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Correspondence Received After April 20, 2016 Packet Mailout

Frogs Leap Winery - P14-00054
Planning Commission Meeting of August 17, 2016

Barbara Fetherston
8817 Conn Creek Road
P.O. Box 239
Rutherford, Ca. 94573
bfetherston1@me.com

April 19, 2016

Members of the Planning Commission
Napa County
1195 Third Street, Suite 210
Napa, California 94559
Attn: Shaveta Sharma

Subject: Frog's Leap Winery, Use Permit Major Modification Application, P14-00054

Dear Commissioners:

I am writing in regard to a request by Frog's Leap Winery (FLW) for an exception to the left-turn lane (LTL) required by Napa County as a condition for the FLW modified use permit. The proposed plan to substitute a 6-foot shoulder widening in lieu of a LTL on Conn Creek Road/Hwy 128 is unacceptable. In the attached letter to Rick Marshall, I have outlined my concerns regarding this matter. I hope that you will read my letter and the related arborist report by Mr. Bill Pramuk.

If the shoulder-widening plan is approved, I believe it would have these impacts:
-Conflict with existing farming activities at 8780 Conn Creek Road/Hwy 128.
-Cause substantial damage and possible death to a Heritage oak.
-Fail to achieve the intended traffic mitigation measures.
-Create unsafe conditions for agricultural workers, vehicles and bicycles.
-Be inconsistent with Napa County Code 18.108.100 that encourages the preservation of oak trees.

-Deprive the community of benefits provided by oak trees that are identified in the *2010 Napa County Voluntary Oak Woodland Management Plan, pps. 10-11:*

a. Air quality protection and carbon sequestration,
b. Plant and wildlife habitat,
c. Scenic and public recreation, and
d. Enhanced property values.

In *A Planner's Guide for Oak Woodlands*, Richard B Standiford states, "Lots containing native oaks have been found to be valued at a 27% premium over properties having no trees. Individual trees of large size or landmark status within a community were found to increase property values by an additional $18,000 to $50,000 each."

Oak trees provide many benefits and are valuable to our community. We need to protect them, especially beautiful veteran specimens like the one across from the FLW driveway.

Thank you for your consideration.

Barbara Fetherston

From: Barbara Fetherston <bfetherston1@me.com>
Subject: Frog's Leap Winery Use Permit #P14-00100 for Major Modification, Parcel # 030-090-033
Date: April 18, 2016 at 2:58:15 PM PDT
To: Marshall Rick <Rick.Marshall@countyofnapa.org>
Cc: "Sharma, Shaveta" <shaveta.sharma@countyofnapa.org>, david.morrison@countyofnapa.org
Bcc: petra@martinestate.com, nancy hammonds <hammonds.nancy@gmail.com>, Bill Pramuk <info@billpramuk.com>

Dear Mr. Marshall,

I am writing to express my concerns regarding a plan proposed by Frog's Leap Winery (FLW) for a six-foot shoulder widening on the east side of Highway 128 in Rutherford, for north-bound traffic, in lieu of a left-turn lane. Approval of this plan requires a Napa County Road and Streets Standards Exception.

The FLW is located at 8815 Conn Creek Road (aka Hwy. 128). My husband and I own the property, to the north, at 8817 Conn Creek Road. The proposed site for the shoulder widening, shown in this diagram as a white strip, is in Caltrans' right of way (ROW) fronting the Martin Estate Vineyard, 8780 Conn Creek Road, directly opposite the FLW driveway.

The shoulder-widening project is being proposed by FLW as an alternative to a left-turn lane (LTL), required by Napa County, to accommodate 50,000 more visitors than FLW's current use permit allows. The expanded visitation and marketing activities requested by FLW, in its pending application for a major modification, triggered the need for the LTL.

13-133exh_State Router 128 Shoulder Improvements Exhibit_081915_signed.pdf ¬

The California Highway Design Manual states that the purpose of a **left turn lane (LTL) is to expedite the movement of through traffic by: 1)Controlling the movement of turning traffic, 2) increasing the capacity of the intersection, and 3) improving safety characteristics.** I appreciate that Napa County has recognized the importance of LTLs in managing the ever-increasing traffic load on Hwy 128 in Rutherford. The County has required four LTLs in a one-mile segment of Hwy 128 for FLW, Caymus, Honig, and Round Pond wineries. Unfortunately, not one of the four LTLs has been constructed and FLW is seeking an exception to the County's requirement for its LTL. I believe the exception is not justified because the alternative shoulder-widening plan will not accomplish the same three goals (in bold type above); and would be a poor substitute for a LTL.

Of particular concern are the safety issues on this segment of Highway 128 (aka Conn Creek Road). The roadway is a narrow (10' wide in each lane), rural, two-lane arterial route running between Silverado Trail and Hwy 29. The posted speed limit varies between 30 and 45 miles an hour but the average speed at the intersection in the drawing above is 48 mph, according to the FLW traffic study conducted by Omni-Means. The roadway is striped with solid, double-yellow lines indicating a no-passing zone. The shoulder-widening plan would encourage unsafe passing on the right, a maneuver that is prohibited by the California Vehicle Code, Sec 21755(a), **"The driver of a vehicle may overtake and pass another vehicle upon the right only under conditions permitting that movement in safety. In no event shall that movement be made by driving off the paved or main-traveled portion of the roadway."**

Directing traffic to pass on the right also creates points of potential conflict and interference with agricultural activities and workers in Martin Estate's vineyard (APN-030-200-057). The proposed six-foot shoulder widening would encroach on the area where vineyard workers operate machinery, tend vines, stage their work projects, and park vehicles on a daily basis. In the center of the proposed shoulder-widening area stands a healthy 90-foot tall, majestic 200 year-old Quercus lobata tree, that has an impressive 51.8" diameter at breast height (dbh). As a fixed object, 7 feet from the existing roadway, this tree is a major safety hazard to individuals (on bicycles or in cars) attempting to bypass vehicles turning left into FLW. The tree also interferes with vertical clearance as its branches hang to within 6 feet of the ground. Consulting arborist, Bill Pramak advises that "construction, excavation, and shoulder-widening asphalt pavement would put this tree at risk of severe damage and possible death and would create unsafe conditions for, people, vehicles, and the tree." Mr. Pramuk's full arborist report, attached below, evaluates the health of the tree and the safety hazards related to the proposed shoulder-widening plan.

The Omni-Means traffic study for FLW, page 26, suggests that a six-foot wide shoulder along the east side of Conn Creek Road (Hwy 128) "will provide an area where northbound traffic could carefully bypass a waiting left-turning vehicle", however, the general traffic on this roadway, in addition to passenger cars, includes: limousines, tour buses, RVs and boats, waste-hauling vehicles, school buses, slow tractors, emergency-response, and other over-sized vehicles; plus 28 percent of traffic is comprised of trucks. The average width of a diesel truck is 8.5 feet and leaves no room for passenger vehicles or bicycles in a 10' wide lane. Even with an additional six-foot shoulder, these vehicles would not be able to pass a car waiting to turn left. In this situation, shoulder widening would not meet Caltrans' goals to increase the capacity of the intersection or expedite the movement of through traffic in a safe manner (see goals in bold type above).

I would be be pleased to further discuss these and other safety issues on Hwy. 128 in Rutherford with you and other stakeholders or interested persons. This one-mile area is home to two wineries currently seeking major modifications to expand their use permits and another request for a new winery. Between construction traffic and existing traffic

we are seeing more and more safety issues in this corridor. Approving an exemption from the Napa County Road and Street Standards for this situation would not improve safety, traffic flow, or the capacity of the intersection.

Thank you for your consideration,

Barbara Fetherston

Bill Pramuk, Consulting Arborist
Pramuk, Trees and Associates, LLC

March 16, 2016

Barbara Fetherston
P.O. Box 239
Rutherford CA 94573

Arborist Report

Re: Shoulder widening by a valley oak tree

Dear Barbara,

You requested I examine a large valley oak tree on the Cal Trans right of way on the east side of Hwy 128, next to the Martin Estate Winery's vineyard and opposite the entrance to Frog's Leap Winery. You are concerned that the proposed shoulder widening of the road would harm the tree.

I examined the tree on March 1 when I noted the following:

The tree is a 51.8" DBH[1] valley oak *(Quercus lobata).* The base of the trunk flare is located seven feet from the edge of the pavement. From the center of the trunk the canopy spreads 35 feet north, 40 feet south, 32 feet east over the vineyard, and 34 feet west, just past the fog line on the west side of the road. The tree is approximately 90 feet tall and I estimate its age to be about 200 years.

The north bound lane measures 10 feet from the edge of the pavement on the east side of the road to the double-yellow center line and 11 feet from the center line to the edge of the pavement on the west side f the road.

The tree shows good vigor[2] and structure. The root collar sits relatively high in the terrain. There are no obvious signs of significant decay, pests or diseases. Sounding with a mallet revealed no evidence of decay in the lower trunk.

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[1] DBH: Diameter at Breast height, 4.5' above ground or just below the first limb.

[2] Vigor is a measure of a tree's current health and ability to withstand pests and diseases. It is not a measure of structural stability. The range of vigor is: Excellent, Good, Fair, Poor, Dying, Dead.

As you described, and as shown in documents you provided [3], proposed plans call for widening the shoulder on the east side of Hwy 128 by six feet in lieu of installing a left turn lane at the entry to Frog's Leap Winery.

Based on the measurements I made, space for the widening on the east side is no more than 7 feet even if the new pavement were to abut the base of the trunk flare.

This would risk potentially devastating direct damage to the roots of the oak and would force traffic to within inches of the trunk.

Based on common tree protection practices, a reasonable tree protection zone should extend to the drip line or a radius of about ten times the trunk diameter.

For this tree, based on canopy spread, this would be 35 feet to the north and 40 feet south. Or, based on trunk diameter, 43 feet to the north and south.

The plan graphics (attached) you provided depict the road widening to pave the entire currently available root protection zone west of the tree, the area that remained unpaved after the existing road was built.

The road construction changes would put the tree at risk of severe direct damage and would create an unsafe condition for traffic and the tree.

There appear to be other options for the project such as:

- Widen the west side of the road.
- Relocate the entry to Frog's Leap.

I strongly recommend that the road widening not be done as currently proposed.

Sincerely,

Bill Pramuk

Bill Pramuk, Consulting Arborist
RCA #409 ISA WE-0610A
Tree Risk Assessment Qualified
Attached: Plan graphic and tree photograph

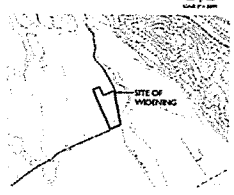
ASCA
AMERICAN SOCIETY of CONSULTING ARBORISTS

CERTIFIED ARBORIST
ISA

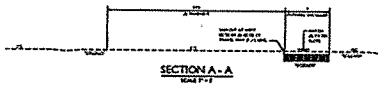
[3] *Review of Focused Traffic Analyses, Proposed Frog's Leap Winery and Caymus Winery Use Permit Modifications,* MRO Engineers, 2/18/16

FROG'S LEAP WINERY

STATE ROUTE 128 SHOULDER IMPROVEMENTS EXHIBIT



LOCATION MAP



SECTION A - A

PROJECT INFORMATION

PROPERTY OWNER & APPLICANT:
FROG'S LEAP WINERY
8815 CONN CREEK ROAD
ST. HELENA, CA 94574

SITE ADDRESS:
8815 CONN CREEK ROAD
ST. HELENA, CA 94574

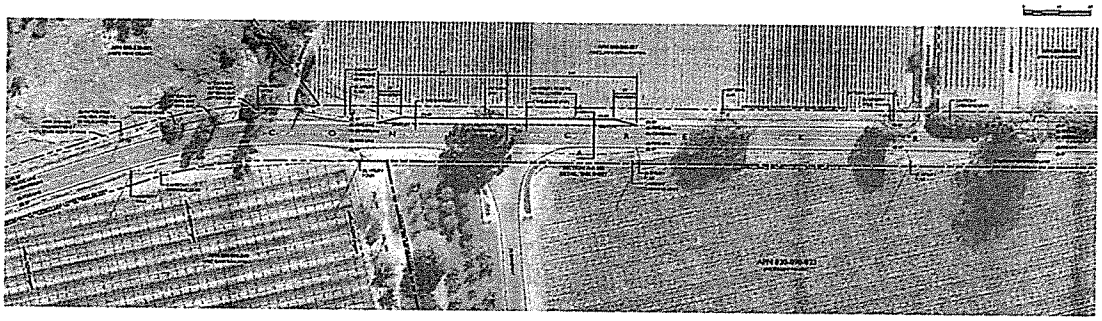
ASSESSORS PARCEL NUMBER:
030-090-033

PARCEL SIZE:
38.92± ACRES

ZONING:
AGRICULTURAL PRESERVE (AP)

NOTES:

1. BASED BACKGROUND IMPROVEMENTS EXISTING TOPOGRAPHIC NATURAL TOPOGRAPHIC INFORMATION SYSTEM FOR BASIS OF TOPOGRAPHIC MAP OF THE LANDS OF FROG'S LEAP WINERY BY TOM OF TOPOGRAPHY DATED NOVEMBER 2014. APPLIED CIVIL ENGINEERING INCORPORATED ASSUMES NO LIABILITY REGARDING THE ACCURACY OR COMPLETENESS OF THE TOPOGRAPHIC INFORMATION.
2. BACKGROUND PHOTOGRAPH WAS OBTAINED FROM THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM (GIS) DATABASE (PHOTO DATE: APRIL 9, 2013).
3. ACCORDING TO FEMA FIRM COMMUNITY PANEL 060426 0016 D, THE SUBJECT PARCEL IS ENTIRELY LOCATED WITHIN ZONE X (AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD). SEE FEMA FIRM COMMUNITY PANEL 060426 0016 D FOR MORE INFORMATION.
4. THIS INFORMATION USED PROVIDED BY FOUND MONUMENTS.



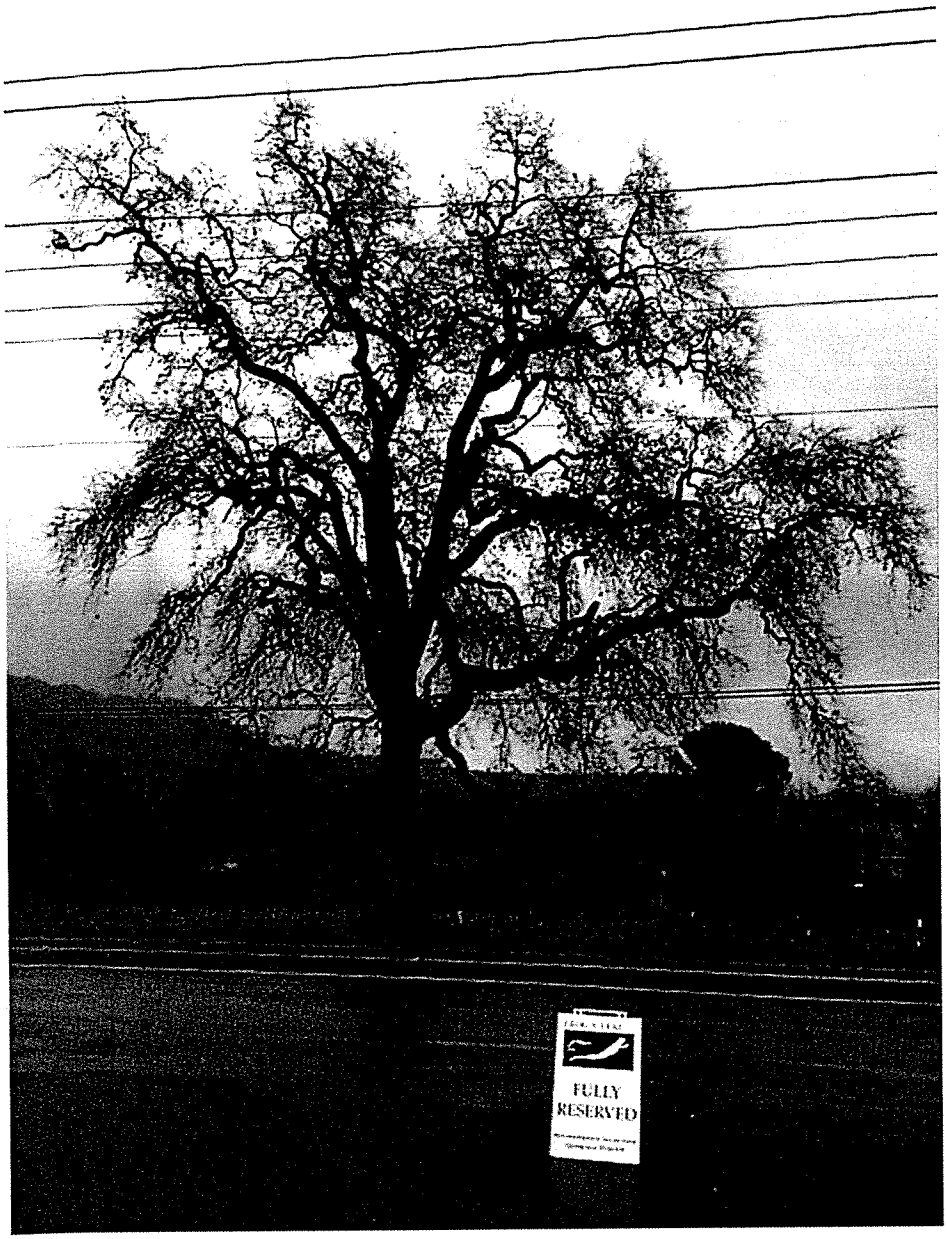
STATE ROUTE 128 SHOULDER IMPROVEMENTS EXHIBIT

APPLIED

FROG'S LEAP WINERY
STATE ROUTE 128 SHOULDER IMPROVEMENTS EXHIBIT

FROG'S LEAP WINERY
8815 CONN CREEK ROAD
ST. HELENA, CA 94574
NAPA COUNTY APN 030-090-033

DATE AUGUST 2015
JOB NUMBER 15420
FILE 15420EXH_Sheet1
ORIGINAL SIZE 24"X 36"
SCALE AS NOTED
SHEET NUMBER C1 OF 1


FULLY
RESERVED

Gallina, Charlene

From: Sharma, Shaveta
Sent: Tuesday, April 19, 2016 3:50 PM
To: Gallina, Charlene; McDowell, John
Subject: FW: Frog's Leap Winery
Attachments: Barbara Fetherston, April 19, 2016.docx; Marshall email.rtfd.zip; Arborist Report.pdf

FYI. Similar to the email sent in yesterday.

From: Barbara Fetherston [mailto:bfetherston1@me.com]
Sent: Tuesday, April 19, 2016 3:39 PM
To: Frost, Melissa
Cc: Sharma, Shaveta; Morrison, David
Subject: Frog's Leap Winery

Dear Melissa,
Please forward these three documents to the Planning Commission for their meeting on 4/20/16
Attachments:
1. Letter to Planning Commission from Barbara Fetherston, dated 4/19/16
2. Email to Rick Marshall
3. Arborist Report by Bill Pramuk

Thank you for your assistance,
Barbara Fetherston

Frost, Melissa

Subject: FW: Frog's Leap Winery
Attachments: Barbara Fetherston, April 19, 2016.docx; Marshall email.rtfd.zip; Arborist Report.pdf

From: Barbara Fetherston [mailto:bfetherston1@me.com]
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Thank you for your assistance,
Barbara Fetherston

Frost, Melissa

Subject: FW: Frog's Leap Winery, Use Permit Major Modification # P14-00054 and Revised Initial Study
Attachments: LTR to Planning Commission re Frog's Leap Revised IS 04.15.2016.PDF

From: McDowell, John
Sent: Friday, April 15, 2016 6:07 PM
To: Morrison, David; Anderson, Laura; Gallina, Charlene; Sharma, Shaveta; Frost, Melissa
Subject: FW: Frog's Leap Winery, Use Permit Major Modification # P14-00054 and Revised Initial Study

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From: Patricia Larkin [mailto:larkin@smwlaw.com]
Sent: Friday, April 15, 2016 3:32 PM
To: McDowell, John; heather@vinehillranch.com; napacommissioner@yahoo.com; anne.cottrell@lucene.com; tkscottco@aol.com; JeriGillPC@outlook.com
Cc: Ellison Folk; Edward T. Schexnayder
Subject: Frog's Leap Winery, Use Permit Major Modification # P14-00054 and Revised Initial Study

Dear Commissioners:

Please see attached a letter from Ellison Folk of this office, which letter is being sent concurrently via U.S. Mail to John McDowell. Please contact me should you have difficulty accessing the pdf attachment.

Best Regards,

Patricia Larkin
Legal Secretary
Shute, Mihaly & Weinberger LLP
396 Hayes Street
San Francisco, CA 94102-4421
v: 415/552-7272 x235
f: 415/552-5816
www.smwlaw.com

SHUTE, MIHALY
& WEINBERGER LLP

396 HAYES STREET, SAN FRANCISCO, CA 94102
T: (415) 552-7272 F: (415) 552-5816
www.smwlaw.com

ELLISON FOLK
Attorney
folk@smwlaw.com

April 15, 2016

Via E-Mail and U.S. Mail

Members of the Planning Commission
Napa County
1195 Third Street, Suite 210
Napa, CA 94559

Attn: John McDowell, Deputy Planning Director
John.McDowell@countyofnapa.org

Re: Frog's Leap Winery. Use Permit Major Modification # P14-00054 and Revised Initial Study

Dear Commissioners:

On behalf of Nancy Hammonds and Charlotte Blank, we submit these comments on the Revised Initial Study/proposed Negative Declaration ("Revised IS") for the proposed Frog's Leap Winery Use Permit ("Project"). For over 30 years, the Blank family has owned property on Conn Creek Road across from the Frog's Leap site. As local grape growers, the Blank family are members of the agricultural community that the County's agricultural preserve is intended to protect. Indeed, to this day, Blank wine production remains a local operation– it is produced in nearby St. Helena (by Grace Family Vineyards) from grapes grown on the Blank family's Rutherford property.

The Blank family has observed firsthand the rapid and relatively-recent growth of winery tourism, tasting, and marketing events in the immediate vicinity of their home. The Conn Creek Road area contains numerous tourism-oriented wineries—on Conn Creek alone, both Frog's Leap and Caymus Vineyards are now seeking to expand their tasting and marking operations, while construction of the proposed Frank Family Vineyards would add further visitors to the area.

This proliferation winery tourism is not without significant impacts on the environment and Napa's community. Winery tourism has dramatically degraded traffic conditions County-wide, and such impacts are acutely felt on the rural Conn Creek Road.

Intersections on this road already fail to meet the County's own traffic standards. The noted increase in traffic on the road has also raised significant safety concerns associated with inadequate facilities to accommodate new tasting and marketing-related traffic, as well as growing concerns about driver intoxication resulting from these events.

The growth in winery tourism has yielded other environmental impacts as well. For instance, noise from marketing events and associated traffic has started to burden the Rutherford community. But as detailed in our original letter on this Project, submitted on December 23, 2015, the IS failed to adequately consider these and other impacts associated with the Project. Despite the County's subsequent release of the Revised IS in March 2016, many of the flaws in the initial document remain. As discussed further below and in the attached letters from traffic experts MRO Engineers (which are incorporated herein by reference) there is a fair argument that the Project will create significant environmental impacts. In cases such as this, the County would violate the California Environmental Quality Act, Pub. Res. Code § 21000 et seq. ("CEQA"), if it adopts the proposed Negative Declaration and approves the Project without first requiring the preparation of an environmental impact report ("EIR"). Without an EIR containing further information and analysis of the Project's likely impacts, the Commission cannot legally approve the Project. Consequently, the Commission should deny the application before it.

I. The Revised IS's Analysis of Traffic Safety Is Inadequate, and There Is a Fair Argument that the Project May Have Significant Safety-Related Impacts.

Even with its recent changes, the Revised IS's consideration of traffic safety remains flawed and does not comply with CEQA's requirements. First, the Revised IS fails to consider safety issues associated with increasing numbers of intoxicated drivers on County roadways as wine tasting and marketing events increase. According to the California Department of Motor Vehicles, Napa County has consistently exceeded state averages for DUI arrest rates during the last four reported years. Exhibit A, MRO Engineers (March 24, 2016) at 3. The County's analysis overlooks this fact and evidence of recent drunk-driving related accidents on Conn Creek Road, which indicate that driving conditions are already unsafe. As we have previously informed the Planning Commission, in a single January 2016 weekend, two serious drunk driving incidents occurred on the segment of Conn Creek Road between Silverado Trail and Rutherford Road. One incident involved a drunk driver hitting a telephone pole and fence and then crossing over Conn Creek Road and crashing into a vineyard. The other involved a drunk driver veering off the road and crashing into a rock wall on the Caymus property.

The conditions leading to these incidents will only worsen with additional visitors to wine tastings and marketing events proposed by the applicant. While the applicant's own traffic consultant acknowledges that "the occurrence of DUI vehicular accidents in the Napa Valley is a concern given the nature of winery visitation/tasting," (Letter from Omni Means, dated January 13, 2016) neither the applicant nor the County has proposed any action to mitigate this significant safety issue.

Second, the Revised IS does not adequately evaluate safety impacts associated with the proposal to widen the shoulder of Conn Creek Road rather than installing a left-turn lane in front of the project site. An analysis by MRO Engineers has determined that this shoulder-widening proposal suffers from numerous flaws. First, as the Revised IS acknowledges, this widening is intended to allow vehicles to pass on the right-hand shoulder when northbound cars are stopped in the middle of Conn Creek Road waiting to turn left into the Frog's Leap driveway. Revised IS at 29. But passing on the shoulder is illegal under the California Vehicle Code. *See* Exhibit A, MRO Engineers (March 24, 2016) at 2. Thus, the shoulder-widening will encourage illegal and unsafe passing in front of the project site.

In noted contrast to motor vehicles, cyclist *are* permitted to ride in the shoulder (Vehicle Code § 21755(b)) and already utilize Conn Creek Road, which contains a bike lane south of the project site. By encouraging an illegal passing maneuver in the shoulder used by cyclists, the proposed shoulder widening creates new, unsafe conditions for cyclist (as well as any agricultural workers/equipment operating on the side of the road). Exhibit A, MRO Engineers (March 24, 2016) at 2-3. Additionally, even with the proposed widening, the six-foot shoulder will be insufficiently wide for many vehicles to use for passing. Thus, encouraging vehicles to pass on this shoulder risks collisions either with vehicles waiting to turn left into the project site, or the oak tree next to the shoulder.[1] *Id.* at 3-5. The Revised IS fails to consider any of these safety issues.

Third, the Revised IS contains a misleading discussion of safety impacts from failing to install a northbound left-turn in front of the Frog's Leap site. As explained by MRO Engineers, installing a turn lane is a necessary safety improvement "that will

[1] As MRO Engineers also observe, the widened shoulder would be paved to within a foot of the oak tree trunk. Exhibit A, MRO Engineers (March 24, 2016) at 3-4. Thus, a substantial portion of the oak tree's roots would be paved over. *Id.* The Revised IS states that shoulder widening would avoid impacts to the oak tree from installing a left turn lane but fails to consider how shoulder widening would itself impact this significant biological resource. *See* Revised IS at 9-10, 26-29.

largely eliminate the potential for rear-end collisions involving vehicles waiting to enter the project site." Exhibit B, MRO Engineers (April 13, 2016) at 8. But rather than consider this significant safety issue, the Revised IS's discussion of the left-turn requirement contains inconsistent information about the County's standards. Echoing text from the applicant's traffic consultant, the Revised IS claims that "the Napa County Road and Street Standards warrant for a left-turn lane is not based on . . . safety issues." Revised IS at 27. But elsewhere, the Revised IS acknowledges that the left-turn lane warrant is safety-related: "the applicant is requesting an exception to the Napa County Road and Streets Standards [intended] to achieve the *same level of safety*" as a left-turn lane. *Id.* at 14 (emphasis added). Indeed, the County's Road and Street Standards, which includes the left-turn lane requirement, confirm that the Standards' objectives include "provid[ing] adequate safety and service" on roads in the County. Exhibit C, excerpts of Napa County Road and Street Standards (2016).[2]

By presenting inconsistent and misleading information about the need for the left turn lane to ameliorate safety issues related to the Project, the Revised IS fails as an informational document. Furthermore, as determined by MRO Engineers, replacing the left-turn lane with the widened northbound shoulder "would 'substantially increase [traffic] hazards due to a design feature' of the project," creating "a significant impact." Exhibit A, MRO Engineers (March 24, 2016) at 5; *see also* Exhibit B, MRO Engineers (April 13, 2016) at 8. This assessment alone requires preparation of an EIR to fully evaluate and mitigate this safety impact. Guidelines § 15064(f)(1)[3]; *Stanislaus Audubon Soc'y v. County of Stanislaus* (1995) 33 Cal.App.4th 144, 150-51.

II. The Revised IS's Transportation Analysis Is Inadequate, and There Is a Fair Argument that the Project May Have Significant Transportation Impacts.

A. The Traffic Impact Calculations Upon Which the Revised IS Relies Contain Numerous Flaws.

Traffic experts MRO Engineers have conducted separate assessments of (1) the Initial Study's discussion of traffic impacts along with the applicant's underlying traffic study, prepared by Omni Means, and (2) more recent traffic analysis contained in the Revised IS and additional information from the applicant. MRO Engineers have

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[2] The full text of these standards is also available at http://www.countyofnapa.org/WorkArea//DownloadAsset.aspx?id=4294975422.

[3] The CEQA Guidelines, 14 Cal. Code Regs. § 15000 *et seq.*, are referred to as "Guidelines."

discovered numerous flaws in the methods used in the applicant's traffic study on which the Revised IS relies. Many of these errors, including those listed below, serve to understate the Project's potential traffic impacts:

- The Omni Means study does not use County-approved trip-generation factors to determine how many cars that new winery visitors will add to the road system. Using the County's factors show that the Project will create over 150 percent more weekday peak traffic and almost 70 percent more Saturday peak traffic than the Initial Study states. Exhibit A, MRO Engineers (March 24, 2016) at 5-6.

- Even using its understated traffic generation numbers, the Omni Means study fails to "assign" all of the new traffic to the roadways around Frog's Leap to determine which roads are impacted. That is, in calculating traffic impacts, the study fails to count the majority of peak-hour traffic that it estimates the Project will generate. *Id.* at 6.

- The Omni Means study uniformly assumes that trucks only occupy 2 percent of the traffic in the study area, despite the fact that marketing events and harvest/crush activities require a substantial number of truck trips. A recent Caltrans report states that trucks comprise over 28 percent of the vehicles on this section of SR 128. This high truck volume likely further exacerbates intersection delays. *Id.* at 8.

- The study fails to adequately analyze the traffic impacts of 500-person marketing events, which will generate traffic volumes that "substantially exceed the peak-hour volumes considered in the Omni-Means analysis." Exhibit B, MRO Engineers (April 13, 2016) at 5. The applicant's traffic consultant claims that traffic from these events would not occur during peak traffic periods, but the proposed conditions of approval would allow these events (and the resulting traffic) to occur *anytime* between 11:00 a.m. and 10:00 p.m. Conditions of Approval at 4.

These errors, along with others identified by MRO Engineers, deprive the Revised IS of value as a document that can inform the public of the Project's true traffic impacts. By relying on the analysis in the Revised IS, the County has not complied with its duty to "painstakingly ferret out" the Project's impacts. *Envt'l Planning and Information Council of W. El Dorado County v. County of El Dorado* (1982) 131 Cal.App.3d 350, 357 ("*EPIC*"). CEQA requires the County to "use its best effort to find out and disclose all that it reasonably can" regarding the extent of traffic impacts. *Citizens to Preserve the Ojai v. Ventura* (1986) 176 Cal.App.3d 421, 431. This has not occurred here.

B. The Revised IS Fails to Study the Full Area of the Project's Traffic Impacts.

As we observed in our December 23, 2015 letter, the IS and Omni Means study fail to consider the Project's impacts on the SR 29/Rutherford Road (SR 128) intersection even though the majority of the Project's traffic travels to and from the direction of that intersection. Indeed, the recent traffic analysis prepared for the nearby Caymus Vineyards *does* consider traffic impacts at this intersection and shows that the intersection already operates below County traffic standards. *See* Exhibit D, excerpted W-Trans Amended Caymus Traffic Impact Study.

The failure to consider impacts at the SR 29/SR 128 intersection is a glaring omission in the Revised IS. The California Supreme Court has emphasized that an environmental document "may not ignore the regional impacts of a project approval." *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 575. The document must analyze environmental impacts over the entire area where impacts might reasonably occur. *See Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 721-23.

Even though the SR 29/SR 128 intersection is less than two miles from the entrance to Frog's Leap, Omni Means asserts, in a conclusory fashion, that the intersection is too far away to consider in its study. There is no evidence to support this statement. In fact, under both Caltrans and the Institute of Transportation Engineers guidelines, this intersection should be considered in the traffic analysis for the Project. Exhibit B, MRO Engineers (April 13, 2016) at 3-5. As MRO Engineers observes:

> Considering the significant traffic delays already occurring at the Rutherford Road (SR 128)/St. Helena Highway (SR 29) intersection, and the fact that the bulk of the traffic from the project will pass through this intersection, it is likely that the project will significantly impact this intersection as well.

Id. at 5. Consequently, the County cannot approve the Project until it assesses, and mitigates, the Project's impacts to this intersection.

C. The Revised IS's Threshold for Considering the Project's Cumulative Traffic Impacts Is Invalid.

Even though the Project will add new traffic to already-impacted intersections—SR 29/Rutherford Road (SR 128) and Silverado Trail/Conn Creek Road (SR 128)—the

Revised IS fails to consider how the Project's traffic will worsen these existing conditions. Instead, the Revised IS employs an arbitrary 1% percent cumulative impact threshold, claiming that there will not be a cumulative impact because the Project will increase existing peak traffic volumes by less than this amount. Revised IS at 28-29. The County has not offered any evidentiary basis to justify using this threshold to evaluate the Project's cumulative traffic impacts.

The California Supreme Court has explained that "when the agency chooses to rely completely on a single quantitative method to justify a no-significance finding, CEQA demands the agency research and document the quantitative parameters essential to that method." *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th 204, 228; *see also* Guidelines § 15063(d)(3) (an initial study must provide the factual basis for an agency's determination that no significant impact will result from the project). Otherwise, "decision makers and the public are left with only an unsubstantiated assertion that the impacts . . . will not be significant." *Center for Biological Diversity*, 62 Cal.4th at 228. Here, lacking evidence and analysis to justify the chosen cumulative traffic impact threshold, the Revised IS's analysis is inadequate.

Moreover, lead agencies may not apply thresholds of significance in a manner that forecloses consideration of other evidence tending to show that a project's environmental effect may be significant. *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1109. Significantly, applying cumulative impact thresholds that Caltrans has adopted for state roadways like SR 128 shows that the Project will create significant cumulative impacts. Where roads are already operating at substandard levels (like the Silverado Trail/SR 128 intersection), Caltrans states that traffic conditions should maintain their current operating conditions, or "measure of effectiveness." Exhibit B, MRO Engineers (April 13, 2016) at 2. The "measure of effectiveness" for unsignalized intersections like those near the project site is the average intersection delay per vehicle. *Id.* Caltrans' standard reflects CEQA's requirement that agencies determine whether a project will have a significant cumulative impact by evaluating whether the project's impacts are significant when combined with past, present, and reasonably foreseeable future impacts. *Kings County Farm Bureau*, 221 Cal.App.3d 692. Agencies may not, as the County has done here, dismiss a project's cumulative impacts by comparing them to the current, already unacceptable problem. Rather, agencies must find the impact significant and require mitigation to maintain, at a minimum, the existing, albeit substandard, operating condition. *Id.*

Here, using the (significantly understated) trip generation estimates from the Omni Means study, MRO Engineers determined that the Project will have a significant cumulative impact on traffic at the Silverado Trail/Conn Creek Road intersection. Under

cumulative conditions, the Project will cause delays at portions of this intersection to increase by roughly 30 seconds per vehicle.[4] *Id* at 9-10. But the Revised IS does not acknowledge these worsened traffic conditions, much less consider whether they can be mitigated. This approach is fundamentally deficient.

D. The Revised IS Fails to Account for Impacts Associated with Later Tasting Hours.

Finally, we note that the Revised IS now states that the applicant is planning to shift its daily visitation hours so that they would end at 6:00 p.m. instead of 4:30 p.m. Revised IS at 2. Caymus is similarly proposing to extend its daily tasting times into the evenings. These later tasting times will place more drivers leaving tastings on the roadways during peak weekday rush hour periods. Yet the Revised IS fails to consider how the combination of these changes will impact traffic delays and safety around Frog's Leap. The County must consider the impacts associated with this Project change as well.

III. The Streamlining Provision in CEQA Guidelines Section 15183 Does Not Apply to this Project.

The applicant and the Revised IS also erroneously contend that the streamlining provision in Guidelines section 15183 excuses the County from fully considering the environmental impacts of the proposed Project. But this Guidelines section is very narrow in scope and has no application here.

Section 15183 applies only to projects that are consistent with development densities established in planning documents, including general plans. Guidelines § 15183(a). In such cases, an agency can rely on previous environmental review prepared for the applicable planning document, but must conduct further review of impacts that are peculiar to the project, or that were not considered in the original environmental document. *Id.* § 15183(b). Both of these triggers require further environmental review here.

As discussed above, the traffic safety impacts caused by widening the shoulder of Conn Creek Road across from the Frog's Leap site are assuredly peculiar to this Project. Shoulder-widening is proposed in conjunction with Frog's Leap's request for a use permit modification to expand tourism activities at the winery. There is no indication

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[4] The reportable delays ranged between 4 minutes, 38 seconds and 15 minutes, 13 seconds per westbound vehicle on Silverado Trail. Eastbound cumulative-plus-project delays were so great that they exceeded the traffic software's reporting capabilities. *Id.*

anywhere in the record that this widening would occur absent approval of the Project. As such, the County cannot use the streamlining provision to avoid consideration of impacts associated with this work. *Id.* § 15183(b)(1).

The Project's traffic impacts and related cumulative impacts also do not qualify for streamlined environmental review either. The County's General Plan EIR did consider planning-related traffic impacts on certain segments of County roads, but it did not evaluate impacts to the section of Conn Creek Road (SR 128) in front of Frog's Leap. *See* Exhibit E, excerpts of Napa County General Plan Draft EIR, pages 4.4-9 through 4.4-10. Moreover, as explained by MRO Engineers, the General Plan EIR's evaluation of impacts to road *segments* is not comparable to determining traffic impacts at road *intersections* near the project site. Exhibit B, MRO Engineers (April 13, 2016) at 6. "In short, the level of service [impact] results for road segments bear no relationship to the level of service results for intersections." *Id.* Because traffic impacts to these intersections on Conn Creek Road were not evaluated in the General Plan EIR, the County cannot avoid considering them now during its evaluation of Frog's Leap's application. Guidelines § 15183(b)(2), (3).

IV. There Is No Justification For Revised IS's Choice of Baseline Visitation Conditions.

An environmental document must include an accurate account of the physical environmental conditions under which a project will be carried out. These conditions "normally constitute the baseline" against which the significance of impacts is measured. Guidelines §15125(a). The baseline describes the environment *without* the project; its function is to allow the agency to determine what will happen to the environment if the project is approved. As the California Supreme Court has explained, "[t]o decide whether a given project's environmental effects are likely to be significant, the agency must use some measure of the environment's state *absent the project.*" *Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 315 (emphasis added).

Given the particular facts surrounding a project, an agency must determine, "in the first instance, exactly how the existing physical conditions *without the project* can most realistically be measured." *See Communities for a Better Environment*, 48 Cal.4th at 328 (emphasis added). Selecting the appropriate baseline is crucial to ensuring that a project's impacts are fully disclosed and analyzed, as required by CEQA. *See Woodward Park*, 150 Cal.App.4th at 707 (baseline requirement "protect[s] the fundamental essence of an EIR, its evaluation of a project's environmental impacts"). Selecting an improper baseline "can only mislead the public as to the reality of the impacts and subvert full

consideration of the actual environmental impacts which would result." *EPIC*, 131 Cal.App.3d at 358.

Here, the Project includes approval of a use permit that would allow the applicant to increase its number of tasting visitors from 350 visitors per week (with a maximum of 50 visitors per day) by more than threefold to 1,100 visitors per week. Revised IS at 1-2. The Project would also allow for an additional 5,740 visitors each year for marketing events. *Id.* Yet the Revised IS fails to consider impacts associated with many of these visitors, because it uses purportedly existing, unpermitted levels of winery operations as its baseline. *Id.* at 2.

In effect, the Revised IS proposes to exempt or "grandfather" the full scope of the Frog's Leap's unlawful uses, even though they have never been authorized or analyzed under CEQA and even though there is no evidence to support the alleged levels of use. This result runs contrary to legal precedent, as well as to the fundamental purposes of CEQA.

A. The Revised IS Lacks Support For Establishing a Baseline Based Upon Illegal Levels Of Use.

As a threshold matter, if an agency's choice of baseline is not supported by substantial evidence, an initial study "fail[s] as [an] informative document." *EPIC*, 131 Cal.App.3d at 358. There is no evidence in the record showing the current visitation and marketing levels at Frog's Leap or suggesting that the applicant's asserted levels will persist (even if they are accurate). Thus, the Revised IS is therefore inadequate until it can provide actual evidence—not just the applicant's unsupported assertions—about existing use levels at the Project site.

Additionally, under CEQA, an agency may not incorporate historical levels of use into the baseline if the effect is to "grandfather" an unauthorized level of use. The Revised IS acknowledges that it is pursuing this tactic, explicitly stating that the baseline is "not those activities approved under [the current] use permit" for Frog's Leap. Revised IS at 2.

In *County of Inyo v. City of Los Angeles* (1973) 32 Cal.App.3d 795, 805-06 ("*County of Inyo I*"), the City of Los Angeles proposed to increase the levels of groundwater extractions to be carried to Los Angeles via a previously constructed aqueduct. The city argued that the groundwater extractions were exempt from CEQA as an ongoing project because the aqueduct was constructed prior to the enactment of CEQA. *Id.* The Court of Appeal rejected the city's argument, reasoning that the increased

level of extractions had not been analyzed when the aqueduct was built. *Id.* In a subsequent opinion, the appellate court rejected the city's attempt to include in the baseline what the city viewed as its post-CEQA historical average pumping rate, noting that the city was attempting to improperly "narrow" its CEQA obligation. *See County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 195 ("*County of Inyo II*"). The effect, reasoned the court, was to treat previously unanalyzed levels of extraction as part of the baseline and to radically understate the impacts of the project. *Id.* at 196-97. The court held that this flaw was fatal to the validity of the environmental analysis. *Id.*

Similarly, in *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 967 ("*Amador County*"), the Court of Appeal rejected an argument that a proposal to operate a hydroelectric dam for consumptive use was exempt as an existing facility, precisely because it involved a level of water use that had not previously been permitted or analyzed. *See also Lewis v. Seventeenth Dist. Agricultural Assn.* (1985) 165 Cal.App.3d 823, 826, 836-37 (Blease, J. concurring in the judgment) (explaining that if the use was not analyzed when applicant obtained a permit for the facility, the existing facilities exemption does not apply).

These cases demonstrate that courts reject attempts to incorporate unpermitted levels of use into the baseline, if the effect is to exempt or grandfather an unanalyzed level of use from CEQA review. Like the environmental analyses at issue in *County of Inyo I and II* and *Amador County*, here the Revised IS in effect grants an exemption for the Frog's Leap's asserted unpermitted tourism levels. As in *County of Inyo I and II* and *Amador County*, such an "exemption" is wholly unjustified under CEQA.

B. The County Must Exercise Its Discretion to Measure the Baseline in a Manner that Achieves the Fundamental Purposes of CEQA.

In *Communities for a Better Environment*, the California Supreme Court affirmed that while the baseline must reflect existing conditions on the ground, "[n]either CEQA nor the CEQA Guidelines mandates a uniform, inflexible rule for determination of the existing conditions baseline." 48 Cal.4th at 517. While an agency has flexibility in selecting a baseline, its choice must be supported by substantial evidence. *Id.* Here, as discussed, there is no evidence supporting the applicant's purported baseline visitation and marketing levels.

Communities for a Better Environment further clarifies the limits on an agency's range of baseline choices. The chosen baseline must be consistent with the major purposes underlying CEQA: public disclosure and mitigation of a project's environmental impacts. *Id.* at 322; *see Woodward Park Homeowners Association v. City*

of Fresno (2007) 150 Cal.App.4th 683, 707. As a result, an agency cannot select a baseline that provides "an illusory basis for a finding of no significant adverse effect." *Communities for a Better Environment*, 48 Cal.4th at 322. The Supreme Court reiterated this holding in *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439, 453, where it found that agencies may not rely on an "existing conditions" baseline that would result in a misleading view of a project's impacts.

Instead, an agency's choice of baseline must allow it to realistically describe *both* the existing environmental conditions and the impacts of the project. As the court explained in *Woodward Park*:

> For instance, if a hypothetical project half the size of the proposed project is used as a baseline, the EIR will report only half the project's impact. The EIR would fail to inform the public of the other half. It would also necessarily lack consideration of mitigation measures for the omitted portion of the project's impact.

150 Cal.App.4th at 707. Thus, an agency's choice of baseline must aim to achieve two objectives: first, it must accurately characterize the existing environment; and second, it must allow the agency to analyze and mitigate the full scope of a project's impacts.

Here, the Revised IS's choice of baseline neither informs the public of the full scope of the Project's impacts nor considers and mitigates those impacts. Instead, Revised IS includes nearly two-thirds of the Project's proposed future weekly visitation levels in the baseline, creating an illusory analysis and no mitigation of the actual impacts of the Project. This result runs counter to the courts' insistence that CEQA be interpreted "to afford the fullest possible protection to the environment within the reasonable scope of the statutory language." *Mountain Lion Foundation v. Fish and Game Com.* (1997) 16 Cal.4th 105, 147.

V. Conclusion

For all of these reasons, as well as the reasons discussed in the attached letters and the December 23, 2015 letter from this office, the Commission should deny the proposed Project.

Very truly yours,

SHUTE, MIHALY & WEINBERGER LLP

Ellison Folk

cc: Nancy Hammonds

Attachments

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EXHIBIT A

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March 24, 2016

Mr. Edward Schexnayder
Shute, Mihaly & Weinberger LLP
396 Hayes Street
San Francisco, California 94102

Subject: ***Review of Focused Traffic Analysis***
Proposed Frog's Leap Winery Use Permit Modifications
Napa County, California

Dear Mr. Schexnayder:

As requested, MRO Engineers, Inc., (MRO) has reviewed the focused traffic analysis completed with respect to the proposed Use Permit modifications at Frog's Leap Winery on Conn Creek Road (State Route 128) in Napa County, California. That analysis was prepared by Omni-Means, and was documented in a revised letter report dated December 15, 2014. The traffic impact analysis report was used by Napa County staff in the preparation of the Initial Study/Negative Declaration (IS/ND) for the proposed project.

This letter report documents the results of our review.

Background

According to the Napa County IS/ND (p. 2):

> *The project as it exists is compliant with respect to all structures on the property. However, the visitation, marketing, and number of employees is in excess of the last [Use Permit] Modification which permitted up to 50 visitors per day, 36 annual events, and four full time employees.*

The proposed project is intended to remedy these violations of the winery's existing Use Permit, as well as to make certain modifications to the on-site facilities.

The project also includes a request for an exemption from the requirement to construct a left-turn lane on northbound Conn Creek Road at the winery's vehicular access driveway. In lieu of that left-turn lane, the winery would construct a six-foot widening of the shoulder on the northbound side of the road to accommodate drivers desiring to bypass vehicles waiting to make a left-turn into the winery site. That issue is addressed in the following memoranda prepared by Napa County staff in connection with the proposed project:

- Memorandum from Paul Wilkinson, Associate Engineer, Department of Public Works (DPW), to Shaveta Sharma, Planning, Building and Environmental Services (PBES) Department, January 20, 2015. This memo states that the left-turn lane will be required, and that the requested exemption is not justified.
- Memorandum from Nate Galambos, PBES, to Shaveta Sharma, PBES, May 15, 2015. This memo also states that the project shall construct the left-turn lane.
- Memorandum from Rick Marshall, Deputy Director of Public Works, to PBES Staff, October 12, 2015. While acknowledging that the project will meet the County's requirements for

installation of a left-turn lane, this memo approves the requested exemption from that requirement. It further states that the proposed six-foot wide shoulder along the east side of the road, ". . . will provide an area where northbound traffic on Conn Creek Road could carefully bypass a waiting left-turning vehicle, if necessary."

Focused Traffic Analysis Review

Our review evaluated the adequacy of the focused traffic analysis and the need to mitigate potential safety hazards associated with the proposed project. The results of our review are summarized below.

1. ***Left-Turn Lane Exemption*** – As described above, the proposed project meets the requirements for a northbound left-turn lane on Conn Creek Road at the winery's driveway, in accordance with the Napa County Roads and Streets Standards. As documented on pages 18 and 23 of the Omni-Means study, this is true for Existing Plus Project and Near-Term Plus Project conditions. Although Napa County staff initially recognized that the left-turn lane would be required, they apparently altered this assessment and stated that the proposed six-foot shoulder:

   . . . will provide an area where northbound traffic on Conn Creek Road could carefully bypass a waiting left-turning vehicle, if necessary.

   Passing on the Right is an Illegal Maneuver

   Unfortunately, the bypass maneuver that staff describes is illegal under the California Vehicle Code. Specifically, Section 21755(a) states:

   The driver of a vehicle may overtake and pass another vehicle upon the right only under conditions permitting that movement in safety. In no event shall that movement be made by driving off the paved or main-traveled portion of the roadway.

   This is further clarified on page 38 of the *California Driver Handbook* (California Department of Motor Vehicles, 2016):

   Never drive off the paved or main-traveled portion of the road or on the shoulder to pass. The edge of the main-traveled portion of the road may have a painted white line on the road's surface.

   Attachment A presents a pair of Google Earth images illustrating that Conn Creek Road at the project driveway has painted white lines designating the edge of the main-traveled portion of the roadway. These lines are typically referred to as "edge lines" or "fog lines."

   In short, provision of a six-foot paved shoulder, as proposed, would inappropriately encourage drivers to perform an illegal maneuver to bypass traffic waiting to turn left into the Frog's Leap Winery driveway.

   Passing on the Right is Unsafe

   Even if passing on the right were legal, it is unsafe. Because no sidewalks or bike lanes exist along Conn Creek Road, pedestrians and bicyclists are forced to travel on the shoulder or along the right-most edge of the road. (Note that paved bike lanes do exist on Conn Creek Road south of Rutherford Road. Bicyclists traveling northbound on that segment of Conn Creek Road might

be inclined to continue to the north and pass by Frog's Leap Winery, despite the lack of bike lanes there.) Motorists who drive on the shoulder pose a danger to such individuals.

Further, vineyard workers and agricultural equipment sometimes occupy the shoulder, and law enforcement officers or other emergency vehicles might be parked on the shoulder in the course of their duties. They would also be endangered by vehicles traveling on the shoulder.

This safety issue is exacerbated by the fact that many drivers on Conn Creek Road and other roads within Napa County have consumed alcohol, often in the course of a wine-tasting excursion. Table 1 summarizes the most-recent available information from the California Department of Motor Vehicles (DMV) regarding the arrest rate for driving under the influence (DUI) in Napa County and statewide. As shown, Napa County consistently exceeds the statewide arrest rate, by as much as 50 percent.

Table 1
DUI Arrest Rates

Year	Arrest Rate Per 100 Licensed Drivers[1]	
	Statewide	Napa County
2013[2]	0.7	0.9 (+29%)
2012	0.7	1.0 (+43%)
2011	0.8	1.1 (+38%)
2010	0.8	1.2 (+50%)

[1] Source: California Department of Motor Vehicles, *Annual Report of the California DUI Management Information System*, 2012 – 2015.
[2] The most-recent available data, from the 2015 DMV report.

Insufficient Width Exists to Construct the Six-Foot Shoulder Widening

Attachment B contains the August 2015 drawing prepared by Applied Civil Engineering to illustrate the proposed shoulder widening. Also presented there is a blow-up of the area in the immediate vicinity of the Frog's Leap Winery driveway.

Although it is difficult to determine specific dimensions from the reduced-scale drawing, the drawing suggests that approximately three feet would remain between the new edge of Conn Creek Road and the existing 56-inch oak tree following completion of the proposed six-foot shoulder widening project. This would mean that the tree sits nine feet from the current edge of the road. However, we note that the symbol representing the oak tree is only about three feet (36 inches) in diameter on the drawing, rather than the 56 inches identified on the drawing, a difference of almost two feet.

The Google Earth images in Attachment A suggest that the tree is substantially less than nine feet from the edge of Conn Creek Road. In fact, a field measurement revealed that it is located about seven feet from the pavement edge. Consequently, the six-foot widening would leave the

new edge of the roadway only one foot from the tree. Without question, the road would cover the root zone of the tree, which could lead to significant impacts to the heritage oak tree.

In addition, the new pavement would be subject to root damage over time, at least as long as the tree is alive. The new pavement would be lifted by root growth, causing it to be uneven and potentially unsafe for motorists and bicyclists.

A Six-Foot Shoulder Would Not Safely Accommodate Most Vehicle Models

The proposed six-foot (i.e., 72 inch) paved shoulder would be narrower than many vehicles that are common on Napa County's roadways. A quick search of the consumerreports.org website revealed a database of exterior dimensions for 351 individual car and pick-up truck models. Attachment C contains a summary table, which shows that the vehicle widths range from 62 inches to 87 inches. A total of 151 models (43 percent) are 72 inches wide or less. The remaining 200 models (57 percent) are over 72 inches wide and are, therefore, wider than the proposed shoulder.

The table in Attachment C also lists a few typical models in each width category. Among the popular models that exceed the 72-inch width of the proposed shoulder are the following:

- Ford Fusion,
- Hyundai Sonata,
- Chevrolet Impala,
- Chevrolet Malibu,
- Toyota RAV4,
- Jeep Cherokee,
- Honda Accord,
- Ford Mustang,
- Ford Taurus,
- Toyota Highlander,
- Ford Edge,
- Jeep Grand Cherokee,
- Kia Sedona,
- Toyota Sienna,
- Ford Explorer, and
- Honda Pilot.

When the vehicles performing the illegal bypass maneuver are wider than the pavement that has been provided for that purpose, the obvious result will be collisions. In this case, those collisions will take the form of sideswipe collisions between the passing vehicle and either the vehicle waiting to turn left or the oak tree.

Conclusion

The intersection of Conn Creek Road/Frog's Leap Winery driveway meets the Napa County warrants for installation of a northbound left-turn lane under Existing Plus Project and Near-Term Plus Project conditions, even after consideration of a number of measures aimed at reducing traffic demand at that location. Despite this, the proposed left-turn lane exemption would allow construction of a six-foot paved shoulder in place of the needed left-turn lane. As described here, construction of the shoulder will have the effect of:

- Encouraging drivers to make illegal passing maneuvers;
- Encouraging drivers to make unsafe passing maneuvers, which could endanger pedestrians, bicyclists, vineyard workers, and law enforcement officers; and
- Creating a high likelihood that sideswipe collisions will occur between those passing drivers and either left-turning vehicles or the existing 56-inch diameter oak tree, which will be inches from the edge of the pavement.

We believe that construction of the six-foot-wide shoulder constitutes a significant impact, as it would "substantially increase hazards due to a design feature" of the project. (See "Napa County Significance Criteria," Omni-Means, pp. 10 – 11.)

2. ***Peak-Hour Trip Generation Estimates*** – The trip generation estimates for the proposed project are documented in Table 2 (p. 13) of the Omni-Means report. The weekday and Saturday daily trip generation estimates are based on factors presented on the Napa County "Winery Traffic Information/Trip Generation Sheet." The peak-hour traffic estimates, on the other hand, do not conform to Napa County requirements. As a result, those estimates substantially understate the volume of weekday and Saturday peak-hour traffic associated with the proposed project.

   According to Omni-Means Table 2, the proposed project would generate 30 weekday PM peak-hour trips (6 inbound, 24 outbound). The number of visitor-related trips was estimated using a factor of 0.056 trips per visitor. In contrast, application of the adopted Napa County factor (i.e., 38 percent of the weekday daily trips), reveals that the project would generate 77 trips in this time period, which is over 150 percent more than the Omni-Means estimate.

   In the Saturday peak hour, Omni-Means Table 2 indicates that the project would generate 86 trips (40 inbound, 46 outbound), based on a factor of 0.286 trips per visitor. Again, application of the adopted Napa County factor for this time period would indicate total trip generation of 145 trips, almost 70 percent more than the Omni-Means estimate.

   The project's peak-hour trip generation estimates should be revised to conform to Napa County's adopted standards, and the modified project traffic values should be assigned to the study area road system. Intersection level of service calculations based on the higher trip generation numbers will undoubtedly reveal that the proposed project will result in greater intersection delay values than were reported in the IS/ND, and the project's incremental impact will also be greater.

   We note, for example, that the intersection of Silverado Trail/Conn Creek Road is shown to operate at LOS E with a delay value of 47.9 seconds/vehicle under Existing Plus Project conditions in the weekend midday time period. (Omni-Means, Table 3, p. 17) It would not be

unreasonable to expect that this intersection might fall to LOS F (with a delay value of greater than 50.0 seconds/vehicle) when the corrected trip generation estimates are considered.

The modified traffic analysis using corrected trip generation estimates must be incorporated into revised environmental documentation, which should then be circulated for public review.

3. ***Project Traffic Assignment*** – Traffic assignment is the process by which the estimated project trips are added to the road system in the designated study area. The assignment of the project's peak-hour trips is illustrated on Figure 4 (p. 14) in the Omni-Means report. Examination of the traffic assignment at the Conn Creek Road/Frog's Leap Winery Driveway intersection shows that only a small percentage of the project trips are represented here. In the weekday PM peak hour, a total of 5 trips are shown entering and exiting the site (1 inbound, 4 outbound), compared to the total estimate of 30 trips listed in Omni-Means Table 2. Thus, only 17 percent of the total project trips were assigned to the Conn Creek Road driveway. In the weekend peak-hour period, a total of 37 trips are assigned to the driveway (17 inbound, 20 outbound); this represents only 43 percent of the total estimated value of 86 trips shown in Omni-Means Table 2.

   Presumably, the trips that are not shown at the Conn Creek Road driveway are assumed to enter and exit the site at the Rutherford Road driveway. In fact, according to the Napa County "Initial Study Checklist" (p. 2), the project will incorporate, ". . . use of the driveway along Rutherford Road for employee access." Based on the volumes presented in the Omni-Means report, this would be 25 trips in the weekday PM peak hour and 49 trips in the weekend peak hour. However, none of these trips are assigned to either of the other two study intersections – Silverado Trail/Conn Creek Road and Rutherford Road/Conn Creek Road. Only the relatively small proportion of the total project trips that are assumed to use the Conn Creek Road driveway are assigned through these other two intersections.

   It is simply not credible to assume that none of the employees (or other users of the Rutherford Road driveway) would pass through either of the other two intersections. Instead, it appears that the trips that are oriented to/from the Rutherford Road driveway have simply been ignored. In any event, the intersection traffic volumes for all of the "plus project" scenarios are erroneous, as they do not accurately account for all of the project's traffic.

   Further, because the traffic volumes are wrong, the intersection level of service results are also inaccurate. Consequently, the Omni-Means traffic study fails to provide a valid representation of the proposed project's impacts on the study area road system. The project traffic assignment must be corrected and revised level of service analyses conducted.

   When all of the project traffic has been accurately accounted for, the "plus project" level of service calculations will reveal higher delay values and perhaps even worse levels of service. As noted above, the intersection of Silverado Trail/Conn Creek Road is shown to operate just within the LOS E/F boundary under Existing Plus Project conditions in the weekend midday time period. (Omni-Means, Table 3, p. 17) Correctly accounting for the project traffic might well reveal that this intersection will operate at LOS F under these conditions when the proposed project is implemented.

   The results of this corrected work must be incorporated into revised environmental documentation that will then need to be circulated for further public review.

4. ***Study Area*** – The Omni-Means traffic study focuses on trips entering and exiting the project site at the winery's driveway on Conn Creek Road. As noted above, employees will enter and exit the site via the Rutherford Road driveway. Further, according to the Omni-Means report, the number of vehicles entering and exiting the site at the Rutherford Road driveway will substantially exceed the number using the Conn Creek Road driveway. However, no analysis is provided to establish whether the proposed project will adversely impact operations at the Rutherford Road driveway intersection, or whether turn lanes are needed. The study area should be expanded to include this intersection.

   Furthermore, it is likely that a substantial proportion of the visitors and employees will travel to and from the site on State Route 29 (St. Helena Highway). According to the Omni-Means traffic study (p. 12), 63 percent of project traffic will be oriented to/from the south. It is reasonable to expect that the bulk of these vehicles will travel by way of Rutherford Road and State Route 29 (St. Helena Highway). Consequently, the traffic analysis is incomplete without analyzing the intersection of Rutherford Road/State Route 29 (St. Helena Highway).

   When considering the intersection of Rutherford Road/State Route 29 (St. Helena Highway), it is important to note that Caltrans has designated it as a location needing safety improvements. Specifically, the *California State Route 128 Transportation Concept Report* (Caltrans District 4, April 2013) says:

   > *. . . the intersection of SR 29/128 and Rutherford Road/SR 128 is targeted for traffic and pedestrian safety improvements. Napa County studied and rejected a roundabout intersection at this location because of the proximity of a rail crossing. Other traffic control alternatives are being studied, but no decision has been made as of the time this document is being published.*

   These previously-acknowledged deficiencies must be fully considered in the analysis of this intersection.

5. ***Intersection Level of Service Calculations*** – The intersection level of service calculations documented in the focused traffic analysis suffer from a number of issues, including the use of outdated methodologies and inappropriate and inaccurate assumptions.

   A. ***Outdated Level of Service Methodology*** – The *Highway Capacity Manual* (HCM) is a publication of the Transportation Research Board (TRB), one of the entities within the National Academy of Sciences. The current, year 2010 edition of the HCM (HCM 2010) follows previous editions completed in 1965, 1985, 1997, and 2000. It was released on April 11, 2011, about 3½ years prior to completion of the Frog's Leap focused traffic study (December 15, 2014).

   Despite this, the intersection level of service calculations presented in the Omni-Means traffic study reflect application of the superseded year 2000 version of the HCM. In fact, the calculation sheets presented in the traffic study appendix have dates ranging from December 5, 2013 to December 3, 2014, which confirms that the calculations could have been performed using the 2010 version of the HCM.

   To ensure the accuracy of the traffic analysis, the intersection level of service calculations must be performed using the current, year 2010 version of the *Highway Capacity Manual.*

B. ***Truck Percentage*** – Certain operations at Frog's Leap Winery generate substantial volumes of truck traffic. This is particularly true during the harvest/crush periods. Trucks have an inordinate adverse effect on traffic operations and safety, due to their size and operating characteristics, particularly with regard to slower acceleration, longer braking distances, and the need for greater separation between vehicles.

The intersection level of service calculations apparently employed an across-the-board assumption of two percent trucks on the study area roads. While this value happens to be the default assumption for "heavy vehicles" in the *Synchro 6* software used in the analysis, it might significantly understate the actual level of trucks in the prevailing traffic stream.

The *California State Route 128 Transportation Concept Report* includes information concerning the volume of truck traffic on Conn Creek Road. With regard to "Segment D" of SR 128 (which includes the section of Conn Creek Road at Frog's Leap Winery), page 15 of that document states:

> *Over 28 percent of the vehicles on this segment are trucks. Because of the many wineries in the area, the truck percentages are higher in the part of the segment that spans the valley between SR 29 and the Silverado Trail* [i.e., Rutherford Road and Conn Creek Road in the vicinity of Frog's Leap Winery].

Revision of the level of service calculations to incorporate an accurate truck percentage is necessary to ensure that the analysis results appropriately reflect the characteristics of the prevailing traffic in the study area. Because the actual truck percentage on Conn Creek Road (SR 128) is higher than the assumed two percent value, the intersection delay values are likely to be higher than those reported in the IS/ND.

Moreover, the traffic study ignores the safety and operational effects of trucks on Conn Creek Road and other nearby roads. As noted above, Caltrans data indicate that over 28 percent of the traffic on State Route 128 consists of heavy trucks. During the crush period, this percentage is certain to be higher. Despite, this, the traffic study includes no discussion or analysis of auto-truck conflicts and the potential safety issues associated with mixing automobile traffic including tourists) with a considerable amount of heavy-vehicle traffic.

C. ***Peak Hour Factor*** – One of the key parameters incorporated into the intersection level of service calculation procedure is the peak hour factor (PHF), which has two functions. First, it serves as an indicator of the uniformity of traffic flow throughout the peak hour period. The closer the PHF is to 1.00, the more uniform the flow. (Specifically, if the traffic volume is identical in each of the four 15-minute periods within the peak hour, the PHF will equal 1.00. Lower PHF values indicate that traffic volumes are more highly variable over the course of the hour.)

Second, and more important, application of the PHF in the level of service calculation provides an adjustment intended to represent operating conditions in the peak 15-minute period within the peak hour, thereby providing a conservative assessment of intersection operations. (Because of the way the PHF is applied, lower factors result in higher 15-minute traffic flow rates, which results in more conservative estimates of intersection delays.)

The Omni-Means intersection level of service calculations consistently used a peak hour factor of 0.92, which is the default value within the *Synchro 6* software package. Given the

availability of actual field data in this case, use of this default PHF value is inappropriate and could significantly understate the impacts of the project on peak level traffic delays.

6. ***Incomplete Cumulative Conditions Analysis Documentation*** – The analysis of intersection and roadway segment operations for the cumulative conditions time frame (year 2030) is documented on pages 21 and 22 of the Omni-Means report. Among the findings reported there is the fact that Silverado Trail/Conn Creek Road would be operating at LOS F (i.e., the worst possible level of service) during both the weekday and weekend peak hours under both Cumulative No Project and Cumulative Plus Project conditions. However, no detail is provided with respect to the projected vehicular delay values that would relate to the LOS F finding.

   Referring to the Omni-Means appendices, the level of service calculation sheets for this intersection can be found for both time periods under Cumulative No Project conditions. No calculation sheets are provided for Cumulative Plus Project conditions, so no detailed intersection delay values are available for this scenario. To remedy this, we have developed intersection level of service analyses for these scenarios using the *Synchro 6* software, as was used in the Omni-Means analysis. First, we performed Cumulative No Project calculations to ensure that our analyses were consistent with the Omni-Means work. Then we added the project traffic, as illustrated on Omni-Means Figure 4 (p. 14). As described above, we question the accuracy of the project traffic assignment shown on this figure, but we used those values to ensure consistency with the Omni-Means analysis. Table 2 summarizes the cumulative conditions analysis results for both "no project" and "plus project" scenarios at Silverado Trail/Conn Creek Road.

Table 2
Cumulative Conditions Level of Service Summary[1]
Silverado Trail/Conn Creek Road

		Cumulative No Project		Cumulative Plus Project	
		Delay[2]	LOS[3]	Delay	LOS
Weekday PM Peak Hour	Eastbound Silverado Trail[4]	Err[5]	F	Err	F
	Westbound Silverado Trail[4]	885.9	F	913.4	F
Weekend Midday Peak Hour	Eastbound Silverado Trail[4]	981.8	F	Err	F
	Westbound Silverado Trail[4]	252.9	F	278.6	F

Notes:
1 Reference: Transportation Research Board, *Highway Capacity Manual*, 2000.
2 Average control delay (seconds per vehicle).
3 Level of service.
4 In the Omni-Means *Synchro 6* analysis, Silverado Trail was assumed to run east-west, and Conn Creek Road was assumed to run north-south.
5 The derived delay value exceeds the reporting capabilities of the *Synchro 6* software.

In the weekday PM peak hour, the delay values on the worst-case eastbound Silverado Trail approach are unknown, as they exceed the reporting capabilities of the analysis software. The average vehicular delay on the westbound Silverado Trail approach, however, will increase from 885.9 seconds/vehicle to 913.4 seconds/vehicle. In other words, the average driver will see his average delay increase from 14.8 minutes to 15.2 minutes.

In the weekend midday peak hour, while the "no project" delay on the eastbound Silverado Trail approach will be 981.8 seconds/vehicle (i.e., 16.4 minutes/vehicle), the "plus project" value is unknown, as it is too great to be reliably reported. On the westbound approach, the project will cause the average delay value to increase from 252.9 seconds/vehicle (4.2 minutes/vehicle) to 278.6 seconds/vehicle (4.6 minutes/vehicle).

Clearly, the project will have a substantial adverse impact on traffic operations at this intersection under cumulative conditions. Despite this, the report presents no conclusion with regard to the project's cumulative conditions impacts; it simply states that the level of service would be unchanged, creating the inaccurate impression that the project's impacts will be insignificant.

7. ***Intersection Level of Service Standard*** – The county's level of service standards for intersections are presented on page 10 of the Omni-Means letter report:

   - *The County shall seek to maintain a Level of Service D or better at all intersections, except where the level of service already exceeds this standard (i.e. Level of Service E or F) and where increased intersection capacity is not feasible without substantial additional right-of-way.*
   - *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.*

   These standards lack clarity. On the one hand, all intersections are to operate at LOS D or better but, on the other hand, no single level of service standard applies to unsignalized intersections. This is critical, because all three of the intersections evaluated for this study are unsignalized. While the second point calls for case-by-case analysis of whether signal warrants are met, it is unclear whether that is the primary (or, perhaps, sole) criterion establishing a significant impact at these locations.

   This is a particular issue with regard to the study intersection of Silverado Trail/Conn Creek Road. Under Near-Term No Project conditions, that intersection is projected to operate at LOS F with an average delay value of 110.2 seconds/vehicle during the weekend midday peak hour. (Omni-Means, Table 3, p. 17) The intersection is also expected to be at LOS F under Near-Term Plus Project conditions (average delay = 127.6 seconds/vehicle), and the project will cause an incremental delay impact of 17.4 seconds/vehicle, a 16 percent increase in delay. Despite this, because of the fuzzy level of service standard for unsignalized intersections, no significant impact was found in the analysis.

   In short, the significance criteria employed in this analysis are so unclear and incomplete that they are virtually meaningless for application to the intersections that operate the worst and are, therefore, most likely to need mitigation. The analysis should be revised to clearly state

appropriate intersection significance criteria so that the project's impacts can be measured against those thresholds.

We also note that Conn Creek Road (i.e., State Route 128) is under Caltrans' jurisdiction. The standard of significance that typically applies to Caltrans facilities is presented in the *Guide for the Preparation of Traffic Impact Studies* (Caltrans, December 2002.) The specific operational standard that applies to those facilities is presented on page 1 of that document:

> *Caltrans endeavors to maintain a target LOS* [Level of Service] *at the transition between LOS "C" and LOS "D" . . . on State highway facilities. . . . If an existing State highway facility is operating at less than the appropriate target LOS, the existing MOE* [Measure of Effectiveness] *should be maintained.*

In other words, Caltrans considers LOS C to be acceptable, and LOS D is not. It is, therefore, appropriate to employ the stated operational standard established by Caltrans, the agency that owns and controls Conn Creek Road (State Route 128).

CONCLUSION

Our review of the focused traffic analysis prepared in connection with the proposed Frog's Leap Winery Use Permit Modification project in Napa County, California revealed several issues affecting the validity of the conclusions presented in that document. These issues must be addressed prior to approval of the proposed project.

We hope this information is useful. If you have questions concerning anything presented here, please feel free to contact me at (916) 783-3838.

Sincerely,

MRO ENGINEERS, INC.

Neal K. Liddicoat, P.E.
Traffic Engineering Manager

MRO ENGINEERS

ATTACHMENT A

Google Earth Images
Conn Creek Road at Frog's Leap Winery Driveway

Google earth

feet 10

meters 4

Google earth

feet 10
meters 4

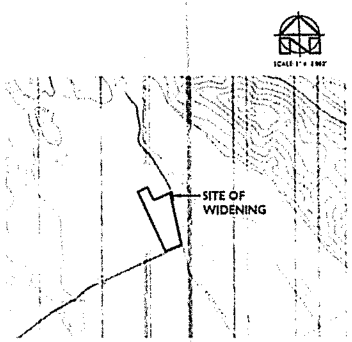
MRO ENGINEERS

ATTACHMENT B

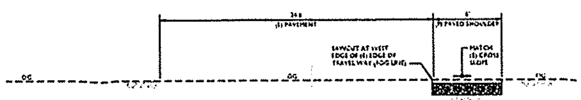
Applied Civil Engineering, ***State Route 128 Shoulder Improvements Exhibit,*** **August 2015.**

FROG'S LEAP WINERY

STATE ROUTE 128 SHOULDER IMPROVEMENTS EXHIBIT



LOCATION MAP
SCALE: 1" = 2000'



SECTION A - A
SCALE: 1" = 5'

PROJECT INFORMATION

PROPERTY OWNER & APPLICANT:
FROG'S LEAP WINERY
8815 CONN CREEK ROAD
ST. HELENA, CA 94574

SITE ADDRESS:
8815 CONN CREEK ROAD
ST. HELENA, CA 94574

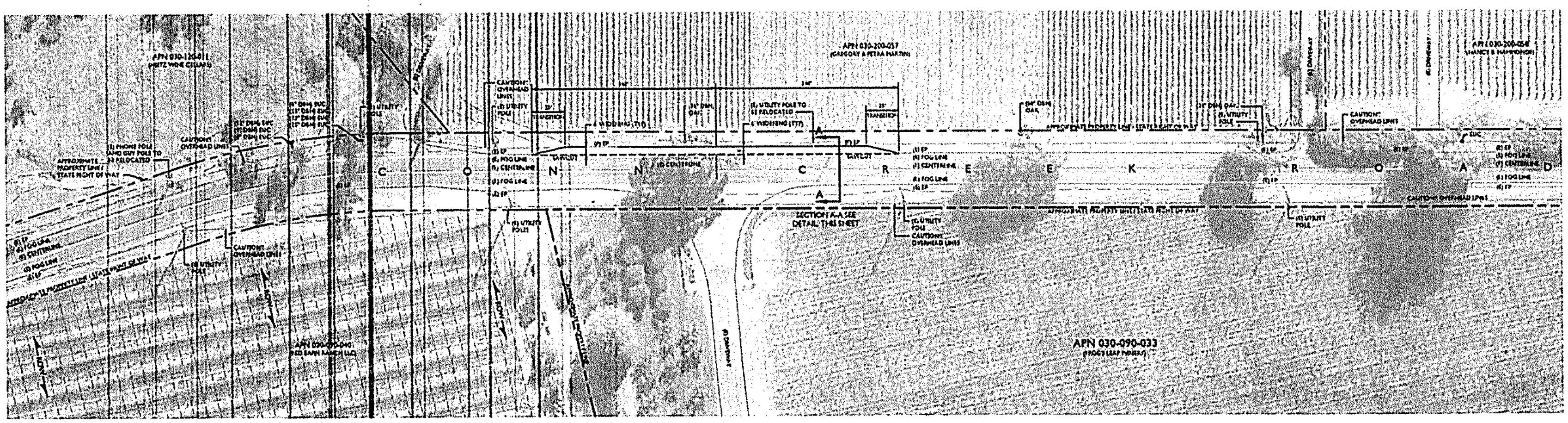
ASSESSOR'S PARCEL NUMBER:
030-090-033

PARCEL SIZE:
38.92± ACRES

ZONING:
AGRICULTURAL PRESERVE (AP)

NOTES:

1. FADED BACKGROUND REPRESENTS EXISTING TOPOGRAPHIC FEATURES. TOPOGRAPHIC INFORMATION WAS OBTAINED FROM THE "MAP OF TOPOGRAPHY OF THE LANDS OF FROG'S LEAP WINERY" PREPARED BY ALBION SURVEYS INC. DATED NOVEMBER 2004. APPLIED CIVIL ENGINEERING INCORPORATED ASSUMES NO LIABILITY REGARDING THE ACCURACY OR COMPLETENESS OF THE TOPOGRAPHIC INFORMATION.
2. BACKGROUND PHOTOGRAPH WAS OBTAINED FROM THE NAPA COUNTY GEOGRAPHIC INFORMATION SYSTEM (GIS) DATABASE (PHOTO DATE APRIL 9, 2011)
3. ACCORDING TO FEMA FIRM COMMUNITY PANEL 06055C0315E THE SUBJECT PARCEL IS DETERMINED TO BE WITHIN THE 100 YEAR AND THE 500 YEAR FLOOD BOUNDARY. SEE FEMA FIRM COMMUNITY PANEL 06055C0315E FOR MORE INFORMATION
4. TREE INFORMATION USED PROVIDED BY POUND MANAGEMENT



STATE ROUTE 128 SHOULDER IMPROVEMENTS EXHIBIT
SCALE: 1" = 40'

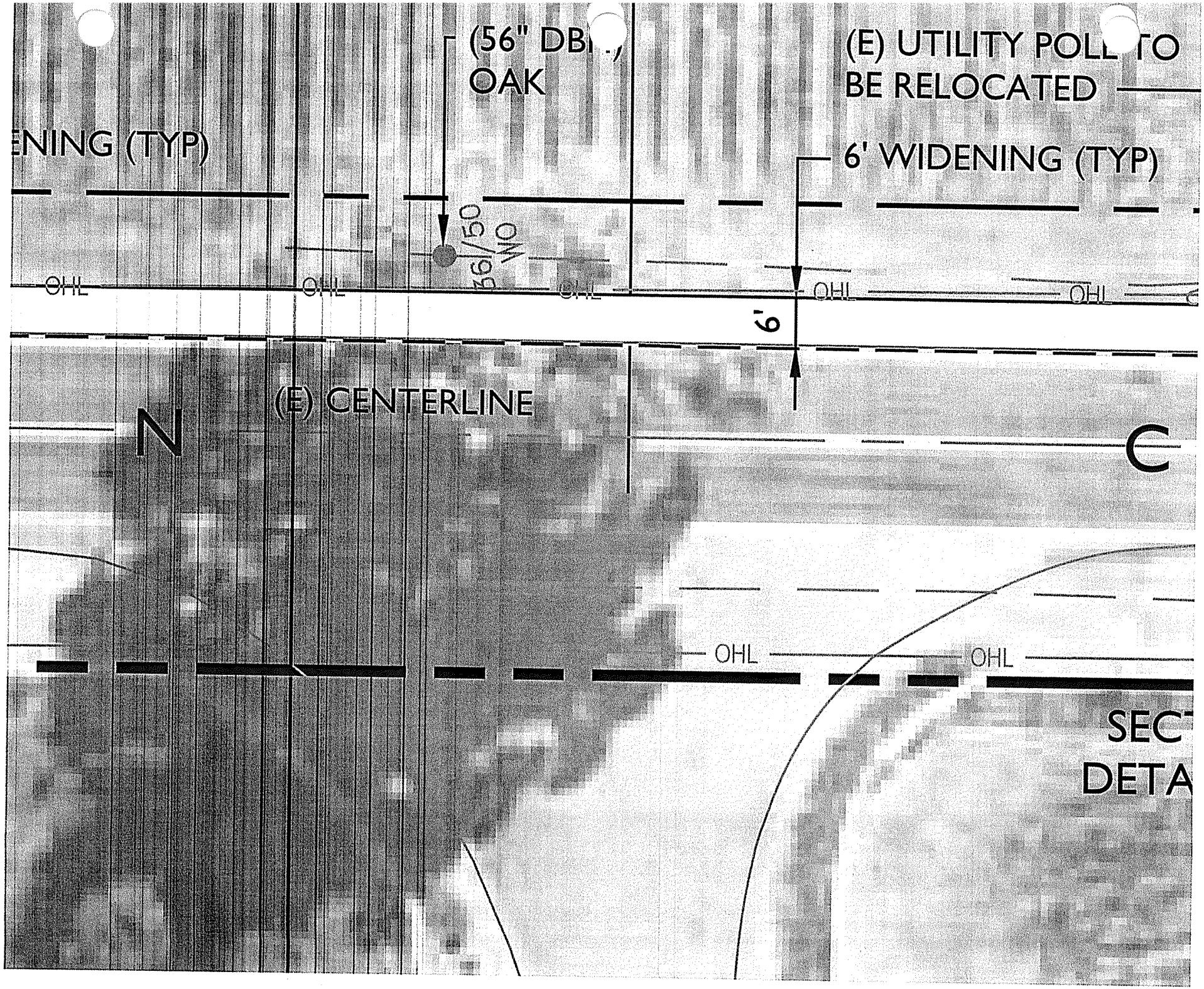
APPLIED
2074 West Lincoln Avenue
Napa, CA 94558
www.appliedcivil.com

DESIGNED BY: MM
DRAWN BY: BT DRAFTING
CHECKED BY: MM

FROG'S LEAP WINERY
STATE ROUTE 128 SHOULDER IMPROVEMENTS EXHIBIT

FROG'S LEAP WINERY
8815 CONN CREEK ROAD
ST. HELENA, CA 94574
NAPA COUNTY APN 030-090-033

DATE	AUGUST 2015
JOB NUMBER	13-133
FILE	13-133EXH_DWG
ORIGINAL SIZE	24" X 36"
SCALE	AS NOTED
SHEET NUMBER	C1 of 1


(56" DBH
OAK
(E) UTILITY POLE TO
BE RELOCATED
ENING (TYP)
6' WIDENING (TYP)
36/50
WO
OHL
OHL
OHL
OHL
OHL
6'
N
(E) CENTERLINE
C
OHL
OHL
SEC
DETA

M R O

ENGINEERS

ATTACHMENT C

Vehicle Width Summary Table

757887.1

Table C-1 Vehicle Width Summary		
Vehicle Width (Inches)	No. of Models	Typical Models
62	1	Mitsubishi i-MiEV
63	1	Chevrolet Spar
64	3	Fiat 500 (3 versions)
65	1	Smart for Two
66	1	Mitsubishi Mirage
67	8	Hyundai Accent, Nissan Versa, Toyota Prius C, Honda Fit
68	12	Ford Fiesta, Kia Rio, Mini Cooper, Mazda MX-5 Miata, Chevrolet Sonic
69	12	Nissan Sentra, Subaru Impreza, Jeep Patriot & Compass, Toyota Prius, Mitsubishi Lancer
70	27	Buick Encore, Hyundai Elantra, Toyota Corolla, Volkswagen Jetta, Audi A3
71	40	Mazda 3, Porsche Boxster, Mercedes-Benz C-Class, Honda Civic, Volkswagen Beetle & Golf
72	45	Ford Focus & Escape, Nissan Altima, Subaru Legacy & Outback, Toyota Camry, Mazda 6
Proposed 72-Inch Shoulder		
73	49	Ford Fusion, Hyundai Sonata, Chevrolet Malibu, Audi A5, Toyota RAV4, Honda Accord
74	33	Kia Sorento, Chrysler 200, Lexus LS, Toyota Tacoma, BMW X3, Jeep Wrangler, Volvo S90
75	23	Chevrolet Camaro, Ford Mustang, Chrysler 300, Nissan Murano, BMW 7-Series, Audi A7
76	23	Ford Taurus & Edge, Toyota Highlander, Mazda CX-9, BMW X5, Lincoln MKS
77	11	Nissan Pathfinder, Acura MDX, Jeep Grand Cherokee, Audi A8
78	14	Kia Sedona, Chevrolet Traverse, Toyota Sienna, Nissan Quest
79	16	Ford Explorer, Honda Pilot & Odyssey, Ram 1500, Dodge Grand Caravan, Buick Enclave
80	16	Ford F-150 & Flex, Chevrolet Silverado, Toyota Sequoia & Tundra, Lincoln Navigator
81	9	GMC Yukon, Cadillac Escalade, Chevrolet Suburban
82	3	Land Rover Discovery Sport, Tesla Model X, Jaguar F-Pace
84	2	Mercedes-Benz GL, Volvo XC90
87	1	Acura NSX
Source: consumerreports.org, "Dimensions: Exterior & Cargo."		

EXHIBIT B

MRO
ENGINEERS
660 Auburn Folsom Rd.
Suite 201B
Auburn, California
95603
PHONE (916) 783-3838
FAX (916) 783-5103

April 13, 2016

Mr. Edward Schexnayder
Shute, Mihaly & Weinberger LLP
396 Hayes Street
San Francisco, California 94102

Subject: ***Review of January 13, 2016 Omni-Means Response to Shute Mihaly & Weinberger Letter (Dated December 23, 2015) and Revised Initial Study/Negative Declaration (March 2016)***
Proposed Frog's Leap Winery Use Permit Modifications - Napa County, California

Dear Mr. Schexnayder:

As requested, MRO Engineers, Inc., (MRO) has reviewed the January 13, 2016 "Initial Outline Response Letter" prepared by Omni-Means with respect to the proposed Use Permit modifications at Frog's Leap Winery on Conn Creek Road (State Route 128) in Napa County, California. That document was intended to respond to issues raised in the December 23, 2015 letter submitted to the Napa County Planning Commission by Shute, Mihaly & Weinberger (SMW). This letter report documents the results of our review of the Omni-Means letter, as well as the revised Initial Study/Negative Declaration (IS/ND) released by Napa County in March 2016. The revised IS/ND incorporates information from the Omni-Means letter.

Background

The proposed Frog's Leap Winery project is intended to remedy violations of the winery's existing Use Permit, as well as to make certain modifications to the on-site facilities. The traffic impacts of the proposed project were evaluated by Omni-Means, with the results of that analysis documented in a revised report dated December 15, 2014. The Omni-Means study was incorporated into the Initial Study/Negative Declaration for the proposed project. Subsequently, a revised IS/ND was prepared by Napa County staff and released in March 2016.

Review of Omni-Means "Initial Outline Response Letter" and Revised Initial Study/Negative Declaration

Our review of these documents raised several questions that require further attention. Those issues are summarized below.

1. ***Thresholds of Significance*** – In response to a comment from SMW regarding the thresholds of significance employed in the traffic study, Omni-Means responded that, ". . . the County has established that a proposed project's overall contribution to cumulative traffic volumes shall be no greater than one percent." Further, the letter states that this standard was specifically applied to the intersection of Conn Creek Road (SR 128)/Silverado Trail, and that the volume of project-generated traffic at the intersection will be 11 weekday PM peak-hour vehicles, or 0.0049 percent of the total year 2030 traffic volume. We have identified two issues here: the traffic volume estimate and the appropriate standard of significance.

   Traffic Volume Estimate

   As noted above, the Omni-Means analysis determined that 11 project-related vehicles would pass through the intersection of Conn Creek Road (SR 128)/Silverado Trail in the weekday PM peak hour. However, in our letter dated March 24, 2016, we noted problems with this estimate.

First, the peak-hour traffic estimates do not conform to Napa County requirements. As a result, those estimates substantially understate the volume of weekday and Saturday peak-hour traffic associated with the proposed project. In fact, correct application of the adopted Napa County trip generation factor indicates that the project would generate over 150 percent more weekday PM peak-hour trips than the Omni-Means estimate. Further, in the Saturday midday peak hour, application of the adopted Napa County factor for this time period would indicate total trip generation of almost 70 percent more than the Omni-Means estimate.

In addition, our examination of the project traffic assignment at the Conn Creek Road/Frog's Leap Winery Driveway intersection showed that only a small percentage of the project trips have been included in the analysis. In the weekday PM peak hour, only 17 percent of the total project trips were assigned to the Conn Creek Road driveway and, therefore, to the entire study area road system. In the weekend peak-hour period, only 43 percent of the estimated project traffic was assigned to the road system.

In short, the analysis has substantially underestimated the volume of project-related traffic that will pass though the Conn Creek Road (SR 128)/Silverado Trail intersection. Therefore, the assessment of the project-related traffic impacts at all of the study intersections is erroneously understated.

Standard of Significance

As described in the December 2014 Omni-Means analysis, the intersection of Conn Creek Road (SR 128)/Silverado Trail operates at Level of Service (LOS) E under Existing Conditions and LOS F under Near-Term No Project conditions, in both the weekday PM peak hour and the Saturday midday peak hour. Addition of the project-generated traffic will cause no change in those levels of service, but will cause the average vehicular delay values to increase, as shown in Table 1 below. The project-related delay increases are particularly noteworthy in the Saturday midday peak hour.

Given that Conn Creek Road is designated as State Route 128, it is under the jurisdiction of Caltrans, the California Department of Transportation, and is, therefore, subject to policies established by that agency. With regard to state highway facilities that operate at substandard levels of service, the Caltrans *Guide for the Preparation of Traffic Impact Studies* (December 2002) states:

> *If an existing State highway facility is operating at less than the appropriate target LOS, the existing MOE* [measure of effectiveness] *should be maintained.*

The Caltrans document designates "average control delay per vehicle" as the measure of effectiveness for unsignalized intersections such as Conn Creek Road (SR 128)/Silverado Trail. That MOE is consistent with the level of service results provided in the Omni-Means analysis. For reference, pertinent pages from the Caltrans document are presented in Attachment A.

Referring to Table 1, it is readily apparent that implementation of the proposed project would violate the Caltrans policy, as the average control delay will not be maintained. (Instead, the project will cause average control delay values to increase at the Conn Creek Road (SR 128)/Silverado Trail intersection. Consequently, using the threshold in the Caltrans policy, the intersection of Conn Creek Road (SR 128)/Silverado Trail would be significantly impacted by the project. This issue has not been adequately evaluated or even identified in the revised IS/ND. (The January 13, 2016 Omni-Means letter (p. 4) states that, ". . . mitigation suggested for the intersection with proposed project traffic is as follows . . .," but then provides no mitigation

measures. Instead, it repeats the inaccurate finding of a less-than-significant impact and states that the project will provide bike racks to conform to Napa County's policy regarding Transportation Demand Management. It does not show that bike racks will affect the project's traffic impacts.)

Table 1
Level of Service Summary[1]
Conn Creek Road (State Route 128)/Silverado Trail

		Weekday PM Peak Hour		Saturday Midday Peak Hour	
		Delay[2]	LOS[3]	Delay	LOS
Existing Conditions	No Project[4]	43.9	E	43.8	E
	With Project[5]	44.1	E	47.9	E
Near-Term Conditions	No Project[4]	85.8	F	110.2	F
	With Project[5]	85.8	F	127.6	F

Notes:
1 Reference: Transportation Research Board, *Highway Capacity Manual*, 2000.
2 Average control delay per vehicle (seconds per vehicle).
3 Level of service.
4 Omni-Means, *Focused Traffic Analysis for the Proposed Frog's Leap Winery Modifications Project*, December 15, 2014 (Revised), Table 1, p. 7.
5 Ibid., Table 3, p. 17.

2. ***Study Area*** – The SMW letter includes a comment with respect to the "improperly narrow study area," which included only three intersections in the immediate vicinity of the project site. In response, the Omni-Means letter describes the traffic study review process undertaken by Napa County and resulting expansions of the initial study area. In conclusion, Omni-Means states that the study area is, ". . . consistent with County practice and professional standards for evaluating traffic impacts."

   It is unclear what professional standards Omni Means is referring to as it provides no citation to support this statement. Two potential sources of such standards would be Caltrans and the Institute of Transportation Engineers (ITE), the foremost professional organization for traffic and transportation engineers.

   Caltrans Guidelines

   The Caltrans *Guide for the Preparation of Traffic Impact Studies* states, under the heading "Boundaries of the Traffic Impact Study" (p. 2):

   > *All State highway facilities impacted in accordance with the criteria in Section II should be studied.*

Section II, as referenced here, describes the level of service guidelines imposed by Caltrans, including the requirement that, ". . . the existing MOE should be maintained" at State highway facilities that are operating at substandard levels of service under existing conditions.

Institute of Transportation Engineers Guidelines

ITE has published a September 2010 document entitled, *Transportation Impact Analyses for Site Development*. That document states (p. 8):

> *Care should be taken to include in the study all known congested locations that may be adversely impacted by the proposed development.*

Study Area Based on Caltrans and ITE Guidelines

Considering both of the study area guidelines described above, the intersection of Rutherford Road (SR 128)/St. Helena Highway (SR 29) should clearly be included in the Frog's Leap Winery traffic analysis, as it is the intersection of two State highways and has been documented as operating at LOS F. In particular, the *Amended Caymus Winery Traffic Impact Study* (W-Trans, April 28, 2015) describes that intersection as operating at LOS F in both the weekday PM peak hour and the weekend midday peak hours under Existing Conditions and Cumulative Conditions (which includes two other projects: Frog's Leap Winery and Frank's Family Vineyards Winery). LOS F conditions are also projected to prevail under Future Conditions, reflecting General Plan buildout. Table 2 presents the detailed delay and level of service values for this intersection as presented in the W-Trans study.

Table 2
Level of Service Summary[1]
Rutherford Road (SR 128)/St. Helena Highway (SR 29)

Analysis Scenario & Critical Approach	Weekday PM Peak Hour		Weekend Midday Peak Hour	
	Delay[2]	LOS[3]	Delay	LOS
Existing Conditions				
Eastbound Approach	29.7	D	85.3	F
Westbound Approach	--[4]	F	--[4]	F
Cumulative Conditions				
Eastbound Approach	57.4	F	--[4]	F
Westbound Approach	--[4]	F	--[4]	F
Future Conditions				
Eastbound Approach	--[4]	F	--[4]	F
Westbound Approach	--[4]	F	--[4]	F

Notes:
1 Source: W-Trans, *Amended Caymus Winery Traffic Impact Study*, April 28, 2015.
2 Average control delay per vehicle (seconds per vehicle).
3 Level of service.
4 Delay value exceeds 120 seconds per vehicle.

Although the Rutherford Road (SR 128)/St. Helena Highway (SR 29) intersection clearly requires evaluation under the guidelines established by Caltrans and ITE, Omni-Means argues that it is appropriate to exclude this location simply because it is 1.8 miles from the project

driveway. Omni Means provides no justification for why this distance warrants exclusion of the intersection from the traffic study. This arbitrary cutoff ignores the fact that a substantial proportion of the project-generated traffic will pass though this deficient intersection, given the lack of alternate routes available in the area. In particular, according to the Omni-Means December 15, 2014 traffic study (p. 12), 63 percent of project traffic will be oriented to/from the south. It is reasonable to expect that the bulk of these vehicles will travel by way of Rutherford Road and State Route 29 (St. Helena Highway) and will, therefore, impact this intersection.

In addition, as previously noted in our March 24, 2016 letter, it is important to note that Caltrans has designated this intersection as a location needing safety improvements. Specifically, the *California State Route 128 Transportation Concept Report* (Caltrans District 4, April 2013) says:

> *. . . the intersection of SR 29/128 and Rutherford Road/SR 128 is targeted for traffic and pedestrian safety improvements. Napa County studied and rejected a roundabout intersection at this location because of the proximity of a rail crossing. Other traffic control alternatives are being studied, but no decision has been made as of the time this document is being published.*

In summary, despite the fact that the intersection of Rutherford Road (SR 128)/St. Helena Highway (SR 29) exceeds the arbitrary distance criterion supposedly used to establish the list of study intersections, the failure to analyze project-related impacts at that location is a substantial deficiency in the traffic analysis. Considering the significant traffic delays already occurring at the Rutherford Road (SR 128)/St. Helena Highway (SR 29) intersection, and the fact that the bulk of the traffic from the project will pass through this intersection, it is likely that the project will significantly impact this intersection as well.

3. ***Analysis of Major Marketing Events*** – In response to a comment from SMW regarding the traffic study's failure to evaluate the effects of a major marketing event (500 attendees) at Frog's Leap Winery, Omni-Means responds that the total trip generation of such an event would be 403 trips, and that, ". . . the number of trips on the street network at one time are [*sic*] half of that volume," or approximately 200 trips. Virtually all of those 200 trips would, presumably, be inbound toward the site prior to the event and outbound from the site after the event.

   We note that this volume substantially exceeds the peak-hour volumes considered in the Omni-Means analysis (i.e., 30 weekday PM peak-hour trips and 86 Saturday peak-hour trips). Given the already-deficient operations at Conn Creek Road (SR 128)/Silverado Trail and Rutherford Road (SR 128)/St. Helena Highway (SR 29), the County should consider a detailed traffic analysis of a major marketing event, so as to ensure that the impacts of such an event are fully considered.

   Omni-Means also responds that:

   > *Additionally, these events are held outside the typical peak traffic periods (during the middle of the day or after 6:00 p.m.) and therefore generally do not impact peak hour operations . . .*

   In addition to providing a detailed traffic analysis, we believe it would be appropriate for Napa County to impose a Condition of Approval on the Frog's Leap Winery to ensure that the traffic associated with such events does, in fact, occur outside of peak traffic hours. Without such a

Condition of Approval, event traffic (including traffic from guests, staff, and vendors) could exacerbate already substandard peak travel conditions.

4. ***Cumulative Traffic Impacts*** – In response to a comment from SMW regarding projected LOS F operations at the intersection of Conn Creek Road (SR 128)/Silverado Trail in the year 2030, Omni-Means states:

> *In addition, the Napa County General Plan Draft EIR analyzed cumulative traffic impacts related to winery development in the County . . . CEQA Guidelines expressly provide that projects which are consistent with the development density established by general plan policies for which an EIR was certified 'shall not require additional environmental review, except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site.' CEQA Guidelines Section 15183(a). Cumulative impacts by their nature are not peculiar to a project or its site and therefore, require no additional analysis in this instance.*

If we were to accept the conclusion of the preceding statement, as presented in its last sentence, there would never be a need for analysis of cumulative conditions. In reality, though, project-specific impacts do sometimes occur under cumulative conditions that are "peculiar to a project or its site." Here, impacts that are peculiar to the Frog's Leap site include issues related to the left-turn lane warrant and the applicant's proposal to widen Conn Creek Road (SR 128) across from the project driveway.

Additionally, it is notable that the Napa County General Plan DEIR is inapplicable here because it did not evaluate the traffic impacts that occur in this section of the County or would be caused by this project.

First, the traffic analysis incorporated into the General Plan DEIR was based on evaluation of roadway segment operations. In contrast, the Frog's Leap Winery IS/ND considers impacts at intersections. These two types of analyses are not directly comparable, as they address different time periods (daily operations for road segments versus peak hours for intersections) and employ vastly different methodologies. In short, the level of service results for road segments bear no relationship to the level of service results for intersections.

Moreover, even if we were to accept the road segment analyses as adequate for this purpose, the General Plan DEIR does not consider traffic on segments within the study area for the proposed Frog's Leap Winery project. In particular, the segments of Conn Creek Road that are within the Omni-Means study area (i.e., between Silverado Trail and Rutherford Road) are simply not addressed in the General Plan DEIR at all. Consequently, the General Plan environmental analysis did not consider potential traffic conditions on the roads surrounding the project site.

5. ***Left-Turn Lane on Conn Creek Road*** – The December 2014 Omni-Means report documents that the proposed project meets Napa County warrants for installation of a northbound left-turn lane on Conn Creek Road at the Frog's Leap Winery driveway. However, in an attempt to justify an exception from that requirement, it also states that the location falls short of meeting a warrant that is described as being from the Caltrans *Highway Design Manual.* In reality, the "Caltrans" warrant is over three decades old; it was taken from a 1985 report of the National Cooperative Highway Research Program (NCHRP), *NCHRP Report 279 – Intersection Channelization Design Guide.*)

A more recent NCHRP report addresses when it is appropriate to construct left-turn lanes. *NCHRP Report 745 – Left-Turn Accommodations at Unsignalized Intersections* (NCHRP, 2013), which documents the results of research conducted by the Texas Transportation Institute at Texas A&M University, provides updated warrants for left-turn lanes in both urban and rural areas, on two- and four-lane roads. Attachment B contains an excerpt from that report, showing a tabular listing of the applicable traffic volumes, as well as a graphical treatment. Table 3 summarizes the left-turn lane warrants for a three-legged intersection on a rural, two-lane highway; this is similar to the intersection of Conn Creek Road/Frog's Leap Winery Driveway.

Table 3
Left-Turn Lane Warrants
Three-Legged Intersection on a Two-Lane Rural Highway

Left-Turn Lane Peak-Hour Volume (Vehicles/Hour)	Two-Lane Highway Peak-Hour Volume That Warrants a Left-Turn Lane (Vehicles/Hour/Lane)
5	200
10	100
15	100
20	50
25	50
30	50
35	50
40	50
45	50
50 or more	50

Source: National Cooperative Highway Research Program, *NCHRP Report 745 - Left-Turn Accommodations at Unsignalized Intersections*, 2013.

Attachment C presents a copy of the NCHRP 745 left-turn warrant graphic showing the analysis of the Conn Creek Road/Frog's Leap Winery Driveway. The traffic volumes employed here (i.e., 19 left turns/hour and a "Major Highway Volume" of 158 vehicles/hour/lane) are taken from the "Caltran's [*sic*] Left-Turn Warrant" graphic attached to the December 15, 2014 Omni-Means report. As shown in Attachment C, under the current NCHRP guidelines, a northbound left-turn lane is clearly warranted on Conn Creek Road at the driveway. This reinforces the results of the left-turn lane warrant analysis conducted by Omni-Means using the Napa County standards.

The traffic volumes used in the left-turn lane warrant analyses described above represent "typical" conditions during the weekend midday peak hour. In evaluating the need for a left-turn lane, it is also important to consider conditions in advance of a major marketing event at Frog's Leap Winery. As noted above, Omni-Means has estimated that such an event would generate a total of 403 trips, with half (i.e., about 200) on the road immediately prior to the event and half (again, about 200) traveling immediately after the event. The December 2014 Omni-Means study indicated that 53 percent of project-related trips would approach from the south on Conn Creek Road in the Saturday midday peak hour and 63 percent would do so in the weekday PM peak hour. Assuming that these percentages also apply to event-related traffic, between 106 and 126 drivers will desire to make a left turn into the site in the hour preceding a major marketing event.

The value of a left-turn lane on Conn Creek Road under those circumstances is obvious, even without conducting a formal warrant analysis.

Finally, we note that the January 13, 2016 Omni-Means letter (p. 6) says that the "Napa County Road and Street Standards" warrant for provision of left-turn lanes has no relationship to safety. In reality, of course, provision of a dedicated left-turn lane is primarily a safety issue and secondarily about road capacity. Having a left-turn lane to serve northbound traffic on Conn Creek Road at the Frog's Leap Winery will largely eliminate the potential for rear-end collisions involving vehicles waiting to enter the project site. Thus, if the County does not make the applicant comply with the County's adopted left-turn warrant for the project, it should evaluate the safety impacts of failing to install a left turn lane at the project driveway.

CONCLUSION

Based on our review of Napa County's revised Initial Study/Negative Declaration and the January 13, 2016 "Initial Outline Response Letter" prepared by Omni-Means with respect to the proposed Use Permit modifications at Frog's Leap Winery on Conn Creek Road (State Route 128) in Napa County, we believe that several issues relating to traffic operations and safety remain that have not been adequately addressed. Additionally, based on the information provided by the County, we find that the project will create a significant traffic impact.

We hope this information is useful. If you have questions concerning anything presented here, please feel free to contact me at (916) 783-3838.

Sincerely,

MRO ENGINEERS, INC.

Neal K. Liddicoat, P.E.
Traffic Engineering Manager

MRO ENGINEERS

ATTACHMENT A

Excerpts from the
Guide for the Preparation of Traffic Impact Studies
(Caltrans, December 2002)

GUIDE FOR THE PREPARATION

OF

TRAFFIC IMPACT STUDIES

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

December 2002

I. INTRODUCTION

Caltrans desires to provide a safe and efficient State transportation system for the citizens of California pursuant to various Sections of the California Streets and Highway Code. This is done in partnership with local and regional agencies through procedures established by the California Environmental Quality Act (CEQA) and other land use planning processes. The intent of this guide is to provide a starting point and a consistent basis in which Caltrans evaluates traffic impacts to State highway facilities. The applicability of this guide for local streets and roads (non-State highways) is at the discretion of the effected jurisdiction.

Caltrans reviews federal, State, and local agency development projects[1], and land use change proposals for their potential impact to State highway facilities. The primary objectives of this guide is to provide:

- guidance in determining if and when a traffic impact study (TIS) is needed,
- consistency and uniformity in the identification of traffic impacts generated by local land use proposals,
- consistency and equity in the identification of measures to mitigate the traffic impacts generated by land use proposals,
- lead agency[2] officials with the information necessary to make informed decisions regarding the existing and proposed transportation infrastructure (see Appendix A, Minimum Contents of a TIS)
- TIS requirements early in the planning phase of a project (i.e., initial study, notice of preparation, or earlier) to eliminate potential delays later,
- a quality TIS by agreeing to the assumptions, data requirements, study scenarios, and analysis methodologies prior to beginning the TIS, and
- early coordination during the planning phases of a project to reduce the time and cost of preparing a TIS.

II. WHEN A TRAFFIC IMPACT STUDY IS NEEDED

The level of service[3] (LOS) for operating State highway facilities is based upon measures of effectiveness (MOEs). These MOEs (see Appendix "C-2") describe the measures best suited for analyzing State highway facilities (i.e., freeway segments, signalized intersections, on- or off-ramps, etc.). Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" (see Appendix "C-3") on State highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing MOE should be maintained.

---

[1] "Project" refers to activities directly undertaken by government, financed by government, or requiring a permit or other approval from government as defined in Section 21065 of the Public Resources Code and Section 15378 of the California Code of Regulations.

[2] "Lead Agency" refers to the public agency that has the principal responsibility for carrying out or approving a project. Defined in Section 21165 of the Public Resources Code, the "California Environmental Quality Act, and Section 15367 of the California Code of Regulations.

[3] "Level of service" as defined in the latest edition of the Highway Capacity Manual, Transportation Research Board, National Research Council.

A. Trip Generation Thresholds

The following criterion is a starting point in determining when a TIS is needed. When a project:

1. Generates over 100 peak hour trips assigned to a State highway facility
2. Generates 50 to 100 peak hour trips assigned to a State highway facility – and, affected State highway facilities are experiencing noticeable delay; approaching unstable traffic flow conditions (LOS "C" or "D").
3. Generates 1 to 49 peak hour trips assigned to a State highway facility – the following are examples that may require a full TIS or some lesser analysis[4]:
   a. Affected State highway facilities experiencing significant delay; unstable or forced traffic flow conditions (LOS "E" or "F").
   b. The potential risk for a traffic incident is significantly increased (i.e., congestion related collisions, non-standard sight distance considerations, increase in traffic conflict points, etc.).
   c. Change in local circulation networks that impact a State highway facility (i.e., direct access to State highway facility, a non-standard highway geometric design, etc.).

Note: A traffic study may be as simple as providing a traffic count to as complex as a microscopic simulation. The appropriate level of study is determined by the particulars of a project, the prevailing highway conditions, and the forecasted traffic.

B. Exceptions

Exceptions require consultation between the lead agency, Caltrans, and those preparing the TIS. When a project's traffic impact to a State highway facility can clearly be anticipated without a study and all the parties involved (lead agency, developer, and the Caltrans district office) are able to negotiate appropriate mitigation, a TIS may not be necessary.

C. Updating An Existing Traffic Impact Study

A TIS requires updating when the amount or character of traffic is significantly different from an earlier study. Generally a TIS requires updating every two years. A TIS may require updating sooner in rapidly developing areas and not as often in slower developing areas. In these cases, consultation with Caltrans is strongly recommended.

III. SCOPE OF TRAFFIC IMPACT STUDY

Consultation between the lead agency, Caltrans, and those preparing the TIS is recommended before commencing work on the study to establish the appropriate scope. At a minimum, the TIS should include the following:

A. Boundaries of the Traffic Impact Study

All State highway facilities impacted in accordance with the criteria in Section II should be studied. Traffic impacts to local streets and roads can impact intersections with State highway facilities. In these cases, the TIS should include an analysis of adjacent local facilities, upstream and downstream, of the intersection (i.e., driveways, intersections, and interchanges) with the State highway.

[4] A "lesser analysis" may include obtaining traffic counts, preparing signal warrants, or a focused TIS, etc.

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ATTACHMENT B

Excerpts from
NCHRP Report 745 – Left-Turn Accommodations at Unsignalized Intersections **(NCHRP, 2013)**

NCHRP

REPORT 745

NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

Left-Turn Accommodations at Unsignalized Intersections

TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

NCHRP REPORT 745

Left-Turn Accommodations at Unsignalized Intersections

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of the steps a designer could take to determine whether a left-turn lane is appropriate for a particular location. Where there are no applicable access management guidelines, adequate spacing and design consistency are both essential requirements to consider.

Apply Left-Turn Lane Warrants

Warrants

After compiling all of the relevant information pertaining to a particular intersection, it is necessary to determine whether that information indicates that a left-turn lane is indeed necessary or beneficial. Left-turn lanes can reduce the potential for collisions and improve capacity by removing stopped vehicles from the main travel lane. The recommended left-turn lane warrants developed based on the NCHRP Project 3-91 research (*1*) are:

- Rural, two-lane highways (see Table 1),
- Rural, four-lane highways (see Table 2), and
- Urban and suburban roadways (see Table 3).

Table 1 also present warrants for a bypass lane treatment on two-lane rural highways. Given a peak-hour left-turn volume and a particular intersection configuration (i.e., number of legs, number of lanes on the major highway), the tables show the minimum peak-hour volume on the major highway that warrants a left-turn lane or bypass lane. Figure 2 displays the warrants for rural two-lane highways graphically. Figure 3 shows graphical warrants for four-lane rural highways, and Figure 4 shows the recommended warrants for urban and suburban arterials.

Technical warrants are an important element of the decision-making process; however, other factors should also be considered when deciding whether to install a left-turn lane, including:

- Sight distance relative to the position of the driver and
- Design consistency within the corridor.

These factors should be considered in conjunction with the numerical warrants. For example, if volumes indicate that a left-turn lane is not warranted but there is insufficient sight distance at the location for the left-turning vehicles, then the left-turn lane should be considered along with other potential changes (e.g., remove sight obstructions, realign the highway, etc.).

Source of Warrants—Benefit-Cost Approach

A benefit-cost approach was conducted as part of NCHRP Project 3-91 (*1*) to determine when a left-turn lane would be justified. Economic analysis can provide a useful method for combining traffic operations and safety benefits of left-turn lanes to identify situations in which left-turn lanes are and are not justified economically. The development steps included:

- Simulation to determine delay savings from installing a left-turn lane,
- Crash costs,
- Crash reduction savings determined from safety performance functions available in the AASHTO *Highway Safety Manual* (Chapter 10 discusses rural two-lane, two-way roads; Chapter 11 discusses rural multilane highways; and Chapter 12 discusses urban and suburban arterials) (*4*),

Table 1. Recommended left-turn treatment warrants for rural two-lane highways.

Left-Turn Lane Peak-Hour Volume (veh/hr)	Three-Leg Intersection, Major Two-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Bypass Lane	Three-Leg Intersection, Major Two-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Left-Turn Lane	Four-Leg Intersection, Major Two-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Bypass Lane	Four-Leg Intersection, Major Two-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Left-Turn Lane
5	50	200	50	150
10	50	100	< 50	50
15	< 50	100	< 50	50
20	< 50	50	< 50	< 50
25	< 50	50	< 50	< 50
30	< 50	50	< 50	< 50
35	< 50	50	< 50	< 50
40	< 50	50	< 50	< 50
45	< 50	50	< 50	< 50
50 or More	< 50	50	< 50	< 50

Table 2. Recommended left-turn lane warrants for rural four-lane highways.

Left-Turn Lane Peak-Hour Volume (veh/hr)	Three-Leg Intersection, Major Four-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Left-Turn Lane	Four-Leg Intersection, Major Four-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Left-Turn Lane
5	75	50
10	75	25
15	50	25
20	50	25
25	50	< 25
30	50	< 25
35	50	< 25
40	50	< 25
45	50	< 25
50 or More	50	< 25

Table 3. Recommended left-turn lane warrants for urban and suburban arterials.

Left-Turn Lane Peak-Hour Volume (veh/hr)	Three-Leg Intersection, Major Urban and Suburban Arterial Volume (veh/hr/ln) That Warrants a Left-Turn Lane	Four-Leg Intersection, Major Urban and Suburban Arterial Volume (veh/hr/ln) That Warrants a Left-Turn Lane
5	450	50
10	300	50
15	250	50
20	200	50
25	200	50
30	150	50
35	150	50
40	150	50
45	150	< 50
50 or More	100	< 50

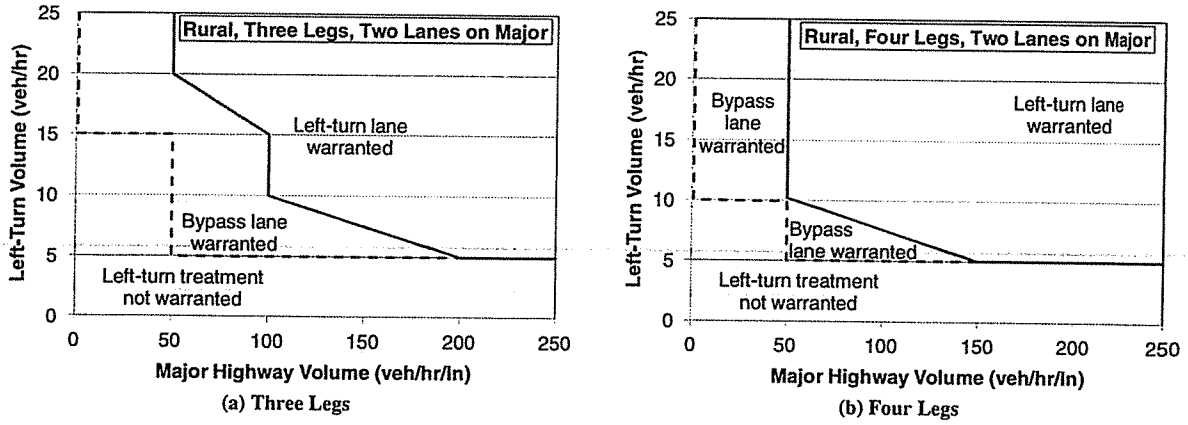

Figure 2. Recommended left-turn treatment warrants for intersections on rural two-lane highways.

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ATTACHMENT C

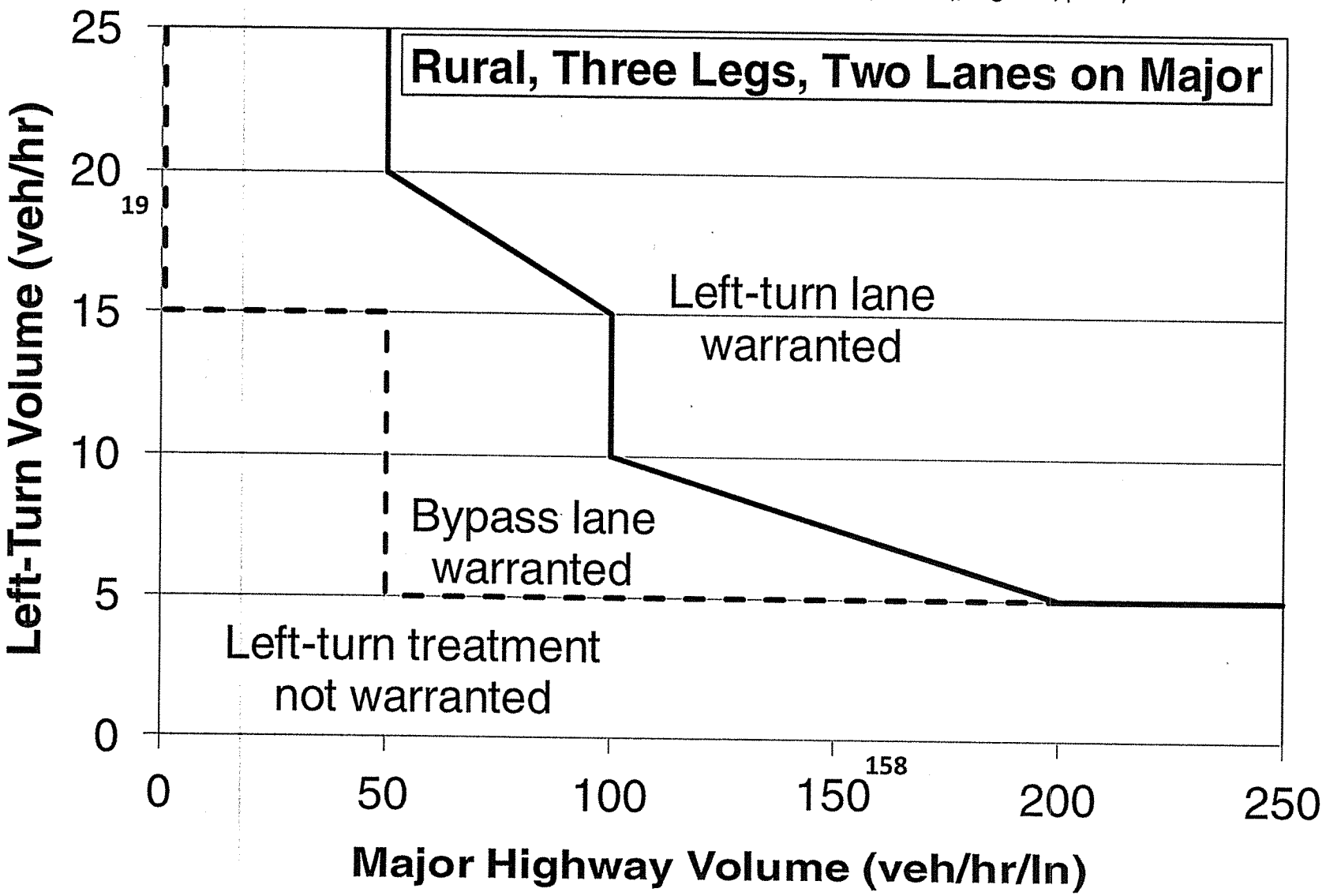
Left-Turn Lane Warrant Analysis
Based on
NCHRP Report 745 – Left-Turn Accommodations at Unsignalized Intersections

(Traffic Volume Source: Omni-Means, *Focused Traffic Analysis for the Proposed Frog's Leap Winery Modifications Project*, December 15, 2014 (Revised), Figure 6, p. 16)

775498.2

LEFT-TURN LANE WARRANT ANALYSIS -- CANN CREEK RD. (SR 128)/FROG'S LEAP WINERY DRIVEWAY
NEAR-TERM + PROJECT -- WEEKEND MIDDAY PEAK HOUR

(Traffic Volume Source: Omni-Means, *Focused Traffic Analysis for the Proposed Frog's Leap Winery Modifications Project*, December 15, 2014 (Revised), Figure 6, p. 16.)



(a) Three Legs

EXHIBIT C

2016

Adopted April 27, 1991

Revised May 10, 1977

Revised August 18, 1987

Revised June 5, 1990
{Ordinance 854}

Revised August 2, 1999
{Ordinance 1160}

Revised August 31, 2004
{Resolution 04-150}

Revised November 21, 2006
{Resolution 06-198}

Revised August 9, 2011
{Resolution 2011-95}

Revised January 26, 2016
{Resolution 2016-06}

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1. OBJECTIVES

The following material was originally prepared through the cooperation of the Road Standards Advisory Committee of 1970. Since then, updates have been incorporated to reflect changes in accepted health and safety practices and to comply with changes in County Ordinances and State and Federal Law. These Road and Street Standards ("Standards") attempt to meet the related interests of several other agencies, including the Resource Conservation District, California Department of Forestry and Fire Protection, Cal Fire, the Federal Emergency Management Agency, the Napa County Planning, Building & Environmental Services Department, and the California Department of Fish and Game. The objectives of these Standards are summarized below:

a. To provide reasonable standards that relate to terrain and parcel size.
b. To preserve the natural landscape and desirable aesthetic features while balancing the needs of property owners.
c. To encourage the location of roads to minimize disturbance or impacts on wetlands, critical native plant communities, or other environmentally sensitive areas.
d. To minimize diversion and concentration of storm runoff, including selection of appropriate discharge locations, outlet dispersion appurtenances and selection of practices that maximize soil infiltration.
e. To encourage use of native grasses and other native plant materials for erosion control and habitat enhancement.
f. To minimize alteration of streams and ephemeral drainage at discharge outfalls, utilizing "bio-technical" stream stabilization techniques and preservation of natural stream morphological conditions.
g. To identify "impacted" runoff basins where special design considerations may be necessary to minimize downstream flooding and other impacts to neighboring properties.
h. To provide adequate safety and service.
i. To provide low maintenance cost road facilities.
j. To produce standards compatible with City Requirements within areas of influence.

The Standards were developed and revised over the years in an effort to meet all of the objectives noted above while striving to maintain the preservation of the health, safety, and welfare of the public. The 2016 revisions are intended to provide clarification and flexibility in order to ensure conformance with local, state and federal regulations while also incorporating appropriate general engineering and construction practices and accommodation of unique project elements.

Users of the Standards are encouraged to become familiar with all of the codes, rules, regulations, and guidance documents available. These include, for example, the State Responsibility Area Fire Safe Regulations (SRA Fire Safe Regulations)[1], the Conservation Regulations, Floodplain Ordinance, Grading Ordinance, Policies, Practices and County Code Sections Administered by the Department of Environmental Management, County Fire Code, Policies and Procedures of Fish and Game, and the Soil Conservation Service's Best Management Practices for the Napa Valley. Roadway design guidance can be found in "A Policy on Geometric Design of Highways and Streets" generated by the American Association of State Highway and Transportation Officials ("AASHTO"), and the Caltrans "Highway Design Manual" and "Standard Specifications." Where these Napa County Road and Street Standards refer to the Caltrans Specifications or the Caltrans Standard Specifications, the reference shall mean the current edition of the Caltrans Standard Specifications.

2. SCOPE OF STANDARDS

These standards are not applicable retroactively to existing roads, streets and private lanes or facilities. These standards shall apply to all construction within the Local Responsibility Area (LRA) of the unincorporated portion of Napa County beginning on the date they are adopted by the Board of Supervisors. For all construction within that portion of unincorporated Napa County within the State Responsibility Area (SRA)[2], the SRA Fire Safe Regulations, which are attached hereto as Appendix "A", shall apply. In addition, these Standards shall also apply to the SRA where the SRA Fire Safe Regulations are silent on issues addressed by the Standards or create additional obligations in addition to those set forth in the SRA Fire Safe Regulations. Activities which will trigger application are included but not limited to:

(a) Clearance for a building permit for new construction, or substantial improvement to an existing structure where substantial improvement is determined when accumulated construction costs of greater than 50% of the retail value of the structure occur within a 5 year period,
(b) Recommendations for a use permit,
(c) Road construction, including construction of a road that does not currently exist, or extension of an existing road,
(d) New subdivisions created by Parcel Map or Final Map,

[1] The SRA Fire Safe Regulations are set forth at Title 14, the Natural Resources Division of the California Code of Regulations, Division 1.5, Chapter 7 Fire Protection, Subchapter 2 SRA Fire Safe Regulations.
[2] The SRA Responsibility Area is defined as defined in Public Resources Code section 4126-4127 and the California Code of Regulations, Title 14, Division 1.5, Chapter 7, Article 1, Sections 1220-1220.5 and 1271.00.

16. INDUSTRIAL AND COMMERCIAL DEVELOPMENT

Industrial references in these standards are applicable to all appropriately zoned lands whether hill areas or flatland areas. In general, the "high density" portions of these standards are applicable to industrial development.

Road cross sections for existing County roads and State highways which have full improvement widths different from these standards shall be improved to provide additional pavement width and thickness plus additional right of way, all as determined by the County Engineer.

Structural pavement sections shall be based upon a minimum traffic index of 6.0 and appropriate "R" value.

Bus turnouts and related sidewalks may be required as a condition of development.

Where on-street parking is allowed, a sidewalk shall be provided on the same side of the street as the parking lane. The sidewalk shall be Portland Cement Concrete. Where no sidewalk is required, an unpaved, clear walkway shall be provided.

Consistent with the Board policy of accepting into the road system only those roads improved to County standards, any new roads or drainage improvements proposed under a parcel map or final map to be accepted for maintenance by the County or by a County Service Area shall first be improved to full improvement in accordance with the standards.

In any land divisions where road and drainage improvements are proposed to be privately maintained, the developer shall furnish covenants calling for maintenance of such improvements. Covenants shall run with the land and be recorded with the final map or parcel map.

17. TRAFFIC CONTROL DEVICES

The California Manual on Uniform Traffic Control Devices (California MUTCD), the Caltrans Standard Specs and the Caltrans Highway Design manual shall be utilized to determine traffic warrants, design and construction procedures for all traffic control devices with the exception of left-turn lanes. Warrants for construction of a left-turn lane on County Maintained roads as defined in Sections 18.112.040 through 18.112.080 of the County Code shall be as follows:

Left-Turn Lane Warrants: Use Permits or modifications thereof shall trigger the application of the following warrants to determine the necessity for a left-turn lane for entering the proposed use.

1. Application of the following Left-Turn Lane Warrant Graph based on road average daily trips (ADT) and the projected ADT of the proposed use. The chart is a

representation of probable conflict between turning traffic and advancing traffic. Private Road or Driveway ADT is the total average daily traffic utilizing the facility. A left-turn lane will not be considered for uses generating an ADT of 10 or less.

2. If the corner sight distance in advancing direction, measured from the driveway, is less than required per Caltrans design standards (usually the posted speed limit multiplied by eleven, read in feet) a left-turn lane shall be installed.
3. If traffic conditions or turning movements pose a considerable threat to public life and safety, as recognized by the Director of Public Works, a left-turn lane shall be installed.

Design: Design of the left-turn lane shall be prepared by a Licensed Civil Engineer and be based on the County Standard Detail LTL-1, available at the Public Works Department. Installation of a left-turn lane on a public road shall require an encroachment permit issued by the Public Works Department and the property owner shall be required to enter into a one (1) year maintenance agreement including appropriate bonding.

EXHIBIT D

Amended Caymus Winery Traffic Impact Study

Prepared for the

County of Napa

Submitted by

Whitlock & Weinberger Transportation, Inc.

490 Mendocino Avenue
Suite 201
Santa Rosa, CA 95401
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web www.w-trans.com

April 28, 2015

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Table of Contents

Table 6
Project Trip Generation

Land Use	Daily Trips		Weekday PM Peak Hour			Weekend Midday Peak Hour		
	Weekday	Weekend	Trips	In	Out	Trips	In	Out
Net Increase on Roadways								
Existing Use	-355	-252	-125	-31	-94	-136	-68	-68
Proposed Use	478	480	170	43	127	258	129	129
Total Net-New Roadway Trips	**123**	**228**	**45**	**12**	**33**	**122**	**61**	**61**
Project Trips								
Permitted Use	-112	-105	-40	-10	-30	-48	-24	-24
Proposed Use	478	480	170	43	127	258	129	129
Total Net-New Project Trips	**366**	**375**	**130**	**33**	**97**	**210**	**105**	**105**

Trip Distribution

The pattern used to allocate new project trips to the street network was based on the existing traffic volumes at the study intersections and access points to the project site. The applied distribution assumptions for visitors, employees, and trucks for both weekday and weekend traffic are shown in Table 7.

Table 7
Trip Distribution Assumptions

User Group *Route*	Percent	Weekday Trips	Weekend Trips	PM Trips	MD Trips
Visitors					
SR 128 (from the west)	*50%*	*104*	*184*	*40*	*104*
SR 128 (from the east)	*50%*	*104*	*184*	*39*	*104*
Conn Creek Road (from the south)	*0%*	*0*	*0*	*0*	*0*
Subtotal	100%	208	368	79	208
Employees					
SR 128 (from the west)	*40%*	*51*	*3*	*16*	*1*
SR 128 (from the east)	*25%*	*32*	*2*	*10*	*0*
Conn Creek Road (from the south)	*35%*	*45*	*2*	*14*	*1*
Subtotal	100%	128	7	40	2
Trucks					
SR 128 (from the west)	*40%*	*12*	*0*	*4*	*0*
SR 128 (from the east)	*25%*	*8*	*0*	*4*	*0*
Conn Creek Road (from the south)	*35%*	*10*	*0*	*3*	*0*
Subtotal	100%	30	0	11	0
TOTAL		**366**	**375**	**130**	**210**

Trips were assigned based on the street network, project driveways and site plan. It was assumed that 100 percent of visitor related project trips would use the north driveway for both inbound and outbound trips. Inbound staff trips and trucks trips were assumed to use the southern driveway while all outbound employee trips and truck trips were assigned to the north driveway. Based on the above assumptions, the resulting project trips are shown in Figures 1 and 3.

Existing plus Project Conditions

Upon the addition of project-related traffic to the existing volumes, all of the study intersections are expected to operate at the same levels of service as without the project, except SR 128/SR 29 which degrades to unacceptable LOS E overall during the p.m. peak hour and to LOS F overall during the midday peak hour. The side street approaches continue operating at the same levels of service at SR 128/SR 29 and SR 128/Silverado Trail South. These results are summarized in Table 8 and copies of the Level of Service calculations are provided in Appendix B.

Table 8
Existing and Existing plus Project Peak Hour Intersection Levels of Service

Study Intersection *Approach*	Existing Conditions				Existing plus Project			
	Weekday PM Peak		Weekend MD Peak		Weekday PM Peak		Weekend MD Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. SR 128/Conn Creek Rd (north)	1.7	A	1.6	A	1.7	A	1.1	A
Conn Creek Rd (northbound)	*9.1*	*A*	*9.6*	*A*	*9.4*	*A*	*10.6*	*B*
2. SR 128/Conn Creek Rd (south)	1.2	A	1.2	A	2.0	A	1.2	A
Conn Creek Rd (southbound)	*9.2*	*A*	*9.2*	*A*	*9.4*	*A*	*9.2*	*A*
3. SR 128/Conn Creek Rd (west)	1.2	A	1.3	A	0.9	A	1.0	A
Conn Creek Rd (westbound)	*9.8*	*A*	*10.3*	*B*	*10.5*	*B*	*11.8*	*B*
4. SR 128/SR 29	14.3	B	**42.0**	**E**	**47.8**	**E**	**	**F**
Eastbound Approach	*29.7*	*D*	*85.3*	*F*	*30.7*	*D*	**	*F*
Westbound Approach	**	*F*	**	*F*	**	*F*	**	*F*
Signalized	8.3	A	9.6	A	10.8	B	12.9	B
5. SR 128-Conn Creek Rd/ Silverado Trail S	7.0	A	3.6	A	11.7	B	4.9	A
Eastbound Approach	*77.0*	*F*	*26.0*	*D*	*116.6*	*F*	*30.9*	*D*
Westbound Approach	*70.2*	*F*	*21.5*	*C*	*81.6*	*F*	*23.3*	*C*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*; ** Delay greater than 120 seconds; **Bold** text indicates deficient operation; Shaded cells = operation with installation of traffic signal

Finding: Under Existing plus Project conditions, SR 128/SR 29 would degrade from acceptable LOS B to unacceptable LOS E during the weekday p.m. peak hour and would further degrade from unacceptable LOS E to LOS F during the weekend midday peak hour. This intersection is already operating unacceptably during the weekend peak period and signalization or other improvements to facilitate access are supported in the General Plan and should be included in the County's traffic impact fee.

Recommendation: The project results in further deterioration of operation at SR 128/SR 29, including unacceptable operation during the weekday p.m. peak hour. However, because this project should be part of the traffic impact fee program, it is recommended that the applicant pay their traffic impact fee to mitigate project impacts. If the fee has not yet been adopted at the time when fees are to be paid, a proportional share fee of 6.8 percent could instead be levied on the condition that it is transferred into the traffic impact fee fund at such time as it is established. The proportional share calculation is provided in Appendix D.

Cumulative plus Project Conditions

Upon the addition of project-related traffic to cumulative volumes, all of the study intersections are expected to operate at LOS C or better, except SR 128/SR 29 which would be expected to degrade to unacceptable LOS F overall during the p.m. peak hour and continue operating at LOS F during the midday peak hour. The side street approaches at SR 128/SR 29 and SR 128/Silverado Trail South would

continue operating at the same levels of service. These results are summarized in Table 9 and copies of the Level of Service calculations are provided in Appendix B.

Table 9
Cumulative and Cumulative plus Project Peak Hour Intersection Levels of Service

Study Intersection *Approach*	Cumulative Conditions				Cumulative plus Project			
	Weekday PM Peak		Weekend MD Peak		Weekday PM Peak		Weekend MD Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. SR 128/Conn Creek Rd (north)	1.5	A	1.5	A	1.5	A	1.0	A
Conn Creek Rd (northbound)	*9.3*	*A*	*10.0*	*A*	*9.6*	*A*	*11.0*	*B*
2. SR 128/Conn Creek Rd (south)	1.2	A	1.4	A	2.1	A	1.3	A
Conn Creek Rd (southbound)	*9.2*	*A*	*9.2*	*A*	*9.4*	*A*	*9.2*	*A*
3. SR 128/Conn Creek Rd (west)	1.0	A	1.1	A	0.9	A	0.9	A
Conn Creek Rd (westbound)	*10.2*	*B*	*10.8*	*B*	*10.9*	*B*	*12.4*	*B*
4. SR 128/SR 29	17.8	C	**55.5**	**F**	**55.8**	**F**	**	**F**
Eastbound Approach	*57.4*	*F*	**	*F*	*67.9*	*F*	**	*F*
Westbound Approach	**	*F*	**	*F*	**	*F*	**	*F*
Signalized	9.2	A	11.2	B	11.6	B	15.4	B
5. SR 128-Conn Creek Rd/ Silverado Trail S	10.9	B	4.9	A	18.3	C	6.7	A
Eastbound Approach	*112.1*	*F*	*30.9*	*D*	**	*F*	*39.1*	*E*
Westbound Approach	*82.3*	*F*	*23.7*	*C*	*97.1*	*F*	*25.9*	*D*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*; ** Delay greater than 120 seconds; **Bold** text indicates deficient operation; Shaded cells = operation with installation of traffic signal

Finding: Under Cumulative plus Project conditions, operation at SR 128/SR 29 is expected to degrade from acceptable LOS C to LOS F during the weekday p.m. peak hour and the intersection would continue operating at unacceptable LOS F during the weekend midday peak hour, with increased delay on the stop-controlled side-street approaches. This is a significant impact.

Recommendation: The project applicant should pay the County's traffic impact fee at such time as it is established, or a proportional share in the interim, to support construction of a traffic signal at SR 128/SR 29.

Future plus Project Conditions

Upon the addition of project-generated traffic to the anticipated Future volumes, the study intersections are SR 128/Conn Creek Road are expected to operate at LOS A overall, while SR 128/SR 29 is expected to continue operating deficiently at LOS F and SR 128-Conn Creek Road/Silverado Trail South is expected to degrade from unacceptable LOS E to LOS F during both peak hours. These results are summarized in Table 10 and copies of the Level of Service calculations are provided in Appendix B.

Table 10
Future and Future plus Project Peak Hour Levels of Service

Study Intersection *Approach*	Future Conditions				Future plus Project			
	Weekday PM Peak		Weekend MD Peak		Weekday PM Peak		Weekend MD Peak	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. SR 128/Conn Creek Rd (north)	1.4	A	1.4	A	1.5	A	1.0	A
Conn Creek Rd (northbound)	*9.1*	*A*	*9.8*	*A*	*9.4*	*A*	*10.7*	*B*
2. SR 128/Conn Creek Rd (south)	1.2	A	1.3	A	2.1	A	1.3	A
Conn Creek Rd (southbound)	*9.1*	*A*	*9.2*	*A*	*9.2*	*A*	*9.2*	*A*
3. SR 128/Conn Creek Rd (west)	1.0	A	1.1	A	0.8	A	0.9	A
Conn Creek Rd (westbound)	*9.8*	*A*	*10.5*	*B*	*10.4*	*B*	*11.9*	*B*
4. SR 128/SR 29	**504.2**	**F**	**710.0**	**F**	**676.6**	**F**	***>1,000***	**F**
Eastbound Approach	**	*F*	**	*F*	**	*F*	**	*F*
Westbound Approach	**	*F*	**	*F*	**	*F*	**	*F*
Signalized	15.3	B	20.0	C	19.8	B	35.8	D
5. SR 128-Conn Creek Rd/ Silverado Trail S	**42.4**	**E**	**44.3**	**E**	**66.8**	**F**	**68.8**	**F**
Eastbound Approach	**	*F*	**	*F*	**	*F*	**	*F*
Westbound Approach	**	*F*	**	*F*	**	*F*	**	*F*
With Traffic Signal	20.6	C	7.6	A	25.3	C	8.6	A

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*; ** Delay greater than 120 seconds; **Bold** text indicates deficient operation; Shaded cells = operation with installation of traffic signal

Finding: SR 128/SR 29 is expected to continue operating deficiently at LOS F while SR 128-Conn Creek Road would degrade to unacceptable LOS F. The project-added traffic would result in substantial further deterioration of operation at SR 128/SR 29 without implementation of improvements necessary to accommodate regional growth in areawide traffic.

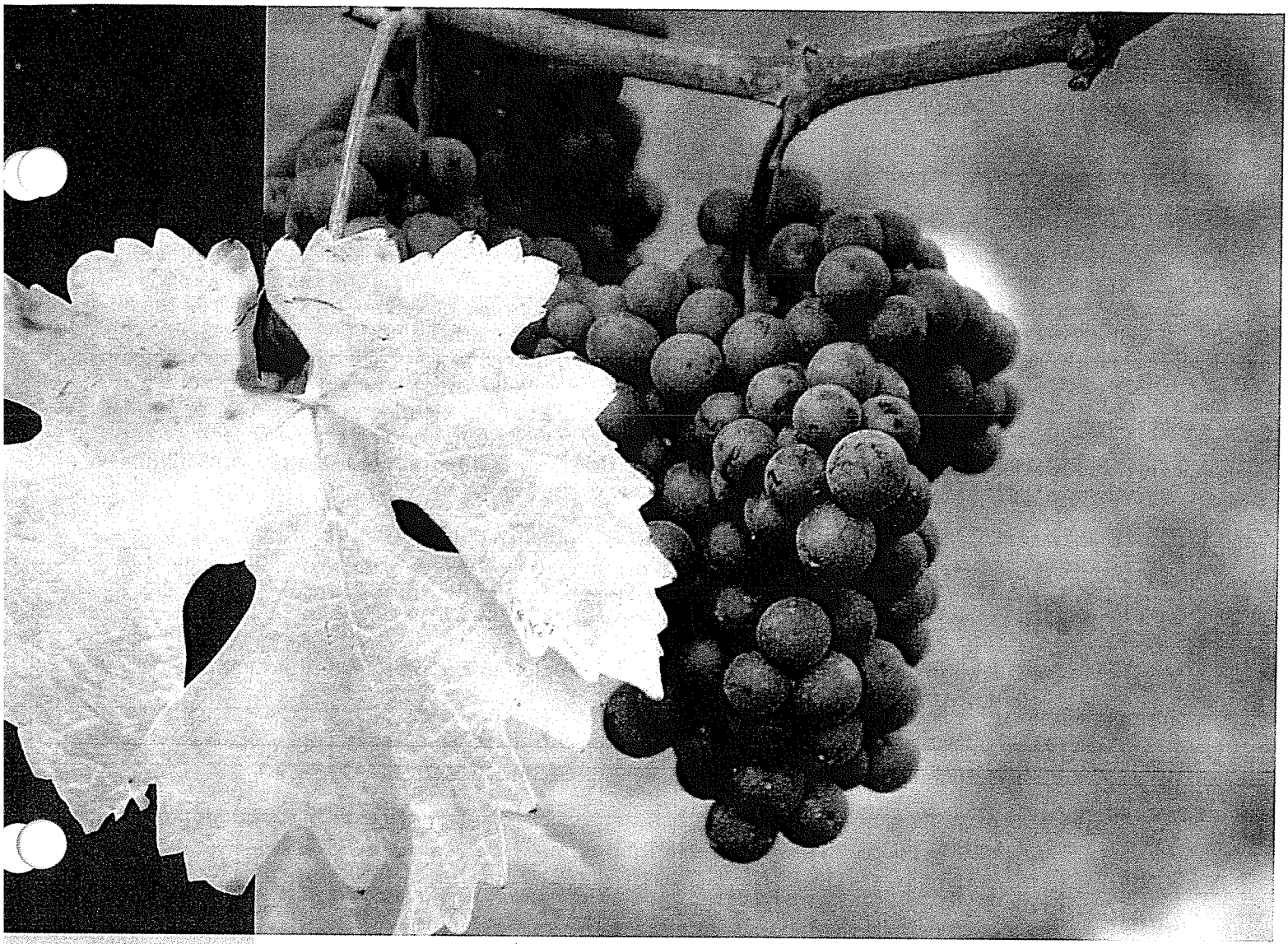
Recommendation: The applicant should pay the applicable traffic impact fees or proportional share fees to support installation of traffic signals at SR 128/SR 29 and at SR 128/Silverado Trail South. The proportional share for Silverado Trail/SR 128 is 57.9 percent, as shown in the calculation provided in Appendix D.

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.

The General Plan contains policies that support roadway improvements that would increase safety and access to the project site.

EXHIBIT E



NAPA COUNTY GENERAL PLAN

DRAFT Environmental Impact Report

Volume 1

February 16, 2007

NAPA COUNTY GENERAL PLAN UPDATE

MC

STATE CLEARINGHOUSE NO. 2005102088

EXISTING ROADWAY CAPACITY AND LEVEL OF SERVICE METHODOLOGY

To assess current conditions, the County roadway system was divided into 46 roadway segments representative of the County's overall network. Traffic volumes were provided by several different agencies including Napa County, Caltrans, the Napa County Transportation Planning Agency and the cities of American Canyon, Calistoga, Napa, Saint Helena, and Yountville. The PM peak hour was selected as the time period for study because in most areas of the County this is generally the time when traffic volumes and congestion is highest. It is also the time of the day/week for which the most data exists. When data for the PM peak hour was not available, a factor was applied to daily or AM peak hour volumes to estimate the missing data based on the percentage of daily traffic occurring in the PM peak hour at other nearby roadway segments. Also, because the PM peak-hour traffic volume data represented various years and months, data from the same peak months were selected for analysis (Dowling 2006).

Traffic conditions on roads and at intersections are generally characterized by their "level of service" or LOS. LOS is a convenient way to express the ratio between volume and capacity on a given link or at a given intersection, and is expressed as a letter grade ranging from LOS A through LOS F. Each level of service is generally described as follows:

LOS A- Free-flowing travel with an excellent level of comfort and convenience and freedom to maneuver.

LOS B- Stable operating conditions, but the presence of other road users causes a noticeable, though slight, reduction in comfort, convenience, and maneuvering freedom.

LOS C- Stable operating conditions, but the operation of individual users is substantially affected by the interaction with others in the traffic stream.

LOS D- High-density, but stable flow. Users experience severe restrictions in speed and freedom to maneuver, with poor levels of comfort and convenience.

LOS E- 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.

LOS F- 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.

The methodology used for the LOS analysis was based on the Highway Capacity Manual, 2000 Edition. As discussed later, the analysis focused on road segments, rather than intersections, due to the nature of the project (i.e. a county-wide general plan rather than a site-specific development). For each of the roadway segments selected for analysis, an existing and future roadway classification was assigned. **Table 4.4-3** shows the various roadway classes and their peak hour capacities. The table is divided into three sections. Section one shows the total peak hour directional capacities for the roadway classifications for levels of service A through F. These roadway capacities are based upon procedures and criteria published by the Florida Department of Transportation (FDOT) and are used throughout the profession as standard practice for roadway capacities for determining level of service. Section two shows peak hour capacities (per lane) and finally section three shows the volume-to-capacity ratios for each roadway classification and each category of level of service. Reference is made, within these

tables, to the specific source of the data from the FDOT guidelines. To summarize, the procedures for determining future traffic volumes and calculating level of service are based upon the 2000 Highway Capacity Manual; however, the roadway capacities are based upon data developed by the Florida Department of Transportation.

It should be noted that the FDOT guidelines for peak hour capacities and level of service criteria are more fine grained or specific than the capacities utilized in the Solano/Napa County travel model. County staff and Dowling Associates evaluated the various roadway segments selected for analysis and assigned the roadway classifications and capacities derived from the FDOT guidelines that best reflect how these roadways function. The county-wide model is less discrete and uses a more generalized set of capacities to reflect the function of roadways in the network. For comparison, the generalized capacities used in the model were:

- Freeways = 1,600 to 2,000 vehicles per hour per lane
- Freeway ramps = 1,500 vehicles per hour per lane
- Expressways = 1,400 vehicles per hour per lane
- Arterials (Major)= 900 vehicles per hour per lane
- Arterials (Minor)= 800 vehicles per hour per lane
- Collectors = 500 vehicles per hour per lane

EXISTING MODEL UNADJUSTED TRAFFIC ESTIMATES

The Solano/Napa County travel demand model was adjusted for application in this EIR. The base year model is designed to reflect 2003 conditions as the base model year, and was calibrated using 2003 data. For the year 2030 forecasts, the model was developed using land use data from several sources that was collectively found to be consistent with regional land use forecasts. This section provides the peak hour levels of service at each of the analysis segments for the base year (2003) and the original (unadjusted) 2030 model configurations. Later sections explain adjustments to the model intended to reflect 2030 conditions under each of the EIR alternatives.

Weekday Traffic Conditions for Existing (2003) and Unadjusted Future (2030) Conditions

The land use assumptions in the original (unadjusted) travel demand model for the 2030 condition reflected the most recent ABAG forecasts, at the time of model creation (ABAG Projections 2003) as modified and agreed upon by the Napa County Transportation Planning Agency (NCTPA) and the majority of communities within Napa County and Solano County. Some negotiations occurred between major jurisdictions such as the City of Napa and American Canyon regarding land use intensities, types and distributions at the time the model was created.

The unadjusted model also assumed certain transportation network improvements by the year 2030. These include:

- Widening of Jamieson Canyon Road (SR 12) between Interstate 80 and State Route 29 for four lanes.
- Improvements to the State Route 29/Napa Valley Highway Interchange
- Installation of new traffic signals within St. Helena

- Construction of new roadway segments such as sections of Devlin Road and the planned Flosden/Newell extension to Green Island Road

- Provision of localized roadway capacity improvements such as additional turn lanes.

Table 4.4-3 shows the peak hour levels of service for each of the analysis locations used for this EIR. Two conditions are illustrated: 1) the base year 2003 volumes, and 2) the forecasted year 2030 volumes using the unadjusted model.

Under the existing conditions (year 2003 model), 13 out of 94 locations, representing seven out of 47 different roadway segments operate over LOS E and F. Some segments operate at substandard levels in only one direction. These include:

- State Route 12/121 - Cuttings Wharf Road to Stanley Road
- State Route 12 - Lynch Road to Kelly Road
- State Route 121 - Napa/Sonoma County Line to Old Sonoma Road
- State Route 29 - Green Island Road to American Canyon Road
- State Route 29 - Oakville Grade to Madison Street
- State Route 29 - Rutherford Cross Road (SR 128) to Oakville Grade
- State Route 29 - Chaix Lane to Zinfandel Lane

Under 2030 conditions, based upon the unadjusted year 2030 model, 27 out of 94 directional locations, representing 19 out of 47 different roadway segments were projected to operate at substandard LOS due to projected growth within the County and the region. Some segments operate at substandard levels in only one direction. These include:

- American Canyon Road - I-80 to Flosden Road
- Deer Park Road - Sanitarium Rd (North) to Silverado Trail
- Flosden Road - American Canyon Road to Solano/Napa County Line
- Napa Vallejo Hwy - Kaiser Road to Highway 29(SR 29/12)
- Petrified Forest Road - Foothill Boulevard (SR 128) to Franz Valley School Road
- Soscol Avenue - First Street to Silverado Trail
- State Route 12/121 - Cuttings Wharf Road to Stanley Road
- State Route 12 - Lynch Road to Kelly Road
- State Route 121 - Wooden Valley Road to Vichy Avenue
- State Route 128 - Napa/Sonoma County Line to Tubbs Lane
- State Route 128 - Tubbs Lane to Petrified Forest Road
- State Route 128 - Petrified Forest Road to Lincoln Avenue (SR 29)
- State Route 29 - Green Island Road to American Canyon Road
- State Route 29 - Oakville Grade to Madison Street
- State Route 29 - Rutherford Cross Road (SR 128) to Oakville Grade
- State Route 29 - Chaix Lane to Zinfandel Lane
- State Route 29 - Lodi Lane to Deer Park Road
- State Route 29 - Kelly Road to Jamieson Canyon Road (SR 12)
- State Route 29 - Napa-Vallejo Hwy (SR 221) to Carneros Hwy (SR 121/12)

TABLE 4.4-3
PEAK HOUR LEVELS OF SERVICE – 2003 AND UNADJUSTED 2030 MODEL

Number of	Segment Descriptions			Level Of Service	
Segment	RoadName	Segment Limit North / East	Segment Limit South / West	Existing 2003 Conditions	Original Year 2030 Model
1	AMERICAN CANYON ROAD	I-80	Flosden Road	LOS D	**LOS F**
2	AMERICAN CANYON ROAD	I-80	Flosden Road	LOS D	**LOS E**
3	CHILES POPE VALLEY RD	Pope Canyon Road	Lower Chiles Valley Road	LOS A	LOS B
4	CHILES POPE VALLEY RD	Pope Canyon Road	Lower Chiles Valley Road	LOS A	LOS A
5	DEER PARK RD	Sanitarium Rd (North)	Silverado Trail	LOS C	**LOS E**
6	DEER PARK RD	Sanitarium Rd (North)	Silverado Trail	LOS C	LOS C
7	DEER PARK ROAD	Silverado Trail	St. Helena Highway (SR 29/128)	LOS C	LOS D
8	DEER PARK ROAD	Silverado Trail	St. Helena Highway (SR 29/128)	LOS C	LOS C
9	FLOSDEN ROAD	American Canyon Road	Napa/Solano County Line	LOS C	LOS D
10	FLOSDEN ROAD	American Canyon Road	Napa/Solano County Line	LOS C	**LOS F**
11	HOWELL MOUNTAIN RD	Pope Valley Rd	N White Cottage Rd	LOS A	LOS C
12	HOWELL MOUNTAIN RD	Pope Valley Rd	N White Cottage Rd	LOS A	LOS A
13	NAPA VALLEJO HWY	Kaiser Rd	Highway 29(SR 29/12)	LOS D	**LOS F**
14	NAPA VALLEJO HWY	Kaiser Rd	Highway 29(SR 29/12)	LOS D	LOS D
15	OAK KNOLL AVE	Big Ranch Rd	Highway 29	LOS C	LOS C
16	OAK KNOLL AVE	Big Ranch Rd	Highway 29	LOS C	LOS C
17	OAKVILLE CROSS RD	Napa River	Highway 29	LOS A	LOS C
18	OAKVILLE CROSS RD	Napa River	Highway 29	LOS B	LOS B
19	OLD SONOMA ROAD	Buhman Avenue	Cameros Highway (SR 121/12)	LOS C	LOS C
20	OLD SONOMA ROAD	Buhman Avenue	Cameros Highway (SR 121/12)	LOS B	LOS B
21	PETRIFIED FOREST ROAD	Foothill Boulevard (SR 128)	Franz Valley School Road	LOS C	**LOS F**
22	PETRIFIED FOREST ROAD	Foothill Boulevard (SR 128)	Franz Valley School Road	LOS C	LOS C
23	POPE CANYON RD	Berryessa-Knoxville Rd	Chiles-Pope Valley Rd	LOS A	LOS B
24	POPE CANYON RD	Berryessa-Knoxville Rd	Chiles-Pope Valley Rd	LOS A	LOS A
25	SILVERADO TRL	0ak Knoll Ave	Hardman Ave	LOS C	LOS C
26	SILVERADO TRL	0ak Knoll Ave	Hardman Ave	LOS C	LOS D
27	SILVERADO TRL	Sage Canyon Rd (SR 128)	Yountville Cross Rd	LOS C	LOS C
28	SILVERADO TRL	Sage Canyon Rd (SR 128)	Yountville Cross Rd	LOS C	LOS D
29	SILVERADO TRL	Pope St	Zinfandel Ln	LOS C	LOS C
30	SILVERADO TRL	Pope St	Zinfandel Ln	LOS C	LOS D
31	SILVERADO TRL	Bale Ln	Deer Park Rd	LOS C	LOS C
32	SILVERADO TRL	Bale Ln	Deer Park Rd	LOS C	LOS C
33	SILVERADO TRL	Calistoga City Limits	Lincoln Ave (SR 29)	LOS C	LOS C
34	SILVERADO TRL	Calistoga City Limits	Lincoln Ave (SR 29)	LOS C	LOS C
35	SOSCOL AVE	First St	Silverado Trail	LOS D	**LOS F**
36	SOSCOL AVE	First St	Silverado Trail	LOS D	LOS D
37	SPRING MOUNTAIN ROAD	St. Helena City Limit	Langtry Road	LOS A	LOS C
38	SPRING MOUNTAIN ROAD	St. Helena City Limit	Langtry Road	LOS A	LOS B
39	STATE HIGHWAY 12/121	Cuttings Wharf Road	Stanely Road	LOS D	**LOS F**
40	STATE HIGHWAY 12/121	Cuttings Wharf Road	Stanely Road	**LOS F**	**LOS F**
41	STATE HIGHWAY 12	Lynch Road	Kelly Road	**LOS F**	**LOS F**
42	STATE HIGHWAY 12	Lynch Road	Kelly Road	**LOS E**	LOS B
43	STATE HIGHWAY 121	Wooden Valley Rd	Vichy Ave	LOS C	**LOS F**
44	STATE HIGHWAY 121	Wooden Valley Rd	Vichy Ave	LOS C	LOS C
45	STATE HIGHWAY 121	Circle Oaks Dr	Wooden Valley Rd	LOS B	LOS C
46	STATE HIGHWAY 121	Circle Oaks Dr	Wooden Valley Rd	LOS C	LOS C

TABLE 4.4-3 CONTINUED
PEAK HOUR LEVELS OF SERVICE – 2003 AND UNADJUSTED 2030 MODEL

Segment Number	Segment Descriptions			Level Of Service	
	RoadName	Segment Limit North / East	Segment Limit South / West	Existing 2003 Conditions	Original Year 2030 Model
47	STATE ROUTE 121	Napa/Sonoma County Line	Old Sonoma Rd	LOS F	LOS C
48	STATE ROUTE 121	Napa/Sonoma County Line	Old Sonoma Rd	LOS F	LOS C
51	STATE ROUTE 128	Napa/Sonoma County Line	Tubbs Lane	LOS C	LOS C
52	STATE ROUTE 128	Napa/Sonoma County Line	Tubbs Lane	LOS C	LOS F
53	STATE ROUTE 128	Tubbs Ln	Petrified Forest Rd	LOS C	LOS E
54	STATE ROUTE 128	Tubbs Ln	Petrified Forest Rd	LOS C	LOS C
55	STATE ROUTE 128	Petrified Forest Rd	Lincoln Ave (SR 29)	LOS C	LOS D
56	STATE ROUTE 128	Petrified Forest Rd	Lincoln Ave (SR 29)	LOS C	LOS F
57	STATE ROUTE 128	Napa River	St Helena Hwy (SR 29)	LOS C	LOS C
58	STATE ROUTE 128	Napa River	St Helena Hwy (SR 29)	LOS B	LOS B
59	STATE ROUTE 128	Chiles-Pope Valley Road	Silverado Trail	LOS C	LOS C
60	STATE ROUTE 128	Chiles-Pope Valley Road	Silverado Trail	LOS C	LOS C
61	STATE ROUTE 128	Monticell Road (SR 121)	Berryessa-Knoxville Road	LOS B	LOS B
62	STATE ROUTE 128	Monticell Road (SR 121)	Berryessa-Knoxville Road	LOS B	LOS C
63	STATE ROUTE 128	Napa/Yolo County Line	State ROUTE 121	LOS A	LOS C
64	STATE ROUTE 128	Napa/Yolo County Line	State ROUTE 121	LOS A	LOS A
65	STATE ROUTE 29	Napa/Lake County Line	Tubbs Lane	LOS C	LOS C
66	STATE ROUTE 29	Napa/Lake County Line	Tubbs Lane	LOS C	LOS C
67	STATE ROUTE 29	Green Island Rd	American Canyon Rd	LOS F	LOS F
68	STATE ROUTE 29	Green Island Rd	American Canyon Rd	LOS F	LOS F
69	STATE ROUTE 29	California Dr	Oak Knoll Ave	LOS C	LOS C
70	STATE ROUTE 29	California Dr	Oak Knoll Ave	LOS C	LOS C
71	STATE ROUTE 29	Oakville Grade	Madison St	LOS F	LOS F
72	STATE ROUTE 29	Oakville Grade	Madison St	LOS F	LOS F
73	STATE ROUTE 29	Rutherford Cross Rd (SR 128)	Oakville Grade	LOS E	LOS F
74	STATE ROUTE 29	Rutherford Cross Rd (SR 128)	Oakville Grade	LOS F	LOS F
75	STATE ROUTE 29	Chaix Ln	Zinfandel Ln	LOS F	LOS F
76	STATE ROUTE 29	Chaix Ln	Zinfandel Ln	LOS F	LOS F
77	STATE ROUTE 29	Lodi Lane	Deer Park Rd	LOS D	LOS F
78	STATE ROUTE 29	Lodi Lane	Deer Park Rd	LOS D	LOS F
79	STATE ROUTE 29	Kelly Rd	Jamieson Cyn Rd (SR 12)	LOS C	LOS F
80	STATE ROUTE 29	Kelly Rd	Jamieson Cyn Rd (SR 12)	LOS C	LOS F
81	STATE ROUTE 29	Napa-Vallejo Hwy (SR 221)	Kelly Rd	LOS C	LOS C
82	STATE ROUTE 29	Napa-Vallejo Hwy (SR 221)	Kelly Rd	LOS C	LOS B
83	STATE ROUTE 29	Napa-Vallejo Hwy (SR 221)	Carneros Hwy (SR 121/12)	LOS C	LOS F
84	STATE ROUTE 29	Napa-Vallejo Hwy (SR 221)	Carneros Hwy (SR 121/12)	LOS C	LOS C
85	STATE ROUTE 29	Imola Ave (SR 121)	Carneros Hwy (SR 121/12)	LOS C	LOS D
86	STATE ROUTE 29	Imola Ave (SR 121)	Carneros Hwy (SR 121/12)	LOS C	LOS B
87	TUBBS LN	Highway 29	Highway 128	LOS C	LOS D
88	TUBBS LN	Highway 29	Highway 128	LOS C	LOS C
89	WOODEN VALLEY RD	Monticello Rd (SR 121)	Napa/Solano Co Line	LOS A	LOS B
90	WOODEN VALLEY RD	Monticello Rd (SR 121)	Napa/Solano Co Line	LOS C	LOS C
91	YOUNTVILLE CROSS RD	Silverado Trail	Yountville Town Limits	LOS C	LOS C
92	YOUNTVILLE CROSS RD	Silverado Trail	Yountville Town Limits	LOS C	LOS C
93	ZINFANDEL LN	Silverado Trail	St Helena Hwy (SR 29&128)	LOS C	LOS C
94	ZINFANDEL LN	Silverado Trail	St Helena Hwy (SR 29&128)	LOS C	LOS B

Source: Dowling Associates 2006