CRANE TRANSPORTATION GROUP

BELLA OAKS WINERY
REVISED TRAFFIC STUDY
APN: 027-260-001 Project No. P23-00032

1271 Manley Lane
Rutherford CA 94573

September 4, 2025

Prepared for: **BELLA OAKS WINERY**
C/O FARELLA BRAUN + MARTEL, LLP
Attn: Katherine Philippakis, Partner
One Bush Street, Suite 900
San Francisco, CA 94104-4415
(415) 954-4434
Philippakis, Katherine <kp@fbm.com>

Prepared by: **CRANE TRANSPORTATION GROUP**
Mark D. Crane, President, TE/CE, President
2621 East Windrim Court
Elk Grove, CA 95758
(916) 647-3406
Mark Crane <cranetransgroup@gmail.com>

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INTRODUCTION

This report responds to requests in a May 3, 2023 Memorandum from the County of Napa Department of Public Works to provide traffic-related information for the proposed Bella Oaks Winery that would be located at 1271 Manley Lane in Rutherford, California. Bella Oaks Winery is proposing to take over and modify the current Swanson Winery development on the south side of Manley Lane (See **Figure 1 - Area Map**). Items requested in the proposed plan for evaluation were:

- **A.** Driveway sightline adequacy
- **B.** On-site parking adequacy
- **C.** On-site bicycle facilities
- **D.** Transportation Demand Management Plan (TDM)
- **E.** On-site circulation adequacy (which will be addressed by the Project Civil Engineer)

In addition to work tasks A, B and C, assistance was provided to the Applicant for Task D in preparation of a Transportation Demand Management (TDM) plan to reduce project-related trip generation and Vehicle Miles Traveled (VMT). A TDM draft plan is included at the end of this report. In addition, a County *Winery Trip Generation Worksheet* is included for the project as **Appendix A**.

A. PROJECT DRIVEWAY SIGHTLINE ADEQUACY

1. LOCATION

The project site is located on the south side of Manley Lane starting about 700 feet west of State Route 29/128 (SR 29). Manley Lane extends west of SR 29 for about a mile before ending. It is straight and level in the project area from SR 29 to about 1800 feet west of the project and is about 16 feet wide, has intermittent dirt shoulders and no centerline striping. While there is no posted speed limit in the project vicinity, observed vehicle speeds by Crane Transportation Group ranged from 25 to 35 Miles Per Hour.

The existing project site has two driveway connections to Manley Lane that will remain in their existing position with the site modification for the Bella Oaks Winery. The easterly driveway is about 770 feet from SR 29, while the westerly driveway is about 980 feet from SR 29.

2. AVAILABLE SIGHTLINES FROM PROJECT DRIVEWAY

Sightlines from both project driveways to the east and west along Manley Lane were determined by Crane Transportation Group based upon Caltrans criteria (3.5 feet above the pavement and 15 feet from the edge of the travel lane). Distances are presented in the table below.

SIGHTLINES TO/FROM PROJECT DRIVEWAYS ALONG MANLEY LANE – SEE FIGURE 2

EASTERN PROJECT DRIVEWAY		WESTERN PROJECT DRIVEWAY	
To The East (SR 29)	**To The West**	**To The East (SR 29)**	**To The West**
770 ft	1000 ft +	980 ft	1000 ft +

Source: Crane Transportation Group

There are manicured hedges on both sides of both driveways. If not manicured, the hedges could block sightlines to the east and west along Manley Lane from both driveways. However, the proposed site modification is proposing a wall and landscaping along the site's entire Manley Lane frontage. After discussion with the Applicant, it was agreed that this report would recommend design criteria that would allow acceptable sightlines for drivers leaving the site by either driveway.

3. DRIVEWAY SIGHTLINE CRITERIA FOR BELLA OAKS WINERY FRONTAGE DESIGN

The 2018 AASHTO* (American Association of State Highway & Transportation Officials) Design Guidelines in "A Policy on Geometric Design of Highways and Streets" indicate that the minimum required stopping sight distance for a driver on Manley Lane would depend upon prevailing speeds. Likewise, as required by Napa County Public Works, the *Caltrans Highway Design Manual* was used to determine required Corner Sight Distances for various speeds. Distances based upon various speeds are as follows:

MINIMUM SIGHTLINE CRITERIA FOR PROJECT DRIVEWAY CONNECTIONS TO MANLEY LANE

SPEED (MPH)	MINIMUM STOPPING SIGHT DISTANCE (feet)	MINIMUM CORNER SIGHT DISTANCE (feet)
25	155	280
30	200	330
35	250	390
40	305	445
45	360	495

4. RECOMMENDATION

It is recommended that to provide acceptable stopping and corner sight distances east and west from both project driveways (from a point 15 feet back from the edge of the road) the following criteria should be used: There should be unblocked viewing east and west along Manley Lane for a height ranging from 2.5 up to 8 feet above the pavement. Following these guidelines for the project's Manley Lane frontage should provide more than acceptable stopping and corner sight distances along Manley Lane from both project driveways.

B. ON-SITE PARKING SUPPLY & DEMAND

1. PARKING SUPPLY

Table 1 (attached) shows that the proposed winery would have 9 visitor spaces, 6 employee spaces and an additional area that would accommodate 12 vehicles adjacent to the employee parking. This would result in on-site parking for 27 vehicles. The largest event will be limited to 80 people maximum (adhering to the 40 ADT) with van shuttle service provided.

2. PARKING DEMAND

Table 1 shows that on a harvest Friday or Saturday, the maximum on-site parking demand would be about 16 spaces, assuming no special event was taking place. This total assumes that only 7 of the 10 employees would be working on-site at any given time, which would be more typical than having all 10 employees on site at the same time.

For days with special events, **Table 1** shows that a 40-person event (with no regular visitation during the day) would result in a demand of up to 10 on-site spaces, which could be accommodated in the 27 available spaces. For the single 80-person event of the year (with 75% of the attendees using sprinter type vans and no regular visitation for the day), there would be a demand for up to 16 on-site spaces. In addition, valet parking would also be provided for the 80-person event to assure all parking is accommodated on-site.

In conclusion, proposed on-site parking for the Bella Oaks Winery should be acceptable to accommodate regular and special event operation. Valet parking would only be required for the maximum size special event.

C. ON-SITE BICYCLE FACILITIES

Bicycle racks will be provided at the Winery as required by County code.

D. TRANSPORTATION DEMAND MANAGEMENT (TDM) PLAN

Table 2 presents a draft Transportation Demand Management (TDM) plan for the Bella Oaks Winery, listing a variety of trip reduction measures for both typical daily activities as well as special events. Examples are then presented in **Table 3** illustrating how TDM measures will be employed for 40 and 80-person special events to reduce Average Daily Traffic (ADT) levels to County specifications. Carpooling for special event staff and use of vans for the majority of guests are proposed.

Mark D. Crane, TE/CE, President
Crane Transportation Group

Attachments:

Table 1: Bella Oaks Winery On-Site Parking Evaluation
Table 2: Bella Oaks Winery Proposed Transportation Demand Management Plan (TDM)
Table 3: Bella Oaks Winery Special Event Average Daily Traffic
Figure 1: Area Map
Figure 2: Sight Distance from Project Driveways along Manley Lane
Appendix A: *County Winery Trip Generation Worksheet*

TABLE 1

BELLA OAKS WINERY REVISED TRAFFIC STUDY

ON-SITE PARKING EVALUATION

PARKING SUPPLY

	VISITOR LOT SPACES	EMPLOYEE LOT SPACES	EMPLOYER LOT OVERFLOW SPACES (Valet Parking)	TOTAL SPACES
Parking Supply	9	6	12	27

Source: Bella Oaks Winery

MAXIMUM PARKING SPACE DEMAND

ACTIVITY DESCRIPTION	VISITOR LOT SPACES	EMPLOYEE LOT SPACES	EMPLOYER LOT OVERFLOW SPACES	TOTAL PARKING SPACE DEMAND
Harvest Weekday No Special Event	9	6	1	16
Harvest Saturday No Special Event	9	6	1	16
Harvest Saturday + 40 Guests (resulting in 24 ADT) with 75% of guests being shuttled by sprinter van No Visitation	4	4	2*	10
Harvest Saturday + 80 Guests (resulting in 40 ADT) with 75% of guests being shuttled by sprinter van No Visitation	8	4	4*	16

*If vans park on site

Source: Crane Transportation Group

TABLE 2

BELLA OAKS WINERY
TDM PLAN
MEASURES TO REDUCE WINERY DAILY TRAFFIC

EMPLOYEE TRAFFIC REDUCTION

1. Assign dedicated person to oversee and manage the TDM program;
2. Post information in common area (e.g., staff kitchen, bulletin board, etc.);
3. Provide new employees with a welcome packet (e.g., explain benefits of reducing trips, congestion, and clean air; provide carpool, transit and bike to work incentives; and identify programs to assist such as sponsored by NVTA and BAAQMD);
4. Offer periodic group lunch to employees to assist in foregoing midday trips;
5. Offer group lunch runs to consolidate into single-trips to avoid workers to individually drive;
6. Allow some employees to work from home or remote-work opportunities, when possible;
7. Require some staff, vendors, and contractors to carpool to onsite marketing events, reducing both VMT and the number of required parking spaces;
8. Enroll in the "Napa Valley Forward" program or similar programs where applicable, aimed at reducing traffic and promoting carpooling, vanpooling, transit use and bike riding;
9. Adopt online conferencing to reduce the amount of onsite business meetings;
10. Regularly monitor participation rates of program;
11. Regularly update materials.

VISITOR TRAFFIC REDUCTION

1. Provide invitations to marketing events that include information about shuttle services to promote reduced trips;
2. Hire a contracted shuttle service to bring guests from pickup points to larger events;
3. Encourage high occupancy vehicle use (vans and shuttle buses) for large marketing events;
4. Install bike racks.

TABLE 2

MEASURES ONLY TO REDUCE EMPLOYEE & VISITOR TRAFFIC DURING PEAK TRAFFIC PERIODS ON THE LOCAL ROADWAY SYSTEM

1. Allow some employees to work from home or remote-work opportunities, when possible;
2. Stagger employee work hours to reduce peak period traffic on weekdays and weekends;
3. Schedule guest appointments, to the extent possible, to avoid travel during the peak traffic hours.

MEASURES TO REDUCE AIR QUALITY IMPACTS

1. All measures above which will reduce daily traffic;
2. Provision of an EV charging station.

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TABLE 3

BELLA OAKS WINERY

SPECIAL EVENT AVERAGE DAILY TRAFFIC (ADT)

Detailed Projections

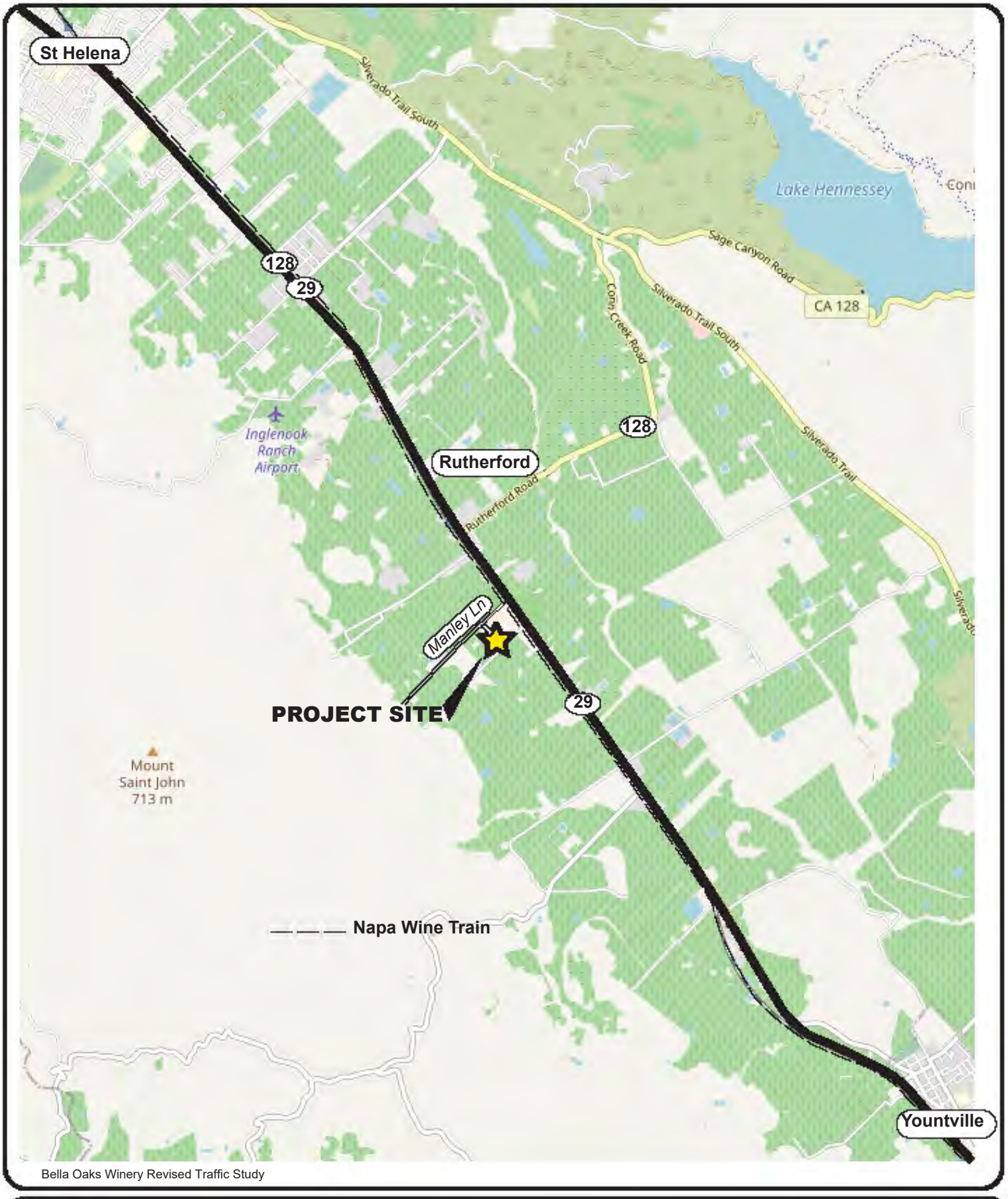
40-PERSON EVENT			
Number of Vehicles/Vans	Inbound Trips	Outbound Trips	Average Daily Traffic
5-Event Staff (4 vehicles)*	4	4	8
10 guests by vehicle (with 2.8 people per vehicle = 4 vehicles)	4	4	8
30 guests by vans (with 15 people per van = 2 vans)	4**	4**	8
TOTAL			**24**

80-PERSON EVENT			
Number of Vehicles/Vans	Inbound Trips	Outbound Trips	Average Daily Traffic
6 Event Staff (4 vehicles)*	4	4	8
20 guests by vehicle (with 2.8 people per vehicle = 8 vehicles)	8	8	16
60 guests by vans (with 15 people per van = 4 vans)	8**	8**	16
TOTAL			**40**

*Assumes some carpooling

**Assumes vans leave Winery after delivering guests and then return at end of event

Source: Crane Transportation Group



Bella Oaks Winery Revised Traffic Study

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Figure 1
Area Map

Bella Oaks Winery Revised Traffic Study

@Google Maps 2024

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Figure 2
Sight Distance from Project Driveways along Manley Lane

WINERY TRIP GENERATION WORKSHEET

Planning, Building & Environmental Services
1195 Third Street, Suite 210
Napa, CA 94559-3082
(707) 253-4417

A tradition of Stewardship
A Commitment to Service

APPENDIX A

Clear Form

PROJECT DESCRIPTION

Winery Name: BELLA OAKS WINERY **Date Prepared:** July 5, 2023

Existing/Permitted Winery		Harvest	Non-Harvest
Number of Full Time Employees*	Weekday	4	4
	Weekend	4	4
Number of Part Time Employees*	Weekday	0	0
	Weekend	0	0
Maximum Daily Visitation	Weekday	75	75
	Weekend	75	75
Annual Gallons of Production		42,500	42,500
Annual Tons of Grape Haul		265.6	N/A
Number of Visitors at the Largest Event that occurs two or more times per month, on average	Weekday	0	0
	Weekend	0	0

Proposed Winery		Harvest	Non-Harvest
Number of Full Time Employees*	Weekday	10	10
	Weekend	10	10
Number of Part Time Employees*	Weekday	0	0
	Weekend	0	0
Maximum Daily Visitation	Weekday	75	75
	Weekend	75	75
Annual Gallons of Production		42,500	42,500
Annual Tons of Grape Haul		265.6	N/A
Number of Visitors at the Largest Event that occurs two or more times per month, on average	Weekday	0	0
	Weekend	0	0

*Number of full time and part time employees should represent the max number of employees that will be working on any given day (including all vendors and contractors employed for the largest event that occurs two or more times per month on average).

APPENDIX A

BELLA OAKS WINERY
TRIP GENERATION

Existing Winery					**Harvest**	**Non-Harvest**
Maximum Daily Weekday Traffic (Friday)						
	Harvest	*Non-Harvest*				
FT Employees	4	4	3.05 one way trips/employee	FT Employee Daily Trips	12.2	12.2
PT Employees	0	0	1.9 one way trips/employee	PT Employee Daily Trips	0.0	0.0
Max Visitors	75	75	2.6 visitors/vehicle for 2 one way trips	Max Visitor Daily Trips	57.7	57.7
Max Event	0	0	2.6 visitors/vehicle for 2 one way trips	Max Event Daily Trips	0.0	0.0
Gallons of Production	42,500		0.000018 truck trips	Production Daily Trips	0.8	0.8
Tons of Grape Haul#	265.6		0.013889 truck trips	Grape Haul Daily Trips	3.7	0.0
				Total Weekday Daily Trips	75	71
				Total Weekday Peak Hour Trips*	28	27
Maximum Daily Weekend Traffic (Saturday)						
	Harvest	*Non-Harvest*				
FT Employees	4	4	3.05 one way trips/employee	FT Employee Daily Trips	12.2	12.2
PT Employees	0	0	1.9 one way trips/employee	PT Employee Daily Trips	0.0	0.0
Max Visitors	75	75	2.8 visitors/vehicle for 2 one way trips	Max Visitor Daily Trips	53.6	53.6
Max Event	0	0	2.8 visitors/vehicle for 2 one way trips	Max Event Daily Trips	0.0	0.0
Gallons of Production	42,500		0.000018 truck trips	Production Daily Trips	0.8	0.8
Tons of Grape Haul#	265.6		0.013889 truck trips	Grape Haul Daily Trips	3.7	0.0
				Total Weekend Daily Trips	71	67
				Total Weekend Peak Hour Trips*	38	35
Maximum Annual Traffic						
				Total Annual Trips**	25,807	

Proposed Winery					**Harvest**	**Non-Harvest**
Maximum Daily Weekday Traffic (Friday)						
	Harvest	*Non-Harvest*				
FT Employees	10	10	3.05 one way trips/employee	FT Employee Daily Trips	30.5	30.5
PT Employees	0	0	1.9 one way trips/employee	PT Employee Daily Trips	0.0	0.0
Max Visitors	75	75	2.6 visitors/vehicle for 2 one way trips	Max Visitor Daily Trips	57.7	57.7
Max Event	0	0	2.6 visitors/vehicle for 2 one way trips	Max Event Daily Trips	0.0	0.0
Gallons of Production	42,500		0.000018 truck trips	Production Daily Trips	0.8	0.8
Tons of Grape Haul#	265.6		0.013889 truck trips	Grape Haul Daily Trips	3.7	0.0
				Total Weekday Daily Trips	93	89
				Total Weekday Peak Hour Trips*	34	33
Maximum Daily Weekend Traffic (Saturday)						
	Harvest	*Non-Harvest*				
FT Employees	10	10	3.05 one way trips/employee	FT Employee Daily Trips	30.5	30.5
PT Employees	0	0	1.9 one way trips/employee	PT Employee Daily Trips	0.0	0.0
Max Visitors	75	75	2.8 visitors/vehicle for 2 one way trips	Max Visitor Daily Trips	53.6	53.6
Max Event	0	0	2.8 visitors/vehicle for 2 one way trips	Max Event Daily Trips	0.0	0.0
Gallons of Production	42,500		0.000018 truck trips	Production Daily Trips	0.8	0.8
Tons of Grape Haul#	265.6		0.013889 truck trips	Grape Haul Daily Trips	3.7	0.0
				Total Weekend Daily Trips	89	85
				Total Weekend Peak Hour Trips*	44	41
Maximum Annual Traffic						
				Total Annual Trips**	32,377	

Net New Trips			**Harvest**	**Non-Harvest**
Maximum Weekday Traffic (Friday)				
If total net new daily trips is greater than 110, a TIS is required	**Net New Weekday Daily Trips**		18	18
	Net New Weekday Peak Hour Trips*		6	6
Maximum Weekend Traffic (Saturday)				
If total net new daily trips is greater than 110, a TIS is required	**Net New Weekend Daily Trips**		18	18
	Net New Weekend Peak Hour Trips*		6	6
Maximum Annual Traffic	*A Traffic Impact Study is NOT Required*	**Net New Annual Trips****	6,570	

#Trips associated with Grape Haul represent harvest season only.

*Weekday peak hour trips are calculated as 38% of daily trips associated with visitors and production plus one trip per employee. Weekend peak hour trips are calculated as 57% of daily trips associated with visitors and production plus one trip per employee.

**Annual trips represent a conservative calculation that assumes 11 weeks of harvest, all weekdays are Fridays, all weekends are Saturdays, and assumes that the largest event that occurs two or more times per month on average occurs every day.

CRANE TRANSPORTATION GROUP

Mark D. Crane, TE/CE, President
2621 East Windrim Court - Elk Grove, CA 95758
(916) 647-3406
mdccat4@gmail.com

MEMORANDUM

TO: Hannah Spencer <**hannah.spencer@countyofnapa.org**>

CC: Kazmi, Syed Ahsan <**SyedAhsan.Kazmi@countyofnapa.org**>

FROM: Mark Crane, TE/CE <**mdccat4@gmail.com**>

DATE: November 25, 2025

SUBJ: Bella Oaks Winery (P23-00032) Minor Modification Application Response to November 6, 2025 Comments by Anna Vickroy, PE/TE

Hello Hannah:

I am providing responses to the two comments from Anna Vickroy on our September 4, 2025 Revised Traffic Study for the proposed Bella Oaks Winery. Both comments centered around proposed 40 and 80-guest special events and the assumptions that went into the determination that the 40-guest event would only result in 24 ADT, while the 80-guest event would only result in 40 ADT. Before explanation, it should be noted that regular guest visitation by appointment and regular Winery operation will not be occurring on days with either a 40 or 80-guest special event.

It is noteworthy that while TJKM's questions relate to 24 and 40 ADT event trips, by closing the Winery to the public on a day a marketing event is held actual vehicle trips are substantially reduced. This appears to be an oddity not envisioned in County policy pertaining to traffic. The *Napa County Trip Generation Worksheet* shows that regular Winery operation (but with no special event) would result in 93 weekday daily trips and 89 Saturday daily trips, much higher than the trip generation expected due to the larger special events.

Ms. Vickroy requested details of the guest and staff numbers and vehicle occupancy for both 40 and 80-guest special events. They are provided in **Table 1** and show that at the small event with vans shuttling 30 of the 40 guests the resultant ADT would be 24 vehicles. For a large special event with vans accommodating 60 of the 80 guests, the resultant ADT would be 40 vehicles. Projections assume minor carpooling by event staff, an auto occupancy of 2.8 guests per vehicle, 15 guests per van and all vans leaving the Winery after dropping off guests and then returning to pick up guests at the end of the event. There would always be a minimum of 2 vans in service. Should one of the vans remain at the Winery, the event ADT will decrease. Vans will not leave the pick-up points until full. Also, there would be no other guest by appointment or Winery operation on days with special events.

Mark Crane, TE/CE, President
Crane Transportation Group

Attachment: **Table 1 Special Event Average Daily Traffic (ADT) Detailed Projections**

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TABLE 1

BELLA OAKS WINERY

SPECIAL EVENT AVERAGE DAILY TRAFFIC (ADT)

Detailed Projections

40-PERSON EVENT			
Number of Vehicles/Vans	**Inbound Trips**	**Outbound Trips**	**Average Daily Traffic**
5-Event Staff (4 vehicles)*	4	4	8
10 guests by vehicle (with 2.8 people per vehicle = 4 vehicles)	4	4	8
30 guests by vans (with 15 people per van = 2 vans)	4**	4**	8
TOTAL			**24**

80-PERSON EVENT			
Number of Vehicles/Vans	**Inbound Trips**	**Outbound Trips**	**Average Daily Traffic**
6 Event Staff (5 vehicles)*	5	5	10
20 guests by vehicle (with 2.8 people per vehicle = 7 vehicles)	7	7	14
60 guests by vans (with 15 people per van = 4 vans)	8**	8**	16
TOTAL			**40**

*Assumes some carpooling

**Assumes vans leave Winery after delivering guests and then return at end of event

There will be no non-special-event guests or Winery operation on days with 40 or 80-person special events.

Source: Crane Transportation Group