Traffic Impact Study for the B Cellars Use Permit Modification

Prepared for the County of Napa

Submitted by
W-Trans

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Executive Summary

The proposed project would modify the existing B Cellars use permit to allow for increased visitation and employment and a revised marketing program that would consist of smaller, more intimate, events that would occur more frequently. The proposed project is expected to generate an average of 47 new daily vehicle trips, including 5 trips during the weekday evening peak hour and 7 trips during the weekend midday peak hour; these trips represent the increase in traffic above current levels.

In October 2016, W-Trans prepared the *Left Turn Lane Warrant Analysis for the B Cellars Project*, which determined that a left-turn lane would not be warranted on Oakville Cross Road at the project driveway. This finding was accepted by the County in a memorandum from Mr. Rick Marshall to PBES Staff in January 2017; however the memo also identified that a larger traffic study was needed to address potential impacts at the intersections of Oakville Cross Road with SR 29 (St. Helena Highway) and Silverado Trail under Existing, Existing plus Approved, and Future conditions.

Analysis indicates that the study intersection at Silverado Trail/Oakville Cross Road is currently operating acceptably at LOS D or better during both peak hours. Upon the addition of project-related traffic to the Existing volumes, the study intersection would continue operating at the same levels of service during both peak hours and the project's impact would be considered less-than-significant under County standards. SR 29/Oakville Cross Road-Walnut Lane is currently operating unacceptably at LOS F on both stop-controlled approaches during one or both peak periods. The increase in volume on the affected westbound approach is less than 10 percent during both peak hours, resulting in a less-than-significant impact.

Under Baseline Conditions, which includes traffic associated the approved Use Permit Modification to Opus One Winery and the approved new Tench Winery, both study intersections would continue operating at the same levels of service during both peak hours. Upon the addition of project-related traffic to Baseline volumes, the project's impact would be less-than-significant as Silverado Trail/Oakville Cross Road would continue to operate acceptably and the project would increase volumes by less than 10 percent at SR 29/Oakville Cross Road-Walnut Lane.

Under the anticipated Future volumes, which are substantially higher than Existing volumes, SR 29/Oakville Cross Road-Walnut Lane would deteriorate to LOS F during both peak hours; Silverado Trail/Oakville Cross Road would deteriorate to LOS F during the weekday p.m. peak hour and LOS E during the weekend midday peak hour. The study intersections would continue operating at the same levels of service upon the addition of project-related traffic, and the project would be responsible for less than one percent of the anticipated growth at each intersection; therefore, the project's impact would be considered less-than-significant under County standards.

Potential impacts associated with the revised marketing program were also evaluated. The winery is currently permitted for two 150-person events, two 100-person events, and 12, 30-person events. Under the proposed marketing plan the largest event would be one 100-person event. The marketing plan would consist of smaller events that occur more often, including nine 75-person events, 26 40-person events, and 35 events for 12 persons. Therefore, the proposed project would result in a net decrease in trips associated with the largest event and the average number of guests per event would be reduced from 54 to 31.

Pedestrian, bicycle, and transit facilities are adequate to serve the project site given the site location and anticipated demand. Further, the applicant already has a car pool/bicycle program in place that offers cash incentives to those employees who participate in an alternative form of transportation to work.

On-site circulation would remain unchanged by the proposed project and would be expected to continue operating acceptably. Sight distances along Oakville Cross Road at the project driveway are adequate for the *prima facie* speed limit of 55-mph.

Introduction

This report presents an analysis of the potential traffic impacts that would be associated with proposed modification of the Use Permit for B Cellars, which is located at 703 Oakville Cross Road in the County of Napa. The traffic study was completed in accordance with the criteria established by the County of Napa and the scope was developed based on direction from County staff as contained in a memorandum from Mr. Rick Marshall dated January 24, 2017. Approved projects in the Baseline Conditions analysis were included as requested by County staff.

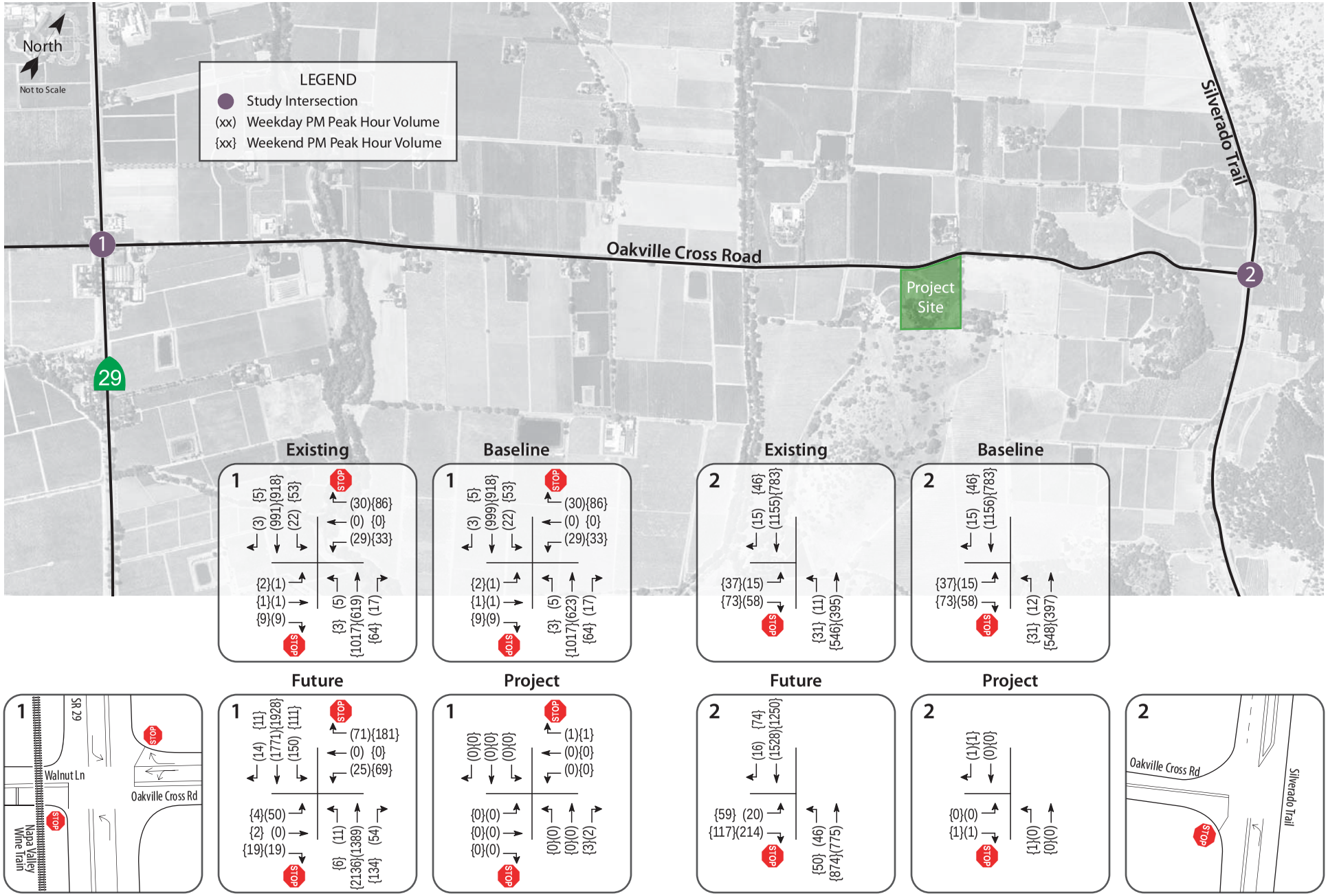
Prelude

The purpose of a traffic impact study is to provide Napa County staff and policy makers with data that they can use to make an informed decision regarding the potential traffic impacts of a proposed project, and any associated improvements that would be required to mitigate these impacts to a level of insignificance as defined by the Napa's County General Plan or other policies. Vehicular traffic impacts are typically evaluated by determining the number of new trips that the proposed use would be expected to generate, distributing these trips to the surrounding street system based on existing travel patterns or anticipated travel patterns specific to the proposed project, then analyzing the impact the new traffic would be expected to have on critical intersections or roadway segments.

Project Profile

The proposed project would update the current B Cellars Use Permit, approved in March 2013, to allow for an average of 64 visitors per day, with maximum weekly visitation not to exceed 450. Additionally, the proposed permit would allow for an increase in the number of employees from (eight) full-time and five (5) part-time staff to twelve (12) full-time and seven-and-one-half (7.5) part-time employees on a typical weekday; two (2) full-time and thirteen-and-one-half (13.5) part-time staff on a typical Saturday and during a crush Saturday. The number of marketing events per year would be increased from 16 to 71; however, the largest event would be decreased from 150 to 100 guests. In total, the proposed marketing plan would increase the number of annual guests by 1,375.

No change to annual production is proposed as part of this modification. The project site is located at 703 Oakville Cross Road, as shown in Figure 1.



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Traffic Impact Study for the B Cellars Project

Figure 1 – Study Area, Lane Configurations, and Traffic Volumes

Transportation Setting

Operational Analysis

Study Area and Periods

The study area includes the project frontage on Oakville Cross Road as well as its intersections with SR 29 and Silverado Trail. Operating conditions during the weekday p.m. and weekend midday peak periods were evaluated as these time periods reflect the highest traffic volumes area wide and for the proposed project. The evening peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion of the day during the homeward bound commute, while the weekend midday peak occurs between 2:00 and 4:00 p.m. on Saturday afternoon.

Study Intersections

SR 29 and Silverado Trail run on somewhat of a diagonal alignment from northwest to southeast through the study area. Because of this skewed alignment, for purposes of this evaluation SR 29 and Silverado Trail were assumed to run north-south and Oakville Cross Road east-west.

SR 29/Oakville Cross Road-Walnut Lane is an unsignalized intersection stop-controlled on the westbound Oakville Cross Road and eastbound Walnut Lane approaches. Left-turn lanes are provided on the northbound and southbound SR 29 approaches and the Oakville Cross Road approach has a dedicated right-turn lane.

Silverado Trail/Oakville Cross Road is an unsignalized tee-intersection stop-controlled on the eastbound Oakville Cross Road approach. There is a left-turn lane provided on the northbound approach and the eastbound approach has a flared right-turn lane with storage space to accommodate approximately one vehicle.

The locations of the study intersections and the existing lane configurations and controls are shown in Figure 1.

Study Roadway

Oakville Cross Road is a two-lane roadway that runs northeast-southwest and connects SR 29 to Silverado Trail. The roadway is approximately 32 feet wide adjacent to the site and includes two 11-foot travel lanes and two five-foot shoulders. The roadway has a posted speed limit of 25 miles per hour (mph) near the bridge over the Napa River; however, it is unposted on the rest of the roadway so the *prima facie* speed limit of 55 mph applies. Based on traffic counts collected in July 2016, the ADT adjacent to the site is approximately 1,500 on weekdays and 1,100 on weekend days.

Alternative Modes

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. As might be expected given the rural location of the project site, a connected pedestrian network is lacking, though such facilities would not be appropriate in this setting.

Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2012, classifies bikeways into three categories:

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.

Oakville Cross Road is classified as an existing Class III bike route and provides adequate access for bicyclists in the project area. Additionally, the planned improvements outlined in the *Napa County Bicycle Plan* would enhance access for bicyclists in the project area. Table 1 summarizes the existing and planned bicycle facilities in the project vicinity.

Table 1 – Bicycle Facility Summary

Status Facility	Class	Length (miles)	Begin Point	End Point
Existing				
Silverado Trail	II	10.5	Yountville Cross Road	Deer Park Road
Planned				
Vine Trail	I	7.7	Madison Street	Chaix Lane
SR 29	II	7.6	Madison Street	Chaix Lane
Oakville Cross Rd	II	2.5	SR 29	Silverado Trail

Source: *Napa County Bicycle Plan*, County of Napa, 2012

Transit Facilities

Transit Services throughout Napa County are provided by Napa Valley Transit (VINE). There are no VINE stops within one-quarter of a mile of the project site.

Capacity Analysis

Intersection Level of Service Methodology

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersections were analyzed using the two-way stop-controlled unsignalized methodology published in the *Highway Capacity Manual* (HCM), Transportation Research Board, 2010. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle. The "Two-Way Stop-Controlled" intersection capacity methodology determines a level of service for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection.

The ranges of delay associated with the various levels of service are indicated in Table 2.

Table 2 – Two-Way Stop-Controlled Intersection Level of Service Criteria	
LOS A	Delay of 0 to 10 seconds. Gaps in traffic are readily available for drivers exiting the minor street.
LOS B	Delay of 10 to 15 seconds. Gaps in traffic are somewhat less readily available than with LOS A, but no queuing occurs on the minor street.
LOS C	Delay of 15 to 25 seconds. Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street.
LOS D	Delay of 25 to 35 seconds. There are fewer acceptable gaps in traffic, and drivers may enter a queue of one or two vehicles on the side street.
LOS E	Delay of 35 to 50 seconds. Few acceptable gaps in traffic are available, and longer queues may form on the side street.
LOS F	Delay of more than 50 seconds. Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues.

Reference: *Highway Capacity Manual*, Transportation Research Board, 2010

Traffic Operation Standards

Napa County

In the Circulation Element of the *Napa County General Plan*, the following policies have been adopted:

- **Policy CIR-13** – *The County seeks to provide a roadway system that maintains current roadway capacities in most locations and is both safe and efficient in terms of providing local access.*
- **Policy CIR-16** – *The County shall seek to maintain an arterial Level of Service D or better on all county roadways, except where maintaining this desired level of service would require the installation of more travel lanes than shown on the Circulation Map.* SR 29 is shown as a 2-lane Rural Throughway on the Circulation Map (Figure CIR-1).
- **Policy CIR-18** – *Traffic safety and adequate local access will be priorities on roadway segments and at signalized intersections where Level of Service D or better cannot be achieved. Therefore, proposed capital*

improvements and development projects in these areas shall be evaluated to determine their effect on safety or local access. Projects that improve safety, improve local access, or alleviate congestion will be prioritized.

In an effort to provide a more quantitative method of adhering to the above standards, the County refers to G*uidelines for Interpretation of General Plan Circulation Policies on Significance Criteria* (Fehr & Peers, 2015). The document establishes thresholds of significance for road segments and different intersection control types. The memorandum states a project would cause a significant impact requiring mitigation if, for existing conditions:

- *A signalized intersection operates at LOS A, B, C, or D during the selected peak hours without Project trips, and the LOS deteriorates to LOS E or F with the addition of Project trips; or*

- *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.*
  - *Project Contribution % = Project Trips ÷ Existing Volumes*

- *An unsignalized intersection operates at LOS A, B, C, or D during the selected peak hours without Project trips, and the LOS deteriorates to LOS E or F with the addition of Project traffic; the peak hour traffic signal warrant criteria should also be evaluated and presented for informational purposes; or*

- *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 ten percent or more of the traffic on a side-street approach for side-street stop-controlled intersections; the peak hour traffic signal criteria should also be evaluated and presented for informational purposes. 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*
  - *<u>All-Way Stop-Controlled Intersections</u> – 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*
  - *<u>Side-Street Stop-Controlled Intersections</u> – 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*

- *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*

- *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. The following equation should be used if the arterial segment operates at LOS E or F without the Project:*
  - *Project Contribution % = Project Trips ÷ Existing Volumes*

Further, a project would cause a significant impact requiring mitigation if, for cumulative (future) conditions, the Project's volume is equal to, or greater than five percent of the difference between cumulative (future) and existing volumes.

- *<u>Cumulative Conditions</u>* – A *Project's contribution to a cumulative condition would be calculated as the Project's percentage contribution to the total growth in traffic. This calculation applies to arterials, signalized intersections, and unsignalized intersections.*
  - *Project Contribution % = Project Trips ÷ (Cumulative Volumes – Existing Volumes)*

Caltrans

Although the study intersection of SR 29/Oakville Cross Road-Walnut Lane is within Napa County limits, Caltrans has jurisdiction over any intersection that includes a State Route. In the *Guide for the Preparation of Traffic Impact Studies*, Caltrans indicates that they endeavor to maintain operation at the transition from LOS C to LOS D. Based on discussions with Caltrans staff, it is understood that the standard is to be applied to the overall average intersection delay, and *not* that associated with any single movement or approach. Under this approach, if one movement experiences very high delay and also has moderate to high traffic volumes, the overall delay and level of service should reflect the critical nature of this condition. However, per direction from County staff, the more stringent County standards were applied to all study intersections, including those on the State Highway system.

Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the weekday p.m. and weekend midday peak periods. This condition includes traffic associated with current Use Permit. Volume data was collected in May 2017 during clear weather conditions and typical winery operations. Peak hour factors (PHF's) were calculated based on the counts obtained and used in the levels of service calculations.

Intersection Levels of Service

Under Existing conditions, the study intersection on Silverado Trail is operating acceptably at LOS A overall and LOS D or better during both peak hours; however, at SR 29/Oakville Cross Road-Walnut Lane the Walnut Lane approach is operating unacceptably at LOS F during the weekend midday peak hour and the Oakville Cross Road approach is operating at LOS F during both peak hours. The existing traffic volumes are shown in Figure 1. A summary of the intersection level of service calculations is contained in Table 3, and copies of the Level of Service calculations for all evaluated scenarios are provided in Appendix A.

Table 3 – Existing Peak Hour Intersection Levels of Service

	Study Intersection	**Weekday PM Peak**		**Weekend MD Peak**	
	Approach	**Delay**	**LOS**	**Delay**	**LOS**
1.	SR 29/Oakville Cross Rd-Walnut Ln	2.6	A	7.1	A
	Eastbound (Walnut Ln) Approach	*26.5*	*D*	*56.0*	*F*
	Westbound (Oakville-Cross Rd) Approach	*66.0*	*F*	*118.9*	*F*
2.	Silverado Trail/Oakville Cross Rd	1.5	A	1.9	A
	Eastbound (Oakville-Cross Rd) Approach	*30.9*	*D*	*23.6*	*C*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Delay for side-street stop-controlled movements shown in *italics*

Baseline Conditions

Baseline operating conditions were assessed to reflect the addition of traffic associated with known winery projects that are approved in the study area and would potentially be operational within the next two to three years. County Staff identified the following projects to be included in this scenario.

- **Opus One Winery** – A major Use Permit Modification that would increase production, employee levels, and visitation at the existing Opus One Winery located at 7900 St Helena Highway (SR 29). Construction on an approximately 50,000 square foot building to house production facilities and office space is currently

underway. As contained in the *Focused Traffic Analysis for the Proposed Opus One Use Modification Project*, prepared by Omni Means, the expansion is expected to generate 61 new trips per day, including 23 trips during the weekday evening peak hour and no new trips during the weekend midday peak hour. The same trip distribution assumptions used in the traffic study for the project were used in this analysis, including 50 percent to/from both the north and south on SR 29.

- **Tench Winery** – An approved winery, currently under construction, located at 7631 Silverado Trail southwest of the Silverado Trail/Oakville Cross Road intersection. The winery is approved to produce 42,840 gallons per year, employ six full-time and one part-time employees, and have a maximum of 14 visitors per day. Based on the *Focused Traffic Analysis for Tench Winery Project*, prepared by Transpedia Consulting Engineers, the winery is expected to generate ten trips during the weekday evening peak hour and nine trips during the weekend midday peak hour. Again, the same trip distribution assumption used in the traffic study for the project were used in this analysis, including 42 percent via Silverado Trail north of Oakville Cross Road, 52 percent via Silverado Trail south of the project driveway, and six percent via Oakville Cross Road west of Silverado Trail.

Intersection Levels of Service

The anticipated traffic associated with these approved projects was added to the volumes analyzed in the Existing Conditions scenario in order to determine Baseline volumes. Under these conditions, the study intersections are projected to continue operating at the same levels of service as Existing Conditions, with Silverado Trail/Oakville Cross Road operating acceptably and SR 29/Oakville Cross Road operating unacceptably. These results are summarized in Table 4 and Baseline volumes are shown in Figure 1.

Table 4 – Baseline Peak Hour Intersection Levels of Service

	Study Intersection	**Weekday PM Peak**		**Weekend MD Peak**	
	Approach	**Delay**	**LOS**	**Delay**	**LOS**
1.	SR 29/Oakville Cross Rd-Walnut Ln	2.6	A	7.1	A
	Eastbound (Walnut Ln) Approach	*26.9*	*D*	*56.0*	*F*
	Westbound (Oakville-Cross Rd) Approach	*68.1*	*F*	*118.9*	*F*
2.	Silverado Trail/Oakville Cross Rd	1.5	A	1.9	A
	Eastbound (Oakville-Cross Rd) Approach	*31.0*	*D*	*23.7*	*C*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Delay for side-street stop-controlled movements shown in *italics*

Future Conditions

Segment volumes for the horizon year 2030 were obtained from the Napa-Solano Travel Demand Model, maintained by the Solano Transportation Authority (STA), and translated to weekday p.m. peak hour turning movement volumes at the study intersections using the "Furness" method. The Furness method is an iterative process that employs existing turn movement data, base-year link volumes and future link volumes to project likely future turning movement volumes at intersections.

Since the model does not contain data for weekend days, Future weekend midday volumes were developed by calculating the growth factor between weekday p.m. peak hour existing volumes and projected future volumes for each study intersection; the growth anticipated during the weekday evening peak hour was assumed to be representative of the growth anticipated during the weekend midday peak hour. It is noted that the model is projecting substantial increases in traffic volumes in the area resulting in a growth factor of 2.1 for SR 29/Oakville Cross Road-Walnut Lane and 1.6 for Silverado Trail/Oakville Cross Road.

As might be expected given the large increase projected by the model, the study intersections are expected to deteriorate to LOS F operation during both peak hours, with the exception of Silverado Trail/Oakville Cross Road, which would be expected to operate at LOS E during the weekend midday peak hour. It is noted that the delays calculated at SR 29/Oakville Cross Road are well above 120 seconds, and indicate that the theoretical results are unreliable. Future volumes are shown in Figure 1 and operating conditions are summarized in Table 5.

Table 5 – Future Peak Hour Intersection Levels of Service

	Study Intersection	Weekday PM Peak		Weekend MD Peak	
	Approach	**Delay**	**LOS**	**Delay**	**LOS**
1.	SR 29/Oakville Cross Rd-Walnut Ln	**	**F**	**	**F**
	Eastbound (Walnut Ln) Approach	**	***F***	**	***F***
	Westbound (Oakville-Cross Rd) Approach	**	***F***	**	***F***
2.	Silverado Trail/Oakville Cross Rd	**52.0**	**F**	**39.4**	**E**
	Eastbound (Oakville-Cross Rd) Approach	**	***F***	**	***F***

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Delay for side-street stop-controlled movements shown in *italics;* ** = delay greater than 120 seconds; **Bold** text = deficient operation

Project Description

Current Approved Permit

The current Use Permit for B Cellars was approved in March 2013 and authorized the following activities:

- Construction of new winery buildings including caves;
- An increase in annual production from 10,000 to 45,000 gallons annually;
- An increase in daily visitors from 10 guests per day to an average of 25 during the week and 35 during the weekend with a maximum of 60 guests on any one day, not to exceed 250 guests per week;
- An increase in the previously approved marketing plan; and
- An increase in the number of employees from one full-time and five part-time staff to eight full-time and five part-time staff; and
- A marketing program consisting of 12 events per year for 30 guests, two for 100 guests, and two for 150 guests for a maximum of up to 860 persons annually.

Proposed Modification

The proposed project would include the following activities that affect daily trip generation:

- An increase in average weekday visitation from 25 to 64;
- An increase in average weekend visitation from 35 to 64;
- An increase in maximum weekly visitation from 250 to 450;
- An increase in the number of employees from eight full-time and five part-time staff to twelve full-time and seven-and-one-half part-time employees on a typical weekday;
- An increase in the number of employees from seven full-time and two part-time to two full-time and thirteen-and-one-half part-time staff on a typical Saturday and during a crush Saturday; and
- A marketing program consisting of 35 events per year for 12 guests, 26 for 40 guests, nine for 75 guests, and one for 100 guests for a maximum of up to 2,235 persons annually.

No change to annual production is proposed as part of this modification.

Trip Generation

Typical Operation

The County of Napa's Winery Traffic Information/Trip Generation Sheet was used to determine the anticipated trip generation for the permitted and proposed conditions. The form estimates the number of daily and peak hour trips for weekdays and Saturdays based on the number of full- and part-time employees, average daily visitors, and production. While the form also indicates estimates of the percent of daily traffic that occurs during peak hours, because the winery is already in operation, it was determined that actual, site-specific data would provide a more accurate assessment of the project's potential impacts.

To determine the peak hour volume as a percent of daily traffic, counts were performed for one week in October 2017 during the peak of harvest. The Napa County trip generation form assumes 38 percent of weekday trips occur during the weekday p.m. peak hour and 57 percent of Saturday trips occur during the midday peak hour; the data obtained at B Cellars shows much lower ratios.

Because B Cellars schedules tastings so that few end during the weekday p.m. peak period, their tasting trips are generally concentrated during midday. Further, existing transportation demand management policies result in few employees arriving or departing during the peak periods. Therefore, during the weekday p.m. peak hour, and based on actual site data, it was assumed there would be five new trips, or ten percent of the increase in the daily volume. The inbound versus outbound ratio for the weekday p.m. peak hour was also reviewed based on the actual driveway counts, and it was determined that the site experiences a 50/50 split between inbound and outbound trips during the weekday p.m. peak hour.

Similarly, weekend peak hour trips were determined to represent 15 percent of the daily volume, translating to 7 new trips associated with the expansion of use at the site. The inbound/outbound split was determined to be about 80 percent inbound and 20 percent outbound. Copies of the counts and a summary to determine the ratios applied as well as the existing transportation demand management plan are provided in Appendix B.

Based on application of these assumptions, with the modification, all of the activities allowed under the Use Permit would be expected to generate an average of 101 trips during a typical weekday, with 10 trips occurring during the evening peak hour; 15 trips would be expected to be generated during the weekend midday peak hour. As shown in Table 6, this would result in a net increase of 47 trips per weekday, 5 trips during the weekday p.m. peak hour, and 7 trips during the weekend midday peak hour; these trips represent the increase in traffic associated with the proposed use permit compared to permitted conditions. The Winery Traffic Information/Trip Generation Sheets for both permitted and proposed conditions are contained in Appendix C.

Table 6 – Trip Generation Summary

Condition	Weekday	Weekday PM Peak Hour			Weekend MD Peak Hour		
	Trips	Trips	In	Out	Trips	In	Out
Permitted	54	5	2	3	8	7	1
Proposed	101	10	5	5	15	12	3
Net New Trips	**47**	**5**	**3**	**2**	**7**	**5**	**2**

Marketing Events

Potential traffic impacts associated with the proposed marketing plan were evaluated as compared to the approved marketing plan. The winery is currently permitted for two 150-person events and the largest event proposed under the new marketing plan would be a single 100-person event; therefore, the proposed project would result in a net decrease in trips associated with the largest event. Further, the winery is currently permitted

for four events with 100 or more guests and the new marketing plan would only include one event with 100 guests.

The proposed marketing plan would focus on smaller, more intimate, events as the average number of guests per event would be reduced from 54 to 31. Since events would occur more frequently under the new marketing program, consideration was given to the potential for the proposed plan to increase the average daily trip generation of the project site. In total, the proposed plan would result in 1,325 more guests annually or an additional 510 trips compared to the existing program. Over the course of the year, this would translate to an average of approximately 1.4 additional trips per day. The proposed marketing program would therefore have minimal impact on the average daily trip generation of the project site and can reasonably be characterized as less-than-significant.

Trip Distribution

The pattern used to allocate new project trips to the street network was determined by reviewing existing turning movements at the study intersections as well as anticipated travel patterns for patrons of the project. The applied distribution assumptions and resulting net new trips are shown in Table 7.

Table 7 – Trip Distribution Assumptions

Route	Percent	Weekday Trips	Weekday PM Trips	Weekend MD Trips
SR 29 (North)	25%	12	1	1*
SR 29 (South)	40%	19	2	3
Silverado Trail (North)	10%	4	1	1
Silverado Trail (South)	25%	12	1	2*
TOTAL	**100%**	**47**	**5**	**7**

* Distributed volumes adjusted to whole numbers that add to the total after rounding result in different volumes for the same percentage.

Intersection Operation

Existing plus Project Conditions

Upon the addition of project-related traffic to Existing volumes, the study intersection at Silverado Trail/Oakville Cross Road would be expected to continue operating acceptably, while the minor street approaches at SR 29/Oakville Cross Rd that were operating at LOS F under Existing conditions would continue to do so with the addition of project-related traffic. These results are summarized in Table 8 and Project traffic volumes are shown in Figure 1.

Table 8 – Existing and Existing plus Project Peak Hour Intersection Levels of Service								
Study Intersection ***Approach***	**Existing Conditions**				**Existing plus Project**			
	Weekday PM Peak		**Weekend MD Peak**		**Weekday PM Peak**		**Weekend MD Peak**	
	Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
1. SR 29/Oakville Cross Rd-Walnut Ln	2.6	A	7.1	A	2.6	A	7.1	A
EB (Walnut Ln) Approach	*26.5*	*D*	*56.0*	*F*	*26.6*	*D*	*56.4*	*F*
WB (Oakville-Cross Rd) Approach	*66.0*	*F*	*118.9*	*F*	*65.3*	*F*	*118.7*	*F*
2. Silverado Trail/Oakville Cross Rd	1.5	A	1.9	A	1.6	A	1.9	A
EB (Oakville-Cross Rd) Approach	*30.9*	*D*	*23.6*	*C*	*34.3*	*D*	*23.6*	*C*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Delay for side-street stop-controlled movements shown in *italics*; EB = Eastbound; WB = Westbound

Findings – Operation at Silverado Trail/Oakville Cross Road is currently and remains at LOS D or better, which is acceptable under the County's standards; the impact is therefore *less-than-significant.*

There are no changes to the service level at SR 29/Oakville Cross Road, but the westbound Oakville approach is at LOS F for both peak periods and the eastbound approach is at LOS F during the p.m. peak period. Although *average* delay on the westbound approach would actually be expected to decrease slightly upon adding the one right turn that the project is expected to generate, under the criterion applied, for existing LOS F operation, the impact is significant if the project generates 10 percent or more of the traffic on that approach. The existing p.m. peak hour volume on westbound Oakville Cross Road is 59 trips, and the project contributes one trip, which is less than 10 percent of the total. This is therefore a *less-than-significant* impact.

Recommendation – To ensure that project-related traffic does not add to the critical left-turn movements on the westbound Oakville Cross Road approach to SR 29 and the eastbound approach to Silverado Trail it is recommended that a sign be installed at the exit directing drivers to turn right to go to Napa and left to go to St. Helena. Similarly, employees should be directed to travel in the direction that allows them easier access to the regional road system via a right turn rather than a more time-consuming left turn.

Baseline plus Project Conditions

With project-related traffic added to Baseline volumes, the study intersections would be expected to continue operating acceptably at LOS A overall. These results are summarized in Table 9.

Table 9 – Baseline and Baseline plus Project Peak Hour Intersection Levels of Service									
Study Intersection ***Approach***		**Baseline Conditions**				**Baseline plus Project**			
		Weekday PM Peak		**Weekend MD Peak**		**Weekday PM Peak**		**Weekend MD Peak**	
		Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
1.	SR 29/Oakville Cross Rd-Walnut Ln	2.6	A	7.1	A	2.6	A	7.1	A
	EB (Walnut Ln) Approach	*26.9*	*D*	*56.0*	*F*	*26.9*	*D*	*56.4*	*F*
	WB (Oakville-Cross Rd) Approach	*68.1*	*F*	*118.9*	*F*	*67.4*	*F*	*118.7*	*F*
2.	Silverado Trail/Oakville Cross Rd	1.5	A	1.9	A	1.6	A	1.9	A
	EB (Oakville-Cross Rd) Approach	*31.0*	*D*	*23.7*	*C*	*34.4*	*D*	*23.7*	*C*

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Delay for side-street stop-controlled movements shown in *italics*; EB = Eastbound; WB = Westbound

Finding – The project's impact would be considered *less-than-significant* at the study intersection of SR 29/Oakville Cross Road as there is no change in service level, and though the westbound approach is at LOS F during both peak periods the Baseline volumes on this approach are the same as those for existing conditions, so the one project trip is still less than 10 percent of the increase in volume. Under the Baseline Silverado Trail/Oakville Cross Road would be expected to continue operating acceptably at LOS D. The impact at this intersection is therefore also *less-than-significant*.

Future plus Project Conditions

Upon the addition of project-generated traffic to the anticipated Future volumes, the study intersections would continue operating at the same levels of service as without the project. The proposed use permit modification would be responsible for less than five percent of the anticipated growth at both intersections during both peak hours, indicating a less-than-significant impact. The Future plus Project operating conditions are summarized in Table 10.

Table 10 – Future and Future plus Project Peak Hour Intersection Levels of Service									
Study Intersection ***Approach***		**Future Conditions**				**Future plus Project**			
		Weekday PM Peak		**Weekend MD Peak**		**Weekday PM Peak**		**Weekend MD Peak**	
		Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
1.	SR 29/Oakville Cross Rd-Walnut Ln	**	**F**	**	**F**	**	**F**	**	**F**
	EB (Walnut Ln) Approach	**	***F***	**	***F***	**	***F***	**	***F***
	WB (Oakville-Cross Rd) Approach	**	***F***	**	***F***	**	***F***	**	***F***
2.	Silverado Trail/Oakville Cross Rd	**52.0**	**F**	**39.4**	**E**	**52.4**	**F**	**40.3**	**E**
	EB (Oakville-Cross Rd) Approach	**	***F***	**	***F***	**	***F***	**	***F***

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Delay for side-street stop-controlled movements shown in *italics*; EB = Eastbound; WB = Westbound; ** = delay greater than 120 seconds; **Bold** text = deficient operation

Finding –The intersection at SR 29/Oakville Cross Road is projected to operate at LOS F for both stop-controlled approaches and overall under Future plus Project volumes. The future volume on the westbound approach is 96 vehicles during the weekday p.m. peak hour (an increase of 37) and 250 during the weekend midday peak hour

(an increase of 131). The critical time period is the weekday p.m. peak hour, when the one trip contributed by the project comprises 2.7 percent of the increase. This is less than five percent and therefore *less-than-significant*.

The intersection at Silverado Trail/Oakville Cross Road is also expected to operate at LOS F on the side street and LOS E or F overall. The eastbound approach has future volumes of 234 and 176 for the weekday and weekend p.m. peak hours respectively. Compared to existing volumes, the approach is expected to experience an increase of 161 trips during the weekday p.m. peak hour and 66 trips during the weekend peak hour. With the project adding one trip during each of these time periods, or less than two percent of the increase in traffic volumes, this impact is *less-than-significant*.

Alternative Modes

Pedestrian Facilities

Given its rural location, lack of existing facilities, and the nature of the project site, project patrons are not expected to walk to the site.

Finding – The lack of pedestrian facilities serving the project site on Oakville Cross Road is consistent with the surrounding area and expected for the type of land use.

Bicycle Facilities

It is understood that B Cellars has an existing car pool/bicycle program that offers cash incentives to those employees who participate in an alternative form of transportation to work. The site currently provides six bicycle parking spaces, which are expected to be adequate for the proposed increase in employment and visitation. The existing shared use of Oakville Cross Road and Class II bike lanes on Silverado Trail, along with the planned projects outlined in the *Napa County Bicycle Plan*, would provide adequate access for bicyclists.

Finding – Bicycle facilities serving the project site are adequate and would improve upon completion of planned future improvements.

Transit

The winery has been operating acceptably with the lack of transit facilities; the proposed increase in employment and visitation would not be expected to generate new transit demand.

Finding – The lack of transit facilities serving the project site is adequate for the demand.

Access and Circulation

Site Access

Site access and circulation would remain unchanged by the proposed use permit modification. The site would continue to be accessed via the existing driveway on the south side of Oakville Cross Road.

Sight Distance

At private roads and driveways, a substantially clear line of sight should be maintained between the driver of a vehicle waiting at the crossroad and the driver of an approaching vehicle. Adequate time must be provided for the waiting vehicle to either cross, turn left, or turn right, without requiring the through traffic to radically alter their speed.

Sight distances along Oakville Cross Road at the project driveway were evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distances for minor street approaches that are driveways are based on stopping sight distance, with approach travel speeds used as the basis for determining the recommended sight distance. Sight distance should be measured from a 3.5-foot height at the location of the driver on the minor road to a 4.25-foot object height in the center of the approaching lane of the major road. Set-back for the driver on the crossroad shall be a minimum of 15 feet, measured from the edge of the traveled way.

For the *prima facie* 55-mph speed limit on Oakville Cross Road near the driveway, the recommended stopping sight distance is 500 feet. Based on a review of field conditions, sight distance at the driveway extends approximately 600 feet to the west and 500 feet to the east to the horizontal curve near the east end of the property.

Finding – Adequate site distance is available at the project driveway to accommodate all turns.

Access Analysis

Left-Turn Lane Warrants

The County of Napa has a published policy that provides guidance on when a turn lane is needed based on the daily traffic volume projected to use the driveway as a function of roadway ADT (Average Daily Traffic). A left-turn lane meets warrants when the corresponding value plots above the curve indicated on the Left Turn Lane Warrant Graph from the *Napa County Road and Street Standards*, and is unwarranted if the value plots below the curve.

Based on Existing plus Project volumes (including the existing single-family dwelling), a left-turn lane would not be warranted with the proposed Use Permit Modification. A copy of the *Left Turn Lane Warrant Analysis for the B Cellars Project*, prepared in October 2016 and accepted by County staff, is enclosed in Appendix D along with the traffic counts that were collected for the analysis and the turn-lane warrant graph.

Finding – A left-turn lane is not warranted on Oakville Cross Road at the project driveway.

On-Site Circulation

On-site circulation would remain unchanged by the proposed Use Permit Modification. The existing drive aisle is adequate to accommodate the anticipated increase in traffic associated with the employee and visitation expansion.

Finding – Circulation is expected to continue operating acceptably.

Conclusions and Recommendations

Conclusions

- The proposed project is expected to generate an average of 47 new daily vehicle trips, including 5 trips during the weekday evening peak hour and 7 trips during the weekend midday peak hour.
- The study intersection of Silverado Trail/Oakville Cross Road is currently operating acceptably at LOS D or better. Upon the addition of cumulative trips and project-related traffic to the Existing volumes, this study intersection would continue operating at the same levels of service during both peak hours.
- The study intersection of SR 29/Oakville Cross Road is currently operating at LOS F on the westbound Oakville Cross Road approach, and will continue doing so with trips added from cumulative projects as well as the proposed project. Because the proposed project is expected to increase the volume on the affected approach by less than 10 percent, the impact is less-than-significant.
- Both study intersections are expected to operate at LOS F on the stop-controlled approaches under Future volumes. The project contributes less than 5 percent of the anticipated increase in traffic volumes, so under the County's criterion, the impact under Future volumes is less-than-significant.
- The proposed project would result in a net decrease in trips associated with the largest marketing event and the average number of guests per event would be reduced from 54 to 31. Over the course of the year, the proposed marketing plan would result in approximately 1.4 additional trips per day on average, and would therefore have minimal impact on the daily trip generation of the project site.
- Pedestrian, bicycle, and transit facilities are adequate to serve the anticipated demand.
- Sight distance on Oakville Cross Road at the project driveway is adequate to accommodate all turns.
- A left-turn lane is not warranted on Oakville Cross Road at the project driveway.

Recommendations

- Visitors and employees should be directed to use Silverado Trail for trips south toward Napa and SR 29 for trips north toward St. Helena to avoid adding traffic to the impacted left-turn movements at both ends of Oakville Cross Road.

Study Participants and References

Study Participants

Principal in Charge	Dalene J. Whitlock, PE, PTOE
Assistant Engineers	Cameron Nye, EIT
Graphics/Editing/Formatting	Angela McCoy

References

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NAX119

Appendix A

Intersection Level of Service Calculations

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Intersection Level Of Service Report

Intersection 1: SR 29/Oakville Cross Rd-Walnut Ln

Control Type:	Two-way stop	Delay (sec / veh):	120.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.526

Intersection Setup

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Base Volume Input [veh/h]	5	619	17	22	991	3	1	1	9	29	0	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	619	17	22	991	3	1	1	9	29	0	30
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	165	5	6	264	1	0	0	2	8	0	8
Total Analysis Volume [veh/h]	5	659	18	23	1054	3	1	1	10	31	0	32
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Free			Free			Stop			Stop		
Flared Lane							No					
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance							No			No		
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.03	0.01	0.00	0.02	0.01	0.04	0.53	0.00	0.07
d_M, Delay for Movement [s/veh]	10.51	0.00	0.00	9.04	0.00	0.00	70.18	52.34	19.58	120.18	104.50	13.45
Movement LOS	B	A	A	A	A	A	F	F	C	F	F	B
95th-Percentile Queue Length [veh]	0.02	0.00	0.00	0.08	0.00	0.00	0.21	0.21	0.21	2.08	2.08	0.22
95th-Percentile Queue Length [ft]	0.57	0.00	0.00	1.93	0.00	0.00	5.33	5.33	5.33	52.12	52.12	5.61
d_A, Approach Delay [s/veh]	0.08			0.19			26.52			65.96		
Approach LOS	A			A			D			F		
d_I, Intersection Delay [s/veh]	2.58											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Silverado Trail/Oakville Cross Rd

Control Type:	Two-way stop	Delay (sec / veh):	45.7
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.157

Intersection Setup

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	75.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Base Volume Input [veh/h]	11	395	1155	15	15	58
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	395	1155	15	15	58
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	105	307	4	4	15
Total Analysis Volume [veh/h]	12	420	1229	16	16	62
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			Yes
Storage Area [veh]	0	0	1
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.01	0.00	0.16	0.29
d_M, Delay for Movement [s/veh]	11.58	0.00	0.00	0.00	45.71	27.11
Movement LOS	B	A	A	A	E	D
95th-Percentile Queue Length [veh]	0.07	0.00	0.00	0.00	1.16	1.16
95th-Percentile Queue Length [ft]	1.64	0.00	0.00	0.00	29.07	29.07
d_A, Approach Delay [s/veh]	0.32		0.00		30.93	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	1.45					
Intersection LOS	E					

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Intersection Level Of Service Report

Intersection 1: SR 29/Oakville Cross Rd-Walnut Ln

Control Type:	Two-way stop	Delay (sec / veh):	362.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.060

Intersection Setup

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Base Volume Input [veh/h]	3	1017	64	53	918	5	2	1	9	33	0	86
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1017	64	53	918	5	2	1	9	33	0	86
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	259	16	14	234	1	1	0	2	8	0	22
Total Analysis Volume [veh/h]	3	1038	65	54	937	5	2	1	9	34	0	88
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Free			Free			Stop			Stop		
Flared Lane							No					
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance							No			No		
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.09	0.01	0.00	0.09	0.02	0.03	1.06	0.00	0.33
d_M, Delay for Movement [s/veh]	9.97	0.00	0.00	11.22	0.00	0.00	182.27	95.26	23.56	362.24	329.46	24.81
Movement LOS	A	A	A	B	A	A	F	F	C	F	F	C
95th-Percentile Queue Length [veh]	0.01	0.00	0.00	0.28	0.00	0.00	0.48	0.48	0.48	3.69	3.69	1.38
95th-Percentile Queue Length [ft]	0.31	0.00	0.00	6.97	0.00	0.00	12.11	12.11	12.11	92.30	92.30	34.46
d_A, Approach Delay [s/veh]	0.03			0.61			55.99			118.85		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	7.07											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Silverado Trail/Oakville Cross Rd

Control Type:	Two-way stop	Delay (sec / veh):	34.6
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.277

Intersection Setup

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	75.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Base Volume Input [veh/h]	31	546	781	46	37	73
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	546	781	46	37	73
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	141	201	12	10	19
Total Analysis Volume [veh/h]	32	563	805	47	38	75
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane					Yes	
Storage Area [veh]	0		0		1	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.01	0.00	0.28	0.20
d_M, Delay for Movement [s/veh]	9.77	0.00	0.00	0.00	34.57	18.05
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh]	0.13	0.00	0.00	0.00	1.11	1.11
95th-Percentile Queue Length [ft]	3.18	0.00	0.00	0.00	27.87	27.87
d_A, Approach Delay [s/veh]	0.53		0.00		23.61	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.91					
Intersection LOS	D					

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Intersection Level Of Service Report

Intersection 1: SR 29/Oakville Cross Rd-Walnut Ln

Control Type:	Two-way stop	Delay (sec / veh):	124.4
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.538

Intersection Setup

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Base Volume Input [veh/h]	5	623	17	22	999	3	1	1	9	29	0	30
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	623	17	22	999	3	1	1	9	29	0	30
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	166	5	6	266	1	0	0	2	8	0	8
Total Analysis Volume [veh/h]	5	663	18	23	1063	3	1	1	10	31	0	32
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Free			Free			Stop			Stop		
Flared Lane							No					
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance							No			No		
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.03	0.01	0.00	0.02	0.01	0.04	0.54	0.00	0.07
d_M, Delay for Movement [s/veh]	10.55	0.00	0.00	9.05	0.00	0.00	71.63	53.25	19.79	124.45	108.27	13.49
Movement LOS	B	A	A	A	A	A	F	F	C	F	F	B
95th-Percentile Queue Length [veh]	0.02	0.00	0.00	0.08	0.00	0.00	0.22	0.22	0.22	2.13	2.13	0.23
95th-Percentile Queue Length [ft]	0.58	0.00	0.00	1.94	0.00	0.00	5.42	5.42	5.42	53.22	53.22	5.64
d_A, Approach Delay [s/veh]	0.08			0.19			26.89			68.09		
Approach LOS	A			A			D			F		
d_I, Intersection Delay [s/veh]	2.63											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Silverado Trail/Oakville Cross Rd

Control Type:	Two-way stop	Delay (sec / veh):	46.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.159

Intersection Setup

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	75.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Base Volume Input [veh/h]	12	397	1156	15	15	58
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	397	1156	15	15	58
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	106	307	4	4	15
Total Analysis Volume [veh/h]	13	422	1230	16	16	62
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			Yes
Storage Area [veh]	0	0	1
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.01	0.00	0.16	0.29
d_M, Delay for Movement [s/veh]	11.60	0.00	0.00	0.00	46.04	27.15
Movement LOS	B	A	A	A	E	D
95th-Percentile Queue Length [veh]	0.07	0.00	0.00	0.00	1.16	1.16
95th-Percentile Queue Length [ft]	1.79	0.00	0.00	0.00	29.12	29.12
d_A, Approach Delay [s/veh]	0.35		0.00		31.03	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	1.46					
Intersection LOS	E					

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Intersection Level Of Service Report

Intersection 1: SR 29/Oakville Cross Rd-Walnut Ln

Control Type:	Two-way stop	Delay (sec / veh):	362.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.060

Intersection Setup

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Base Volume Input [veh/h]	3	1017	64	53	918	5	2	1	9	33	0	86
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1017	64	53	918	5	2	1	9	33	0	86
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	259	16	14	234	1	1	0	2	8	0	22
Total Analysis Volume [veh/h]	3	1038	65	54	937	5	2	1	9	34	0	88
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Free		Free		Stop		Stop	
Flared Lane					No			
Storage Area [veh]	0		0		0		0	
Two-Stage Gap Acceptance					No		No	
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.09	0.01	0.00	0.09	0.02	0.03	1.06	0.00	0.33
d_M, Delay for Movement [s/veh]	9.97	0.00	0.00	11.22	0.00	0.00	182.27	95.26	23.56	362.24	329.46	24.81
Movement LOS	A	A	A	B	A	A	F	F	C	F	F	C
95th-Percentile Queue Length [veh]	0.01	0.00	0.00	0.28	0.00	0.00	0.48	0.48	0.48	3.69	3.69	1.38
95th-Percentile Queue Length [ft]	0.31	0.00	0.00	6.97	0.00	0.00	12.11	12.11	12.11	92.30	92.30	34.46
d_A, Approach Delay [s/veh]	0.03			0.61			55.99			118.85		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	7.07											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Silverado Trail/Oakville Cross Rd

Control Type:	Two-way stop	Delay (sec / veh):	34.8
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.278

Intersection Setup

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	75.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Base Volume Input [veh/h]	31	548	783	46	37	73
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	548	783	46	37	73
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	141	202	12	10	19
Total Analysis Volume [veh/h]	32	565	807	47	38	75
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane					Yes	
Storage Area [veh]	0		0		1	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.01	0.00	0.28	0.20
d_M, Delay for Movement [s/veh]	9.78	0.00	0.00	0.00	34.77	18.12
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh]	0.13	0.00	0.00	0.00	1.12	1.12
95th-Percentile Queue Length [ft]	3.18	0.00	0.00	0.00	28.08	28.08
d_A, Approach Delay [s/veh]	0.52		0.00		23.72	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.91					
Intersection LOS	D					

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Intersection Level Of Service Report

Intersection 1: SR 29/Oakville Cross Rd-Walnut Ln

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	82.582

Intersection Setup

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Base Volume Input [veh/h]	11	1389	54	150	1771	14	50	0	19	25	0	71
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	1389	54	150	1771	14	50	0	19	25	0	71
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	347	14	38	443	4	13	0	5	6	0	18
Total Analysis Volume [veh/h]	11	1389	54	150	1771	14	50	0	19	25	0	71
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Free			Free			Stop			Stop		
Flared Lane							No					
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance							No			No		
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.32	0.02	0.00	82.58	0.00	0.19	28.03	0.00	0.42
d_M, Delay for Movement [s/veh]	15.72	0.00	0.00	16.21	0.00	0.00	10000.0	10000.0	10000.0	10000.0	10000.0	41.18
Movement LOS	C	A	A	C	A	A	F	F	F	F	F	E
95th-Percentile Queue Length [veh]	0.10	0.00	0.00	1.36	0.00	0.00	10.90	10.90	10.90	4.92	4.92	1.90
95th-Percentile Queue Length [ft]	2.45	0.00	0.00	34.01	0.00	0.00	272.39	272.39	272.39	122.98	122.98	47.38
d_A, Approach Delay [s/veh]	0.12			1.26			10000.00			2634.63		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	266.05											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Silverado Trail/Oakville Cross Rd

Control Type:	Two-way stop	Delay (sec / veh):	652.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.613

Intersection Setup

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	75.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Base Volume Input [veh/h]	46	775	1528	16	20	214
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	775	1528	16	20	214
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	194	382	4	5	54
Total Analysis Volume [veh/h]	46	775	1528	16	20	214
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			Yes
Storage Area [veh]	0	0	1
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.01	0.02	0.00	0.61	1.50
d_M, Delay for Movement [s/veh]	14.38	0.00	0.00	0.00	652.03	566.89
Movement LOS	B	A	A	A	F	F
95th-Percentile Queue Length [veh]	0.36	0.00	0.00	0.00	19.60	19.60
95th-Percentile Queue Length [ft]	8.92	0.00	0.00	0.00	489.90	489.90
d_A, Approach Delay [s/veh]	0.81		0.00		574.17	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	51.95					
Intersection LOS	F					

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Intersection Level Of Service Report

Intersection 1: SR 29/Oakville Cross Rd-Walnut Ln

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.231

Intersection Setup

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Base Volume Input [veh/h]	3	1017	64	53	918	5	2	1	9	33	0	86
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	2136	134	111	1928	11	4	2	19	69	0	181
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	534	34	28	482	3	1	1	5	17	0	45
Total Analysis Volume [veh/h]	6	2136	134	111	1928	11	4	2	19	69	0	181
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.00	0.49	0.02	0.00	0.00	0.00	0.23	0.00	0.00	3.21
d_M, Delay for Movement [s/veh]	17.15	0.00	0.00	35.80	0.00	0.00	10000.0	10000.0	10000.0	10000.0	10000.0	1149.08
Movement LOS	C	A	A	E	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh]	0.06	0.00	0.00	2.50	0.00	0.00	5.00	5.00	5.00	10.98	10.98	19.13
95th-Percentile Queue Length [ft]	1.52	0.00	0.00	62.43	0.00	0.00	125.00	125.00	125.00	274.53	274.53	478.17
d_A, Approach Delay [s/veh]	0.05			1.94			10000.00			3591.93		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	250.39											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Silverado Trail/Oakville Cross Rd

Control Type:	Two-way stop	Delay (sec / veh):	585.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.452

Intersection Setup

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	75.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Base Volume Input [veh/h]	31	546	781	46	37	73
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.60	1.60	1.60	1.60	1.60	1.60
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	50	874	1250	74	59	117
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	219	313	19	15	29
Total Analysis Volume [veh/h]	50	874	1250	74	59	117
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane					Yes	
Storage Area [veh]	0		0		1	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.01	0.01	0.00	1.45	0.58
d_M, Delay for Movement [s/veh]	12.63	0.00	0.00	0.00	585.83	515.21
Movement LOS	B	A	A	A	F	F
95th-Percentile Queue Length [veh]	0.32	0.00	0.00	0.00	15.04	15.04
95th-Percentile Queue Length [ft]	7.91	0.00	0.00	0.00	375.91	375.91
d_A, Approach Delay [s/veh]	0.68		0.00		538.88	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	39.39					
Intersection LOS	F					

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Intersection Level Of Service Report

Intersection 1: SR 29/Oakville Cross Rd-Walnut Ln

Control Type:	Two-way stop	Delay (sec / veh):	120.5
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.527

Intersection Setup

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Base Volume Input [veh/h]	5	619	19	22	991	3	1	1	9	29	0	31
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	619	19	22	991	3	1	1	9	29	0	31
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	165	5	6	264	1	0	0	2	8	0	8
Total Analysis Volume [veh/h]	5	659	20	23	1054	3	1	1	10	31	0	33
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Free			Free			Stop			Stop		
Flared Lane							No					
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance							No			No		
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.03	0.01	0.00	0.02	0.01	0.04	0.53	0.00	0.07
d_M, Delay for Movement [s/veh]	10.51	0.00	0.00	9.04	0.00	0.00	70.50	52.47	19.58	120.50	104.78	13.48
Movement LOS	B	A	A	A	A	A	F	F	C	F	F	B
95th-Percentile Queue Length [veh]	0.02	0.00	0.00	0.08	0.00	0.00	0.21	0.21	0.21	2.09	2.09	0.23
95th-Percentile Queue Length [ft]	0.57	0.00	0.00	1.94	0.00	0.00	5.34	5.34	5.34	52.20	52.20	5.80
d_A, Approach Delay [s/veh]	0.08			0.19			26.57			65.32		
Approach LOS	A			A			D			F		
d_I, Intersection Delay [s/veh]	2.59											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Silverado Trail/Oakville Cross Rd

Control Type:	Two-way stop	Delay (sec / veh):	49.1
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.157

Intersection Setup

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	75.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Base Volume Input [veh/h]	11	395	1155	16	15	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	395	1155	16	15	59
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	105	307	4	4	16
Total Analysis Volume [veh/h]	12	420	1229	17	16	63
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane					Yes	
Storage Area [veh]	0		0		1	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.01	0.00	0.16	0.29
d_M, Delay for Movement [s/veh]	11.59	0.00	0.00	0.00	49.10	30.49
Movement LOS	B	A	A	A	E	D
95th-Percentile Queue Length [veh]	0.07	0.00	0.00	0.00	1.53	1.53
95th-Percentile Queue Length [ft]	1.64	0.00	0.00	0.00	38.18	38.18
d_A, Approach Delay [s/veh]	0.32		0.00		34.26	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	1.62					
Intersection LOS	E					

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Intersection Level Of Service Report

Intersection 1: SR 29/Oakville Cross Rd-Walnut Ln

Control Type:	Two-way stop	Delay (sec / veh):	363.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.062

Intersection Setup

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Base Volume Input [veh/h]	3	1017	67	53	918	5	2	1	9	33	0	87
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1017	67	53	918	5	2	1	9	33	0	87
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	259	17	14	234	1	1	0	2	8	0	22
Total Analysis Volume [veh/h]	3	1038	68	54	937	5	2	1	9	34	0	89
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Free			Free			Stop			Stop		
Flared Lane							No					
Storage Area [veh]	0			0			0			0		
Two-Stage Gap Acceptance							No			No		
Number of Storage Spaces in Median	0			0			0			0		

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.09	0.01	0.00	0.10	0.02	0.03	1.06	0.00	0.33
d_M, Delay for Movement [s/veh]	9.97	0.00	0.00	11.24	0.00	0.00	184.10	95.76	23.67	363.88	330.98	24.97
Movement LOS	A	A	A	B	A	A	F	F	C	F	F	C
95th-Percentile Queue Length [veh]	0.01	0.00	0.00	0.28	0.00	0.00	0.49	0.49	0.49	3.70	3.70	1.40
95th-Percentile Queue Length [ft]	0.31	0.00	0.00	6.99	0.00	0.00	12.21	12.21	12.21	92.44	92.44	35.10
d_A, Approach Delay [s/veh]	0.03			0.61			56.42			118.66		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	7.10											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Silverado Trail/Oakville Cross Rd

Control Type:	Two-way stop	Delay (sec / veh):	34.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.278

Intersection Setup

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	75.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Base Volume Input [veh/h]	32	546	781	47	37	74
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	546	781	47	37	74
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	141	201	12	10	19
Total Analysis Volume [veh/h]	33	563	805	48	38	76
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane					Yes	
Storage Area [veh]	0		0		1	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.01	0.00	0.28	0.21
d_M, Delay for Movement [s/veh]	9.78	0.00	0.00	0.00	34.71	18.07
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh]	0.13	0.00	0.00	0.00	1.12	1.12
95th-Percentile Queue Length [ft]	3.28	0.00	0.00	0.00	28.06	28.06
d_A, Approach Delay [s/veh]	0.54		0.00		23.62	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.93					
Intersection LOS	D					

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Intersection Level Of Service Report

Intersection 1: SR 29/Oakville Cross Rd-Walnut Ln

Control Type:	Two-way stop	Delay (sec / veh):	124.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.539

Intersection Setup

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Base Volume Input [veh/h]	5	623	19	22	999	3	1	1	9	29	0	31
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	623	19	22	999	3	1	1	9	29	0	31
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	166	5	6	266	1	0	0	2	8	0	8
Total Analysis Volume [veh/h]	5	663	20	23	1063	3	1	1	10	31	0	33
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.03	0.01	0.00	0.02	0.01	0.04	0.54	0.00	0.07
d_M, Delay for Movement [s/veh]	10.55	0.00	0.00	9.06	0.00	0.00	71.95	53.39	19.79	124.78	108.57	13.53
Movement LOS	B	A	A	A	A	A	F	F	C	F	F	B
95th-Percentile Queue Length [veh]	0.02	0.00	0.00	0.08	0.00	0.00	0.22	0.22	0.22	2.13	2.13	0.23
95th-Percentile Queue Length [ft]	0.58	0.00	0.00	1.94	0.00	0.00	5.43	5.43	5.43	53.31	53.31	5.84
d_A, Approach Delay [s/veh]	0.08			0.19			26.94			67.42		
Approach LOS	A			A			D			F		
d_I, Intersection Delay [s/veh]	2.64											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Silverado Trail/Oakville Cross Rd

Control Type:	Two-way stop	Delay (sec / veh):	49.5
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.159

Intersection Setup

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	75.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Base Volume Input [veh/h]	12	397	1156	16	15	59
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	397	1156	16	15	59
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	106	307	4	4	16
Total Analysis Volume [veh/h]	13	422	1230	17	16	63
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane					Yes	
Storage Area [veh]	0		0		1	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.01	0.00	0.16	0.29
d_M, Delay for Movement [s/veh]	11.60	0.00	0.00	0.00	49.47	30.57
Movement LOS	B	A	A	A	E	D
95th-Percentile Queue Length [veh]	0.07	0.00	0.00	0.00	1.53	1.53
95th-Percentile Queue Length [ft]	1.79	0.00	0.00	0.00	38.30	38.30
d_A, Approach Delay [s/veh]	0.35		0.00		34.39	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	1.63					
Intersection LOS	E					

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Intersection Level Of Service Report

Intersection 1: SR 29/Oakville Cross Rd-Walnut Ln

Control Type:	Two-way stop	Delay (sec / veh):	363.9
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.062

Intersection Setup

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Base Volume Input [veh/h]	3	1017	67	53	918	5	2	1	9	33	0	87
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1017	67	53	918	5	2	1	9	33	0	87
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	259	17	14	234	1	1	0	2	8	0	22
Total Analysis Volume [veh/h]	3	1038	68	54	937	5	2	1	9	34	0	89
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Free		Free		Stop		Stop	
Flared Lane					No			
Storage Area [veh]	0		0		0		0	
Two-Stage Gap Acceptance					No		No	
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.09	0.01	0.00	0.10	0.02	0.03	1.06	0.00	0.33
d_M, Delay for Movement [s/veh]	9.97	0.00	0.00	11.24	0.00	0.00	184.10	95.76	23.67	363.88	330.98	24.97
Movement LOS	A	A	A	B	A	A	F	F	C	F	F	C
95th-Percentile Queue Length [veh]	0.01	0.00	0.00	0.28	0.00	0.00	0.49	0.49	0.49	3.70	3.70	1.40
95th-Percentile Queue Length [ft]	0.31	0.00	0.00	6.99	0.00	0.00	12.21	12.21	12.21	92.44	92.44	35.10
d_A, Approach Delay [s/veh]	0.03			0.61			56.42			118.66		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	7.10											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Silverado Trail/Oakville Cross Rd

Control Type:	Two-way stop	Delay (sec / veh):	34.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.280

Intersection Setup

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	75.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Base Volume Input [veh/h]	32	548	783	47	37	74
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	32	548	783	47	37	74
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	141	202	12	10	19
Total Analysis Volume [veh/h]	33	565	807	48	38	76
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane					Yes	
Storage Area [veh]	0		0		1	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.01	0.00	0.28	0.21
d_M, Delay for Movement [s/veh]	9.79	0.00	0.00	0.00	34.91	18.14
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh]	0.13	0.00	0.00	0.00	1.13	1.13
95th-Percentile Queue Length [ft]	3.29	0.00	0.00	0.00	28.27	28.27
d_A, Approach Delay [s/veh]	0.54		0.00		23.73	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.93					
Intersection LOS	D					

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Intersection Level Of Service Report

Intersection 1: SR 29/Oakville Cross Rd-Walnut Ln

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	84.123

Intersection Setup

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Base Volume Input [veh/h]	11	1389	56	150	1771	14	50	0	19	25	0	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	1389	56	150	1771	14	50	0	19	25	0	72
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	347	14	38	443	4	13	0	5	6	0	18
Total Analysis Volume [veh/h]	11	1389	56	150	1771	14	50	0	19	25	0	72
Pedestrian Volume [ped/h]	0			0			0			0		

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Intersection Settings

Priority Scheme	Free		Free		Stop		Stop	
Flared Lane					No			
Storage Area [veh]	0		0		0		0	
Two-Stage Gap Acceptance					No		No	
Number of Storage Spaces in Median	0		0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.32	0.02	0.00	84.12	0.00	0.19	28.20	0.00	0.43
d_M, Delay for Movement [s/veh]	15.72	0.00	0.00	16.24	0.00	0.00	10000.0	10000.0	10000.0	10000.0	10000.0	41.60
Movement LOS	C	A	A	C	A	A	F	F	F	F	F	E
95th-Percentile Queue Length [veh]	0.10	0.00	0.00	1.36	0.00	0.00	10.90	10.90	10.90	4.92	4.92	1.94
95th-Percentile Queue Length [ft]	2.45	0.00	0.00	34.10	0.00	0.00	272.43	272.43	272.43	122.99	122.99	48.43
d_A, Approach Delay [s/veh]	0.12			1.26			10000.00			2608.20		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	265.84											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Silverado Trail/Oakville Cross Rd

Control Type:	Two-way stop	Delay (sec / veh):	655.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.614

Intersection Setup

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	75.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Base Volume Input [veh/h]	46	775	1528	17	20	215
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	775	1528	17	20	215
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	194	382	4	5	54
Total Analysis Volume [veh/h]	46	775	1528	17	20	215
Pedestrian Volume [ped/h]	0		0		0	

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Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			Yes
Storage Area [veh]	0	0	1
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.01	0.02	0.00	0.61	1.51
d_M, Delay for Movement [s/veh]	14.39	0.00	0.00	0.00	655.82	570.61
Movement LOS	B	A	A	A	F	F
95th-Percentile Queue Length [veh]	0.36	0.00	0.00	0.00	19.71	19.71
95th-Percentile Queue Length [ft]	8.93	0.00	0.00	0.00	492.80	492.80
d_A, Approach Delay [s/veh]	0.81		0.00		577.86	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	52.46					
Intersection LOS	F					

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Intersection Level Of Service Report

Intersection 1: SR 29/Oakville Cross Rd-Walnut Ln

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.231

Intersection Setup

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	90.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	SR 29			SR 29			Walnut Ln			Oakville Cross Rd		
Base Volume Input [veh/h]	3	1017	67	53	918	5	2	1	9	33	0	87
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	2136	141	111	1928	11	4	2	19	69	0	183
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	534	35	28	482	3	1	1	5	17	0	46
Total Analysis Volume [veh/h]	6	2136	141	111	1928	11	4	2	19	69	0	183
Pedestrian Volume [ped/h]	0			0			0			0		

Generated with PTV VISTRO

Version 5.00-00

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.00	0.50	0.02	0.00	0.00	0.00	0.23	0.00	0.00	3.26
d_M, Delay for Movement [s/veh]	17.15	0.00	0.00	36.16	0.00	0.00	10000.0	10000.0	10000.0	10000.0	10000.0	1172.57
Movement LOS	C	A	A	E	A	A	F	F	F	F	F	F
95th-Percentile Queue Length [veh]	0.06	0.00	0.00	2.52	0.00	0.00	5.00	5.00	5.00	10.98	10.98	19.40
95th-Percentile Queue Length [ft]	1.52	0.00	0.00	63.02	0.00	0.00	125.00	125.00	125.00	274.53	274.53	485.01
d_A, Approach Delay [s/veh]	0.05			1.96			10000.00			3589.61		
Approach LOS	A			A			F			F		
d_I, Intersection Delay [s/veh]	251.34											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Silverado Trail/Oakville Cross Rd

Control Type:	Two-way stop	Delay (sec / veh):	596.8
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.460

Intersection Setup

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	0	0	0
Pocket Length [ft]	75.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	55.00		55.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Silverado Trail		Silverado Trail		Oakville Cross Rd	
Base Volume Input [veh/h]	32	546	781	47	37	74
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.60	1.60	1.60	1.60	1.60	1.60
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	51	874	1250	75	59	118
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	219	313	19	15	30
Total Analysis Volume [veh/h]	51	874	1250	75	59	118
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free		Free		Stop	
Flared Lane					Yes	
Storage Area [veh]	0		0		1	
Two-Stage Gap Acceptance					No	
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.01	0.01	0.00	1.46	0.59
d_M, Delay for Movement [s/veh]	12.65	0.00	0.00	0.00	596.75	525.62
Movement LOS	B	A	A	A	F	F
95th-Percentile Queue Length [veh]	0.32	0.00	0.00	0.00	15.21	15.21
95th-Percentile Queue Length [ft]	8.09	0.00	0.00	0.00	380.22	380.22
d_A, Approach Delay [s/veh]	0.70		0.00		549.33	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	40.33					
Intersection LOS	F					

Appendix B

Transportation Demand Management Plan, Trip Distribution Derivation, and Count Data

B Cellars Vineyards and Winery Operations
Transportation Demand Management Plan

In an effort to minimize the traffic impact from employees and guest visits, the following provides a summary of "best practices" in place now and additional measures that will further enhance safety and lessen traffic impacts:

Existing:

- Employees are encouraged to ride-share; management provides a financial incentive to both driver and ride-share participants. The company installed bike-racks and our separate men's and ladies locker rooms help to promote cycling during good weather. Currently, B Cellars has four (4) employees that consistently ride-share and one (1) that cycles during good weather months.
- Employees are encouraged to remain on property during their AM, PM and lunch breaks. To accomplish this, B Cellars provides all employees access to private men's/ladies bathrooms located adjacent to the company's "break-room"; both are equipped with lockers, showers and dressing areas. At B Cellars' expense, the break-room serves a wide range of refreshments throughout the day and a daily meal is offered between the hours of 11AM-3PM.
- B Cellars opens its employee facilities to all private drivers, limousine companies, taxis/Uber, etc. This permits drivers to stay on property with access to our facilities on the same basis as an employee while guests are enjoying their tasting experience.
- Our year-round vegetable garden, hen house and fruit trees provide the basis for a majority of related food products served in conjunction with our wine and food pairings; this lessens daily deliveries.
- By contractual agreement between B Cellars and event organizers, parking for marketing events comprised of 10 guests or more must use a ridesharing service (i.e. pairing up) or a single/multiple motor coach.

Adding:

- Two new signs will be added towards the end of the driveway advising departing guests: (i) Napa: Right ➔; Saint Helena: Left ← and (ii) a Stop sign.
- The company's web site will be updated to provide incoming and outgoing visitors directions to reinforce the Napa and Saint Helena turns above.

B Cellars Winery
Driveway Counts

Weekday - PM Peak Hour						
Day	Date	Peak Hour	Peak Hour Vol		Daily Vol	Peak Hour % of Daily
			In	Out		
Thursday	9/28/2017	4:00 PM	1	10	116	9.48%
Friday	9/29/2017	4:00 PM	7	13	189	10.58%
Monday	10/2/2017	4:30 PM	13	2	125	12.00%
Tuesday	10/3/2017	4:45 PM	2	6	155	5.16%
Wednesday	10/4/2017	4:00 PM	7	1	86	9.30%
Average			6	6	134	**9.30%**
			50%	50%		

Weekend - PM Peak Hour						
Day	Date	Peak Hour	Peak Hour Vol		Daily Vol	Peak Hour % of Daily
			In	Out		
Saturday	9/30/2017	4:45 PM	14	2	125	12.80%
Sunday	10/1/2017	4:45 PM	14	1	93	16.13%
Average			14	2	109	**14.47%**
			87.5%	12.5%		

Weekly						
Day	Date	Peak Hour	Peak Hour Vol		Daily Vol	Peak Hour % of Daily
			In	Out		
Thursday	9/28/2017	4:00 PM	1	10	116	9.48%
Friday	9/29/2017	4:00 PM	7	13	189	10.58%
Saturday	9/30/2017	4:45 PM	14	2	125	12.80%
Sunday	10/1/2017	4:45 PM	14	1	93	16.13%
Monday	10/2/2017	4:30 PM	13	2	125	12.00%
Tuesday	10/3/2017	4:45 PM	2	6	155	5.16%
Wednesday	10/4/2017	4:00 PM	7	1	86	9.30%
Average			8	5	127	**10.78%**
			62%	38%		

Prepared by NDS/ATD

VOLUME

B Cellars Winery Dwy S/O Oakville Cross Rd

Day: Thursday
Date: 9/28/2017

City: Oakville
Project #: CA17_7760_001

DAILY TOTALS	NB	SB	EB	WB	Total
	57	59	0	0	116

AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	0	1			1	12:00	1	1			2
00:15	0	0			0	12:15	1	1			2
00:30	0	0			0	12:30	0	1			1
00:45	0	0	1		0 1	12:45	0 2	2	5		2 7
01:00	0	0			0	13:00	3	1			4
01:15	0	0			0	13:15	3	2			5
01:30	0	0			0	13:30	1	1			2
01:45	0	0			0	13:45	1 8	5	9		6 17
02:00	0	0			0	14:00	2	0			2
02:15	0	0			0	14:15	3	4			7
02:30	0	0			0	14:30	1	1			2
02:45	0	0			0	14:45	2 8	2	7		4 15
03:00	0	0			0	15:00	1	0			1
03:15	0	0			0	15:15	1	0			1
03:30	0	0			0	15:30	0	1			1
03:45	0	0			0	15:45	1 3	1	2		2 5
04:00	0	0			0	16:00	2	0			2
04:15	0	0			0	16:15	1	0			1
04:30	0	0			0	16:30	1	1			2
04:45	0	0			0	16:45	2 6	0	1		2 7
05:00	0	0			0	17:00	0	0			0
05:15	0	0			0	17:15	0	0			0
05:30	0	0			0	17:30	2	0			2
05:45	0	0			0	17:45	2 4	0			2 4
06:00	0	0			0	18:00	6	0			6
06:15	0	1			1	18:15	0	0			0
06:30	0	0			0	18:30	3	0			3
06:45	0	0	1		0 1	18:45	0 9	1	1		1 10
07:00	1	0			1	19:00	0	1			1
07:15	0	0			0	19:15	0	0			0
07:30	0	0			0	19:30	0	0			0
07:45	0 1	2	2		2 3	19:45	0	0	1		0 1
08:00	0	0			0	20:00	1	0			1
08:15	0	1			1	20:15	0	0			0
08:30	1	2			3	20:30	0	0			0
08:45	1 2	5	8		6 10	20:45	0 1	0			0 1
09:00	0	4			4	21:00	0	0			0
09:15	1	1			2	21:15	0	0			0
09:30	2	5			7	21:30	0	0			0
09:45	0 3	1	11		1 14	21:45	0	0			0
10:00	0	0			0	22:00	0	0			0
10:15	2	3			5	22:15	0	0			0
10:30	2	2			4	22:30	0	0			0
10:45	0 4	1	6		1 10	22:45	0	0			0
11:00	3	2			5	23:00	0	0			0
11:15	1	1			2	23:15	0	0			0
11:30	0	1			1	23:30	0	0			0
11:45	2 6	0	4		2 10	23:45	0	0			0
TOTALS	16	33			49	TOTALS	41	26			67
SPLIT %	32.7%	67.3%			42.2%	SPLIT %	61.2%	38.8%			57.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	57	59	0	0	116

AM Peak Hour	10:15	08:45			08:45	PM Peak Hour	17:45	13:30			13:00
AM Pk Volume	7	15			19	PM Pk Volume	11	10			17
Pk Hr Factor	0.583	0.750			0.679	Pk Hr Factor	0.458	0.500			0.708
7 - 9 Volume	3	10	0	0	13	4 - 6 Volume	10	1	0	0	11
7 - 9 Peak Hour	08:00	08:00			08:00	4 - 6 Peak Hour	16:00	16:00			16:00
7 - 9 Pk Volume	2	8	0	0	10	4 - 6 Pk Volume	6	1	0	0	7
Pk Hr Factor	0.500	0.400	0.000	0.000	0.417	Pk Hr Factor	0.750	0.250	0.000	0.000	0.875

Prepared by NDS/ATD

VOLUME

B Cellars Winery Dwy S/O Oakville Cross Rd

Day: Friday
Date: 9/29/2017

City: Oakville
Project #: CA17_7760_001

DAILY TOTALS	NB	SB	EB	WB	Total
	89	100	0	0	189

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0				0		12:00	4		2				6	
00:15	0		0				0		12:15	2		0				2	
00:30	0		0				0		12:30	1		2				3	
00:45	1	1	0				1	1	12:45	3	10	3	7			6	17
01:00	0		0				0		13:00	2		2				4	
01:15	0		0				0		13:15	3		1				4	
01:30	0		0				0		13:30	1		1				2	
01:45	0		0				0		13:45	2	8	2	6			4	14
02:00	0		0				0		14:00	4		1				5	
02:15	0		0				0		14:15	2		5				7	
02:30	0		0				0		14:30	2		4				6	
02:45	0		0				0		14:45	2	10	2	12			4	22
03:00	0		0				0		15:00	1		2				3	
03:15	0		0				0		15:15	1		2				3	
03:30	0		0				0		15:30	1		1				2	
03:45	0		0				0		15:45	1	4	2	7			3	11
04:00	0		1				1		16:00	1		2				3	
04:15	0		0				0		16:15	3		3				6	
04:30	1		0				1		16:30	1		6				7	
04:45	0	1	3	4			3	5	16:45	2	7	2	13			4	20
05:00	0		0				0		17:00	1		1				2	
05:15	0		0				0		17:15	0		7				7	
05:30	0		0				0		17:30	0		6				6	
05:45	0		0				0		17:45	0	1	1	15			1	16
06:00	0		0				0		18:00	0		3				3	
06:15	0		0				0		18:15	0		0				0	
06:30	0		1				1		18:30	0		0				0	
06:45	1	1	0	1			1	2	18:45	0		0	3			0	3
07:00	1		0				1		19:00	1		1				2	
07:15	0		0				0		19:15	0		0				0	
07:30	0		0				0		19:30	0		2				2	
07:45	1	2	0				1	2	19:45	0	1	0	3			0	4
08:00	2		0				2		20:00	0		1				1	
08:15	1		0				1		20:15	0		0				0	
08:30	4		1				5		20:30	0		0				0	
08:45	5	12	2	3			7	15	20:45	0		0	1			0	1
09:00	1		2				3		21:00	0		0				0	
09:15	5		0				5		21:15	1		0				1	
09:30	4		5				9		21:30	0		0				0	
09:45	2	12	2	9			4	21	21:45	1	2	0				1	2
10:00	0		1				1		22:00	0		0				0	
10:15	4		1				5		22:15	0		0				0	
10:30	1		1				2		22:30	0		0				0	
10:45	3	8	4	7			7	15	22:45	0		0				0	
11:00	5		3				8		23:00	0		0				0	
11:15	2		0				2		23:15	0		1				1	
11:30	1		2				3		23:30	0		0				0	
11:45	1	9	3	8			4	17	23:45	0		0	1			0	1
TOTALS		46		32				**78**	**TOTALS**		43		68				**111**
SPLIT %		59.0%		41.0%				**41.3%**	**SPLIT %**		38.7%		61.3%				**58.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	89	100	0	0	189

AM Peak Hour	08:30	08:45				**08:45**	**PM Peak Hour**	12:00	17:15				**13:45**
AM Pk Volume	15	9				**24**	**PM Pk Volume**	10	17				**22**
Pk Hr Factor	0.750	0.450				**0.667**	**Pk Hr Factor**	0.625	0.607				**0.786**
7 - 9 Volume	14	3	0	0		**17**	**4 - 6 Volume**	8	28	0	0		**36**
7 - 9 Peak Hour	08:00	08:00				**08:00**	**4 - 6 Peak Hour**	16:00	16:30				**16:00**
7 - 9 Pk Volume	12	3	0	0		**15**	**4 - 6 Pk Volume**	7	16	0	0		**20**
Pk Hr Factor	0.600	0.375	0.000	0.000		**0.536**	**Pk Hr Factor**	0.583	0.571	0.000	0.000		**0.714**

Prepared by NDS/ATD

VOLUME

B Cellars Winery Dwy S/O Oakville Cross Rd

Day: Saturday
Date: 9/30/2017

City: Oakville
Project #: CA17_7760_001

DAILY TOTALS	NB	SB	EB	WB	Total
	61	64	0	0	125

AM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0						0	
00:15	0		0						0	
00:30	0		0						0	
00:45	0		0						0	
01:00	0		0						0	
01:15	0		0						0	
01:30	0		0						0	
01:45	0		0						0	
02:00	0		0						0	
02:15	0		0						0	
02:30	0		0						0	
02:45	0		0						0	
03:00	0		0						0	
03:15	0		0						0	
03:30	0		0						0	
03:45	0		0						0	
04:00	1		0						1	
04:15	0		0						0	
04:30	0		0						0	
04:45	0	1	0						0	1
05:00	0		0						0	
05:15	0		0						0	
05:30	0		0						0	
05:45	0		0						0	
06:00	0		0						0	
06:15	0		0						0	
06:30	0		0						0	
06:45	0		0						0	
07:00	0		0						0	
07:15	0		0						0	
07:30	3		0						3	
07:45	2	5	0						2	5
08:00	1		4						5	
08:15	2		1						3	
08:30	4		1						5	
08:45	1	8	0	6					1	14
09:00	3		1						4	
09:15	4		1						5	
09:30	2		0						2	
09:45	0	9	0	2					0	11
10:00	3		1						4	
10:15	0		3						3	
10:30	1		0						1	
10:45	0	4	0	4					0	8
11:00	2		0						2	
11:15	1		1						2	
11:30	1		0						1	
11:45	3	7	2	3					5	10
TOTALS		34		15						**49**
SPLIT %		69.4%		30.6%						**39.2%**

PM Period	NB		SB		EB		WB		TOTAL	
12:00	1		0						1	
12:15	0		1						1	
12:30	2		1						3	
12:45	1	4	2	4					3	8
13:00	0		0						0	
13:15	2		2						4	
13:30	3		1						4	
13:45	2	7	1	4					3	11
14:00	1		2						3	
14:15	1		2						3	
14:30	1		1						2	
14:45	1	4	1	6					2	10
15:00	2		3						5	
15:15	1		4						5	
15:30	1		1						2	
15:45	3	7	2	10					5	17
16:00	1		1						2	
16:15	0		1						1	
16:30	0		2						2	
16:45	0	1	4	8					4	9
17:00	0		2						2	
17:15	2		3						5	
17:30	0		5						5	
17:45	0	2	2	12					2	14
18:00	1		0						1	
18:15	0		3						3	
18:30	0		0						0	
18:45	0	1	0	3					0	4
19:00	0		0						0	
19:15	1		2						3	
19:30	0		0						0	
19:45	0	1	0	2					0	3
20:00	0		0						0	
20:15	0		0						0	
20:30	0		0						0	
20:45	0		0						0	
21:00	0		0						0	
21:15	0		0						0	
21:30	0		0						0	
21:45	0		0						0	
22:00	0		0						0	
22:15	0		0						0	
22:30	0		0						0	
22:45	0		0						0	
23:00	0		0						0	
23:15	0		0						0	
23:30	0		0						0	
23:45	0		0						0	
TOTALS		27		49						**76**
SPLIT %		35.5%		64.5%						**60.8%**

DAILY TOTALS	NB	SB	EB	WB	Total
	61	64	0	0	125

AM Peak Hour	08:30	07:45			**07:45**
AM Pk Volume	12	6			**15**
Pk Hr Factor	0.750	0.375			**0.750**
7 - 9 Volume	13	6	0	0	**19**
7 - 9 Peak Hour	07:45	07:45			**07:45**
7 - 9 Pk Volume	9	6	0	0	**15**
Pk Hr Factor	0.563	0.375	0.000	0.000	**0.750**

PM Peak Hour	13:15	16:45			**15:00**
PM Pk Volume	8	14			**17**
Pk Hr Factor	0.667	0.700			**0.850**
4 - 6 Volume	3	20	0	0	**23**
4 - 6 Peak Hour	16:30	16:45			**16:45**
4 - 6 Pk Volume	2	14	0	0	**16**
Pk Hr Factor	0.250	0.700	0.000	0.000	**0.800**

Prepared by NDS/ATD

VOLUME

B Cellars Winery Dwy S/O Oakville Cross Rd

Day: Sunday
Date: 10/1/2017

City: Oakville
Project #: CA17_7760_001

DAILY TOTALS	NB	SB	EB	WB	Total
	46	47	0	0	93

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0						0		12:00	2		0						2	
00:15	0		0						0		12:15	2		0						2	
00:30	0		0						0		12:30	1		3						4	
00:45	1	1	0						1	1	12:45	1	6	1	4					2	10
01:00	0		0						0		13:00	0		1						1	
01:15	0		0						0		13:15	2		0						2	
01:30	0		0						0		13:30	0		0						0	
01:45	0		0						0		13:45	4	6	0	1					4	7
02:00	0		0						0		14:00	3		1						4	
02:15	0		0						0		14:15	0		4						4	
02:30	0		0						0		14:30	2		1						3	
02:45	0		0						0		14:45	3	8	2	8					5	16
03:00	0		0						0		15:00	0		1						1	
03:15	0		0						0		15:15	0		4						4	
03:30	0		0						0		15:30	1		1						2	
03:45	0		0						0		15:45	0	1	2	8					2	9
04:00	0		0						0		16:00	0		1						1	
04:15	0		0						0		16:15	0		1						1	
04:30	0		0						0		16:30	0		0						0	
04:45	0		0						0		16:45	0		5	7					5	7
05:00	0		0						0		17:00	0		0						0	
05:15	0		0						0		17:15	1		7						8	
05:30	0		0						0		17:30	0		2						2	
05:45	0		0						0		17:45	0	1	2	11					2	12
06:00	0		0						0		18:00	0		0						0	
06:15	0		0						0		18:15	1		0						1	
06:30	0		0						0		18:30	0		0						0	
06:45	0		0						0		18:45	0	1	0						0	1
07:00	0		0						0		19:00	0		0						0	
07:15	0		0						0		19:15	0		0						0	
07:30	0		0						0		19:30	0		0						0	
07:45	2	2	0						2	2	19:45	0		0						0	
08:00	0		0						0		20:00	0		0						0	
08:15	2		0						2		20:15	0		0						0	
08:30	2		0						2		20:30	0		0						0	
08:45	1	5	0						1	5	20:45	0		0						0	
09:00	0		0						0		21:00	0		0						0	
09:15	5		0						5		21:15	0		0						0	
09:30	1		0						1		21:30	0		0						0	
09:45	1	7	2	2					3	9	21:45	0		1	1					1	1
10:00	0		0						0		22:00	1		1						2	
10:15	1		1						2		22:15	0		2						2	
10:30	2		0						2		22:30	0		0						0	
10:45	1	4	1	2					2	6	22:45	0	1	0	3					0	4
11:00	1		0						1		23:00	0		0						0	
11:15	1		0						1		23:15	0		0						0	
11:30	0		0						0		23:30	0		0						0	
11:45	1	3	0						1	3	23:45	0		0						0	
TOTALS	22		4							26	TOTALS	24		43							67
SPLIT %	84.6%		15.4%							28.0%	SPLIT %	35.8%		64.2%							72.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	46	47	0	0	93

AM Peak Hour	08:30	09:30			09:00	PM Peak Hour	13:15	16:45			14:00
AM Pk Volume	8	3			9	PM Pk Volume	9	14			16
Pk Hr Factor	0.400	0.375			0.450	Pk Hr Factor	0.563	0.500			0.800
7 - 9 Volume	7	0	0	0	7	4 - 6 Volume	1	18	0	0	19
7 - 9 Peak Hour	07:45				07:45	4 - 6 Peak Hour	16:30	16:45			16:45
7 - 9 Pk Volume	6	0	0	0	6	4 - 6 Pk Volume	1	14	0	0	15
Pk Hr Factor	0.750	0.000	0.000	0.000	0.750	Pk Hr Factor	0.250	0.500	0.000	0.000	0.469

Prepared by NDS/ATD

VOLUME

B Cellars Winery Dwy S/O Oakville Cross Rd

Day: Monday
Date: 10/2/2017

City: Oakville
Project #: CA17_7760_001

DAILY TOTALS	NB	SB	EB	WB	Total
	60	65	0	0	125

AM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0						0	
00:15	0		0						0	
00:30	0		0						0	
00:45	0		0						0	
01:00	0		0						0	
01:15	0		0						0	
01:30	0		0						0	
01:45	0		0						0	
02:00	0		0						0	
02:15	0		0						0	
02:30	0		0						0	
02:45	0		0						0	
03:00	0		0						0	
03:15	0		0						0	
03:30	0		0						0	
03:45	0		0						0	
04:00	0		0						0	
04:15	0		0						0	
04:30	0		0						0	
04:45	0		0						0	
05:00	0		0						0	
05:15	0		0						0	
05:30	0		0						0	
05:45	0		0						0	
06:00	1		0						1	
06:15	0		1						1	
06:30	0		0						0	
06:45	1	2	0	1					1	3
07:00	0		2						2	
07:15	0		0						0	
07:30	2		0						2	
07:45	2	4	0	2					2	6
08:00	1		1						2	
08:15	1		0						1	
08:30	1		0						1	
08:45	0	3	0	1					0	4
09:00	2		0						2	
09:15	2		1						3	
09:30	3		0						3	
09:45	1	8	1	2					2	10
10:00	1		0						1	
10:15	2		3						5	
10:30	3		2						5	
10:45	2	8	2	7					4	15
11:00	4		3						7	
11:15	2		2						4	
11:30	2		1						3	
11:45	0	8	2	8					2	16
TOTALS		33		21						**54**
SPLIT %		61.1%		38.9%						**43.2%**

PM Period	NB		SB		EB		WB		TOTAL	
12:00	1		2						3	
12:15	1		1						2	
12:30	0		0						0	
12:45	1	3	1	4					2	7
13:00	3		1						4	
13:15	1		1						2	
13:30	2		1						3	
13:45	1	7	0	3					1	10
14:00	2		1						3	
14:15	0		3						3	
14:30	2		4						6	
14:45	3	7	4	12					7	19
15:00	0		1						1	
15:15	3		0						3	
15:30	0		2						2	
15:45	0	3	0	3					0	6
16:00	0		2						2	
16:15	0		0						0	
16:30	1		3						4	
16:45	0	1	5	10					5	11
17:00	0		2						2	
17:15	1		3						4	
17:30	0		0						0	
17:45	0	1	1	6					1	7
18:00	3		0						3	
18:15	0		2						2	
18:30	0		0						0	
18:45	0	3	0	2					0	5
19:00	1		0						1	
19:15	0		1						1	
19:30	0		1						1	
19:45	0	1	0	2					0	3
20:00	1		0						1	
20:15	0		1						1	
20:30	0		0						0	
20:45	0	1	0	1					0	2
21:00	0		0						0	
21:15	0		0						0	
21:30	0		0						0	
21:45	0		0						0	
22:00	0		0						0	
22:15	0		0						0	
22:30	0		0						0	
22:45	0		0						0	
23:00	0		0						0	
23:15	0		0						0	
23:30	0		0						0	
23:45	0		1	1					1	1
TOTALS		27		44						**71**
SPLIT %		38.0%		62.0%						**56.8%**

DAILY TOTALS	NB	SB	EB	WB	Total
	60	65	0	0	125

AM Peak Hour	10:15	10:15			**10:15**
AM Pk Volume	11	10			**21**
Pk Hr Factor	0.688	0.833			**0.750**
7 - 9 Volume	7	3	0	0	**10**
7 - 9 Peak Hour	07:30	07:00			**07:30**
7 - 9 Pk Volume	6	2	0	0	**7**
Pk Hr Factor	0.750	0.250	0.000	0.000	**0.875**

PM Peak Hour	14:30	16:30			**14:00**
PM Pk Volume	8	13			**19**
Pk Hr Factor	0.667	0.650			**0.679**
4 - 6 Volume	2	16	0	0	**18**
4 - 6 Peak Hour	16:30	16:30			**16:30**
4 - 6 Pk Volume	2	13	0	0	**15**
Pk Hr Factor	0.500	0.650	0.000	0.000	**0.750**

Prepared by NDS/ATD

VOLUME

B Cellars Winery Dwy S/O Oakville Cross Rd

Day: Tuesday
Date: 10/3/2017

City: Oakville
Project #: CA17_7760_001

DAILY TOTALS	NB	SB	EB	WB	Total
	74	81	0	0	155

AM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0						0	
00:15	0		0						0	
00:30	0		0						0	
00:45	0		0						0	
01:00	0		0						0	
01:15	0		0						0	
01:30	0		0						0	
01:45	0		0						0	
02:00	0		0						0	
02:15	0		0						0	
02:30	0		0						0	
02:45	0		0						0	
03:00	0		0						0	
03:15	0		0						0	
03:30	0		0						0	
03:45	0		0						0	
04:00	0		0						0	
04:15	0		0						0	
04:30	0		0						0	
04:45	0		0						0	
05:00	0		0						0	
05:15	0		0						0	
05:30	0		0						0	
05:45	0		0						0	
06:00	0		0						0	
06:15	0		0						0	
06:30	0		0						0	
06:45	2	2	0						2	2
07:00	1		1						2	
07:15	0		0						0	
07:30	0		0						0	
07:45	3	4	0	1					3	5
08:00	1		0						1	
08:15	0		0						0	
08:30	4		3						7	
08:45	4	9	1	4					5	13
09:00	1		2						3	
09:15	6		1						7	
09:30	2		2						4	
09:45	0	9	3	8					3	17
10:00	0		1						1	
10:15	4		0						4	
10:30	5		2						7	
10:45	2	11	2	5					4	16
11:00	2		2						4	
11:15	4		0						4	
11:30	0		0						0	
11:45	2	8	2	4					4	12
TOTALS		43		22						**65**
SPLIT %		66.2%		33.8%						**41.9%**

PM Period	NB		SB		EB		WB		TOTAL	
12:00	1		0						1	
12:15	3		3						6	
12:30	3		5						8	
12:45	1	8	3	11					4	19
13:00	1		1						2	
13:15	1		2						3	
13:30	1		4						5	
13:45	0	3	3	10					3	13
14:00	2		2						4	
14:15	2		1						3	
14:30	2		3						5	
14:45	1	7	0	6					1	13
15:00	0		0						0	
15:15	4		3						7	
15:30	2		0						2	
15:45	3	9	1	4					4	13
16:00	0		3						3	
16:15	0		0						0	
16:30	0		0						0	
16:45	1	1	2	5					3	6
17:00	0		1						1	
17:15	0		1						1	
17:30	1		2						3	
17:45	0	1	0	4					0	5
18:00	0		4						4	
18:15	1		0						1	
18:30	0		1						1	
18:45	1	2	0	5					1	7
19:00	0		6						6	
19:15	0		0						0	
19:30	0		0						0	
19:45	0		1	7					1	7
20:00	0		1						1	
20:15	0		0						0	
20:30	0		0						0	
20:45	0		0	1					0	1
21:00	0		0						0	
21:15	0		1						1	
21:30	0		2						2	
21:45	0		0	3					0	3
22:00	0		1						1	
22:15	0		2						2	
22:30	0		0						0	
22:45	0		0	3					0	3
23:00	0		0						0	
23:15	0		0						0	
23:30	0		0						0	
23:45	0		0						0	
TOTALS		31		59						**90**
SPLIT %		34.4%		65.6%						**58.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	74	81	0	0	155

AM Peak Hour	08:30	11:45			**08:30**
AM Pk Volume	15	10			**22**
Pk Hr Factor	0.625	0.500			**0.786**
7 - 9 Volume	13	5	0	0	**18**
7 - 9 Peak Hour	08:00	08:00			**08:00**
7 - 9 Pk Volume	9	4	0	0	**13**
Pk Hr Factor	0.563	0.333	0.000	0.000	**0.464**

PM Peak Hour	15:00	12:15			**12:15**
PM Pk Volume	9	12			**20**
Pk Hr Factor	0.563	0.600			**0.625**
4 - 6 Volume	2	9	0	0	**11**
4 - 6 Peak Hour	16:45	16:45			**16:45**
4 - 6 Pk Volume	2	6	0	0	**8**
Pk Hr Factor	0.500	0.750	0.000	0.000	**0.667**

Prepared by NDS/ATD

VOLUME

B Cellars Winery Dwy S/O Oakville Cross Rd

Day: Wednesday
Date: 10/4/2017

City: Oakville
Project #: CA17_7760_001

DAILY TOTALS	NB	SB	EB	WB	Total
	72	71	0	0	143

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0				0		12:00	1		0				1	
00:15	0		0				0		12:15	4		1				5	
00:30	0		0				0		12:30	3		5				8	
00:45	0		0				0		12:45	3	11	4	10			7	21
01:00	0		0				0		13:00	4		2				6	
01:15	0		0				0		13:15	3		4				7	
01:30	0		0				0		13:30	2		1				3	
01:45	0		0				0		13:45	2	11	3	10			5	21
02:00	0		0				0		14:00	0		1				1	
02:15	0		0				0		14:15	2		2				4	
02:30	0		0				0		14:30	1		2				3	
02:45	0		0				0		14:45	0	3	3	8			3	11
03:00	0		0				0		15:00	0		0				0	
03:15	0		0				0		15:15	1		1				2	
03:30	0		0				0		15:30	2		7				9	
03:45	0		0				0		15:45	0	3	0	8			0	11
04:00	0		0				0		16:00	0		2				2	
04:15	0		0				0		16:15	0		1				1	
04:30	0		0				0		16:30	1		2				3	
04:45	0		0				0		16:45	0	1	0	5			0	6
05:00	0		0				0		17:00	0		2				2	
05:15	0		0				0		17:15	0		3				3	
05:30	0		0				0		17:30	0		1				1	
05:45	0		0				0		17:45	0		0	6			0	6
06:00	0		0				0		18:00	0		4				4	
06:15	0		0				0		18:15	1		1				2	
06:30	0		0				0		18:30	0		1				1	
06:45	0		0				0		18:45	1	2	1	7			2	9
07:00	0		0				0		19:00	0		0				0	
07:15	2		0				2		19:15	0		0				0	
07:30	1		0				1		19:30	0		0				0	
07:45	1	4	0				1	4	19:45	0		0				0	
08:00	3		0				3		20:00	0		0				0	
08:15	1		0				1		20:15	0		0				0	
08:30	3		0				3		20:30	0		0				0	
08:45	3	10	1	1			4	11	20:45	0		0				0	
09:00	0		0				0		21:00	1		0				1	
09:15	2		1				3		21:15	0		0				0	
09:30	7		2				9		21:30	0		0				0	
09:45	0	9	0	3			0	12	21:45	0	1	0				0	1
10:00	2		0				2		22:00	0		0				0	
10:15	4		3				7		22:15	0		0				0	
10:30	2		1				3		22:30	0		0				0	
10:45	0	8	1	5			1	13	22:45	0		0				0	
11:00	2		3				5		23:00	0		0				0	
11:15	3		2				5		23:15	0		0				0	
11:30	2		2				4		23:30	0		0				0	
11:45	2	9	1	8			3	17	23:45	0		0				0	
TOTALS		40		17				**57**	**TOTALS**		32		54				**86**
SPLIT %		70.2%		29.8%				**39.9%**	**SPLIT %**		37.2%		62.8%				**60.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	72	71	0	0	143

AM Peak Hour	09:30	10:15					**09:30**		**PM Peak Hour**	12:15	12:30					**12:30**		
AM Pk Volume	13	8					**18**		**PM Pk Volume**	14	15					**28**		
Pk Hr Factor	0.464	0.667					**0.500**		**Pk Hr Factor**	0.875	0.750					**0.875**		
7 - 9 Volume	14	1	0	0			**15**		**4 - 6 Volume**	1	11	0	0			**12**		
7 - 9 Peak Hour	08:00	08:00					**08:00**		**4 - 6 Peak Hour**	16:00	16:30					**16:30**		
7 - 9 Pk Volume	10	1	0	0			**11**		**4 - 6 Pk Volume**	1	7	0	0			**8**		
Pk Hr Factor	0.833	0.250	0.000	0.000			**0.688**		**Pk Hr Factor**	0.250	0.583	0.000	0.000			**0.667**		

Appendix C

Winery Traffic Information/Trip Generation Forms

Winery Traffic Information / Trip Generation Sheet

Project Name: B Cellars Project Scenario: Permitted

Traffic during a Typical Weekday

Number of FT employees: 8	x 3.05 one-way trips per employee	=	24	daily trips.
Number of PT employees: 5	x 1.90 one-way trips per employee	=	10	daily trips.
Average number of weekday visitors: 25	/ 2.6 visitors per vehicle x 2 one-way trips	=	19	daily trips.
Gallons of production: 45000	/ 1,000 x .009 truck trips daily[3] x 2 one-way trips	=	1	daily trips.
	Total	=	54	**daily trips.**
	Number of total weekday trips x .38	=	21	**PM peak trips.**

Traffic during a Typical Saturday

Number of FT employees (on Saturdays): 7	x 3.05 one-way trips per employee	=	21	daily trips.
Number of PT employees (on Saturdays): 2	x 1.90 one-way trips per employee	=	4	daily trips.
Average number of weekend visitors: 35	/ 2.8 visitors per vehicle x 2 one-way trips	=	25	daily trips.
	Total	=	50	**daily trips.**
	Number of total Saturday trips x .57	=	29	**PM peak trips.**

Traffic during a Crush Saturday

Number of FT employees (during crush): 7	x 3.05 one-way trips per employee	=	21	daily trips.
Number of PT employees (during crush): 4	x 1.90 one-way trips per employee	=	8	daily trips.
Average number of weekend visitors: 35	/ 2.8 visitors per vehicle x 2 one-way trips	=	25	daily trips.
Gallons of production: 45000	/ 1,000 x .009 truck trips daily x 2 one-way trips	=	1	daily trips.
Avg. annual tons of grape on-haul: 273	x .11 truck trips daily [4] x 2 one-way trips	=	4	daily trips.
	Total	=	59	**daily trips.**
	Number of total Saturday trips x .57	=	34	**PM peak trips.**

Largest Marketing Event- Additional Traffic

Number of event staff (largest event): 3	x 2 one-way trips per staff person	=	6	trips.
Number of visitors (largest event): 150	/ 2.8 visitors per vehicle x 2 one-way trips	=	107	trips.
Number of special event truck trips (largest event): 0	x 2 one-way trips	=	0	trips.

[3] Assumes 1.47 materials & supplies trips + 0.8 case goods trips per 1,000 gallons of production / 250 days per year (see *Traffic Information Sheet Addendum* for reference).
[4] Assumes 4 tons per trip / 36 crush days per year (see *Traffic Information Sheet Addendum* for reference).

Winery Traffic Information / Trip Generation Sheet

Project Name: B Cellars Project Scenario: Proposed

Traffic during a Typical Weekday

Number of FT employees: 12	x 3.05 one-way trips per employee	=	36.6	daily trips.
Number of PT employees: 7.5	x 1.90 one-way trips per employee	=	14.3	daily trips.
Average number of weekday visitors: 64	/ 2.6 visitors per vehicle x 2 one-way trips	=	49.2	daily trips.
Gallons of production: 45000	/ 1,000 x .009 truck trips daily[3] x 2 one-way trips	=	0.8	daily trips.
	Total	=	101.0	**daily trips.**
	Number of total weekday trips x .38	=	38.0	**PM peak trips.**

Traffic during a Typical Saturday

Number of FT employees (on Saturdays): 2	x 3.05 one-way trips per employee	=	6.1	daily trips.
Number of PT employees (on Saturdays): 13.5	x 1.90 one-way trips per employee	=	25.7	daily trips.
Average number of weekend visitors: 64	/ 2.8 visitors per vehicle x 2 one-way trips	=	45.7	daily trips.
	Total	=	77.0	**daily trips.**
	Number of total Saturday trips x .57	=	44.0	**PM peak trips.**

Traffic during a Crush Saturday

Number of FT employees (during crush): 2	x 3.05 one-way trips per employee	=	6.1	daily trips.
Number of PT employees (during crush): 13.5	x 1.90 one-way trips per employee	=	25.7	daily trips.
Average number of weekend visitors: 64	/ 2.8 visitors per vehicle x 2 one-way trips	=	45.7	daily trips.
Gallons of production: 45000	/ 1,000 x .009 truck trips daily x 2 one-way trips	=	0.8	daily trips.
Avg. annual tons of grape on-haul: 273	x .11 truck trips daily [4] x 2 one-way trips	=	3.8	daily trips.
	Total	=	82.0	**daily trips.**
	Number of total Saturday trips x .57	=	47.0	**PM peak trips.**

Largest Marketing Event- Additional Traffic

Number of event staff (largest event): 3	x 2 one-way trips per staff person	=	6	trips.
Number of visitors (largest event): 100	/ 2.8 visitors per vehicle x 2 one-way trips	=	71	trips.
Number of special event truck trips (largest event): 2	x 2 one-way trips	=	4	trips.

[3] Assumes 1.47 materials & supplies trips + 0.8 case goods trips per 1,000 gallons of production / 250 days per year (see *Traffic Information Sheet Addendum* for reference).
[4] Assumes 4 tons per trip / 36 crush days per year (see *Traffic Information Sheet Addendum* for reference).

Appendix D

Left-Turn Lane Warrant Analysis for the B Cellars Project

October 14, 2016

Mr. Duffy Keys
B Cellars
P.O. Box 84
Oakville, CA 94562

Left-turn Lane Warrant Analysis for the B Cellars Project

Dear Mr. Keys;

As requested, the need for a left-turn Lane on Oakville Cross Road at the driveway to B Cellars was evaluated within the context of the County of Napa's policies.

Project Description

Approved Project

The current use permit for B Cellars approved in March 2013 authorized the following activities:

1. Construction of new winery buildings including caves;
2. An increase in annual production from 10,000 to 45,000 gallons annually;
3. An increase in daily visitors from 10 guests per day to a maximum of 60 guests per day, not to exceed 250 guests per week;
4. An increase in the previously approved marketing plan; and
5. An increase in the number of employees from one (1) full-time and five (5) part-time staff to eight (8) full-time and five (5) part-time staff

Proposed Modification

It is understood that a proposed modification to the current project is going to be submitted to the County of Napa, and will include the following activities that affect daily trip generation:

1. An increase in average weekday and weekend daily visitors from 60 to 64, with maximum weekly visitation not to exceed 450;
2. An increase in the number of employees from (eight) full-time and five (5) part-time staff to twelve (12) full-time and seven-and-one-half (7.5) part-time employees on a typical weekday; two (2) full-time and thirteen-and-one-half (13.5) part-time staff on a typical Saturday and during a crush Saturday; and

No change to annual production is proposed as part of this modification

Traffic Volumes

Daily traffic counts were obtained on Oakville Cross Road for a period including two weekdays and two weekend days. The dates of the count were July 21 to 24, 2016, a period including a Thursday through Sunday. Although volumes mid-week (Tuesday and Wednesday) are typically lower than on a Thursday or Friday, the volumes for these two days were averaged to achieve a weekday average which was then averaged in with the weekend days to achieve an average daily traffic (ADT) volume of 1,408 vehicles. Copies of the traffic counts are enclosed for reference.

Winery Trip Generation

The enclosed Winery Traffic Information/Trip Generation Sheet was developed by applying the County's standard trip generation rates and again averaging trips over the course of the week, as shown below the graph. The

driveway is expected to have an ADT of about 104 trips daily, including the proposed modifications to the winery's Use Permit as well as trips from the existing single-family dwelling.

Left-turn Lane Warrant Analysis

The County of Napa has a published policy that provides guidance on when a turn lane is needed. Use of the ADTs for both the roadway and the driveway, developed as described above, a left-turn lane is not warranted. A copy of the graph, with the volume derivation information included at the bottom, is enclosed for reference.

Please contact me if you have any questions. Thank you for giving us the opportunity to provide these services.

Sincerely,

Dalene J. Whitlock, PE, PTOE
Principal

DJW/djw/NAX119.L1

Enclosures: Traffic Counts
Winery Trip Generation
Turn Lane Warrant Graph

Copy to: Mr. Jeffrey Redding (via email)

Prepared by NDS/ATD

VOLUME

Oakville Cross Rd Bet. Money Rd & Silverado Trail

Day: Thursday
Date: 7/21/2016

City: Napa County
Project #: CA16_7500_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	785	683	1,468

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			1		0		1		12:00			13		16		29	
00:15			0		1		1		12:15			20		15		35	
00:30			0		0		0		12:30			30		20		50	
00:45			0	1	0	1	0	2	12:45			18	81	8	59	26	140
01:00			0		0		0		13:00			19		13		32	
01:15			2		1		3		13:15			14		20		34	
01:30			0		0		0		13:30			13		5		18	
01:45			0	2	0	1	0	3	13:45			18	64	17	55	35	119
02:00			0		1		1		14:00			11		16		27	
02:15			0		1		1		14:15			19		11		30	
02:30			0		1		1		14:30			27		14		41	
02:45			0		0	3	0	3	14:45			17	74	11	52	28	126
03:00			0		0		0		15:00			21		20		41	
03:15			1		1		2		15:15			21		11		32	
03:30			1		0		1		15:30			26		8		34	
03:45			0	2	1	2	1	4	15:45			22	90	12	51	34	141
04:00			1		0		1		16:00			18		10		28	
04:15			2		0		2		16:15			12		20		32	
04:30			0		1		1		16:30			58		14		72	
04:45			1	4	0	1	1	5	16:45			14	102	12	56	26	158
05:00			2		1		3		17:00			21		12		33	
05:15			8		7		15		17:15			11		9		20	
05:30			9		18		27		17:30			10		11		21	
05:45			4	23	8	34	12	57	17:45			7	49	11	43	18	92
06:00			7		8		15		18:00			6		11		17	
06:15			7		3		10		18:15			10		7		17	
06:30			5		8		13		18:30			4		4		8	
06:45			11	30	8	27	19	57	18:45			2	22	3	25	5	47
07:00			3		9		12		19:00			2		2		4	
07:15			7		7		14		19:15			1		3		4	
07:30			6		11		17		19:30			1		2		3	
07:45			6	22	16	43	22	65	19:45			2	6	0	7	2	13
08:00			12		12		24		20:00			2		2		4	
08:15			10		9		19		20:15			4		3		7	
08:30			7		11		18		20:30			0		2		2	
08:45			12	41	15	47	27	88	20:45			4	10	5	12	9	22
09:00			8		5		13		21:00			1		2		3	
09:15			8		13		21		21:15			4		1		5	
09:30			15		17		32		21:30			1		0		1	
09:45			13	44	15	50	28	94	21:45			2	8	0	3	2	11
10:00			11		5		16		22:00			3		0		3	
10:15			10		6		16		22:15			1		3		4	
10:30			8		15		23		22:30			3		1		4	
10:45			12	41	18	44	30	85	22:45			3	10	1	5	4	15
11:00			9		11		20		23:00			0		0		0	
11:15			14		17		31		23:15			2		2		4	
11:30			12		10		22		23:30			0		0		0	
11:45			22	57	22	60	44	117	23:45			0	2	0	2	0	4
TOTALS				267		313		**580**	**TOTALS**				518		370		**888**
SPLIT %				46.0%		54.0%		**39.5%**	**SPLIT %**				58.3%		41.7%		**60.5%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	785	683	1,468

AM Peak Hour			11:45	11:45	**11:45**	**PM Peak Hour**			15:45	12:30	**15:45**
AM Pk Volume			85	73	**158**	**PM Pk Volume**			110	61	**166**
Pk Hr Factor			0.708	0.830	**0.790**	**Pk Hr Factor**			0.474	0.763	**0.576**
7 - 9 Volume	0	0	63	90	**153**	**4 - 6 Volume**	0	0	151	99	**250**
7 - 9 Peak Hour			08:00	07:30	**08:00**	**4 - 6 Peak Hour**			16:15	16:15	**16:15**
7 - 9 Pk Volume	0	0	41	48	**88**	**4 - 6 Pk Volume**	0	0	105	58	**163**
Pk Hr Factor	0.000	0.000	0.854	0.750	**0.815**	**Pk Hr Factor**	0.000	0.000	0.453	0.725	**0.566**

Prepared by NDS/ATD

VOLUME

Oakville Cross Rd Bet. Money Rd & Silverado Trail

Day: Friday
Date: 7/22/2016

City: Napa County
Project #: CA16_7500_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	887	714	1,601

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		0		0		12:00			30		20		50	
00:15			2		0		2		12:15			16		16		32	
00:30			0		0		0		12:30			17		27		44	
00:45			0	2	0		0	2	12:45			24	87	20	83	44	170
01:00			0		0		0		13:00			27		16		43	
01:15			0		0		0		13:15			15		9		24	
01:30			0		0		0		13:30			25		14		39	
01:45			0		0		0		13:45			18	85	16	55	34	140
02:00			0		0		0		14:00			20		15		35	
02:15			0		0		0		14:15			27		20		47	
02:30			0		0		0		14:30			31		14		45	
02:45			0		0		0		14:45			18	96	15	64	33	160
03:00			0		0		0		15:00			18		13		31	
03:15			1		1		2		15:15			24		16		40	
03:30			0		0		0		15:30			44		19		63	
03:45			0	1	0	1	0	2	15:45			23	109	12	60	35	169
04:00			1		0		1		16:00			20		10		30	
04:15			0		0		0		16:15			15		16		31	
04:30			2		1		3		16:30			27		19		46	
04:45			1	4	0	1	1	5	16:45			17	79	2	47	19	126
05:00			2		1		3		17:00			17		8		25	
05:15			4		6		10		17:15			20		4		24	
05:30			5		12		17		17:30			9		4		13	
05:45			6	17	8	27	14	44	17:45			15	61	9	25	24	86
06:00			4		3		7		18:00			10		7		17	
06:15			2		5		7		18:15			4		4		8	
06:30			4		7		11		18:30			4		1		5	
06:45			7	17	6	21	13	38	18:45			6	24	3	15	9	39
07:00			10		7		17		19:00			6		3		9	
07:15			6		8		14		19:15			1		3		4	
07:30			8		16		24		19:30			1		5		6	
07:45			13	37	11	42	24	79	19:45			5	13	4	15	9	28
08:00			8		20		28		20:00			6		5		11	
08:15			13		12		25		20:15			3		1		4	
08:30			13		9		22		20:30			3		0		3	
08:45			13	47	14	55	27	102	20:45			0	12	1	7	1	19
09:00			16		19		35		21:00			0		0		0	
09:15			16		12		28		21:15			0		1		1	
09:30			15		10		25		21:30			1		3		4	
09:45			14	61	15	56	29	117	21:45			3	4	4	8	7	12
10:00			11		24		35		22:00			0		1		1	
10:15			13		13		26		22:15			1		1		2	
10:30			15		17		32		22:30			4		0		4	
10:45			14	53	8	62	22	115	22:45			1	6	0	2	1	8
11:00			17		19		36		23:00			1		0		1	
11:15			12		15		27		23:15			0		2		2	
11:30			19		12		31		23:30			1		2		3	
11:45			22	70	18	64	40	134	23:45			0	2	0	4	0	6
TOTALS				309		329		**638**	**TOTALS**				578		385		**963**
SPLIT %				48.4%		51.6%		**39.9%**	**SPLIT %**				60.0%		40.0%		**60.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	887	714	1,601

AM Peak Hour			11:30	11:45	**11:45**	**PM Peak Hour**			15:15	12:00	**12:00**
AM Pk Volume			87	81	**166**	**PM Pk Volume**			111	83	**170**
Pk Hr Factor			0.725	0.750	**0.830**	**Pk Hr Factor**			0.631	0.769	**0.850**
7 - 9 Volume	0	0	84	97	**181**	**4 - 6 Volume**	0	0	140	72	**212**
7 - 9 Peak Hour			07:45	07:30	**08:00**	**4 - 6 Peak Hour**			16:30	16:00	**16:00**
7 - 9 Pk Volume	0	0	47	59	**102**	**4 - 6 Pk Volume**	0	0	81	47	**126**
Pk Hr Factor	0.000	0.000	0.904	0.738	**0.911**	**Pk Hr Factor**	0.000	0.000	0.750	0.618	**0.685**

Prepared by NDS/ATD

VOLUME

Oakville Cross Rd Bet. Money Rd & Silverado Trail

Day: Saturday
Date: 7/23/2016

City: Napa County
Project #: CA16_7500_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	711	750	1,461

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00					0		1		1		12:00					12		13		25	
00:15					0		0		0		12:15					14		23		37	
00:30					0		1		1		12:30					26		27		53	
00:45					0		0	2	0	2	12:45					23	75	27	90	50	165
01:00					0		0		0		13:00					28		16		44	
01:15					0		0		0		13:15					22		24		46	
01:30					0		0		0		13:30					19		19		38	
01:45					0		0		0		13:45					16	85	24	83	40	168
02:00					0		0		0		14:00					21		22		43	
02:15					0		0		0		14:15					20		17		37	
02:30					0		0		0		14:30					24		21		45	
02:45					0		0		0		14:45					18	83	23	83	41	166
03:00					0		1		1		15:00					24		19		43	
03:15					0		0		0		15:15					20		22		42	
03:30					0		0		0		15:30					18		22		40	
03:45					1	1	1	2	2	3	15:45					16	78	17	80	33	158
04:00					1		0		1		16:00					22		17		39	
04:15					1		1		2		16:15					18		19		37	
04:30					3		1		4		16:30					18		16		34	
04:45					1	6	0	2	1	8	16:45					9	67	20	72	29	139
05:00					1		5		6		17:00					13		13		26	
05:15					2		4		6		17:15					11		18		29	
05:30					6		10		16		17:30					5		20		25	
05:45					6	15	7	26	13	41	17:45					8	37	17	68	25	105
06:00					4		1		5		18:00					5		21		26	
06:15					3		4		7		18:15					8		11		19	
06:30					3		2		5		18:30					1		10		11	
06:45					4	14	4	11	8	25	18:45					3	17	4	46	7	63
07:00					3		3		6		19:00					4		5		9	
07:15					5		4		9		19:15					1		3		4	
07:30					6		5		11		19:30					1		3		4	
07:45					5	19	5	17	10	36	19:45					5	11	2	13	7	24
08:00					1		6		7		20:00					3		2		5	
08:15					6		5		11		20:15					1		5		6	
08:30					3		7		10		20:30					2		0		2	
08:45					11	21	5	23	16	44	20:45					0	6	1	8	1	14
09:00					6		8		14		21:00					6		0		6	
09:15					9		8		17		21:15					3		3		6	
09:30					10		4		14		21:30					5		2		7	
09:45					12	37	10	30	22	67	21:45					11	25	2	7	13	32
10:00					20		6		26		22:00					11		1		12	
10:15					12		3		15		22:15					2		1		3	
10:30					7		6		13		22:30					6		1		7	
10:45					12	51	15	30	27	81	22:45					3	22	2	5	5	27
11:00					12		8		20		23:00					0		2		2	
11:15					11		9		20		23:15					1		0		1	
11:30					8		19		27		23:30					0		0		0	
11:45					8	39	14	50	22	89	23:45					1	2	0	2	1	4
TOTALS						203		193		**396**	**TOTALS**						508		557		**1065**
SPLIT %						51.3%		48.7%		**27.1%**	**SPLIT %**						47.7%		52.3%		**72.9%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	711	750	1,461

AM Peak Hour			11:45	11:45	**11:45**	**PM Peak Hour**			12:30	12:30	**12:30**
AM Pk Volume			60	77	**137**	**PM Pk Volume**			99	94	**193**
Pk Hr Factor			0.577	0.713	**0.646**	**Pk Hr Factor**			0.884	0.870	**0.910**
7 - 9 Volume	0	0	40	40	**80**	**4 - 6 Volume**	0	0	104	140	**244**
7 - 9 Peak Hour			08:00	07:45	**08:00**	**4 - 6 Peak Hour**			16:00	16:00	**16:00**
7 - 9 Pk Volume	0	0	21	23	**44**	**4 - 6 Pk Volume**	0	0	67	72	**139**
Pk Hr Factor	0.000	0.000	0.477	0.821	**0.688**	**Pk Hr Factor**	0.000	0.000	0.761	0.900	**0.891**

Prepared by NDS/ATD

VOLUME

Oakville Cross Rd Bet. Money Rd & Silverado Trail

Day: Sunday
Date: 7/24/2016

City: Napa County
Project #: CA16_7500_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	389	335	724

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			2		1		3		12:00			5		11		16	
00:15			1		1		2		12:15			13		11		24	
00:30			1		0		1		12:30			14		7		21	
00:45			0	4	0	2	0	6	12:45			7	39	11	40	18	79
01:00			0		0		0		13:00			11		10		21	
01:15			0		0		0		13:15			3		13		16	
01:30			0		0		0		13:30			16		14		30	
01:45			0		0		0		13:45			12	42	13	50	25	92
02:00			0		0		0		14:00			9		12		21	
02:15			0		0		0		14:15			12		6		18	
02:30			0		0		0		14:30			12		7		19	
02:45			0		1	1	1	1	14:45			20	53	14	39	34	92
03:00			0		0		0		15:00			14		8		22	
03:15			0		0		0		15:15			13		9		22	
03:30			0		0		0		15:30			4		7		11	
03:45			0		1	1	1	1	15:45			11	42	7	31	18	73
04:00			1		1		2		16:00			7		7		14	
04:15			1		0		1		16:15			11		3		14	
04:30			0		0		0		16:30			8		5		13	
04:45			0	2	0	1	0	3	16:45			8	34	7	22	15	56
05:00			0		0		0		17:00			5		5		10	
05:15			1		1		2		17:15			12		7		19	
05:30			0		1		1		17:30			2		5		7	
05:45			1	2	0	2	1	4	17:45			9	28	5	22	14	50
06:00			1		0		1		18:00			9		3		12	
06:15			0		2		2		18:15			4		4		8	
06:30			0		0		0		18:30			4		1		5	
06:45			2	3	0	2	2	5	18:45			3	20	5	13	8	33
07:00			0		0		0		19:00			0		2		2	
07:15			1		0		1		19:15			1		1		2	
07:30			3		0		3		19:30			4		0		4	
07:45			2	6	3	3	5	9	19:45			3	8	3	6	6	14
08:00			3		0		3		20:00			1		3		4	
08:15			2		0		2		20:15			0		1		1	
08:30			5		2		7		20:30			2		2		4	
08:45			6	16	2	4	8	20	20:45			2	5	1	7	3	12
09:00			6		8		14		21:00			0		1		1	
09:15			4		5		9		21:15			1		2		3	
09:30			6		4		10		21:30			2		2		4	
09:45			8	24	4	21	12	45	21:45			1	4	1	6	2	10
10:00			9		5		14		22:00			2		2		4	
10:15			6		4		10		22:15			1		1		2	
10:30			6		13		19		22:30			1		0		1	
10:45			6	27	5	27	11	54	22:45			1	5	3	6	4	11
11:00			5		5		10		23:00			2		1		3	
11:15			8		6		14		23:15			0		0		0	
11:30			3		4		7		23:30			0		0		0	
11:45			7	23	13	28	20	51	23:45			0	2	0	1	0	3
TOTALS				107		92		**199**	**TOTALS**				282		243		**525**
SPLIT %				53.8%		46.2%		**27.5%**	**SPLIT %**				53.7%		46.3%		**72.5%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	389	335	724

AM Peak Hour				11:45		11:45		**11:45**	**PM Peak Hour**				14:30		13:15		**14:30**
AM Pk Volume				39		42		**81**	**PM Pk Volume**				59		52		**97**
Pk Hr Factor				0.696		0.808		**0.844**	**Pk Hr Factor**				0.738		0.929		**0.713**
7 - 9 Volume	0	0		22		7		**29**	**4 - 6 Volume**	0	0		62		44		**106**
7 - 9 Peak Hour				08:00		07:45		**08:00**	**4 - 6 Peak Hour**				16:00		16:30		**16:30**
7 - 9 Pk Volume	0	0		16		5		**20**	**4 - 6 Pk Volume**	0	0		34		24		**57**
Pk Hr Factor	0.000	0.000		0.667		0.417		**0.625**	**Pk Hr Factor**	0.000	0.000		0.773		0.857		**0.750**

Winery Traffic Information / Trip Generation Sheet

Project Name: B Cellars Project Scenario: Proposed

Traffic during a Typical Weekday

Number of FT employees: 12	x 3.05 one-way trips per employee	=	36.6	daily trips.
Number of PT employees: 7.5	x 1.90 one-way trips per employee	=	14.3	daily trips.
Average number of weekday visitors: 64	/ 2.6 visitors per vehicle x 2 one-way trips	=	49.2	daily trips.
Gallons of production: 45000	/ 1,000 x .009 truck trips daily[3] x 2 one-way trips	=	0.8	daily trips.
	Total	=	101.0	**daily trips.**
	Number of total weekday trips x .38	=	38.0	**PM peak trips.**

Traffic during a Typical Saturday

Number of FT employees (on Saturdays): 2	x 3.05 one-way trips per employee	=	6.1	daily trips.
Number of PT employees (on Saturdays): 13.5	x 1.90 one-way trips per employee	=	25.7	daily trips.
Average number of weekend visitors: 64	/ 2.8 visitors per vehicle x 2 one-way trips	=	45.7	daily trips.
	Total	=	77.0	**daily trips.**
	Number of total Saturday trips x .57	=	44.0	**PM peak trips.**

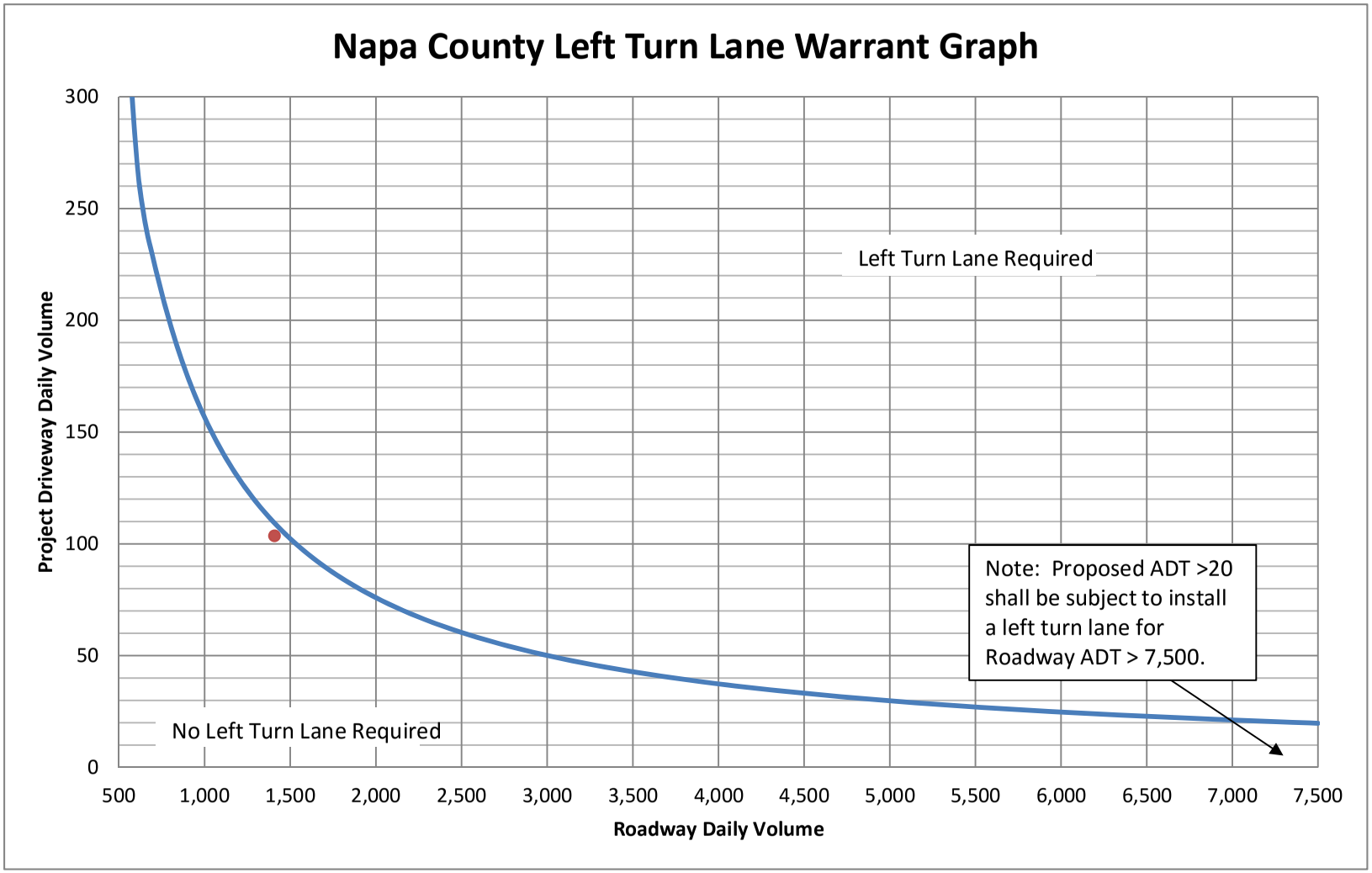
Traffic during a Crush Saturday

Number of FT employees (during crush): 2	x 3.05 one-way trips per employee	=	6.1	daily trips.
Number of PT employees (during crush): 13.5	x 1.90 one-way trips per employee	=	25.7	daily trips.
Average number of weekend visitors: 64	/ 2.8 visitors per vehicle x 2 one-way trips	=	45.7	daily trips.
Gallons of production: 45000	/ 1,000 x .009 truck trips daily x 2 one-way trips	=	0.8	daily trips.
Avg. annual tons of grape on-haul: 273	x .11 truck trips daily [4] x 2 one-way trips	=	3.8	daily trips.
	Total	=	82.0	**daily trips.**
	Number of total Saturday trips x .57	=	47.0	**PM peak trips.**

Largest Marketing Event- Additional Traffic

Number of event staff (largest event): 4	x 2 one-way trips per staff person	=	8	trips.
Number of visitors (largest event): 150	/ 2.8 visitors per vehicle x 2 one-way trips	=	107	trips.
Number of special event truck trips (largest event): 2	x 2 one-way trips	=	4	trips.

[3] Assumes 1.47 materials & supplies trips + 0.8 case goods trips per 1,000 gallons of production / 250 days per year (see *Traffic Information Sheet Addendum* for reference).
[4] Assumes 4 tons per trip / 36 crush days per year (see *Traffic Information Sheet Addendum* for reference).



Volume Derivation

	ROADWAY	WINERY		ROADWAY	WINERY
Thursday	1468	101			
Friday	1601	101	Weekday Average	1534.5	101.0
Saturday	1461	77	Single family dwelling		9.5
Sunday	724	77	ADT (5xdaily + Sat + Sun)	1408.2	103.6