

October 16, 2014

Ms. Heather McCollister
1512 D Street
Napa, CA 94559

Traffic Impact Study for the Girard Winery Project

Dear Ms. McCollister;

Whitlock & Weinberger Transportation, Inc. (W-Trans) has completed a focused traffic analysis addressing potential traffic impacts and access needs for the proposed new winery to be located at 1077 Dunaweal Lane in the County of Napa. The traffic study was completed in accordance with the criteria established by the County of Napa, and is consistent with standard traffic engineering techniques. Comments from County staff have been addressed in preparing this final study.

Study Area

The project site is located on the east side of Dunaweal Lane between Silverado Trail and State Route (SR) 29, and is currently vacant. Dunaweal Lane is a two-lane roadway that runs north-south, and is designated as a local roadway. The posted speed limit on Dunaweal Lane is 45 miles per hour (mph).

Two intersections were identified by County staff for analysis.

Silverado Trail/Dunaweal Lane is a tee intersection with stop controls and flared right-turn lane on the northbound terminating Dunaweal Lane approach.

SR 29/Dunaweal Lane is stop-controlled with flared right-turn lanes on both the northbound and southbound Dunaweal Lane approaches.

Project Description

The proposed project would allow production of up to 200,000 gallons of wine annually, and operation of a tasting room for an average of 52 visitors on a weekday and 62 visitors on a weekend (or maximums of 75 and 90 visitors on a peak day, respectively). The project would have eight full-time employees and three part time employees on-site during weekdays as well as two full-time employees and four part-time employees on weekends. Vehicular access to the project site would be provided via a full access driveway on Dunaweal Lane. The most recent site plan, dated February 4, 2014 is enclosed.

Existing Volumes

Mechanical tube counts were collected on Dunaweal Lane near the project site on three consecutive days in March 2014 (Thursday through Saturday). Intersection counts were taken during the p.m. peak period in September 2014 at Silverado Trail/Dunaweal Lane and SR 29/Dunaweal Lane. The existing traffic volumes on Dunaweal Lane are summarized in Table I. The volume of traffic ranged from 1,484 on Thursday to 1,691 vehicles on Saturday; this would be considered relatively low and reflects the volumes that would be generated by a residential subdivision having fewer than 20 homes.

**Table 1
Existing Traffic Volumes**

Study Segment	Friday		Saturday	
	Daily Trips	PM Peak	Daily Trips	Midday Peak
	NB/SB	NB/SB	NB/SB	NB/SB
Dunaweal Ln	828/746	68/90	880/811	101/77
Total (NB+SB)	1,574	158	1,691	178

Existing Conditions

Intersections

Using the turning movement data collected at the two study intersections together with the current configurations, existing operating conditions at each intersection were evaluated. As shown in Table 2, both intersections are currently operating at LOS A or B overall and on all approaches. Copies of the calculations for all scenarios are enclosed.

**Table 2
Existing PM Peak Hour Intersection Levels of Service**

Study Intersection <i>Approach</i>	Existing Conditions		Existing plus Project	
	Delay	LOS	Delay	LOS
1. Silverado Trail/Dunaweal Ln	1.8	A	1.8	A
<i>Westbound (Silverado) Left-turn</i>	7.6	A	7.6	A
<i>Northbound (Dunaweal) Approach</i>	8.9	A	8.9	A
2. SR 29/Dunaweal Ln	0.9	A	0.9	A
<i>Northbound (Dunaweal) Approach</i>	9.7	A	9.7	A
<i>Southbound (Dunaweal) Approach</i>	11.6	B	11.6	B
<i>Eastbound (SR 29) Left-turn</i>	8.9	A	8.9	A
<i>Westbound (SR 29) Left-turn</i>	8.1	A	8.1	A

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service

According to Policy CIR-16 of the *Napa County General Plan, 2008*, “No single level of service standard is appropriate for un-signalized intersections, which shall be evaluated on a case-by-case basis to determine if signal warrants are met.” For analysis purposes it was assumed that the impact would be significant if project-added traffic caused operation to fall to LOS E or F on an approach for which the Peak Hour Volume Signal Warrant is met.

With all approaches at LOS A or B, the current operation of both intersections would be considered acceptable. While weekend operation was not evaluated, given the similarity of volumes on a weekday versus a weekend day together with the very low average delays currently being encountered, it appears reasonable to conclude that operation during the weekend peak period is also low and therefore acceptable.

Roadways

Information in the *Napa County General Plan Update Draft Environmental Impact Report*, February 2007 (GPUDEIR), indicates that under 2003 volumes SR 29 was operating at LOS D between Lodi Lane and Deer Park Road (this is the nearest segment included in the analysis). Silverado Trail is identified in the same document as operating at LOS C under 2003 volumes.

Policy CIR-16 of the Napa County General Plan also provides guidance for roadways, indicating that, "The County shall seek to maintain an arterial Level of Service D or better on all county roadways, except where maintaining this desired level of service would require the installation of more travel lanes than shown on the Circulation Map." Both SR 29 and Silverado Trail are shown as 2-lane Rural Collectors on the Circulation Map (Figure CIR-1). As a result, the LOS D standard does not apply and operation is therefore considered acceptable regardless of the service level.

Collision History

The collision history along Dunaweal Lane between Silverado Trail and SR 29 was reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates were calculated based on the collision data available from the California Highway Patrol as published in their *Statewide Integrated Traffic Records System* (SWITRS) reports during a five-year period between January 1, 2007, and December 31, 2011. The calculated collision rate for the study segment was compared to the average collision rate for similar facilities statewide, as indicated in *2010 Collision Data on California State Highways*, California Department of Transportation (Caltrans).

The statewide average collision rate for a rural two-lane, flat road with a speed limit of 55 mph or less is 1.05 collisions/million vehicle miles (c/mvm). Over the five-year study period, seven collisions were reported on Dunaweal Lane between Silverado Trail and SR 29, for a calculated collision rate of 0.90 c/mvm, which is lower than the statewide average for similar facilities. Further, no injuries or fatalities were reported during the five-year study period. The collision rate calculation spreadsheet is enclosed.

Future Volumes

Future projected traffic volumes were obtained from the Solano Transportation Authority (STA) who maintains the joint Napa County/Solano County 2010-2030 Travel Demand Forecasting Model. The data used included directional segment volumes along SR 29 and Silverado Trail for the p.m. peak hour. Using the 2030 and 2010 model volumes a growth factor of 1.45 was determined for SR 29. This growth factor was applied to turning movements to and from Dunaweal Lane and the remainder of the future increase was added to the volumes for the through movements. It is noted that the 78 vehicle trips added to Dunaweal Lane during the p.m. peak hour would adequately represent increases associated with three new wineries or expansions to existing wineries along Dunaweal Lane.

Future Conditions

Intersections

Based on these projected future volumes, the two study intersections are expected to operate acceptably overall, though the northbound Dunaweal approach to Silverado Trail is expected to operate at LOS E and the southbound Dunaweal Lane approach to SR 29 is expected to operate at LOS F. These results are shown in Table 3.

Table 3
Future PM Peak Hour Intersection Levels of Service

Study Intersection Approach	Future Conditions		Future plus Project	
	Delay	LOS	Delay	LOS
1. Silverado Trail/Dunaweal Ln	3.9	A	4.9	A
Westbound (Silverado) Left-turn	9.5	A	9.6	A
Northbound (Dunaweal) Approach	38.7	E	45.7	E
2. SR 29/Dunaweal Ln	9.6	A	12.4	B
Northbound (Dunaweal) Approach	20.3	C	20.7	C
Southbound (Dunaweal) Approach	**	F	**	F
Eastbound (SR 29) Left-turn	11.4	B	11.4	B
Westbound (SR 29) Left-turn	8.7	A	8.7	A

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; ** = delay greater than 120 seconds

Roadways

According to the GPUDEIR, under projected 2030 volumes SR 29 is expected to operate at LOS F in the study area and, despite substantial increases in traffic, Silverado Trail is expected to continue operating at LOS C. As previously noted, the County has exempted both of these roads from their operational standard, so the projected operation is considered acceptable.

Trip Generation

The anticipated trip generation for a proposed project is typically estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 9th Edition, 2012. However, the publication contains no such information for a winery. Therefore, the County of Napa's Winery Traffic Information/Trip Generation Sheet was used to determine the anticipated traffic that would be generated by the proposed tasting room. A copy of this worksheet is enclosed.

Employee-related trips will be minimized by scheduling employee shifts that reduce the number of trips generated during the p.m. peak period. Production employees will work Monday through Friday from 7 a.m. to 3 p.m., hospitality and/or tasting room employees will work seven days per week from 9 a.m. to 6 p.m. and administrative employees will work Monday through Friday from 8 a.m. to 5 p.m. The resulting weekday p.m. peak hour trips will be associated with administrative employees and tasting visitors only.

The County of Napa's Winery Traffic Information/Trip Generation Sheet does not include guidance on inbound versus outbound trips, so it was assumed that 75 percent of trips at the winery would be outbound during the weekday p.m. peak hour since most of the trips would be associated with employees and customers leaving at closure of the winery. For the weekend midday peak hour it was assumed that inbound and outbound trips would be evenly split. A summary of the project's trip generation potential is provided in Table 4.

Table 4
Project Trip Generation

Land Use	Daily Trips		Weekday PM Peak			Weekend Midday Peak		
	Weekday	Weekend	Trips	In	Out	Trips	In	Out
Proposed Project								
Winery plus Tasting Room	74	58	26	6	20	29	15	14
Total Trips on Driveway	74	58	26	6	20	29	15	14

Trip Distribution

The pattern used to allocate new project trips to the street network was determined by reviewing existing average daily traffic volumes on Dunaweal Lane. It is understood that the winery will direct employees to take SR 29 when their origin/destination is the north and take Silverado Trail when their origin/destination is the south. This results in right-turns from Dunaweal Lane to the regional network, further reducing impacts at the study intersections due to project-related trips. It is recommended that clear signage that directs tasting room visitors in the same fashion be installed at the project driveway for exiting vehicles and similar directions be posted on the winery's website.

Visitor traffic accessing the site from the north via Silverado Trail and from the south via SR 29 was assumed to have an even split, while all employee trips from the north take SR 29 and from the south were assumed to take Silverado Trail. Evening peak hour counts recently obtained at Dunaweal Lane together with the anticipated travel pattern specific to this project were used to estimate the splits at SR 29 and Silverado Trail. The resulting trip distribution is shown in Table 4.

Table 4
Trip Distribution Assumptions and Project-Added Trips

Origin/Destination	Percent of Trips	Daily/Weekend Trips	PM Peak Trips	Weekend Peak Trips
SR 29 south of Dunaweal				
Employee Trips	0	0/0	0	0
Visitor & Truck Trips	15	7/7	2	4
SR 29 north of Dunaweal				
Employee Trips	70	21/10	7	3
Visitor & Truck Trips	35	15/15	6	9
Silverado Trail south of Dunaweal				
Employee Trips	0	0/0	0	0
Visitor & Truck Trips	35	15/15	6	9
Silverado Trail north of Dunaweal				
Employee Trips	30	9/4	3	1
Visitor & Truck Trips	15	7/7	2	4
TOTAL		74/58	26	30*

Note: * Value does not equal trip generation exactly due to rounding

Plus Project Conditions

Intersections

Upon adding project-generated trips to existing volumes, both study intersections are expected to continue operating at LOS A or B overall as well as on all approaches. Because operation will remain acceptable, the impact is considered less-than-significant.

Under Future plus Project conditions both study intersections are projected to continue operating at the same levels of service both overall and on individual approaches except that the overall operation at SR 29/ Dunaweal Lane changes from LOS A to LOS B.

Roadways

The additional traffic that the project would generate would reasonably be expected to be included in the growth projected by the County's traffic model. Further, since both study roadways are exempt from the County's operational standard, the added trips can be considered to have a less-than-significant impact.

Recommendation: Steps should be taken to direct winery traffic in such a way as to minimize impacts and support efforts to maintain LOS D operation on the SR 29 study intersection and roadway segments.

Site Access

Left-Turn Lane Warrants

The need for a left-turn lane on Dunaweal Lane at the proposed project driveway was evaluated based on criteria contained in the *Napa County Road and Street Standards*, 2011. Because future average daily traffic volumes on Dunaweal Lane are not available, recently obtained counts for both the weekday and weekend were used for this analysis.

Using the County's criteria, for the daily Friday traffic volume of 1575 vehicles and 1875 vehicles on a weekend, a left-turn lane would not be warranted for the projected driveway ADT of 74 vehicles on a weekday and 60 vehicles or more on a weekend. The proposed project would generate a weekday average of 74 trips and weekend average of 58 trips. Based on these traffic levels, a left-turn lane would not be warranted at the project driveway. The left-turn lane warrant graphs are enclosed for reference.

Sight Distance

At driveways, a substantially clear line of sight should be maintained between the driver of a vehicle waiting on the driveway and the driver of an approaching vehicle. Adequate time must be provided for the waiting vehicle to either cross, turn left, or turn right, without requiring the through traffic to radically alter their speed.

Sight distance along Dunaweal Lane at the proposed driveway was evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distance for minor street approaches that are driveways is based on stopping sight distance, with the approach travel speeds as the basis for determining the recommended sight distance. For a 45-mph posted speed limit on Dunaweal Lane, the recommended stopping sight distance for a private driveway is 360 feet.

Dunaweal Lane is relatively flat and straight on both sides of the proposed driveway. Based on a review of the site plan, proposed driveway and Google Earth, sight lines are more than adequate and meet the recommended distance for the prevailing travel speeds.

Conclusions and Recommendations

- The proposed project would generate an average of 74 new daily trips, including 26 weekday p.m. peak hour trips and 29 weekend p.m. peak hour trips.
- The calculated collision rate for the study segment was lower than the statewide average for similar facilities.
- The study intersections and roadways are operating acceptably under existing volumes, and are expected to continue to do so with project trips added.
- Under projected future volumes the study intersections are expected to continue operating acceptably overall, though due to excessive delays anticipated at SR 29/Dunaweal Lane signalization may be warranted.
- SR 29 and Silverado Trail will continue to operate acceptably based on the applicable standards under projected Future volumes.
- It is recommended that the schedule for employee shifts be set to minimize the amount of traffic generated during the weekday p.m. peak hour.
- Clear signage that directs visitors to use SR 29 when destined to the north and Silverado Trail when destined to the south should be placed at the driveway. Similar information should be provided on the winery's website as well.
- A left-turn lane is not warranted at the project driveway based on Napa County's Left-Turn Lane Warrant criterion.
- Acceptable clear sight lines are available in both directions along Dunaweal Lane from the proposed driveway.
- The applicant should take steps to minimize traffic impacts and support efforts to maintain LOS D operation on SR 29 and its intersection with Dunaweal Lane.

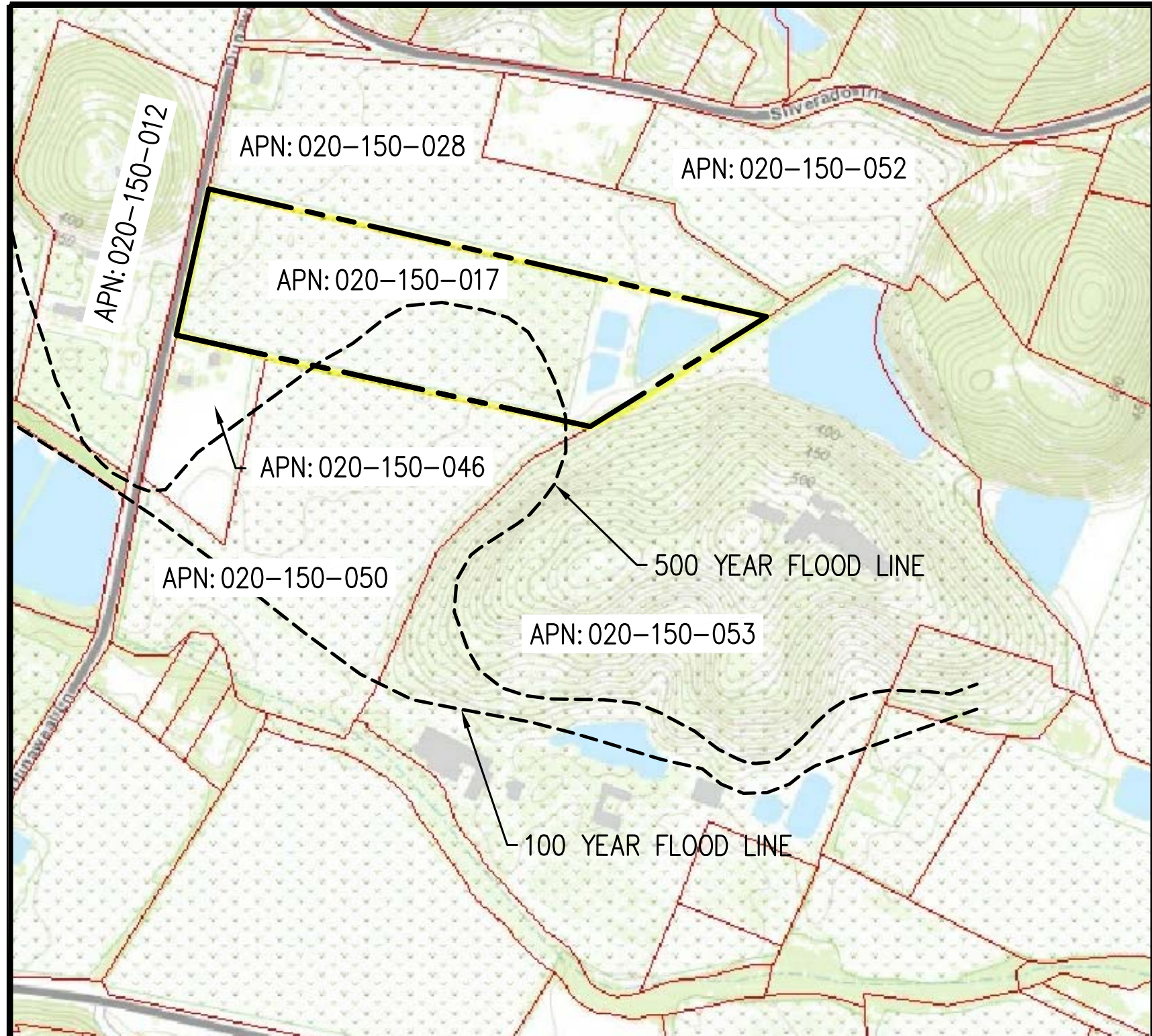
Thank you for giving W-Trans the opportunity to provide these services. Please call if you have any questions.

Sincerely,

Dalene J. Whitlock, PE, PTOE
Principal

DJW/djw/NAX077.L2

Enclosures: Site Plan
 Level of Service Calculations
 Collision Rate Calculation Spreadsheet
 Winery Traffic Information/Trip Generation Sheet
 Napa County Left-Turn Lane Warrant

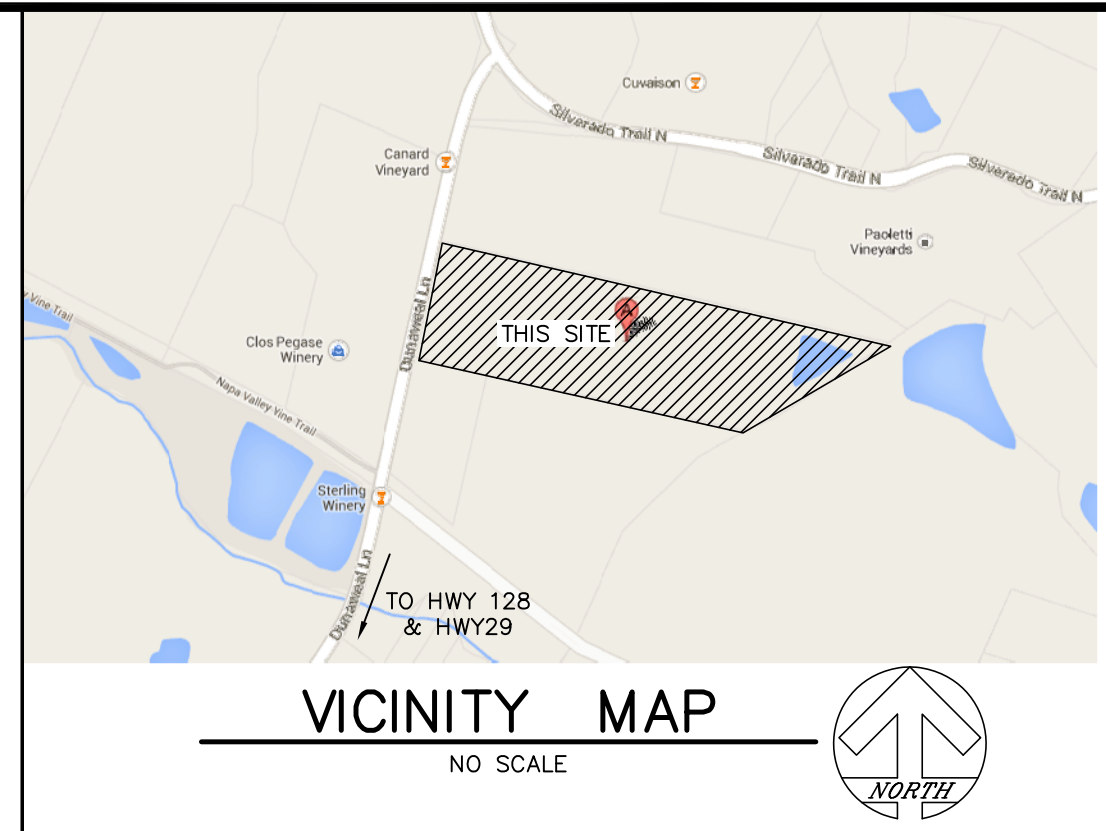


GIRARD WINERY

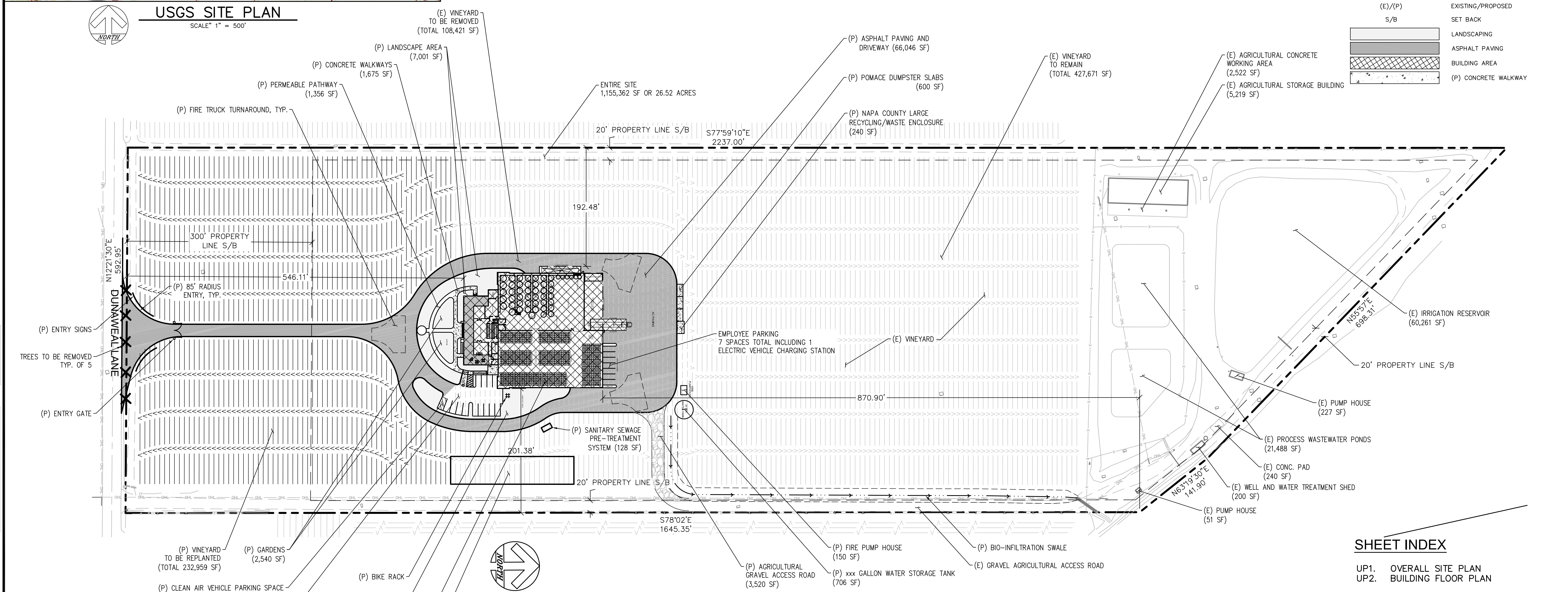
1077 Dunaweal Ln.

Calistoga, California 94515

APN 022-150-017



LEGEND	
	APPROXIMATE PROPERTY LINE
	FENCE
	EDGE OF PAVEMENT
	EDGE OF GRAVEL DRIVEWAY
	DRAINAGE COURSE FLOWLINE
	VINEROW
	OVERHEAD UTILITIES
	SETBACK
	100 YEAR FLOOD PLAIN
	500 YEAR FLOOD PLAIN
	5 FOOT INDEX 1' INTERVAL CONTOURS
	WELL
	EXISTING/PROPOSED
	SET BACK
	LANDSCAPING
	ASPHALT PAVING
	BUILDING AREA
	(P) CONCRETE WALKWAY



PROPOSED OVERALL SITE PLAN
SCALE: 1" = 80'

OWNER/APPLICANT:
VINTAGE WINE ESTATES
205 CONCOURSE BLVD.
SANTA ROSA, CA 95403
CONTACT: PAT RONEY
PH. (877) 289-9463

ARCHITECT:
DEL STARRETT ARCHITECT
181 CONCOURSE BLVD., SUITE A
SANTA ROSA, CA 95403
CONTACT: DEL STARRETT
PH. (707) 526-9645

LANDSCAPE ARCHITECT:
PARKER SMITH LANDSCAPE ARCHITECT
1945 PINER RD. #25
SANTA ROSA, CA 95403
PH. (707) 477-7502

ARCHITECT:
ALWAYS ENGINEERING INC.
131 STONY CIRCLE, SUITE 1000
SANTA ROSA, CA 95401
CONTACT: BEN MONROE
PH. (707) 542-8795

Grading Quantities:
Site Grading is based upon subgrade to existing grade. No account has been taken for stripings, expansion or contraction. Volumes should be verified and determined independently by the Contractor.

	CUT:	ENGINEERED FILL:	NET:
TOTAL EARTHWORK:	2,172 CY	4,034 CY	1,862 CY (FILL)
TOTAL DISTURBED AREA = 3.59 ACRES			

Note: Excess spoils will be disposed of in a county approved site or spread in onsite vineyards. Temporary grading spoils will be stockpiled onsite in the unplanted vineyard area until ready for use.

SHEET INDEX

UP1. OVERALL SITE PLAN
UP2. BUILDING FLOOR PLAN

Always Engineering, Inc.
Civil Engineering & Topographic Surveying
2360 Professional Drive (707) 542-8795
Santa Rosa, CA 95403 Fax (707) 542-6147
www.alwayseng.com

GIRARD WINERY
1077 DUNAWREAL LN., CALISTOGA, CA

USE PERMIT OVERALL SITE PLAN
1077 DUNAWREAL LN., CALISTOGA, CA
APN:020-150-017

SHEET
UP1 OF UP2

SEGMENT COLLISION RATE CALCULATIONS**Vintage Wine Estates Project****Location:** 1077 Dunaweal Lane**Date of Count:** Thursday, March 06, 2014**ADT:** 1,500**Number of Collisions:** 2**Number of Injuries:** 0**Number of Fatalities:** 0**Start Date:** January 1, 2007**End Date:** December 31, 2011**Number of Years:** 5**Highway Type:** Conventional 2 lanes or less**Area:** Rural**Design Speed:** ≤55**Terrain:** Flat**Segment Length:** 0.8 miles**Direction:** North/South

Number of Collisions x 1 Million

ADT x 365 Days per Year x Segment Length x Number of Years

2	x	1,000,000
1,500	x	365
	x	0.81
		x
		5

	Collision Rate		Fatality Rate		Injury Rate	
Study Segment	0.90	c/mvm	0.0%		0.0%	
Statewide Average*	1.05	c/mvm	2.4%		40.1%	

ADT = average daily traffic volume

c/mvm = collisions per million vehicle miles

* 2010 Collision Data on California State Highways, Caltrans

Winery Traffic Information / Trip Generation Sheet

Traffic during a Typical Weekday

Number of FT employees: 8 x 3.05 one-way trips per employee = 24 daily trips.

Number of PT employees: 3 x 1.90 one-way trips per employee = 6 daily trips.

Average number of weekday visitors: 52 / 2.6 visitors per vehicle x 2 one-way trips = 40 daily trips.

Gallons of production: 200,000 / 1,000 x .009 truck trips daily³ x 2 one-way trips = 4 daily trips.

Total = 74 daily trips.

(No of FT employees) + (No of PT employees/2) + (sum of visitor and truck trips x .38) = 26 PM peak trips.

Traffic during a Typical Saturday

Number of FT employees (on Saturdays): 2 x 3.05 one-way trips per employee = 6 daily trips.

Number of PT employees (on Saturdays): 4 x 1.90 one-way trips per employee = 8 daily trips.

Average number of Saturday visitors: 62 / 2.8 visitors per vehicle x 2 one-way trips = 44 daily trips.

Total = 58 daily trips.

(No of FT employees) + (No of PT employees/2) + (visitor trips x .57) = 29 PM peak trips.

Traffic during a Crush Saturday

Number of FT employees (during crush): 20 x 3.05 one-way trips per employee = 61 daily trips.

Number of PT employees (during crush): 10 x 1.90 one-way trips per employee = 19 daily trips.

Average number of Saturday visitors: 62 / 2.8 visitors per vehicle x 2 one-way trips = 44 daily trips.

Gallons of production: 200,000 / 1,000 x .009 truck trips daily x 2 one-way trips = 4 daily trips.

Avg. annual tons of grape on-haul: 1,000 / 144 truck trips daily⁴ x 2 one-way trips = 14 daily trips.

Total = 142 daily trips.

Largest Marketing Event- Additional Traffic

Number of event staff (largest event): 30 x 2 one-way trips per staff person = 60 trips.

Number of visitors (largest event): 500 / 2.8 visitors per vehicle x 2 one-way trips = 357 trips.

Number of special event truck trips (largest event): 10 x 2 one-way trips = 20 trips.

³ Assumes 1.47 materials & supplies trips + 0.8 case goods trips per 1,000 gallons of production / 250 days per year (see *Traffic Information Sheet Addendum* for reference).

⁴ Assumes 4 tons per trip / 36 crush days per year (see *Traffic Information Sheet Addendum* for reference).

PM Peak Hour - Existing Conditions
Vintage Wine Estates TIS
County of Napa

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 Silverado Trail/Dunaweal Ln

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: A[8.9]

Street Name: Dunaweal Ln Silverado Trail

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 0 0 0 0 0 1 0 0 1 0 0 0 0

Volume Module: >> Count Date: 17 Sep 2014 << 4:45 - 5:45 pm
Base Vol: 16 0 84 0 0 0 0 167 27 15 248 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 16 0 84 0 0 0 0 167 27 15 248 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94
PHF Volume: 17 0 89 0 0 0 0 177 29 16 264 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 17 0 89 0 0 0 0 177 29 16 264 0

Critical Gap Module:
Critical Gp: 6.4 6.5 6.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 4.1 xxxxx xxxxx
FollowUpTim: 3.5 4.0 3.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 2.2 xxxxx xxxxx

Capacity Module:
Conflict Vol: 487 487 192 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 206 xxxxx xxxxx
Potent Cap.: 543 484 855 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 1377 xxxxx xxxxx
Move Cap.: 538 478 855 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 1377 xxxxx xxxxx
Volume/Cap: 0.03 0.00 0.10 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.01 xxxxx xxxxx

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.0 xxxxx xxxxx
Control Del:xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 7.6 xxxxx xxxxx
LOS by Move: * * * * * * * * * * A * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx 1018 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue:xxxxx 0.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.0 xxxxx xxxxx
Shrd ConDel:xxxxx 8.9 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 7.6 xxxxx xxxxx
Shared LOS: * A * * * * * * * * A * * *
ApproachDel: 8.9 xxxxxxx xxxxxxx xxxxxxx
ApproachLOS: A * * *

Note: Queue reported is the number of cars per lane.

PM Peak Hour - Existing Conditions
Vintage Wine Estates TIS
County of Napa

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 SR 29/Dunaweal Ln

Average Delay (sec/veh): 0.9 Worst Case Level Of Service: B[11.6]

Street Name: Dunaweal Ln SR 29

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1! 0 0 1 0 0 1 0 1 0 0 1 0

Volume Module: >> Count Date: 16 Sep 2014 << 4:00 - 5:00 pm
Base Vol: 2 0 2 47 0 25 14 382 2 2 558 64
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 2 0 2 47 0 25 14 382 2 2 558 64
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93
PHF Volume: 2 0 2 51 0 27 15 412 2 2 601 69
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 2 0 2 51 0 27 15 412 2 2 601 69

Critical Gap Module:
Critical Gp: 7.1 6.5 6.2 7.1 6.5 6.2 4.1 xxxxx xxxxx 4.1 xxxxx xxxxx
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxxx xxxxx 2.2 xxxxx xxxxx

Capacity Module:
Conflict Vol: 1096 1117 413 1084 1084 636 670 xxxxx xxxxx 414 xxxxx xxxxx
Potent Cap.: 192 209 644 196 219 482 930 xxxxx xxxxx 1156 xxxxx xxxxx
Move Cap.: 179 205 644 193 215 482 930 xxxxx xxxxx 1156 xxxxx xxxxx
Volume/Cap: 0.01 0.00 0.00 0.26 0.00 0.06 0.02 xxxxx xxxxx 0.00 xxxxx xxxxx

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.0 xxxxx xxxxx 0.0 xxxxx xxxxx
Control Del:xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 8.9 xxxxx xxxxx 8.1 xxxxx xxxxx
LOS by Move: * * * * * * * * A * * * A * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx 769 xxxxx xxxxx 624 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue:xxxxx 0.0 xxxxx xxxxx 0.4 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd ConDel:xxxxx 9.7 xxxxx xxxxx 11.6 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * A * * B * * * * * * * *
ApproachDel: 9.7 11.6 xxxxxxx xxxxxxx
ApproachLOS: A B * *

Note: Queue reported is the number of cars per lane.

PM Peak Hour - Existing plus Project Conditions
Vintage Wine Estates TIS
County of Napa

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Silverado Trail/Dunaweal Ln

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: A[8.9]

Dunaweal Ln				Silverado Trail				
North Bound		South Bound		East Bound		West Bound		
L	T	R	L	T	R	L	T	R
Control:	Stop Sign		Stop Sign		Uncontrolled		Uncontrolled	
Rights:	Include		Include		Include		Include	
Lanes:	0 0 1! 0 0		0 0 0 0 0		0 0 0 1 0		0 1 0 0 0	

Volume Module:	>> Count	Date:	17 Sep 2014	<< 4:45 - 5:45 pm
Base Vol:	16 0 84	0 0 0	0 167	27 15 248 0
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	16 0 84	0 0 0	0 167	27 15 248 0
Added Vol:	3 0 7	0 0 0	0 0 1	2 0 0 0
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0 0
Initial Fut:	19 0 91	0 0 0	0 167	28 17 248 0
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	0.94 0.94 0.94	0.94 0.94 0.94	0.94 0.94 0.94	0.94 0.94 0.94
PHF Volume:	20 0 97	0 0 0	0 177	30 18 264 0
Reduct Vol:	0 0 0	0 0 0	0 0 0	0 0 0 0
FinalVolume:	20 0 97	0 0 0	0 177	30 18 264 0

Critical Gap Module:

Critical Gp:	6.4	6.5	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	xxxx <td>xxxxx</td> <td>xxxxx</td> <td>xxxx <td>xxxxx</td> <td>2.2</td> <td>xxxx</td> <td>xxxxx</td> </td>	xxxxx	xxxxx	xxxx <td>xxxxx</td> <td>2.2</td> <td>xxxx</td> <td>xxxxx</td>	xxxxx	2.2	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	492	492	192	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	207	xxxx	xxxxx
Potent Cap.:	540	481	854	xxxx	xxxx <td>xxxxx</td> <td>xxxx</td> <td>xxxx <td>xxxxx</td> <td>1376</td> <td>xxxx</td> <td>xxxxx</td> </td>	xxxxx	xxxx	xxxx <td>xxxxx</td> <td>1376</td> <td>xxxx</td> <td>xxxxx</td>	xxxxx	1376	xxxx	xxxxx
Move Cap.:	534	474	854	xxxx	xxxx <td>xxxxx</td> <td>xxxx</td> <td>xxxx <td>xxxxx</td> <td>1376</td> <td>xxxx</td> <td>xxxxx</td> </td>	xxxxx	xxxx	xxxx <td>xxxxx</td> <td>1376</td> <td>xxxx</td> <td>xxxxx</td>	xxxxx	1376	xxxx	xxxxx
Volume/Cap:	0.04	0.00	0.11	xxxx	xxxx <td>xxxx</td> <td>xxxx</td> <td>xxxx <td>xxxx</td> <td>0.01</td> <td>xxxx</td> <td>xxxx</td> </td>	xxxx	xxxx	xxxx <td>xxxx</td> <td>0.01</td> <td>xxxx</td> <td>xxxx</td>	xxxx	0.01	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT			
Shared Cap.:	xxxx	1033	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	8.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx
Shared LOS:	*	A	*	*	*	*	*	*	*	A	*	*
ApproachDel:	8.9		xxxxxx			xxxxxx			xxxxxx			
ApproachLOS:	A		*			*			*			

Note: Queue reported is the number of cars per lane.

PM Peak Hour - Existing plus Project Conditions
Vintage Wine Estates TIS
County of Napa

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 SR 29/Dunaweal Ln

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: B[11.3]

Dunaweal Ln				SR 29				
North Bound		South Bound		East Bound		West Bound		
L	T	R	L	T	R	L	T	R
Control:	Stop Sign		Stop Sign		Uncontrolled		Uncontrolled	
Rights:	Include		Include		Include		Include	
Lanes:	0 0 1! 0 0		0 0 1! 0 0		1 0 0 1 0		1 0 0 1 0	

Volume Module:	>> Count	Date:	16 Sep 2014	<< 4:00 - 5:00 pm
Base Vol:	2 0 2	47 0 25	14 382	2 2 558 64
Growth Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	2 0 2	47 0 25	14 382	2 2 558 64
Added Vol:	0 0 0	3 0 7	2 0 0	0 0 0 1
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0 0
Initial Fut:	2 0 2	50 0 32	16 382	2 2 558 65
User Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
PHF Adj:	0.93 0.93 0.93	0.93 0.93 0.93	0.93 0.93 0.93	0.93 0.93 0.93
PHF Volume:	2 0 2	54 0 34	17 412	2 2 601 70
Reduct Vol:	0 0 0	0 0 0	0 0 0	0 0 0 0
FinalVolume:	2 0 2	54 0 34	17 412	2 2 601 70

Critical Gap Module:

Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	1105	1123	413	1089	1089	636	671	xxxx	xxxxx	414	xxxx	xxxxx
Potent Cap.:	190	207	644	195	217	481	929	xxxx	xxxxx	1156	xxxx	xxxxx
Move Cap.:	173	203	644	191	213	481	929	xxxx	xxxxx	1156	xxxx	xxxxx
Volume/Cap:	0.01	0.00	0.00	0.28	0.00	0.07	0.02	xxxx	xxxx	0.00	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.9	xxxx	xxxxx	8.1	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT						
Shared Cap.:	xxxx	753	xxxxx	xxxx	662	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.0	xxxxx	xxxxx	0.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	9.8	xxxxx	xxxxx	11.3	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	A	*	*	B	*	*	*	*	*	*	*
ApproachDel:	9.8				11.3		xxxxxx		xxxxxx			
ApproachLOS:	A				B		*		*			

Note: Queue reported is the number of cars per lane.

PM Peak Hour - Future Conditions
Vintage Wine Estates TIS
County of Napa

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 Silverado Trail/Dunaweal Ln

Average Delay (sec/veh): 3.9 Worst Case Level Of Service: E[38.7]

Street Name: Dunaweal Ln Silverado Trail

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 0 0 0 0 1 0 0 1 0 0 0

Volume Module:
Base Vol: 122 0 23 0 0 0 0 786 39 22 494 0
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 122 0 23 0 0 0 0 786 39 22 494 0
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 122 0 23 0 0 0 0 786 39 22 494 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 122 0 23 0 0 0 0 786 39 22 494 0

Critical Gap Module:
Critical Gp: 6.4 6.5 6.2 xxxxx xxxxx xxxxx xxxxx xxxxx 4.1 xxxxx xxxxx
FollowUpTim: 3.5 4.0 3.3 xxxxx xxxxx xxxxx xxxxx xxxxx 2.2 xxxxx xxxxx

Capacity Module:
Conflict Vol: 1344 1344 806 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 825 xxxxx xxxxx
Potent Cap.: 169 153 385 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 814 xxxxx xxxxx
Move Cap.: 166 149 385 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 814 xxxxx xxxxx
Volume/Cap: 0.74 0.00 0.06 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.03 xxxxx xxxxx

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.1 xxxxx xxxxx
Control Del:xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 9.5 xxxxx xxxxx
LOS by Move: * * * * * * * * * * A * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx 246 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue:xxxxxx 3.4 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.1 xxxxx xxxxx
Shrd ConDel:xxxxxx 38.7 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 9.5 xxxxx xxxxx
Shared LOS: * E * * * * * * * * A * * *
ApproachDel: 38.7 xxxxxxx xxxxxxx xxxxxxx
ApproachLOS: E * * *

Note: Queue reported is the number of cars per lane.

PM Peak Hour - Future Conditions
Vintage Wine Estates TIS
County of Napa

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 SR 29/Dunaweal Ln

Average Delay (sec/veh): 9.6 Worst Case Level Of Service: F[177.3]

Street Name: Dunaweal Ln SR 29

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 1! 0 0 0 0 1! 0 0 1 0 0 1 0 0 1 0

Volume Module:
Base Vol: 2 0 2 68 0 36 20 613 2 2 1113 93
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 2 0 2 68 0 36 20 613 2 2 1113 93
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 2 0 2 68 0 36 20 613 2 2 1113 93
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 2 0 2 68 0 36 20 613 2 2 1113 93

Critical Gap Module:
Critical Gp: 7.1 6.5 6.2 7.1 6.5 6.2 4.1 xxxxx xxxxx 4.1 xxxxx xxxxx
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxxx xxxxx 2.2 xxxxx xxxxx

Capacity Module:
Conflict Vol: 1836 1864 614 1819 1819 1160 1206 xxxxx xxxxx 615 xxxxx xxxxx
Potent Cap.: 59 74 496 61 79 240 586 xxxxx xxxxx 974 xxxxx xxxxx
Move Cap.: 49 71 496 59 76 240 586 xxxxx xxxxx 974 xxxxx xxxxx
Volume/Cap: 0.04 0.00 0.00 1.16 0.00 0.15 0.03 xxxxx xxxxx 0.00 xxxxx xxxxx

Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.1 xxxxx xxxxx 0.0 xxxxx xxxxx
Control Del:xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 11.4 xxxxx xxxxx 8.7 xxxxx xxxxx
LOS by Move: * * * * * * * * B * * * A * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx 240 xxxxx xxxxx 101 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue:xxxxxx 0.1 xxxxx xxxxx 6.5 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd ConDel:xxxxxx 20.3 xxxxx xxxxx 177 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * C * * F * * * * * * * *
ApproachDel: 20.3 177.3 xxxxxxx xxxxxxx
ApproachLOS: C F * *

Note: Queue reported is the number of cars per lane.

PM Peak Hour - Future plus Project Conditions
Vintage Wine Estates TIS
County of Napa

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #1 Silverado Trail/Dunaweal Ln

Average Delay (sec/veh): 4.9 Worst Case Level Of Service: E[45.7]

Dunaweal Ln				Silverado Trail				
North Bound		South Bound		East Bound		West Bound		
L	T	R	L	T	R	L	T	R
Control:	Stop Sign		Stop Sign		Uncontrolled		Uncontrolled	
Rights:	Include		Include		Include		Include	
Lanes:	0 0 1! 0 0		0 0 0 0 0		0 0 0 1 0		0 1 0 0 0	

Volume Module:

Base Vol:	122	0	23	0	0	0	0	786	39	22	494	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	122	0	23	0	0	0	0	786	39	22	494	0
Added Vol:	3	0	7	0	0	0	0	0	1	2	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	125	0	30	0	0	0	0	786	40	24	494	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	125	0	30	0	0	0	0	786	40	24	494	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	125	0	30	0	0	0	0	786	40	24	494	0

Critical Gap Module:

Critical Gp:	6.4	6.5	6.2	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	4.1	xxxx	xxxx
FollowUpTim:	3.5	4.0	3.3	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	2.2	xxxx	xxxx

Capacity Module:

Cnflict Vol:	1348	1348	806	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	826	xxxx	xxxx
Potent Cap.:	168	152	385	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	813	xxxx	xxxx
Move Cap.:	164	148	385	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	813	xxxx	xxxx
Volume/Cap:	0.76	0.00	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.03	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.1	xxxx	xxxx
Control Del:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	9.6	xxxx	xxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT			
Shared Cap.:	xxxx	235	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
SharedQueue:	xxxx	4.1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.1	xxxx	xxxx
Shrd ConDel:	xxxx	45.7	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	9.6	xxxx	xxxx
Shared LOS:	*	E	*	*	*	*	*	*	*	A	*	*
ApproachDel:	45.7		xxxxxx			xxxxxx			xxxxxx			
ApproachLOS:	E		*			*			*			

Note: Queue reported is the number of cars per lane.

PM Peak Hour - Future plus Project Conditions
Vintage Wine Estates TIS
County of Napa

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 SR 29/Dunaweal Ln

Average Delay (sec/veh): 12.4 Worst Case Level Of Service: F[209.8]

Dunaweal Ln				SR 29				
North Bound		South Bound		East Bound		West Bound		
L	T	R	L	T	R	L	T	R
Control:	Stop Sign		Stop Sign		Uncontrolled		Uncontrolled	
Rights:	Include		Include		Include		Include	
Lanes:	0 0 1! 0 0		0 0 1! 0 0		1 0 0 1 0		1 0 0 1 0	

Volume Module:

Base Vol:	2	0	2	68	0	36	20	613	2	2	1113	93
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	2	0	2	68	0	36	20	613	2	2	1113	93
Added Vol:	0	0	0	3	0	7	2	0	0	0	0	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	2	0	2	71	0	43	22	613	2	2	1113	94
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	2	0	2	71	0	43	22	613	2	2	1113	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	2	0	2	71	0	43	22	613	2	2	1113	94

Critical Gap Module:

Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxx	4.1	xxxx	xxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxx	2.2	xxxx	xxxx

Capacity Module:

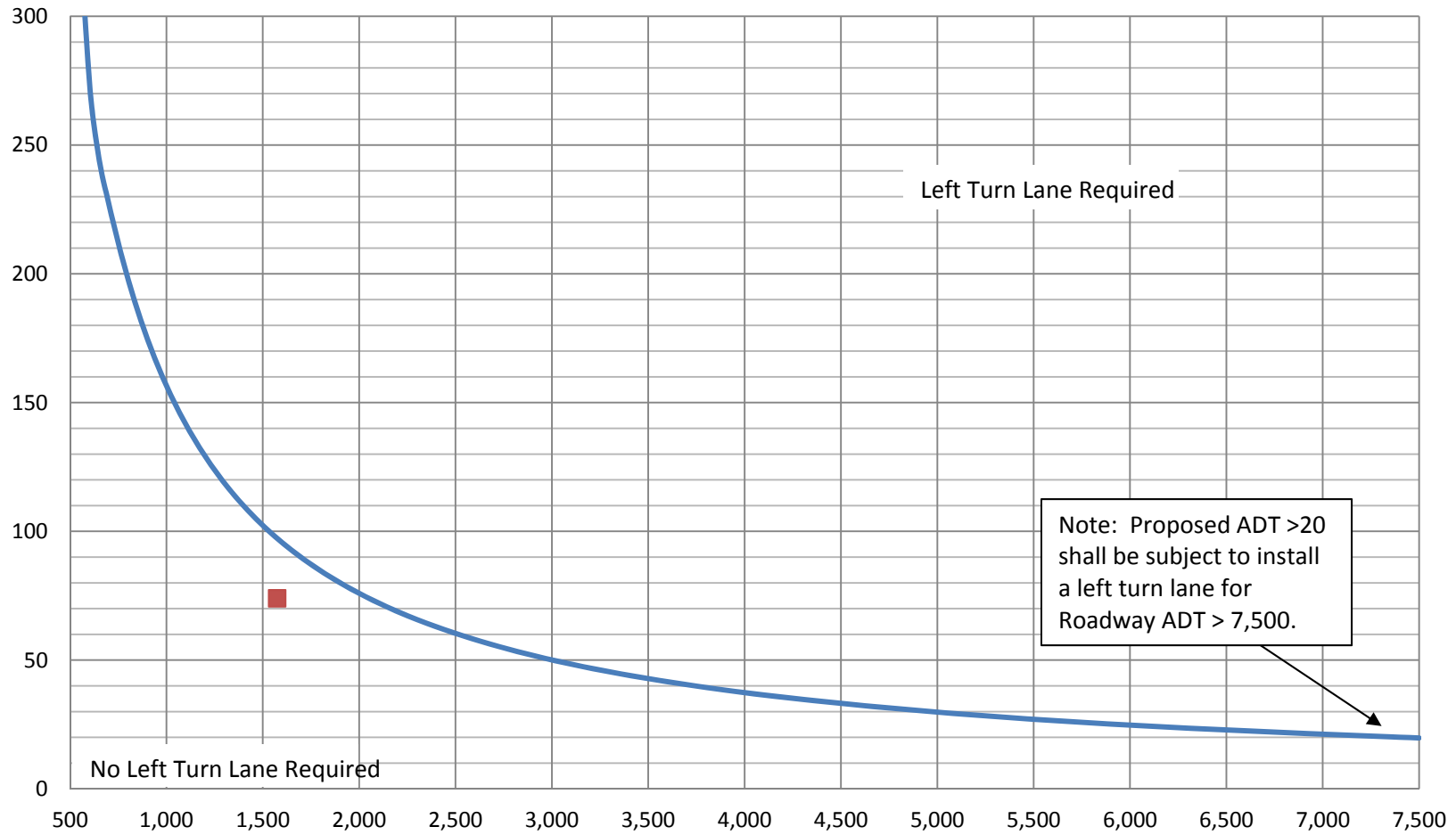
Cnflict Vol:	1844	1869	614	1823	1823	1160	1207	xxxx	xxxx	615	xxxx	xxxx
Potent Cap.:	58	73	496	60	78	240	585	xxxx	xxxx	974	xxxx	xxxx
Move Cap.:	46	70	496	58	75	240	585	xxxx	xxxx	974	xxxx	xxxx
Volume/Cap:	0.04	0.00	0.00	1.22	0.00	0.18	0.04	xxxx	xxxx	0.00	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.1	xxxx	xxxx	0.0	xxxx	xxxx
Control Del:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	11.4	xxxx	xxxx	8.7	xxxx	xxxx
LOS by Move:	*	*	*	*	*	*	B	*	*	A	*	*
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT						
Shared Cap.:	xxxx	233	xxxx	xxxx	100	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
SharedQueue:	xxxx	0.1	xxxx	xxxx	7.4	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Shrd ConDel:	xxxx	20.7	xxxx	xxxx	210	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Shared LOS:	*	C	*	*	F	*	*	*	*	*	*	*
ApproachDel:	20.7				209.8		xxxxxx			xxxxxx		
ApproachLOS:	C				F		*			*		

Note: Queue reported is the number of cars per lane.

Napa County Left Turn Lane Warrant Graph



Napa County Left Turn Lane Warrant Graph

