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Traffic Study

Reynolds Family Winery P14-00344-MOD
Planning Commission Hearing Date November 1, 2017

TRAFFIC IMPACT REPORT

REYNOLDS FAMILY WINERY
2017 USE PERMIT MODIFICATION

September 22, 2017

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I. INTRODUCTION

This traffic report has been prepared at the request of the Napa County Public Works and Planning, Building and Environmental Sciences Departments as authorized by the Reynolds Family Winery applicant. It has determined if traffic from the proposed Reynolds Family Winery expansion will result in any significant impacts to the local circulation system and the need for any mitigation measures. **Figure 1** shows the winery location.

II. SCOPE OF SERVICES

The scope of service for this traffic study was approved by the Napa County Public Works and the Planning, Building and Environmental Sciences departments. Evaluation was conducted for harvest traffic periods for Friday and Saturday PM peak traffic conditions. Existing, year 2020 and year 2030 (Cumulative – General Plan Buildout) horizons were evaluated both with and without project traffic. Operating conditions along Silverado Trail as well as at the Silverado Trail/Soda Canyon Road intersection were evaluated for all analysis scenarios based upon significance criteria contained in the General Plan and/or utilized in all recent County traffic studies. In addition, sight line adequacy was evaluated at the project driveway intersection with Silverado Trail. Since a left turn lane is being provided on the southbound Silverado Trail approach to the project driveway intersection as part of the proposed project, no County left turn lane warrant evaluation is included. Significant impacts, if any, were identified and measures listed, if needed, to mitigate all impacts to a less than significant level.

III. SUMMARY OF FINDINGS

A. "WITHOUT PROJECT" OPERATING CONDITIONS

1. Existing Volumes – Harvest 2014

Analysis peak traffic hours were based upon total volumes passing through the Silverado Trail/Soda Canyon Road intersections. Along Silverado Trail, two-way volumes south of Soda Canyon Road were higher during the Friday PM peak hour compared to the Saturday PM peak hour (about 1,655 Friday PM peak hour vehicles versus about 1,330 Saturday PM peak hour vehicles). The driveway serving the project site had 4 vehicles during the Friday PM peak hour and 6 vehicles during the Saturday PM peak hour.

2. Year 2014 Harvest – Circulation System Unacceptable Operation

- **Silverado Trail/Soda Canyon Road** intersection level of service
  - Friday & Saturday PM peak traffic hours unacceptable operation
- **Silverado Trail/Soda Canyon Road** intersection signalization needs
  - Friday & Saturday PM peak traffic hours – volumes exceed peak hour signal warrant criteria levels

3. Year 2020 Harvest – Circulation System Unacceptable Operation

- **Silverado Trail/Soda Canyon Road** intersection – level of service
  - Friday & Saturday PM peak traffic hours – unacceptable operation
- **Silverado Trail/Soda Canyon Road** intersection signalization needs
  - Friday & Saturday PM peak traffic hours – volumes exceed peak hour signal warrant criteria levels.

4. Cumulative (Year 2030) Harvest – Circulation System Unacceptable Operation

- **Silverado Trail/Soda Canyon Road** intersection – level of service
  - Friday & Saturday PM peak traffic hours – unacceptable operation
- **Silverado Trail/Soda Canyon Road** intersection signalization needs
  - Friday & Saturday PM peak traffic hours – volumes exceed peak hour signal warrant criteria levels.

B. PROJECT IMPACTS

1. **Project Trip Generation**

The proposed project will result in the following trip generation during the Friday and Saturday PM peak traffic hours.

PROJECT TRIP GENERATION

HARVEST

FRIDAY PM PEAK HOUR* (4:30-5:30)		SATURDAY PM PEAK HOUR* (4:00-5:00)	
INBOUND TRIPS	OUTBOUND TRIPS	INBOUND TRIPS	OUTBOUND TRIPS
1	2	1	2

Trips during the Friday and Saturday PM peak hours will be visitors by appointment. All new employees associated with the expansion will be departing after the Friday and Saturday PM peak hours during crush conditions.

2. Year 2014 Existing + Project Off-Cite Circulation Impacts – Harvest

The proposed project would not result in any significant off-site level of service or signal warrant impacts to the Silverado Trail/Soda Canyon Road intersection. The project would not degrade operation from acceptable to unacceptable or increase peak hour volumes by 1 percent or greater for any peak hour when the intersection is already experiencing unacceptable "Without Project" operation.

3. Year 2020 Existing + Project Off-Site Circulation Impacts – Harvest

The proposed project would not result in any significant off-site level of service or signal warrant impacts to the Silverado Trail/Soda Canyon Road intersection. The project would not degrade operation from acceptable to unacceptable or increase peak hour volumes by 1 percent or greater for any peak hour when the intersection is already experiencing unacceptable "Without Project" operation.

4. Cumulative (Year 2030) Existing + Project Off-Site Circulation Impacts – Harvest

The proposed project would not result in any significant off-site level of service or signal warrant impacts to the Silverado Trail/Soda Canyon Road intersection. The project would not degrade operation from acceptable to unacceptable or increase peak hour volumes by 1 percent or greater for any peak hour when the intersection is already experiencing unacceptable "Without Project" operation.

5. Left Turn Lane on Silverado Trail at Project Entrance

The project will include construction of a left turn lane on the southbound Silverado Trail approach to the project driveway.

6. Sight Lines at Project Driveway

Sight lines are acceptable at the project's driveway connection to Silverado Trail assuming landscaping is maintained along the project frontage.

7. Mitigations

There are no required mitigations other than maintaining landscaping along the project's Silverado Trail frontage to provide acceptable sight lines for drivers turning from the project driveway and scheduling marketing events to preclude guest traffic on the local circulation system between 3:00 and 5:30 PM.

C. CONCLUSIONS & RECOMMENDATIONS

The project will result in no significant off-site circulation system operational impacts to Silverado Trail or to the Silverado Trail/Soda Canyon Road intersection. A left turn lane will be provided on the southbound Silverado Trail approach to the project driveway. In addition, sight lines at the project driveway connection to Silverado Trail are and will be acceptable assuming landscaping along the project frontage is maintained so as not to block sight lines.

IV. PROJECT LOCATION & DESCRIPTION

The Reynolds Family Winery is located on the east side of Silverado Trail with a driveway located about 500 feet south of the Silverado Trail/Soda Canyon Road intersection (see **Figure 1**). The current driveway connection will be maintained and a left turn lane will be provided on the southbound Silverado Trail approach to the entrance. **Figure 2** presents existing intersection geometrics and approach lanes, while **Figure 3** presents the revised geometrics and inclusion of the southbound left turn lane with project completion.

The proposed changes to Reynolds Family Winery production and visitation are as follows.

- Increase from 20,000 up to 40,000 gallons per year production.
- New employees.[1]

Summer	Crush
4 full-time	4 full-time
	2 part-time

- Increased bottling on-site.
- All new grapes will be grown off site. New grapes will be transported to the site in about 30 trucks spread over about 4 weeks.
- New tours and tasting by appointment only – 7 days per week from 10:00 AM to 6:00 PM, total 40 visitors/day maximum on weekdays and weekend days (30 visitors/day net new).
- New food and wine pairing events – 4 per month maximum: 2 at 24 visitors per event and 2 at 40 visitors per event (between noon and 10:00 PM).
- New marketing events – 2 per year, maximum 60 visitors per event Saturday or Sunday between 2:00 and 10:00 PM.
- New wine auction events – 2 per year, maximum 125 visitors per event. Saturdays between 6:00 and 10:00 PM.

[1] Employee and grape truck delivery details are presented in the **Appendix**.

V. EXISTING CIRCULATION SYSTEM EVALUATION PROCEDURES

A. ANALYSIS LOCATIONS

At County direction, the following locations have been evaluated.

1. **Silverado Trail/Soda Canyon Road intersection (the Soda Canyon Road approach is stop sign controlled).**

2. **Silverado Trail/Project Driveway intersection.**

B. VOLUMES

1. ANALYSIS SEASONS AND DAYS OF THE WEEK

At County request project traffic impacts have been evaluated during both harvest and peak summer (non-harvest) conditions. Based upon more than four years of historical information from Caltrans PeMS (Performance Measurement System) count surveys along SR 29 in the Napa Valley, September has the highest daily volumes of the year (during harvest), with August having the highest summer non-harvest daily volumes of the year. August counts were almost as high as September counts. Therefore, conditions during these two months were selected for evaluation.

In regards to the peak traffic days of the week, the recently released Napa County Travel Behavioral Study[2] shows that the highest weekday volumes in Napa Valley occur on a Friday, with the highest weekend volumes occurring on a Saturday. In addition, historical count data from the City of Napa show that Friday has the highest volumes of any weekday, while Caltrans historical counts for SR 29 between St. Helena and Napa also show that weekday AM and PM peak hour volumes are higher on a Friday than on either a Wednesday or Thursday. Therefore, Friday and Saturday peak traffic conditions were evaluated in this study.

2. COUNT RESULTS

Friday 3:00 to 6:00 PM and Saturday 1:00 to 6:00 PM turn movement counts were conducted by Crane Transportation Group (CTG) in May 2013 at the Silverado Trail/Soda Canyon Road intersection, while Friday PM peak period (3:00-6:00 PM) as well as Saturday PM peak period (1:00-6:00 PM) counts were conducted at the Silverado Trail/Soda Canyon Road and project driveway intersections in January 2015. The peak traffic hours at Silverado Trail/Soda Canyon Road were 4:30-5:30 PM on Friday and 4:00-5:00 PM on Saturday. Resultant May 2013 as well as January 2015 peak hour counts are presented in **Appendix Figures A-1** and **A-2**.

[2] Fehr & Peers, December 8, 2014.

3. SEASONAL ADJUSTMENTS

May 2013 peak hour counts were used to develop September 2014 harvest condition volumes based upon monthly and day of week adjustment factors from Caltrans PeMS monthly traffic count data. Overall, May PM peak hour counts would be expected to increase by about 4 percent on a Friday and almost 6 percent on a Saturday to reflect fall harvest conditions.

Applying the above factors to the May 2013 volumes produced September 2013 harvest projections. In order to develop harvest 2014 volumes, a one-year straight line increment of traffic growth between 2013 and 2030 was applied to the 2013 September Silverado Trail volumes (17 two-way vehicles for Friday PM peak conditions and 14 two-way vehicles for Saturday PM peak conditions).

Resultant 2014 Friday and Saturday PM peak hour harvest volumes are presented in **Figure 4**.

C. INTERSECTION LEVEL OF SERVICE

1. ANALYSIS METHODOLOGY

Transportation engineers and planners commonly use a grading system called level of service (LOS) to measure and describe the operational status of the local roadway network. LOS is a description of the quality of a roadway facility's operation, ranging from LOS A (indicating free-flow traffic conditions with little or no delay) to LOS F (representing oversaturated conditions where traffic flows exceed design capacity, resulting in long queues and delays). Intersections, rather than roadway segments between intersections, are almost always the capacity controlling locations for any circulation system.

Signalized Intersections. For signalized intersections, the 2010 *Highway Capacity Manual* (Transportation Research Board, National Research Council) methodology was utilized. With this methodology, operations are defined by the level of service and average control delay per vehicle (measured in seconds) for the entire intersection. For a signalized intersection, control delay is the portion of the total delay attributed to traffic signal operation. This includes delay associated with deceleration, acceleration, stopping, and moving up in the queue. **Table 1** summarizes the relationship between delay and LOS for signalized intersections.

Unsignalized Intersections. For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, the 2010 *Highway Capacity Manual* (Transportation Research Board, National Research Council) methodology for unsignalized intersections was utilized. For side-street stop-controlled intersections, operations are defined by the level of service and average control delay per vehicle (measured in seconds), with delay reported for the stop sign controlled approaches or turn movements, although overall delay is also typically reported for intersections along state highways. For all-way stop-controlled intersections, operations are defined by the average control delay for the entire intersection (measured in seconds per vehicle). The delay at an unsignalized intersection incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. It should be noted that the 2010 analysis software for

unsignalized intersections does not report overall intersection delay. However, the year 2000 software does report overall delay and was utilized to report overall intersection operation. **Table 2** summarizes the relationship between delay and LOS for unsignalized intersections.

2. MINIMUM ACCEPTABLE OPERATION

Napa County has recently adopted new minimum acceptable operating condition standards for unsignalized intersections. Based upon the new standards, Level of Service D (LOS D) is the poorest acceptable operation for side street stop sign controlled approaches at two-way stop intersections and for all-way-stop intersections.

D. INTERSECTION PEAK HOUR SIGNAL WARRANT EVALUATION

1. ANALYSIS METHODOLOGY

Traffic signals are used to provide an orderly flow of traffic through an intersection. Many times they are needed to offer side street traffic an opportunity to access a major road where high volumes and/or high vehicle speeds block crossing or turn movements. They do not, however, increase the capacity of an intersection (i.e., increase the overall intersection's ability to accommodate additional vehicles) and, in fact, often slightly reduce the number of total vehicles that can pass through an intersection in a given period of time. Signals can also cause an increase in traffic accidents if installed at inappropriate locations.

There are 10 possible tests for determining whether a traffic signal should be considered for installation. These tests, called "warrants", consider criteria such as actual traffic volume, pedestrian volume, presence of school children, and accident history. The intersection volume data together with the available collision histories were compared to warrants contained in the *California Manual on Uniform Traffic Control Devices, 2014, Revision 2 (2014 CMUTCD Rev. 2)*. Section 4C of the 2014 CMUTCD Rev. 2 provides guidelines, or warrants, which may indicate need for a traffic signal at an unsignalized intersection. As indicated in the 2014 CMUTCD Rev. 2, satisfaction of one or more warrants does not necessarily require immediate installation of a traffic signal. It is merely an indication that the local jurisdiction should begin monitoring conditions at that location and that a signal may ultimately be required.

Warrant 3, the peak hour volume warrant, is often used as an initial check of signalization needs since peak hour volume data is typically available and this warrant is usually the first one to be met. Warrant 3 is based on a logarithmic curve and takes only the hour with the highest volume of the day into account. For intersections in rural locations (with local area population less than 10,000 people or where the posted speed limit or 85th percentile speed on the uncontrolled intersection approaches is greater than 40 miles per hour) a 70 percent warrant is applied. The regular and 70 percent warrants are typically referred to as the urban and rural peak hour warrants. Please see the **Appendix Figures A-3** and **A-4** for rural and urban signal Warrant #3 evaluation for existing Friday and Saturday harvest PM peak hour conditions.

F. PLANNED IMPROVEMENTS

There are no planned and funded improvements at any location evaluated in this study.[3]

VI. FUTURE HORIZON TRAFFIC VOLUME PROJECTIONS

Traffic analysis has been conducted for existing, year 2020 and year 2030 horizons at County request. The 2030 horizon reflects the County General Plan Buildout year, while 2020 reflects a near term horizon year after the winery expansion should be at full production.

Based upon several discussions with County Public Works staff, a modeling process called "the difference method" has been utilized in order to project 2030 horizon volumes. The difference method first determines the net change in volumes between 2030 projections and the model calibration run. This difference is assumed to occur on a uniform basis for the years between the calibration run and 2030. A determination is then made of the change that would, on average, occur between 2014 and 2030, with this change being added to the harvest 2014 traffic projections. This methodology was used for Silverado Trail since it accommodates both local and regional traffic.

Traffic modeling for the General Plan shows about a 16 percent growth in two-way weekday PM peak hour traffic along Silverado Trail in the project area between 2014 and 2030. Projecting straight line traffic growth along Silverado Trail for analysis purposes, this translates into about a 6 percent growth in two-way PM peak hour traffic from 2014 to 2020.

Since traffic modeling projections were only available for weekday PM peak hour conditions and not for the Saturday PM peak hour, north and southbound Saturday PM peak hour volumes on Silverado Trail were both uniformly increased by the PM percentages above.

No reliable future traffic modeling projections were available for Soda Canyon Road. Therefore, County staff provided information about four wineries that are approved or proposed along Soda Canyon Road and have been assumed constructed and in full operation by 2020. The list of four projects and their expected Friday and Saturday PM peak hour harvest trip generation are provided in **Table 3**. In addition to traffic from these specific developments, an additional 5 percent growth was also projected for Soda Canyon Road traffic to 2030. These developments and growth rate result in about a 19 percent growth in weekday PM peak hour harvest traffic along Soda Canyon Road near Silverado Trail from 2014 to 2030.

Resultant year 2020 harvest "Without Project" peak hour volumes are presented in **Figure 5**, while year 2030 harvest "Without Project" peak hour volumes are presented in **Figure 6**.

[3] Ms. Michelle Melonakis, Napa County Public Works Department, July 2017.

VII. OFF-SITE CIRCULATION SYSTEM OPERATION – WITHOUT PROJECT

1. EXISTING OPERATING CONDITIONS (WITHOUT PROJECT)

HARVEST

1. INTERSECTION LEVEL OF SERVICE (Silverado Trail/Soda Canyon Road) – Table 4

a) Friday PM Peak Hour

Unacceptable Soda Canyon Road stop sign controlled operation: LOS F

b) Saturday PM Peak Hour

Unacceptable Soda Canyon Road stop sign controlled operation: LOS E

2. INTERSECTION PEAK HOUR SIGNAL WARRANT EVALUATION (Silverado Trail/Soda Canyon Road) – Table 5

a) Friday PM Peak Hour

Volumes meet both rural and urban peak hour signal warrant criteria #3.

b) Saturday PM Peak Hour

Volumes meet rural peak hour signal warrant criteria #3.

2. YEAR 2020 OPERATING CONDITIONS (WITHOUT PROJECT)

HARVEST

1. INTERSECTION LEVEL OF SERVICE (Silverado Trail/Soda Canyon Road) – Table 4

a) Friday PM Peak Hour

Unacceptable Soda Canyon Road stop sign controlled operation: LOS F

b) Saturday PM Peak Hour

Unacceptable Soda Canyon Road stop sign controlled operation: LOS F

2. INTERSECTION PEAK HOUR SIGNAL WARRANT EVALUATION (Silverado Trail/Soda Canyon Road) – Table 5

a) Friday PM Peak Hour

Volumes meet both rural and urban peak hour signal warrant criteria #3.

b) Saturday PM Peak Hour

Volumes meet rural peak hour signal warrant criteria #3.

3. YEAR 2030 OPERATING CONDITIONS (WITHOUT PROJECT)

HARVEST

1. INTERSECTION LEVEL OF SERVICE (Silverado Trail/Soda Canyon Road) – Table 4

a) Friday PM Peak Hour

Unacceptable Soda Canyon Road stop sign controlled operation: LOS F

b) Saturday PM Peak Hour

Unacceptable Soda Canyon Road stop sign controlled operation: LOS F

2. INTERSECTION PEAK HOUR SIGNAL WARRANT EVALUATION (Silverado Trail/Soda Canyon Road) – Table 5

a) Friday PM Peak Hour

Volumes meet both rural and urban peak hour signal warrant criteria #3.

b) Saturday PM Peak Hour

Volumes meet rural peak hour signal warrant criteria #3.

VIII. PROJECT IMPACT EVALUATION SIGNIFICANCE CRITERIA

A. SIGNIFICANCE CRITERIA

1. COUNTY OF NAPA

The following criteria have recently been developed for traffic impact analyses in Napa County.

EXISTING + PROJECT CONDITIONS

A. ARTERIAL SEGMENTS

A project would cause a significant impact requiring mitigation if:

1. An arterial segment operates at LOS A, B, C or D during the selected peak hours without project trips, and deteriorates to LOS E or F with the addition of project trips, or
2. An arterial segment operates at LOS E or F during the selected peak hours without project trips, and the addition of project trips increases the total segment volume by one percent or more.

For the second criteria, the following equation should be used if the arterial operates at LOS E or F without the project:

Project Contribution % = Project Trips ÷ Existing Volumes

B. SIGNALIZED INTERSECTIONS

A project would cause a significant impact requiring mitigation if:

1. A signalized intersection operates at LOS A, B, C or D during the selected peak hours without project trips, and deteriorates to LOS E or F with the addition of project trips, or
2. A signalized intersection operates at LOS E or F during the selected peak hours without project trips, and the addition of project trips increases the total entering volume by one percent or more.

For the second criteria, the following equation should be used if the signalized intersection operates at LOS E or F without the project:

Project Contribution % = Project Trips ÷ Existing Volumes

Maintaining LOS D or better at all signalized intersections would sometimes require expanding the physical footprint of an intersection. In some locations around the County, expanding physical transportation infrastructure could be in direct conflict with the County's goals of preserving the area's rural character, improving safety, and sustaining the agricultural industry, making these potential improvements infeasible. The County's Circulation Element lists intersections that are slated for improvement or expansion in unincorporated Napa County.[4]

Transportation studies should individually consider the feasibility of potential mitigation measures with respect to right-of-way acquisition, regardless of the intersection's place in the Circulation Element's identified improvement lists, and present potential alternative mitigation measures that do not require right-of-way acquisition. County staff would then review that information and make the decision about the feasibility of the identified potential mitigations.

For intersections that cannot be improved without substantial additional right-of-way according to both the Circulation Element and the individual transportation impact study, and where other mitigations such as updating signal timing, signal phasing and operations, and/or signing and striping improvements do not improve the LOS, LOS E or F will be considered acceptable and the one percent threshold would not apply. Analysis of signalized intersection LOS should still be presented for informational purposes, and there should still be an evaluation of effects on safety and local access, per Policy CIR-18.

C. UNSIGNALIZED INTERSECTIONS (ALL WAY STOP AND SIDE STREET STOP SIGN CONTROLLED)

LOS for all way stop controlled intersections is defined as an average of the delay at all approaches. LOS for side street stop controlled intersections is defined by the delay and LOS for the worst case approach. The recommended interpretation of Policy CIR-16 regarding unsignalized intersection significance criteria is as follows:

1. An unsignalized intersection operates at LOS A, B, C or D during the selected peak hours without project trips, the LOS deteriorates to LOS E or F with the addition of project traffic, and the peak hour traffic signal warrant criteria should also be evaluated and presented for information purposes, or
2. An unsignalized intersection operates at LOS E or F during the selected peak hours without project trips and the project contributes one percent or more of the total entering traffic for all way stop controlled intersections, or 10 percent or more of the traffic on a side street approach for side street stop controlled intersections; the peak hour traffic signal warrant criteria should also be evaluated and presented for informational purposes.

[4] According to the Circulation Element dated June 8, 2008, the following intersections can be altered or expanded as a mitigation measure: SR-12/Airport Boulevard/SR-29, SR-221/SR-12/Highway 29, and several intersections along SR-29 and SR-128 north of Napa. The significance criteria shown above should apply to facilities where appropriate based upon the most recent Circulation Element chapter of the General Plan.

All Way Stop Controlled Intersections
For the second criteria at an all way stop controlled intersection, the following equation should be used if the all way stop controlled intersection operates at LOS E or F without the project.

Project Contribution % = Project Trips ÷ Existing Volumes

Side Street Stop Controlled Intersections
For the second criteria at a side street stop controlled intersection, the following equation should be used if the side street stop controlled intersection operates at LOS E or F without the project.

Project Contribution % = Project Trips ÷ Existing Volumes

Both of those volumes are for the stop controlled approaches only. Each stop controlled approach that operates at LOS E or F should be analyzed individually.

CUMULATIVE+ PROJECT CONDITIONS

A. ARTERIAL SEGMENTS, SIGNALIZED INTERSECTIONS AND UNSIGNALIZED INTERSECTIONS

A project would cause a significant cumulative impact requiring mitigation if:

1. The overall amount of expected traffic growth causes conditions to deteriorate such that any of the significance criteria described above for existing conditions are met, and
2. The project's contribution to a significant cumulative impact would be equal to or greater than five percent of the growth in traffic from existing conditions.

A project's contribution to a cumulative condition would be calculated as the project's percentage contribution to the total growth in traffic from existing conditions.

Project Contribution % = Project Trips ÷ (Cumulative Volumes - Existing Volumes)

- If projected daily volumes on the project driveway in combination with volumes on the roadway providing access to the project driveway meet County warrant criteria for provision of a left turn lane on the approach to the project entrance.

- If sight lines at project access driveways do not meet Caltrans stopping sight distance criteria based upon prevailing vehicle speeds.

IX. PROJECT TRIP GENERATION & DISTRIBUTION

A. TRIP GENERATION

Friday and Saturday PM peak hour trip generation projections were developed with the assistance of the project applicant and their representative for all components of the Reynolds Family Winery proposed expansion (see worksheets in the **Appendix**). Results are presented on an hourly basis in **Tables 6** and **7** for harvest Friday and Saturday conditions, while a summary of peak hour trips associated with the expansion is presented in **Table 8**. The specific hourly distribution of new visitor traffic is presented in **Appendix Figure A-5**. During the harvest Friday PM peak traffic hour there would be a projected 1 new inbound and 2 new outbound vehicles. During the harvest Saturday PM peak traffic hour, there would also be a projected 1 new inbound and 2 new outbound vehicles. As shown, all increased traffic during the Friday and Saturday PM peak hours would be associated with expanded visitation. New employees during summer and harvest Fridays and Saturdays would be scheduled to leave after the PM peak traffic hours. The one expected grape delivery per day during harvest could be scheduled any time between 6:00 AM and 1:00 PM, although morning deliveries would be typical.

B. TRIP DISTRIBUTION

Project traffic was distributed to Silverado Trail in a pattern reflective of existing vehicle distribution patterns. During the Friday PM peak hour more inbound visitor traffic would be expected to come from the north and make a left turn into the site, while most outbound traffic would be expected to make a left turn from the site to southbound Silverado Trail. During the Saturday afternoon peak traffic hour, distribution patterns would be similar.

The harvest Friday and Saturday PM project traffic increments expected on Silverado Trail during the times of ambient peak traffic flows through the Silverado Trail/Soda Canyon Road intersection are presented in **Figure 7**. Existing "With Project" harvest Friday and Saturday PM peak hour volumes are presented in **Figure 8**, year 2020 "With Project" harvest Friday and Saturday PM peak hour volumes are presented in **Figure 9**, and year 2030 (Cumulative) "With Project" harvest Friday and Saturday PM peak hour volumes are presented in **Figure 10**.

C. PLANNED ROADWAY IMPROVEMENTS

There are no capacity increasing roadway improvements planned by Caltrans or the County on the local roadway network serving the project site.[5] However, the project would be providing a left turn lane on the southbound Silverado Trail approach to the project driveway.

[5] Ms. Michelle Melonakis, Napa County Public Works Department, July 2017.

X. PROJECT IMPACTS

A. EXISTING WITH PROJECT CONDITIONS

HARVEST

a) Summary

Project traffic would not result in any significant level of service or signal warrant impacts at the Silverado Trail/Soda Canyon Road intersection. ***Less than Significant***.

b) Intersection Level of Service (Silverado Trail/Soda Canyon Road) – Table 4

The Silverado Trail/Soda Canyon Road intersection would already have unacceptable level of service during both the Friday and Saturday PM peak hours. The addition of project traffic would only increase volumes by 0.06 to 0.07 percent during either peak hour, which would be less than the minimum 1 percent traffic added significance criteria limit. ***Less than Significant.***

c) Signalization Needs (Silverado Trail/Soda Canyon Road) – Table 5

The Silverado Trail/Soda Canyon Road intersection would have volumes increased during both the Friday and Saturday PM peak hours, when "Without Project" volumes would already exceed signal warrant criteria levels. However, project traffic would only increase volumes by 0.06 to 0.07 percent, which would be less than the minimum 1 percent traffic added significance criteria limit. ***Less than Significant.***

B. YEAR 2020 WITH PROJECT CONDITIONS

HARVEST

a) Summary

Project traffic would not result in any significant level of service or signal warrant impacts at the Silverado Trail/Soda Canyon Road. ***Less than Significant***.

b) Intersection Level of Service (Silverado Trail/Soda Canyon Road) – Table 4

The Silverado Trail/Soda Canyon Road intersection would already have unacceptable level of service during both the Friday and Saturday PM peak hours. The addition of project traffic would only increase volumes by 0.06 to 0.07 percent during either peak hour, which would be less than the minimum 1 percent traffic added significance criteria limit. ***Less than Significant.***

c) Signalization Needs (Silverado Trail/Soda Canyon Road) – Table 5

The Silverado Trail/Soda Canyon Road intersection would have volumes increased during both the Friday and Saturday PM peak hours (when "Without Project" volumes would already meet or exceed warrant criteria levels). However, project traffic would only increase volumes by 0.06 to 0.07 percent during either peak hour, which would be less than the minimum 1 percent traffic added significance criteria limit. ***Less than Significant.***

C. YEAR 2030 (CUMULATIVE) WITH PROJECT CONDITIONS

HARVEST

a) Summary

Project traffic would not result in any significant level of service or signal warrant impacts at the Silverado Trail/Soda Canyon Road intersection. ***Less than Significant***.

b) Intersection Level of Service (Silverado Trail/Soda Canyon Road) – Table 4

The Silverado Trail/Soda Canyon Road intersection would already have unacceptable level of service during both the Friday and Saturday PM peak hours. The addition of project traffic would only increase volumes by 0.05 to 0.06 percent during either peak hour, which would be less than the minimum 1 percent traffic added significance criteria limit. ***Less than Significant.***

c) Signalization Needs (Silverado Trail/Soda Canyon Road) – Table 5

The Silverado Trail/Soda Canyon Road intersection would have volumes increased during both the Friday and Saturday PM peak hours (when "Without Project" volumes would already exceed signal warrant criteria levels). However, project traffic would only increase volumes by 0.05 to 0.06 percent, which would be less than the minimum 1 percent traffic added significance criteria limit. ***Less than Significant.***

XI. PROJECT ACCESS IMPACTS

A. SIGHT LINE ADEQUACY AT PROJECT DRIVEWAYS

Project Driveway Connection to Silverado Trail
Sight lines will be acceptable for drivers turning from the project driveway to see Silverado Trail traffic. Sight lines to the south would be more than 1,000 feet and to the north about 800 feet. Based upon a travel speed along Silverado Trail of 60 miles per hour, the required stopping sight distance would be 580 feet.[6]

B. LEFT TURN LANE ON SILVERADO TRAIL

A left turn lane will be provided on the southbound Silverado Trail approach to the winery driveway as part of the proposed project. The specific length of the turn lane is being worked out in conjunction with the County and the proposed Ellman Family Winery just to the north that will also require a left turn lane on the southbound Silverado Trail approach to their driveway.

XII. MARKETING EVENTS

Table 9 presents details of the number of guests, employees and hired event staffing that would likely be present for new marketing events. The most common event would be food and wine pairings, held 48 times per year and up to four times per month. Two of the four would have up to 24 guests (resulting in about 9 vehicles), while the other two would have up to 40 guests (resulting in about 15 vehicle trips to and from the winery). Total hired staffing for the events would result in an additional 4 vehicles accessing the winery. Events would last about three hours and would occur between noon and 10:00 PM, primarily on weekends.

Two wine auctions would be held each year with up to 125 guests (resulting in about 45 vehicle trips to/from the winery) as well as two wine releases per year with up to 60 guests (resulting in about 22 vehicles to/from the winery). Hired event staffing for each of these four events would result in an additional 4 vehicles accessing the winery. The wine auctions would be about four hours long and would occur on Saturday evenings starting at 6:00 PM, while the wine releases could occur between 2:00 and 10:00 PM on a weekend day.

There will be no regular visitation allowed during any marketing events.

[6] Caltrans *Highway Design Manual*, 2014.

XIII. MITIGATION MEASURES

- No off-site or access mitigation measures are required since there are no significant off-site or access-related project impacts.

- Vegetation along the project's Silverado Trail frontage that could eventually block sight lines for drivers turning from the project driveway should be maintained at heights which will not interfere with sight lines.

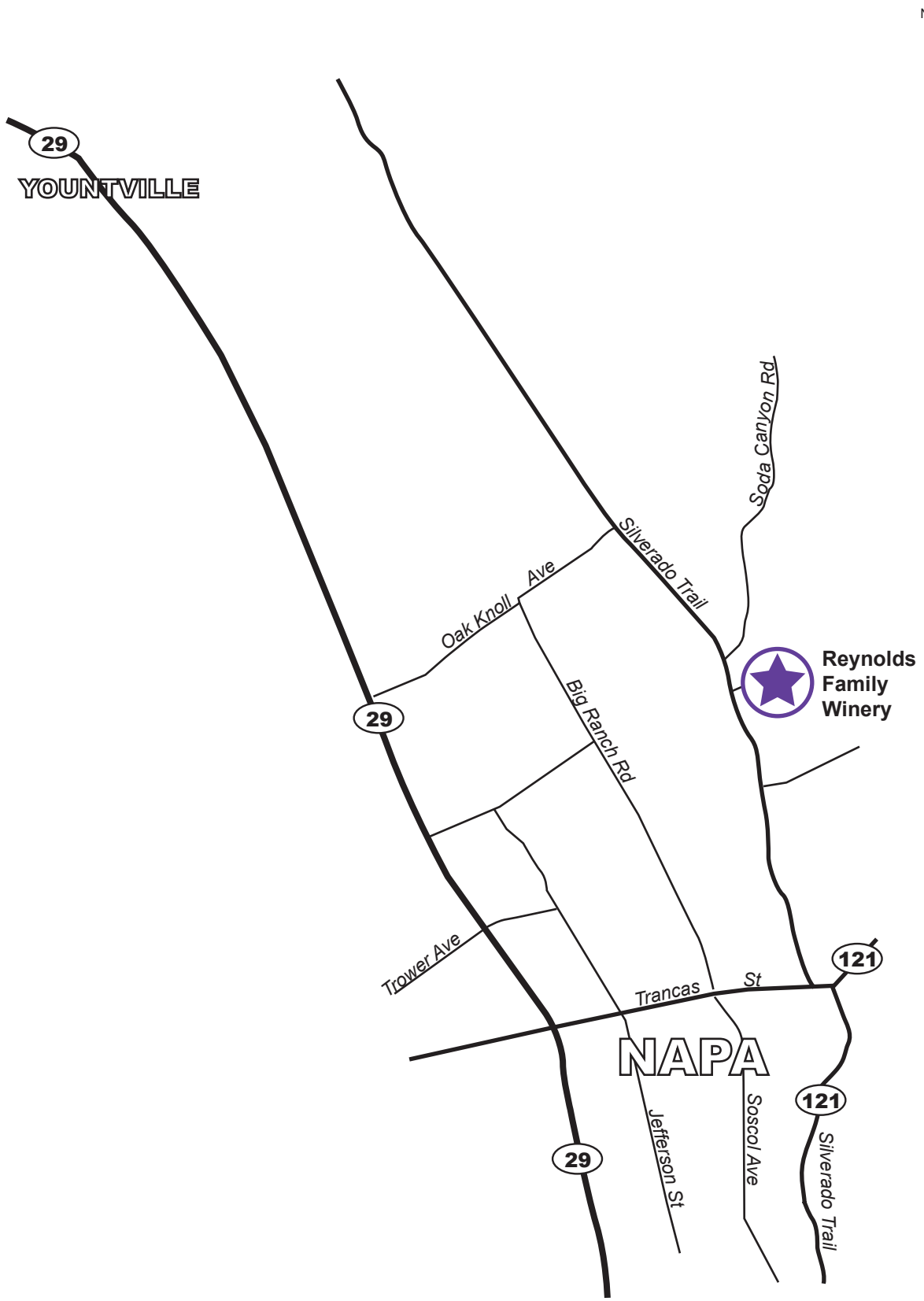
- All marketing events should either end by 3:00 PM or begin at 6:00 PM or later in order to avoid having guests and hired staffing traveling on the local roadway network during peak traffic hours.

XIV. CONCLUSIONS & RECOMMENDATIONS

The project will result in no significant off-site circulation system operational impacts to Silverado Trail or to the Silverado Trail/Soda Canyon Road intersection. A left turn lane will be provided on the southbound Silverado Trail approach to the project driveway. In addition, sight lines at the project driveway connection to Silverado Trail are and will be acceptable assuming landscaping along the project frontage is maintained so as not to block sight lines.

This Report is intended for presentation and use in its entirety, together with all of its supporting exhibits, schedules, and appendices. Crane Transportation Group will have no liability for any use of the Report other than in its entirety, such as providing an excerpt to a third party or quoting a portion of the Report. If you provide a portion of the Report to a third party, you agree to hold CTG harmless against any liability to such third parties based upon their use of or reliance upon a less than complete version of the Report.

Figures



Reynolds Family Winery Expansion Traffic Study

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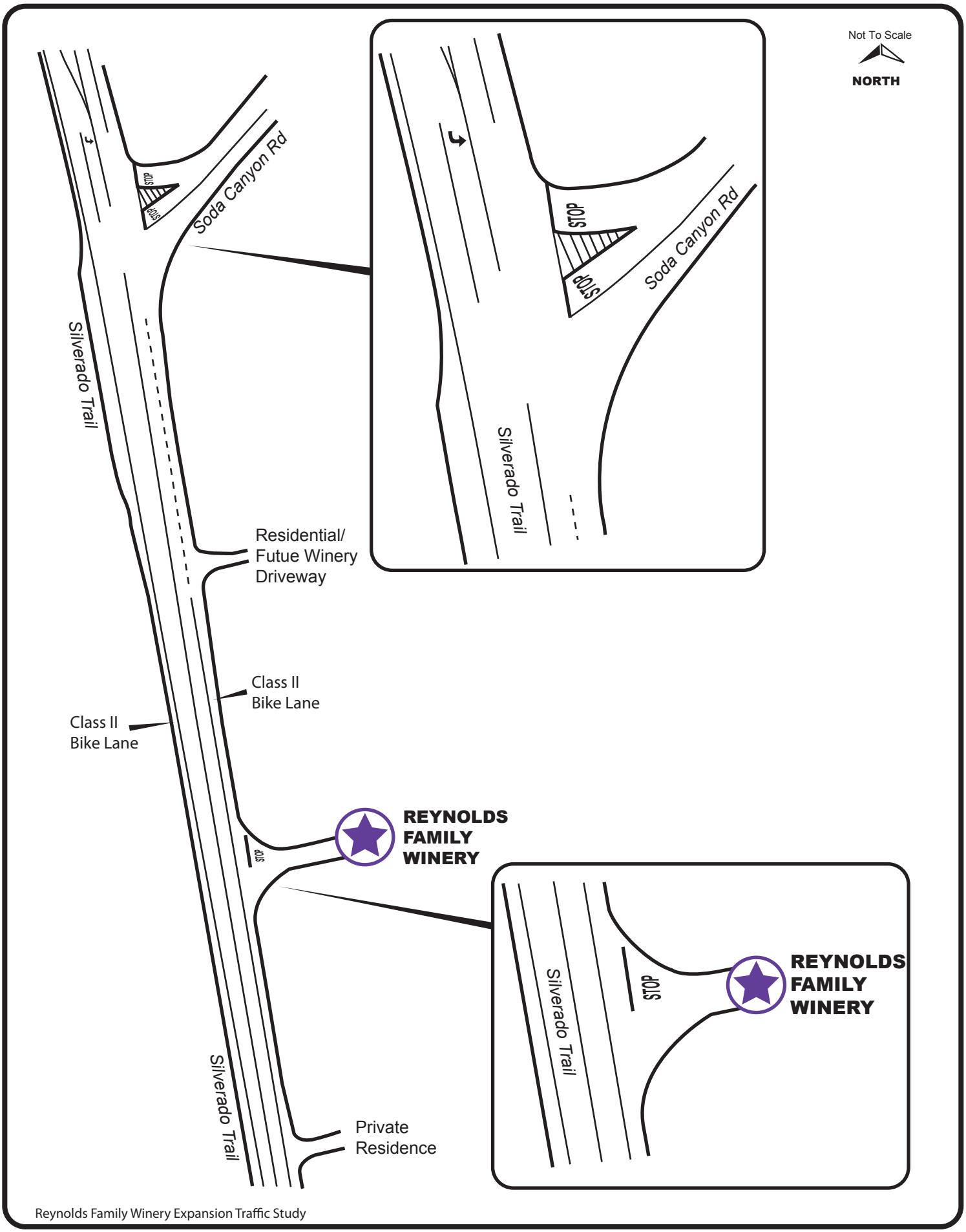
Figure 1

Area Map



Reynolds Family Winery Expansion Traffic Study

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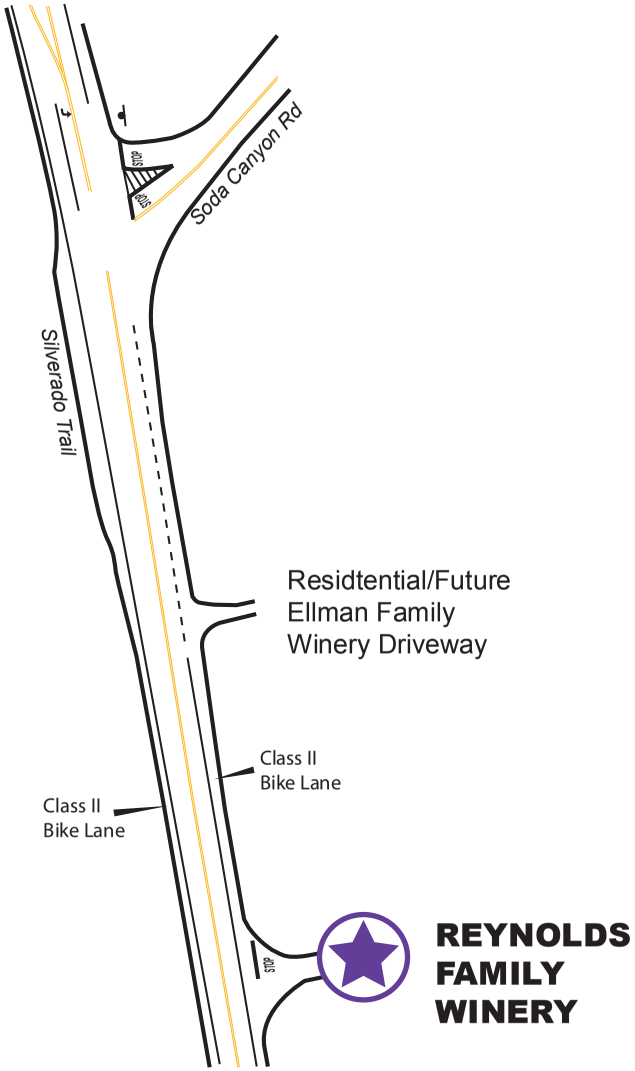
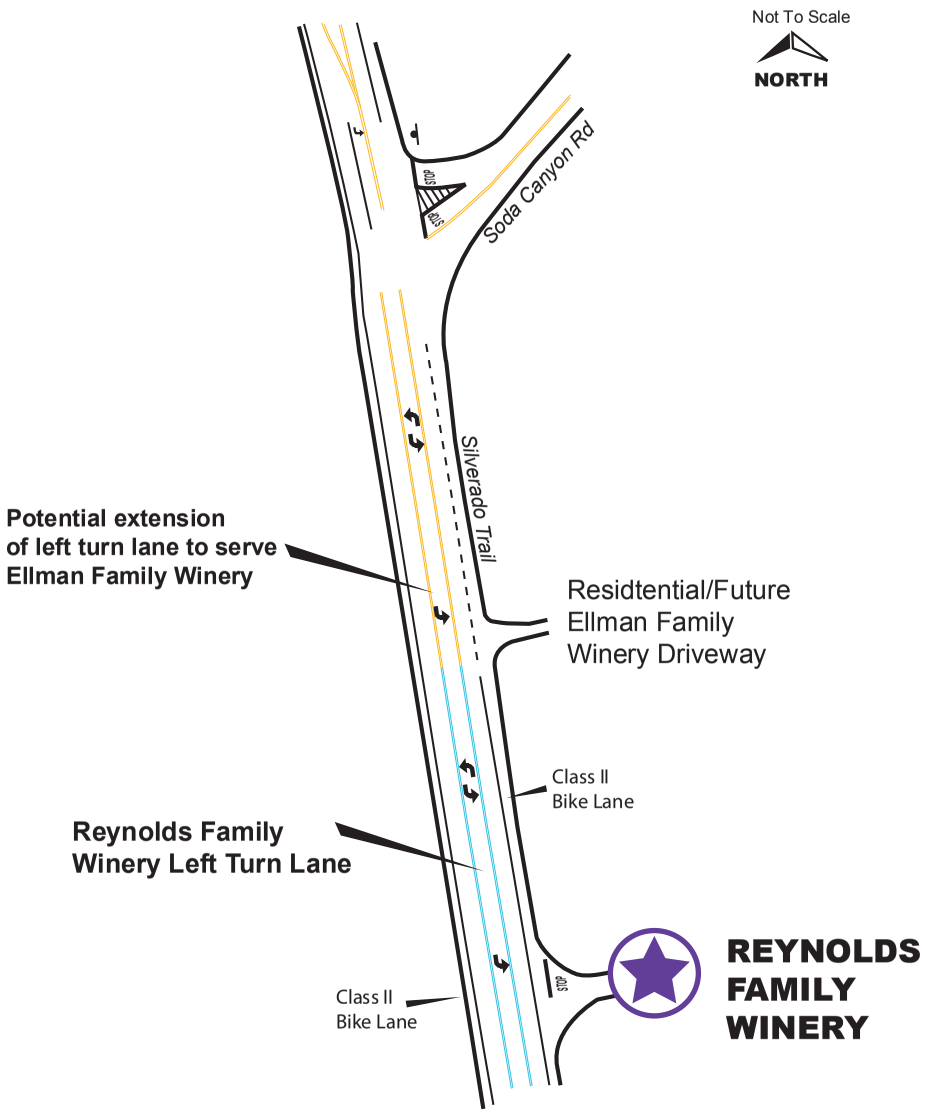
Figure 2

Existing Lane Geometrics and Intersection Control



Existing Lane Geometrics



Proposed Left Turn Lane
Lane Geometrics

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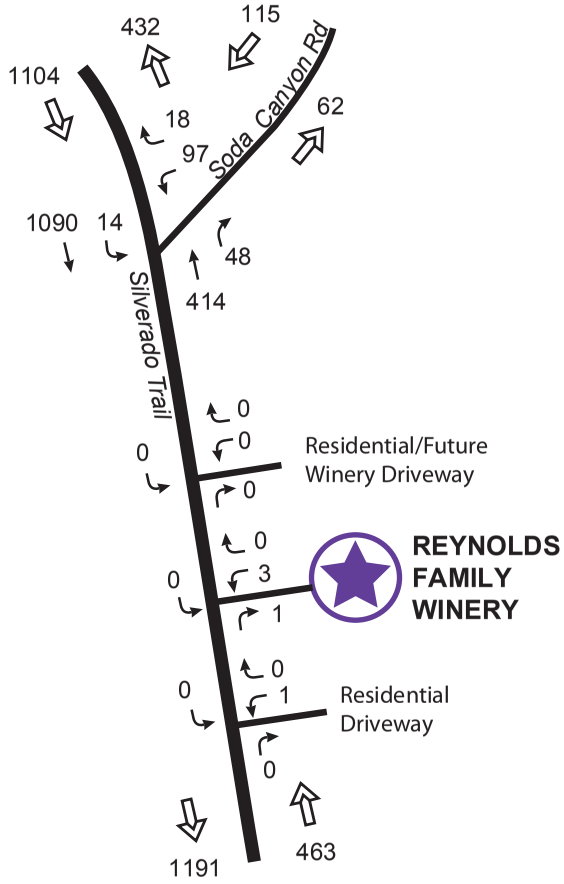
Figure 3

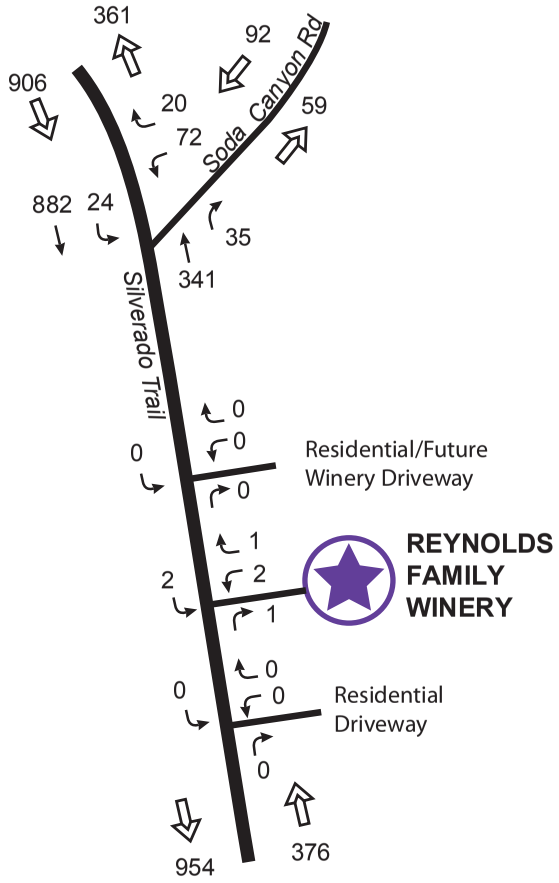
Proposed Left Turn Lane on Southbound Silverado Trail
Approach to Reynolds Family Winery

Not To Scale

NORTH



Friday
4:30-5:30 PM



Saturday
4:00-5:00 PM

Reynolds Family Winery Expansion Traffic Study

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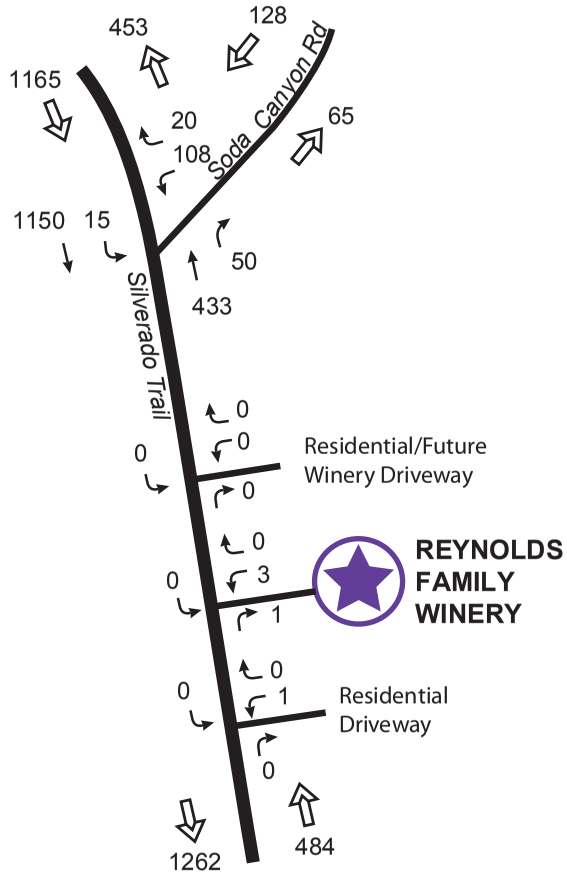
Figure 4

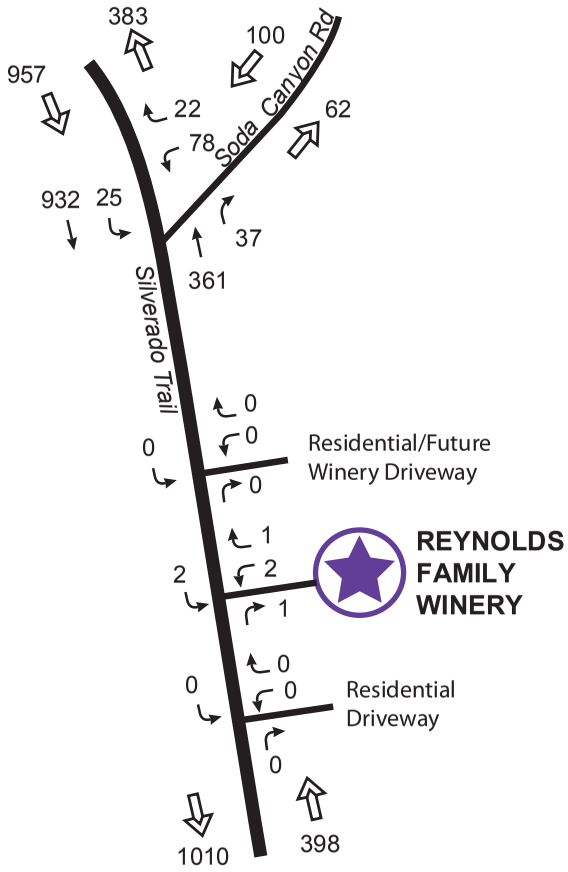
Existing (2014) Harvest without Project Friday and Saturday PM Peak Hour Volumes

Not To Scale

NORTH



Friday
4:30-5:30 PM



Saturday
4:00-5:00 PM

Reynolds Family Winery Expansion Traffic Study

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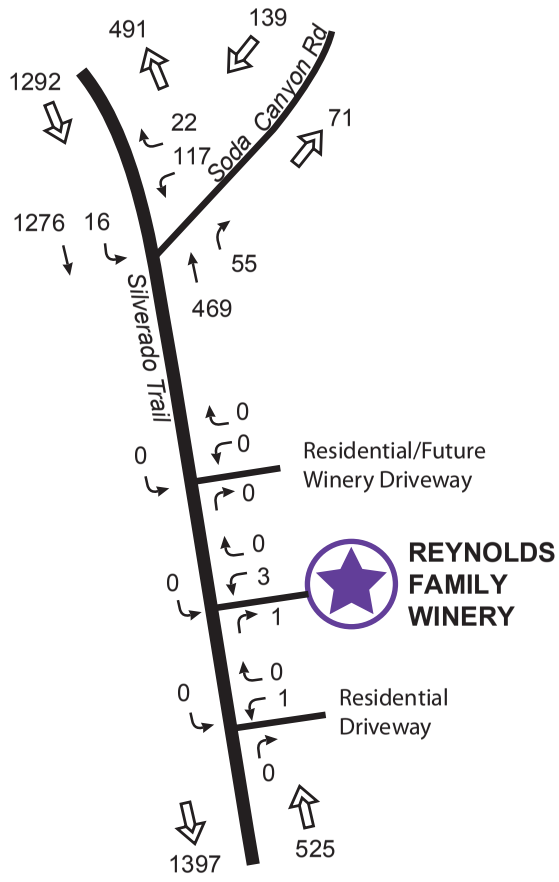
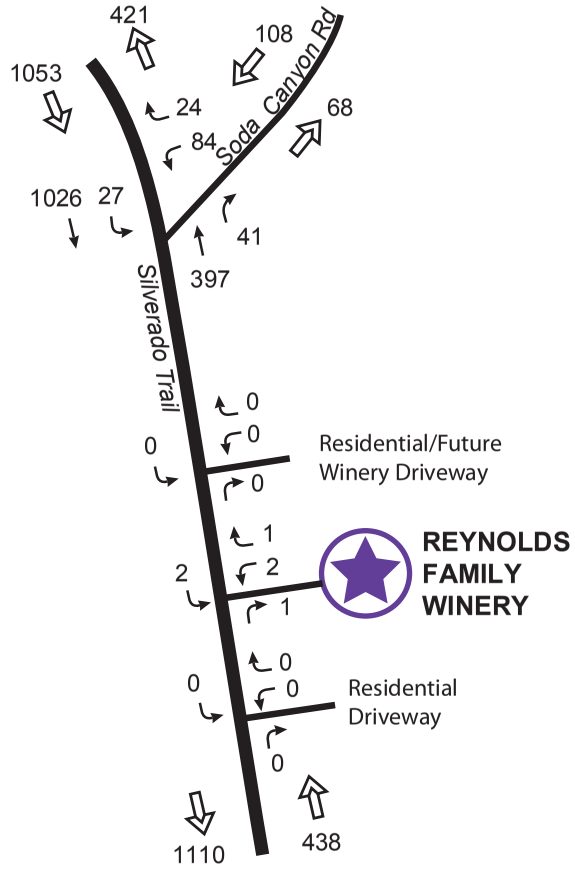
Figure 5

Year 2020 Harvest without Project Friday and Saturday PM Peak Hour Volumes



Friday
4:30-5:30 PM



Saturday
4:00-5:00 PM

Not To Scale

NORTH

Reynolds Family Winery Expansion Traffic Study

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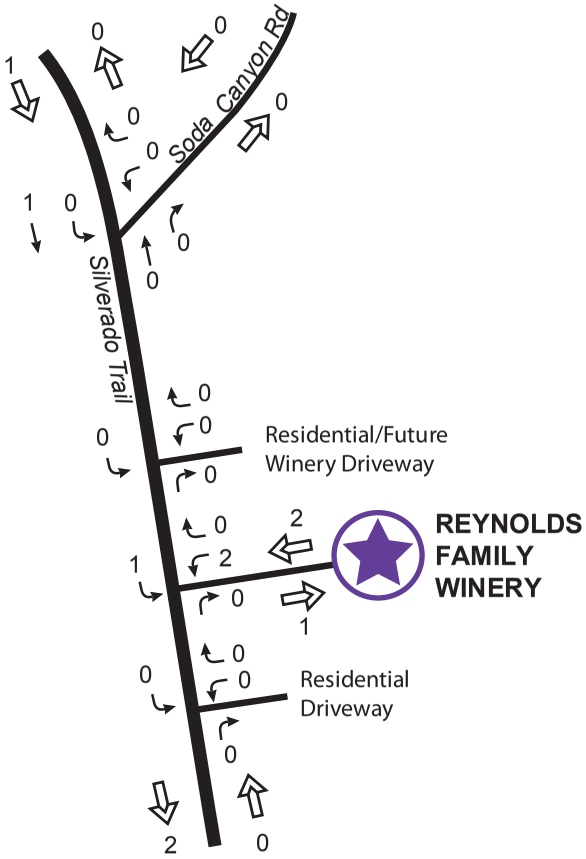
Figure 6

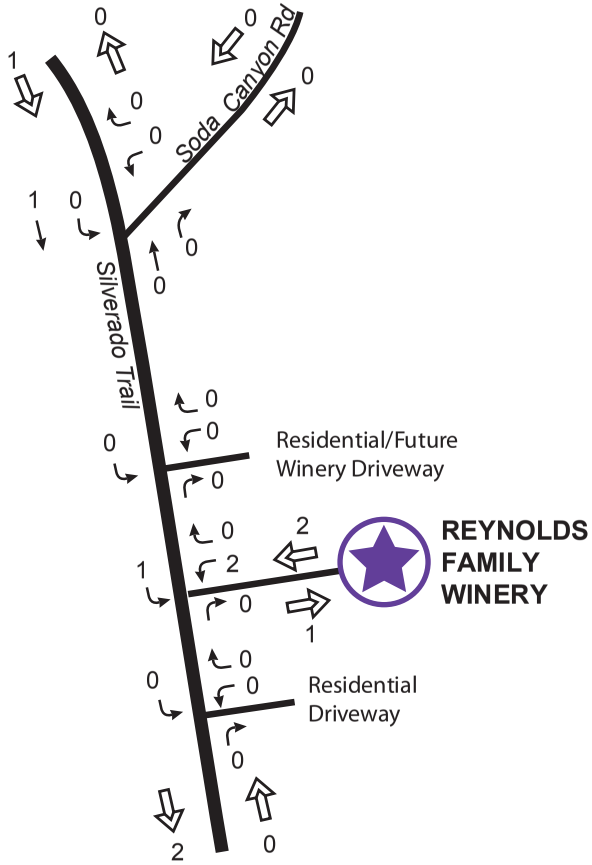
Year 2030 (Cumulative) Harvest without Project Friday and Saturday PM Peak Hour Volumes

Not To Scale

NORTH



Friday
4:30-5:30 PM



Saturday
4:00-5:00 PM

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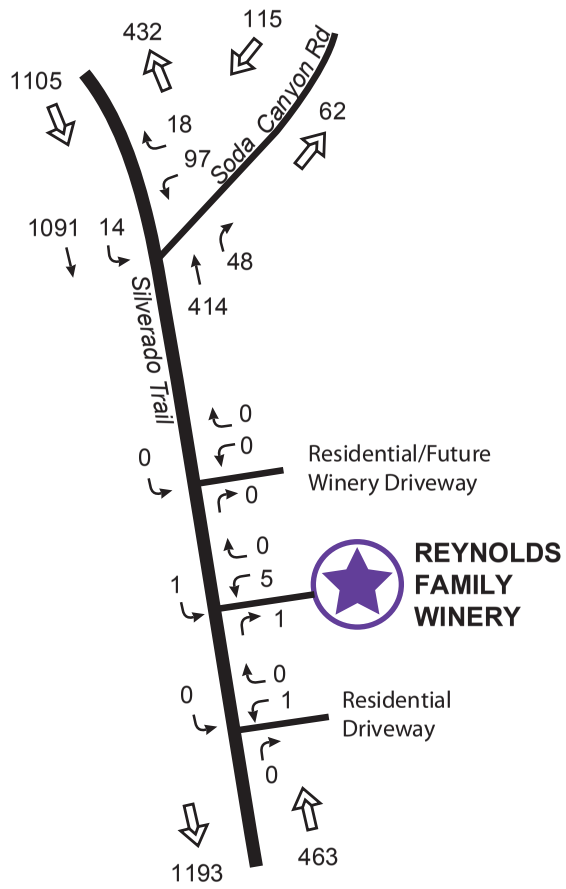
Figure 7

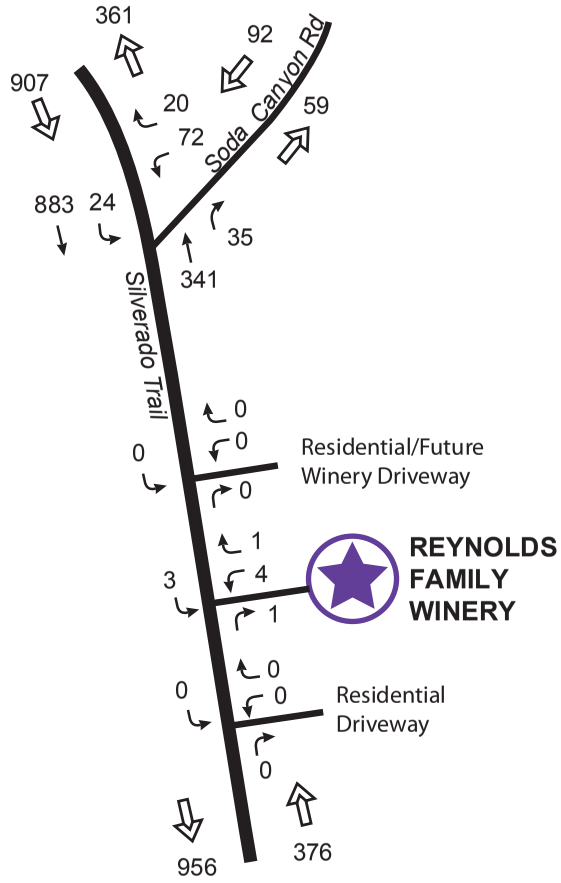
Harvest Project Increment Friday and Saturday PM Peak Hour Volumes

Not To Scale

NORTH



Friday
4:30-5:30 PM



Saturday
4:00-5:00 PM

Reynolds Family Winery Expansion Traffic Study

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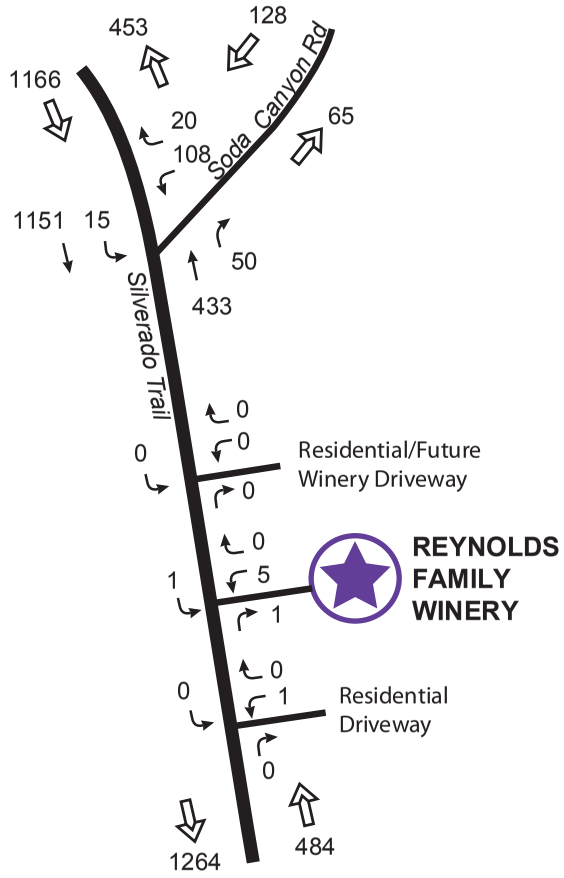
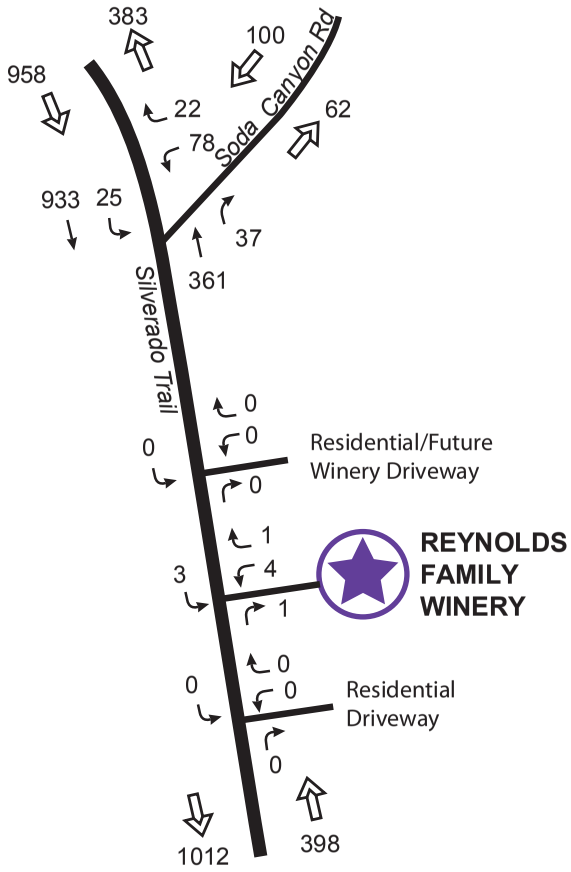
Figure 8
Existing (2014) Harvest with Project Friday and Saturday PM Peak Hour Volumes

Not To Scale

NORTH



Friday
4:30-5:30 PM



Saturday
4:00-5:00 PM

Reynolds Family Winery Expansion Traffic Study

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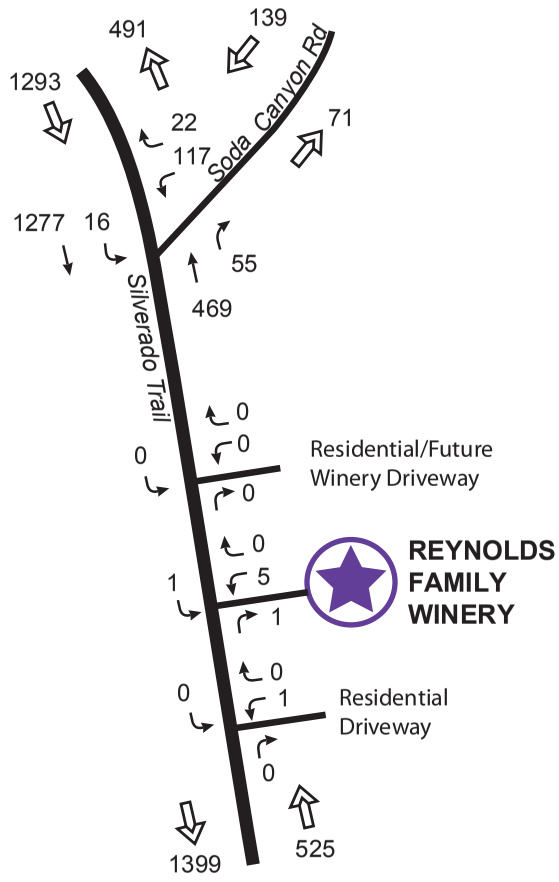
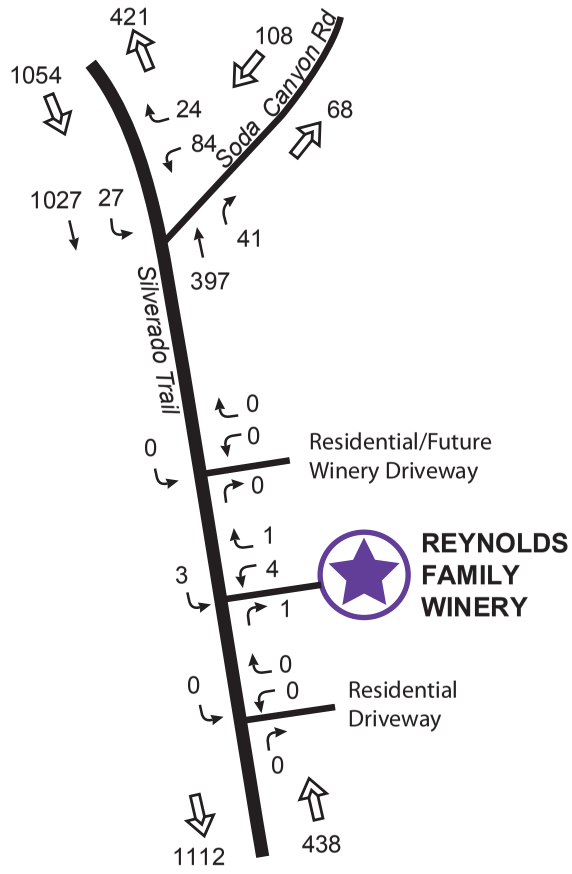
Figure 9

Year 2020 Harvest with Project Friday and Saturday PM Peak Hour Volumes



Friday
4:30-5:30 PM



Saturday
4:00-5:00 PM

Not To Scale

NORTH

Reynolds Family Winery Expansion Traffic Study

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Figure 10

Year 2030 (Cumulative) Harvest with Project Friday and Saturday PM Peak Hour Volumes

Tables

Table 1

SIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Average Control Delay (Seconds Per Vehicle)
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	≤ 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and/or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.1 to 80.0
F	Operation with delays unacceptable to most drivers occurring due to oversaturation, poor progression, or very long cycle lengths.	> 80.0

Source: 2010 Highway Capacity Manual (Transportation Research Board).

Table 2

UNSIGNALIZED INTERSECTION LOS CRITERIA

Level of Service	Description	Average Control Delay (Seconds Per Vehicle)
A	Little or no delays	≤ 10.0
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays with intersection capacity exceeded (for an all-way stop), or with approach/turn movement capacity exceeded (for a side street stop controlled intersection)	> 50.0

Source: 2010 Highway Capacity Manual (Transportation Research Board).

Table 3

TRIP GENERATION
PROPOSED AND APPROVED DEVELOPMENTS
SERVED BY SODA CANYON ROAD

PROJECT	FRIDAY PM PEAK HOUR TRIPS (4:30-5:30)		SATURDAY PM PEAK HOUR TRIPS (4:00-5:00)	
	IN	OUT	IN	OUT
Mountain Peak Winery	5	6	5	5
Relic Wine Cellars	0	6	0	2
V-12 Winery	0	4	0	2
Roy Estates Vineyards	0	4	0	2
TOTAL	5	20	5	11

Source: Crane Transportation Group after review of traffic reports for all projects.

Table 4

INTERSECTION LEVEL OF SERVICE
SILVERADO TRAIL/SODA CANYON ROAD

HARVEST

FRIDAY PM PEAK HOUR

LOCATION	EXISTING (2014)		YEAR 2020		YEAR 2030	
	W/O PROJECT	WITH PROJECT	W/O PROJECT	WITH PROJECT	W/O PROJECT	WITH PROJECT
Silverado Trail/ Soda Canyon Rd.	F-89.9/A-8.3[(1)]	F-89.9/A-8.3 (.06%)*	F-143/A-8.4	F-143/A-8.4 (.06%)*	F-271.3/A-8.5	F-271.3/A-8.5 (.05)*

SATURDAY PM PEAK HOUR

LOCATION	EXISTING (2014)		YEAR 2020		YEAR 2030	
	W/O PROJECT	WITH PROJECT	W/O PROJECT	WITH PROJECT	W/O PROJECT	WITH PROJECT
Silverado Trail/ Soda Canyon Rd.	E-43.9/A-8.2[(1)]	E-43.9/A-8.2 (.07%)*	F-57.3/A-8.3	F-58.1/A-8.3 (.07%)*	F-86.4/A-8.4	F-86.4/A-8.4 (.06)*

(1) Unsignalized level of service – control delay in seconds. Soda Canyon Road westbound stop sign controlled approach/Silverado Trail southbound left turn.

* (Percent project traffic added to intersection) Less than a 1% increase is not considered a significant impact.

Year 2010 Highway Capacity Manual (HCM) Analysis Methodology – individual approach or turn movement results
Source: Crane Transportation Group

Table 5

INTERSECTION SIGNAL WARRANT EVALUATION

Do Volumes Meet Caltrans Peak Hour Warrant #3 Volume Criteria Levels?

HARVEST

EXISTING – 2014

INTERSECTION	FRIDAY PM PEAK HOUR (4:15-5:15)		SATURDAY PM PEAK HOUR (4:30-5:30)	
	W/O PROJECT	WITH PROJECT	W/O PROJECT	WITH PROJECT
Silverado Trail/Soda Canyon Road	Yes – R, U	Yes (.06%)	Yes – R	Yes (.07%)

YEAR 2020

INTERSECTION	FRIDAY PM PEAK HOUR (4:15-5:15)		SATURDAY PM PEAK HOUR (4:30-5:30)	
	W/O PROJECT	WITH PROJECT	W/O PROJECT	WITH PROJECT
Silverado Trail/Soda Canyon Road	Yes – R, U	Yes (.06%)	Yes – R	Yes (.07%)

CUMULATIVE (YEAR 2030)

INTERSECTION	FRIDAY PM PEAK HOUR (4:15-5:15)		SATURDAY PM PEAK HOUR (4:30-5:30)	
	W/O PROJECT	WITH PROJECT	W/O PROJECT	WITH PROJECT
Silverado Trail/Soda Canyon Road	Yes – R, U	Yes (.05%)	Yes – R	Yes (.06%)

R = Rural warrant met; U = Urban warrant met
(xx) – Percent project traffic added to intersection. Less than a 1% increase is not considered a significant impact.

Source: Crane Transportation Group; Caltrans Manual on Uniform Traffic Control Devices, Revision 2, 2017

Table 6

PROJECT TRIP GENERATION
REYNOLDS WINERY 2017 USE PERMIT MODIFICATION

HARVEST

FRIDAY

EXPANDED ACTIVITY	TOTAL	HOURS	TRIPS							
			3-4 PM		4-5 PM		5-6 PM		4:30-5:30 PM*	
			IN	OUT	IN	OUT	IN	OUT	IN	OUT
Employees – Full Time	3	6:00 AM-6:00 PM	0	0	0	0	0	0	0	0
Employees – Part Time	2	6:00 AM-6:00 PM	0	0	0	0	0	0	0	0
Tours/Tasting Employees	1	9:00 AM-6:00 PM	0	0	0	0	0	0	0	0
Grape Delivery Trucks – 30/yr. (20% grown on site)	1/day	6:00 AM-1:00 PM	0	0	0	0	0	0	0	0
Visitors	30 (12 veh.)[(1)]	10:00 AM=6:00 PM	2	3	1	2	0	1	1	2
TOTAL			2	3	1	2	0	1	1	2

* Peak traffic hour at Silverado Trail/Soda Canyon Road intersection.
(1) 2.6 visitors/vehicle average on weekdays per County data.

Source: Reynolds Winery project applicant; Compiled by: Crane Transportation Group

Table 7

PROJECT TRIP GENERATION
REYNOLDS WINERY 2017 USE PERMIT MODIFICATION

HARVEST

SATURDAY

EXPANDED ACTIVITY	TOTAL	HOURS	TRIPS							
			2-3 PM		3-4 PM		4-5 PM*		5-6 PM	
			IN	OUT	IN	OUT	IN	OUT	IN	OUT
Employees – Full Time	3	6:00 AM - 6:00 PM	0	0	0	0	0	0	0	0
Employees – Part Time	2	6:00 AM - 6:00 PM	0	0	0	0	0	0	0	0
Tours/Tasting Employees	1	9:00 AM - 6:00 PM	0	0	0	0	0	0	0	0
Grape Delivery Trucks – 30/yr. (20% grown on site)	1/day	6:00 AM- 1:00 PM	0	0	0	0	0	0	0	0
Visitors	30 (11 veh.)[(1)]	10:00 AM- 6:00 PM	3	3	2	3	1	2	0	1
TOTAL			3	3	2	3	1	2	0	1

* Peak traffic hour at SR 29/Soda Canyon Road intersection.
(1) 2.8 visitors/vehicle average on weekdays per County data.

Source: Reynolds Winery project applicant; Compiled by: Crane Transportation Group

Table 8

PROJECT PEAK HOUR TRIP GENERATION SUMMARY

HARVEST

FRIDAY PM PEAK HOUR* (4:00-5:00)		SATURDAY PM PEAK HOUR* (4:30-5:30)	
INBOUND TRIPS	OUTBOUND TRIPS	INBOUND TRIPS	OUTBOUND TRIPS
1	2	1	2

* Peak hour at the SR 29/Soda Canyon Road intersection.
Source: Reynolds Winery; compiled by Crane Transportation Group

Table 9

REYNOLDS FAMILY WINERY EXPANSION
MARKETING EVENT TRAFFIC DETAILS

MARKETING EVENT	STAFF/GUEST CATEGORY	# OF PEOPLE	# OF VEHICLES	TIMES	REGULAR VISITATION ELIMINATED DURING MARKETING EVENT?
Food & Wine Pairing (4 per month)	Guests	2 @ 24 2 @ 40	9 autos 15 autos	May occur Between noon & 10:00 PM. Typically 3 hours long. Saturday or Sunday	Yes
	Extra Winery Staff	0	N/A		
	Caterers	4	1		
	Entertainers	2	1		
	Delivery vehicles	2	1		
	Florist	1	1		
Wine Release (2 per year)	Guests	60	22 autos	Between 2:00 & 10:00 PM Saturday or Sunday	Yes
	Extra Winery Staff	0	N/A		
	Caterers	4	1		
	Entertainers	2	1		
	Delivery vehicles	2	1		
	Florist	1	1		
Wine Auction (2 per year)	Guests	125	45 autos	May occur between 6:00 & 10:00 PM Saturday	Yes
	Extra Winery Staff	0	N/A		
	Caterers	4	1		
	Entertainers	2	1		
	Delivery vehicles	2	1		
	Florist	1	1		

Source: Reynolds Family Winery applicant

Appendix

REYNOLDS FAMILY WINERY EXPANSION
EXPECTED PROJECT TRAFFIC ACTIVITY DUE TO EXPANSION (PROJECT INCREMENT ONLY)

Gallons/Year Production: Existing 20,000 Proposed 40,000

1st Year of Expected Full Production After Expansion: 2020

	HARVEST CONDITIONS	NON-HARVEST CONDITIONS
A.	**New full-time admin employees** # on Weekdays __0__ # on Saturday __0__ # on Sunday __0__ Work hours: Weekday NA Saturday NA Sunday NA	**New full-time admin employees** # on Weekdays __0__ # on Saturday __0__ # on Sunday __0__ Work hours: Weekday NA Saturday NA Sunday NA
B.	**New full-time production employees** # on Weekdays __3__ # on Saturday __3__ # on Sunday __0__ Work hours: Weekday 6:00 AM to 6:00 PM Saturday 6:00 AM to 6:00 PM Sunday NA	**New full-time production employees** # on Weekdays __3__ # on Saturday __0__ # on Sunday __0__ Work hours: Weekday 9:00 AM to 5:30 PM Saturday NA Sunday NA
C.	**New part-time production employees** # on Weekdays __2__ # on Saturday __2__ # on Sunday __0__ Work hours: Weekday 6:00 AM to 6:00 PM Saturday 6:00 AM to 6:00 PM Sunday NA	**New part-time production employees** # on Weekdays __0__ # on Saturday __0__ # on Sunday __0__ Work hours: Weekday NA Saturday NA Sunday NA
D.	**New tours & tasting employees** # on Weekdays __1__ # on Saturday __1__ # on Sunday __1__ Work hours: Weekday 9:00 AM to 6:00 PM Saturday 9:00 AM to 6:00 PM Sunday 9:00 AM to 6:00 PM	**New tours & tasting employees** # on Weekdays __1__ # on Saturday __1__ # on Sunday __1__ Work hours: Weekday 9:00 AM to 6:00 PM Saturday 9:00 AM to 6:00 PM Sunday 9:00 AM to 6:00 PM

REYNOLDS FAMILY WINERY EXPANSION
EXPECTED PROJECT TRAFFIC ACTIVITY DUE TO EXPANSION (PROJECT INCREMENT ONLY)

	HARVEST CONDITIONS	NON-HARVEST CONDITIONS
E.	**New grape delivery trucks** # on Weekdays __1__ # on Saturday __1__ # on Sunday __1__ Delivery hours: Weekday 6:00 AM to 1:00 PM Saturday 6:00 AM to 1:00 PM Sunday 6:00 AM to 1:00 PM # days of grape delivery: 30	No grape delivery
F.	**New maximum tours/tasting visitors** # on Weekdays __30__ # on Saturday __30__ # on Sunday __30__ Tasting hours: Weekday 10:00 AM to 6:00 PM Saturday 10:00 AM to 6:00 PM Sunday 10:00 AM to 6:00 PM	**New maximum tours/tasting visitors** # on Weekdays __30__ # on Saturday __30__ # on Sunday __30__ Tasting hours: Weekday 10:00 AM to 6:00 PM Saturday 10:00 AM to 6:00 PM Sunday 10:00 AM to 6:00 PM
G.	**Other employees** # on Weekdays __0__ # on Saturday __0__ # on Sunday __0__ Work hours: Weekday NA Saturday NA Sunday NA	**Other employees** # on Weekdays __0__ # on Saturday __0__ # on Sunday __0__ Work hours: Weekday NA Saturday NA Sunday NA
H.	**Other trucks** # on Weekdays __0__ # on Saturday __0__ # on Sunday __0__ Delivery hours: Weekday NA Saturday NA Sunday NA Please detail	**Other trucks** # on Weekdays __0__ # on Saturday __0__ # on Sunday __0__ Delivery hours: Weekday NA Saturday NA Sunday NA Please detail

REYNOLDS FAMILY WINERY EXPANSION EXPECTED PROJECT TRAFFIC ACTIVITY DUE TO EXPANSION (PROJECT INCREMENT ONLY)

I. Project Grape Source & Trucks

Percent new grapes grown on site: 0%

Grapes grown off site – access route to winery entrance
From the north on Silverado Trail: 30%
From the south on Silverado Trail: 70%

Number of yearly grape haul truck trips to the site due to the project : 30

J. New Marketing Events

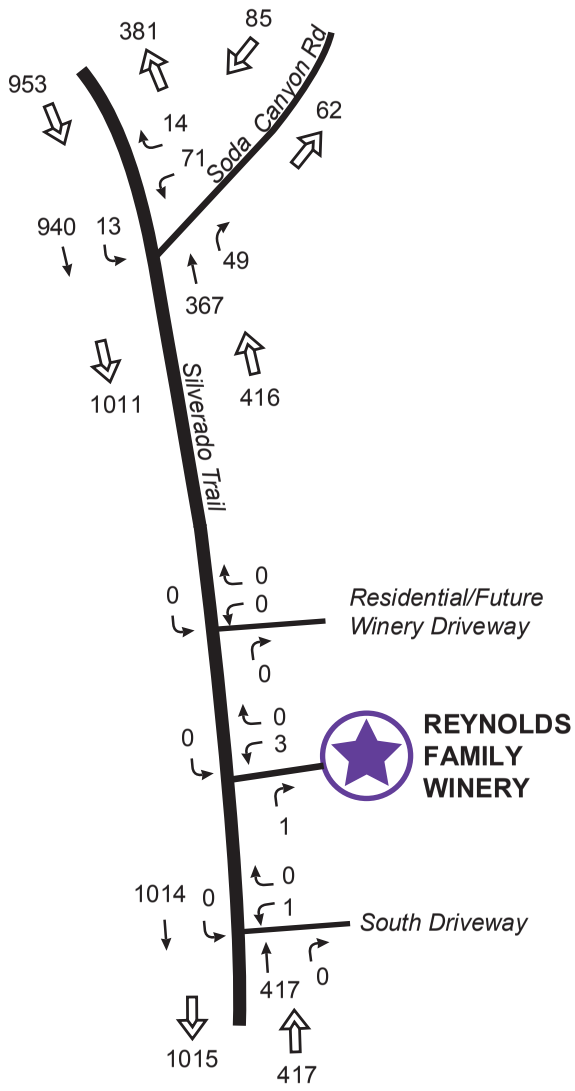
Food & wine pairing – # events/year: 48 (4/month maximum)
maximum # people/event: 2/month @ 24 guests &
2/month @ 40 guests
typical days: Saturday/Sunday
typical start time: between noon and 6:00 PM

Wine releases – # events/year: 2
people/event: 60
typical days: Saturday/Sunday
typical hours: 2:00 to 10:00 PM

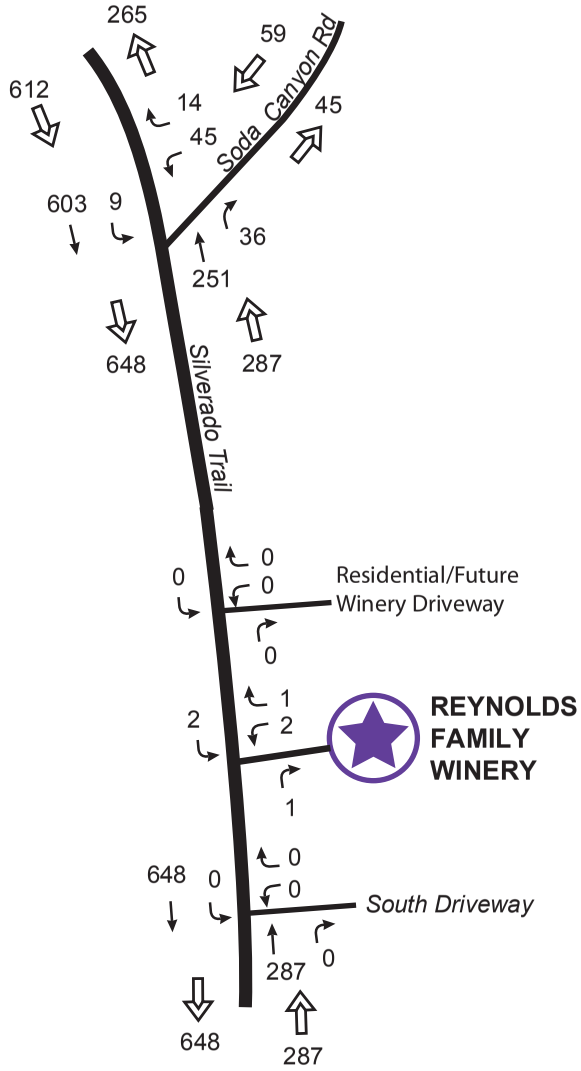
Wine auction – # events/year: 2
people/event: 125
typical days: Saturday
typical hours: 6:00 to 10:00 PM

K. Bottling

On-site bottling.



Friday January 23, 2015
4:30-5:30 PM



Saturday, January 24, 2015
4:00-5:00 PM

Not To Scale

NORTH

Reynolds Family Winery Traffic Study

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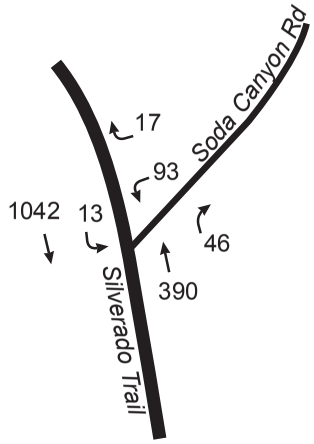
Figure A-1

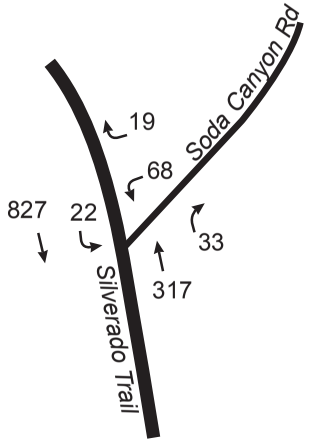
January 2015 Friday and Saturday PM Peak Hour Volumes

Not To Scale

NORTH



Friday
4:30-5:30 PM



Saturday
4:00-5:00 PM

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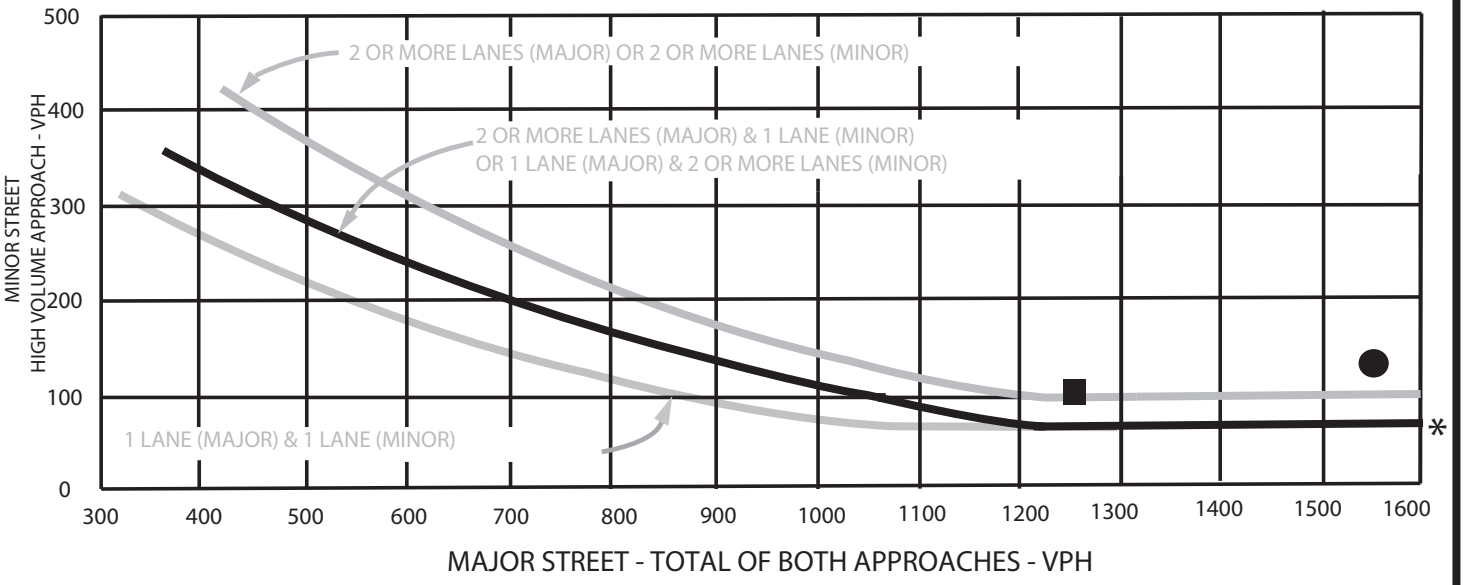
Figure A-2
May 2013 Friday and Saturday
PM Peak Hour Volumes

Silverado Trail/Soda Canyon Rd

PEAK HOUR VOLUME WARRANT #3
(Rural Area)



● = existing Harvest Friday PM Peak Hour
■ = existing Harvest Saturday Peak Hour

* NOTE

100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE

Source: Year 2010 Manual on Uniform Traffic Control Devices, Federal Highway Administration

Figure A-3

Existing Harvest (without Project) Friday and Saturday PM Peak Hour Rural Signal Warrant #3 Silverado Trail/Soda Canyon Road

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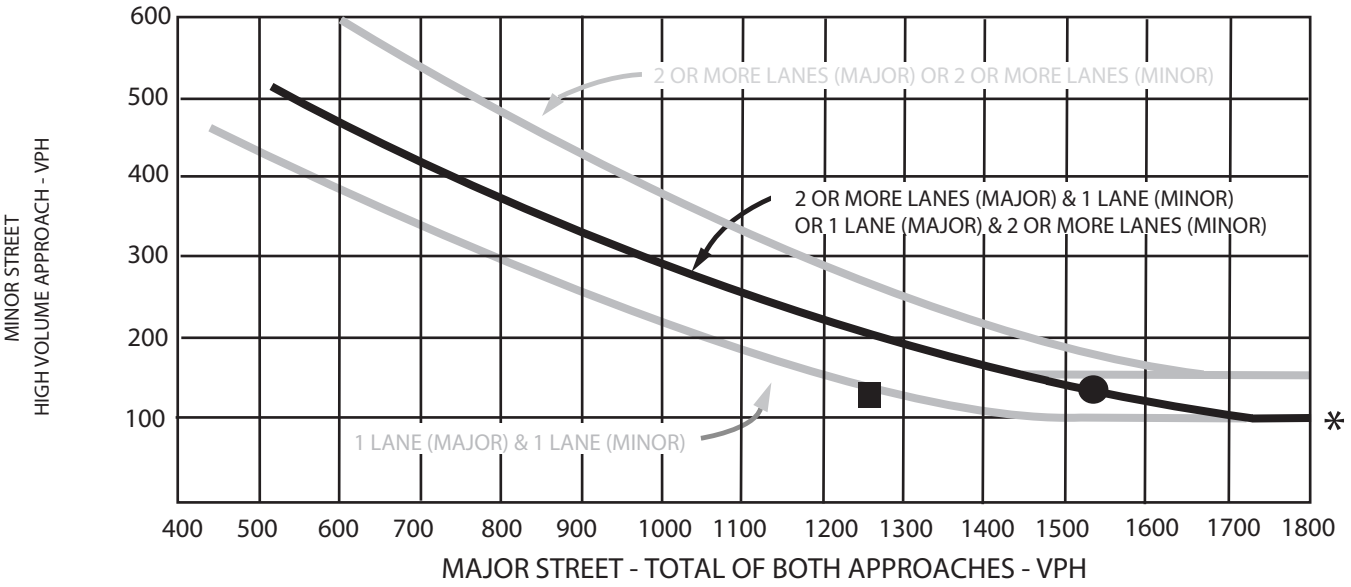
Silverado Trail/Soda Canyon Rd

PEAK HOUR VOLUME WARRANT #3
(Urban Area)



● = existing Harvest Friday PM Peak Hour
■ = existing Harvest Saturday Peak Hour

* NOTE

150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE

Source: Year 2010 Manual on Uniform Traffic Control Devices, Federal Highway Administration

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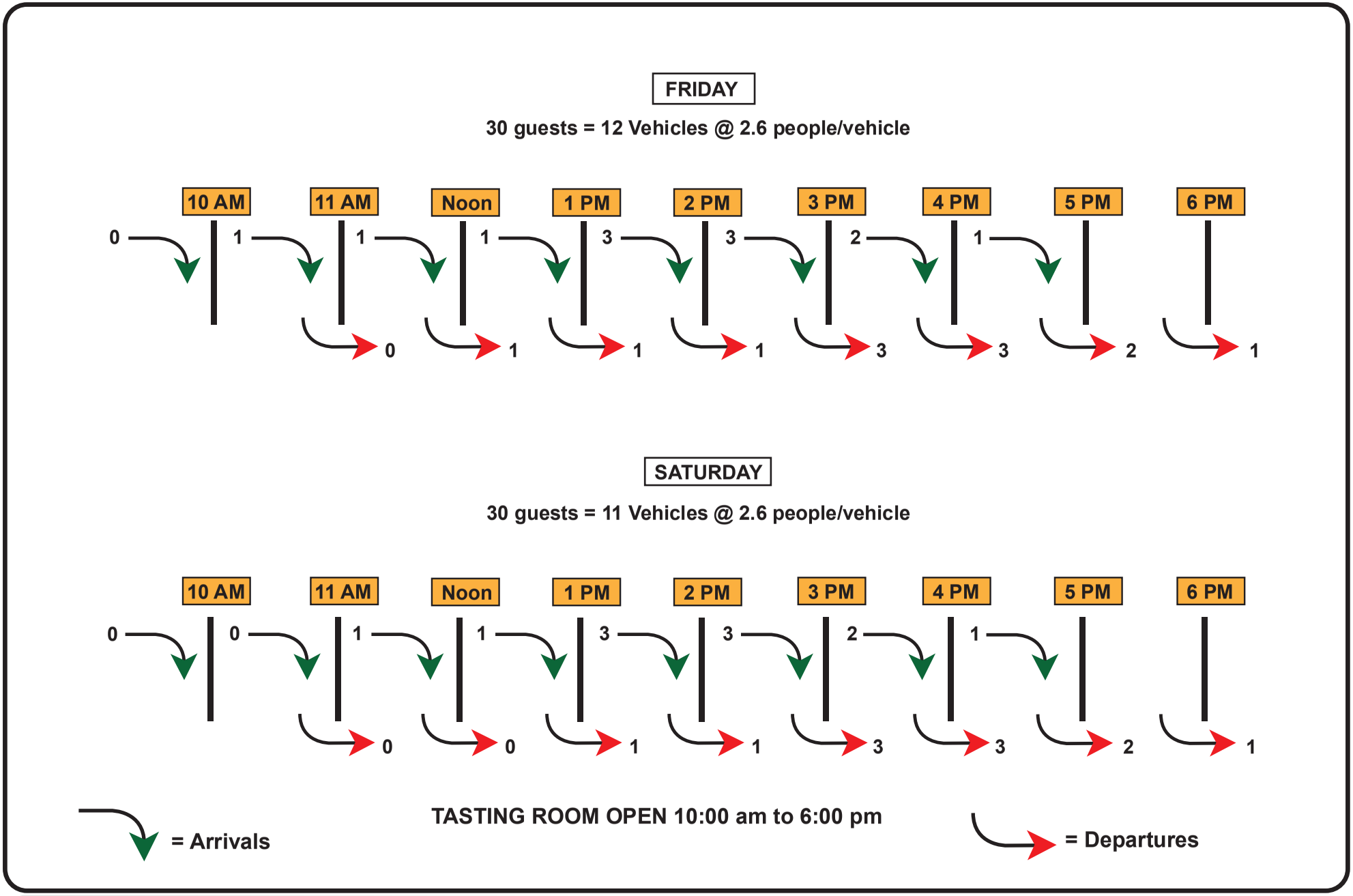
Figure A-4

Existing Harvest (without Project) Friday and Saturday PM Peak Hour Urban Signal Warrant #3
Silverado Trail/Soda Canyon Road



CRANE TRANSPORTATION GROUP

Figure A-5

Reynolds Family Winery

Distribution of New Guests by Appointment

From:	Mark Crane
To:	Balcher, Wyntress
Subject:	Sunday versus Saturday traffic counts
Date:	Thursday, October 22, 2015 4:47:30 PM

Wyntress:

Here are some recent traffic count results showing that peak hour volumes on Saturday are higher than those on Sunday along Silverado Trail and SR 29 in the mid section of Napa Valley.

SR 29 just south of Whitehall Lane

Sept 2014 2 way volumes

Saturday (3-4 PM) - 1964 vehicles
Sunday (2:30-3:30 PM) - 1602 vehicles

Silverado Trail just south of Sage Canyon Road (SR 128)

Saturday counts from May 2014 and Sunday counts from May 2015.

Saturday (2:15-3:15 PM) 1286 vehicles
Sunday (2:15-3:15 PM) 836 vehicles

SR 121 east of Silverado Trail

Saturday (2:15-3:15 PM) 244 vehicles
Sunday (2:15-3:15 PM) 182 vehicles

As you can see, in all locations, Saturday peak hour volumes are significantly higher than Sunday peak hour volumes. We can give you more results along SR 29 if needed.

Mark

--
Mark Crane, P.E.
Crane Transportation Group
2621 E. Windrim Court
Elk Grove, CA 95758
916.647.3406 phone
916.647.3408 fax

CRANE TRANSPORTATION GROUP
TRAFFIC AND TRANSPORTATION PLANNING AND ENGINEERING

December 3, 2015

Wyntress Balcher
Napa County Dept. of Planning,
Engineering & Environmental Services
1195 Third Street, Suite 210
Napa, CA 94559

RE: REYNOLDS WINERY EXPANSION TRAFFIC STUDY – QUESTIONS ABOUT SIGNIFICANCE OF CIRCULATION IMPACTS DUE TO ADDED EMPLOYEES

Dear Ms. Balcher:

At your request, Crane Transportation Group has evaluated the significance of any circulation impacts that would be due to the Reynolds Winery expansion adding 10 or fewer employees to their project description. Based upon our discussion, the number of new employees and their work schedules during harvest would be as follow.

7 production employees (full or part time)	7:00 AM-3:00 PM
3 administrative or hospitality employees	9:00 AM-6:00 PM

The peak traffic hours during harvest along Silverado Trail adjacent to the Reynolds Winery are 4:30-5:30 PM on a Friday and 4:00-5:00 PM on a Saturday. Since the proposed work schedules of the 10 employee are designed to avoid peak traffic times on the local circulation system, there would be no significant peak hour impacts due to their traffic.

Although the added employees would increase daily volumes on the Reynolds driveway, the applicant has already committed to provide a left turn lane on the southbound Silverado Trail approach to the project entrance, thereby mitigating any issues that the extra employee traffic would produce in relation to the need for a left turn lane.

Mark Crane

Mark Crane, P.E.

cc: Charlene Galline
John McDowell

From: Donna Oldford
To: Balcher, Wyntress; Gallina, Charlene; jmcdowell@countyofnapa.org
Subject: Fwd: Reynolds Family Winery P14-00334
Date: Wednesday, November 25, 2015 8:38:28 PM

See below response from Mark Crane, from his review of all correspondence received on Reynolds. The Crane analysis was done early and submitted with the application, as was the norm at that time. We did not have a scope of study meeting like we do now. I provided Mark Crane with all the letters received for Reynolds and this was what he submitted on Monday of this week.

Best,
Donna

Donna B. Oldford
Plans4Wine
(707)963-5832
DBOldford@aol.com

-----Original Message-----
From: Mark Crane <cranetransgroup@gmail.com>
To: Donna Oldford <dboldford@aol.com>
Sent: Mon, Nov 23, 2015 11:47 am
Subject: Re: Reynolds Family Winery P14-00334

Donna:

I have reviewed the Coombs & Dunlap letter as that was the only submission with any traffic related comments.

In response:

Issue 1 concerned the fact that the number of grape delivery trucks was not accurately stated and that there would be a slightly higher number. Given how few grape delivery trucks would actually be accessing the site with either the original projections or the Coombs & Dunlap projections, their impact would still not be significant.

Issue 2 concerned the impacts to the Allen property entrance about 150 feet south of the Reynolds entrance once a left turn lane is provided on the approach to the Reynolds driveway. Concerning sight lines to the north from the Allen driveway if southbound traffic is backed up waiting to turn left into the Reynolds driveway: If southbound vehicles are waiting to turn left into the Reynold's property it is because there is northbound traffic on Silverado Trail. This northbound traffic on Silverado would block movement into the Reynold's driveway AS WELL AS OUT OF THE ALLEN DRIVEWAY. Therefore, once the northbound traffic clears the southbound left turns into Reynolds could proceed and stop blocking the sightline to the north from the Allen driveway. Also, there are only going to be a projected 4 additional vehicles per hour turning left into the Reynold's driveway due to increased visitation.

In regards to southbound trucks turning left into the Allen driveway having more problems due to the left turn lane being provided on the approach to the Reynold's driveway, I don't understand the argument about the issue.

Regarding the suggestion that the left turn lane on the southbound approach to the Reynold's driveway be extended south to serve the Allen driveway, it would be beneficial to the Allen property as

well as to Reynolds as it would provide a median refuge area to assist drivers turning left from Reynolds. The only issue is the cost and the availability of right of way

Issue 3. The number of new employees is shown as 0 in the traffic study and 7 in other descriptions. I don't have any opinion about this as we were given no new employees to evaluate in the traffic study.

Issue 4. The commentor is not clear about the description of new trips associated with marketing events. I don't understand the confusion as the vehicle occupancy of visitors is listed in the study and it is directly from County guidelines.

Please call if you would like to discuss.

Mark

On Fri, Nov 20, 2015 at 5:42 PM, Donna Oldford <dboldford@aol.com> wrote:

> Do you see anything here worth commenting on?
>
> Donna B. Oldford
> Plans4Wine
> (707)963-5832
> DBOldford@aol.com
>
> -----Original Message-----
> From: Balcher, Wyntress <Wyntress.Balcher@countyofnapa.org>
> To: Donna Oldford <dboldford@aol.com>
> Sent: Fri, Nov 20, 2015 5:35 pm
> Subject: Reynolds Family Winery P14-00334
>
> Attached are the public comments
>
> Wyntress Balcher, Planner
> Planning, Building, Environmental Services
> 1195 Third Street Suite 210
> Napa, CA 94559
> D. 707. 299.1351
> F. 707. 299.4094
>
> CONFIDENTIALITY NOTICE: This email message is intended only for the use of the individual or entity to which it is addressed, and may contain information that is privileged, confidential, and/or exempt from disclosure under applicable law. If you are not the intended recipient of the message, please contact the sender immediately and delete this message and any attachments. Thank you.

--
Mark Crane, P.E.
Crane Transportation Group
2621 E. Windrim Court
Elk Grove, CA 95758
916.647.3406 phone
916.647.3408 fax

From: Marshall, Rick
To: Balcher, Wyntress
Subject: Reynolds - letter from Evelyn Allen
Date: Tuesday, November 24, 2015 2:44:13 PM

I have reviewed the letter from Daniel Hardy, on behalf of his client Evelyn Allen (neighbor south of the Reynolds site). The letter should be provided to the applicants and their team of professionals for response, since much of the letter indicates a need to clarify exactly what is proposed by the applicants (for example, the details of grape deliveries and numbers of employees).

With regard to the operations of a left-turn lane to be installed with the subject project:

1. I am not aware of any situation in which the provision of a left-turn lane for access to development on one property has resulted in any adverse impact to an adjacent property, such as is envisioned in this letter. The volume of turning traffic is not high enough that vehicles will be "stacking up" for such a long time that it will result in unreasonable delay for this or any other neighboring property.
2. The taper area of the left-turn lane will be striped in a way which permits turns to be legally made into any driveways in the vicinity, including for the Allen property.

Left-turn lane improvements are routinely required of wineries and other developments on Silverado Trail, and roads throughout Napa County, under the provisions of the Road & Street Standards. However, in each case they are required to serve the property being developed, and in a few rare instances, a property directly across from the development site. It is not reasonably related to a project's impacts to require it to improve access conditions for a neighboring property. If this neighbor would like to work together with the applicants to extend the improvements as a cooperative project, we would be happy to work with them to facilitate that.

Please let me know if you have questions or need additional information.

Rick Marshall, P.E., P.L.S.
Deputy Director of Public Works
Road Commissioner & County Surveyor
Napa County Public Works
(707) 259-8381
Rick.Marshall@countyofnapa.org

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