

September 10, 2013

Mr. Paul Woolls
Woolls Ranch, LLC
1032 Mt. Veeder Road
Napa, CA 94558

Traffic Analysis for the Woolls Ranch Winery

Dear Mr. Woolls;

Whitlock & Weinberger Transportation, Inc. (W-Trans) has completed a focused traffic analysis addressing potential traffic impacts and circulation needs for the proposed new winery to be located at 1032 Mount Veeder Road 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.

Project Description

The site is currently vacant. The proposed project would allow production of up to 50,000 gallons of wine annually and operation of a tasting room for a maximum of 60 visitors per day. The site is served by a single driveway on Redwood Road that also provides access to two single family homes; this entrance would be improved as part of the project.

Study Area

The study area consists of the project site, the connection of the project driveway to Redwood Road, and the segment of Mount Veeder Road-Redwood Road within one-half mile of the project frontage. The project site is located on the east side of Mount Veeder Road, with an existing driveway on Redwood Road approximately 180 feet south of the intersection of Mount Veeder Road/Redwood Road. Mount Veeder Road-Redwood Road is a two-lane undivided highway that runs north-south in the study area with twelve-foot travel lanes in each direction. The configurations of both Redwood Road and the project driveway are shown in Figure 1, which is enclosed.

There is no posted speed limit on Mount Veeder Road-Redwood Road in the vicinity of the project driveway. However, based on speed data collected, the 85th percentile speed for traffic approaching the driveway was found to be approximately 35 miles per hour (mph). Therefore, 35 mph was used for the design speed. It should be noted that traffic approaching the driveway from the south was generally observed to be accelerating while exiting a horizontal curve approximately 400 feet south of the driveway location.

Based on mechanical tube counts collected in August 2013, the average daily traffic (ADT) on Redwood Road just south of Mt. Veeder Road is approximately 1,400 vehicles per day on weekdays and 1,100 vehicles per day on weekend days.

Collision History

The collision history for the study segment of Mount Veeder Road within one-half mile of the project site was reviewed to determine any trends or patterns that indicate a safety risk that may be



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exacerbated by the addition of project traffic. Average annual collision rates were calculated based on records for January 2006 through December 2010 obtained through the California Highway Patrol and published in their Statewide Integrated Traffic Records System (SWITRS) reports.

The statewide average collision rate for a rural two-lane, mountainous road with a speed limit of 55 mph or less is 1.88 collisions/million vehicle miles (c/mvm). The one-mile segment of Mount Veeder Road within one-half mile of the project site had 11 reported collisions over the five-year study period for a calculated collision rate of 4.02 c/mvm, higher than the statewide average for similar facilities. While the collision rate is higher than the statewide average, both the fatality and injury rates are lower. A review of the crashes recorded indicates that a majority of collisions were hit-object collisions, with unsafe speed and improper turning the primary collision factor. These types of collisions are generally related to driver behavior rather than the volume of traffic using the roadway, and tend to involve drivers who are familiar with the road. Drivers who are unfamiliar with a roadway tend to drive more slowly, and are therefore less likely to run off the road due to excessive speed around a curve.

A copy of the collision rate spreadsheet is enclosed for reference.

Existing Conditions

Under existing conditions and with just the traffic generated by existing uses on the driveway, operation is well within the acceptable range, with drivers experiencing less than ten seconds of delay on average. While the concept of "Level of Service" is generally not applied to private driveways, the calculated average delay is consistent with LOS A operation. The existing traffic volumes are shown in Figure 1. Copies of the calculations are enclosed

Future Conditions

Future traffic volumes are typically developed based on information produced by the Napa County Traffic Model; however, due to the remote location of the proposed project, no projections are available for any roads in the vicinity of the proposed project. However, given the very low delays currently experienced at the driveway, substantial increases in traffic on Redwood Road would be needed to trigger unacceptable delays on the driveway. It is therefore anticipated that future operation will continue to be well within the range of what is considered tolerable by drivers exiting a private driveway to an arterial roadway.

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 for reference.

Since the County of Napa's Winery Traffic Information/Trip Generation Sheet does not include guidance on inbound versus outbound trips, 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 1.

**Table 1
Trip Generation Summary**

Trip Type	Daily Trips	Weekday PM Peak		Weekend Midday Peak		
		Trips	In	Out	Trips	In
Existing Trips on Driveway						
Single Family Home (2 units)	19	2	1	1	2	1
Proposed Project						
Winery plus Tasting Room	68	25	6	19	31	16
Total Trips on Driveway	87	27	7	20	33	16

Note: Trip generation does not include traffic associated with special events

Trip Distribution

Given the limited potential for trips to be generated by uses to the north of the site, it was assumed that nearly all of the project traffic will be to and from the south. The applied distribution assumptions and resulting trips are shown in Table 2.

**Table 2
Trip Distribution Assumptions**

Route	Percent	Daily Trips	PM Trips	Wknd MD Trips
Mount Veeder Road North	5%	3	1	2
Redwood Road South	95%	65	26	31
TOTAL	100%	68	27	33

Existing plus Project Conditions

Upon adding project-generated traffic to the driveway, operation is expected to continue to be acceptable, with drivers still experiencing less than ten seconds of delay on average, which is again representative of LOS A operation. The project-added and existing plus project traffic volumes are shown in Figure 1.

Site Access

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 Mount Veeder Road-Redwood Road at the project driveways was evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The

recommended sight distances for minor street approaches that are either a private road or a driveway are based on stopping sight distance. The approach travel speeds are used as the basis for determining the recommended sight distance. Additionally, the stopping sight distance needed for a following driver to stop if there is a vehicle waiting to turn into a side street or driveway is evaluated based on stopping sight distance criterion and the approach speed on the major street. Along Mount Veeder Road-Redwood Road, where the observed 85th percentile speeds were approximately 35 mph, the minimum stopping sight distance required is 250 feet. Based on a review of the project site and the proposed driveway, the sight distance for drivers exiting the proposed driveway is approximately 100 feet to the south and over 400 feet to the north. The sight distance for drivers along Mount Veeder Road-Redwood Road following a driver turning into the project driveway is at least 400 feet for both northbound and southbound traffic. Therefore, with the exception of sight lines for drivers exiting the driveway looking south, sight distance is expected to be adequate for the project driveway.

As part of the proposed project, the project driveway would be modified. Based on a review of the site plan, the driveway would be widened and parts of the embankment on the southeast corner of the driveway access would be removed. Based on the information available, including the proposed site entrance modifications, it is expected that sight distance would be improved. Insufficient information was available to determine if 250 feet of sight distance would be achieved.

Left-Turn Lane Warrants

The need for a left-turn lane on southbound Mount Veeder Road at the project driveway was evaluated using Napa County's Left-Turn Lane Warrant, which is based on the ADT of the roadway and the projected ADT of the proposed use, as well as safety criteria. Under Existing conditions, a left-turn lane is not warranted on southbound Redwood Road at the project driveway.

Based on Napa County's Left-Turn Lane Warrant, a left-turn lane would be warranted when the average daily traffic on Mount Veeder Road-Redwood Road reach 1,700 vehicles per day, or more than a 20 percent increase over existing volumes. Given the limited potential for any growth in this area a 20 percent increase seems highly unlikely. Further, 95 percent of project-related traffic is expected to originate from the south and make a right turn into the site. Therefore, even if volumes reach the level in the future where the left-turn lane is warranted based on the daily trips, a left-turn lane is still not recommended because so little project-related traffic would utilize it. A copy of the turn lane warrant graph is enclosed for reference.

Conclusions and Recommendations

- The proposed project would generate an average of 68 new trips daily, including 25 weekday p.m. peak hour trips and 31 weekend p.m. peak hour trips.
- Under existing conditions without and with the project, operation of the project driveway is expected to remain well within the limits of acceptability, with drivers experiencing, on average, less than ten seconds of delay. This is consistent with LOS A operation.
- Given the limited number of trips that the project would generate, it would increase volumes by considerably less than one percent on the regional road system. This would be a less-than-significant impact.



May 24, 2013

Nate Galambos
Napa County Public Works
1195 Third Street, Suite 201
Napa, California 94559

Subject: Woolfs Ranch Winery, 1032 Mount Veeder Road, Napa. APN: 035-010-054
Road Exception Request for Driveway Entrance to Proposed Winery

Nate,

This letter is to request a specific road exception for an improved access drive from Mount Veeder Road to a proposed winery. The owner of APN 035-010-054 is proposing to construct new production and hospitality buildings in the southeast section of the parcel. The site currently consists of approximately 29.35 acres of vineyards on a 249.81 acre parcel, accessed by existing asphalt and gravel roads. The proposed hospitality site is approximately 5,900 feet from the driveway entrance at 1032 Mount Veeder Road. The proposed production building is approximately 800 feet beyond the hospitality site.

Included with this letter are a set of use permit plans which detail the driveway to the proposed construction site. The plans are titled, *Use Permit Plans For: Woolfs Ranch Winery*, and are dated 5-23-13. Within the proposed access road, there is an approximate 400 foot section which does not meet the Napa County Road and Street Standards. This section is detailed below. All station locations reference the centerline alignment shown in the Use Permit Plans.

Road Exception Request Description

Station 0+18 to 4+00: Road Exception Request for Travel Way Less Than 20'

The path of travel between these stations does not meet the commercial driveway standards for width. The proposed driveway matches the footprint of an existing paved driveway. The total width of the proposed driveway, is 14 feet wide, with asphalt paving 10 foot wide.

From station 0+18 to station 2+50, the existing road is bounded by steep cross slopes on both sides. The slope on the right side increases in elevation, with grades ranging from 80% to 105%. The slope on the left side decreases in elevation, with grades ranging from 65% to 75%.

From station 2+50 to 3+50, the existing driveway crosses a large culvert that drains to the confluence of Redwood Creek and Pickle Creek. The pavement surface is approximately 30 feet above the inverts of the culvert, with grades ranging from 60% to 70% on each side of the driveway.

From station 3+50 to 4+00, the proposed driveway transitions from a 14 foot travel way to a 20 foot travel way, where the road will meet Napa County Road and Street Standards the remainder of the distance.

Project: M-104
Woolfs Ranch Winery

DELTA CONSULTING & ENGINEERING
OF ST. HELENA



To mitigate for the reduction in width from 20 feet to 14 feet in these stations, a Napa County Standard turnout is proposed at station 2+00.

Please feel free to contact me if you have any questions.


Sincerely,


Bryan Jackson, P.E.
Engineering Supervisor

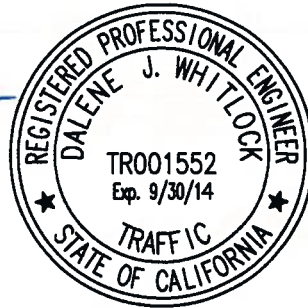
- Sight lines from the project driveway and along Mount Veeder Road-Redwood Road are expected to be adequate, except for sight lines for drivers exiting the site on the project driveway looking to the south.
- It is expected that the proposed modifications to the site entrance would improve sight lines to the south; however, it is not known if adequate sight lines will result.
- Based on Napa County's Left Turn Lane Warrants, a left-turn lane at the proposed project site entry is not warranted for existing volumes, or even with future volumes that might reasonably be expected.
- It is recommended that further study be conducted to ensure adequate sight lines to the south for drivers exiting on the project driveway.

Thank you for asking W-Trans to provide these services.

Sincerely,


Sam Lam, PE
Transportation Engineer


Dalene J. Whitlock, PE, PTOE
Principal



DJW/std/NAX069.L1

Enclosures: Collision Rate Calculations Spreadsheet
Figure 1: Lane Configurations and Volumes
LOS Calculations
Winery Traffic Information/Trip Generation Sheet
Turn Lane Warrant Graph

SEGMENT COLLISION RATE CALCULATIONS

County of Napa

Location: 1032 Mt Veeder Rd

Date of Count: Thursday, August 01, 2013

ADT: 1,500

Number of Collisions: 11

Number of Injuries: 4

Number of Fatalities: 0

Start Date: January 1, 2006

End Date: December 31, 2010

Number of Years: 5

Highway Type: Conventional 2 lanes or less

Area: Rural

Design Speed: <=55

Terrain: Mountain

Segment Length: 1.0 miles

Direction: North/South

Number of Collisions x 1 Million

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

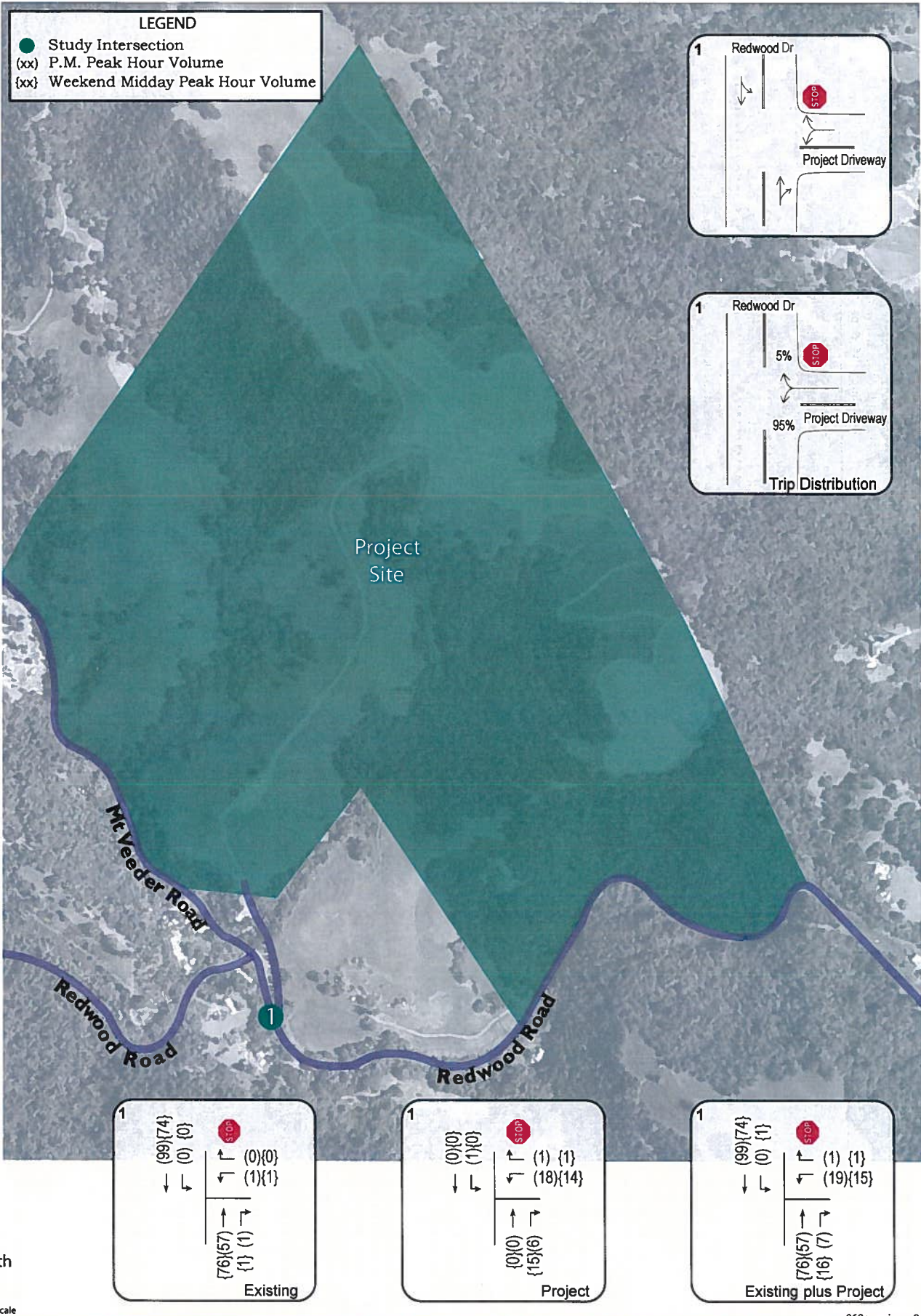
$$\begin{array}{ccccccc}
 & & 11 & & & & 1,000,000 \\
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 1,500 & \times & 365 & \times & 1 & \times & 5
 \end{array}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Segment	4.02 c/mvm	0.0%	36.4%
Statewide Average*	1.88 c/mvm	2.5%	48.1%

ADT = average daily traffic volume

c/mvm = collisions per million vehicle miles

* 2009 Collision Data on California State Highways, Caltrans



Traffic Analysis for the Woolls Ranch Winery

Figure I – Lane Configuration, Trip Distribution and Traffic Volumes



PM Peak Hour - Existing Conditions
Woolfs Ranch Winery
County of Napa

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

Intersection #1 Redwood Rd/Project Driveway

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: A[9.3]

Street Name: Redwood Rd Project Driveway

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign Stop Sign

Rights: Include Include Include Include

Lanes: 0 0 0 1 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0

Volume Module:

Base Vol: 0 57 1 0 99 0 0 0 0 0 0 0 0 0 0 0 0 0 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 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 0 57 1 0 99 0 0 0 0 0 0 0 0 0 0 0 0 0 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 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 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 0 57 1 0 99 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 57 1 0 99 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Critical Gap Module:

Critical Gp:xxxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 6.4 xxxxx xxxxx

FollowUpTim:xxxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 xxxxx xxxxx

Capacity Module:

Conflict Vol: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 157 xxxxx xxxxx

Potent Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 840 xxxxx xxxxx

Move Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 840 xxxxx xxxxx

Volume/Cap: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.00 xxxxx xxxxx

Level of Service Module:

2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.0 xxxxx xxxxx

Control Del:xxxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 9.3 xxxxx xxxxx

Wknd MD Peak Hour - Existing Conditions
Woolfs Ranch Winery
County of Napa

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

Intersection #1 Redwood Rd/Project Driveway

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: A[9.3]

Street Name: Redwood Rd Project Driveway

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control: Uncontrolled Uncontrolled Stop Sign Stop Sign

Rights: Include Include Include Include

Lanes: 0 0 0 1 0 0 0 1 0 0 0 0 0 0 1 0 0 0 0

Volume Module:

Base Vol: 0 76 1 0 74 0 0 0 0 0 0 0 0 0 0 0 0 0 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 1.00 1.00 1.00 1.00 1.00 1.00

Initial Bse: 0 76 1 0 74 0 0 0 0 0 0 0 0 0 0 0 0 0 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 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 1.00 1.00 1.00 1.00 1.00 1.00

PHF Volume: 0 76 1 0 74 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 76 1 0 74 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Critical Gap Module:

Critical Gp:xxxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 6.4 xxxxx xxxxx

FollowUpTim:xxxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 xxxxx xxxxx

Capacity Module:

Conflict Vol: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 151 xxxxx xxxxx

Potent Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 846 xxxxx xxxxx

Move Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 846 xxxxx xxxxx

Volume/Cap: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.00 xxxxx xxxxx

Level of Service Module:

2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.0 xxxxx xxxxx

Control Del:xxxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 9.3 xxxxx xxxxx

Wknd MD Peak Hour - Existing plus Project Conditions
 Woolls Ranch Winery
 County of Napa

Trip Generation Report

Forecast for wknd md

Zone #	Subzone	Amount	Units	Rate		Trips		Total % Of Trips Total
				In	Out	In	Out	
1		1.00	Project	16.00	15.00	16	15	31 100.0
	Zone 1 Subtotal					16	15	31 100.0
TOTAL						16	15	31 100.0

PM Peak Hour - Existing plus Project Conditions
 Woolls Ranch Winery
 County of Napa

Trip Generation Report

Forecast for pm

Zone #	Subzone	Amount	Units	Rate		Trips		Total % Of Trips Total
				In	Out	In	Out	
1		1.00	Project	6.00	19.00	6	19	25 100.0
	Zone 1 Subtotal					6	19	25 100.0
TOTAL						6	19	25 100.0

Level of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #1 Redwood Rd/Project Driveway

 Average Delay (sec/veh): 1.0 Worst Case Level of Service: A [9.4]

 Street Name: Redwood Rd Project Driveway
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R

Level of Service Computation Report
 2000 HCM Unsignalized Method (Future Volume Alternative)

 Intersection #1 Redwood Rd/Project Driveway

 Average Delay (sec/veh): 0.9 Worst Case Level of Service: A [9.4]

 Street Name: Redwood Rd Project Driveway
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R

Control:	Uncontrolled	Uncontrolled	Uncontrolled	Uncontrolled	Stop Sign	Stop Sign
Rights:	Include	Include	Include	Include	Include	Include
Lanes:	0	0	0	0	0	0
Volume Module:						
Base Vol:	0	57	1	0	99	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	57	1	0	99	0
Added Vol:	0	0	6	0	0	0
PasserByVol:	0	0	0	0	0	0
Initial Fut:	0	57	7	0	99	0
User Adj:	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
PHF Volume:	0	57	7	0	99	0
Reduct Vol:	0	0	0	0	0	0
FinalVolume:	0	57	7	0	99	0

Control:	Uncontrolled	Uncontrolled	Uncontrolled	Uncontrolled	Stop Sign	Stop Sign
Rights:	Include	Include	Include	Include	Include	Include
Lanes:	0	0	0	0	0	0
Volume Module:						
Base Vol:	0	76	1	0	74	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	76	1	0	74	0
Added Vol:	0	0	15	0	0	0
PasserByVol:	0	0	0	0	0	0
Initial Fut:	0	76	16	1	74	0
User Adj:	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
PHF Volume:	0	76	16	1	74	0
Reduct Vol:	0	0	0	0	0	0
FinalVolume:	0	76	16	1	74	0

Critical Gap Module:

Critical Gp:xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	6.4	6.5	6.2
FollowUpTim:xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	3.5	4.0	3.3

Capacity Module:

Conflict Vol:	xxxx	xxxx	xxxx	xxxx	xxxx	160	160	61
Potent Cap.:	xxxx	xxxx	xxxx	xxxx	xxxx	836	736	1010
Move Cap.:	xxxx	xxxx	xxxx	xxxx	xxxx	836	736	1010
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	0.00	0.00

Critical Gap Module:

Critical Gp:xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	6.4	6.5	6.2
FollowUpTim:xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	3.5	4.0	3.3

Capacity Module:

Conflict Vol:	xxxx	xxxx	xxxx	xxxx	xxxx	160	160	84
Potent Cap.:	xxxx	xxxx	xxxx	xxxx	xxxx	836	736	981
Move Cap.:	xxxx	xxxx	xxxx	xxxx	xxxx	836	736	981
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	0.00	0.00

Level of Service Module:

2Way95thQ:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Control Del:xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
LOS by Move:	*	*	*	*	*	*	*	*
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
Shared Cap.:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	844	xxxx
SharedQueue:xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.1	xxxx
Shrd ConDel:xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	9.4	xxxx
Shared LOS:	*	*	*	*	*	*	A	*
ApproachDel:	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	9.4	A	xxxxxx
ApproachLOS:	*	*	*	*	*	*	A	*

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

Level of Service Module:

2Way95thQ:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Control Del:xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
LOS by Move:	*	*	*	*	*	*	*	*
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
Shared Cap.:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	843	xxxx
SharedQueue:xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.1	xxxx
Shrd ConDel:xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	9.4	xxxx
Shared LOS:	*	*	*	*	*	*	A	*
ApproachDel:	xxxxxx	xxxxxx	xxxxxx	xxxxxx	xxxxxx	9.4	A	xxxxxx
ApproachLOS:	*	*	*	*	*	*	A	*

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

Winery Traffic Information / Trip Generation Sheet

Traffic during a Typical Weekday

Number of FT employees: <u>7</u> x 3.05 one-way trips per employee	=	<u>21.35</u> daily trips.
Number of PT employees: <u>0</u> x 1.90 one-way trips per employee	=	<u>0</u> daily trips.
Average number of weekday visitors: <u>60</u> / 2.6 visitors per vehicle x 2 one-way trips	=	<u>46.15</u> daily trips.
Gallons of production: <u>50,000</u> / 1,000 x .009 truck trips daily ³ x 2 one-way trips	=	<u>0.9</u> daily trips.
Total	=	<u>68.4</u> daily trips.
(No of FT employees) + (No of PT employees/2) + (sum of visitor and truck trips x .38)	=	<u>24.88</u> PM peak trips.

Traffic during a Typical Saturday

Number of FT employees (on Saturdays): <u>7</u> x 3.05 one-way trips per employee	=	<u>21.35</u> daily trips.
Number of PT employees (on Saturdays): <u>0</u> x 1.90 one-way trips per employee	=	<u>0</u> daily trips.
Average number of Saturday visitors: <u>60</u> / 2. 8 visitors per vehicle x 2 one-way trips	=	<u>42.86</u> daily trips.
Total	=	<u>64.21</u> daily trips.
(No of FT employees) + (No of PT employees/2) + (visitor trips x .57)	=	<u>31.43</u> PM peak trips.

Traffic during a Crush Saturday

Number of FT employees (during crush): <u>7</u> x 3.05 one-way trips per employee	=	<u>21.35</u> daily trips.
Number of PT employees (during crush): <u>5</u> x 1.90 one-way trips per employee	=	<u>9.5</u> daily trips.
Average number of Saturday visitors: <u>60</u> / 2. 8 visitors per vehicle x 2 one-way trips	=	<u>42.86</u> daily trips.
Gallons of production: <u>50000</u> / 1,000 x .009 truck trips daily x 2 one-way trips	=	<u>0.9</u> daily trips.
Avg. annual tons of grape on-haul: <u>304</u> / 144 truck trips daily ⁴ x 2 one-way trips	=	<u>4.2</u> daily trips.
Total	=	<u>78.81</u> daily trips.

Largest Marketing Event- Additional Traffic

Number of event staff (largest event): <u>12</u> x 2 one-way trips per staff person	=	<u>24</u> trips.
Number of visitors (largest event): <u>200</u> / 2.8 visitors per vehicle x 2 one-way trips	=	<u>143</u> trips.
Number of special event truck trips (largest event): <u>5</u> x 2 one-way trips	=	<u>10</u> 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).

Traffic Information Sheet Addendum

Information for Caltrans Review

Application should include:

Project Location

- Site Plan showing all driveway location(s)
- Show detail of Caltrans right-of-way
- Aerial photo at a readable scale

Trip Generation Estimate

- Please provide separate **Winery Traffic Information / Trip Generation Sheets** for existing and proposed operations.

Napa County Winery Traffic Generation Characteristics

Employees

Half-hour lunch: All - 2 trips/day (1 during weekday PM peak)
Hour lunch: Permanent Full-Time – 3.2 trips/day (1 during weekday PM peak)
Permanent Part-Time – 2 trips/day (1 during weekday PM peak)
Seasonal: 2 trips/day (0 during weekday PM peak) – crush
see full time above – bottling
Auto Occupancy: 1.05 employees/auto

Visitors

Auto occupancy:
Weekday = 2.6 visitors/auto
Weekend = 2.8 visitors/auto

Peaking Factors:

Peak Month: 1.65 x average month
Average Weekend: 0.22 x average month
Average Saturday: 0.53 x average weekend
Peak Saturday: 1.65 x average Saturday
Average Sunday: 0.8 x average Saturday
Peak Sunday: 2.0 x average Sunday

Peak Weekend Hour: Winery (3-4 PM) - 0.57 x total for weekend day involved

Average 5-Day Week (Monday-Friday) - 1.3 x average weekend

Average Weekday: 0.2 x average 5-day week

Peak Weekday Hour: Winery (3-4 PM) - 0.57 x total for weekday involved

Roadway PM Peak(4-5 PM?) - 0.38 x total for weekday involved

Service Vehicles

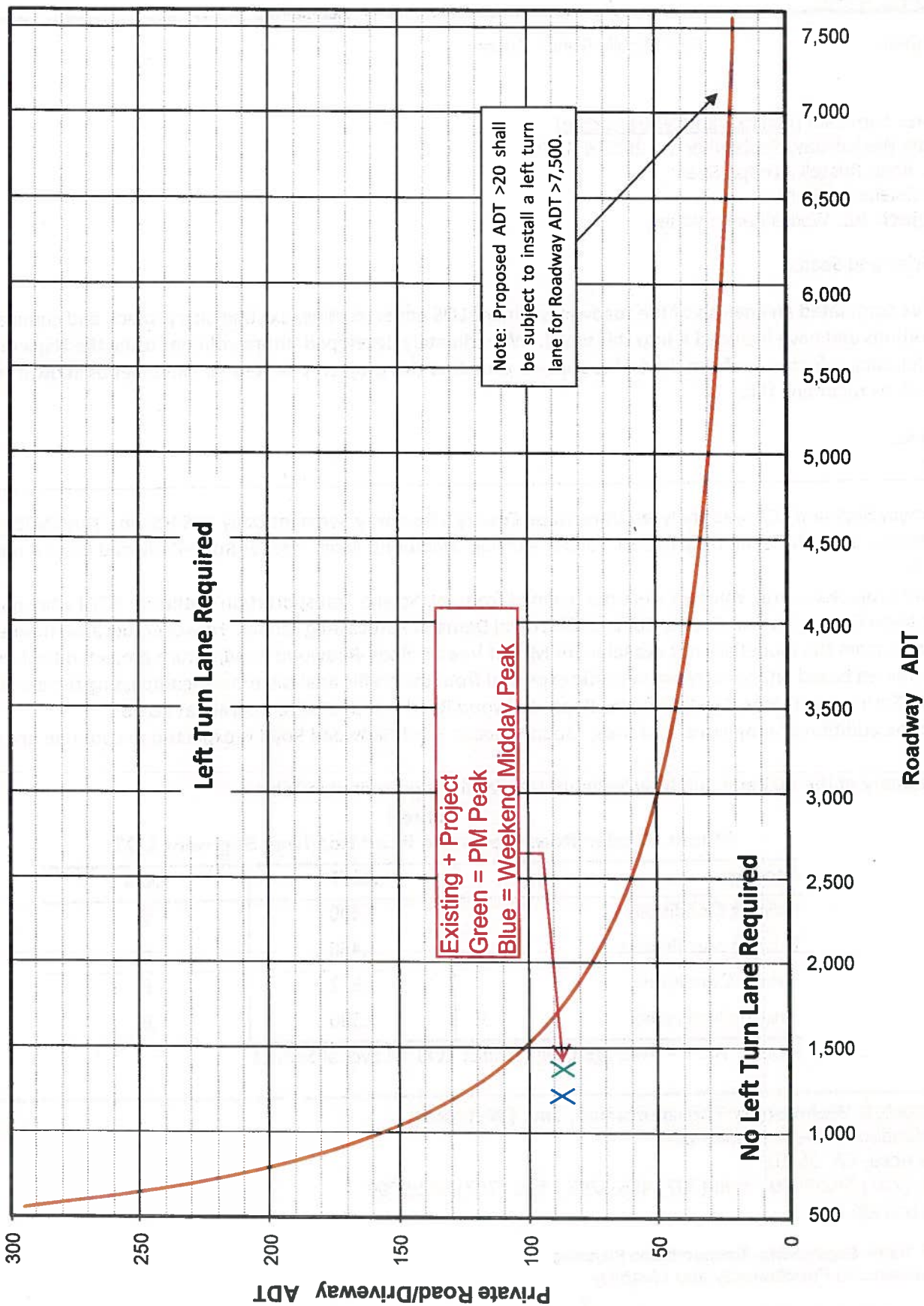
Grapes (36 days (6weeks)/season): 1.52 trips/1000 gals/season (4 ton loads assumed)

Materials/Supplies (250 days/yr): 1.47 trips/1000 gals/yr

Case Goods (250 days/yr): 0.8 trips/1000 gal/yr

Woollys Ranch Winery
Left-Turn Lane Warrant Analysis

LEFT TURN LANE WARRANT GRAPH



Trippi, Sean

Subject: FW: Woolls Ranch Winery

From: Sam Lam [<mailto:slam@w-trans.com>]

Sent: Wednesday, September 18, 2013 4:31 PM

To: 'Brian Russell'; Trippi, Sean

Cc: Dalene Whitlock

Subject: RE: Woolls Ranch Winery

Hi Brian and Sean,

We've completed an analysis of the roadway segment LOS under existing, existing plus project, and cumulative conditions and have included it into this email. We ultimately developed future volumes using the Napa County traffic model using information from the traffic analysis zone that this project is located in. Please let us know if you have any questions regarding this.

Thanks,

-Sam

Roadway Segment LOS was analyzed using Napa County's Roadway Segment Daily LOS Volume Thresholds published in the Napa County Baseline Data Report. Under existing conditions, Mount Veeder Road-Redwood Road is operating at LOS B.

Future projected traffic volumes were determined from the Solano Transportation Authority (STA) who maintains the joint Napa County/Solano County 2010-2030 Travel Demand Forecasting Model. However, because future traffic volumes from the model are not available for Mount Veeder Road-Redwood Road, future projected traffic volumes were determined based on the increase in traffic expected from the traffic analysis zone encompassing the existing project. Under Future conditions, Mount Veeder Road-Redwood Road is expected to operate at LOS B.

With the addition of project-related trips, Mount Veeder Road-Redwood Road is expected to continue operating at LOS B.

A summary of the ADT and Roadway Segment LOS results is presented in Table 1.

Table 1
Mount Veeder Road-Redwood Road Roadway Segment LOS

Scenario	ADT	LOS
Existing Conditions	1,400	B
Existing plus Project	1,468	B
Future Conditions	1,512	B
Future plus Project	1,580	B

Notes: ADT = Average Daily Traffic; LOS = Level of Service

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