCM 6th Edition	EB Left	0.590	32.5	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Pleasant Hill Road & Stanley Boulevard/Deer Hill Road

Control Type:	Signalized	Delay (sec / veh):	108.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.154

Intersection Setup

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	185.00	100.00	100.00	450.00	100.00	260.00	175.00	100.00	186.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Base Volume Input [veh/h]	818	131	30	226	98	164	115	1568	188	105	756	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	0.00	0.00	2.00	0.00	1.00	0.00	1.00	1.00	2.00	1.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	6	6	22	3	7	0	0	0	0	0	8	9
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	44	7	2	0	0	0	0	107	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	868	144	54	229	105	164	115	1675	188	105	764	248
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	224	37	14	59	27	42	30	432	48	27	197	64
Total Analysis Volume [veh/h]	895	148	56	236	108	169	119	1727	194	108	788	256
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	11			0			11			0		
v_di, Inbound Pedestrian Volume crossing m	11			0			11			0		
v_co, Outbound Pedestrian Volume crossing	1			20			20			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			20			20			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			2			1			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	135
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	9	0	7	10	0	8	10	0
Maximum Green [s]	0	30	0	0	30	0	25	60	0	25	60	0
Amber [s]	0.0	4.1	0.0	0.0	3.6	0.0	3.0	4.1	0.0	3.0	4.1	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	33	0	0	17	0	11	73	0	12	74	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.0	0.0	1.5	5.0	0.0	1.5	4.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	0.0	2.6	0.0	2.0	3.1	0.0	2.0	3.1	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	135	135	135	135	135	135	135	135	135	135
L, Total Lost Time per Cycle [s]	5.10	5.10	4.60	4.60	4.00	5.10	5.10	4.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	2.60	2.60	2.00	3.10	3.10	2.00	3.10	3.10
g_i, Effective Green Time [s]	37	37	12	12	7	58	58	8	59	59
g / C, Green / Cycle	0.28	0.28	0.09	0.09	0.05	0.43	0.43	0.06	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.26	0.11	0.07	0.16	0.07	0.51	0.54	0.06	0.22	0.16
s, saturation flow rate [veh/h]	3486	1799	3459	1696	1810	1885	1791	1781	3589	1578
c, Capacity [veh/h]	967	499	318	156	94	815	774	106	1578	694
d1, Uniform Delay [s]	47.44	39.77	59.75	61.30	64.00	38.31	38.31	63.50	27.14	25.17
k, delay calibration	0.04	0.04	0.04	0.20	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.77	0.20	1.30	360.30	127.60	92.91	119.03	30.86	1.13	1.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.41	0.74	1.78	1.27	1.18	1.24	1.02	0.50	0.37
d, Delay for Lane Group [s/veh]	49.21	39.97	61.05	421.60	191.60	131.23	157.35	94.36	28.27	26.68
Lane Group LOS	D	D	E	F	F	F	F	F	C	C
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	14.81	5.60	4.00	20.94	6.56	47.48	50.73	4.54	9.40	5.81
50th-Percentile Queue Length [ft/ln]	370.31	139.94	100.12	523.60	163.97	1186.89	1268.19	113.47	235.09	145.20
95th-Percentile Queue Length [veh/ln]	21.12	9.48	7.21	33.53	11.45	66.07	72.32	8.09	14.43	9.76
95th-Percentile Queue Length [ft/ln]	528.10	236.95	180.22	838.16	286.29	1651.87	1808.07	202.19	360.82	244.01

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	49.21	39.97	39.97	61.05	421.60	421.60	191.60	142.82	157.35	94.36	28.27	26.68
Movement LOS	D	D	D	E	F	F	F	F	F	F	C	C
d_A, Approach Delay [s/veh]	47.50			255.73			147.05			34.12		
Approach LOS	D			F			F			C		
d_I, Intersection Delay [s/veh]	108.80											
Intersection LOS	F											
Intersection V/C	1.154											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	12.4
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	1010.00	73.45	385.39	0.00
d_p, Pedestrian Delay [s]	58.80	58.80	58.80	55.67
l_p,int, Pedestrian LOS Score for Intersection	2.537	2.386	2.929	3.112
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	413	184	1006	1021
d_b, Bicycle Delay [s]	42.48	55.73	16.68	16.20
l_b,int, Bicycle LOS Score for Intersection	3.373	2.406	3.243	2.510
Bicycle LOS	C	B	C	B

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Pleasant Hill Rd & Mt Diablo Boulevard

Control Type:	Signalized	Delay (sec / veh):	32.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.590

Intersection Setup

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Base Volume Input [veh/h]	211	590	343	0	509	381	260	490	261	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.70	3.50	2.00	1.70	1.60	1.60	1.80	0.50	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	20	0	0	11	2	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	610	343	0	520	383	260	490	261	0	0	0
Peak Hour Factor	0.9100	0.9100	0.9100	1.0000	0.9100	0.9100	0.9100	0.9100	0.9100	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	168	94	0	143	105	71	135	72	0	0	0
Total Analysis Volume [veh/h]	232	670	377	0	571	421	286	538	287	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	6			13			6			12		
v_di, Inbound Pedestrian Volume crossing m	6			12			6			13		
v_co, Outbound Pedestrian Volume crossing	10			0			0			11		
v_ci, Inbound Pedestrian Volume crossing mi	11			0			0			10		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			3			5			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	7	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	Lead	-	-	-	-	-
Minimum Green [s]	6	7	0	0	7	0	5	9	0	0	5	0
Maximum Green [s]	35	35	0	0	20	0	30	21	0	0	30	0
Amber [s]	3.7	4.4	0.0	0.0	4.4	0.0	3.7	4.1	0.0	0.0	3.0	0.0
All red [s]	1.5	4.0	0.0	0.0	3.0	0.0	1.5	4.0	0.0	0.0	1.0	0.0
Split [s]	21	52	0	0	31	0	24	63	0	0	39	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	16	0	0	28	0	0	30	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	3.2	6.4	0.0	0.0	5.4	0.0	3.2	6.1	0.0	0.0	2.0	0.0
Minimum Recall	No	Yes			Yes		No	No			No	
Maximum Recall	No	No			No		No	No			No	
Pedestrian Recall	No	No			No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	0.0	20.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	C	L	C	C	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	5.20	8.40	8.40	7.40	5.20	8.10	8.10	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.20	6.40	6.40	5.40	3.20	6.10	6.10	2.00
g_i, Effective Green Time [s]	16	67	67	47	19	32	32	12
g / C, Green / Cycle	0.14	0.58	0.58	0.41	0.16	0.28	0.28	0.10
(v / s)_i Volume / Saturation Flow Rate	0.13	0.19	0.24	0.16	0.16	0.23	0.24	0.00
s, saturation flow rate [veh/h]	1795	3569	1550	3569	1787	1873	1620	1870
c, Capacity [veh/h]	247	2070	899	1450	292	518	448	193
d1, Uniform Delay [s]	49.14	12.48	13.34	24.14	47.91	39.27	39.58	0.00
k, delay calibration	0.04	0.50	0.50	0.50	0.15	0.04	0.04	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.27	0.42	1.44	0.80	24.31	1.48	2.01	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.32	0.42	0.39	0.98	0.84	0.87	0.00
d, Delay for Lane Group [s/veh]	56.40	12.90	14.78	24.94	72.22	40.75	41.58	0.00
Lane Group LOS	E	B	B	C	E	D	D	A
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.07	4.45	5.57	5.62	10.09	11.77	10.57	0.00
50th-Percentile Queue Length [ft/ln]	176.78	111.30	139.26	140.51	252.23	294.22	264.33	0.00
95th-Percentile Queue Length [veh/ln]	11.43	7.91	9.44	9.51	15.30	17.39	15.91	0.00
95th-Percentile Queue Length [ft/ln]	285.81	197.80	236.03	237.71	382.47	434.87	397.65	0.00

Movement, Approach, & Intersection Results

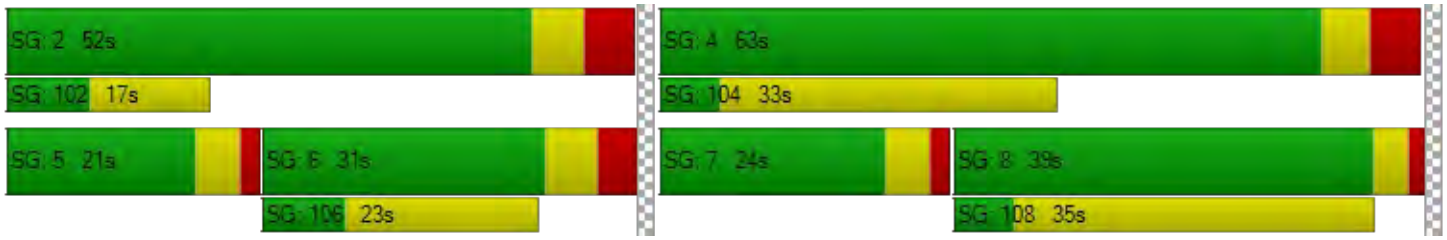
d_M, Delay for Movement [s/veh]	56.40	12.90	14.78	0.00	24.94	0.00	72.22	40.91	41.58	0.00	0.00	0.00
Movement LOS	E	B	B		C		E	D	D		A	
d_A, Approach Delay [s/veh]	21.34			24.94			49.14			0.00		
Approach LOS	C			C			D			A		
d_I, Intersection Delay [s/veh]	32.47											
Intersection LOS	C											
Intersection V/C	0.590											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	271.93	0.00	0.00
d_p, Pedestrian Delay [s]	48.85	48.85	47.03	47.03
l_p,int, Pedestrian LOS Score for Intersection	2.768	2.714	2.470	2.249
Crosswalk LOS	C	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	758	410	955	609
d_b, Bicycle Delay [s]	22.19	36.38	15.74	27.83
l_b,int, Bicycle LOS Score for Intersection	2.615	2.031	2.476	1.560
Bicycle LOS	B	B	B	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 16 Concept 2 AM - Plus Terraces
1/9/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Pleasant Hill Road & Stanley Boulevard/Deer Hill Road	Signalized	HCM 6th Edition	SWB Thru	0.932	79.0	E
11	Pleasant Hill Rd & Mt Diablo Boulevard	Signalized	HCM 6th Edition	NB Left	0.458	31.1	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Pleasant Hill Road & Stanley Boulevard/Deer Hill Road

Control Type:	Signalized	Delay (sec / veh):	79.0
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.932

Intersection Setup

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	185.00	100.00	100.00	450.00	100.00	260.00	175.00	100.00	186.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Base Volume Input [veh/h]	291	71	41	238	128	99	139	821	268	151	1500	445
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	0.00	0.00	1.00	0.00	4.00	1.00	2.00	0.00	0.00	2.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	16	10	27	2	2	0	0	0	0	0	2	3
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	307	81	68	240	130	99	139	821	268	151	1502	448
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	90	24	20	71	38	29	41	241	79	44	442	132
Total Analysis Volume [veh/h]	361	95	80	282	153	116	164	966	315	178	1767	527
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	11			0			12			0		
v_di, Inbound Pedestrian Volume crossing m	12			0			11			0		
v_co, Outbound Pedestrian Volume crossing	0			3			2			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			3			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			1			1			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	170
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	75.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	9	0	7	10	0	8	10	0
Maximum Green [s]	0	30	0	0	30	0	25	60	0	25	60	0
Amber [s]	0.0	4.1	0.0	0.0	3.6	0.0	3.0	4.1	0.0	3.0	4.1	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	24	0	17	57	0	22	62	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.0	0.0	1.5	5.0	0.0	1.5	4.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk												
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	0.0	2.6	0.0	2.0	3.1	0.0	2.0	3.1	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	9
Pedestrian Walk [s]	5
Pedestrian Clearance [s]	30

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	170	170	170	170	170	170	170	170	170	170
L, Total Lost Time per Cycle [s]	5.10	5.10	4.60	4.60	4.00	5.10	5.10	4.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	2.60	2.60	2.00	3.10	3.10	2.00	3.10	3.10
g_i, Effective Green Time [s]	20	20	19	19	13	76	76	18	81	81
g / C, Green / Cycle	0.12	0.12	0.11	0.11	0.08	0.45	0.45	0.11	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.10	0.10	0.08	0.15	0.09	0.35	0.37	0.10	0.50	0.34
s, saturation flow rate [veh/h]	3486	1715	3486	1754	1795	1870	1696	1810	3560	1568
c, Capacity [veh/h]	416	205	398	200	137	838	760	192	1701	749
d1, Uniform Delay [s]	73.55	73.42	72.58	75.30	78.50	40.04	40.75	75.37	44.39	34.55
k, delay calibration	0.04	0.04	0.04	0.32	0.11	0.50	0.50	0.15	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.20	3.94	0.88	174.47	102.58	7.46	9.34	21.87	32.64	5.48
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.86	0.71	1.34	1.19	0.79	0.81	0.93	1.04	0.70
d, Delay for Lane Group [s/veh]	75.75	77.36	73.46	249.77	181.08	47.50	50.09	97.24	77.03	40.03
Lane Group LOS	E	E	E	F	F	D	D	F	F	D
Critical Lane Group	Yes	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.92	7.77	6.02	18.50	9.97	25.44	24.55	8.93	43.14	18.23
50th-Percentile Queue Length [ft/ln]	198.03	194.19	150.59	462.51	249.15	636.05	613.67	223.25	1078.44	455.63
95th-Percentile Queue Length [veh/ln]	12.54	12.34	10.05	28.59	16.07	33.71	32.67	13.83	55.62	25.23
95th-Percentile Queue Length [ft/ln]	313.42	308.46	251.22	714.80	401.81	842.85	816.80	345.77	1390.42	630.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	75.75	77.36	77.36	73.46	249.77	249.77	181.08	48.31	50.09	97.24	77.03	40.03
Movement LOS	E	E	E	E	F	F	F	D	D	F	F	D
d_A, Approach Delay [s/veh]	76.28			159.53			63.77			70.60		
Approach LOS	E			F			E			E		
d_I, Intersection Delay [s/veh]	79.03											
Intersection LOS	E											
Intersection V/C	0.932											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	257.55	0.00
d_p, Pedestrian Delay [s]	76.24	76.24	76.24	76.24
l_p,int, Pedestrian LOS Score for Intersection	2.499	2.440	3.028	3.120
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	316	228	611	669
d_b, Bicycle Delay [s]	60.29	66.74	41.04	37.66
l_b,int, Bicycle LOS Score for Intersection	2.444	2.469	2.752	3.599
Bicycle LOS	B	B	C	D

Sequence

Ring 1	1	2	4	-	9	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Pleasant Hill Rd & Mt Diablo Boulevard

Control Type:	Signalized	Delay (sec / veh):	31.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.458

Intersection Setup

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Base Volume Input [veh/h]	256	694	406	0	506	561	191	228	133	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	0.70	0.60	2.00	4.20	4.20	0.70	4.40	2.80	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	5	0	0	20	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	256	699	406	0	526	561	191	228	133	0	0	0
Peak Hour Factor	0.9400	0.9400	0.9400	1.0000	0.9400	0.9400	0.9400	0.9400	0.9400	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	68	186	108	0	140	149	51	61	35	0	0	0
Total Analysis Volume [veh/h]	272	744	432	0	560	597	203	243	141	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	4			0			3			0		
v_di, Inbound Pedestrian Volume crossing m	3			0			4			0		
v_co, Outbound Pedestrian Volume crossing	3			1			1			4		
v_ci, Inbound Pedestrian Volume crossing mi	4			1			1			3		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	6			1			5			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	4	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	7	0	0	7	0	0	9	0	0	0	0
Maximum Green [s]	35	35	0	0	20	0	0	21	0	0	0	0
Amber [s]	3.7	4.4	0.0	0.0	4.4	0.0	0.0	4.1	0.0	0.0	0.0	0.0
All red [s]	1.5	4.0	0.0	0.0	3.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0
Split [s]	30	61	0	0	31	0	0	42	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	16	0	0	28	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	3.2	6.4	0.0	0.0	5.4	0.0	0.0	6.1	0.0	0.0	0.0	0.0
Minimum Recall	No	Yes			Yes			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	0.0	20.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	9
Pedestrian Walk [s]	5
Pedestrian Clearance [s]	32

Lane Group Calculations

Lane Group	L	C	R	C	L	C	C	
C, Cycle Length [s]	140	140	140	140	140	140	140	
L, Total Lost Time per Cycle [s]	5.20	8.40	8.40	7.40	8.10	8.10	8.10	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	3.20	6.40	6.40	5.40	6.10	6.10	6.10	
g_i, Effective Green Time [s]	23	95	95	68	18	18	18	
g / C, Green / Cycle	0.17	0.68	0.68	0.49	0.13	0.13	0.13	
(v / s)_i Volume / Saturation Flow Rate	0.15	0.21	0.27	0.16	0.11	0.11	0.12	
s, saturation flow rate [veh/h]	1775	3598	1585	3498	1800	1834	1576	
c, Capacity [veh/h]	293	2452	1080	1700	230	235	202	
d1, Uniform Delay [s]	57.59	8.95	9.71	22.00	59.99	59.83	60.15	
k, delay calibration	0.10	0.50	0.50	0.50	0.04	0.04	0.04	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	11.19	0.32	1.11	0.52	4.29	3.63	5.69	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.93	0.30	0.40	0.33	0.88	0.86	0.90	
d, Delay for Lane Group [s/veh]	68.79	9.27	10.82	22.52	64.29	63.46	65.84	
Lane Group LOS	E	A	B	C	E	E	E	
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	10.41	4.56	5.93	5.82	7.37	7.30	6.68	
50th-Percentile Queue Length [ft/ln]	260.32	113.91	148.37	145.41	184.37	182.49	167.11	
95th-Percentile Queue Length [veh/ln]	15.70	8.06	9.93	9.77	11.83	11.73	10.92	
95th-Percentile Queue Length [ft/ln]	392.62	201.43	248.25	244.29	295.71	293.27	273.11	

Movement, Approach, & Intersection Results

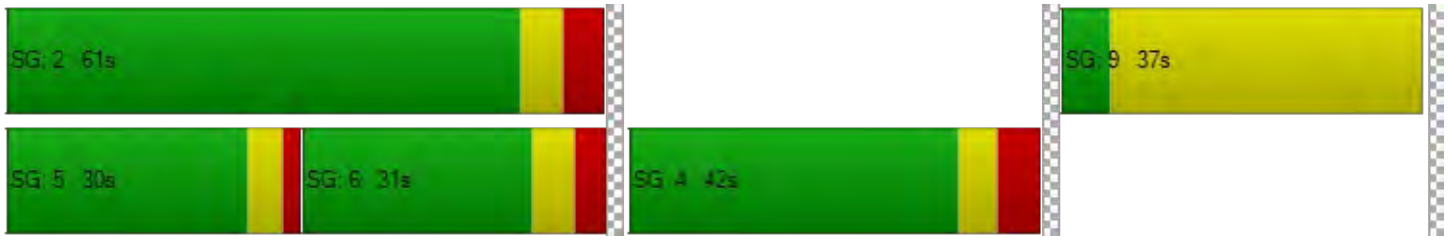
d_M, Delay for Movement [s/veh]	68.79	9.27	10.82	0.00	22.52	0.00	64.29	63.86	65.84	0.00	0.00	0.00
Movement LOS	E	A	B		C		E	E	E			
d_A, Approach Delay [s/veh]	20.91			22.52			64.48			0.00		
Approach LOS	C			C			E			A		
d_I, Intersection Delay [s/veh]	31.12											
Intersection LOS	C											
Intersection V/C	0.458											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	61.29	61.29	61.29	61.29
l_p,int, Pedestrian LOS Score for Intersection	2.777	2.720	2.363	2.066
Crosswalk LOS	C	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	751	337	484	0
d_b, Bicycle Delay [s]	27.36	48.41	40.31	70.00
l_b,int, Bicycle LOS Score for Intersection	2.754	2.022	2.044	4.132
Bicycle LOS	C	B	B	D

Sequence

Ring 1	-	2	-	9	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 17 Concept 2 PM - Plus Terraces
1/9/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Pleasant Hill Road & Stanley Boulevard/Deer Hill Road	Signalized	HCM 6th Edition	SWB Right	1.110	191.6	F
11	Pleasant Hill Rd & Mt Diablo Boulevard	Signalized	HCM 6th Edition	EB Right	0.580	44.7	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Pleasant Hill Road & Stanley Boulevard/Deer Hill Road

Control Type:	Signalized	Delay (sec / veh):	191.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.110

Intersection Setup

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	185.00	100.00	100.00	450.00	100.00	260.00	175.00	100.00	186.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Base Volume Input [veh/h]	818	131	30	226	98	164	115	1568	188	105	756	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	0.00	0.00	2.00	0.00	1.00	0.00	1.00	1.00	2.00	1.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	6	6	22	3	7	0	0	0	0	0	8	9
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	44	7	2	0	0	0	0	107	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	868	144	54	229	105	164	115	1675	188	105	764	248
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	224	37	14	59	27	42	30	432	48	27	197	64
Total Analysis Volume [veh/h]	895	148	56	236	108	169	119	1727	194	108	788	256
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	11			0			11			0		
v_di, Inbound Pedestrian Volume crossing m	11			0			11			0		
v_co, Outbound Pedestrian Volume crossing	1			20			20			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			20			20			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			2			1			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	180
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	9	0	7	10	0	8	10	0
Maximum Green [s]	0	30	0	0	30	0	25	60	0	25	60	0
Amber [s]	0.0	4.1	0.0	0.0	3.6	0.0	3.0	4.1	0.0	3.0	4.1	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	35	0	0	18	0	11	80	0	12	81	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.0	0.0	1.5	5.0	0.0	1.5	4.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk												
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	0.0	2.6	0.0	2.0	3.1	0.0	2.0	3.1	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	9
Pedestrian Walk [s]	5
Pedestrian Clearance [s]	30

Lane Group Calculations

Lane Group	L	C	L	C	L	C	C	L	C	R
C, Cycle Length [s]	180	180	180	180	180	180	180	180	180	180
L, Total Lost Time per Cycle [s]	5.10	5.10	4.60	4.60	4.00	5.10	5.10	4.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	2.60	2.60	2.00	3.10	3.10	2.00	3.10	3.10
g_i, Effective Green Time [s]	48	48	13	13	7	64	64	8	65	65
g / C, Green / Cycle	0.26	0.26	0.07	0.07	0.04	0.36	0.36	0.04	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.26	0.11	0.07	0.16	0.07	0.51	0.53	0.06	0.22	0.16
s, saturation flow rate [veh/h]	3486	1798	3459	1695	1810	1885	1811	1781	3589	1594
c, Capacity [veh/h]	922	475	257	126	70	673	646	79	1301	578
d1, Uniform Delay [s]	65.52	54.93	82.74	83.30	86.50	57.89	57.89	86.00	46.88	43.48
k, delay calibration	0.04	0.04	0.04	0.41	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.01	0.23	5.39	558.41	315.90	201.15	226.99	170.55	2.10	2.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.97	0.43	0.92	2.19	1.69	1.43	1.49	1.36	0.61	0.44
d, Delay for Lane Group [s/veh]	69.53	55.16	88.14	641.71	402.40	259.04	284.88	256.55	48.99	45.94
Lane Group LOS	E	E	F	F	F	F	F	F	D	D
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	20.90	7.82	5.69	25.49	9.48	68.23	70.19	7.47	15.03	9.22
50th-Percentile Queue Length [ft/ln]	522.61	195.59	142.21	637.30	237.06	1705.65	1754.85	186.72	375.81	230.60
95th-Percentile Queue Length [veh/ln]	28.40	12.41	9.60	40.41	16.18	100.63	104.91	12.89	21.39	14.20
95th-Percentile Queue Length [ft/ln]	710.06	310.27	239.99	1010.28	404.40	2515.79	2622.81	322.13	534.77	355.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	69.53	55.16	55.16	88.14	641.71	641.71	402.40	270.51	284.88	256.55	48.99	45.94
Movement LOS	E	E	E	F	F	F	F	F	F	F	D	D
d_A, Approach Delay [s/veh]	66.86			387.05			279.57			67.77		
Approach LOS	E			F			F			E		
d_I, Intersection Delay [s/veh]	191.60											
Intersection LOS	F											
Intersection V/C	1.110											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	17.13	274.29	0.00
d_p, Pedestrian Delay [s]	81.23	81.23	81.23	81.23
l_p,int, Pedestrian LOS Score for Intersection	2.642	2.399	2.942	3.127
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	332	149	832	843
d_b, Bicycle Delay [s]	62.58	77.18	30.70	30.13
l_b,int, Bicycle LOS Score for Intersection	3.373	2.406	3.243	2.510
Bicycle LOS	C	B	C	B

Sequence

Ring 1	1	2	4	-	9	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 11: Pleasant Hill Rd & Mt Diablo Boulevard

Control Type:	Signalized	Delay (sec / veh):	44.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.580

Intersection Setup

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Pleasant Hill Rd			Pleasant Hill Rd			Mt Diablo Blvd					
Base Volume Input [veh/h]	211	590	343	0	509	381	260	490	261	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.70	3.50	2.00	1.70	1.60	1.60	1.80	0.50	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	20	0	0	11	2	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	610	343	0	520	383	260	490	261	0	0	0
Peak Hour Factor	0.9100	0.9100	0.9100	1.0000	0.9100	0.9100	0.9100	0.9100	0.9100	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	168	94	0	143	105	71	135	72	0	0	0
Total Analysis Volume [veh/h]	232	670	377	0	571	421	286	538	287	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	6			0			6			0		
v_di, Inbound Pedestrian Volume crossing m	6			0			6			0		
v_co, Outbound Pedestrian Volume crossing	10			0			0			11		
v_ci, Inbound Pedestrian Volume crossing mi	11			0			0			10		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			3			5			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	135
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	5	2	0	0	6	0	0	4	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	6	7	0	0	7	0	0	9	0	0	0	0
Maximum Green [s]	35	35	0	0	20	0	0	21	0	0	0	0
Amber [s]	3.7	4.4	0.0	0.0	4.4	0.0	0.0	4.1	0.0	0.0	0.0	0.0
All red [s]	1.5	4.0	0.0	0.0	3.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0
Split [s]	24	55	0	0	31	0	0	43	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	0	0	7	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	16	0	0	28	0	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk												
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	3.2	6.4	0.0	0.0	5.4	0.0	0.0	6.1	0.0	0.0	0.0	0.0
Minimum Recall	No	Yes			Yes			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	0.0	0.0	20.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	9
Pedestrian Walk [s]	5
Pedestrian Clearance [s]	32

Lane Group Calculations

Lane Group	L	C	R	C	L	C	C	
C, Cycle Length [s]	135	135	135	135	135	135	135	
L, Total Lost Time per Cycle [s]	5.20	8.40	8.40	7.40	8.10	8.10	8.10	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	3.20	6.40	6.40	5.40	6.10	6.10	6.10	
g_i, Effective Green Time [s]	19	67	67	44	34	34	34	
g / C, Green / Cycle	0.14	0.50	0.50	0.33	0.25	0.25	0.25	
(v / s)_i Volume / Saturation Flow Rate	0.13	0.19	0.24	0.16	0.16	0.23	0.24	
s, saturation flow rate [veh/h]	1795	3569	1550	3569	1787	1873	1619	
c, Capacity [veh/h]	250	1776	771	1168	448	470	406	
d1, Uniform Delay [s]	57.43	20.97	22.42	36.37	45.11	49.43	49.82	
k, delay calibration	0.04	0.50	0.50	0.50	0.06	0.29	0.31	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	6.23	0.61	2.21	1.46	0.92	18.60	25.44	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.93	0.38	0.49	0.49	0.64	0.93	0.95	
d, Delay for Lane Group [s/veh]	63.66	21.59	24.63	37.83	46.03	68.04	75.26	
Lane Group LOS	E	C	C	D	D	E	E	
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	
50th-Percentile Queue Length [veh/ln]	8.26	6.72	8.38	7.82	8.70	16.81	15.72	
50th-Percentile Queue Length [ft/ln]	206.59	168.07	209.46	195.62	217.47	420.28	393.03	
95th-Percentile Queue Length [veh/ln]	12.98	10.97	13.13	12.41	13.54	23.54	22.22	
95th-Percentile Queue Length [ft/ln]	324.46	274.37	328.13	310.30	338.40	588.38	555.60	

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.66	21.59	24.63	0.00	37.83	0.00	46.03	69.39	75.26	0.00	0.00	0.00
Movement LOS	E	C	C		D		D	E	E			
d_A, Approach Delay [s/veh]	30.11			37.83			64.89			0.00		
Approach LOS	C			D			E			A		
d_I, Intersection Delay [s/veh]	44.65											
Intersection LOS	D											
Intersection V/C	0.580											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	58.80	58.80	58.80	58.80
l_p,int, Pedestrian LOS Score for Intersection	2.775	2.722	2.479	2.182
Crosswalk LOS	C	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	690	350	517	0
d_b, Bicycle Delay [s]	28.97	46.03	37.20	67.50
l_b,int, Bicycle LOS Score for Intersection	2.615	2.031	2.476	4.132
Bicycle LOS	B	B	B	D

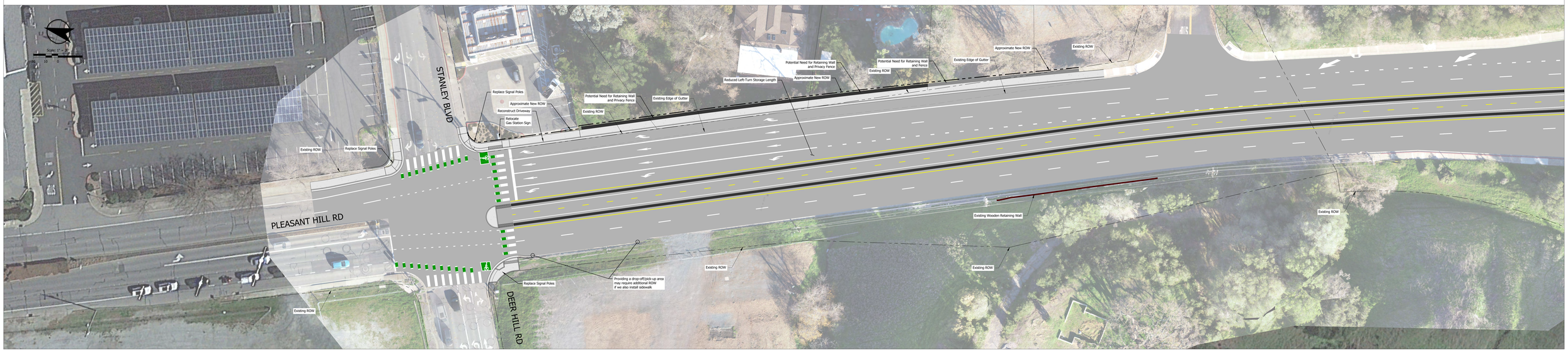
Sequence

Ring 1	-	2	-	9	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

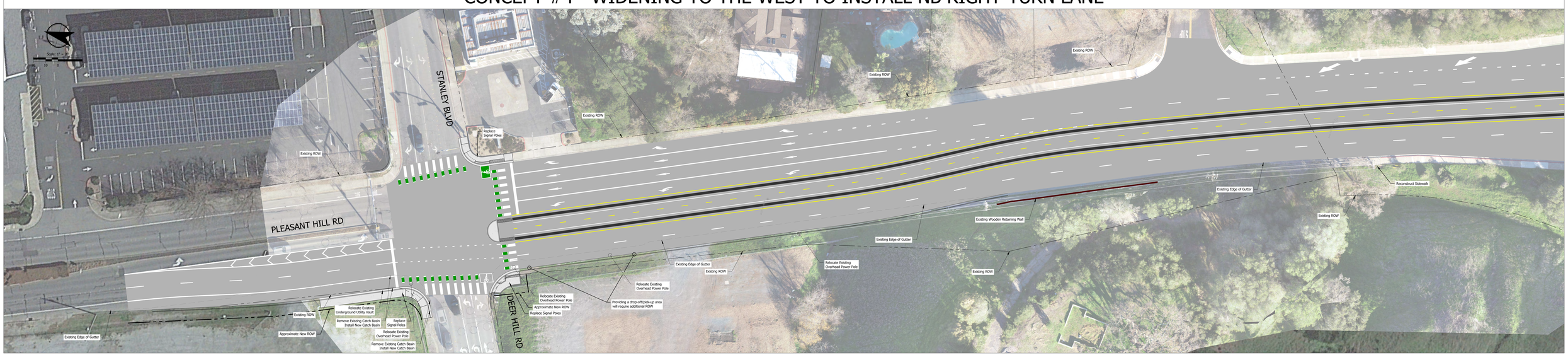
Appendix G

Retain NBR @ Stanley Blvd Analysis – Roll Plots

CONCEPT #3 - WIDENING TO THE EAST TO INSTALL NB RIGHT-TURN LANE



CONCEPT #4 - WIDENING TO THE WEST TO INSTALL NB RIGHT-TURN LANE



Appendix H

Retain NBR at Stanley Blvd Analysis – Vistro Workskeets

Vistro File: H:\...\26991_trafficops_20220906.vistro
Report File: H:\...\9_Concept1AM_NBR.pdf

Scenario 21 Concept 1 AM - NBR
9/6/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Pleasant Hill Road & Stanley Boulevard/Deer Hill Road	Signalized	HCM 6th Edition	NWB Left	0.884	45.3	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Pleasant Hill Road & Stanley Boulevard/Deer Hill Road

Control Type:	Signalized	Delay (sec / veh):	45.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.884

Intersection Setup

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	185.00	100.00	100.00	450.00	100.00	260.00	175.00	100.00	186.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Base Volume Input [veh/h]	291	71	41	238	128	99	120	821	268	151	1500	445
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	0.00	0.00	1.00	0.00	4.00	1.00	2.00	0.00	0.00	2.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	291	71	41	238	128	99	120	821	268	151	1500	445
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	21	12	70	38	29	35	241	79	44	441	131
Total Analysis Volume [veh/h]	342	84	48	280	151	116	141	966	315	178	1765	524
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	11			0			12			0		
v_di, Inbound Pedestrian Volume crossing m	12			0			11			0		
v_co, Outbound Pedestrian Volume crossing	0			3			2			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			3			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			1			1			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	150
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	75.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	9	0	7	10	0	8	10	0
Maximum Green [s]	0	30	0	0	30	0	25	60	0	25	60	0
Amber [s]	0.0	4.1	0.0	0.0	3.6	0.0	3.0	4.1	0.0	3.0	4.1	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	24	0	17	67	0	27	77	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.0	0.0	1.5	5.0	0.0	1.5	4.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	0.0	2.6	0.0	2.0	3.1	0.0	2.0	3.1	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	150	150	150	150	150	150	150	150	150	150	150
L, Total Lost Time per Cycle [s]	5.10	5.10	4.60	4.60	4.60	4.00	5.10	5.10	4.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	2.60	2.60	2.60	2.00	3.10	3.10	2.00	3.10	3.10
g_i, Effective Green Time [s]	20	20	19	19	19	13	75	75	17	78	78
g / C, Green / Cycle	0.14	0.14	0.13	0.13	0.13	0.09	0.50	0.50	0.11	0.52	0.52
(v / s)_i Volume / Saturation Flow Rate	0.10	0.08	0.12	0.12	0.08	0.08	0.27	0.20	0.10	0.50	0.33
s, saturation flow rate [veh/h]	3486	1737	1795	1871	1543	1795	3560	1574	1810	3560	1568
c, Capacity [veh/h]	473	236	232	242	199	156	1774	784	201	1862	820
d1, Uniform Delay [s]	62.10	60.62	64.43	64.43	61.41	67.90	25.90	23.45	65.72	33.86	25.37
k, delay calibration	0.04	0.04	0.08	0.08	0.04	0.04	0.50	0.50	0.08	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.79	0.77	9.77	9.38	1.00	7.58	1.21	1.53	9.60	11.75	3.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.72	0.56	0.91	0.91	0.58	0.91	0.54	0.40	0.88	0.95	0.64
d, Delay for Lane Group [s/veh]	62.89	61.39	74.20	73.80	62.41	75.48	27.11	24.98	75.32	45.61	29.17
Lane Group LOS	E	E	E	E	E	E	C	C	E	D	C
Critical Lane Group	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.33	4.78	8.62	8.95	4.24	5.71	12.23	7.38	7.28	32.77	14.09
50th-Percentile Queue Length [ft/ln]	158.35	119.60	215.49	223.77	105.99	142.74	305.69	184.44	182.01	819.14	352.30
95th-Percentile Queue Length [veh/ln]	10.46	8.37	13.43	13.86	7.62	9.63	17.96	11.83	11.71	42.15	20.25
95th-Percentile Queue Length [ft/ln]	261.54	209.28	335.86	346.44	190.40	240.71	449.06	295.80	292.63	1053.83	506.21

Movement, Approach, & Intersection Results

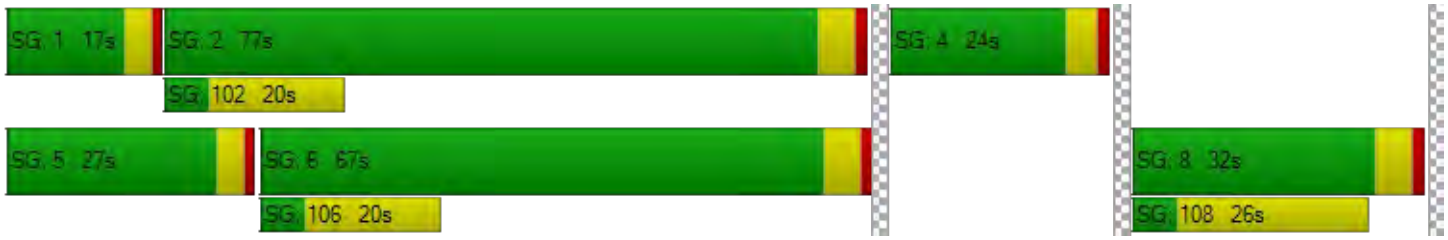
d_M, Delay for Movement [s/veh]	62.89	61.39	61.39	74.11	73.80	62.41	75.48	27.11	24.98	75.32	45.61	29.17
Movement LOS	E	E	E	E	E	E	E	C	C	E	D	C
d_A, Approach Delay [s/veh]	62.48			71.54			31.43			44.26		
Approach LOS	E			E			C			D		
d_I, Intersection Delay [s/veh]	45.34											
Intersection LOS	D											
Intersection V/C	0.884											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	19.4
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	333.89	0.00
d_p, Pedestrian Delay [s]	66.27	66.27	66.27	56.85
l_p,int, Pedestrian LOS Score for Intersection	2.471	2.431	3.050	3.104
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	359	259	825	959
d_b, Bicycle Delay [s]	50.56	56.88	25.88	20.35
l_b,int, Bicycle LOS Score for Intersection	2.342	2.462	2.733	3.595
Bicycle LOS	B	B	B	D

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Report File: H:\...\9_Concept1PM_NBR.pdf

Scenario 20 Concept 1 PM - NBR
9/6/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Pleasant Hill Road & Stanley Boulevard/Deer Hill Road	Signalized	HCM 6th Edition	SWB Right	1.026	67.5	E

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Pleasant Hill Road & Stanley Boulevard/Deer Hill Road

Control Type:	Signalized	Delay (sec / veh):	67.5
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.026

Intersection Setup

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	185.00	100.00	100.00	450.00	100.00	260.00	175.00	100.00	186.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Base Volume Input [veh/h]	818	131	30	226	98	164	39	1568	188	105	756	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	0.00	0.00	2.00	0.00	1.00	0.00	1.00	1.00	2.00	1.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	44	7	2	0	0	0	0	107	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	862	138	32	226	98	164	39	1675	188	105	756	239
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	222	36	8	58	25	42	10	432	48	27	195	62
Total Analysis Volume [veh/h]	889	142	33	233	101	169	40	1727	194	108	779	246
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	11			0			11			0		
v_di, Inbound Pedestrian Volume crossing m	11			0			11			0		
v_co, Outbound Pedestrian Volume crossing	1			20			20			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			20			20			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			2			1			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	135
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	9	0	7	10	0	8	10	0
Maximum Green [s]	0	30	0	0	30	0	25	60	0	25	60	0
Amber [s]	0.0	4.1	0.0	0.0	3.6	0.0	3.0	4.1	0.0	3.0	4.1	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	35	0	0	18	0	11	70	0	12	71	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.0	0.0	1.5	5.0	0.0	1.5	4.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	0.0	2.6	0.0	2.0	3.1	0.0	2.0	3.1	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	135	135	135	135	135	135	135	135	135	135	135
L, Total Lost Time per Cycle [s]	5.10	5.10	4.60	4.60	4.60	4.00	5.10	5.10	4.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	2.60	2.60	2.60	2.00	3.10	3.10	2.00	3.10	3.10
g_i, Effective Green Time [s]	37	37	13	13	13	5	58	58	8	60	60
g / C, Green / Cycle	0.27	0.27	0.10	0.10	0.10	0.04	0.43	0.43	0.06	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.25	0.10	0.09	0.09	0.11	0.02	0.48	0.13	0.06	0.22	0.16
s, saturation flow rate [veh/h]	3486	1829	1781	1862	1576	1810	3589	1496	1781	3589	1578
c, Capacity [veh/h]	953	500	177	185	156	73	1539	641	106	1607	707
d1, Uniform Delay [s]	47.84	39.41	60.29	60.29	60.69	63.55	38.55	25.05	63.50	26.30	24.29
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.98	0.16	8.02	7.72	45.97	2.34	64.10	1.21	30.86	1.05	1.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.35	0.92	0.92	1.08	0.55	1.12	0.30	1.02	0.48	0.35
d, Delay for Lane Group [s/veh]	49.82	39.57	68.31	68.01	106.66	65.89	102.65	26.26	94.36	27.35	25.65
Lane Group LOS	D	D	E	E	F	E	F	C	F	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	14.79	4.73	5.95	6.20	7.35	1.40	38.70	4.31	4.54	9.11	5.44
50th-Percentile Queue Length [ft/ln]	369.78	118.35	148.69	155.07	183.81	35.04	967.39	107.74	113.47	227.70	136.06
95th-Percentile Queue Length [veh/ln]	21.10	8.30	9.95	10.29	12.14	2.52	53.18	7.71	8.09	14.06	9.27
95th-Percentile Queue Length [ft/ln]	527.46	207.56	248.68	257.18	303.59	63.07	1329.42	192.85	202.19	351.44	231.71

Movement, Approach, & Intersection Results

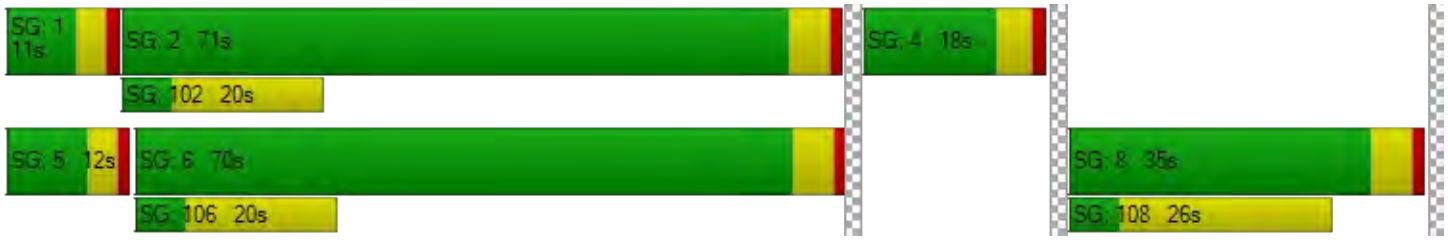
d_M, Delay for Movement [s/veh]	49.82	39.57	39.57	68.23	68.01	106.66	65.89	102.65	26.26	94.36	27.35	25.65
Movement LOS	D	D	D	E	E	F	E	F	C	F	C	C
d_A, Approach Delay [s/veh]	48.13			81.09			94.35			33.37		
Approach LOS	D			F			F			C		
d_I, Intersection Delay [s/veh]	67.54											
Intersection LOS	E											
Intersection V/C	1.026											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	13.4
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	1325.63	73.45	408.96	0.00
d_p, Pedestrian Delay [s]	58.80	58.80	58.80	54.77
l_p,int, Pedestrian LOS Score for Intersection	2.505	2.383	2.962	3.107
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	443	199	961	976
d_b, Bicycle Delay [s]	40.91	54.82	18.21	17.70
l_b,int, Bicycle LOS Score for Intersection	3.315	2.390	3.177	2.494
Bicycle LOS	C	B	C	B

Sequence

Ring 1	1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Report File: H:\...\9_Concept2AM_NBR.pdf

Scenario 22 Concept 2 AM - NBR
9/6/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Pleasant Hill Road & Stanley Boulevard/Deer Hill Road	Signalized	HCM 6th Edition	SWB Left	0.872	64.6	E

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Pleasant Hill Road & Stanley Boulevard/Deer Hill Road

Control Type:	Signalized	Delay (sec / veh):	64.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.872

Intersection Setup

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	185.00	100.00	100.00	450.00	100.00	260.00	175.00	100.00	186.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Base Volume Input [veh/h]	291	71	41	238	128	99	120	821	268	151	1500	445
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	0.00	0.00	1.00	0.00	4.00	1.00	2.00	0.00	0.00	2.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	291	71	41	238	128	99	120	821	268	151	1500	445
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	21	12	70	38	29	35	241	79	44	441	131
Total Analysis Volume [veh/h]	342	84	48	280	151	116	141	966	315	178	1765	524
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	11			0			12			0		
v_di, Inbound Pedestrian Volume crossing m	12			0			11			0		
v_co, Outbound Pedestrian Volume crossing	0			3			2			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			3			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			1			1			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	170
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	75.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	9	0	7	10	0	8	10	0
Maximum Green [s]	0	30	0	0	30	0	25	60	0	25	60	0
Amber [s]	0.0	4.1	0.0	0.0	3.6	0.0	3.0	4.1	0.0	3.0	4.1	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	32	0	0	24	0	17	42	0	36	61	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.0	0.0	1.5	5.0	0.0	1.5	4.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk												
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	0.0	2.6	0.0	2.0	3.1	0.0	2.0	3.1	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	9
Pedestrian Walk [s]	5
Pedestrian Clearance [s]	30

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	170	170	170	170	170	170	170	170	170	170	170
L, Total Lost Time per Cycle [s]	5.10	5.10	4.60	4.60	4.60	4.00	5.10	5.10	4.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	2.60	2.60	2.60	2.00	3.10	3.10	2.00	3.10	3.10
g_i, Effective Green Time [s]	19	19	19	19	19	13	77	77	19	82	82
g / C, Green / Cycle	0.11	0.11	0.11	0.11	0.11	0.08	0.45	0.45	0.11	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.10	0.08	0.12	0.12	0.08	0.08	0.27	0.20	0.10	0.50	0.33
s, saturation flow rate [veh/h]	3486	1750	1795	1871	1542	1795	3560	1581	1810	3560	1568
c, Capacity [veh/h]	395	198	205	213	176	137	1605	713	199	1724	759
d1, Uniform Delay [s]	74.11	72.29	75.30	75.30	72.05	78.50	35.17	31.84	74.72	43.85	33.61
k, delay calibration	0.04	0.04	0.14	0.14	0.04	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.28	1.44	41.83	40.97	1.57	28.94	1.68	1.98	5.61	27.96	5.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.67	1.03	1.03	0.66	1.03	0.60	0.44	0.90	1.02	0.69
d, Delay for Lane Group [s/veh]	76.39	73.73	117.13	116.27	73.62	107.44	36.85	33.82	80.34	71.81	38.71
Lane Group LOS	E	E	F	F	E	F	D	C	F	F	D
Critical Lane Group	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.52	5.65	11.39	11.82	4.96	7.16	15.64	9.40	8.04	42.56	17.79
50th-Percentile Queue Length [ft/ln]	187.95	141.16	284.70	295.39	123.92	178.94	390.98	235.12	201.02	1063.91	444.70
95th-Percentile Queue Length [veh/ln]	12.01	9.54	17.14	17.68	8.61	11.65	22.12	14.43	12.69	54.31	24.70
95th-Percentile Queue Length [ft/ln]	300.36	238.58	428.62	441.99	215.20	291.36	553.12	360.85	317.28	1357.79	617.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	76.39	73.73	73.73	116.93	116.27	73.62	107.44	36.85	33.82	80.34	71.81	38.71
Movement LOS	E	E	E	F	F	E	F	D	C	F	F	D
d_A, Approach Delay [s/veh]	75.65			107.56			43.18			65.39		
Approach LOS	E			F			D			E		
d_I, Intersection Delay [s/veh]	64.65											
Intersection LOS	E											
Intersection V/C	0.872											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	288.88	0.00
d_p, Pedestrian Delay [s]	76.24	76.24	76.24	76.24
l_p,int, Pedestrian LOS Score for Intersection	2.477	2.436	3.055	3.116
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	316	228	434	658
d_b, Bicycle Delay [s]	60.29	66.74	52.13	38.33
l_b,int, Bicycle LOS Score for Intersection	2.342	2.462	2.733	3.595
Bicycle LOS	B	B	B	D

Sequence

Ring 1	1	2	4	-	9	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Vistro File: H:\...\26991_trafficops_20220906.vistro
Report File: H:\...\9_Concept2PM_NBR.pdf

Scenario 23 Concept 2 PM - NBR
9/6/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Pleasant Hill Road & Stanley Boulevard/Deer Hill Road	Signalized	HCM 6th Edition	SEB Left	0.992	141.1	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Pleasant Hill Road & Stanley Boulevard/Deer Hill Road

Control Type:	Signalized	Delay (sec / veh):	141.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.992

Intersection Setup

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Approach	Northeastbound			Southwestbound			Northwestbound			Southeastbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	0	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	100.00	185.00	100.00	100.00	450.00	100.00	260.00	175.00	100.00	186.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Deer Hill Road			Stanley Boulevard			Pleasant Hill Road			Pleasant Hill Road		
Base Volume Input [veh/h]	818	131	30	226	98	164	39	1568	188	105	756	239
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	0.00	0.00	2.00	0.00	1.00	0.00	1.00	1.00	2.00	1.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	44	7	2	0	0	0	0	107	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	862	138	32	226	98	164	39	1675	188	105	756	239
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	222	36	8	58	25	42	10	432	48	27	195	62
Total Analysis Volume [veh/h]	889	142	33	233	101	169	40	1727	194	108	779	246
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	11			0			11			0		
v_di, Inbound Pedestrian Volume crossing m	11			0			11			0		
v_co, Outbound Pedestrian Volume crossing	1			20			20			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			20			20			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			2			1			2		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	180
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Semi-actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	8	0	0	4	0	1	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	10	0	0	9	0	7	10	0	8	10	0
Maximum Green [s]	0	30	0	0	30	0	25	60	0	25	60	0
Amber [s]	0.0	4.1	0.0	0.0	3.6	0.0	3.0	4.1	0.0	3.0	4.1	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	37	0	0	19	0	11	77	0	12	78	0
Vehicle Extension [s]	0.0	2.0	0.0	0.0	2.0	0.0	1.5	5.0	0.0	1.5	4.0	0.0
Walk [s]	0	5	0	0	0	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	0	0	0	15	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk												
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	0.0	2.6	0.0	2.0	3.1	0.0	2.0	3.1	0.0
Minimum Recall		No			No		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	9
Pedestrian Walk [s]	5
Pedestrian Clearance [s]	30

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	180	180	180	180	180	180	180	180	180	180	180
L, Total Lost Time per Cycle [s]	5.10	5.10	4.60	4.60	4.60	4.00	5.10	5.10	4.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	2.60	2.60	2.60	2.00	3.10	3.10	2.00	3.10	3.10
g_i, Effective Green Time [s]	48	48	14	14	14	6	63	63	8	65	65
g / C, Green / Cycle	0.27	0.27	0.08	0.08	0.08	0.03	0.35	0.35	0.04	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.25	0.10	0.09	0.09	0.11	0.02	0.48	0.12	0.06	0.22	0.15
s, saturation flow rate [veh/h]	3486	1829	1781	1862	1574	1810	3589	1568	1781	3589	1594
c, Capacity [veh/h]	929	487	142	149	126	61	1253	548	79	1292	574
d1, Uniform Delay [s]	65.01	53.56	82.80	82.80	82.67	85.95	58.57	43.36	86.00	47.07	43.48
k, delay calibration	0.04	0.04	0.05	0.05	0.13	0.04	0.50	0.50	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.00	0.17	73.83	73.49	166.89	4.41	175.09	1.79	170.55	2.09	2.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.96	0.36	1.15	1.15	1.34	0.66	1.38	0.35	1.36	0.60	0.43
d, Delay for Lane Group [s/veh]	68.02	53.72	156.63	156.29	249.56	90.36	233.66	45.15	256.55	49.16	45.81
Lane Group LOS	E	D	F	F	F	F	F	D	F	D	D
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	20.54	6.56	9.60	10.02	11.73	1.93	59.05	6.82	7.47	14.86	8.82
50th-Percentile Queue Length [ft/ln]	513.61	164.01	239.98	250.55	293.26	48.33	1476.28	170.50	186.72	371.58	220.59
95th-Percentile Queue Length [veh/ln]	27.98	10.76	15.39	15.96	19.05	3.48	86.60	11.10	12.89	21.19	13.70
95th-Percentile Queue Length [ft/ln]	699.45	269.02	384.85	398.98	476.34	86.99	2165.04	277.58	322.13	529.65	342.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	68.02	53.72	53.72	156.53	156.29	249.56	90.36	233.66	45.15	256.55	49.16	45.81
Movement LOS	E	D	D	F	F	F	F	F	D	F	D	D
d_A, Approach Delay [s/veh]	65.66			187.74			212.09			68.20		
Approach LOS	E			F			F			E		
d_I, Intersection Delay [s/veh]	141.06											
Intersection LOS	F											
Intersection V/C	0.992											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	17.13	297.83	0.00
d_p, Pedestrian Delay [s]	81.23	81.23	81.23	81.23
l_p,int, Pedestrian LOS Score for Intersection	2.616	2.396	2.975	3.123
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	354	160	799	810
d_b, Bicycle Delay [s]	60.93	76.25	32.48	31.89
l_b,int, Bicycle LOS Score for Intersection	3.315	2.390	3.177	2.494
Bicycle LOS	C	B	C	B

Sequence

Ring 1	1	2	4	-	9	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix I

MUP Extension – Example Cross Section

Pleasant Hill Road