George W. Nickelson, P.E.

Traffic Engineering • Transportation Planning

October 5, 2009

MJA Vineyards
c/o Mr. Farhaad Virani
Farella, Braun & Martel, LLP
Russ Building
235 Montgomery Street
San Francisco, CA 94104

Subject: ***Focused Traffic Analysis for MJA Vineyards Winery Production Increase and Visitor Program – Greenfield Road in Napa County***

Dear Mr. Virani:

This traffic analysis addresses a proposed expansion of an existing winery at 647 Greenfield Road in Napa County (see Figure 1 for site location map). This scope of the analysis reflects my discussions with you and field reviews/data collection at the site.

Greenfield Road is a somewhat narrow (16-18 foot paved width) two-lane Napa County public road. Although the proposed winery would result in an increased potential for vehicle conflicts on Greenfield Road, the overall traffic volume would remain very low and the potential for conflicts would be minimal.

The following measures are recommended to address existing traffic conditions and the added traffic generated by the proposed MJA Vineyards Winery project:

- At the site access, advisory curve signs (Caltrans standard W4) should be installed on Greenfield Road warning of the curve and recommending a 15 mph speed.
- Stop sign controls (a stop sign and a stop bar on the pavement) should be installed on the Greenfield Road approach at the Conn Valley Road/Greenfield Road intersection.
- Foliage on the north side of Conn Valley Road and east of Greenfield Road should be trimmed to maximize sight distance.
- A side road warning sign (Caltrans W7) is recommended on eastbound Conn Valley Road approaching the Greenfield Road intersection.

I trust that this report responds to your needs. Please review this information and call me with any questions or comments.

Sincerely,

George W. Nickelson, P.E.

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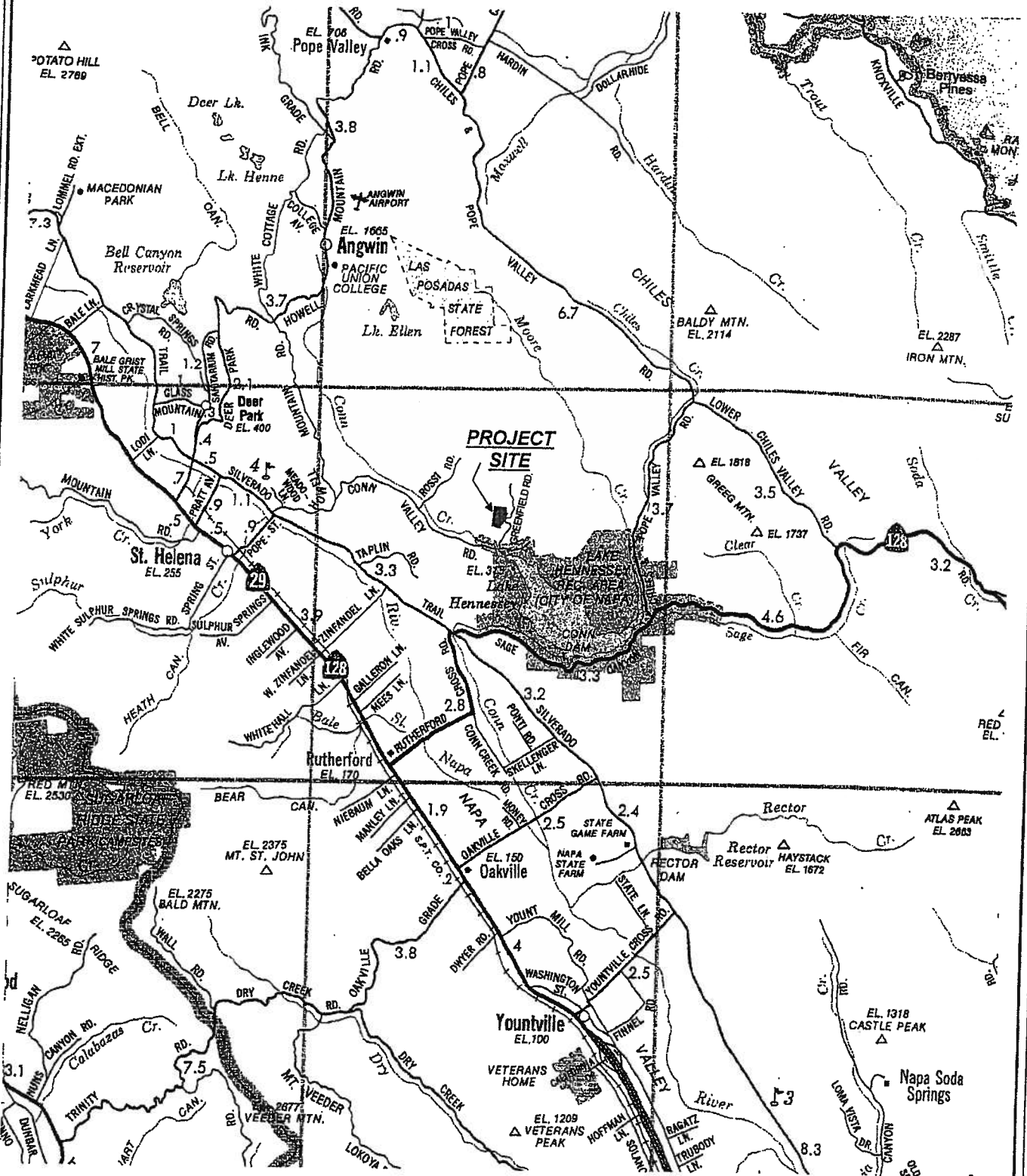

Project Site Location Map

North

George W. Nickelson, P.E.

figure 1

1. Existing Traffic Conditions

The project would have direct access onto Greenfield Road, a two-lane County roadway serving the project parcel and additional agricultural properties and residences. Greenfield Road would be categorized as a "Non-Continuing Minor Road", a Napa County standard that would typically require a 20 foot paved width.(1) The roadway is generally 16-18 feet wide (without centerline striping), extending from Conn Valley Road and ending north of the project parcel. Due to the somewhat narrow width of Greenfield Road, there is a higher potential for vehicle conflicts associated with two-way traffic flows. At the winery access, Greenfield Road is 17-18 feet wide with an acute curve. Although no traffic count data is available, the daily volume on Greenfield Road is very low, estimated at not more than 500 daily vehicles.

The primary access to/from the project area would be via Conn Valley Road which extends from Howell Mountain Road southeast about 5 miles, ending near Lake Hennessey. Conn Valley Road has two travel lanes and limited shoulder areas due to the topography. Conn Valley Road does have periodic turnout areas. At the Conn Valley Road/Greenfield Road intersection, the Greenfield Road approach is not controlled.

The key issues for access design are the vehicle visibility and operation relative to vehicles traveling on Greenfield Road and vehicles turning in/out of the winery access. It is also recognized that similar visibility issues would occur at the Conn Valley Road/Greenfield Road intersection. The required vehicle visibility or "corner sight distance" is a function of the travel speeds on Greenfield Road at the site access and on Conn Valley Road at Greenfield Road. Caltrans design standards indicate that for appropriate corner sight distance, "a substantially clear line of sight should be maintained between the driver of a vehicle waiting at the cross road and the driver of an approaching vehicle in the right lane of the main highway.".(2) Caltrans design guidelines also indicate that at private access intersections or at public intersections "where restrictive conditions exist", the minimum corner sight distance "shall be equal to the stopping sight distance".

Based on field observations, vehicle speeds on Greenfield Road at the winery access were observed to be about 15-20 miles per hour (mph). Based on Caltrans design standards, a 20 mph vehicle speed requires a sight distance of 125 feet, measured along the travel lanes on Greenfield Road. Field measurements along Greenfield Road indicate sight distances are about 140-150 feet to the north and 170-180 feet to the south, and these distances would meet the Caltrans standards.

Vehicle speeds on Conn Valley Road at Greenfield Road were observed to be about 30 mph. The vehicle visibility at the Conn Valley Road/Greenfield Road intersection was field measured at about 325 feet to the west and 150-160 feet to the east. A steep embankment around a curve and foliage adjacent to the road limits visibility to the east. Because of the physical restrictions along Conn Valley Road, Caltrans' "stopping sight distance standard" would apply, a distance of 200 feet for 30 mph vehicle speeds. As this comparison suggests, visibility to the west would exceed this standard while visibility to the east would be somewhat deficient. However, Conn Valley Road "dead ends" to the east and the very low traffic volumes would result in a minimal potential for traffic conflicts.

2. Traffic Effects of the Proposed Project

The typical project traffic that would be added to the roadways would represent those activities associated with winery visitors, the processing of grapes and bottling/shipping of wine, deliveries of equipment and supplies, employees and other periodic deliveries.

The proposed MJA Vineyards Winery traffic generation has been calculated in Table 1. On typical weekdays and Saturdays, a maximum of 13 and 17 one-way vehicle trips would be generated. During the 6-week harvest season, the traffic increase would be 21 daily one-way trips. Although there would be an increased potential for vehicle conflicts on Greenfield Road, the overall volume would remain very low, and the potential for vehicle conflicts would be minimal.

At the site access, traffic activity on Greenfield Road is extremely limited. However, the limited width of Greenfield Road could result in increased vehicle conflicts. It is also noted that the winery access road is about 15-16 feet wide, and any further widening would be problematic due to the topography. Although the 15-16 foot width would be minimal for two-way vehicle travel, the winery traffic volumes would be very low.

Consideration has also been given to the proposed two monthly marketing events and the semi-annual special events. During each of the twice monthly events a total of 24 daily one-way trips (or 12 vehicles) would be generated. This increase would be slightly higher than the typical daily winery traffic, resulting in a somewhat greater potential for vehicle conflicts on Greenfield Road. The semi annual events would generate about 50 daily one-way vehicle trips (or 25 vehicles).[3] Although this volume would measurably affect Greenfield Road, the limited frequency of these events would tend to mitigate the impacts.

At the Conn Valley Road/Greenfield Road intersection, volumes would remain very low with the project. However, there would be a somewhat greater potential for vehicle conflicts.

3. Summary and Conclusions

As noted in this report, there is the potential for vehicle conflicts with the existing traffic flows on Greenfield Road. Traffic generated by the proposed winery project would not significantly affect Greenfield Road traffic, but there would be an increased potential for vehicle conflicts. Sight distances on Greenfield Road at the site access are generally satisfactory, but the limited roadway width and curve could result in vehicle conflicts.

Although traffic volumes and vehicle speeds are low at the Conn Valley Road/Greenfield Road intersection, Greenfield Road has no controls, and foliage adjacent to the roadway partially obstructs vehicle visibility to the east. Again, Conn Valley Road "dead ends" to the east and the very low traffic volumes would result in a minimal potential for traffic conflicts.

The following measures are recommended to address existing traffic conditions and the added traffic generated by the proposed MJA Vineyards Winery project. With these measures, the potential for vehicle conflicts would be minimized.

- At the site access, advisory curve signs (Caltrans standard W4) should be installed on Greenfield Road warning of the curve and recommending a 15 mph speed.
- Stop sign controls (a stop sign and a stop bar on the pavement) should be installed on the Greenfield Road approach at the Conn Valley Road/Greenfield Road intersection.
- Foliage on the north side of Conn Valley Road and east of Greenfield Road should be trimmed to maximize sight distance.
- A side road warning sign (Caltrans W7) is recommended on eastbound Conn Valley Road approaching the Greenfield Road intersection.

References:

(1) Napa County Department of Public Works, *Adopted Road & Street Standards*, August 31, 2004.

(2) Caltrans, *Highway Design Manual*, July 1, 2008.

(3) During a twice monthly event, the following daily one-way trips would be generated:

• 20 visitors/2.8 persons per vehicle x 2 one-way trips	=	14 daily trips
• 4 employees x 2 one-way trips per employee	=	8 daily trips
• 1 truck x 2 one-way trips per truck	=	2 daily trips
		24 daily trips

During a semi-annual special event, the following daily one-way trips would be generated:

• 50 visitors/2.8 persons per vehicle x 2 one-way trips	=	36 daily trips
• 6 employees x 2 one-way trips per employee	=	12 daily trips
• 1 truck x 2 one-way trips per truck	=	2 daily trips
		50 daily trips

TABLE 1
TRIP GENERATION FOR THE PROPOSED
MJA VINEYARDS WINERY EXPANSION PROJECT

Daily Traffic During a Typical Weekday:

• 2 employees x 2 one-way trips per employee	=	4 daily trips
• 9 visitors/2.6 persons per vehicle x 2 one-way trips	=	7 daily trips
• 1 truck x 2 one-way trips per truck[1]	=	2 daily trips
		13 daily trips

Daily Traffic During a Typical Saturday:

• 2 employees x 2 one-way trips per employee	=	4 daily trips
• 15 visitors/2.8 persons per vehicle x 2 one-way trips	=	11 daily trips
• 1 truck x 2 one-way trips per truck[1]	=	2 daily trips
		17 daily trips

Daily Traffic During Harvest Season (6 weeks):[2]

• 4 employees x 2 one-way trips per employee	=	8 daily trips
• 15 visitors/2.8 persons per vehicle x 2 one-way trips	=	11 daily trips
• 1 truck x 2 one-way trips per truck	=	2 daily trips
		21 daily trips

(1) During the 46 week non-harvest season, a maximum of one daily truck would be generated related to routine deliveries, calculated as follows (20,475 gallon increase/2.38 gallons per case = 8,603 cases):

8,603 cases/2,310 cases per truck =	4 glass delivery trucks
8,603 cases/1,232 cases per truck =	7 wine shipment trucks
5 miscellaneous weekly deliveries =	230 miscellaneous trucks
	241 annual trucks

241 trucks/46 weeks = 5 weekly trucks or at most 1 added truck per day.

(2) During the 6-week harvest season, about one weekly grape delivery truck (which would not measurably change the daily truck activity) would be generated, calculated as follows:

- 13,200 gallons of off-site production/165 gallons per ton = 80 tons of off-site grapes
- 80 tons of off-site grapes/10 tons per truck/6 weeks = one truck/week