

**Traffic Study** 

Baldacci Family Vineyards (P15-00422-UP & P16-00295-VIEW) Planning Commission Hearing, February 15, 2017



# Transportation Impact Analysis Baldacci Family Vineyards Project Napa County



Prepared by: Abrams Associates 1875 Olympic Boulevard, Suite 210 Walnut Creek CA 94596



November 7, 2016

## Baldacci Family Winery Expansion Project Napa County

### TRANSPORTATION IMPACT ANALYSIS

### **1) EXECUTIVE SUMMARY**

This traffic impact study describes the existing and future conditions for transportation with and without the proposed expansion of the Baldacci Family Vineyard in Napa County. The study presents information on the regional and local roadway networks, pedestrian and transit conditions, and provides an analysis of the effects on transportation facilities associated with the project. This study also describes the regulatory setting; the criterion used for determining the significance of environmental impacts; and summarizes potential environmental impacts and appropriate mitigation measures. This study has been conducted in accordance with the requirements and methodologies set forth by Napa County, Caltrans, and the applicable provisions of CEQA.

The following is a summary of findings of the transportation impact analysis: 1) No internal site circulation or access issues have been identified that would cause traffic safety problems or any unusual traffic congestion; 2) At the relocated project entrance on Silverado Trail there were no capacity problems identified with the proposed lane configurations; 3) The proposed project is not expected to significantly impact or change the design of any existing bicycle facilities or create any new safety problems for bicyclists in the area; 4) The proposed project would not interfere with any existing bus routes and would not remove or relocate any existing bus stops; 5) The proposed project would not result in significant impacts to any of the project study intersections or roadway segments during the critical weekday PM or Saturday afternoon peak hours; 6) The project is proposing to provide an adequate supply of off-street parking based on the County's requirements; 8) The construction activities associated with the proposed project will be subject to a Traffic Control Plan and oversight by the County Engineer. If the required Traffic Control Plan is properly followed the project's construction activities are not forecast to result in any significant transportation impacts based on County standards; 9) Development of the proposed project is not expected to result in any significant impacts regarding emergency vehicle access (subject to approval of the Fire Department).

## **2) PROJECT DESCRIPTION**

The proposed project would be an expansion of an existing winery located at 6236 Silverado Trail in Napa County. The project would increase winery production from the currently permitted 20,000 gallons of annual production to 40,000 gallons. The project would include expansion of the existing cave and construction of a new production building at the new cave entrance. The existing winery building will be renovated and reprogrammed for administration use within the existing footprint and a new attached hospitality building will also be constructed. In addition, a new internal roadway connection would be constructed to allow the existing winery entrance to be relocated to 6271 Silverado Trail where there is an existing left turn lane. The project also includes construction of 13 additional surface parking spaces. **Figure 1** shows the location of the project and the surrounding roadway network. **Figure 2** shows a close up view of the project and the roadways and intersection in the immediate vicinity of the project site. **Figure 3** shows the proposed site plan for the project.

### 3) ENVIRONMENTAL SETTING

This section of the report describes the roadways, traffic conditions and other existing transportation characteristics in the vicinity of the project. The primary basis of the analysis is the peak hour level of service for the key intersections. The period identified as the "peak" hour is generally between 4:15 PM and 5:15 PM on weekdays and 3:45 PM to 4:45 PM on weekends. Please note that weekday traffic counts were conducted from 4:00 PM to 6:00 PM and weekend traffic counts were conducted from 2:00 PM to 5:00 PM on Saturday. The peak hour used in this analysis was the highest one-hour volumes recorded during these count periods. Throughout this report, these peak hours will be identified as the weekday PM peak hour and weekend PM peak hour. Traffic counts at the study intersections were conducted in early June and late August of 2016 at times when local schools were in session. Historical traffic data for Silverado Trail indicated the August traffic volumes were generally the same or a little higher at a few locations.<sup>1</sup> But overall, previous studies have indicated that September traffic volumes were slightly higher than August volumes. However, the volumes were found to be no more than about 2% higher in September, which is well within daily fluctuations of traffic so no adjustments were made for the purposes of the traffic operations analysis.

### **3.1 Project Study Intersections**

Based on the project's trip generation, and the potential for traffic impacts, a list of project study intersections was prepared based on the project's potential for significant impacts. **Figure 2** shows the location of the project study intersections. There are four study intersections included in the analysis. All project study intersections are controlled with side street stop signs.

### Project Study Intersections

- 1. Silverado Trail at Yountville Cross Road
- 2. Silverado Trail at the Secondary Winery Service/Farm Labor Dwelling Entrance
- 3. Silverado Trail at the Existing Winery Entrance
- 4. Silverado Trail at the Proposed New Winery Entrance (Currently serving as the access to a single family home at 6271 Silverado Trail)

### **3.2 Traffic Analysis Scenarios**

The study intersections were evaluated for the following six scenarios:

- Scenario 1: *Existing Conditions* Level of Service (LOS) based on existing peak hour volumes and existing intersection configurations.
- Scenario 2: *Existing Plus Project* Existing traffic volumes plus trips from the proposed project.

<sup>&</sup>lt;sup>1</sup> *Traffic Impact Report for the Mountain Peak Winery*, Crane Transportation Group, Elk Grove, CA, March 16, 2015.





FIGURE 2 PROJECT LOCATION CLOSEUP TRANSPORTATION IMPACT ANALYSIS Baldacci Vineyard Project City of Napa





- Scenario 3: *Baseline Conditions* This scenario includes year 2021 volumes based on a review of approved projects in the area.
- Scenario 4: Baseline Plus Project Conditions This scenario includes year 2021 volumes based on a review of approved projects in the area plus the trips from the proposed project.
- Scenario 5: *Cumulative Conditions* This scenario includes year 2030 cumulative volumes based on future traffic volume forecasts for the area.
- Scenario 6: *Cumulative Plus Project Conditions* This scenario includes year 2030 cumulative forecast volumes plus the trips from the proposed project.

### **3.3 Existing Roadway Network**

As discussed previously, the project location and the surrounding roadway network are illustrated in **Figure 1**. The following is a more detailed description of the key roadways that may be affected by the project:

- **Silverado Trail** Silverado Trail is a major north-south roadway in the County that extends north from Soscol Avenue in the City of Napa to terminate at State Route 29 in the City of Calistoga. Silverado Trail has two 12-foot travel lanes and eight foot paved shoulders that are signed and striped as Class II bicycle lanes. The posted speed limit is 55 mph.
- Yountville Cross Road Yountville Cross Road is an east-west roadway that extends east from Yount Street in the town of Yountville to terminate on the east at Silverado Trail. The posted speed limit is 45 mph at each end of the segment in the unincorporated area and 55 mph in the middle. Within the Town of Yountville the speed limit is 35 mph.

### **3.4 Intersection Analysis Methodology**

Existing operational conditions at the four study intersections have been evaluated according to the requirements set forth by Caltrans and Napa County. Analysis of traffic operations were conducted using the 2010 *Highway Capacity Manual (HCM)* Level of Service (LOS) methodology with Synchro software.<sup>2</sup> Level of service is an expression, in the form of a scale, of the relationship between the capacity of an intersection (or roadway segment) to accommodate the volume of traffic moving through it at any given time. The level of service scale describes traffic flow with six ratings ranging from A to F, with "A" indicating relatively free flow of traffic and "F" indicating stop-and-go traffic characterized by traffic jams.

As the amount of traffic moving through a given intersection or roadway segment increases, the traffic flow conditions that motorists experience rapidly deteriorate as the capacity of the intersection or roadway segment is reached. Under such conditions, there is general instability in the traffic flow, which means that relatively small incidents (e.g., momentary engine stall) can cause considerable fluctuations in speeds and delays that lead to traffic congestion. This near-capacity situation is labeled level of service (LOS) E. Beyond LOS E, the intersection or

<sup>&</sup>lt;sup>2</sup> 2010 Highway Capacity Manual, Transportation Research Board, Washington D.C., 2010.

roadway segment capacity has been exceeded, and arriving traffic will exceed the ability of the intersection to accommodate it.

<u>For unsignalized</u> (all-way stop controlled and two-way stop controlled) <u>intersections</u>, the average control delay and LOS operating conditions are calculated by approach (e.g. northbound) and movement (e.g., northbound left-turn) for those movements that are subject to delay. In general, the operating conditions for unsignalized intersections are presented for the worst approach. **Table 1** summarizes the relationship between LOS and average control delay at <u>unsignalized</u> intersections.

	TABLE 1 UNSIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS									
Level of <u>Service</u>	Description of Operations	Average Delay (seconds/vehicle)								
А	No delay for stop-controlled approaches.	0 to 10								
В	Operations with minor delays.	> 10 to 15								
С	Operations with moderate delays.	> 15 to 25								
D	Operations with some delays.	> 25 to 35								
Е	Operations with high delays and long queues.	> 35 to 50								
F	Operation with extreme congestion, with very high delays and long queues unacceptable to most drivers.	> 50								
	SOURCE: 2010 Highway Capacity Manual, Transportation Research Board, 2010.									

### **3.5 Existing Intersection Capacity Conditions (Scenario 1)**

The existing intersection geometry at each of the project study intersections can be seen in **Figure 4** and the existing traffic volumes at the study intersections for weekday PM peak hour are presented in **Figure 5**. Traffic counts at the study intersections were conducted in early June and late August of 2016 at times when local schools were in session. **Table 2** summarizes the associated LOS computation results for the existing weekday PM peak hour conditions. Please note that the corresponding LOS analysis calculation sheets are presented in the *Traffic Analysis Appendix*. As shown in **Table 2**, all of the study intersections currently have acceptable conditions (LOS D or better) during the weekday PM peak hour with the exception of Yountville Cross Road at Silverado Trail which operates at LOS E during the weekday PM peak hour.

The existing traffic volumes at the study intersections for the weekend PM peak hour are presented in **Figure 6**. **Table 3** summarizes the associated LOS computation results for the existing weekend PM peak hour conditions. As shown in **Table 3**, all of the study intersections currently have acceptable conditions (LOS D or better) during the weekend PM peak hour.



**City of Napa** 



TRANSPORTATION IMPACT ANALYSIS **Baldacci Family Vineyards Project** Napa County





Napa County

## TABLE 2 WEEKDAY PM PEAK HOUR EXISTING INTERSECTION LEVEL OF SERVICE CONDITIONS

INTERSECTION		CONTROL	PEAK	EXISTING		
			HOUK	Delay	LOS	
1	YOUNTVILLE CROSS ROAD & SILVERADO TRAIL	Two Way Stop	РМ	38.6	E	
2	BALDACCI SERVICE ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	0.0	А	
3	BALDACCI WINERY ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	28.0	D	
4	PROPOSED NEW PROJECT ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	0.0	А	

SOURCE: Abrams Associates, 2016

**NOTES:** HCM LOS results are presented in terms of average intersection delay in seconds per vehicle. For stop controlled intersections the results for the worst side street approach are presented.

## TABLE 3 WEEKEND PM PEAK HOUR EXISTING INTERSECTION LEVEL OF SERVICE CONDITIONS

INTERSECTION		CONTROL	PEAK	EXISTING		
			поок	Delay	LOS	
1	YOUNTVILLE CROSS ROAD & SILVERADO TRAIL	Two Way Stop	РМ	30.8	D	
2	BALDACCI SERVICE ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	0.0	А	
3	BALDACCI WINERY ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	21.7	С	
4	PROPOSED NEW PROJECT ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	0.0	А	

SOURCE: Abrams Associates, 2016

**NOTES:** HCM LOS results are presented in terms of average intersection delay in seconds per vehicle. For stop controlled intersections the results for the worst side street approach are presented.

### 3.6 Planned Roadway Improvements

The most significant planned roadway changes in the area are potential improvements to the intersection of Silverado Trail and Yountville Cross Road. The Napa County General Plan Circulation Element specifies intersection improvements to improve safety and traffic flow at this intersection but does not specify exactly what improvements would be made. The General Plan notes that these improvements "*will be implemented over time by the County and other agencies to the extent that the improvements continue to enjoy political support and funding becomes available*."

Please note the County has recently completed safety improvements at Yountville Crossroad and the Silverado Trail. This work involved installation of rumble striping along the existing painted edge lines, the installation of solar-powered street lighting, and pavement restriping to include an approximately 150-foot acceleration lane on the Silverado Trail just north of Yountville Crossroad. Please note that an analysis of the traffic operations with and without this improvement indicated it has provided a substantial reduction in delay. This improvement was completed after the first draft of the report but has now incorporated into the latest LOS analysis. With this new configuration the intersection delays on the side street were reduced so that the intersection has acceptable operations on weekends, but the intersection still exceeds the LOS standards during the weekday PM peak hour.

### **3.7 Pedestrian and Bicycle Facilities**

Bicycle paths, lanes and routes are typical examples of bicycle transportation facilities, which are defined by Caltrans as being in one of the following three classes:

*Class I* – Provides a completely separated facility designed for the exclusive use of bicyclists and pedestrians with crossing points minimized.

*Class II* – Provides a restricted right-of-way designated lane for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross-flows by pedestrians and motorists permitted.

*Class III* – Provides a route designated by signs or permanent markings and shared with pedestrians and motorists.

In the project study area there are Class II bicycle lanes on Yountville Cross Road and on Silverado Trail adjacent to the project site.

### 3.8 Transit Service

Bus transit service in the project area is provided by Napa County and the Napa Valley Transit Authority and is known as the VINE. The VINE operates local bus routes with connections to Solano County, Bay Area Rapid Transit (BART) and the Baylink Ferry, in Vallejo. The nearest bus service to the site is the Yountville Trolley which is about 1 and half miles from the winery. The Yountville Trolley provides door to door service for visitors and residents and connects with regional bus routes that operate along State Route 29. The Trolley operates Monday through Saturday from 10:00 AM to 11:00 PM and Sunday 10:00 AM to 7:00 PM.

### 4) REGULATORY CONTEXT

Existing policies, laws and regulations that apply to the proposed project are summarized below.

### 4.1 State

The California Department of Transportation (Caltrans) has jurisdiction over State highways. Therefore, Caltrans controls all construction, modification, and maintenance of State Highways and freeways such as I-5. Any improvements to these roadways would require Caltrans' approval. The Guide for the Preparation of Traffic Impact Studies provides consistent guidance for Caltrans staff who review local development and land use change proposals. The Guide also informs local agencies about the information needed for Caltrans to analyze the traffic impacts to state highway facilities which include freeway segments, on- or off-ramps, and intersections.

### 4.2 Local

**Napa County General Plan -** The Transportation and Circulation Element included in the Napa County General Plan was prepared pursuant to Section 65302(b) of the California Government Code. The Transportation and Circulation Element addresses the location and extension of existing and planned transportation routes, terminals, and other local public utilities and facilities. The General Plan identifies roadway and transit goals and policies that have been adopted to ensure that the transportation system of the County will have adequate capacity to serve planned growth. These goals and policies are intended to provide a plan and implementation measures for an integrated, multi-modal transportation system that will safely and efficiently meet the transportation needs of all economic and social segments of the County.

### 4.3 Significance Criteria

The goal of Napa County is to maintain a Level of Service (LOS) D on roads and at intersections during the peak hours on weekdays. Please note that a reduction to worse than LOS D resulting from project traffic would be considered a significant impact. For intersections with existing operations already worse than LOS D the project would be considered to have a significant impact if the peak hour traffic signal warrant criteria are not met without project trips but would be met with the addition of project trips, and the project contributes one percent or more of the total entering traffic for all-way stop-controlled and signalized intersections, or ten percent or more of the traffic on a side-street approach for side-street stop-controlled intersections. Please note the significance criteria used in this report was based on Napa County's Guidelines for Interpretation of General Plan Circulation Policies on Significance Criteria.<sup>3</sup>

<u>Significance Criteria for Roadways Segments in Napa County</u> - Project-related operational impacts on roadways in Napa County are considered significant if project-related traffic causes the Level of Service (LOS) rating to deteriorate from LOS C or better to LOS D or worse. For roadway segments with operations already worse than LOS D the project would be considered to have a significant impact if it would increase the volumes by more than one percent. **Table 4** shows the approximate volume of traffic and maximum volume to capacity ratio that a particular roadway can usually accommodate at each level of service. These figures should be

		LOS A	LOS B	LOS C	LOS D	LOS E
2-Lane Rural Highway	Maximum Peak Direction Volumes	100	330	620	870	1,200
(Silverado Trail)	Volume to Capacity Ratio	0.08	0.28	0.52	0.73	1.00
2-Lane Collector	Maximum Peak Direction Volumes	73	97	480	760	810
(Yountville Cross Road)	Volume to Capacity Ratio	0.09	0.12	0.59	0.94	1.00

 TABLE 4

 ROAD TYPE AND MAXIMUM PEAK DIRECTION VOLUMES BY LEVEL OF SERVICE

<sup>&</sup>lt;sup>3</sup> Guidelines for Interpretation of General Plan Circulation Policies on Significance Criteria, Fehr and Peers, Walnut Creek, CA, December 1, 2015.

considered guidelines rather than absolute because road alignments, intersection controls, types of traffic and adjacent land uses factor into the handling capacity of a given roadway.

According to CEQA guidelines, a project would also have a significant impact if it would:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transit.
- Conflict with an applicable congestion management program, including, but not limited to, level-of-service standards, and travel demand measures, or other standards established by a county congestion management agency for designated roadways.
- Result in inadequate emergency vehicle access.
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.
- Result in a projected future over-capacity freeway condition where current long-range planning studies show an under-capacity condition.
- Result in an internal circulation system design that does not meet County standards.

### **5) IMPACTS AND MITIGATION MEASURES**

### **5.1 Project Trip Generation**

The proposed project would increase winery production from the currently permitted 20,000 gallons of annual production to 40,000 gallons. The project would include an 11,031 square foot expansion to the existing 7,613 square feet of caves with no change in use, construction of a 3,510 square foot hospitality building, and conversion of the existing 1,345 sq. ft. winery building to an administration building. The trip generation calculations are based on the number of visitors, employees and truck trips for an average weekday PM and are shown in **Table 5**. The trip generation calculations for an average weekend PM in the summer are shown in **Table 6**. These calculations are based on the maximum visitation proposed (100 visitors per day) using the assumptions listed on the County's Winery Traffic Information Form.

The total trip generation reflects all vehicle trips that would be counted at the project driveways, both inbound and outbound. The project is forecast to generate approximately 40 trips during the weekday PM peak hour and about 52 trips during the weekend PM peak hour. For purposes of determining the reasonable worst-case impacts of traffic on the surrounding street network from a proposed project, the maximum trips generated by this proposed development are estimated for the peak weekday commute hour of 4:15 p.m. and 5:15 p.m. and the peak weekend traffic hour which generally occurs on Saturday afternoons from about 3:45 PM to 4:45 PM. These time periods represent the peak hours of "*adjacent street traffic*". These are the time periods when the project traffic would generally contribute to the greatest amount of congestion.

**Table 7** presents the net increase in traffic taking into account existing maximum allowablevisitation and current winery trip generation.Based on the use permit application the maximumexisting daily tours and tastings visitation is 54 visitors per day.As shown in Table 7, using

# TABLE 5WEEKDAY PROJECT TRIP GENERATION ASSUMING THE MAXIMUMALLOWABLE NUMBER OF CUSTOMERS (100 VISITORS PER DAY)

Traffic Component	Vehicles	Daily Trip Rate	Trip Generation
Full Time Employees <sup>1</sup>	10	3.05 one way trips	31 trips
Part Time Employees	0	0	0
Weekday Visitors (100 visitors maximum) <sup>1</sup>	39	2 one way trips	78 trips
Truck Trips Associated with Production (40,000 gallons) <sup>2</sup>	1	2 one way trips	2 trips
Maximum Forecast <u>Daily</u> Project	111 trips		
Maximum Forecast <u>Peak Hour</u> P	40 trips		

Notes: <sup>1</sup> Employees are assumed to each drive their own vehicle and visitors are assumed to arrive with an average of 2.6 visitors per vehicle.

<sup>2</sup> As per the County's winery traffic information form, the truck trips are assumed to be .009 trucks per day for each 1,000 gallons of wine production.

<sup>3</sup> The peak hour trips are equal to the total truck and visitor trips times 0.38 plus one trip for each full time employee and one half trip for each part time employee.

# TABLE 6SATURDAY PROJECT TRIP GENERATION ASSUMING THE MAXIMUMALLOWABLE NUMBER OF CUSTOMERS (100 VISITORS PER DAY)

Traffic Component	Vehicles	Daily Trip Rate	Trip Generation
Full Time Employees <sup>1</sup>	10	3.05 one way trips	31 trips
Part Time Employees	0	0	0
Weekend Visitors (100 visitors maximum) <sup>1</sup>	36	2 one way trips	72 trips
Truck Trips Associated with Production (40,000 gallons) <sup>2</sup>	1	2 one way trips	2 trips
Maximum Forecast Daily Project	105 trips		
Maximum Forecast <u>Peak Hour</u> P	52 trips		

Notes: <sup>1</sup> Employees are assumed to each drive their own vehicle and visitors are assumed to arrive with an average of 2.8 visitors per vehicle.

<sup>2</sup> As per the County's winery traffic information form, the truck trips are assumed to be .009 trucks per day for each 1,000 gallons of wine production.

<sup>3</sup> The peak hour trips are equal to the total truck and visitor trips times 0.57 plus one trip for each full time employee and one half trip for each part time employee.

# TABLE 7SATURDAY NET INCREASE PROJECT TRIP GENERATION BASED ON THE CURRENT MAXIMUMALLOWABLE NUMBER OF CUSTOMERS (54 VISITORS PER DAY)

Traffic Component	Vehicles	Vehicles Daily Trip Rate	
Full Time Employees <sup>1</sup>	10	3.05 one way trips	31 trips
Part Time Employees	0	0	0
Weekend Visitors (54 visitors maximum) <sup>1</sup>	19	19 2 one way trips	
Truck Trips Associated with Production (20,000 gallons) <sup>2</sup>	Truck Trips Associated with Production (20,000 gallons)212 one way trips		2 trips
Maximum Existing <u>Daily</u> Trip Ger	neration		71 trips
Maximum Existing <u>Peak Hour</u> Pr	ation <sup>3</sup>	33 trips	
Maximum Proposed <u>Peak Hour</u> F	52 trips		
Net Increase in <u>Peak Hour</u> Site T	rip Generation <sup>3</sup>		19 trips

Notes: <sup>1</sup> Employees are assumed to each drive their own vehicle and visitors are assumed to arrive with an average of 2.8 visitors per vehicle.

<sup>2</sup> As per the County's winery traffic information form, the truck trips are assumed to be .009 trucks per day for each 1,000 gallons of wine production.

<sup>3</sup> The peak hour trips are equal to the total truck and visitor trips times 0.57 plus one trip for each full time employee and one half trip for each part time employee.

County's assumptions for peak hour winery trip generation this indicates the winery has an existing maximum peak hour trip generation of 33 vehicles per hour during the weekday PM peak commute hour. Therefore, the 52 PM peak hour trips forecast to be generated by the proposed project would equate to an increase of about 19 peak hour trips over the current maximum peak hour trip generation.

### **5.2 Project Trip Distribution**

The trip distribution assumptions have been based on the project's proximity to major travel corridors, the existing directional split at nearby intersections, and the overall land use patterns in the area. **Figure 7** shows the project traffic that would be added during the weekday PM peak hour at each of the study intersections. **Figure 8** shows the project traffic that would be added during the weekend PM afternoon peak hour at each of the study intersections.

### 5.3 Existing Plus Project Traffic Capacity Conditions (Scenario 2)

This scenario evaluates the existing conditions with the addition of traffic from the proposed project. The weekday existing plus project volumes at each of the study intersections are presented in **Figure 9**. The weekday PM peak hour capacity calculations for the Existing Plus

Abrams Assoc TRAFFIC ENGINEERING INC

Project scenario are shown in **Table 7**. Please note that the corresponding LOS analysis calculation sheets are presented in the Traffic Analysis Appendix. As shown in **Table 7**, with the addition of project traffic all study intersections would continue to have acceptable conditions (LOS D or better) during the weekday PM peak hour with the exception of Yountville Cross Road at Silverado Trail which operates at LOS E during the weekday PM peak hour. This intersection is forecast to continue to operate at LOS E regardless of whether or not the proposed project is implemented.

The weekend PM peak hour existing plus project volumes at each of the study intersections are presented in **Figure 10**. The weekend PM peak hour capacity calculations for the Existing Plus Project scenario are shown in **Table 8**. Please note that the corresponding LOS analysis calculation sheets are presented in the Traffic Analysis Appendix. As shown in **Table 8**, with the addition of project traffic all study intersections would continue to have acceptable conditions (LOS D or better) with the exception of Yountville Cross Road at Silverado Trail which is forecast to continue to operate at LOS E during the weekday PM peak hour regardless of whether or not the proposed project is implemented. At this intersection the side street approach (Yountville Crossroad) currently carries about 102 vehicles per hour during the weekday PM peak hour according to the latest traffic counts. The proposed project is only forecast to add about 2 vehicles per hour to this approach during the weekday PM peak hour which would equate to an increase of about 2%. This is well under 10% and therefore would not be considered a significant impact according to the significance criteria established by Napa County (described in Section 4.3).

INTERSECTION		CONTROL	PEAK HOUR	EXISTING		EXISTING PLUS PROJECT	
		nook	Delay	LOS	Delay	LOS	
1	YOUNTVILLE CROSS ROAD & SILVERADO TRAIL	Two Way Stop	РМ	38.6	E	39.9	E
2	BALDACCI SERVICE ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	0.0	А	0.0	А
3	BALDACCI WINERY ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	28.0	D	0.0	А
4	PROPOSED NEW PROJECT ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	0.0	А	28.4	D

#### TABLE 7 WEEKDAY PM PEAK HOUR EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE CONDITIONS

**SOURCE:** Abrams Associates, 2016

**NOTES:** HCM LOS results are presented in terms of average intersection delay in seconds per vehicle. For stop controlled intersections the results for the worst side street approach are presented.



Napa County



Napa County



FIGURE 9 | EXISTING PLUS PROJECT PM PEAK HOUR TRAFFIC VOLUMES TRANSPORTATION IMPACT ANALYSIS Baldacci Family Vineyards Project





Napa County



# TABLE 8SATURDAY PEAK HOUR EXISTING PLUS PROJECT INTERSECTIONLEVEL OF SERVICE CONDITIONS

INTERSECTION		CONTROL H	PEAK HOUR	EXISTING		EXISTING PLUS PROJECT	
			поск	Delay	LOS	Delay	LOS
1	YOUNTVILLE CROSS RD & SILVERADO TRAIL	Two Way Stop	РМ	30.8	D	32.3	D
2	BALDACCI SERVICE ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	0.0	А	0.0	А
3	BALDACCI WINERY ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	21.7	С	0.0	А
4	EXISTING SINGLE FAMILY HOME & SILVERADO TRAIL	Two Way Stop	PM	0.0	A	21.5	С

SOURCE: Abrams Associates, 2016

**NOTES:** HCM LOS results are presented in terms of average intersection delay in seconds per vehicle. For stop controlled intersections the results for the worst side street approach are presented.

### 5.4 Baseline Traffic Capacity Conditions (Scenario 3)

The Baseline scenario evaluates the existing conditions with the addition of background growth from reasonably foreseeable projects that could potentially affect the traffic volumes in the study area. This includes traffic from various approved and pending projects based on the Traffic Impact Study for the Beau Vigne Winery.<sup>4</sup> Based on a review of approved projects the baseline growth in traffic was assumed to be one percent per year for five years, assuming completion of the proposed project and various other planned projects by the year 2021. **Figure 11** presents the resulting weekday baseline volumes at each of the project study intersections and **Table 9** summarizes the associated LOS computation results for the Baseline and Baseline Plus Project weekday PM peak hour conditions. The corresponding LOS analysis calculation sheets are presented in the Technical Appendix to this report. As shown in **Table 9**, with addition of traffic from the proposed project all study intersections would continue to have acceptable conditions (LOS D or better) during the weekday PM peak hour with the exception of Yountville Cross Road at Silverado Trail which would continue to operate at LOS E during the weekday PM peak hour.

**Figure 12** presents the resulting weekend PM baseline volumes at each of the project study intersections and **Table 10** summarizes the associated LOS computation results for the Baseline and Baseline Plus Project weekend peak hour conditions. As shown in **Table 10**, with addition of traffic from the proposed project all study intersections would continue to have acceptable conditions (LOS D or better) during the weekend PM peak hour with the exception of Yountville Cross Road at Silverado Trail which would continue to operate at LOS E during the weekend PM peak hour.

### 5.5 Baseline *Plus Project* Traffic Capacity Conditions (Scenario 4)

The Baseline plus proposed project traffic forecasts were developed by adding project-related traffic to the baseline traffic volumes. **Figure 13** presents the weekday PM peak hour Baseline Plus Project traffic volumes that were used in the analysis. As noted above, **Table 9** 

<sup>&</sup>lt;sup>4</sup> Focused Traffic Impact Study of the Beau Vigne Winery, W-Trans, Santa Rosa, September 28, 2015.



FIGURE 11 | BASELINE PM PEAK HOUR TRAFFIC VOLUMES TRANSPORTATION IMPACT ANALYSIS Baldacci Family Vineyards Project Napa County







FIGURE 13 | BASELINE PLUS PROJECT PM PEAK HOUR TRAFFIC VOLUMES TRANSPORTATION IMPACT ANALYSIS Baldacci Family Vineyards Project Napa County



# TABLE 9WEEKDAY PM PEAK HOUR BASELINE PLUS PROJECT INTERSECTION<br/>LEVEL OF SERVICE CONDITIONS

INTERSECTION		CONTROL	PEAK HOUR	BASELINE		BASELINE PLUS PROJECT	
			поок	Delay	LOS	Delay	LOS
1	YOUNTVILLE CROSS ROAD & SILVERADO TRAIL	Two Way Stop	РМ	46.2	E	48.0	E
2	BALDACCI SERVICE ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	0.0	А	0.0	А
3	EXISTING WINERY ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	30.4	D	0.0	А
4	PROPOSED NEW PROJECT ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	0.0	А	31.3	D

SOURCE: Abrams Associates, 2016

**NOTES:** HCM LOS results are presented in terms of average intersection delay in seconds per vehicle. For stop controlled intersections the results for the worst side street approach are presented.

summarizes the LOS results for the Baseline and Baseline Plus Project weekday PM peak hour. As shown in **Table 9**, with addition of traffic from the proposed project all study intersections would continue to have acceptable conditions (LOS D or better) during the weekday PM peak hour with the exception of Yountville Cross Road at Silverado Trail which would continue to operate at LOS E during the weekday PM peak hour. Please note that the corresponding LOS analysis calculation sheets results are presented in the appendix. **Figure 14** presents the resulting Saturday afternoon baseline volumes at each of the project study intersections and **Table 10** summarizes the associated LOS computation results for the Baseline and Baseline Plus Project weekend PM peak hour conditions. As shown in **Table 10**, with addition of project traffic all study intersections would continue to have acceptable conditions (LOS D or better) during the weekend PM peak hour with the exception of Yountville Cross Road at Silverado Trail which would continue to operate at LOS E during the weekend PM peak hour.

#### TABLE 10 SATURDAY PEAK HOUR BASELINE PLUS PROJECT INTERSECTION LEVEL OF SERVICE CONDITIONS

INTERSECTION		CONTROL PEAK	BASELINE		BASELINE PLUS PROJECT		
			HOUK	Delay	LOS	Delay	LOS
1	YOUNTVILLE CROSS RD & SILVERADO TRAIL	Two Way Stop	РМ	36.2	E	38.0	E
2	BALDACCI SERVICE ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	0.0	А	0.0	А
3	PREVIOUS WINERY ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	23.3	С	0.0	А
4	PROPOSED PROJECT ACCESS & SILVERADO TRAIL	Two Way Stop	РМ	0.0	А	23.2	С

SOURCE: Abrams Associates, 2016

**NOTES:** HCM LOS results are presented in terms of average intersection delay in seconds per vehicle. For stop controlled intersections the results for the worst side street approach are presented.



FIGURE 14 | BASELINE PLUS PROJECT WEEKEND PEAK HOUR TRAFFIC VOLUMES TRANSPORTATION IMPACT ANALYSIS **Baldacci Family Vineyards Project** Napa County



At the intersection of Yountville Cross Road and Silverado Trail the side street approach (Yountville Crossroad) is forecast to carry about 107 vehicles per hour during the weekday PM peak hour. The proposed project is only forecast to add about 2 vehicles per hour to this approach during the weekday PM peak hour which would equate to an increase of about 2%. This is well under 10% and therefore would not be considered a significant impact according to the significance criteria established by Napa County (described in Section 4.3).

### 5.6 Cumulative Traffic Capacity Conditions (Scenario 5)

For the cumulative conditions, the intersection traffic volumes were based on the projected future daily volumes from the Napa County General Plan which equate to a forecast 0.5% per year increase in background traffic to the Year 2030. **Figure 15** presents the resulting weekday PM peak hour cumulative 2030 traffic volumes. **Table 11** summarizes the LOS results for the cumulative (Year 2030) traffic conditions at each of the project study intersections. As shown in **Table 11**, all of the study intersections would continue to have acceptable conditions during the weekday PM peak commute hour with the exception of Yountville Cross Road at Silverado Trail which would continue to operate at LOS F during the weekday PM peak hour. **Figure 16** presents the resulting weekend PM peak hour cumulative (Year 2030) traffic conditions. As shown in **Table 12**, all of the study intersections. As shown in **Table 12**, all of the study intersections. As shown in **Table 12**, all of the study intersections conditions. As shown in **Table 12**, all of the study intersections would continue to have acceptable conditions during the weekend PM peak hour cumulative (Year 2030) traffic conditions at each of the project study intersections. As shown in **Table 12**, all of the study intersections would continue to have acceptable conditions during the weekend PM peak hour with the exception of Yountville Cross Road at Silverado Trail which would continue to have acceptable conditions during the weekend PM peak hour with the exception of Yountville Cross Road at Silverado Trail which would continue to operate at LOS E during the weekend PM peak hour.

INTERSECTION		CONTROL	PEAK HOUR	CUMULATIVE		CUMULATIVE PLUS PROJECT	
			HOUK		LOS	Delay	LOS
1	YOUNTVILLE CROSS RD & SILVERADO TRAIL	Two Way Stop	РМ	> 55.0	F	> 55.0	F
2	BALDACCI SERVICE ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	0.0	А	0.0	A
3	PREVIOUS WINERY ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	33.0	D	0.0	A
4	PROPOSED NEW PROJECT ACCESS & SILVERADO TRAIL	Two Way Stop	РМ	0.0	А	34.3	D

TABLE 11 WEEKDAY PM PEAK HOUR CUMULATIVE PLUS PROJECT INTERSECTION LEVEL OF SERVICE CONDITIONS

SOURCE: Abrams Associates, 2016

**NOTES:** HCM LOS results are presented in terms of average intersection delay in seconds per vehicle. For stop controlled intersections the results for the worst side street approach are presented.

### 5.7 Cumulative Plus Project Traffic Capacity Conditions (Scenario 6)

**Table 11** summarizes the LOS results for the weekday PM peak hour Cumulative Plus Project (Year 2030) traffic conditions at each of the project study intersections. As shown on this table, with the addition of project traffic all of the study intersections would continue to have acceptable conditions during the weekday PM peak commute hour with the exception of Yountville Cross Road at the Silverado Trail which would continue to operate at LOS F during the weekday PM peak hour. **Figure 17** presents the resulting weekday PM peak hour cumulative plus project 2030 traffic volumes.



FIGURE 15 CUMULATIVE PM PEAK HOUR TRAFFIC VOLUMES TRANSPORTATION IMPACT ANALYSIS Baldacci Family Vineyards Project Napa County

![](_page_30_Picture_2.jpeg)

![](_page_31_Picture_0.jpeg)

FIGURE 16 CUMULATIVE WEEKEND PEAK HOUR TRAFFIC VOLUMES TRANSPORTATION IMPACT ANALYSIS Baldacci Family Vineyards Project Napa County

![](_page_31_Picture_2.jpeg)

![](_page_32_Picture_0.jpeg)

FIGURE 17 CUMULATIVE PLUS PROJECT PM PEAK HOUR TRAFFIC VOLUMES TRANSPORTATION IMPACT ANALYSIS Baldacci Family Vineyards Project Napa County

![](_page_32_Picture_2.jpeg)

**Figure 18** presents the resulting weekend PM peak hour cumulative 2030 traffic volumes. **Table 12** summarizes the LOS results for the weekend PM peak hour cumulative (Year 2030) traffic conditions at each of the project study intersections. As shown in **Table 12**, with the addition of project traffic all of the study intersections would continue to have acceptable conditions during the weekend PM peak hour with the exception of Yountville Cross Road at the Silverado Trail which would continue to operate at LOS E during the weekend PM peak hour regardless of whether or not the proposed project is implemented. At this intersection the side street approach (Yountville Crossroad) is forecast to carry about 112 vehicles per hour during the weekday PM peak hour. The proposed project is only forecast to add about 2 vehicles per hour to this approach during the weekday PM peak hour which would equate to an increase of about 2%. This is well under 10% and therefore would not be considered a significant impact according to the significance criteria established by Napa County (described in Section 4.3).

TABLE 12
SATURDAY PEAK HOUR CUMULATIVE PLUS PROJECT INTERSECTION
LEVEL OF SERVICE CONDITIONS

INTERSECTION		CONTROL	PEAK HOUR	CUMULATIVE		CUMULATIVE PLUS PROJECT	
				Delay	LOS	Delay	LOS
1	YOUNTVILLE CROSS RD & SILVERADO TRAIL	Two Way Stop	РМ	42.9	E	46.0	E
2	BALDACCI SERVICE ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	0.0	А	0.0	A
3	PREVIOUS WINERY ENTRANCE & SILVERADO TRAIL	Two Way Stop	РМ	24.8	С	0.0	A
4	PROPOSED PROJECT ACCESS & SILVERADO TRAIL	Two Way Stop	РМ	0.0	A	24.9	С

SOURCE: Abrams Associates, 2016

**NOTES:** HCM LOS results are presented in terms of average intersection delay in seconds per vehicle. For stop controlled intersections the results for the worst side street approach are presented.

### **5.8 Internal Circulation and Access**

No internal site circulation or access issues have been identified that would cause a traffic safety problem or any unusual traffic congestion or delay. The volumes on the internal roadways would be light enough so that no significant conflicts would be expected with through traffic and vehicles backing out of the parking spaces or interior roadways within the project. The internal roadways have been designed to accommodate all required turning movements that would need to be made by winery trucks, delivery trucks, and emergency vehicles. At the relocated project entrance there were no safety problems or capacity identified with the intersection or its current lane configuration. The forecasts indicate the 95<sup>th</sup> percentile left turn queue for northbound traffic waiting to turn left into the proposed project would be about one car length with the addition of project traffic. Based on the forecast volume of left turning traffic Caltrans guidelines indicate that, at a minimum, storage space for two cars should be provided (approximately 50 feet). Please note the existing two-way left turn lane in this area extends back approximately 340 feet to the south of the project entrance and the nearest driveway in this direction is located approximately 230 feet away.

![](_page_34_Picture_0.jpeg)

FIGURE 18 | CUMULATIVE PLUS PROJECT WEEKEND PEAK HOUR TRAFFIC VOLUMES TRANSPORTATION IMPACT ANALYSIS Baldacci Family Vineyards Project Napa County

### 5.9 Parking Impacts

The proposed project would provide an adequate supply of off-street parking based on the County's requirements. The project is currently proposing to meet the County's parking requirements and subject to final County approval of the proposed parking plan there would be no significant parking impacts expected to the surrounding properties.

### 5.10 Pedestrian and Bicycle Impacts

The proposed project could potentially generate a small increase pedestrian and bicycle traffic in the area from employees and visitors, thereby potentially increasing conflicts between vehicles, bicycles, and pedestrians. However, although the proposed project could slightly increase vehicle and pedestrian traffic in the project vicinity it is not expected to significantly impact or change the design of any existing bicycle facilities or create any new safety problems for pedestrians or bicyclists in the area.

### 5.11 Transit Impacts

The proposed project would not interfere with any existing bus routes and would not remove or relocate any existing bus stops. The proposed Project could potentially generate some additional very limited transit ridership but it would not conflict with any transit plans or goals of Napa County. Therefore, the impact of the proposed Project on existing transit operations (or adopted plans related to transit) would be less than significant.

### 5.12 Roadway Segment Level of Service Analysis

As specified in the Napa County General Plan, an analysis of the average daily traffic volumes was conducted on roadways that could potentially receive a significant amount of additional traffic from the proposed project. According to the thresholds presented previously in **Table 3**, the segment of Yountville Cross Road adjacent to the project currently operates at LOS C during the weekday PM peak hour and LOS D during the weekend PM peak hour. Please note the conditions on Yountville Cross Road are not forecast to change under existing, baseline or cumulative conditions with or without implementation of the proposed project.

The segment of Silverado Trail adjacent to the project currently operates at LOS E during the weekday PM peak hour and LOS C during the weekend PM peak hour. The LOS E condition on weekdays is not forecast to change under existing, baseline or cumulative conditions with or without implementation of the proposed project. Under cumulative conditions this segment is forecast to still operate at LOS E during the weekday PM peak hour but would operate at LOS D during the weekend PM peak hour. Please note, that for the purpose of this determination, significant impacts are defined as the net increase in traffic between the existing winery operations and the expanded operations proposed in the use permit application. Based on the net increase in project traffic that would be associated with approval of the project, the increase to the existing traffic volumes on the adjacent segment of the Silverado Trail would be less than 1%. Based on existing traffic counts the analysis assumed approximately 58% of project traffic would be to and from the south on Silverado Trail and approximately 42% would be to and from the north. Using these assumptions and the increase of 19 PM peak hour trips shown in Table 7, the maximum net increase in traffic being added to any one segment of Silverado Trail would be 11 peak hour trips. Based on the latest traffic counts the existing weekday PM peak hour volumes on the segment of Silverado Trail adjacent to the project is 1,377 vehicles per hour.

Therefore, based on the forecast net increase in project traffic on any one segment of Silverado Trail would be about 0.08%. This is less than 1% and therefore would not be considered a significant impact according to the significance criteria established by Napa County (described in Section 4.3).

### 5.13 Special Event Traffic

The marketing plan for the winery indicates the largest event that would occur at the winery would have a maximum attendance of 150 persons and would require about six additional employees. Please note that daily tastings would not be scheduled when special events are being held. Based on the assumptions provided in the County's Winery Traffic Information Form this could require parking for about 54 vehicles and could result in a total trip generation of up to 130 trips (approximately 65 in and 65 out). The forecasts indicate the 95<sup>th</sup> percentile left turn queue for northbound traffic waiting to turn left into the proposed project during special events would be no more than about one car length with the forecast special event traffic. Based on the forecast volume of left turning traffic Caltrans guidelines indicate that, at a minimum, storage space for two cars should be provided (approximately 50 feet). Please note the existing two-way left turn lane in this area extends back approximately 340 feet to the south of the project entrance and the nearest driveway in this direction is located approximately 230 feet away. Based on our review there would be no significant safety or operational problems anticipated with special event traffic assuming the relocated project entrance is utilized as planned.

### **5.14 Project-Specific Impacts and Mitigation Measures**

The project would not cause any intersections in the study area to exceed County or Caltrans standards and no vehicular traffic mitigations would be required. Please note that at the intersection of Yountville Crossroad and the Silverado Trail the project's forecast increase to the side street traffic is approximately two percent. Since this is well under the ten percent threshold for impacts established by Napa County the project's contribution to traffic at this intersection would not be considered a significant impact. The following is a list of potential transportation impacts of the project. With the implementation of the proposed measures described in this section, all potential project transportation impacts would be reduced to a less than significant level.

### TR-1 Impacts related to bicycle and pedestrian facilities.

Although the proposed project could increase vehicle, pedestrian and bicycle traffic in the project vicinity it is not expected to significantly impact or change the design of any existing bicycle or pedestrian facilities or create any new safety problems for bicyclists or pedestrians in the area.

Mitigation Measure(s) None required.

### TR-2 Impacts related to transit facilities.

The proposed project has the potential to result in limited increases to patronage on Napa Vine bus lines. However, based on this analysis the project would not result in degradation of the level of service (or a significant increase in delay) on any roadway segments currently being utilized by the Vine and, as such, no significant impacts to transit are expected. The project contribution to key roadway segments in the area would not result in any significant changes to travel speeds. As a result, the project would not be expected to result in any significant impacts to transit service in the area.

Mitigation Measure(s) None required.

#### TR-3 Impacts related to site access and circulation.

The proposed project would require all winery traffic to use the new relocated project entrance. Based on this analysis the proposed access plan should function well and there should be no capacity or safety problems at the project entrance. Please note that the level of service and Caltrans signal warrants were carefully reviewed to confirm that traffic signals would not be required by the project. Based on a review of the proposed site plan it was determined that the site circulation should function well and would not cause any safety or operational problems. The project site design has previously been required to conform to County design standards and the plan is not expected to create any significant impacts to pedestrians, bicyclists or traffic operations. Therefore, impacts related to site access and circulation to the proposed project would be *less-thansignificant*.

<u>Mitigation Measure(s)</u> None required.

## TR-6 Impacts regarding emergency vehicle access on and surrounding the proposed project site.

Sufficient emergency vehicle access is determined by factors such as number of access points, roadway width, and proximity to fire stations. The land use plan for the proposed project includes a primary entrance on Silverado Trail with secondary access via the previous winery entrance and the Farm Labor Dwelling entrance. All lane widths within the project should meet the minimum width that can accommodate emergency vehicles and the final emergency vehicle access plan would be subject to final approval from the Fire Department. Therefore, the development of the proposed project is expected to have **less-than-significant** impacts regarding emergency vehicle access.

Mitigation Measure(s) None required.