Traffic Impact Study

Dakota Shy Winery, Use Permit Major Modification
Application No. P19-00131-MOD
Planning Commission Hearing, February 17, 2021

FINAL TRAFFIC IMPACT REPORT

DAKOTA SHY WINERY
USE PERMIT MODIFICATION 2020

771 Sage Canyon Road, St. Helena, CA 94574
(APN 030-120-024-000)
Project No. P19-00131

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I. INTRODUCTION

This report has been prepared at the request of the Dakota Shy Winery to determine whether expanded activities at the Winery, as detailed in their 2020 use permit modification application, will result in any significant circulation impacts to the local roadway network. The project site is located along Sage Canyon Road (State Route 128) about a quarter mile east of Silverado Trail (See **Figure 1 Regional Map**, **Figure 2 Site Specific Air Photo** and **Figure 3 Site Plan**). The scope of analysis includes evaluation of Silverado Trail and Sage Canyon Road along with the Silverado Trail intersections with Conn Creek Road and Sage Canyon Road as well as the two Project Driveway intersections along Sage Canyon Road. Harvest Year 2019, Year 2025 and cumulative (Year 2030) horizons have been analyzed. The scope of service for this traffic study was developed for and approved by both the Napa County Public Works Department and the Planning, Building & Environmental Sciences Department.

II. EXECUTIVE SUMMARY OF PROJECT IMPACTS AND RECOMMENDED IMPROVEMENTS

A. IMPACTS

1. PROPOSED PROJECT HARVEST FRIDAY & SATURDAY PM PEAK HOUR TRIP GENERATION

PM PEAK HOUR TRIPS	
HARVEST FRIDAY	HARVEST SATURDAY
5	3

2. SIGNIFICANCE OF PROJECT IMPACTS

a. Intersection Level of Service (Silverado Trail at Conn Creek Road & Sage Canyon Road at both Project Driveways)

- ***Less than significant.***

b. Intersection Level of Service (Silverado Trail at Sage Canyon Road)

- ***Significant.***

c. Arterial Level of Service (Silverado Trail and Sage Canyon Road)

- ***Less than significant.***

d. Need for Left Turn Lane on Sage Canyon Road at the Project Inbound (Eastern) Driveway Intersection - Turn lane not warranted.

- ***Less than significant.***

e. Sight Line Adequacy at Sage Canyon Road/Project Outbound (Western) Driveway Intersection

- ***Less than significant*** **-** Sight lines meet Caltrans stopping sight distance criteria.

f. Marketing Events

- ***Less than significant*** **-** There are no changes in the marketing event program. Also, there are no medium size events being held 2 or more times per month.

g. Pedestrian, bicycle and transit impacts

- ***Less than significant.***

h. On-site Parking and Internal Circulation Impacts

- ***Less than significant*** **-** The on-site circulation system was designed to County and CAL FIRE criteria when the Winery was first built. It should continue to function acceptably with the minor increases in traffic expected due to the use permit modification. On-site parking is now underutilized and should accommodate the expected increase in employee and guest parking demand.

i. Transportation Demand Management (TDM) Program and Vehicle Miles Traveled (VMT) Reduction

- ***Less than significant*** **-** A TDM coordinator will be appointed to reduce traffic generation potential for daily employee traffic as well as to promote shuttle buses for both large size marketing events. A TDM plan is attached.

B. RECOMMENDED IMPROVEMENT

The project should eliminate all new trip generation during the Friday PM peak traffic hour on the local roadway system (3:30-4:30 PM) to mitigate its impact at the Silverado Trail/Sage Canyon Road intersection. This will require scheduling all new guests during the late afternoon to arrive no later than 3:15 PM and leave no earlier than 4:30 PM. Also, no new employees or deliveries shall be scheduled to arrive or depart during this hour on Friday afternoon. The Winery TDM Coordinator will be responsible for scheduling.

III. SUMMARY OF "WITHOUT AND WITH PROJECT" OPERATING CONDITIONS

A. "WITHOUT PROJECT" OPERATING CONDITIONS

1. INTERSECTION LEVEL OF SERVICE

a. SILVERADO TRAIL/CONN CREEK ROAD - Stop sign controlled approach

- **Friday PM Peak Hour**
  Existing, Year 2025 & Cumulative (2030) - **Unacceptable**
- **Saturday PM Peak Hour**
  Existing, Year 2025 & Cumulative (2030) - Acceptable

b. SILVERADO TRAIL/SAGE CANYON ROAD

- **Friday PM Peak Hour**
  Existing, Year 2025 & Cumulative (2030) - **Unacceptable**
- **Saturday PM Peak Hour**
  Existing - Acceptable
  Year 2025 and Cumulative (2030) - **Unacceptable**

c. SAGE CANYON ROAD/PROJECT DRIVEWAYS

- **Friday & Saturday PM Peak Hours**
  Existing, Year 2025 & Cumulative (2030) - Acceptable

2. ARTERIAL LEVEL OF SERVICE

a. SILVERADO TRAIL NORTH OF CONN CREEK ROAD & SOUTH OF SAGE CANYON RD

- **Friday PM Peak Hour**
  Existing, Year 2025 & Cumulative (2030)
  Southbound **Unacceptable**
  Northbound Acceptable
- **Saturday PM Peak Hour**
  Existing, Year 2025 & Cumulative (2030)
  Southbound Acceptable
  Northbound Acceptable

b. SAGE CANYON ROAD EAST OF SILVERADO TRAIL

- **Friday & Saturday PM Peak Hours**
  Existing, Year 2025 & Cumulative (2030)
  Eastbound - Acceptable
  Westbound – Acceptable

3. INTERSECTIONS WITH VOLUMES MEETING RURAL PEAK HOUR SIGNAL WARRANT #3 CRITERIA

a. SILVERADO TRAIL/CONN CREEK ROAD & SILVERADO TRAIL/SAGE CANYON ROAD

- Existing, 2025 & Cumulative (2030) - Friday & Saturday PM peak hour volumes meet rural signal Warrant #3 criteria.

4. LEFT TURN LANE VOLUME WARRANT ON THE SAGE CANYON ROAD APPROACH TO THE WINERY'S EASTERN DRIVEWAY

- Volumes currently do not meet County warrant criteria for provision of a left turn lane on the eastbound Sage Canyon Road approach to the Winery's Eastern Driveway, which allows both in- and outbound traffic. Once the new Western (Outbound) Driveway is in operation the existing Eastern Driveway will be limited to primarily inbound traffic flow, with only outbound movements by large trucks. Volumes at the Eastern Driveway at that point will also not warrant provision of a left turn lane.

B. PROJECT IMPACTS
Friday & Saturday PM Peak Hours

1. OFF-SITE

a. INTERSECTION LEVEL OF SERVICE

1) SILVERADO TRAIL/CONN CREEK ROAD - *Less than significant*

- **Existing, Year 2025 or Cumulative (2030) -** Project traffic would not increase delay by 5 seconds or greater on the stop sign controlled Conn Creek Road approach to Silverado Trail, which would already be operating at an unacceptable LOS E or F during the Friday PM peak hour. Operation during the Saturday PM peak hour would remain acceptable during all horizons.

2) SILVERADO TRAIL/SAGE CANYON ROAD - *Significant*

- **Existing, Year 2025 & Cumulative (2030) -** During the Friday PM peak hour project traffic would increase delay by more than 5 seconds on the stop sign controlled Sage Canyon Road intersection approach, which would already be operating at an unacceptable LOS F. However, impacts would be less than significant during the Saturday PM peak hour.

3) **SAGE CANYON ROAD/PROJECT OUTBOUND DRIVEWAY - *Less than significant.***

- **Existing, Year 2025 & Cumulative (2030) -** Unsignalized operation would remain an acceptable LOS A or B during both the Friday & Saturday PM peak hours.

b. ARTERIAL LEVEL OF SERVICE

1) **SILVERADO TRAIL NORTH OF CONN CREEK ROAD & SOUTH OF SAGE CANYON ROAD - *Less than significant.***

- **Existing & Year 2025** - ***Less than significant.*** Project traffic would not increase 2-way volumes by 1% or greater along the segments of Silverado Trail already operating unacceptably at LOS E during the Friday PM peak hour. Saturday operation would remain acceptable.
- **Cumulative (2030) -** Project traffic would not increase the growth in 2-way traffic from 2019 to 2030 by 5% or greater along the segments of Silverado Trail which would already be operating unacceptably at LOS E during the Friday PM peak hour. Saturday operation would remain acceptable.

2) **SAGE CANYON ROAD EAST OF SILVERADO TRAIL**

- Existing, Year 2025 & Cumulative (2030) - ***Less than significant.*** Friday & Saturday operation would remain an acceptable LOS A or B.

c. NEED FOR A LEFT TURN LANE ON EASTBOUND SAGE CANYON ROAD APPROACH TO PROJECT INBOUND DRIVEWAY - *Less than significant*

Daily volumes would not meet County warrant criteria.

d. SIGHT LINES AT SAGE CANYON ROAD/PROJECT OUTBOUND DRIVEWAY INTERSECTION - *Less than significant*

Sight lines would continue to meet minimum Caltrans stopping sight distance criteria.

e. MARKETING EVENTS - *Less than significant*

No new marketing events are requested. Also, there are no moderate size events occurring 2 or more times per month.

f. PEDESTRIAN, BICYCLE AND TRANSIT IMPACTS - *Less than significant*

No pedestrians or transit riders would be expected at the Winery as there are no pedestrian facilities or transit routes along Silverado Trail or Sage Canyon Road. Bike racks would be provided for any bicyclists accessing the Winery via the Class II bicycle lanes along Silverado Trail.

g. ON-SITE PARKING & INTERNAL CIRULATION - *Less than significant.*
On-site parking (at 11 spaces) is now greatly underutilized and should accommodate the added employee and visitor parking. In addition, the internal circulation plan and truck circulation patterns will be the same as those approved by the County when the Winery was first constructed about 5 years ago. The project will only result in an increase in the number of trucks.

h. TDM PROGRAM AND VMT REDUCTION - *Less than significant*
A TDM coordinator will be appointed to reduce traffic generation potential for daily employee traffic as well as to promote shuttle buses for all medium and large size marketing events. A TDM plan is attached.

C. RECOMMENDED IMPROVEMENT

The project should eliminate all new trip generation during the Friday PM peak traffic hour on the local roadway system (3:30-4:30 PM) to mitigate its impact at the Silverado Trail/Sage Canyon Road intersection. This will require scheduling all new guests during the late afternoon to arrive no later than 3:15 PM and leave no earlier than 4:30 PM. Also, no new employees or deliveries shall be scheduled to arrive or depart during this hour on Friday afternoon. The Winery TDM Coordinator will be responsible for scheduling.

D. CONCLUSIONS & RECOMMENDATIONS

- The project will result in a significant off-site circulation system operational impact to the Silverado Trail intersection with Sage Canyon Road during the Friday PM peak hour. However, there will be no significant impacts to Silverado Trail or Sage Canyon Road or to the Silverado Trail/Conn Creek Road or Sage Canyon Road/Project Driveway intersections. Also, volumes will not meet County warrant criteria for provision of a left turn lane on the Sage Canyon Road approach to the Project Inbound Driveway once the new Outbound Driveway is in operation.

- No pedestrians or transit users are expected at the Winery. However, bicycle racks will be provided for any bike riders accessing the Winery via the Class II bike lanes along Silverado Trail.

- No new marketing events are being proposed and on days with recurring moderate size attendance daily visitation by appointment will be reduced by the same number of guests attending the event. Finally, a TDM coordinator will be appointed to institute measures to reduce daily employee traffic as well as increase limousine and shuttle bus service for marketing events.

- The project should eliminate all new trip generation during the Friday PM peak hour (3:30-4:30 PM) to mitigate its impact at the Silverado Trail/Sage Canyon Road intersection. This will require scheduling all new guests during the late afternoon to

arrive no later than 3:15 PM and leave no earlier than 4:30 PM. Also, no new employees or deliveries shall be scheduled to arrive or depart during this hour on Friday afternoon. The Winery TDM Coordinator will be responsible for scheduling. This measure will offset the significant impact at the Silverado Trail/Sage Canyon Road intersection.

IV. PROJECT LOCATION & DESCRIPTION

The Dakota Shy Winery is located along the south side of Sage Canyon Road about a quarter mile east of Silverado Trail.

The proposed use permit modification Winery will have the following characteristics:

- Production will increase from 14,000 up to 20,000 gallons per year.
- Bottling will remain on site.
- Harvest employee totals will change -
  Weekday: From 2 full-time & 2 part-time to 10 full-time.
  Saturday: From 2 full-time & 2 part-time to 4 full-time.
- Non-harvest employee totals will change -
  Weekday: From 2 full-time & 2 part-time to 10 full-time.
  Saturday: From 2 full-time & 0 part-time to 4 full-time.
- Maximum daily harvest visitation will increase from 16 up to 35 guests on a Friday and from 20 up to 48 guests on a Saturday.
- Tours and tasting will remain 7 days/week, 10:00 AM-6:00 PM
- Marketing events: No new events requested and there are no existing moderate size events occurring 2 or more times per month.
- On-site parking will remain 11 spaces.
- The internal circulation plan will remain as approved by the County during initial Winery construction. Part of this plan included a second driveway connection to Sage Canyon Road (at the west end of the site) to be used by outbound traffic only. Improvements have recently been completed at the Outbound Driveway connection to Sage Canyon Road (SR 128) under Caltrans encroachment permit 04-19-6-RM-1728 in order to allow opening of this new driveway. A signage plan directing existing vehicles to the new Outbound Driveway will be prepared by the applicant and installed once approved by the County.

V. EXISTING CIRCULATION SYSTEM EVALUATION PROCEDURES

A. ANALYSIS LOCATIONS

1. INTERSECTIONS

The following locations have been evaluated.

a. **Silverado Trail/Conn Creek Road intersection** (The Conn Creek Road eastbound approach is stop sign controlled.)
b. **Silverado Trail/Sage Canyon Road** (The Sage Canyon Road westbound approach is stop sign controlled.)
c. **Sage Canyon Road/Project Driveway intersections** (The Project's new Western Outbound Driveway approach will be stop sign controlled.

Figure 4 presents a schematic of approach lane geometrics and control at each analysis intersection.

2. ARTERIAL ROADWAY SEGMENTS

The following locations have been evaluated.

a. **Silverado Trail just north of Conn Creek Road and just south of Sage Canyon Road**
b. **Sage Canyon Road between Silverado Trail and the Project site**

B. VOLUMES

1. ANALYSIS SEASONS AND DAYS OF THE WEEK

Project traffic impacts have been evaluated during harvest conditions. Based upon more than four years of historical information from Caltrans PeMS (Performance Measurement System) count surveys along Silverado Trail in the Napa Valley, September has the highest daily volumes of the year (during harvest). Therefore, only September harvest conditions were selected for evaluation.

In regards to the peak traffic days of the week, the Napa County Travel Behavioral Study (Fehr & Peers, December 8, 2014) shows that the highest weekday volumes in Napa Valley occur on a Friday, with the highest weekend volumes occurring on a Saturday. In addition, historical count data from the City of Napa show that Friday has the highest volumes of any weekday, while Caltrans historical counts for Silverado Trail between St. Helena and Napa also show that weekday AM and PM peak hour volumes are higher on a Friday than on either a Wednesday or Thursday. Therefore, Friday and Saturday peak traffic conditions were evaluated in this study. Napa County Public Works recent direction regarding

days of the week to evaluate also dictate that harvest Friday and Saturday conditions should be evaluated in all traffic impact studies.

2. COUNT RESULTS

Friday 2:00 to 6:00 PM as well as Saturday Noon to 6:00 PM turn movement counts were conducted by Crane Transportation Group (CTG) for two Fridays and two Saturdays in January or February 2020 at the Silverado Trail intersections with Conn Creek Road and Sage Canyon Road as well as at the Sage Canyon Road intersections with the Project driveways. The peak traffic hours for the system were determined to be 3:30 to 4:30 PM on Friday and 3:00 to 4:00 PM on Saturday. It should be noted, however, that there were many hours on both days that had similar volumes. Based upon direction from County Public Works, results from the two Friday counts were averaged and seasonally increased 15% with the results shown in **Figure 5**. Results from the two Saturday counts were also averaged and seasonally increased 15% as shown in **Figure 5**. Peak hour counts from each count day along with daily counts, speed survey results and classification counts are presented in **Appendix A.**

Overall, harvest PM peak hour two-way volumes along Silverado Trail between Conn Creek Road and Sage Canyon Road are much higher during the Friday PM peak hour than those during the Saturday PM peak hour (about 1660 vehicles on Friday versus about 1055 vehicles on Saturday).
Daily (24-hour) directional volumes were also conducted for two Fridays and two Saturdays in January and February on the Project driveways and Sage Canyon Road adjacent to the Project site. Daily speed surveys and classification counts were also conducted on Silverado Trail and Sage Canyon Road on a clear weather Friday/Saturday at the end of January 2020. Count results are presented in **Appendix A**.

C. ROADWAYS

Roadway descriptions are based upon the designation that Silverado Trail runs in general north-south direction through the project area, while Conn Creek Road and Sage Canyon Road run in an east-west direction. The project site is along the south side of Sage Canyon Road about a quarter mile east of Silverado Trail. **Figure 4** presents existing intersection geometrics and control.

Silverado Trail provides the only major regional access to the east side of the Napa Valley. In the project vicinity it has two well-paved travel lanes, wide paved shoulders that are signed and striped as Class II bicycle lanes, and a posted speed limit of 55 miles per hour. It is level and has several gentle horizontal curves. A left turn lane is in place on the northbound approach to Conn Creek Road and on the southbound approach to Sage Canyon Road. Silverado Trail is designated State Route 128 (SR 128) between the Conn Creek Road and Sage Canyon Road intersections.

Sage Canyon Road (SR 128) provides access from the Napa Valley easterly to Lake Berryessa and the Central Valley. It has two well-paved travel lanes and no shoulders in the project area other than a wide gravel shoulder opposite the project Inbound Driveway. The posted speed limit is 40 miles per hour. There is no left turn lane on the eastbound approach to the Project Inbound Driveway.

The Two Project Driveways are paved. The Eastern Driveway now allows both inbound and outbound traffic flow associated with the Winery and is not stop sign controlled on its approach to Sage Canyon

Road. The Western Driveway, now used only for access to a residential unit on the Winery property, but soon to become an outbound only Winery traffic connection to Sage Canyon Road, will be stop sign controlled on its approach to Sage Canyon Road.

D. INTERSECTION LEVEL OF SERVICE

1. ANALYSIS METHODOLOGY

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

***Unsignalized Intersections*.** For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, the Year 2017 6th Edition Highway Capacity Manual (Transportation Research Board, National Research Council) methodology for unsignalized intersections was utilized. For side-street stop-controlled intersections, operations are defined by the level of service and average control delay per vehicle (measured in seconds), with delay reported for the stop sign controlled approaches or turn movements. For all-way stop-controlled intersections, operations are defined by the average control delay for the entire intersection (measured in seconds per vehicle). The delay at an unsignalized intersection incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. **Table 1** summarizes the relationship between delay and LOS for unsignalized intersections.

2. MINIMUM ACCEPTABLE OPERATION

Napa County's currently minimum acceptable operating standard for signalized intersections is Level of Service D (LOS D) for overall intersection operation, while at unsignalized intersections it is also Level of Service D for the side street stop sign controlled approaches at two-way stop intersections and for overall operation at all-way-stop intersections. Intersection capacity worksheets are provided in **Appendix B**.

E. ARTERIAL LEVEL OF SERVICE

1. ANALYSIS METHODOLOGY

The 2017 Highway Capacity Manual Version 6 arterial analysis methodology has been utilized for analysis of Silverado Trail and Sage Canyon Road. Analysis results are presented as a level of service and demand capacity ratio. Input includes directional volumes, road and shoulder widths, percent trucks and RVs, terrain characteristics, percent available passing distance, etc.

2. MINIMUM ACCEPTABLE OPERATION

Napa County's currently minimum acceptable operating standard for arterials such as Silverado Trail is Level of Service D (LOS D).

F. INTERSECTION SIGNAL WARRANTS

1. ANALYSIS METHODOLOGY

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

There are 10 possible tests for determining whether a traffic signal should be considered for installation. These tests, called "warrants", consider criteria such as actual traffic volume, pedestrian volume, presence of school children, and accident history. The intersection volume data together with the available collision histories were compared to warrants contained in the *California Manual on Uniform Traffic Control Devices, 2014, Rev 5 (2014 CaMUTCD Rev 5 - March 2020)*. It provides guidelines, or warrants, which may indicate need for a traffic signal at an unsignalized intersection. As indicated in the *2014 CaMUTCD Rev 5 – March 2020*, satisfaction of one or more warrants does not necessarily require immediate installation of a traffic signal. It is merely an indication that the local jurisdiction should begin monitoring conditions at that location and that a signal may ultimately be required.

2. MINIMUM ACCEPTABLE OPERATION

Warrant 3, the peak hour volume warrant, is often used as an initial check of signalization needs since peak hour volume data is typically available and this warrant is usually the first one to be met. Warrant 3 is based on a logarithmic curve and takes only the hour with the highest volume of the day into account. For intersections in rural locations (with local area population less than 10,000 people or where the posted speed limit or 85th percentile speed on the uncontrolled intersection approaches is greater than 40 miles per hour) a 70 percent warrant is applied. The regular and 70 percent warrants are typically referred to as the urban and rural peak hour warrants. Rural warrant criteria have been used for evaluation of the Silverado Trail/Conn Creek Road and Silverado Trail/Sage Canyon Road intersections. Please see **Appendix C** for the existing condition warrant charts.

G. PLANNED IMPROVEMENTS

There are no planned and funded roadway system capacity improvements at any location evaluated in this study (*Napa County Public Works Department, January 2020*).

H. ACCIDENT HISTORY

Accident records from January 2014 through the end of 2019 were obtained from the California Highway Patrol for Silverado Trail between and including the Conn Creek Road and Sage Canyon Road intersections as well as along Sage Canyon Road from Silverado Trail to the project site. Locations of all accidents over this time span are presented in **Figure 6.** As shown, there have not been any reported accidents at the Sage Canyon Road intersections with the Project driveways.

I. EXISTING PEDESTRIAN AND BICYCLE FACILITIES NEAR THE PROJECT

There are no pedestrian walkways along Sage Canyon Road or Silverado Trail in the project area and none are planned by the project. However, there are Class II signed and striped bicycle lanes along the paved shoulders of Silverado Trail.

J. TRANSIT SERVICE

There is no scheduled transit service along Silverado Trail or Sage Canyon Road in the project area.

K. LEFT TURN WARRANT AT PROJECT INBOUND DRIVEWAY

Daily volumes on Sage Canyon Road and the Project Inbound Driveway currently do not meet County warrant criteria for provision of a left turn lane on the westbound Sage Canyon Road intersection approach. See **Appendix D**.

VI. FUTURE HORIZON TRAFFIC VOLUME PROJECTIONS

Traffic analysis has been conducted for harvest existing (2019), year 2025 and cumulative (year 2030) horizons at County request. The 2030 cumulative horizon reflects the County General Plan Buildout year. Traffic modeling for the General Plan shows the following growths in two-way traffic between 2019 and 2030 for the following roadways.

Route	2019 to 2030 Projected Growth in 2-Way Weekday PM Peak Hour Traffic
Silverado Trail north of Conn Creek Road	PM peak hour = 20%
Silverado Trail south of Sage Canyon Road	PM peak hour = 17.6%
Sage Canyon Road	PM peak hour = 25%
Conn Creek Road	PM peak hour = 60%

Projecting straight line traffic growth for analysis purposes, this translates into the following growths in two-way traffic between 2019 and 2025 for the same roadways.

Route	2019 to 2025 Projected Growth in 2-Way Weekday PM Peak Hour Traffic
Silverado Trail north of Conn Creek Road	PM peak hour = 10.9%
Silverado Trail south of Sage Canyon Road	PM peak hour = 9.6%
Sage Canyon Road	PM peak hour = 13.6%
Conn Creek Road	PM peak hour = 33%

Since traffic modeling projections were only available for weekday PM peak hour conditions and not for the Saturday PM peak hour, Saturday two-way PM peak hour volumes were increased by the percentages found for the weekday PM peak hour.
Based upon input from County Planning, traffic from 2 other approved but not constructed developments was also included in near-term horizon growth. They are:

- Lieff Winery - 40 Auberge Road, 3000 gallons/year, 8 visitors/week, 2 employees.
- Frank Family Vineyards - 8895 Conn Creek Road, 475,000 gallons/year.

Appendix E presents expected PM peak hour trip generation from each project.

Resultant year 2025 harvest "Without Project" Friday and Saturday PM peak hour volumes are presented in **Figure 7**, while cumulative (year 2030) harvest "Without Project" Friday and Saturday PM peak hour volumes are presented in **Figure 8**.

VII. OFF-SITE HARVEST CIRCULATION SYSTEM OPERATION – WITHOUT PROJECT

A. YEAR 2019 HARVEST (WITHOUT PROJECT) OPERATING CONDITIONS

1. EXISTING INTERSECTION LEVEL OF SERVICE - SEE TABLE 2 & APPENDIX B FOR CAPACITY WORKSHEETS

a. SILVERADO TRAIL/CONN CREEK ROAD

- **Friday PM Peak Hour**
  Unacceptable Conn Creek Road stop sign controlled eastbound approach: LOS F
- **Saturday PM Peak Hour**
  Acceptable Conn Creek Road stop sign controlled eastbound approach: LOS C

b. SILVERADO TRAIL/SAGE CANYON ROAD

- **Friday PM Peak Hours**
  Unacceptable Sage Canyon Road stop sign controlled westbound approach: LOS F.
- **Saturday PM Peak Hour**
  Acceptable Sage Canyon Road stop sign controlled westbound approach: LOS D.

c. SAGE CANYON ROAD/PROJECT EASTERN DRIVEWAY

- **Friday & Saturday PM Peak Hours**
  Acceptable Project Eastern Driveway approach: LOS A or B.
  The Existing "Without Project" condition reflects Winery traffic using only the Eastern Driveway. All other scenarios assume operation that includes a second "outbound only" Western Driveway, with the Eastern Driveway designated for all inbound vehicles and outbound large trucks.

2. EXISTING ARTERIAL SEGMENT LEVEL OF SERVICE - SEE TABLE 3

a. SILVERADO TRAIL JUST NORTH OF CONN CREEK ROAD

- **Friday PM Peak Hour**
  Northbound – LOS C
  Southbound – LOS E
- **Saturday PM Peak Hour**
  Northbound – LOS C
  Southbound – LOS D

b. SILVERADO TRAIL JUST SOUTH OF SAGE CANYON ROAD

- **Friday PM Peak Hour**
  Northbound – LOS C
  Southbound – LOS E
- **Saturday PM Peak Hour**
  Northbound – LOS C
  Southbound – LOS D

c. SAGE CANYON ROAD JUST EAST OF SILVERADO TRAIL

- **Friday PM Peak Hour**
  Eastbound – LOS A
  Westbound – LOS A
- **Saturday PM Peak Hour**
  Eastbound – LOS A
  Westbound – LOS A

3. EXISTING SIGNAL WARRANT EVALUATION - SEE TABLE 4 & APPENDIX C

a. SILVERADO TRAIL/CONN CREEK ROAD & SILVERADO TRAIL/SAGE CANYON ROAD

- **Friday & Saturday PM Peak Hours**
  Volumes **exceed** peak hour signal Warrant #3 rural criteria.

B. YEAR 2025 HARVEST (WITHOUT PROJECT) OPERATING CONDITIONS

1. 2025 INTERSECTION LEVEL OF SERVICE – SEE TABLE 2

a. SILVERADO TRAIL/CONN CREEK ROAD

- **Friday PM Peak Hour**
  Unacceptable Conn Creek Road stop sign controlled eastbound approach: LOS F
- **Saturday PM Peak Hour**
  Acceptable Conn Creek Road stop sign controlled eastbound approach: LOS D

b. SILVERADO TRAIL/SAGE CANYON ROAD

- **Friday & Saturday PM Peak Hours**
  Unacceptable stop sign controlled westbound approach: LOS F or E

c. SAGE CANYON ROAD/PROJECT OUTBOUND DRIVEWAY

- **Friday & Saturday PM Peak Hours**
  Acceptable Project Outbound Driveway approach: LOS B

2. 2025 ARTERIAL SEGMENT LEVEL OF SERVICE - SEE TABLE 3

a. SILVERADO TRAIL JUST NORTH OF CONN CREEK ROAD

- **Friday PM Peak Hour**
  Northbound – LOS C
  Southbound – LOS E
- **Saturday PM Peak Hour**
  Northbound – LOS C
  Southbound – LOS D

b. SILVERADO TRAIL JUST SOUTH OF SAGE CANYON ROAD

- **Friday PM Peak Hour**
  Northbound – LOS C
  Southbound – LOS E
- **Saturday PM Peak Hour**
  Northbound – LOS C
  Southbound – LOS D

c. SAGE CANYON ROAD JUST EAST OF SILVERADO TRAIL

- **Friday PM Peak Hour**
  Eastbound – LOS B
  Westbound – LOS A
- **Saturday PM Peak Hour**
  Eastbound – LOS A
  Westbound – LOS A

3. 2025 SIGNAL WARRANT EVALUATION – SEE TABLE 4

a. SILVERADO TRAIL/CONN CREEK ROAD & SILVERADO TRAIL/SAGE CANYON ROAD

- **Friday & Saturday PM Peak Hours**
  Volumes would **exceed** peak hour signal Warrant #3 rural criteria.

C. CUMULATIVE (YEAR 2030) HARVEST (WITHOUT PROJECT) OPERATING CONDITIONS

1. 2030 INTERSECTION LEVEL OF SERVICE - SEE TABLE 2

a. SILVERADO TRAIL/CONN CREEK ROAD

- **Friday PM Peak Hour**
  Unacceptable Conn Creek Road stop sign controlled eastbound approach: LOS F.
- **Saturday PM Peak Hour**
  Acceptable Conn Creek Road stop sign controlled eastbound approach: LOS D.

b. SILVERADO TRAIL/SAGE CANYON ROAD

- **Friday & Saturday PM Peak Hours**
  Unacceptable stop sign controlled westbound approach: LOS F.

c. SILVERADO TRAIL/PROJECT OUTBOUND DRIVEWAY

- **Friday & Saturday PM Peak Hours**
  Acceptable Project Outbound Driveway approach: LOS B.

2. 2030 ARTERIAL SEGMENT LEVEL OF SERVICE - SEE TABLE 3

a. SILVERADO TRAIL JUST NORTH OF CONN CREEK ROAD

- **Friday PM Peak Hour**
  Northbound – LOS C
  Southbound – LOS E
- **Saturday PM Peak Hour**
  Northbound – LOS C
  Southbound – LOS D

b. SILVERADO TRAIL JUST SOUTH OF SAGE CANYON ROAD

- **Friday PM Peak Hour**
  Northbound – LOS C
  Southbound – LOS E
- **Saturday PM Peak Hour**
  Northbound – LOS C
  Southbound – LOS D

c. SAGE CANYON ROAD JUST EAST OF SILVERADO TRAIL

- **Friday PM Peak Hour**
  Eastbound – LOS B
  Westbound – LOS A
- **Saturday PM Peak Hour**
  Eastbound – LOS A
  Westbound – LOS A

3. 2030 SIGNAL WARRANT EVALUATION – SEE TABLE 4

a. SILVERADO TRAIL/CONN CREEK ROAD & SILVERADO TRAIL/SAGE CANYON ROAD

- **Friday & Saturday PM Peak Hours**
  Volumes would **exceed** peak hour signal Warrant #3 rural criteria.

VIII. SIGNIFICANCE CRITERIA

A. COUNTY OF NAPA

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

EXISTING + PROJECT CONDITIONS

1. ARTERIAL SEGMENTS

A project would cause a significant impact requiring mitigation if:

- **a.** 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
- **b.** An arterial segment operates at LOS E or F during the selected peak hours without project trips, and the addition of project trips increases the total segment volume by one percent or more.

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

P***roject Contribution % = Project Trips ÷ Existing Volumes***

2. SIGNALIZED INTERSECTIONS

A project would cause a significant impact requiring mitigation if:

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

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

Project Contribution % = Project Trips ÷ Existing Volumes

Maintaining LOS D or better at all signalized intersections would sometimes require expanding the physical footprint of an intersection. In some locations around the County, expanding physical transportation infrastructure could be in direct conflict with the County's goals of preserving the area's rural character, improving safety, and sustaining the agricultural industry,

making these potential improvements infeasible. The County's Circulation Element lists intersections that are slated for improvement or expansion in unincorporated Napa County. (*According to the Circulation Element dated June 8, 2008, the following intersections can be altered or expanded as a mitigation measure: SR-12/Airport Boulevard/SR-29, SR-221/SR-12/Highway 29, and several intersections along SR-29 and SR-128 north of Napa. The significance criteria shown above should apply to facilities where appropriate based upon the most recent Circulation Element chapter of the General Plan.)*

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

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

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

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

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

b. An unsignalized intersection operates at LOS E or F during the selected peak hours without project trips and the project increases stop sign controlled delay by 5 seconds or greater. The peak hour traffic signal warrant criteria should also be evaluated and presented for informational purposes.

Project Contribution % = Project Trips ÷ Existing Volumes

CUMULATIVE + PROJECT CONDITIONS

1. ARTERIAL SEGMENTS, SIGNALIZED INTERSECTIONS AND UNSIGNALIZED INTERSECTIONS

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

a. The overall amount of expected traffic growth causes conditions to deteriorate such that any of the significance criteria described above for existing conditions are met, and

b. The project's contribution to a significant cumulative impact for arterials or signalized intersections would be equal to or greater than five percent of the growth in traffic from existing to cumulative conditions.

c. The project's contribution to a cumulative significant impact at an unsignalized intersection would result with an increase in stop sign controlled delay of 5 seconds or greater.

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

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

- If projected daily volumes on the project driveway in combination with volumes on the roadway providing access to the project driveway meet County warrant criteria for provision of a left turn lane on the approach to the project entrance.
- If sight lines at project access driveways do not meet Caltrans stopping sight distance criteria based upon prevailing vehicle speeds.

IX. PROJECT IMPACT EVALUATION

A. TRIP GENERATION

1. METHODOLOGY

Project trip generation was determined using one of the three possible methodologies recently approved by Napa County Public Works for transportation impact study analysis. As detailed from Public Works, perform a site-specific analysis by first conducting actual daily trip counts at the driveway of the project on two Fridays and two Saturdays (for Winery use permit modifications). Next, determine the increment of net new daily traffic due to the use permit modification proposed project using trip rates from the use permit Winery Traffic Information/Trip Generation sheets. Based upon the two Friday and two Saturday 24-hour Winery driveway counts, determine which hour on each day had the highest combined inbound + outbound traffic and determine the percent of total traffic occurring during those hours in relation to the daily counts. Apply these percentages to the net new Friday and Saturday daily traffic increments for the project to determine the amount of project traffic that would be expected to occur during the Winery's peak traffic hour. Finally, assume that the Winery's peak hourly traffic will occur at the time as the ambient peak traffic time on the adjacent roadway system.

Table 5 shows that the proposed use permit modification 2020 would be expected to generate 2 inbound and 3 outbound trips during a harvest Friday PM peak hour (3:30 - 4:30), with 2 inbound and 1 outbound trips during a harvest Saturday PM peak hour (3:00 - 4:00). Winery Traffic Information/Trip Generation sheets are presented in **Appendix F** along with the hourly percent 2-way traffic for a Friday and Saturday on the Winery driveways.

B. TRIP DISTRIBUTION

Project traffic was distributed to Sage Canyon Road in a pattern reflective of existing PM peak hour distribution patterns at the Sage Canyon Road/Project Driveway intersections. Likewise, project traffic distribution at the Silverado Trail intersections with Sage Canyon Road and Conn Creek Road was based upon existing turn patterns. For the Friday PM peak hour inbound traffic would be expected to come about equally from the north and south, while the majority of outbound traffic would be expected to turn left to the south on Silverado Trail. For the Saturday PM peak hour inbound traffic would also be expected to come about equally from the north and south, while the majority of outbound traffic would be expected to turn left to go southbound on Silverado Trail.

The harvest Friday and Saturday project traffic increments expected on Silverado Trail during the times of ambient peak traffic flows are presented in **Figure 9**. Friday and Saturday "With Project" PM peak hour harvest volumes for year 2019 are presented in **Figure 10**; "With Project" PM peak hour harvest volumes for year 2025 conditions are presented in **Figure 11**, and "With Project" PM peak hour harvest volumes for cumulative (year 2030) conditions are presented in **Figure 12.**

C. OFF-SITE IMPACTS

1. EXISTING (2019) HARVEST + PROJECT CONDITIONS

a. SUMMARY

Project traffic would not result in any significant level of service impacts along Silverado Trail or Sage Canyon Road or at the Silverado Trail/Conn Creek Road or Sage Canyon Road/Project Driveway intersections during either the Friday or Saturday PM peak traffic hours. However, there would be a significant impact at the Silverado Trail/Sage Canyon Road intersection. ***Potentially significant.***

b. 2019 INTERSECTION LEVEL OF SERVICE IMPACTS – SEE TABLE 2

1) SILVERADO TRAIL/CONN CREEK ROAD

- **Friday PM Peak Hour**
  Operation of the stop sign controlled Conn Creek Road intersection approach would remain an unacceptable LOS F with the addition of project traffic. However, delay would not increase by 5 seconds or more (0.1 seconds), the County significance limit. ***Less than significant.***
- **Saturday PM Peak Hour**
  Operation of the Conn Creek Road approach would remain an acceptable LOS C with the addition of project traffic. ***Less than significant.***

2) SILVERADO TRAIL/SAGE CANYON ROAD

- **Friday PM Peak Hour**
  Operation of the stop sign controlled Sage Canyon Road intersection approach would remain an unacceptable LOS F with the addition of project traffic. Delay would increase more than 5 seconds (15.4 seconds), the County significance limit. ***Significant.***
- **Saturday PM Peak Hour**
  Operation of the Sage Canyon Road approach would remain an acceptable LOS D with the addition of project traffic. ***Less than significant.***

3) SAGE CANYON ROAD/PROJECT OUTBOUND DRIVEWAY

- **Friday or Saturday PM Peak Hours**
  Operation of the Project Outbound Driveway approach to Sage Canyon Road would remain an acceptable LOS B during the Friday PM peak hour and LOS A during the Saturday PM peak hour with the addition of project traffic. ***Less than significant.***

c. 2019 ARTERIAL SEGMENT IMPACTS – SEE TABLE 3

1) SILVERADO TRAIL NORTH OF CONN CREEK ROAD

- **Friday PM Peak Hour**
  Operation would remain LOS C northbound and LOS D southbound. The project would not increase total segment volumes by 1 percent or more (0.1%). ***Less than significant.***
- **Saturday PM Peak Hour**
  Operation would remain LOS C northbound and LOS D southbound. ***Less than significant.***

2) SILVERADO TRAIL SOUTH OF SAGE CANYON ROAD

- **Friday PM Peak Hour**
  Operation would remain LOS C northbound and LOS E southbound. The project would not increase total segment volumes by 1 percent or more (0.2%). ***Less than significant.***
- **Saturday PM Peak Hour**
  Operation would remain LOS C northbound and LOS D southbound. ***Less than significant.***

3) SAGE CANYON ROAD EAST OF SILVERADO TRAIL

- **Friday and Saturday PM Peak Hours**
  Operation would remain LOS A eastbound and westbound. ***Less than significant.***

d. 2019 SIGNAL WARRANT EVALUATION – SEE TABLE 4

Signal warrant information is provided for informational purposes only per County significance criteria.

1) SILVERADO TRAIL/SAGE CANYON ROAD

- **Friday or Saturday PM Peak Hours**
  Volumes would be exceeding rural peak hour signal warrant criteria with or without project traffic. ***Less than significant.***

2) SILVERADO TRAIL/CONN CREEK ROAD

- **Friday or Saturday PM Peak Hours**
  Volumes would be exceeding rural peak hour signal warrant criteria with or without project traffic. ***Less than significant.***

2. YEAR 2025 HARVEST + PROJECT CONDITIONS

a. SUMMARY

Project traffic would not result in any significant level of service impacts along Silverado Trail or Sage Canyon Road or at the Silverado Trail/Conn Creek Road or Sage Canyon Road/Project Driveway intersections during either the Friday or Saturday PM peak traffic hours. However, there would be a significant impact at the Silverado Trail/Sage Canyon Road intersection. ***Potentially significant.***

b. 2025 INTERSECTION LEVEL OF SERVICE IMPACTS – SEE TABLE 2

1) SILVERADO TRAIL/CONN CREEK ROAD

- **Friday PM Peak Hour**
  Operation of the stop sign controlled Conn Creek Road intersection approach would remain an unacceptable LOS F with the addition of project traffic. However, delay would not increase by 5 seconds or more (0.9 seconds), the County significance limit. ***Less than significant.***
- **Saturday PM Peak Hour**
  Operation of the Conn Creek Road approach would remain an acceptable LOS D with the addition of project traffic. ***Less than significant.***

2) SILVERADO TRAIL/SAGE CANYON ROAD

- **Friday PM Peak Hour**
  Operation of the stop sign controlled Sage Canyon Road intersection approach would remain an unacceptable LOS F with the addition of project traffic. Delay would increase more than 5 seconds (23.8 seconds), the County significance limit. ***Significant.***
- **Saturday PM Peak Hour**
  Operation of the stop sign controlled Sage Canyon Road intersection approach would remain an unacceptable LOS E with the addition of project traffic. However, delay would not increase by 5 seconds or more (1.2 seconds), the County significance limit. ***Less than significant.***

3) SAGE CANYON ROAD/PROJECT OUTBOUND DRIVEWAY

- **Friday or Saturday PM Peak Hours**
  Operation of the Project Driveway approach to Sage Canyon Road would remain an acceptable LOS B during both the Friday and Saturday PM peak hours with the addition of project traffic. ***Less than significant.***

c. 2025 ARTERIAL SEGMENT IMPACTS – SEE TABLE 3

1) SILVERADO TRAIL NORTH OF CONN CREEK ROAD

- **Friday PM Peak Hour**
  Operation would remain LOS C northbound and LOS E southbound. The project would not increase total segment volumes by 1 percent or more (0.1%). ***Less than significant.***
- **Saturday PM Peak Hour**
  Operation would remain LOS C northbound and LOS D southbound. ***Less than significant.***

2) SILVERADO TRAIL SOUTH OF SAGE CANYON ROAD

- **Friday PM Peak Hour**
  Operation would remain LOS C northbound and LOS E southbound. The project would not increase total segment volumes by 1 percent or more (0.2%). ***Less than significant.***
- **Saturday PM Peak Hour**
  Operation would remain LOS C northbound and LOS D southbound. ***Less than significant.***

3) SAGE CANYON ROAD EAST OF SILVERADO TRAIL

- **Friday and Saturday PM Peak Hours**
  Operation would remain LOS B eastbound and LOS A westbound. ***Less than significant.***
- **Saturday PM Peak Hour**
  Operation would remain LOS A eastbound and LOS A westbound. ***Less than significant.***

d. 2025 SIGNAL WARRANT EVALUATION – SEE TABLE 4

Signal warrant information is provided for informational purposes only per County significance criteria.

1) SILVERADO TRAIL/SAGE CANYON ROAD

- **Friday or Saturday PM Peak Hours**
  Volumes would be exceeding rural peak hour signal warrant criteria with or without project traffic.

2) SILVERADO TRAIL/CONN CREEK ROAD

- **Friday or Saturday PM Peak Hours**
  Volumes would be exceeding rural peak hour signal warrant criteria with or without project traffic.

3. CUMULATIVE (YEAR 2030) HARVEST + PROJECT CONDITIONS

a. SUMMARY

Project traffic would not result in any significant level of service impacts along Silverado Trail or Sage Canyon Road or at the Silverado Trail/Conn Creek Road or Sage Canyon Road/Project Driveway intersections during either the Friday or Saturday PM peak traffic hours. However, there would be a significant impact at the Silverado Trail/Sage Canyon Road intersection. ***Potentially significant.***

b. 2030 INTERSECTION LEVEL OF SERVICE IMPACTS – SEE TABLE 2

1) SILVERADO TRAIL/CONN CREEK ROAD

- **Friday PM Peak Hour**
  Operation of the stop sign controlled Conn Creek Road intersection approach would remain an unacceptable LOS F with the addition of project traffic. However, delay would not increase by 5 seconds or more (0.0 seconds), the County significance limit. ***Less than significant.***
- **Saturday PM Peak Hour**
  Operation of the Conn Creek Road approach would remain an acceptable LOS D with the addition of project traffic. ***Less than significant.***

2) SILVERADO TRAIL/SAGE CANYON ROAD

- **Friday PM Peak Hour**
  Operation of the stop sign controlled Sage Canyon Road intersection approach would remain an unacceptable LOS F with the addition of project traffic. Delay would increase more than 5 seconds (167 seconds), the County significance limit. ***Significant.***
- **Saturday PM Peak Hour**
  Operation of the stop sign controlled Sage Canyon Road intersection approach would remain an unacceptable LOS E with the addition of project traffic. However, delay would not increase by 5 seconds or more (1.2 seconds), the County significance limit. ***Less than significant.***

3) SAGE CANYON ROAD/PROJECT OUTBOUND DRIVEWAY

- **Friday or Saturday PM Peak Hours**
  Operation of the Project Outbound Driveway approach to Silverado Trail would remain an acceptable LOS B with the addition of project traffic. ***Less than significant.***

c. 2030 ARTERIAL SEGMENT IMPACTS – SEE TABLE 3

1) SILVERADO TRAIL NORTH OF CONN CREEK ROAD

- **Friday PM Peak Hour**
  Operation would remain LOS C northbound and LOS E southbound. The project would not increase the change in two-way segment volumes between 2019 and 2030 by 5 percent or more (0.6%). ***Less than significant.***
- **Saturday PM Peak Hour**
  Operation would remain LOS C northbound and LOS D southbound. ***Less than significant.***

2) SILVERADO TRAIL SOUTH OF SAGE CANYON ROAD

- **Friday PM Peak Hour**
  Operation would remain LOS C northbound and LOS E southbound. The project would not increase the change in two-way segment volumes between 2019 and 2030 by more than 5 percent (1.6%). ***Less than significant.***
- **Saturday PM Peak Hour**
  Operation would remain LOS C northbound and LOS D southbound. ***Less than significant.***

3) SAGE CANYON ROAD EAST OF SILVERADO TRAIL

- **Friday PM Peak Hour**
  Operation would remain LOS B eastbound and LOS A westbound. ***Less than significant.***
- **Saturday PM Peak Hour**
  Operation would remain LOS A eastbound and LOS A westbound, acceptable operation. ***Less than significant.***

d. 2030 SIGNAL WARRANT EVALUATION – SEE TABLE 4

Signal warrant information is provided for informational purposes only per County significance criteria.

1) SILVERADO TRAIL/SAGE CANYON ROAD

- **Friday or Saturday PM Peak Hours**
  Volumes would be exceeding rural peak hour signal warrant criteria with or without project traffic.

2) SILVERADO TRAIL/CONN CREEK ROAD

- **Friday or Saturday PM Peak Hours**
  Volumes would be exceeding rural peak hour signal warrant criteria with or without project traffic.

X. OTHER POTENTIAL PROJECT IMPACTS

A. SIGHT LINES AT SAGE CANYON ROAD/PROJECT OUTBOUND DRIVEWAY

Sight lines at the Sage Canyon Road/Project Outbound Driveway intersection are currently acceptable to the east and west along Sage Canyon Road.

Sight line to the east along Sage Canyon Road (to see westbound vehicles) 400 feet
Sight line to the west along Sage Canyon Road (to see eastbound vehicles) 365 feet

The Caltrans Highway Design Manual (July 2018) states that stopping sight distance is the corner sight distance criteria to be utilized at private road connections to arterial roadways. The minimum required stopping sight distances based upon various vehicle speeds are as follows.

SPEED	MINIMUM REQUIRED STOPPING SIGHT DISTANCE
40 mph	300 feet
45 mph	360 feet

The posted speed limit at the project outbound is 40 miles per hour, and some vehicles were observed traveling higher than the posted limit during field surveys by Crane Transportation Group. Based upon the 45 mile per hour criteria, resultant sight lines to the east and west along Sage Canyon Road from the outbound Project Driveway would be acceptable. ***Less than significant***.

B. LEFT TURN LANE AT THE SAGE CANYON ROAD/PROJECT INBOUND DRIVEWAY INTERSECTION

The addition of project traffic would not increase daily volumes to meet the County left turn lane warrant for Sage Canyon Road at the Project Inbound Eastern Driveway. This assumes that the inbound driveway will be used for all inbound as well as outbound large truck traffic, while the new Western Driveway will be used for all other outbound traffic. See **Appendix D**. ***Less than significant.***

C. MARKETING EVENTS

No new marketing events are proposed. In addition, for midsize events occurring two or more times per month daily visitation by appointment will be reduced by the level of attendance at the marketing event. ***Less than significant.***

D. PEDESTRIAN, BICYCLE AND TRANSIT IMPACTS

No pedestrians or transit riders would be expected at the Winery as there are no pedestrian facilities or transit routes along Silverado Trail or Sage Canyon Road. Bike racks would be provided for any bicyclists accessing the Winery via the Class II bicycle lanes along Silverado Trail. ***Less than significant.***

E. TRANSPORTATION DEMAND MANAGEMENT (TDM) PLAN & VEHICLE MILES TRAVELED (VMT) REDUCTION

It is an upcoming requirement of all jurisdictions in the state to reduce the Vehicle Miles Traveled (VMT) of traffic associated with new developments to lower levels than would have resulted with comparable projects in the past (per State Senate Bill 743, which will take effect in July 2020). This will help reduce greenhouse gas emissions and vehicle congestion. Specific quantitative reduction guidelines have not yet been set for wineries in Napa County, but all are expected to develop ongoing programs that will provide incentives to reduce daily and commute period employee traffic as well as measures that will entice guests to use travel modes other than the automobile or to travel at times other than peak congestion periods. Towards this end, the Dakota Shy Winery will develop a Transportation Demand Management (TDM) plan that will help accomplish these goals.

A TDM coordinator will be appointed to reduce traffic generation potential for daily employee traffic as well as to promote shuttle buses for all medium and large size marketing events. Please see **Appendix G** for the proposed TDM Plan. ***Less than significant.***

F. ON-SITE PARKING & INTERNAL CIRCULATION

The number of parking spaces on-site are not changing due to the project. There are currently 11 on-site spaces (which are never fully occupied) and the applicant projects that the increased employee and guest parking demand can be accommodated by the existing parking supply.

Truck turn movements internal to the site were evaluated during the initial design of the Winery 5 years ago. Truck traffic circulation patterns and truck type will not change as a result of the use permit modification, although the number of trucks will increase. Both project driveway connections to Sage Canyon Road meet Caltrans design specifications and both have recently been paved. The Winery will develop an internal signing program directing all outbound Winery traffic to the new Western (outbound) Driveway. The exception will be outbound large trucks, which will continue to use the Eastern Driveway for access to Sage Canyon Road.

G. YEARLY TRIP GENERATION

Based upon County formula, the Dakota Shy Winery is currently generating 8,429 yearly trips, while with the use permit modification 2020 yearly trip generation would increase to 20,257 yearly trips, for an increase of 11,828 yearly trips. See **Appendix F**.

XI. RECOMMENDATION

The project will result in a significant Friday PM peak hour circulation impact at the Silverado Trail/Sage Canyon Road intersection. Two measures have been considered as potential improvements.

1. Provide an exclusive right turn lane on the Sage Canyon Road intersection approach.

   OR

2. Schedule visitation and employee work hours to eliminate all new project traffic on the local roadway system during the Friday PM peak hour (3:30-4:30 PM). This will be the responsibility of the Winery TDM Coordinator.

Elimination of project traffic during this hour is recommended for the following reason:

- There is already a significant pavement area on the Sage Canyon Road approach to Silverado Trail to allow right-turning vehicles to separate from left-turning vehicles (a large right turn flare). In addition, provision of an exclusive right turn lane would infringe upon an existing vineyard.

XII. CONCLUSIONS & RECOMMENDATIONS

- The project will result in a significant off-site circulation system operational impact to the Silverado Trail intersection with Sage Canyon Road during the Friday PM peak hour. However, there will be no significant impacts to Silverado Trail or Sage Canyon Road or to the Silverado Trail/Conn Creek Road or Sage Canyon Road/Project Driveway intersections. Also, volumes will not meet County warrant criteria for provision of a left turn lane on the Sage Canyon Road approach to the Project Inbound Driveway once the new Outbound Driveway is in operation.

- No pedestrians or transit users are expected at the Winery. However, bicycle racks will be provided for any bike riders accessing the Winery via the Class II bike lanes along Silverado Trail.

- No new marketing events are being proposed and on days with recurring moderate size attendance daily visitation by appointment will be reduced by the same number of guests attending the event. Finally, a TDM coordinator will be appointed to institute measures to reduce daily employee traffic as well as increase limousine and shuttle bus service for marketing events.

- The project should eliminate all new trip generation during the Friday PM peak hour (3:30-4:30 PM) to mitigate its impact at the Silverado Trail/Sage Canyon Road intersection. This will require scheduling all new guests during the late afternoon to arrive no later than 3:15 PM and leave no earlier than 4:30 PM. Also, no new employees or deliveries shall be scheduled to arrive or depart during this hour on Friday afternoon. The Winery TDM Coordinator will be responsible for scheduling. This measure will offset the significant impact at the Silverado Trail/Sage Canyon Road intersection.

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

Tables

Table 1

UNSIGNALIZED INTERSECTION LOS CRITERIA

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

Source: Year 2017 6th Edition Highway Capacity Manual (Transportation Research Board).

Table 2

INTERSECTION LEVEL OF SERVICE

YEAR 2019 HARVEST

LOCATION	FRIDAY PM PEAK HOUR		SATURDAY PM PEAK HOUR	
	W/O PROJECT	WITH PROJECT	W/O PROJECT	WITH PROJECT
Silverado Trail/Conn Creek Rd	F-79.4 [1]	F-79.5	C-22.8	C-22.8
Silverado Trail/Sage Canyon Rd	F-665.9 [2]	F-681.3	D-30.0	D-30.5
Sage Canyon Rd/Project (Western) Outbound Driveway	N/A	B-11.0	N/A	A-9.9
Sage Canyon Rd/Project (Eastern) Driveway	B-11.0 [4]	N/A	A-9.9	N/A

YEAR 2025 HARVEST

LOCATION	FRIDAY PM PEAK HOUR		SATURDAY PM PEAK HOUR	
	W/O PROJECT	WITH PROJECT	W/O PROJECT	WITH PROJECT
Silverado Trail/Conn Creek Rd	F-140.9 [1]	F-141.8	D-27.6	D-27.6
Silverado Trail/Sage Canyon Rd	F-1173.1 [2]	F-1196.9	E-42.0	E-43.2
Sage Canyon Rd/Project (Western) Outbound Driveway	B-11.3 [3]	B-11.4	B-10.0	B-10.1

CUMULATIVE (YEAR 2030) HARVEST

LOCATION	FRIDAY PM PEAK HOUR		SATURDAY PM PEAK HOUR	
	W/O PROJECT	WITH PROJECT	W/O PROJECT	WITH PROJECT
Silverado Trail/Conn Creek Rd	F-266.3 [1]	F-266.3	D-39.4	D-39.4
Silverado Trail/Sage Canyon Rd	F-1918. [2]	F-2085.0	F-67.7	F-68.9
Sage Canyon Rd/Project (Western) Outbound Driveway	B-11.8 [3]	B-11.8	B-10.2	B-10.3

[1] Unsignalized level of service – control delay in seconds: Conn Creek Rd. Eastbound stop sign controlled approach to Silverado Trail.
[2] Unsignalized level of service – control delay in seconds: Westbound Sage Canyon Rd approach to Silverado Trail.
[3] Unsignalized level of service – control delay in seconds: Project (Western) Outbound Driveway approach to Sage Canyon Road.
[4] Unsignalized level of service – control delay in seconds: Project Eastern Driveway approach to Sage Canyon Road.

The Eastern Driveway served all inbound and outbound vehicles in 2019 without the Project Outbound Driveway in operation. Within the next year the (Western) Outbound Driveway will be in operation for winery traffic with or without project. The Eastern Driveway at that point will serve only inbound vehicles as well as exiting large trucks.

6th Edition Highway Capacity Manual (HCM) Analysis Methodology for unsignalized intersections (2017)
Source: Crane Transportation Group

Table 3 (Page 1 of 2)

ARTERIAL LEVEL OF SERVICE

YEAR 2019 HARVEST

LOCATION	FRIDAY PM PEAK HOUR					SATURDAY PM PEAK HOUR				
	W/O PROJECT		WITH PROJECT		% Increase in 2-Way Volume due to Project (If applicable)	W/O PROJECT		WITH PROJECT		% Increase in 2-Way Volume due to Project (If applicable)
	NB	SB	NB	SB		NB	SB	NB	SB	
Silverado Trail north of Conn Creek Rd	C-.32[(1)]	E-.74	C-.32	E-.74	.1%	C-.28	D-.41	C-.28	D-.41	.1%
Silverado Trail south of Sage Canyon Rd	C-.30[(1)]	E-.72	C-.30	E-.72	.2%	C-.27	D-.42	C-.27	D-.42	.2%
	EB	WB	EB	WB		EB	WB	EB	WB	
Sage Canyon Rd east of Silverado Trail	A-.13[(1)]	A-.10	A-.14	A-.10		A-.07	A-.08	A-.07	A-.08	

YEAR 2025 HARVEST

LOCATION	FRIDAY PM PEAK HOUR					SATURDAY PM PEAK HOUR				
	W/O PROJECT		WITH PROJECT		% Increase in 2-Way Volume due to Project (If applicable)	W/O PROJECT		WITH PROJECT		% Increase in 2-Way Volume due to Project (If applicable)
	NB	SB	NB	SB		NB	SB	NB	SB	
Silverado Trail north of Conn Creek Rd	C-.33[(1)]	E-.84	C-.33	E-.84	.1%	C-.29	D-.46	C-.29	D-.46	.1%
Silverado Trail south of Sage Canyon Rd	C-.31[(1)]	E-.80	C-.31	E-.80	.2%	C-.29	D-.46	C-.29	D-.46	.2%
	EB	WB	EB	WB		EB	WB	EB	WB	
Sage Canyon Rd east of Silverado Trail	B-.16[(1)]	A-.10	B-.16	A-.10		A-.07	A-.09	A-.08	A-.09	

Table 3 (Page 2 of 2)

ARTERIAL LEVEL OF SERVICE

CUMULATIVE (YEAR 2030) HARVEST

LOCATION	FRIDAY PM PEAK HOUR					SATURDAY PM PEAK HOUR				
	W/O PROJECT		WITH PROJECT		% Project Volume of Traffic Growth from 2019-2030 (If applicable)	W/O PROJECT		WITH PROJECT		% Project Volume of Traffic Growth from 2019-2030 (If applicable)
	NB	SB	NB	SB		NB	SB	NB	SB	
Silverado Trail north of Conn Creek Road	C-.34[(1)]	E-.92	C-.34	E-.92	.6%	C-.32	D-.50	C-.32	D-.50	
Silverado Trail south of Sage Canyon Road	C-.31[(1)]	E-.87	C-.32	E-.87	1.1%	C-.31	D-.49	C-.31	D-.49	
	EB	**WB**	**EB**	**WB**		**EB**	**WB**	**EB**	**WB**	
Sage Canyon Road east of Silverado Trail	B-.19[(1)]	A-.10	B-.19	A-.10		A-.08	A-.10	A-.08	A-.10	

[(1)] Level of service – demand/capacity
Highway Capacity Manual, 6th Edition (2017) analysis methodology

Source: Crane Transportation Group

Table 4

RURAL SIGNAL WARRANT EVALUATION

Silverado Trail/Sage Canyon Road &

Silverado Trail/Conn Creek Road

Do Volumes meet Caltrans Rural Warrant #3 Volume Criteria?

YEAR 2019

FRIDAY PM PEAK HOUR		SATURDAY PM PEAK HOUR	
WITHOUT PROJECT	WITH PROJECT	WITHOUT PROJECT	WITH PROJECT
Yes	Yes	Yes	Yes

YEAR 2025

FRIDAY PM PEAK HOUR		SATURDAY PM PEAK HOUR	
WITHOUT PROJECT	WITH PROJECT	WITHOUT PROJECT	WITH PROJECT
Yes	Yes	Yes	Yes

CUMULATIVE (YEAR 2030)

FRIDAY PM PEAK HOUR		SATURDAY PM PEAK HOUR	
WITHOUT PROJECT	WITH PROJECT	WITHOUT PROJECT	WITH PROJECT
Yes	Yes	Yes	Yes

Source: Crane Transportation Group

Table 5

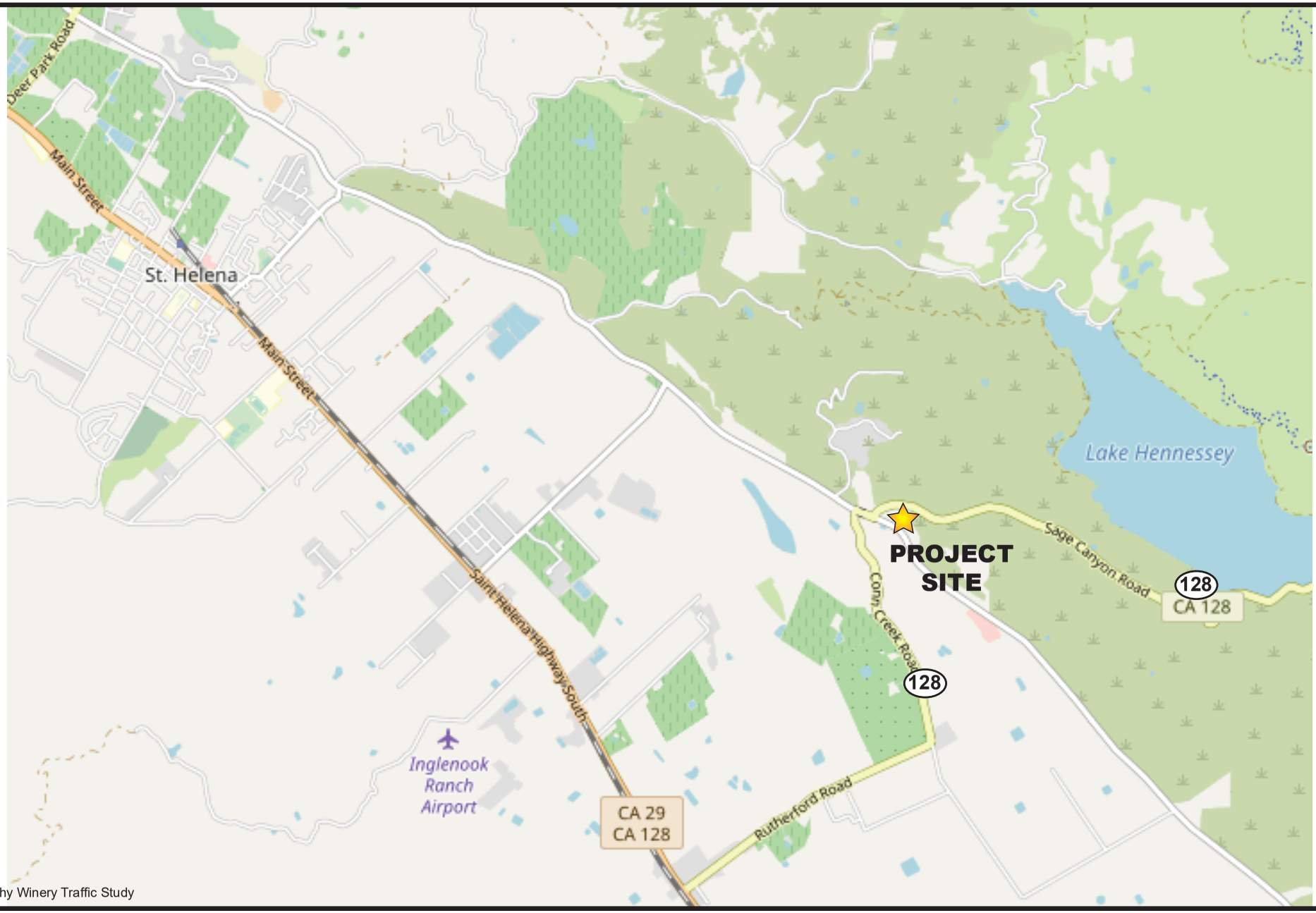
PROJECT TRIP GENERATION

	Daily Trips			Maximum PM Hourly % of Daily 2-Way Traffic**	Resultant Project PM Peak Hour 2-Way Trip Generation
	Existing*	Existing* +Project	Increase Due to Project		
Friday	**25**	**61**	**36**	**14%**	**5**
Saturday	**27**	**50**	**23**	**13%**	**3**

* Napa County Winery Trip Generation Worksheets
** Two Friday and two Saturday 24-hour Traffic Counts of the Winery driveway by Crane Transportation Group

Source: Crane Transportation Group

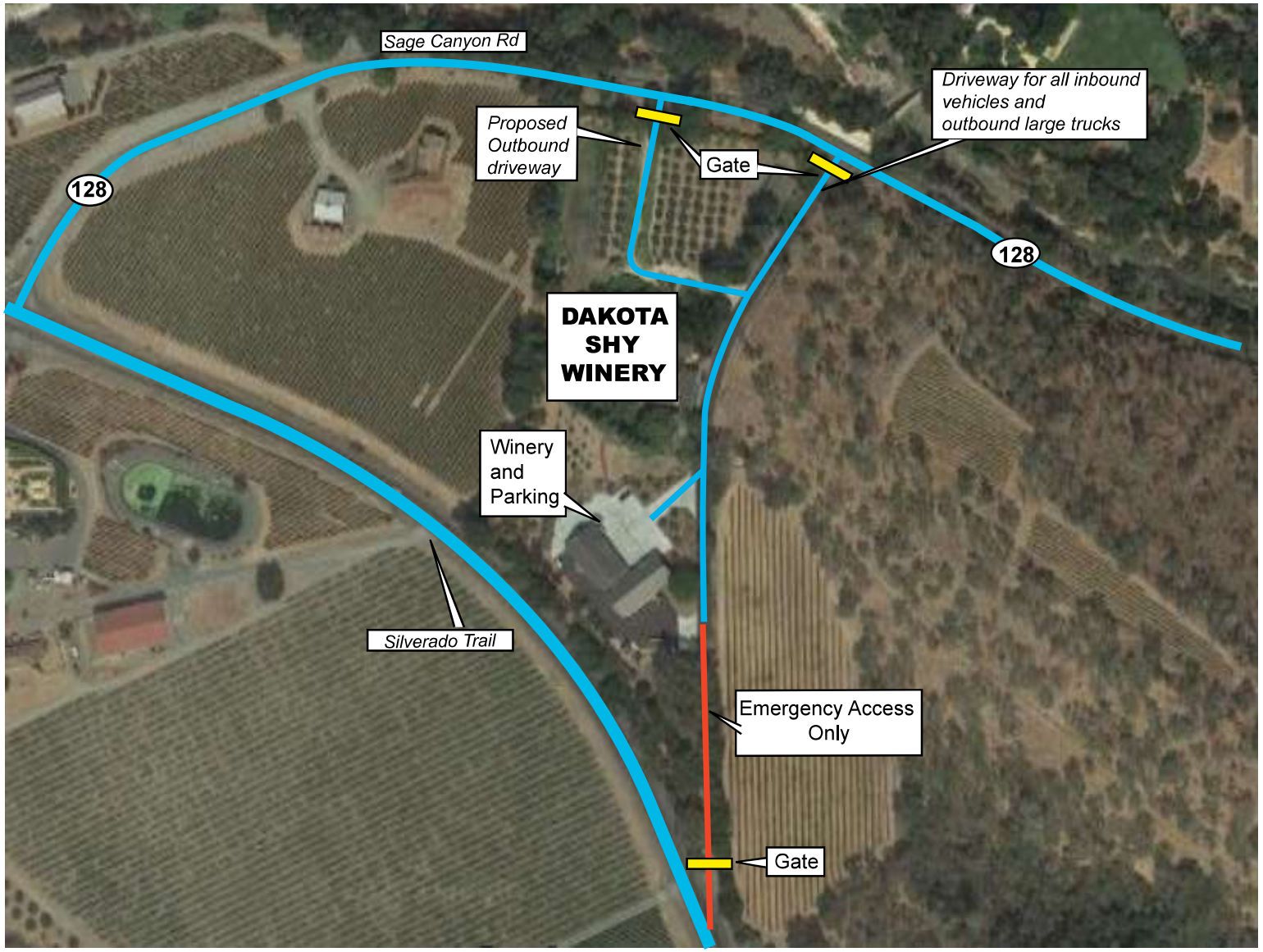
Figures



Dakota Shy Winery Traffic Study

CRANE TRANSPORTATION GROUP

Figure 1
Area Map



Dakota Shy Winery Traffic Study

CRANE TRANSPORTATION GROUP

Figure 2

Site Specific Air Photo

DAKOTA SHY WINERY

USE PERMIT MODIFICATION

PROJECT INFORMATION:

PROPERTY OWNER:
DS PROPERTY, LLC
C/O TOM GARRETT
711 SAGE CANYON ROAD
ST. HELENA, CA 94574

PROJECT APPLICANT:
TOM GARRETT
711 SAGE CANYON ROAD
ST. HELENA, CA 94574
707-225-5131

PROJECT ADDRESS:
711 SAGE CANYON ROAD
ST. HELENA, CA 94574

ASSESSOR'S PARCEL NUMBER:
030-120-024

PARCEL SIZE:
6.0± ACRES

PARCEL ZONING:
AW

SHEET INDEX:

SHEET UP1	OVERALL SITE PLAN
SHEET UP2	COUNTY SETBACKS EXHIBIT
SHEET UP3	PHOTOGRAPHIC DOCUMENTATION
SHEET UP4	WINERY COVERAGE EXHIBITS
SHEET UP5	WINERY DEVELOPMENT EXHIBITS
SHEET UP6	WINERY ACCESSORY TO PRODUCTION RATIO EXHIBITS

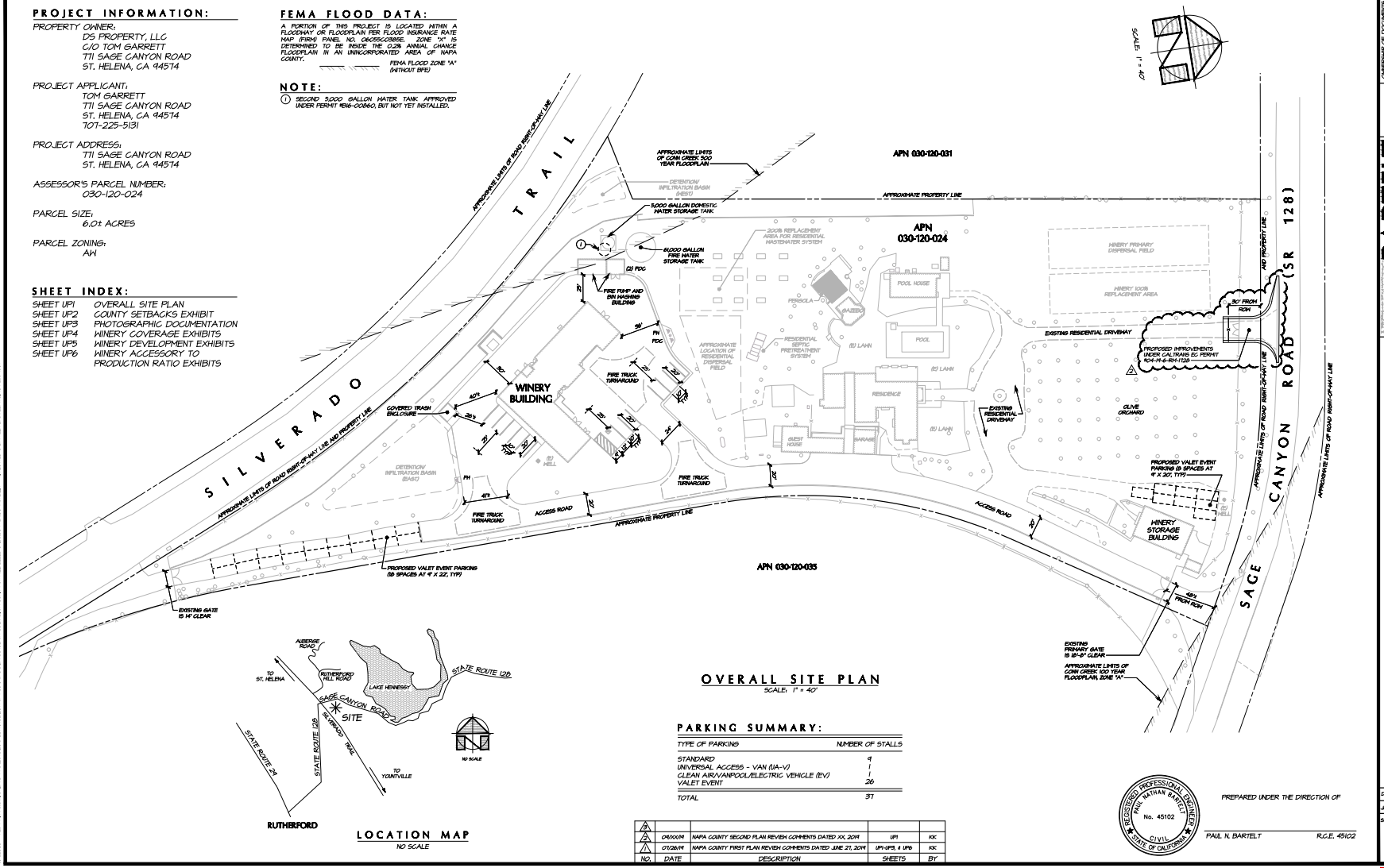
FEMA FLOOD DATA:

A PORTION OF THIS PROJECT IS LOCATED WITHIN A FLOODWAY OR FLOODPLAIN PER FLOOD INSURANCE RATE MAP (FIRM) PANEL NO. 06055C0359E. ZONE "A" IS DETERMINED TO BE INSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN IN AN UNINCORPORATED AREA OF NAPA COUNTY.

FEMA FLOOD ZONE "A" (WITHOUT BFE)

NOTE:

1. SECOND 5,000 GALLON WATER TANK APPROVED UNDER PERMIT #BLD-20080, BUT NOT YET INSTALLED.



LOCATION MAP
NO SCALE

OVERALL SITE PLAN
SCALE: 1" = 40'

PARKING SUMMARY:

TYPE OF PARKING	NUMBER OF STALLS
STANDARD	9
UNIVERSAL ACCESS - VAN (UA-V)	1
CLEAN AIR/VANPOOL/ELECTRIC VEHICLE (EV)	1
VALET EVENT	26
TOTAL	37

NO.	DATE	DESCRIPTION	SHEETS	BY
3				
2	09/30/19	NAPA COUNTY SECOND PLAN REVIEW COMMENTS DATED XX, 2019	UP1	KK
1	07/26/19	NAPA COUNTY FIRST PLAN REVIEW COMMENTS DATED JUNE 27, 2019	UP1-UP3, & UP6	KK

REGISTERED PROFESSIONAL ENGINEER — PAUL NATHAN BARTELT — No. 45102 — CIVIL — STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF

PAUL N. BARTELT R.C.E. 45102

DES. RP | DRWN. KK | CHKD. PNB

BARTELT ENGINEERING
CIVIL ENGINEERING · LAND PLANNING
3015 Jefferson Street, Napa, CA 94558
www.bartelteng.com
Telephone: 707-259-9301

DAKOTA SHY WINERY
OVERALL SITE PLAN
NAPA COUNTY CALIFORNIA

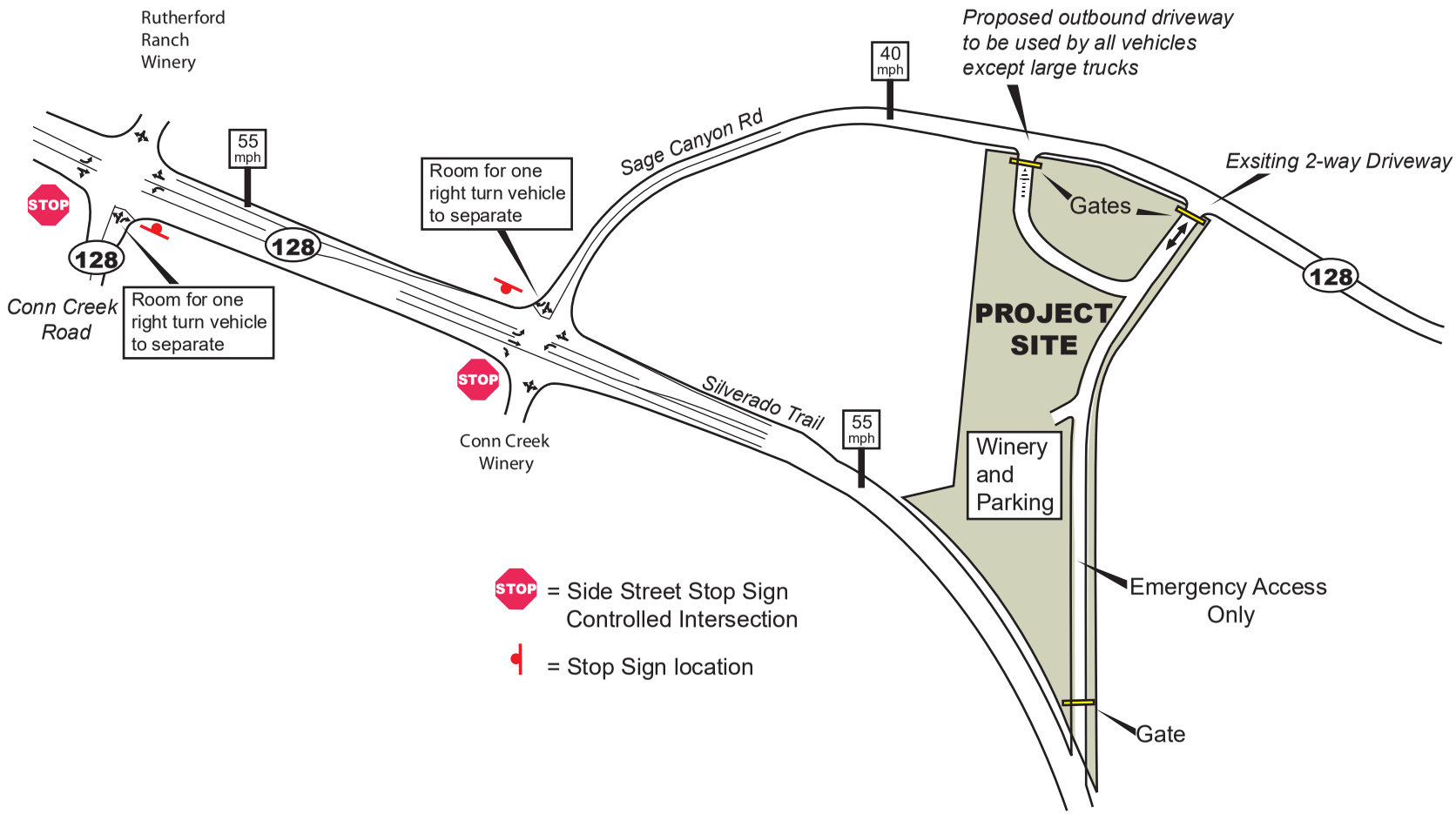
DATE: MARCH 2019
JOB NO. 14-02
SHEET NO. UP1 OF 6

P19-00131

Figure 3

Site Plan

CRANE TRANSPORTATION GROUP

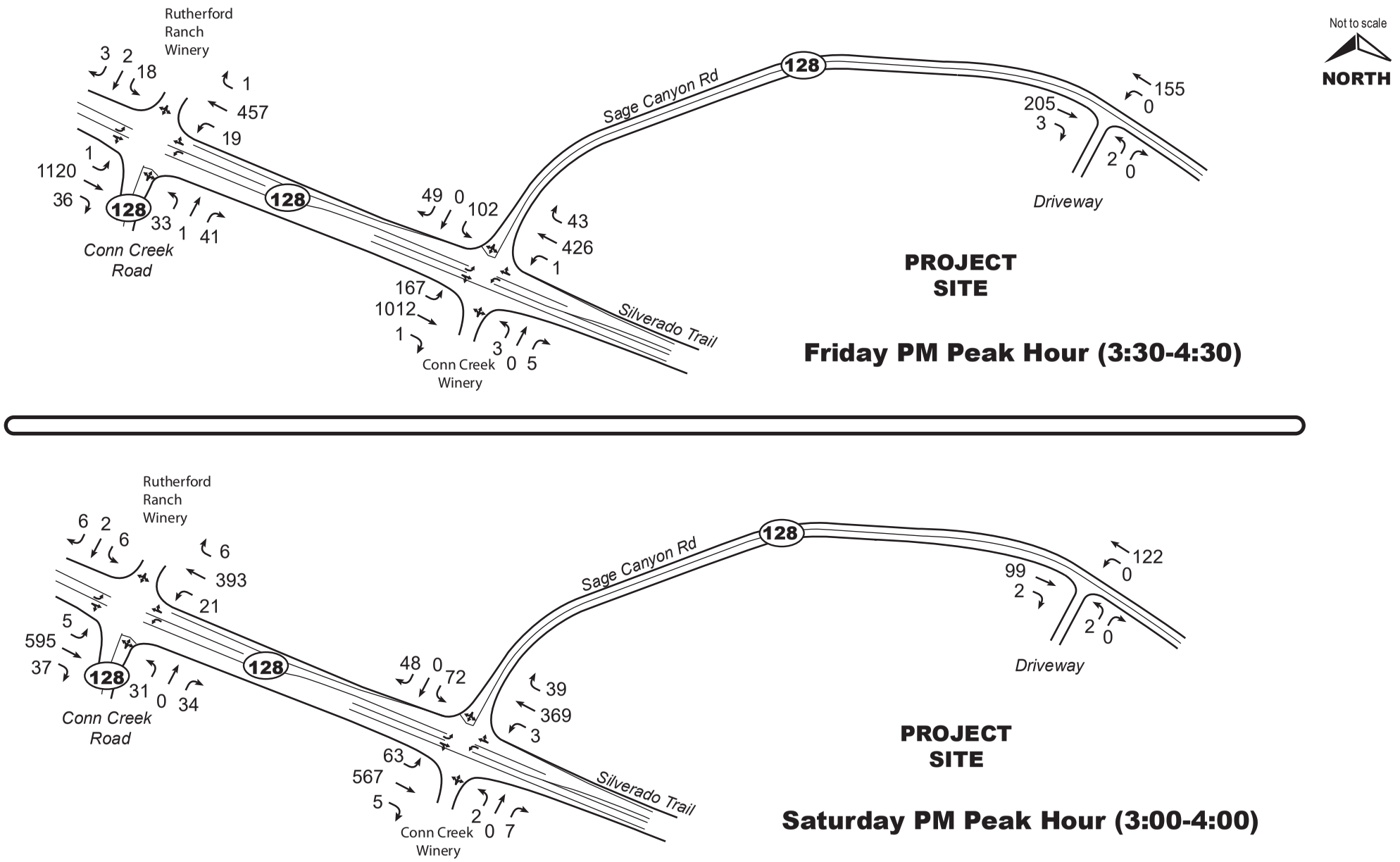


Dakota Shy Winery Traffic Study

Figure 4

Existing Lane Geometrics and Intersection Control

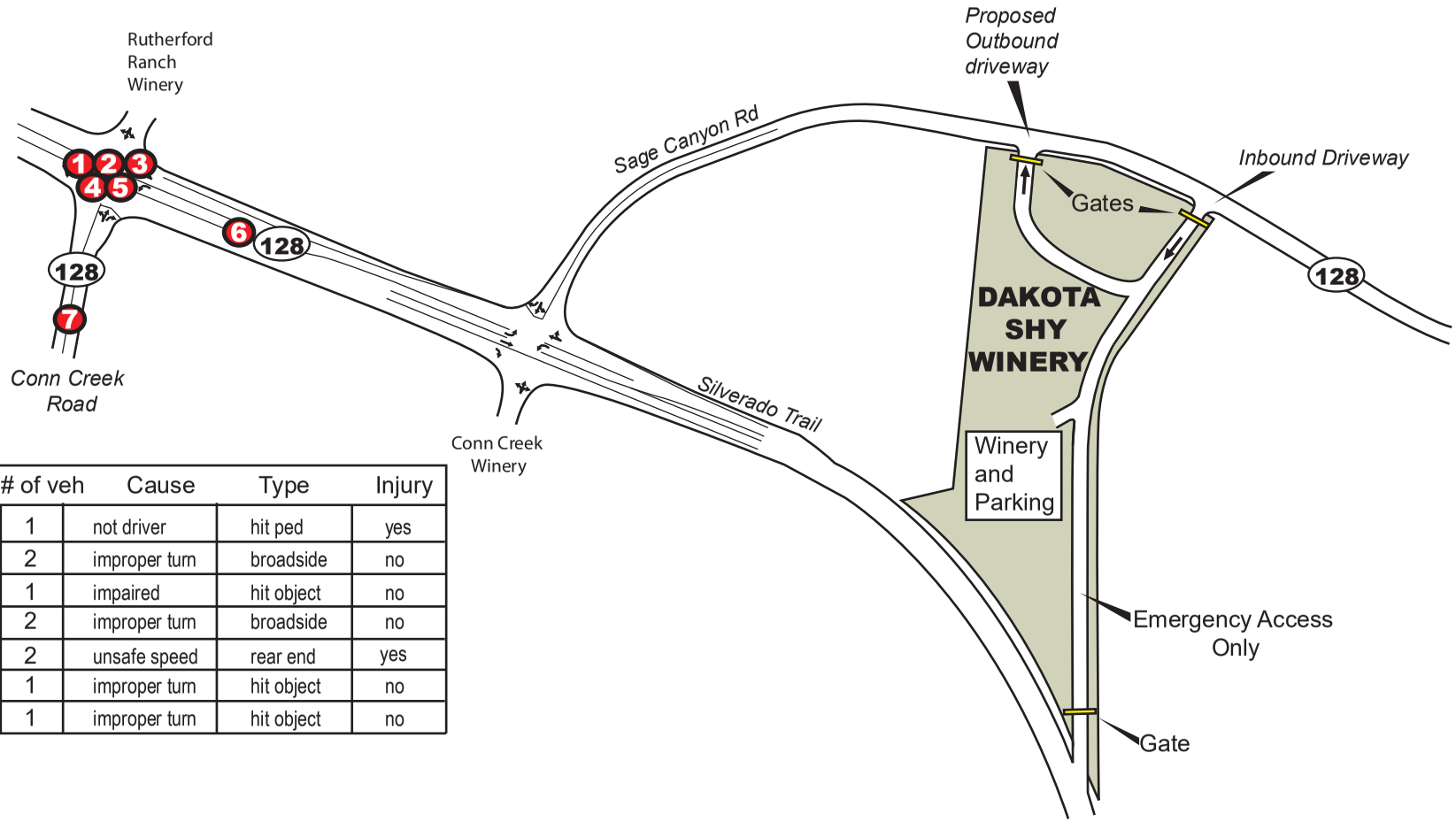
CRANE TRANSPORTATION GROUP



CRANE TRANSPORTATION GROUP

Figure 5

Existing (2019) Harvest (without Project)
Friday and Saturday PM Peak Hour Volumes

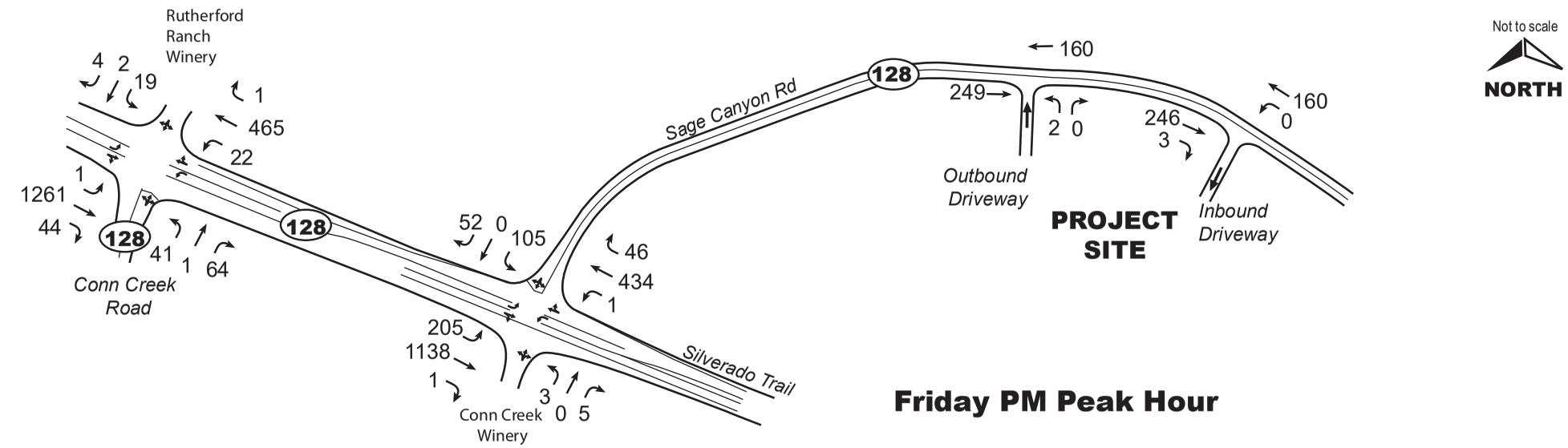


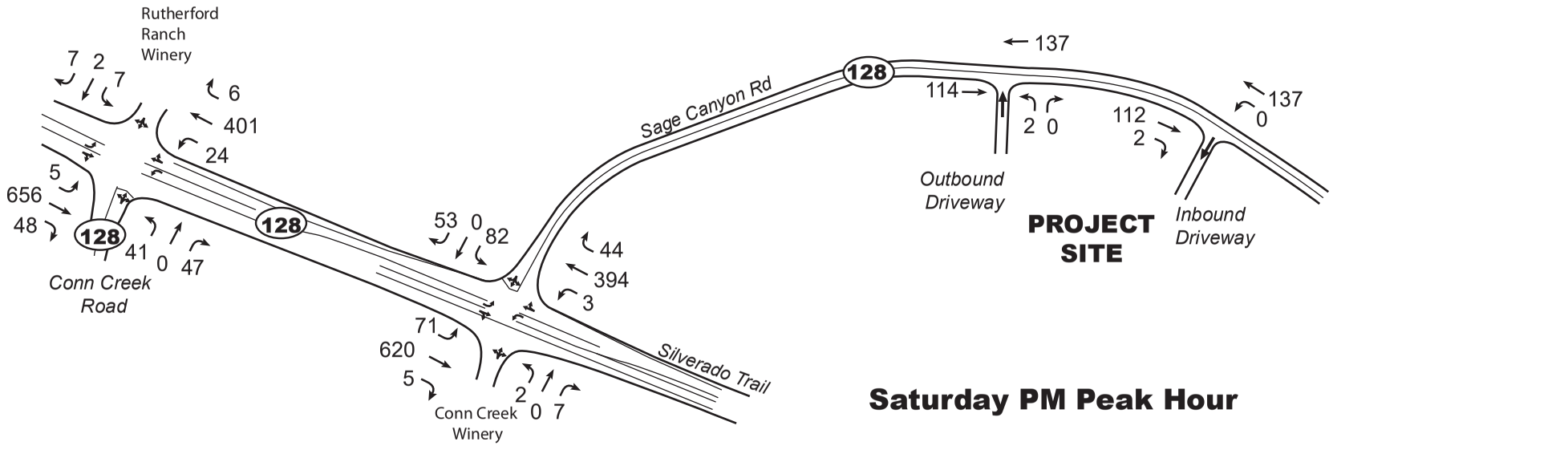
	# of veh	Cause	Type	Injury
1	1	not driver	hit ped	yes
2	2	improper turn	broadside	no
3	1	impaired	hit object	no
4	2	improper turn	broadside	no
5	2	unsafe speed	rear end	yes
6	1	improper turn	hit object	no
7	1	improper turn	hit object	no

CRANE TRANSPORTATION GROUP

Figure 6

Accidents in the Vicinity of the Dakota Shy Winery - 2015 - 2019

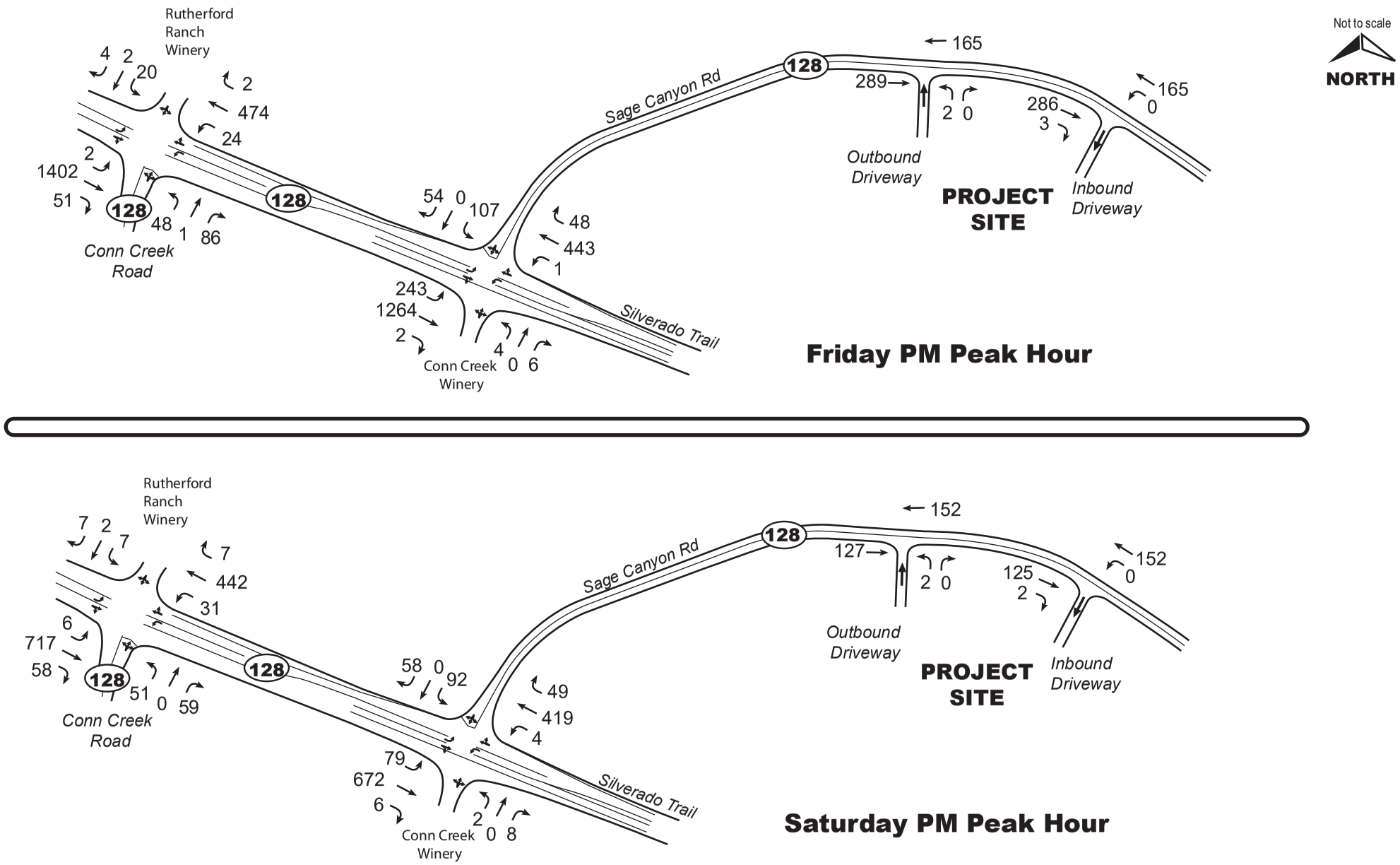




CRANE TRANSPORTATION GROUP

Figure 7

Year 2025 Harvest (without Project)
Friday and Saturday PM Peak Hour Volumes

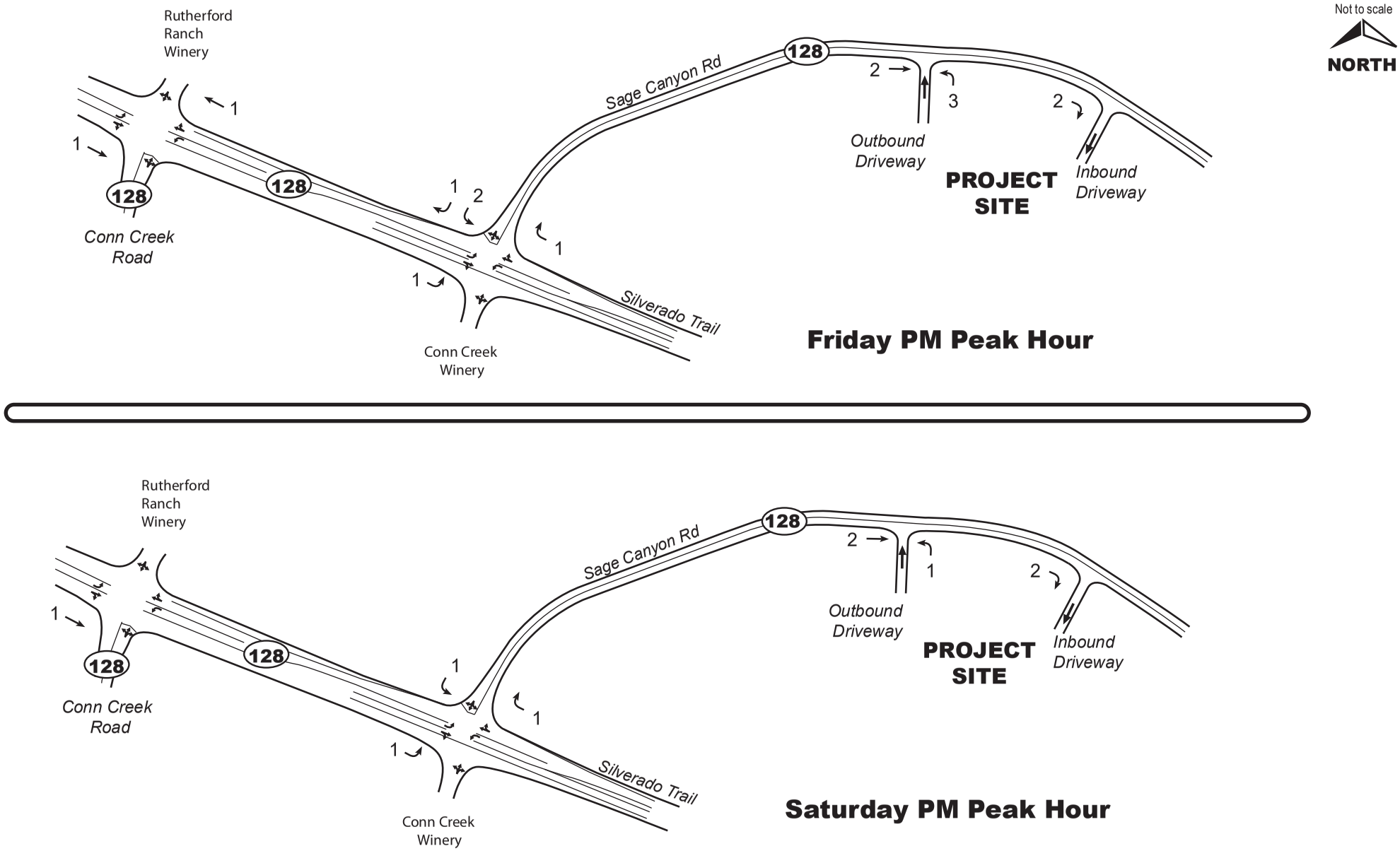


Dakota Shy Winery Traffic Study

CRANE TRANSPORTATION GROUP

Figure 8

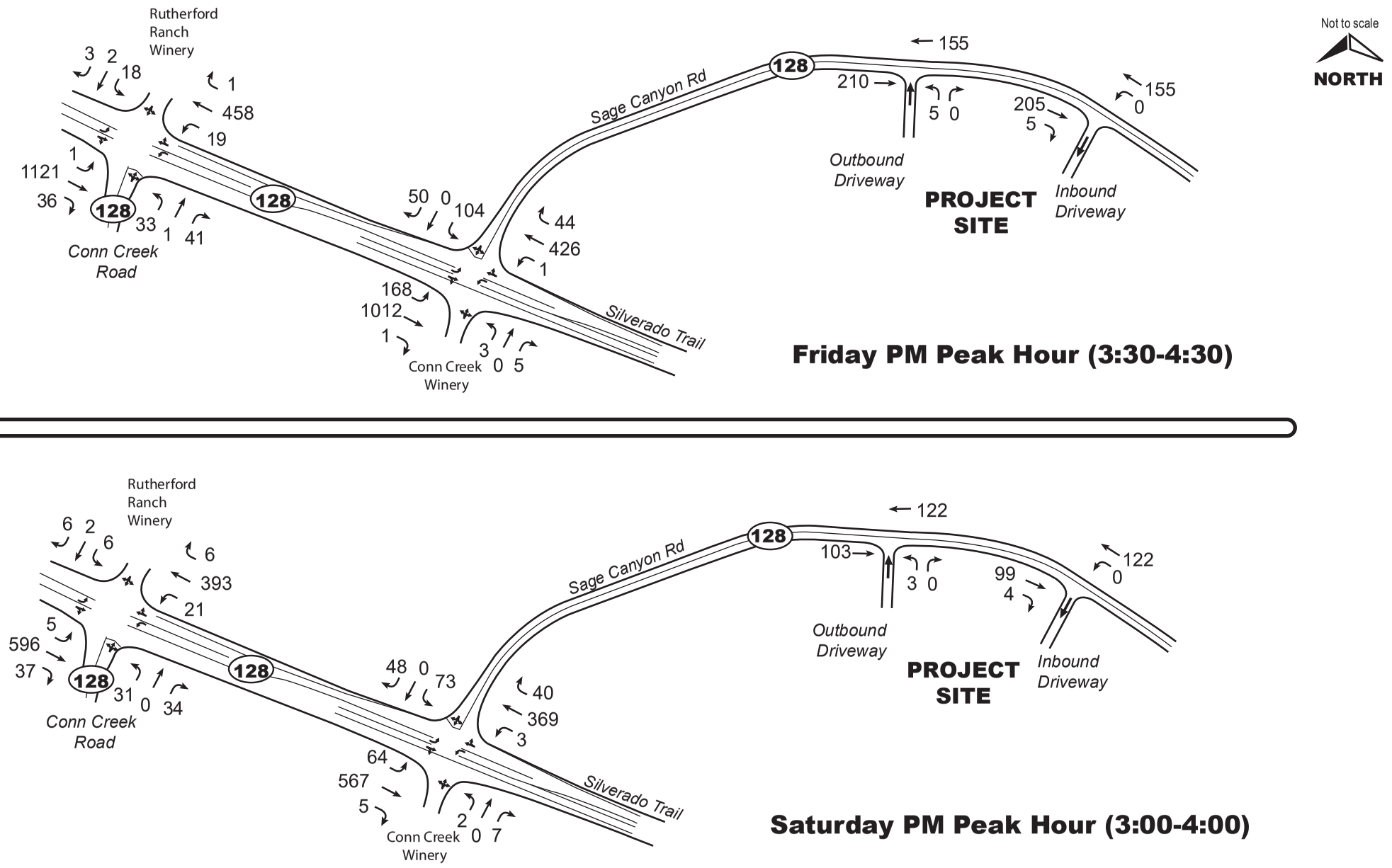
Cumulative (Year 2030) Harvest (without Project)
Friday and Saturday PM Peak Hour Volumes



CRANE TRANSPORTATION GROUP

Figure 9

Friday & Saturday PM Peak Hour Project Increment Volumes

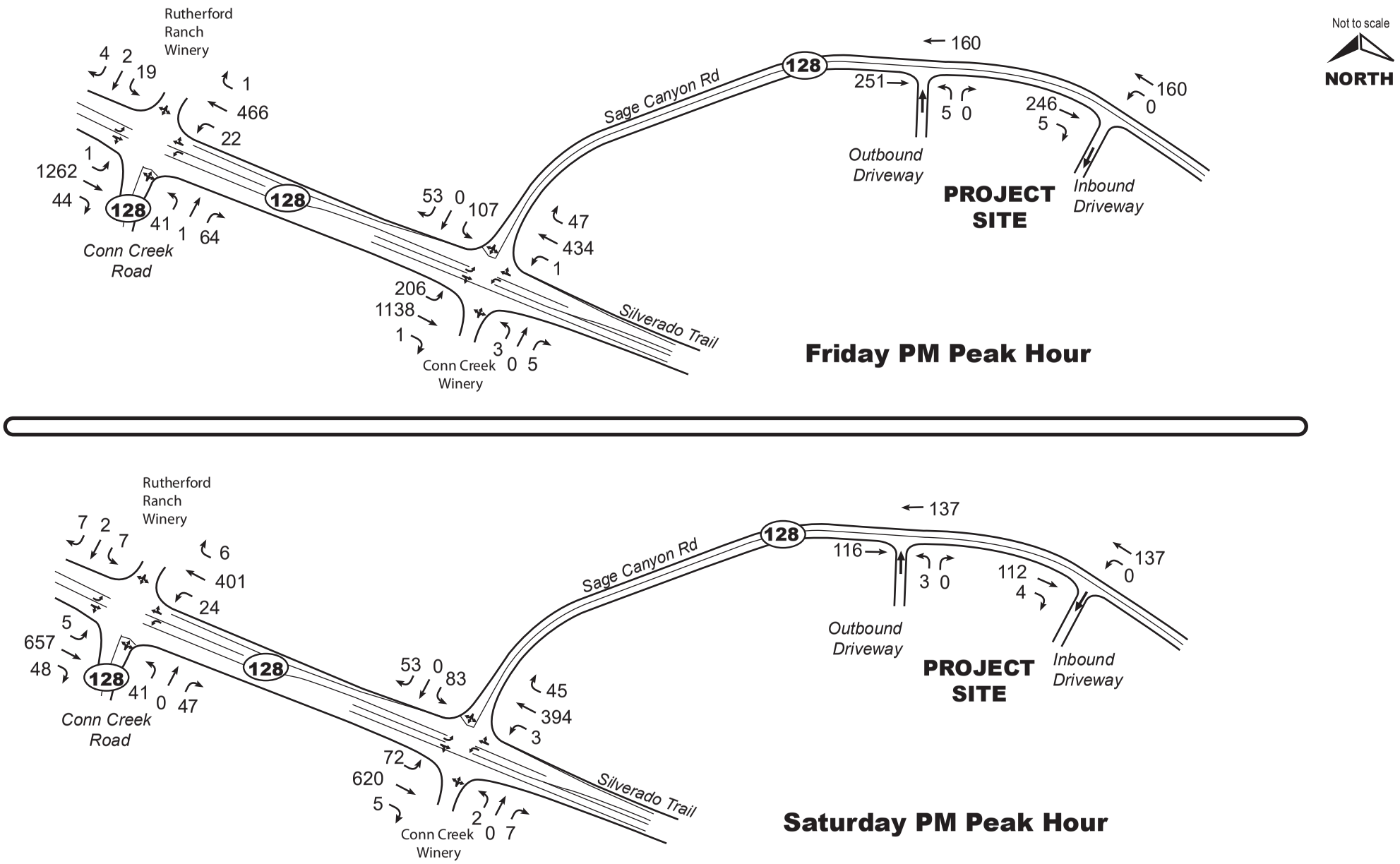


Dakota Shy Winery Traffic Study

CRANE TRANSPORTATION GROUP

Figure 10

Existing (2019) Harvest (with Project)
Friday and Saturday PM Peak Hour Volumes

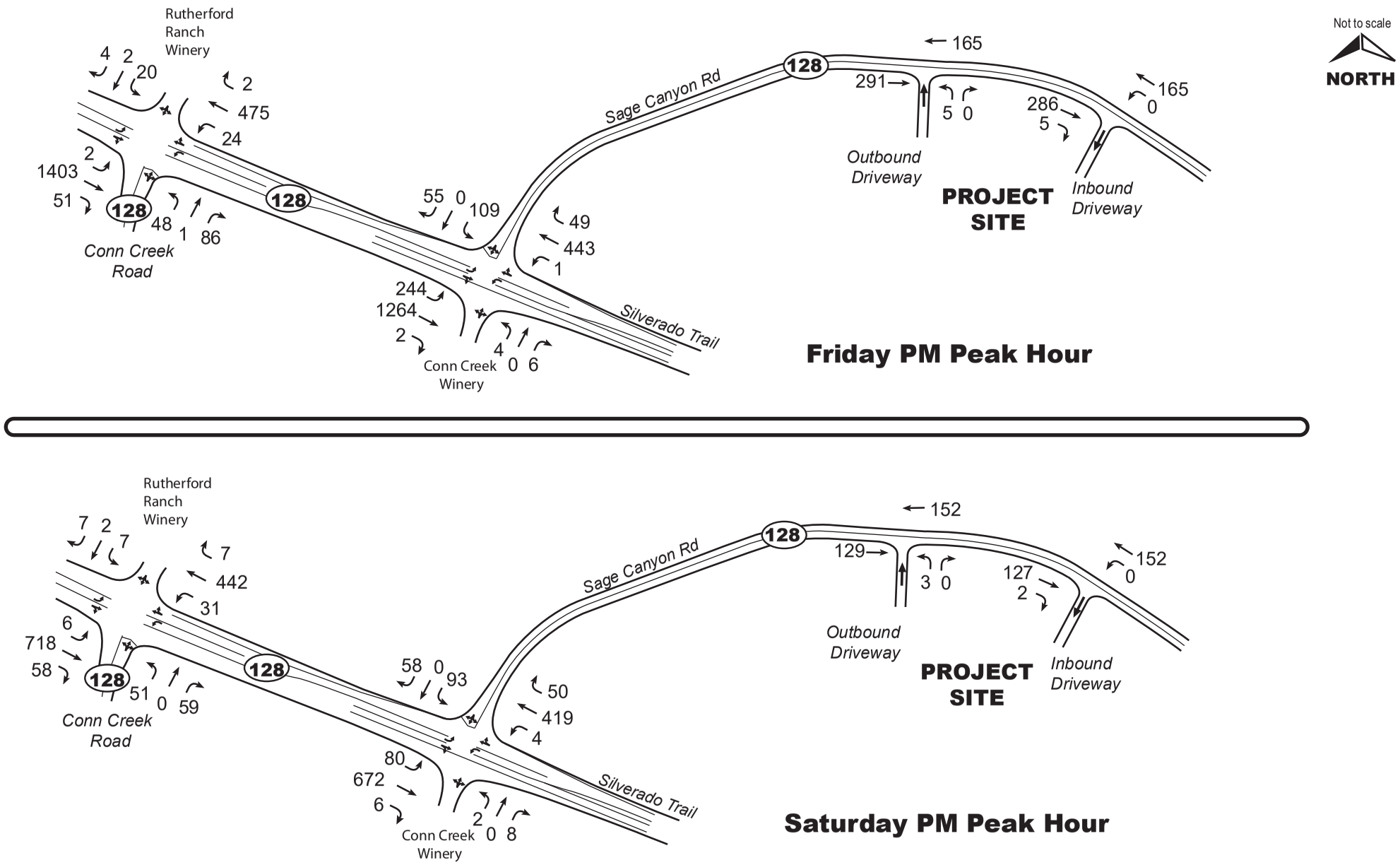


Dakota Shy Winery Traffic Study

CRANE TRANSPORTATION GROUP

Figure 11

Year 2025 Harvest (with Project)
Friday and Saturday PM Peak Hour Volumes



Dakota Shy Winery Traffic Study

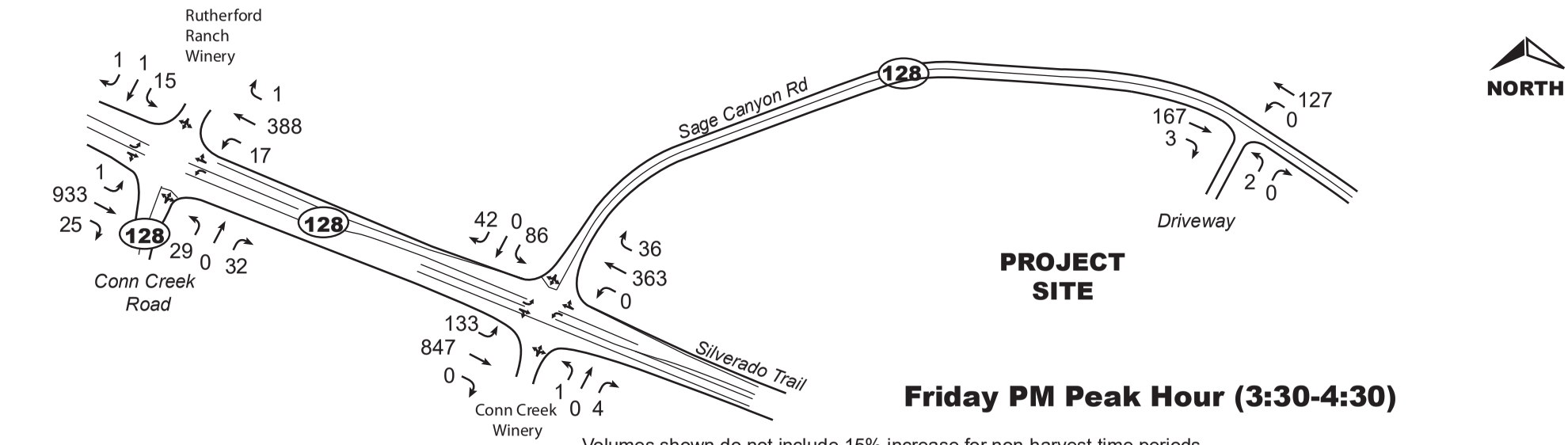
CRANE TRANSPORTATION GROUP

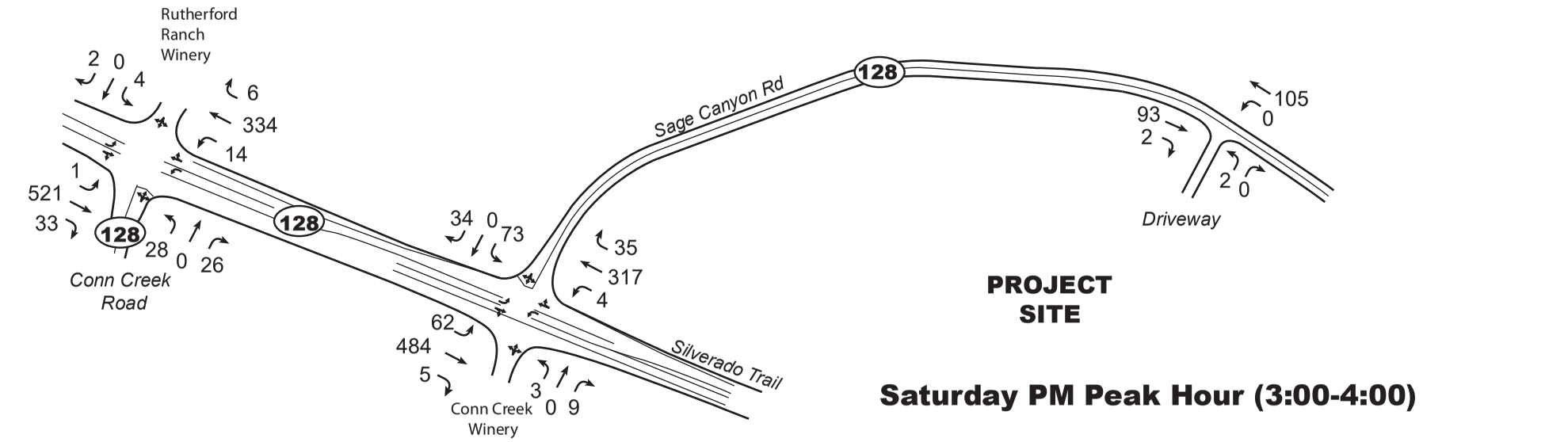
Figure 12

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

Appendices

Appendix A

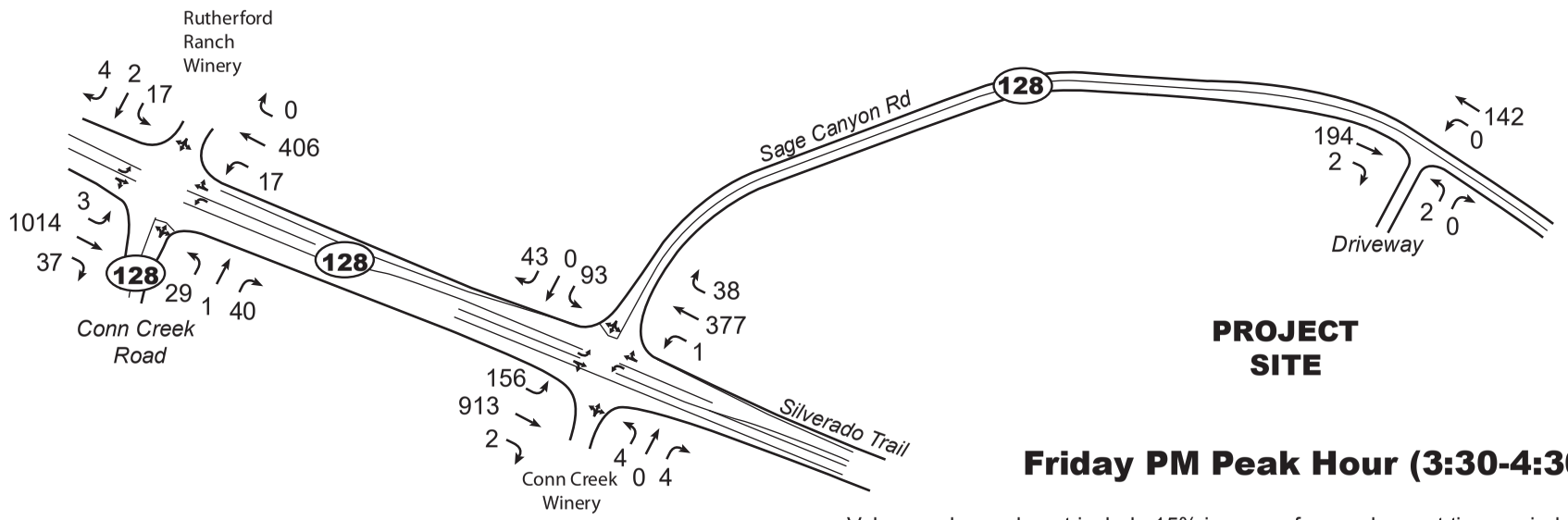


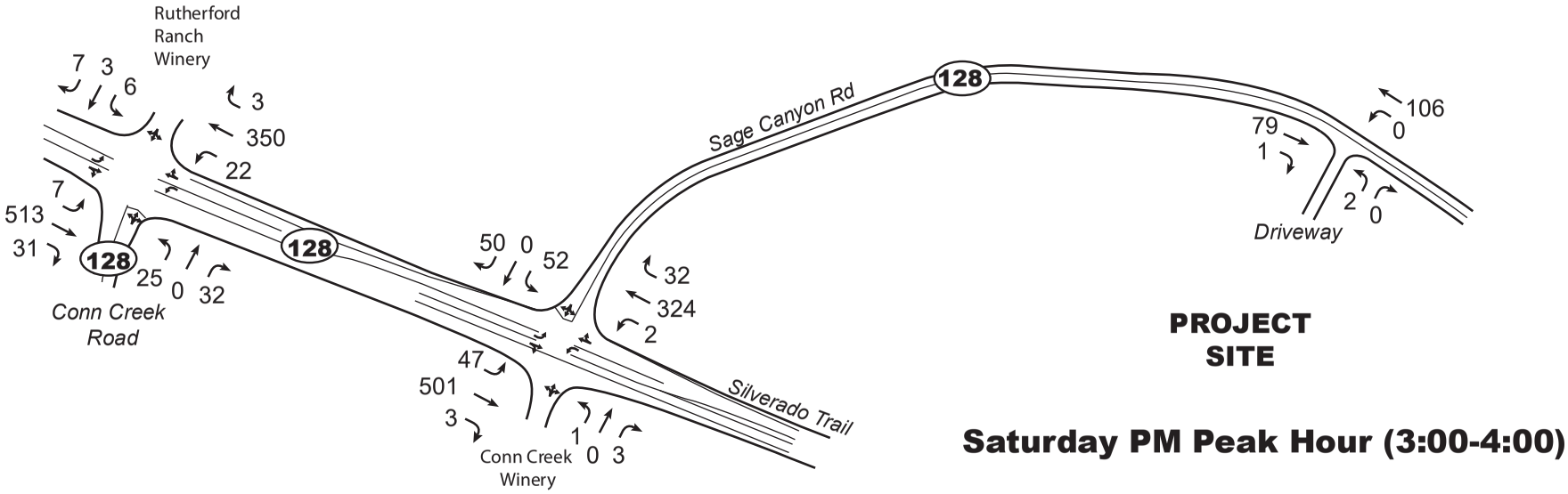


CRANE TRANSPORTATION GROUP

Figure A-1

2020 January 31 & Feb 1
Friday and Saturday
PM Peak Hour Volumes





CRANE TRANSPORTATION GROUP

Figure A-2
2020 Feb 7 & Feb 8
Friday and Saturday
PM Peak Hour Volumes

Vehicle Speed Report Summary

Location: Silverado Trail, South of Sage Canyon Rd

Count Direction: Northbound / Southbound

Date Range: 2/21/2020 to 2/22/2020

Site Code: 01

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	3	14	34	55	186	756	1,619	3,061	3,276	1,679	484	100	14	3	2	1	2	11,289
Percent	0.0%	0.1%	0.3%	0.5%	1.6%	6.7%	14.3%	27.1%	29.0%	14.9%	4.3%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Southbound	76	56	63	135	273	740	1,544	3,875	3,450	1,145	253	51	15	5	2	2	0	11,685
Percent	0.7%	0.5%	0.5%	1.2%	2.3%	6.3%	13.2%	33.2%	29.5%	9.8%	2.2%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	100%
Total	79	70	97	190	459	1,496	3,163	6,936	6,726	2,824	737	151	29	8	4	3	2	22,974
Percent	0.3%	0.3%	0.4%	0.8%	2.0%	6.5%	13.8%	30.2%	29.3%	12.3%	3.2%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	44.9	mph	Mean (Average) Speed	44.5	mph
85th Percentile	51.3	mph	10 mph Pace	40.4 - 50.4	mph
95th Percentile	55.3	mph	Percent in Pace	56.2	%
Southbound			**Southbound**		
50th Percentile (Median)	44.0	mph	Mean (Average) Speed	43.1	mph
85th Percentile	49.4	mph	10 mph Pace	39.8 - 49.8	mph
95th Percentile	53.1	mph	Percent in Pace	62.6	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Silverado Trail, South of Sage Canyon Rd
Date Range: 2/21/2020 to 2/22/2020
Site Code: 01

Friday, February 21, 2020
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	1	1	2	5	4	4	1	1	0	0	0	0	**19**
1:00 AM	0	0	0	0	0	0	0	2	1	2	0	0	0	0	0	0	0	**5**
2:00 AM	0	0	0	0	1	0	1	0	3	2	2	1	0	0	0	0	0	**10**
3:00 AM	0	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	0	**5**
4:00 AM	0	0	0	0	0	0	1	0	0	6	4	3	1	0	0	0	0	**15**
5:00 AM	0	0	0	0	1	8	13	13	21	31	25	9	3	2	0	0	0	**126**
6:00 AM	0	0	0	7	39	48	70	125	197	122	20	2	0	0	0	0	0	**630**
7:00 AM	0	0	0	3	20	29	49	129	177	92	23	8	0	0	0	0	0	**530**
8:00 AM	0	0	1	1	4	29	79	149	237	122	24	3	1	0	0	0	0	**650**
9:00 AM	0	0	0	1	2	32	67	139	145	79	11	0	0	0	0	0	0	**476**
10:00 AM	0	1	2	0	7	17	52	97	118	41	10	0	0	0	0	0	0	**345**
11:00 AM	0	1	1	2	1	27	66	151	134	47	7	1	0	0	0	0	0	**438**
12:00 PM	0	5	1	2	4	19	64	133	113	36	7	1	0	0	0	0	0	**385**
1:00 PM	0	0	1	0	6	25	68	130	128	34	4	0	0	0	0	0	0	**396**
2:00 PM	0	1	0	1	0	29	69	139	124	47	7	1	0	0	0	0	0	**418**
3:00 PM	3	1	2	9	15	46	81	121	117	43	4	0	0	0	0	0	1	**443**
4:00 PM	0	0	2	0	4	33	79	134	97	44	9	0	0	0	0	0	0	**402**
5:00 PM	0	1	0	3	6	32	74	126	102	27	4	0	0	0	0	0	0	**375**
6:00 PM	0	0	0	0	0	8	19	40	81	41	12	2	0	0	0	0	0	**203**
7:00 PM	0	0	0	0	0	3	15	22	47	27	10	1	1	0	0	0	0	**126**
8:00 PM	0	0	0	0	1	5	8	13	38	27	11	1	0	1	0	0	0	**105**
9:00 PM	0	0	0	1	1	4	10	18	27	20	13	2	0	0	1	0	0	**97**
10:00 PM	0	0	0	0	0	4	5	23	22	17	2	5	1	0	0	1	0	**80**
11:00 PM	0	0	0	0	0	1	3	22	11	7	5	1	1	0	0	0	0	**51**
Total	**3**	**10**	**10**	**30**	**113**	**400**	**894**	**1,730**	**1,945**	**918**	**220**	**42**	**9**	**3**	**1**	**1**	**1**	**6,330**
Percent	**0.0%**	**0.2%**	**0.2%**	**0.5%**	**1.8%**	**6.3%**	**14.1%**	**27.3%**	**30.7%**	**14.5%**	**3.5%**	**0.7%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	45.0	mph	Mean (Average) Speed	44.4	mph
85th Percentile	51.1	mph	10 mph Pace	40.3 - 50.3	mph
95th Percentile	54.6	mph	Percent in Pace	58.1	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Silverado Trail, South of Sage Canyon Rd
Date Range: 2/21/2020 to 2/22/2020
Site Code: 01

idax DATA SOLUTIONS

Friday, February 21, 2020
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	1	5	5	6	3	0	0	0	0	0	0	**20**
1:00 AM	0	0	0	0	0	1	1	2	4	3	1	0	0	0	0	0	0	**12**
2:00 AM	0	0	0	0	0	2	0	2	1	1	0	0	0	0	0	0	0	**6**
3:00 AM	0	0	1	0	0	0	0	2	4	2	2	0	0	0	0	0	0	**11**
4:00 AM	0	0	0	0	0	0	5	3	2	1	7	2	1	0	0	0	0	**21**
5:00 AM	0	0	1	0	2	1	3	3	16	19	11	0	0	3	0	0	0	**59**
6:00 AM	0	0	0	0	3	19	12	49	87	31	7	4	1	0	0	0	0	**213**
7:00 AM	0	0	1	0	3	18	17	44	102	57	16	1	0	0	0	0	0	**259**
8:00 AM	0	0	0	1	2	11	27	100	113	54	3	0	0	0	0	0	0	**311**
9:00 AM	0	0	2	4	6	15	43	92	83	17	2	0	0	0	0	0	0	**264**
10:00 AM	0	0	0	2	4	12	50	109	83	22	5	0	0	0	0	0	0	**287**
11:00 AM	0	1	0	2	3	18	34	131	122	35	4	0	0	0	0	0	0	**350**
12:00 PM	1	0	0	2	7	23	44	153	120	33	5	1	0	0	0	0	0	**389**
1:00 PM	0	1	0	4	8	29	43	161	140	48	5	0	0	0	0	0	0	**439**
2:00 PM	0	1	1	2	5	12	66	201	183	60	5	1	1	0	0	0	0	**538**
3:00 PM	0	0	0	3	7	39	166	444	296	44	2	2	0	0	0	0	0	**1,003**
4:00 PM	12	8	12	35	48	109	152	292	151	26	5	1	0	0	0	2	0	**853**
5:00 PM	59	42	35	66	74	50	52	87	118	38	3	0	0	0	0	0	0	**624**
6:00 PM	0	0	0	0	7	9	35	122	121	58	6	1	0	0	0	0	0	**359**
7:00 PM	0	0	0	0	2	10	19	41	52	37	12	0	0	0	0	0	0	**173**
8:00 PM	0	0	0	0	0	5	6	20	34	16	6	2	0	0	0	0	0	**89**
9:00 PM	0	0	0	0	2	0	12	27	19	9	6	1	0	0	0	0	0	**76**
10:00 PM	0	0	0	0	3	4	5	10	17	12	9	1	1	1	0	0	0	**63**
11:00 PM	0	0	0	0	2	2	4	11	11	16	10	1	0	0	0	0	0	**57**
Total	**72**	**53**	**53**	**121**	**188**	**389**	**797**	**2,111**	**1,884**	**645**	**135**	**18**	**4**	**4**	**0**	**2**	**0**	**6,476**
Percent	**1.1%**	**0.8%**	**0.8%**	**1.9%**	**2.9%**	**6.0%**	**12.3%**	**32.6%**	**29.1%**	**10.0%**	**2.1%**	**0.3%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	43.8	mph	Mean (Average) Speed	42.5	mph
85th Percentile	49.4	mph	10 mph Pace	40.0 - 50.0	mph
95th Percentile	52.9	mph	Percent in Pace	61.55	%

Location: Silverado Trail, South of Sage Canyon Rd
Date Range: 2/21/2020 to 2/22/2020
Site Code: 01

idax DATA SOLUTIONS

Saturday, February 22, 2020
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	1	0	1	0	9	0	4	0	0	0	0	0	**15**
1:00 AM	0	0	0	0	0	0	1	2	6	3	2	2	0	0	0	0	0	**16**
2:00 AM	0	0	0	0	0	0	0	1	3	3	1	0	0	0	0	0	0	**8**
3:00 AM	0	0	0	0	0	1	0	0	1	3	2	1	0	0	0	0	0	**8**
4:00 AM	0	0	0	0	1	1	0	1	3	1	1	2	0	0	0	0	0	**10**
5:00 AM	0	0	0	0	0	0	2	5	10	7	4	8	4	0	0	0	0	**40**
6:00 AM	0	0	0	0	3	16	27	31	64	74	36	5	0	0	0	0	0	**256**
7:00 AM	0	0	0	0	1	7	13	30	38	42	31	6	0	0	0	0	0	**168**
8:00 AM	0	0	2	2	3	25	22	67	101	78	43	8	0	0	0	0	0	**351**
9:00 AM	0	2	8	9	5	22	42	96	94	63	28	5	0	0	0	0	0	**374**
10:00 AM	0	2	1	2	11	39	62	99	134	51	20	4	0	0	0	0	0	**425**
11:00 AM	0	0	5	4	2	28	92	166	134	51	4	0	0	0	0	0	0	**486**
12:00 PM	0	0	5	0	7	46	99	174	114	54	7	0	0	0	0	0	0	**506**
1:00 PM	0	0	1	0	5	40	96	157	145	41	5	0	0	0	0	0	0	**490**
2:00 PM	0	0	2	7	18	59	82	123	93	26	8	1	0	0	0	0	0	**419**
3:00 PM	0	0	0	1	10	25	67	98	75	46	7	0	0	0	0	0	0	**329**
4:00 PM	0	0	0	0	1	13	39	97	83	40	6	1	0	0	0	0	0	**280**
5:00 PM	0	0	0	0	2	14	41	71	68	46	13	3	0	0	0	0	0	**258**
6:00 PM	0	0	0	0	0	7	20	32	54	28	12	1	1	0	0	0	0	**155**
7:00 PM	0	0	0	0	0	4	2	16	28	31	7	0	0	0	0	0	0	**88**
8:00 PM	0	0	0	0	1	4	3	24	25	21	4	1	0	0	0	0	0	**83**
9:00 PM	0	0	0	0	2	2	4	19	27	12	3	0	0	0	1	0	0	**70**
10:00 PM	0	0	0	0	1	2	8	14	20	14	10	1	0	0	0	0	1	**71**
11:00 PM	0	0	0	0	0	0	3	7	11	17	10	5	0	0	0	0	0	**53**
Total	**0**	**4**	**24**	**25**	**73**	**356**	**725**	**1,331**	**1,331**	**761**	**264**	**58**	**5**	**0**	**1**	**0**	**1**	**4,959**
Percent	**0.0%**	**0.1%**	**0.5%**	**0.5%**	**1.5%**	**7.2%**	**14.6%**	**26.8%**	**26.8%**	**15.3%**	**5.3%**	**1.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	44.9	mph	Mean (Average) Speed	44.5	mph
85th Percentile	51.8	mph	10 mph Pace	39.8 - 49.8	mph
95th Percentile	56.0	mph	Percent in Pace	53.7	%

Location: Silverado Trail, South of Sage Canyon Rd
Date Range: 2/21/2020 to 2/22/2020
Site Code: 01

idax DATA SOLUTIONS

Saturday, February 22, 2020
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	1	0	7	6	8	1	0	1	0	1	0	0	**25**
1:00 AM	0	0	0	0	0	1	1	5	5	6	1	0	0	0	0	0	0	**19**
2:00 AM	0	0	0	0	0	1	1	1	3	3	3	3	0	0	0	0	0	**15**
3:00 AM	0	0	0	0	0	0	1	2	2	1	1	0	0	0	0	0	0	**7**
4:00 AM	0	0	0	0	0	0	2	2	4	2	2	1	2	0	0	0	0	**15**
5:00 AM	0	0	0	0	0	4	2	7	5	6	2	2	1	0	1	0	0	**30**
6:00 AM	0	0	0	1	1	5	6	18	24	23	1	2	1	0	0	0	0	**82**
7:00 AM	0	0	0	0	2	7	6	17	39	38	16	4	3	0	0	0	0	**132**
8:00 AM	0	0	0	0	1	9	13	24	52	27	12	2	1	0	0	0	0	**141**
9:00 AM	0	1	1	1	7	16	21	58	69	18	7	2	0	1	0	0	0	**202**
10:00 AM	0	0	3	1	5	20	40	113	75	34	2	0	0	0	0	0	0	**293**
11:00 AM	1	1	2	1	9	17	50	104	89	29	7	2	0	0	0	0	0	**312**
12:00 PM	0	0	0	1	10	23	70	135	129	23	4	0	0	0	0	0	0	**395**
1:00 PM	3	0	2	0	7	27	60	144	124	27	5	3	1	0	0	0	0	**403**
2:00 PM	0	0	0	0	3	31	82	190	152	35	10	0	0	0	0	0	0	**503**
3:00 PM	0	0	2	1	7	51	103	254	191	35	3	2	0	0	0	0	0	**649**
4:00 PM	0	1	0	5	10	50	130	261	208	38	2	1	1	0	0	0	0	**707**
5:00 PM	0	0	0	0	8	42	87	235	179	32	4	0	0	0	0	0	0	**587**
6:00 PM	0	0	0	1	6	17	29	104	100	42	5	1	0	0	0	0	0	**305**
7:00 PM	0	0	0	2	2	15	13	28	44	22	9	1	0	0	0	0	0	**136**
8:00 PM	0	0	0	0	2	5	15	21	13	5	2	0	0	0	0	0	0	**63**
9:00 PM	0	0	0	0	4	4	6	14	19	9	4	2	0	0	0	0	0	**62**
10:00 PM	0	0	0	0	1	4	4	13	20	15	4	1	0	0	0	0	0	**62**
11:00 PM	0	0	0	0	0	1	5	7	14	22	11	4	0	0	0	0	0	**64**
Total	**4**	**3**	**10**	**14**	**85**	**351**	**747**	**1,764**	**1,566**	**500**	**118**	**33**	**11**	**1**	**2**	**0**	**0**	**5,209**
Percent	**0.1%**	**0.1%**	**0.2%**	**0.3%**	**1.6%**	**6.7%**	**14.3%**	**33.9%**	**30.1%**	**9.6%**	**2.3%**	**0.6%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	44.1	mph	Mean (Average) Speed	43.8	mph
85th Percentile	49.4	mph	10 mph Pace	39.8 - 49.8	mph
95th Percentile	53.4	mph	Percent in Pace	64.06	%

Location: Silverado Trail, South of Sage Canyon Rd
Date Range: 2/21/2020 to 2/22/2020
Site Code: 01

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	1	1	2	3	7	2	3	1	0	0	0	0	**20**
1:00 AM	0	0	0	0	0	0	1	2	4	3	1	1	0	0	0	0	0	**12**
2:00 AM	0	0	0	0	1	0	1	1	3	3	2	1	0	0	0	0	0	**12**
3:00 AM	0	0	0	0	1	1	0	1	1	2	2	1	0	0	0	0	0	**9**
4:00 AM	0	0	0	0	1	1	1	1	2	4	3	3	1	0	0	0	0	**17**
5:00 AM	0	0	0	0	1	4	8	9	16	19	15	9	4	1	0	0	0	**86**
6:00 AM	0	0	0	4	21	32	49	78	131	98	28	4	0	0	0	0	0	**445**
7:00 AM	0	0	0	2	11	18	31	80	108	67	27	7	0	0	0	0	0	**351**
8:00 AM	0	0	2	2	4	27	51	108	169	100	34	6	1	0	0	0	0	**504**
9:00 AM	0	1	4	5	4	27	55	118	120	71	20	3	0	0	0	0	0	**428**
10:00 AM	0	2	2	1	9	28	57	98	126	46	15	2	0	0	0	0	0	**386**
11:00 AM	0	1	3	3	2	28	79	159	134	49	6	1	0	0	0	0	0	**465**
12:00 PM	0	3	3	1	6	33	82	154	114	45	7	1	0	0	0	0	0	**449**
1:00 PM	0	0	1	0	6	33	82	144	137	38	5	0	0	0	0	0	0	**446**
2:00 PM	0	1	1	4	9	44	76	131	109	37	8	1	0	0	0	0	0	**421**
3:00 PM	2	1	1	5	13	36	74	110	96	45	6	0	0	0	0	0	1	**390**
4:00 PM	0	0	1	0	3	23	59	116	90	42	8	1	0	0	0	0	0	**343**
5:00 PM	0	1	0	2	4	23	58	99	85	37	9	2	0	0	0	0	0	**320**
6:00 PM	0	0	0	0	0	8	20	36	68	35	12	2	1	0	0	0	0	**182**
7:00 PM	0	0	0	0	0	4	9	19	38	29	9	1	1	0	0	0	0	**110**
8:00 PM	0	0	0	0	1	5	6	19	32	24	8	1	0	1	0	0	0	**97**
9:00 PM	0	0	0	1	2	3	7	19	27	16	8	1	0	0	1	0	0	**85**
10:00 PM	0	0	0	0	1	3	7	19	21	16	6	3	1	0	0	1	1	**79**
11:00 PM	0	0	0	0	0	1	3	15	11	12	8	3	1	0	0	0	0	**54**
Total	**2**	**10**	**18**	**30**	**100**	**383**	**817**	**1,538**	**1,645**	**845**	**249**	**57**	**11**	**2**	**1**	**1**	**2**	**5,711**
Percent	**0.0%**	**0.2%**	**0.3%**	**0.5%**	**1.8%**	**6.7%**	**14.3%**	**26.9%**	**28.8%**	**14.8%**	**4.4%**	**1.0%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	44.9	mph	Mean (Average) Speed	44.5	mph
85th Percentile	51.3	mph	10 mph Pace	40.4 - 50.4	mph
95th Percentile	55.3	mph	Percent in Pace	56.2	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Silverado Trail, South of Sage Canyon Rd
Date Range: 2/21/2020 to 2/22/2020
Site Code: 01

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	1	1	6	6	7	2	0	1	0	1	0	0	**25**
1:00 AM	0	0	0	0	0	1	1	4	5	5	1	0	0	0	0	0	0	**17**
2:00 AM	0	0	0	0	0	2	1	2	2	2	2	2	0	0	0	0	0	**13**
3:00 AM	0	0	1	0	0	0	1	2	3	2	2	0	0	0	0	0	0	**11**
4:00 AM	0	0	0	0	0	0	4	3	3	2	5	2	2	0	0	0	0	**21**
5:00 AM	0	0	1	0	1	3	3	5	11	13	7	1	1	2	1	0	0	**49**
6:00 AM	0	0	0	1	2	12	9	34	56	27	4	3	1	0	0	0	0	**149**
7:00 AM	0	0	1	0	3	13	12	31	71	48	16	3	2	0	0	0	0	**200**
8:00 AM	0	0	0	1	2	10	20	62	83	41	8	1	1	0	0	0	0	**229**
9:00 AM	0	1	2	3	7	16	32	75	76	18	5	1	0	1	0	0	0	**237**
10:00 AM	0	0	2	2	5	16	45	111	79	28	4	0	0	0	0	0	0	**292**
11:00 AM	1	1	1	2	6	18	42	118	106	32	6	1	0	0	0	0	0	**334**
12:00 PM	1	0	0	2	9	23	57	144	125	28	5	1	0	0	0	0	0	**395**
1:00 PM	2	1	1	2	8	28	52	153	132	38	5	2	1	0	0	0	0	**425**
2:00 PM	0	1	1	1	4	22	74	196	168	48	8	1	1	0	0	0	0	**525**
3:00 PM	0	0	1	2	7	45	135	349	244	40	3	2	0	0	0	0	0	**828**
4:00 PM	6	5	6	20	29	80	141	277	180	32	4	1	1	0	0	1	0	**783**
5:00 PM	30	21	18	33	41	46	70	161	149	35	4	0	0	0	0	0	0	**608**
6:00 PM	0	0	0	1	7	13	32	113	111	50	6	1	0	0	0	0	0	**334**
7:00 PM	0	0	0	1	2	13	16	35	48	30	11	1	0	0	0	0	0	**157**
8:00 PM	0	0	0	0	1	5	11	21	24	11	4	1	0	0	0	0	0	**78**
9:00 PM	0	0	0	0	3	2	9	21	19	9	5	2	0	0	0	0	0	**70**
10:00 PM	0	0	0	0	2	4	5	12	19	14	7	1	1	1	0	0	0	**66**
11:00 PM	0	0	0	0	1	2	5	9	13	19	11	3	0	0	0	0	0	**63**
Total	**40**	**30**	**35**	**71**	**140**	**375**	**778**	**1,944**	**1,733**	**579**	**135**	**30**	**12**	**4**	**2**	**1**	**0**	**5,909**
Percent	**0.7%**	**0.5%**	**0.6%**	**1.2%**	**2.4%**	**6.3%**	**13.2%**	**32.9%**	**29.3%**	**9.8%**	**2.3%**	**0.5%**	**0.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	44.0	mph	Mean (Average) Speed	43.1	mph
85th Percentile	49.4	mph	10 mph Pace	39.8 - 49.8	mph
95th Percentile	53.1	mph	Percent in Pace	62.6	%

Vehicle Speed Report Summary

Location: Silverado Trail, North of Conn Creek Rd

Count Direction: Northbound / Southbound

Date Range: 2/21/2020 to 2/22/2020

Site Code: 02

	Speed Range (mph)																	Total
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	Volume
Study Total																		
Northbound	2	19	41	25	141	489	981	2,527	3,711	2,437	743	160	26	6	2	2	1	11,313
Percent	0.0%	0.2%	0.4%	0.2%	1.2%	4.3%	8.7%	22.3%	32.8%	21.5%	6.6%	1.4%	0.2%	0.1%	0.0%	0.0%	0.0%	100%
Southbound	31	46	34	68	278	628	1,466	3,678	3,729	1,774	628	149	28	9	5	0	1	12,552
Percent	0.2%	0.4%	0.3%	0.5%	2.2%	5.0%	11.7%	29.3%	29.7%	14.1%	5.0%	1.2%	0.2%	0.1%	0.0%	0.0%	0.0%	100%
Total	33	65	75	93	419	1,117	2,447	6,205	7,440	4,211	1,371	309	54	15	7	2	2	23,865
Percent	0.1%	0.3%	0.3%	0.4%	1.8%	4.7%	10.3%	26.0%	31.2%	17.6%	5.7%	1.3%	0.2%	0.1%	0.0%	0.0%	0.0%	100%

Total Study Percentile Speed Summary			Total Study Speed Statistics		
Northbound			**Northbound**		
50th Percentile (Median)	46.9	mph	Mean (Average) Speed	46.4	mph
85th Percentile	52.9	mph	10 mph Pace	42.7 - 52.7	mph
95th Percentile	56.8	mph	Percent in Pace	59.8	%
Southbound			**Southbound**		
50th Percentile (Median)	45.1	mph	Mean (Average) Speed	44.7	mph
85th Percentile	51.6	mph	10 mph Pace	40.5 - 50.5	mph
95th Percentile	55.9	mph	Percent in Pace	58.9	%

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Silverado Trail, North of Conn Creek Rd
Date Range: 2/21/2020 to 2/22/2020
Site Code: 02

Friday, February 21, 2020
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	1	1	6	6	4	0	0	0	0	0	**18**
1:00 AM	0	0	0	0	0	1	0	0	5	0	1	0	0	0	0	0	0	**7**
2:00 AM	0	0	0	0	0	0	1	1	1	3	3	2	0	0	0	0	0	**11**
3:00 AM	0	0	0	0	0	0	0	0	4	0	1	1	0	0	0	0	0	**6**
4:00 AM	0	0	0	0	1	1	0	0	3	6	5	3	0	1	0	0	0	**20**
5:00 AM	0	0	0	0	1	5	3	3	21	35	27	12	3	1	0	0	0	**111**
6:00 AM	0	0	0	1	5	26	48	97	203	151	47	9	0	0	0	0	0	**587**
7:00 AM	0	0	1	1	4	11	17	78	218	153	47	6	0	0	0	0	0	**536**
8:00 AM	0	0	2	2	9	21	45	111	207	214	48	4	2	0	0	0	0	**665**
9:00 AM	0	0	2	3	4	11	38	96	161	130	31	1	0	0	0	0	0	**477**
10:00 AM	0	0	1	0	4	13	22	78	133	80	15	3	0	0	0	0	0	**349**
11:00 AM	0	1	1	0	6	23	38	103	153	76	14	3	0	0	0	0	0	**418**
12:00 PM	0	3	0	2	8	24	55	110	130	63	13	1	1	0	0	0	0	**410**
1:00 PM	0	3	2	1	8	24	51	94	157	71	3	0	0	0	0	0	0	**414**
2:00 PM	0	0	1	0	3	23	33	126	142	66	12	2	0	2	0	0	0	**410**
3:00 PM	0	0	1	0	2	21	49	132	177	53	13	2	0	0	0	0	0	**450**
4:00 PM	0	0	2	2	4	19	51	130	124	54	17	0	0	0	0	0	0	**403**
5:00 PM	0	0	0	1	4	13	36	141	115	61	10	4	0	0	0	0	0	**385**
6:00 PM	0	0	0	3	1	3	9	40	79	60	19	8	0	1	0	0	0	**223**
7:00 PM	0	0	0	1	2	3	7	11	47	38	14	3	0	0	0	0	0	**126**
8:00 PM	0	0	0	0	0	1	3	15	25	28	18	3	0	0	1	0	0	**94**
9:00 PM	0	0	1	1	2	1	4	5	21	31	19	3	0	1	0	0	0	**89**
10:00 PM	0	0	0	0	2	1	3	14	19	26	5	3	2	0	0	1	0	**76**
11:00 PM	0	0	0	0	3	2	5	7	12	10	7	3	2	0	0	0	0	**51**
Total	**0**	**7**	**14**	**18**	**73**	**247**	**518**	**1,393**	**2,158**	**1,415**	**395**	**80**	**10**	**6**	**1**	**1**	**0**	**6,336**
Percent	**0.0%**	**0.1%**	**0.2%**	**0.3%**	**1.2%**	**3.9%**	**8.2%**	**22.0%**	**34.1%**	**22.3%**	**6.2%**	**1.3%**	**0.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	47.0	mph	Mean (Average) Speed	46.6	mph
85th Percentile	52.8	mph	10 mph Pace	42.7 - 52.7	mph
95th Percentile	56.6	mph	Percent in Pace	62.2	%

Location: Silverado Trail, North of Conn Creek Rd
Date Range: 2/21/2020 to 2/22/2020
Site Code: 02

Friday, February 21, 2020
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	2	4	7	5	2	2	0	0	0	0	0	**22**
1:00 AM	0	0	0	0	0	0	1	4	3	1	2	0	0	0	0	0	0	**11**
2:00 AM	0	0	2	0	0	0	2	1	1	0	1	0	0	0	0	0	0	**7**
3:00 AM	0	0	0	0	0	0	1	2	2	3	1	2	0	0	0	0	0	**11**
4:00 AM	0	0	0	1	1	1	1	1	2	4	4	5	0	0	0	0	0	**20**
5:00 AM	0	0	0	0	0	0	0	8	19	16	11	3	1	1	1	0	0	**60**
6:00 AM	0	0	0	0	0	1	7	42	71	56	32	9	3	0	0	0	0	**221**
7:00 AM	0	0	0	3	4	5	10	37	56	78	60	12	4	0	0	0	0	**269**
8:00 AM	0	0	0	0	2	3	12	69	133	95	37	10	0	0	0	0	0	**361**
9:00 AM	0	0	1	3	2	8	31	76	97	50	20	4	0	0	0	0	0	**292**
10:00 AM	1	0	0	3	7	9	20	87	101	64	10	4	0	0	0	0	0	**306**
11:00 AM	0	0	1	0	8	13	24	108	144	55	24	0	0	0	0	0	0	**377**
12:00 PM	0	0	0	0	5	19	39	128	141	58	8	0	0	0	0	0	0	**398**
1:00 PM	1	1	0	0	8	30	51	160	157	64	10	1	0	0	0	0	0	**483**
2:00 PM	3	0	0	0	13	41	89	182	170	77	16	1	0	0	0	0	0	**592**
3:00 PM	7	0	0	4	5	49	186	415	305	45	11	1	0	0	0	0	0	**1,028**
4:00 PM	8	45	24	31	53	139	243	318	196	13	3	0	0	0	0	0	0	**1,073**
5:00 PM	0	0	1	2	17	42	155	285	265	104	16	4	0	0	0	0	0	**891**
6:00 PM	0	0	0	0	5	10	21	86	133	96	28	4	0	0	0	0	0	**383**
7:00 PM	0	0	1	2	6	7	9	38	49	47	21	4	0	0	0	0	0	**184**
8:00 PM	0	0	0	0	7	6	2	28	20	22	15	5	0	0	0	0	0	**105**
9:00 PM	0	0	0	0	2	3	7	18	26	14	6	3	2	0	0	0	0	**81**
10:00 PM	0	0	1	1	5	3	1	14	10	14	7	3	0	2	0	0	0	**61**
11:00 PM	0	0	0	0	2	12	6	6	11	8	9	4	2	1	0	0	0	**61**
Total	**20**	**46**	**31**	**50**	**152**	**401**	**920**	**2,117**	**2,119**	**989**	**354**	**81**	**12**	**4**	**1**	**0**	**0**	**7,297**
Percent	**0.3%**	**0.6%**	**0.4%**	**0.7%**	**2.1%**	**5.5%**	**12.6%**	**29.0%**	**29.0%**	**13.6%**	**4.9%**	**1.1%**	**0.2%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	44.9	mph	Mean (Average) Speed	44.3	mph
85th Percentile	51.3	mph	10 mph Pace	39.9 - 49.9	mph
95th Percentile	55.8	mph	Percent in Pace	57.87	%

Location: Silverado Trail, North of Conn Creek Rd
Date Range: 2/21/2020 to 2/22/2020
Site Code: 02

Saturday, February 22, 2020
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	0	1	8	2	4	0	0	0	0	0	**15**
1:00 AM	0	0	1	0	0	0	1	1	1	7	5	0	1	0	0	0	0	**17**
2:00 AM	0	0	0	0	0	0	1	2	3	0	1	1	0	0	0	0	0	**8**
3:00 AM	0	0	0	0	1	0	0	0	1	1	3	1	0	0	0	0	0	**7**
4:00 AM	0	0	0	1	0	1	0	0	4	1	1	2	0	0	0	0	0	**10**
5:00 AM	0	0	0	0	2	3	2	2	5	12	4	5	6	0	0	0	0	**41**
6:00 AM	0	0	0	0	1	5	13	10	59	93	35	11	2	0	0	0	0	**229**
7:00 AM	0	0	0	0	0	8	8	12	29	64	29	4	0	0	0	0	0	**154**
8:00 AM	0	0	1	0	1	6	15	30	101	129	57	6	3	0	0	0	0	**349**
9:00 AM	0	4	14	1	3	16	22	96	119	82	38	14	0	0	0	0	0	**409**
10:00 AM	0	2	4	2	11	20	22	94	135	86	22	1	0	0	0	0	1	**400**
11:00 AM	0	1	2	2	6	21	54	151	158	61	14	4	0	0	0	0	0	**474**
12:00 PM	0	4	5	0	8	33	79	158	152	55	13	2	0	0	0	0	0	**509**
1:00 PM	0	1	0	0	13	47	70	141	129	52	11	1	0	0	0	0	0	**465**
2:00 PM	0	0	0	1	6	29	75	146	122	31	9	0	1	0	0	0	0	**420**
3:00 PM	0	0	0	0	5	23	42	93	133	45	10	2	1	0	0	0	0	**354**
4:00 PM	0	0	0	0	2	10	23	78	144	66	11	5	0	0	0	0	0	**339**
5:00 PM	0	0	0	0	1	5	15	51	102	66	14	4	0	0	0	0	0	**258**
6:00 PM	0	0	0	0	0	8	8	26	46	52	15	4	0	0	0	0	0	**159**
7:00 PM	1	0	0	0	1	0	5	15	31	27	12	0	0	0	0	0	0	**92**
8:00 PM	1	0	0	0	4	2	2	8	24	20	15	2	0	0	0	0	0	**78**
9:00 PM	0	0	0	0	0	2	0	9	25	25	5	0	1	0	1	0	0	**68**
10:00 PM	0	0	0	0	2	3	5	8	18	23	10	2	1	0	0	1	0	**73**
11:00 PM	0	0	0	0	1	0	1	3	11	16	12	5	0	0	0	0	0	**49**
Total	**2**	**12**	**27**	**7**	**68**	**242**	**463**	**1,134**	**1,553**	**1,022**	**348**	**80**	**16**	**0**	**1**	**1**	**1**	**4,977**
Percent	**0.0%**	**0.2%**	**0.5%**	**0.1%**	**1.4%**	**4.9%**	**9.3%**	**22.8%**	**31.2%**	**20.5%**	**7.0%**	**1.6%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	46.6	mph	Mean (Average) Speed	46.2	mph
85th Percentile	53.1	mph	10 mph Pace	42.7 - 52.7	mph
95th Percentile	57.0	mph	Percent in Pace	56.7	%

Location: Silverado Trail, North of Conn Creek Rd
Date Range: 2/21/2020 to 2/22/2020
Site Code: 02

Saturday, February 22, 2020
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	0	1	2	5	7	5	3	1	1	0	0	0	1	**27**
1:00 AM	0	0	0	0	1	0	3	7	3	5	3	0	0	0	0	0	0	**22**
2:00 AM	0	0	0	0	0	0	1	1	1	3	5	2	1	0	0	0	0	**14**
3:00 AM	0	0	0	0	1	0	2	5	5	0	0	0	0	0	0	0	0	**13**
4:00 AM	0	0	0	0	0	1	0	1	8	7	2	1	1	1	0	0	0	**22**
5:00 AM	0	0	0	0	1	1	1	6	5	6	2	5	1	0	2	0	0	**30**
6:00 AM	0	0	0	0	1	0	4	11	22	34	14	5	1	1	0	0	0	**93**
7:00 AM	0	0	0	2	1	2	1	13	28	45	31	10	2	1	0	0	0	**136**
8:00 AM	1	0	0	1	1	1	1	11	66	56	24	7	1	1	1	0	0	**172**
9:00 AM	1	0	2	0	0	2	5	39	72	55	22	3	2	1	1	0	0	**205**
10:00 AM	0	0	0	1	5	13	32	79	99	38	19	3	0	0	0	0	0	**289**
11:00 AM	3	0	0	0	3	11	34	100	101	38	18	5	1	0	0	0	0	**314**
12:00 PM	1	0	0	0	6	14	50	155	136	49	15	0	0	0	0	0	0	**426**
1:00 PM	2	0	0	1	18	23	50	140	114	32	11	1	0	0	0	0	0	**392**
2:00 PM	0	0	0	1	10	26	87	187	171	41	7	3	0	0	0	0	0	**533**
3:00 PM	0	0	0	1	12	26	93	210	195	64	5	0	0	0	0	0	0	**606**
4:00 PM	1	0	0	1	14	28	77	272	225	58	9	1	0	0	0	0	0	**686**
5:00 PM	1	0	1	1	13	16	62	173	193	98	18	4	0	0	0	0	0	**580**
6:00 PM	1	0	0	1	10	18	23	75	82	49	26	3	2	0	0	0	0	**290**
7:00 PM	0	0	0	2	9	15	6	24	30	36	11	2	0	0	0	0	0	**135**
8:00 PM	0	0	0	2	5	6	7	15	10	10	4	1	0	0	0	0	0	**60**
9:00 PM	0	0	0	1	4	5	2	11	18	16	7	4	0	0	0	0	0	**68**
10:00 PM	0	0	0	0	6	5	1	15	12	23	7	3	0	0	0	0	0	**72**
11:00 PM	0	0	0	2	5	13	2	6	7	17	11	4	3	0	0	0	0	**70**
Total	**11**	**0**	**3**	**18**	**126**	**227**	**546**	**1,561**	**1,610**	**785**	**274**	**68**	**16**	**5**	**4**	**0**	**1**	**5,255**
Percent	**0.2%**	**0.0%**	**0.1%**	**0.3%**	**2.4%**	**4.3%**	**10.4%**	**29.7%**	**30.6%**	**14.9%**	**5.2%**	**1.3%**	**0.3%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	

Daily Percentile Speed Summary			Speed Statistics		
50th Percentile (Median)	45.4	mph	Mean (Average) Speed	45.2	mph
85th Percentile	51.8	mph	10 mph Pace	40.6 - 50.6	mph
95th Percentile	56.1	mph	Percent in Pace	60.44	%

Location: Silverado Trail, North of Conn Creek Rd
Date Range: 2/21/2020 to 2/22/2020
Site Code: 02

Total Study Average
Northbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	0	0	0	0	1	1	7	4	4	0	0	0	0	0	**17**
1:00 AM	0	0	1	0	0	1	1	1	3	4	3	0	1	0	0	0	0	**15**
2:00 AM	0	0	0	0	0	0	1	2	2	2	2	2	0	0	0	0	0	**11**
3:00 AM	0	0	0	0	1	0	0	0	3	1	2	1	0	0	0	0	0	**8**
4:00 AM	0	0	0	1	1	1	0	0	4	4	3	3	0	1	0	0	0	**18**
5:00 AM	0	0	0	0	2	4	3	3	13	24	16	9	5	1	0	0	0	**80**
6:00 AM	0	0	0	1	3	16	31	54	131	122	41	10	1	0	0	0	0	**410**
7:00 AM	0	0	1	1	2	10	13	45	124	109	38	5	0	0	0	0	0	**348**
8:00 AM	0	0	2	1	5	14	30	71	154	172	53	5	3	0	0	0	0	**510**
9:00 AM	0	2	8	2	4	14	30	96	140	106	35	8	0	0	0	0	0	**445**
10:00 AM	0	1	3	1	8	17	22	86	134	83	19	2	0	0	0	0	1	**377**
11:00 AM	0	1	2	1	6	22	46	127	156	69	14	4	0	0	0	0	0	**448**
12:00 PM	0	4	3	1	8	29	67	134	141	59	13	2	1	0	0	0	0	**462**
1:00 PM	0	2	1	1	11	36	61	118	143	62	7	1	0	0	0	0	0	**443**
2:00 PM	0	0	1	1	5	26	54	136	132	49	11	1	1	1	0	0	0	**418**
3:00 PM	0	0	1	0	4	22	46	113	155	49	12	2	1	0	0	0	0	**405**
4:00 PM	0	0	1	1	3	15	37	104	134	60	14	3	0	0	0	0	0	**372**
5:00 PM	0	0	0	1	3	9	26	96	109	64	12	4	0	0	0	0	0	**324**
6:00 PM	0	0	0	2	1	6	9	33	63	56	17	6	0	1	0	0	0	**194**
7:00 PM	1	0	0	1	2	2	6	13	39	33	13	2	0	0	0	0	0	**112**
8:00 PM	1	0	0	0	2	2	3	12	25	24	17	3	0	0	1	0	0	**90**
9:00 PM	0	0	1	1	1	2	2	7	23	28	12	2	1	1	1	0	0	**82**
10:00 PM	0	0	0	0	2	2	4	11	19	25	8	3	2	0	0	1	0	**77**
11:00 PM	0	0	0	0	2	1	3	5	12	13	10	4	1	0	0	0	0	**51**
Total	**2**	**10**	**25**	**17**	**76**	**251**	**495**	**1,268**	**1,860**	**1,225**	**376**	**86**	**17**	**5**	**2**	**1**	**1**	**5,717**
Percent	**0.0%**	**0.2%**	**0.4%**	**0.3%**	**1.3%**	**4.4%**	**8.7%**	**22.2%**	**32.5%**	**21.4%**	**6.6%**	**1.5%**	**0.3%**	**0.1%**	**0.0%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	46.9	mph	Mean (Average) Speed	46.4	mph
85th Percentile	52.9	mph	10 mph Pace	42.7 - 52.7	mph
95th Percentile	56.8	mph	Percent in Pace	59.8	%

Location: Silverado Trail, North of Conn Creek Rd
Date Range: 2/21/2020 to 2/22/2020
Site Code: 02

Total Study Average
Southbound

Time	Speed Range (mph)																	Total Volume
	0 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	35 - 40	40 - 45	45 - 50	50 - 55	55 - 60	60 - 65	65 - 70	70 - 75	75 - 80	80 - 85	85 +	
12:00 AM	0	0	0	1	0	1	2	5	7	5	3	2	1	0	0	0	1	**28**
1:00 AM	0	0	0	0	1	0	2	6	3	3	3	0	0	0	0	0	0	**18**
2:00 AM	0	0	1	0	0	0	2	1	1	2	3	1	1	0	0	0	0	**12**
3:00 AM	0	0	0	0	1	0	2	4	4	2	1	1	0	0	0	0	0	**15**
4:00 AM	0	0	0	1	1	1	1	1	5	6	3	3	1	1	0	0	0	**24**
5:00 AM	0	0	0	0	1	1	1	7	12	11	7	4	1	1	2	0	0	**48**
6:00 AM	0	0	0	0	1	1	6	27	47	45	23	7	2	1	0	0	0	**160**
7:00 AM	0	0	0	3	3	4	6	25	42	62	46	11	3	1	0	0	0	**206**
8:00 AM	1	0	0	1	2	2	7	40	100	76	31	9	1	1	1	0	0	**272**
9:00 AM	1	0	2	2	1	5	18	58	85	53	21	4	1	1	1	0	0	**253**
10:00 AM	1	0	0	2	6	11	26	83	100	51	15	4	0	0	0	0	0	**299**
11:00 AM	2	0	1	0	6	12	29	104	123	47	21	3	1	0	0	0	0	**349**
12:00 PM	1	0	0	0	6	17	45	142	139	54	12	0	0	0	0	0	0	**416**
1:00 PM	2	1	0	1	13	27	51	150	136	48	11	1	0	0	0	0	0	**441**
2:00 PM	2	0	0	1	12	34	88	185	171	59	12	2	0	0	0	0	0	**566**
3:00 PM	4	0	0	3	9	38	140	313	250	55	8	1	0	0	0	0	0	**821**
4:00 PM	5	23	12	16	34	84	160	295	211	36	6	1	0	0	0	0	0	**883**
5:00 PM	1	0	1	2	15	29	109	229	229	101	17	4	0	0	0	0	0	**737**
6:00 PM	1	0	0	1	8	14	22	81	108	73	27	4	1	0	0	0	0	**340**
7:00 PM	0	0	1	2	8	11	8	31	40	42	16	3	0	0	0	0	0	**162**
8:00 PM	0	0	0	1	6	6	5	22	15	16	10	3	0	0	0	0	0	**84**
9:00 PM	0	0	0	1	3	4	5	15	22	15	7	4	1	0	0	0	0	**77**
10:00 PM	0	0	1	1	6	4	1	15	11	19	7	3	0	1	0	0	0	**69**
11:00 PM	0	0	0	1	4	13	4	6	9	13	10	4	3	1	0	0	0	**68**
Total	**21**	**24**	**19**	**40**	**147**	**319**	**740**	**1,845**	**1,870**	**894**	**320**	**79**	**17**	**8**	**4**	**0**	**1**	**6,348**
Percent	**0.3%**	**0.4%**	**0.3%**	**0.6%**	**2.3%**	**5.0%**	**11.7%**	**29.1%**	**29.5%**	**14.1%**	**5.0%**	**1.2%**	**0.3%**	**0.1%**	**0.1%**	**0.0%**	**0.0%**	

Note: Average only condsidered on days with 24-hours of data.

Total Study Percentile Speed Summary			Total Study Speed Statistics		
50th Percentile (Median)	45.1	mph	Mean (Average) Speed	44.7	mph
85th Percentile	51.6	mph	10 mph Pace	40.5 - 50.5	mph
95th Percentile	55.9	mph	Percent in Pace	58.9	%

Location: Silverado Trail, South of Sage Canyon Rd
Date Range: 2/21/2020 - 2/27/2020
Site Code: 01

	Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Thursday			Mid-Week Average		
	2/21/2020			2/22/2020			2/23/2020			2/24/2020			2/25/2020			2/26/2020			2/27/2020					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	19	20	39	15	25	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
1:00 AM	5	12	17	16	19	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
2:00 AM	10	6	16	8	15	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
3:00 AM	5	11	16	8	7	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
4:00 AM	15	21	36	10	15	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
5:00 AM	126	59	185	40	30	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
6:00 AM	630	213	843	256	82	338	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
7:00 AM	530	259	789	168	132	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
8:00 AM	**650**	311	**961**	351	141	492	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
9:00 AM	476	264	740	374	202	576	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
10:00 AM	345	287	632	425	293	718	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
11:00 AM	438	**350**	788	**486**	**312**	**798**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
12:00 PM	385	389	774	**506**	395	901	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
1:00 PM	396	439	835	490	403	893	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
2:00 PM	418	538	956	419	503	922	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
3:00 PM	**443**	**1,003**	**1,446**	329	649	978	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
4:00 PM	402	853	1,255	280	**707**	**987**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
5:00 PM	375	624	999	258	587	845	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
6:00 PM	203	359	562	155	305	460	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
7:00 PM	126	173	299	88	136	224	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
8:00 PM	105	89	194	83	63	146	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
9:00 PM	97	76	173	70	62	132	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
10:00 PM	80	63	143	71	62	133	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
11:00 PM	51	57	108	53	64	117	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Total	6,330	6,476	12,806	4,959	5,209	10,168	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Percent	49%	51%	-	49%	51%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AM Peak	08:00	11:00	08:00	11:00	11:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Vol.	650	350	961	486	312	798	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
PM Peak	15:00	15:00	15:00	12:00	16:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Vol.	443	1,003	1,446	506	707	987	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: Silverado Trail, North of Conn Creek Rd
Date Range: 2/21/2020 - 2/27/2020
Site Code: 02

	Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Thursday			Mid-Week Average		
	2/21/2020			2/22/2020			2/23/2020			2/24/2020			2/25/2020			2/26/2020			2/27/2020					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	18	22	40	15	27	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
1:00 AM	7	11	18	17	22	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
2:00 AM	11	7	18	8	14	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
3:00 AM	6	11	17	7	13	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
4:00 AM	20	20	40	10	22	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
5:00 AM	111	60	171	41	30	71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
6:00 AM	587	221	808	229	93	322	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
7:00 AM	536	269	805	154	136	290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
8:00 AM	**665**	361	**1,026**	349	172	521	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
9:00 AM	477	292	769	409	205	614	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
10:00 AM	349	306	655	400	289	689	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
11:00 AM	418	**377**	795	**474**	**314**	**788**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
12:00 PM	410	398	808	**509**	426	935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
1:00 PM	414	483	897	465	392	857	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
2:00 PM	410	592	1,002	420	533	953	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
3:00 PM	**450**	1,028	**1,478**	354	606	960	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
4:00 PM	403	**1,073**	1,476	339	**686**	**1,025**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
5:00 PM	385	891	1,276	258	580	838	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
6:00 PM	223	383	606	159	290	449	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
7:00 PM	126	184	310	92	135	227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
8:00 PM	94	105	199	78	60	138	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
9:00 PM	89	81	170	68	68	136	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
10:00 PM	76	61	137	73	72	145	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
11:00 PM	51	61	112	49	70	119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Total	6,336	7,297	13,633	4,977	5,255	10,232	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Percent	46%	54%	-	49%	51%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AM Peak	08:00	11:00	08:00	11:00	11:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Vol.	665	377	1,026	474	314	788	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
PM Peak	15:00	16:00	15:00	12:00	16:00	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Vol.	450	1,073	1,478	509	686	1,025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: East Project Driveway
Date Range: 1/31/2020 - 2/6/2020
Site Code: 02

	Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Thursday			Mid-Week Average		
	1/31/2020			2/1/2020			2/2/2020			2/3/2020			2/4/2020			2/5/2020			2/6/2020					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
1:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
2:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
3:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
4:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
5:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
6:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
7:00 AM	0	3	3	0	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
8:00 AM	2	0	2	**2**	**3**	**5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
9:00 AM	**3**	**5**	**8**	0	**3**	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
10:00 AM	2	2	4	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
11:00 AM	2	3	5	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
12:00 PM	2	2	4	**2**	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
1:00 PM	**4**	3	**7**	**2**	**3**	**5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
2:00 PM	2	2	4	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
3:00 PM	2	**4**	6	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
4:00 PM	3	1	4	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
5:00 PM	0	2	2	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
6:00 PM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
7:00 PM	0	0	0	0	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
8:00 PM	0	2	2	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
9:00 PM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
10:00 PM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
11:00 PM	0	0	0	0	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Total	22	29	51	12	20	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Percent	43%	57%	-	38%	63%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AM Peak	09:00	09:00	09:00	08:00	08:00	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Vol.	3	5	8	2	3	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
PM Peak	13:00	15:00	13:00	12:00	13:00	13:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Vol.	4	4	7	2	3	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: West Project Driveway
Date Range: 1/31/2020 - 2/6/2020
Site Code: 03

	Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Thursday			Mid-Week Average		
	1/31/2020			2/1/2020			2/2/2020			2/3/2020			2/4/2020			2/5/2020			2/6/2020					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
1:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
2:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
3:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
4:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
5:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
6:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
7:00 AM	0	0	0	**1**	0	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
8:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
9:00 AM	**1**	0	**1**	**1**	0	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
10:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
11:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
12:00 PM	1	0	1	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
1:00 PM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
2:00 PM	0	0	0	**2**	0	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
3:00 PM	**2**	0	**2**	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
4:00 PM	1	0	1	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
5:00 PM	1	0	1	**2**	0	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
6:00 PM	1	0	1	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
7:00 PM	0	0	0	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
8:00 PM	1	0	1	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
9:00 PM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
10:00 PM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
11:00 PM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Total	8	-	8	8	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Percent	100%	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AM Peak	09:00	-	09:00	07:00	-	07:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Vol.	1	-	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
PM Peak	15:00	-	15:00	14:00	-	14:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Vol.	2	-	2	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####

1. Mid-week average includes data between Tuesday and Thursday.

Project Manager: (415) 310-6469
project.manager.ca@idaxdata.com

Location: East Project Driveway
Date Range: 2/7/2020 - 2/13/2020
Site Code: 02

	Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Thursday			Mid-Week Average		
	2/7/2020			2/8/2020			2/9/2020			2/10/2020			2/11/2020			2/12/2020			2/13/2020					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
1:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
2:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
3:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
4:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
5:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
6:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
7:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
8:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
9:00 AM	2	**4**	**6**	**1**	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
10:00 AM	0	1	1	0	**2**	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
11:00 AM	**4**	2	**6**	0	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
12:00 PM	0	2	2	**2**	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
1:00 PM	0	1	1	1	**3**	**4**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
2:00 PM	0	0	0	**2**	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
3:00 PM	0	**4**	**4**	1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
4:00 PM	0	0	0	0	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
5:00 PM	0	2	2	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
6:00 PM	0	0	0	0	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
7:00 PM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
8:00 PM	**1**	0	1	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
9:00 PM	0	0	0	0	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
10:00 PM	0	0	0	0	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
11:00 PM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Total	7	16	23	7	14	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Percent	30%	70%	-	33%	67%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AM Peak	11:00	09:00	09:00	09:00	10:00	10:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Vol.	4	4	6	1	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
PM Peak	20:00	15:00	15:00	12:00	13:00	13:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Vol.	1	4	4	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####

1. Mid-week average includes data between Tuesday and Thursday.

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Location: West Project Driveway
Date Range: 2/7/2020 - 2/13/2020
Site Code: 03

	Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Thursday			Mid-Week Average		
	2/7/2020			2/8/2020			2/9/2020			2/10/2020			2/11/2020			2/12/2020			2/13/2020					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
1:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
2:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
3:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
4:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
5:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
6:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
7:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
8:00 AM	0	0	0	**1**	0	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
9:00 AM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
10:00 AM	**1**	0	**1**	**1**	0	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
11:00 AM	0	0	0	**1**	0	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
12:00 PM	**3**	0	**3**	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
1:00 PM	1	0	1	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
2:00 PM	1	0	1	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
3:00 PM	1	0	1	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
4:00 PM	2	0	2	**2**	0	**2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
5:00 PM	1	0	1	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
6:00 PM	0	0	0	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
7:00 PM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
8:00 PM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
9:00 PM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
10:00 PM	0	0	0	1	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
11:00 PM	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Total	10	-	10	10	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Percent	100%	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AM Peak	10:00	-	10:00	08:00	-	08:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Vol.	1	-	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
PM Peak	12:00	-	12:00	16:00	-	16:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####
Vol.	3	-	3	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#####	#####	#####

1. Mid-week average includes data between Tuesday and Thursday.

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Appendix B

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1120	36	19	457	1	33	1	41	18	2	3
Future Vol, veh/h	1	1120	36	19	457	1	33	1	41	18	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	1	1231	40	21	502	1	36	1	45	20	2	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	503	0	0	1271	0	0	1800	1798	1251	1821	1818	503
Stage 1	-	-	-	-	-	-	1253	1253	-	545	545	-
Stage 2	-	-	-	-	-	-	547	545	-	1276	1273	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1067	-	-	550	-	-	62	80	212	60	78	571
Stage 1	-	-	-	-	-	-	212	245	-	524	520	-
Stage 2	-	-	-	-	-	-	523	520	-	206	239	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1067	-	-	550	-	-	58	77	212	45	75	571
Mov Cap-2 Maneuver	-	-	-	-	-	-	58	77	-	45	75	-
Stage 1	-	-	-	-	-	-	212	245	-	523	500	-
Stage 2	-	-	-	-	-	-	498	500	-	161	239	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	79.4	123.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	58	212	1067	-	-	550	-	-	53
HCM Lane V/C Ratio	0.644	0.213	0.001	-	-	0.038	-	-	0.477
HCM Control Delay (s)	143.2	26.5	8.4	-	-	11.8	-	-	123.8
HCM Lane LOS	F	D	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.7	0.8	0	-	-	0.1	-	-	1.8

Intersection	
Int Delay, s/veh	56.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	167	1012	1	1	426	43	3	0	5	102	0	49
Future Vol, veh/h	167	1012	1	1	426	43	3	0	5	102	0	49
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	182	1100	1	1	463	47	3	0	5	111	0	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	510	0	0	1101	0	0	1980	1977	1101	1956	1954	487
Stage 1	-	-	-	-	-	-	1465	1465	-	489	489	-
Stage 2	-	-	-	-	-	-	515	512	-	1467	1465	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1060	-	-	638	-	-	46	62	259	~ 48	64	583
Stage 1	-	-	-	-	-	-	160	193	-	562	551	-
Stage 2	-	-	-	-	-	-	544	538	-	160	193	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1060	-	-	638	-	-	36	51	259	~ 41	53	583
Mov Cap-2 Maneuver	-	-	-	-	-	-	36	51	-	~ 41	53	-
Stage 1	-	-	-	-	-	-	132	160	-	465	550	-
Stage 2	-	-	-	-	-	-	494	537	-	130	160	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	56.9	$ 665.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	78	1060	-	-	638	-	-	41	583
HCM Lane V/C Ratio	0.111	0.171	-	-	0.002	-	-	2.704	0.091
HCM Control Delay (s)	56.9	9.1	-	-	10.7	-	-	$ 980.1	11.8
HCM Lane LOS	F	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	0.4	0.6	-	-	0	-	-	12.2	0.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	205	3	0	155	2	0
Future Vol, veh/h	205	3	0	155	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	228	3	0	172	2	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	231	0	402	230
Stage 1	-	-	-	-	230	-
Stage 2	-	-	-	-	172	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1337	-	604	809
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	858	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1337	-	604	809
Mov Cap-2 Maneuver	-	-	-	-	604	-
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	858	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	604	-	-	1337	-
HCM Lane V/C Ratio	0.004	-	-	-	-
HCM Control Delay (s)	11	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	595	37	21	393	6	31	0	34	6	2	6
Future Vol, veh/h	5	595	37	21	393	6	31	0	34	6	2	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	5	654	41	23	432	7	34	0	37	7	2	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	439	0	0	695	0	0	1171	1170	675	1185	1187	436
Stage 1	-	-	-	-	-	-	685	685	-	482	482	-
Stage 2	-	-	-	-	-	-	486	485	-	703	705	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1126	-	-	905	-	-	170	194	456	167	189	622
Stage 1	-	-	-	-	-	-	440	450	-	567	555	-
Stage 2	-	-	-	-	-	-	565	553	-	430	441	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1126	-	-	905	-	-	163	188	456	150	184	622
Mov Cap-2 Maneuver	-	-	-	-	-	-	163	188	-	150	184	-
Stage 1	-	-	-	-	-	-	438	448	-	565	541	-
Stage 2	-	-	-	-	-	-	543	539	-	393	439	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	22.8	21.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	163	456	1126	-	-	905	-	-	231
HCM Lane V/C Ratio	0.209	0.082	0.005	-	-	0.025	-	-	0.067
HCM Control Delay (s)	32.8	13.6	8.2	-	-	9.1	-	-	21.7
HCM Lane LOS	D	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.8	0.3	0	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	63	567	5	3	369	39	2	0	7	72	0	48
Future Vol, veh/h	63	567	5	3	369	39	2	0	7	72	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	66	591	5	3	384	41	2	0	7	75	0	50

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	425	0	0	596	0	0	1162	1157	594	1140	1139	405
Stage 1	-	-	-	-	-	-	726	726	-	411	411	-
Stage 2	-	-	-	-	-	-	436	431	-	729	728	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1140	-	-	985	-	-	173	197	507	179	202	648
Stage 1	-	-	-	-	-	-	417	431	-	620	597	-
Stage 2	-	-	-	-	-	-	601	585	-	416	430	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1140	-	-	985	-	-	152	185	507	168	190	648
Mov Cap-2 Maneuver	-	-	-	-	-	-	152	185	-	168	190	-
Stage 1	-	-	-	-	-	-	393	406	-	584	595	-
Stage 2	-	-	-	-	-	-	553	583	-	386	405	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.1	16.1	30
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	334	1140	-	-	985	-	-	168	648
HCM Lane V/C Ratio	0.028	0.058	-	-	0.003	-	-	0.446	0.077
HCM Control Delay (s)	16.1	8.4	-	-	8.7	-	-	42.7	11
HCM Lane LOS	C	A	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	2.1	0.2

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	99	2	0	121	2	0
Future Vol, veh/h	99	2	0	121	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	110	2	0	134	2	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	112	0	245	111
Stage 1	-	-	-	-	111	-
Stage 2	-	-	-	-	134	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1478	-	743	942
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	892	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1478	-	743	942
Mov Cap-2 Maneuver	-	-	-	-	743	-
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	892	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	743	-	-	1478	-
HCM Lane V/C Ratio	0.003	-	-	-	-
HCM Control Delay (s)	9.9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	12

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1261	44	22	465	1	41	1	64	19	2	4
Future Vol, veh/h	1	1261	44	22	465	1	41	1	64	19	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	1	1386	48	24	511	1	45	1	70	21	2	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	512	0	0	1434	0	0	1975	1972	1410	2008	1996	512
Stage 1	-	-	-	-	-	-	1412	1412	-	560	560	-
Stage 2	-	-	-	-	-	-	563	560	-	1448	1436	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1058	-	-	477	-	-	47	63	171	44	61	564
Stage 1	-	-	-	-	-	-	172	205	-	515	512	-
Stage 2	-	-	-	-	-	-	513	512	-	164	200	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1058	-	-	477	-	-	~ 44	60	171	25	58	564
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 44	60	-	25	58	-
Stage 1	-	-	-	-	-	-	172	205	-	514	486	-
Stage 2	-	-	-	-	-	-	481	486	-	96	200	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	140.9	$ 312.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	44	171	1058	-	-	477	-	-	31
HCM Lane V/C Ratio	1.049	0.411	0.001	-	-	0.051	-	-	0.886
HCM Control Delay (s)	294.7	40	8.4	-	-	12.9	-	-	$ 312.2
HCM Lane LOS	F	E	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	4.3	1.8	0	-	-	0.2	-	-	3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	93.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	205	1138	1	1	434	46	3	0	5	105	0	52
Future Vol, veh/h	205	1138	1	1	434	46	3	0	5	105	0	52
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	223	1237	1	1	472	50	3	0	5	114	0	57

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	522	0	0	1238	0	0	2212	2208	1238	2185	2183	497
Stage 1	-	-	-	-	-	-	1684	1684	-	499	499	-
Stage 2	-	-	-	-	-	-	528	524	-	1686	1684	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1050	-	-	566	-	-	32	45	215	~ 33	46	575
Stage 1	-	-	-	-	-	-	120	151	-	555	545	-
Stage 2	-	-	-	-	-	-	536	532	-	120	151	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1050	-	-	566	-	-	24	35	215	~ 27	36	575
Mov Cap-2 Maneuver	-	-	-	-	-	-	24	35	-	~ 27	36	-
Stage 1	-	-	-	-	-	-	95	119	-	437	544	-
Stage 2	-	-	-	-	-	-	482	531	-	~ 92	119	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0	84.1	$ 1173.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	54	1050	-	-	566	-	-	27	575
HCM Lane V/C Ratio	0.161	0.212	-	-	0.002	-	-	4.227	0.098
HCM Control Delay (s)	84.1	9.3	-	-	11.4	-	-	$ 1748.1	11.9
HCM Lane LOS	F	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	0.5	0.8	-	-	0	-	-	14	0.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	249	0	0	160	2	0
Future Vol, veh/h	249	0	0	160	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	271	0	0	174	2	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	271	0	445	271
Stage 1	-	-	-	-	271	-
Stage 2	-	-	-	-	174	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1292	-	571	768
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	856	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1292	-	571	768
Mov Cap-2 Maneuver	-	-	-	-	571	-
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	856	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	571	-	-	1292	-
HCM Lane V/C Ratio	0.004	-	-	-	-
HCM Control Delay (s)	11.3	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	246	3	0	160	0	0
Future Vol, veh/h	246	3	0	160	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	273	3	0	178	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	276	0	453	275
Stage 1	-	-	-	-	275	-
Stage 2	-	-	-	-	178	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1287	-	565	764
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	853	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1287	-	565	764
Mov Cap-2 Maneuver	-	-	-	-	565	-
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	853	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1287	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	656	48	24	401	6	41	0	47	7	2	7
Future Vol, veh/h	5	656	48	24	401	6	41	0	47	7	2	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	5	721	53	26	441	7	45	0	52	8	2	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	448	0	0	774	0	0	1260	1258	748	1281	1281	445
Stage 1	-	-	-	-	-	-	758	758	-	497	497	-
Stage 2	-	-	-	-	-	-	502	500	-	784	784	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1118	-	-	846	-	-	148	172	414	143	166	615
Stage 1	-	-	-	-	-	-	401	417	-	557	546	-
Stage 2	-	-	-	-	-	-	553	545	-	388	406	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1118	-	-	846	-	-	141	166	414	122	160	615
Mov Cap-2 Maneuver	-	-	-	-	-	-	141	166	-	122	160	-
Stage 1	-	-	-	-	-	-	399	415	-	555	529	-
Stage 2	-	-	-	-	-	-	527	528	-	338	404	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	27.6	25.1
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	141	414	1118	-	-	846	-	-	197
HCM Lane V/C Ratio	0.32	0.125	0.005	-	-	0.031	-	-	0.089
HCM Control Delay (s)	42.1	14.9	8.2	-	-	9.4	-	-	25.1
HCM Lane LOS	E	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.3	0.4	0	-	-	0.1	-	-	0.3

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	71	620	5	3	394	44	2	0	7	82	0	53
Future Vol, veh/h	71	620	5	3	394	44	2	0	7	82	0	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	74	646	5	3	410	46	2	0	7	85	0	55

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	456	0	0	651	0	0	1264	1259	649	1239	1238	433
Stage 1	-	-	-	-	-	-	797	797	-	439	439	-
Stage 2	-	-	-	-	-	-	467	462	-	800	799	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1110	-	-	940	-	-	147	171	472	153	176	625
Stage 1	-	-	-	-	-	-	381	400	-	599	580	-
Stage 2	-	-	-	-	-	-	578	566	-	380	399	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1110	-	-	940	-	-	127	159	472	143	164	625
Mov Cap-2 Maneuver	-	-	-	-	-	-	127	159	-	143	164	-
Stage 1	-	-	-	-	-	-	355	373	-	559	578	-
Stage 2	-	-	-	-	-	-	525	564	-	349	372	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	17.6	42
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	294	1110	-	-	940	-	-	143	625
HCM Lane V/C Ratio	0.032	0.067	-	-	0.003	-	-	0.597	0.088
HCM Control Delay (s)	17.6	8.5	-	-	8.8	-	-	61.9	11.3
HCM Lane LOS	C	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	3.1	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	114	0	0	137	2	0
Future Vol, veh/h	114	0	0	137	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	124	0	0	149	2	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	124	0	273	124
Stage 1	-	-	-	-	124	-
Stage 2	-	-	-	-	149	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1463	-	716	927
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	879	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1463	-	716	927
Mov Cap-2 Maneuver	-	-	-	-	716	-
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	879	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	716	-	-	1463	-
HCM Lane V/C Ratio	0.003	-	-	-	-
HCM Control Delay (s)	10	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	112	2	0	137	0	0
Future Vol, veh/h	112	2	0	137	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	124	2	0	152	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	126	0	277	125
Stage 1	-	-	-	-	125	-
Stage 2	-	-	-	-	152	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1460	-	713	926
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	876	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1460	-	713	926
Mov Cap-2 Maneuver	-	-	-	-	713	-
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	876	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1460	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	31.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1402	51	24	474	2	48	1	86	20	2	4
Future Vol, veh/h	2	1402	51	24	474	2	48	1	86	20	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	2	1541	56	26	521	2	53	1	95	22	2	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	523	0	0	1597	0	0	2150	2148	1569	2195	2175	522
Stage 1	-	-	-	-	-	-	1573	1573	-	574	574	-
Stage 2	-	-	-	-	-	-	577	575	-	1621	1601	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1049	-	-	413	-	-	~ 35	49	137	33	47	557
Stage 1	-	-	-	-	-	-	139	171	-	506	505	-
Stage 2	-	-	-	-	-	-	504	504	-	130	166	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1049	-	-	413	-	-	~ 32	46	137	~ 10	44	557
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 32	46	-	~ 10	44	-
Stage 1	-	-	-	-	-	-	139	171	-	505	473	-
Stage 2	-	-	-	-	-	-	466	472	-	40	166	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	266.3	$ 1140.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	32	137	1049	-	-	413	-	-	13
HCM Lane V/C Ratio	1.683	0.69	0.002	-	-	0.064	-	-	2.198
HCM Control Delay (s)	$ 600.9	75.6	8.4	-	-	14.3	-	-	$ 1140.1
HCM Lane LOS	F	F	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	6.1	3.9	0	-	-	0.2	-	-	4.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	144

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	243	1264	2	1	443	48	4	0	5	107	0	54
Future Vol, veh/h	243	1264	2	1	443	48	4	0	5	107	0	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	264	1374	2	1	482	52	4	0	5	116	0	59

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	534	0	0	1376	0	0	2443	2439	1375	2416	2414	508
Stage 1	-	-	-	-	-	-	1903	1903	-	510	510	-
Stage 2	-	-	-	-	-	-	540	536	-	1906	1904	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1039	-	-	502	-	-	22	32	179	~ 23	33	567
Stage 1	-	-	-	-	-	-	89	118	-	548	539	-
Stage 2	-	-	-	-	-	-	528	525	-	~ 89	117	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1039	-	-	502	-	-	16	24	179	~ 18	25	567
Mov Cap-2 Maneuver	-	-	-	-	-	-	16	24	-	~ 18	25	-
Stage 1	-	-	-	-	-	-	66	88	-	409	538	-
Stage 2	-	-	-	-	-	-	472	524	-	~ 64	87	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	0	161	$ 1918.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	32	1039	-	-	502	-	-	18	567
HCM Lane V/C Ratio	0.306	0.254	-	-	0.002	-	-	6.461	0.104
HCM Control Delay (s)	161	9.6	-	-	12.2	-	-	$ 2880	12.1
HCM Lane LOS	F	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	1	1	-	-	0	-	-	15.2	0.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	289	0	0	165	2	0
Future Vol, veh/h	289	0	0	165	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	314	0	0	179	2	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	314	0	493	314
Stage 1	-	-	-	-	314	-
Stage 2	-	-	-	-	179	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1246	-	535	726
Stage 1	-	-	-	-	741	-
Stage 2	-	-	-	-	852	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1246	-	535	726
Mov Cap-2 Maneuver	-	-	-	-	535	-
Stage 1	-	-	-	-	741	-
Stage 2	-	-	-	-	852	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	535	-	-	1246	-
HCM Lane V/C Ratio	0.004	-	-	-	-
HCM Control Delay (s)	11.8	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	286	3	0	165	0	0
Future Vol, veh/h	286	3	0	165	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	318	3	0	183	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	321	0	503	320
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	183	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1239	-	528	721
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1239	-	528	721
Mov Cap-2 Maneuver	-	-	-	-	528	-
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	848	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1239	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	717	58	31	442	7	51	0	59	7	2	7
Future Vol, veh/h	6	717	58	31	442	7	51	0	59	7	2	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	7	788	64	34	486	8	56	0	65	8	2	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	494	0	0	852	0	0	1397	1396	820	1425	1424	490
Stage 1	-	-	-	-	-	-	834	834	-	558	558	-
Stage 2	-	-	-	-	-	-	563	562	-	867	866	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1075	-	-	791	-	-	119	142	376	114	136	580
Stage 1	-	-	-	-	-	-	364	385	-	516	513	-
Stage 2	-	-	-	-	-	-	513	511	-	349	372	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1075	-	-	791	-	-	112	135	376	91	129	580
Mov Cap-2 Maneuver	-	-	-	-	-	-	112	135	-	91	129	-
Stage 1	-	-	-	-	-	-	361	382	-	512	491	-
Stage 2	-	-	-	-	-	-	482	489	-	287	369	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.6	39.4	31.6
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	112	376	1075	-	-	791	-	-	153
HCM Lane V/C Ratio	0.5	0.172	0.006	-	-	0.043	-	-	0.115
HCM Control Delay (s)	65.7	16.6	8.4	-	-	9.8	-	-	31.6
HCM Lane LOS	F	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	2.3	0.6	0	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	79	672	6	4	419	49	2	0	8	92	0	58
Future Vol, veh/h	79	672	6	4	419	49	2	0	8	92	0	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	82	700	6	4	436	51	2	0	8	96	0	60

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	487	0	0	706	0	0	1367	1362	703	1341	1340	462
Stage 1	-	-	-	-	-	-	867	867	-	470	470	-
Stage 2	-	-	-	-	-	-	500	495	-	871	870	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1081	-	-	897	-	-	125	149	439	130	153	602
Stage 1	-	-	-	-	-	-	349	371	-	576	562	-
Stage 2	-	-	-	-	-	-	555	548	-	347	370	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1081	-	-	897	-	-	106	137	439	120	141	602
Mov Cap-2 Maneuver	-	-	-	-	-	-	106	137	-	120	141	-
Stage 1	-	-	-	-	-	-	322	343	-	532	560	-
Stage 2	-	-	-	-	-	-	497	546	-	315	342	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	18.9	67.7
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	270	1081	-	-	897	-	-	120	602
HCM Lane V/C Ratio	0.039	0.076	-	-	0.005	-	-	0.799	0.1
HCM Control Delay (s)	18.9	8.6	-	-	9	-	-	103	11.6
HCM Lane LOS	C	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	4.7	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	127	0	0	152	2	0
Future Vol, veh/h	127	0	0	152	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	138	0	0	165	2	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	138	0	303	138
Stage 1	-	-	-	-	138	-
Stage 2	-	-	-	-	165	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1446	-	689	910
Stage 1	-	-	-	-	889	-
Stage 2	-	-	-	-	864	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1446	-	689	910
Mov Cap-2 Maneuver	-	-	-	-	689	-
Stage 1	-	-	-	-	889	-
Stage 2	-	-	-	-	864	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	689	-	-	1446	-
HCM Lane V/C Ratio	0.003	-	-	-	-
HCM Control Delay (s)	10.2	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	125	2	0	152	0	0
Future Vol, veh/h	125	2	0	152	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	139	2	0	169	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	141	0	309	140
Stage 1	-	-	-	-	140	-
Stage 2	-	-	-	-	169	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1442	-	683	908
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	861	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1442	-	683	908
Mov Cap-2 Maneuver	-	-	-	-	683	-
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	861	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1442	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1121	36	19	458	1	33	1	41	18	2	3
Future Vol, veh/h	1	1121	36	19	458	1	33	1	41	18	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	1	1232	40	21	503	1	36	1	45	20	2	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	504	0	0	1272	0	0	1802	1800	1252	1823	1820	504
Stage 1	-	-	-	-	-	-	1254	1254	-	546	546	-
Stage 2	-	-	-	-	-	-	548	546	-	1277	1274	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1066	-	-	549	-	-	62	80	211	60	78	570
Stage 1	-	-	-	-	-	-	212	244	-	524	520	-
Stage 2	-	-	-	-	-	-	522	520	-	205	239	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1066	-	-	549	-	-	58	77	211	45	75	570
Mov Cap-2 Maneuver	-	-	-	-	-	-	58	77	-	45	75	-
Stage 1	-	-	-	-	-	-	212	244	-	523	500	-
Stage 2	-	-	-	-	-	-	497	500	-	160	239	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.5	79.5	123.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	58	211	1066	-	-	549	-	-	53
HCM Lane V/C Ratio	0.644	0.214	0.001	-	-	0.038	-	-	0.477
HCM Control Delay (s)	143.2	26.6	8.4	-	-	11.8	-	-	123.8
HCM Lane LOS	F	D	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	2.7	0.8	0	-	-	0.1	-	-	1.8

Intersection	
Int Delay, s/veh	58.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	168	1012	1	1	426	44	3	0	5	104	0	50
Future Vol, veh/h	168	1012	1	1	426	44	3	0	5	104	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	183	1100	1	1	463	48	3	0	5	113	0	54

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	511	0	0	1101	0	0	1983	1980	1101	1958	1956	487
Stage 1	-	-	-	-	-	-	1467	1467	-	489	489	-
Stage 2	-	-	-	-	-	-	516	513	-	1469	1467	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1059	-	-	638	-	-	46	62	259	~ 48	64	583
Stage 1	-	-	-	-	-	-	160	193	-	562	551	-
Stage 2	-	-	-	-	-	-	544	538	-	160	193	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1059	-	-	638	-	-	36	51	259	~ 41	53	583
Mov Cap-2 Maneuver	-	-	-	-	-	-	36	51	-	~ 41	53	-
Stage 1	-	-	-	-	-	-	132	160	-	465	550	-
Stage 2	-	-	-	-	-	-	493	537	-	130	160	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	56.9	$ 681.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	78	1059	-	-	638	-	-	41	583
HCM Lane V/C Ratio	0.111	0.172	-	-	0.002	-	-	2.757	0.093
HCM Control Delay (s)	56.9	9.1	-	-	10.7	-	-	$ 1003.2	11.8
HCM Lane LOS	F	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	0.4	0.6	-	-	0	-	-	12.4	0.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	210	0	0	155	5	0
Future Vol, veh/h	210	0	0	155	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	228	0	0	168	5	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	228	0	396	228
Stage 1	-	-	-	-	228	-
Stage 2	-	-	-	-	168	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1340	-	609	811
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	862	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1340	-	609	811
Mov Cap-2 Maneuver	-	-	-	-	609	-
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	862	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	609	-	-	1340	-
HCM Lane V/C Ratio	0.009	-	-	-	-
HCM Control Delay (s)	11	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	205	5	0	155	0	0
Future Vol, veh/h	205	5	0	155	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	228	6	0	172	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	234	0	403	231
Stage 1	-	-	-	-	231	-
Stage 2	-	-	-	-	172	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1333	-	603	808
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	858	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1333	-	603	808
Mov Cap-2 Maneuver	-	-	-	-	603	-
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	858	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1333	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	596	37	21	393	6	31	0	34	6	2	6
Future Vol, veh/h	5	596	37	21	393	6	31	0	34	6	2	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	5	655	41	23	432	7	34	0	37	7	2	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	439	0	0	696	0	0	1172	1171	676	1186	1188	436
Stage 1	-	-	-	-	-	-	686	686	-	482	482	-
Stage 2	-	-	-	-	-	-	486	485	-	704	706	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1126	-	-	905	-	-	170	193	455	166	189	622
Stage 1	-	-	-	-	-	-	439	449	-	567	555	-
Stage 2	-	-	-	-	-	-	565	553	-	429	440	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1126	-	-	905	-	-	163	187	455	149	184	622
Mov Cap-2 Maneuver	-	-	-	-	-	-	163	187	-	149	184	-
Stage 1	-	-	-	-	-	-	437	447	-	565	541	-
Stage 2	-	-	-	-	-	-	543	539	-	392	438	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	22.8	21.8
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	163	455	1126	-	-	905	-	-	230
HCM Lane V/C Ratio	0.209	0.082	0.005	-	-	0.025	-	-	0.067
HCM Control Delay (s)	32.8	13.6	8.2	-	-	9.1	-	-	21.8
HCM Lane LOS	D	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.8	0.3	0	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	64	567	5	3	369	40	2	0	7	73	0	48
Future Vol, veh/h	64	567	5	3	369	40	2	0	7	73	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	67	591	5	3	384	42	2	0	7	76	0	50

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	426	0	0	596	0	0	1164	1160	594	1142	1141	405
Stage 1	-	-	-	-	-	-	728	728	-	411	411	-
Stage 2	-	-	-	-	-	-	436	432	-	731	730	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1139	-	-	985	-	-	172	196	507	178	201	648
Stage 1	-	-	-	-	-	-	416	430	-	620	597	-
Stage 2	-	-	-	-	-	-	601	584	-	415	429	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1139	-	-	985	-	-	151	184	507	167	189	648
Mov Cap-2 Maneuver	-	-	-	-	-	-	151	184	-	167	189	-
Stage 1	-	-	-	-	-	-	391	405	-	583	595	-
Stage 2	-	-	-	-	-	-	553	582	-	385	404	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.1	16.1	30.5
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	333	1139	-	-	985	-	-	167	648
HCM Lane V/C Ratio	0.028	0.059	-	-	0.003	-	-	0.455	0.077
HCM Control Delay (s)	16.1	8.4	-	-	8.7	-	-	43.4	11
HCM Lane LOS	C	A	-	-	A	-	-	E	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	2.1	0.2

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	103	0	0	121	3	0
Future Vol, veh/h	103	0	0	121	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	112	0	0	132	3	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	112	0	244	112
Stage 1	-	-	-	-	112	-
Stage 2	-	-	-	-	132	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1478	-	744	941
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	894	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1478	-	744	941
Mov Cap-2 Maneuver	-	-	-	-	744	-
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	894	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	744	-	-	1478	-
HCM Lane V/C Ratio	0.004	-	-	-	-
HCM Control Delay (s)	9.9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	99	4	0	121	0	0
Future Vol, veh/h	99	4	0	121	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	110	4	0	134	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	114	0	246	112
Stage 1	-	-	-	-	112	-
Stage 2	-	-	-	-	134	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1475	-	742	941
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	892	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1475	-	742	941
Mov Cap-2 Maneuver	-	-	-	-	742	-
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	892	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1475	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	12.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1262	44	22	466	1	41	1	64	19	2	4
Future Vol, veh/h	1	1262	44	22	466	1	41	1	64	19	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	93	91	91	91	91	91
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	1	1387	48	24	512	1	44	1	70	21	2	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	513	0	0	1435	0	0	1977	1974	1411	2010	1998	513
Stage 1	-	-	-	-	-	-	1413	1413	-	561	561	-
Stage 2	-	-	-	-	-	-	564	561	-	1449	1437	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1058	-	-	476	-	-	47	63	170	44	60	563
Stage 1	-	-	-	-	-	-	172	205	-	514	512	-
Stage 2	-	-	-	-	-	-	512	512	-	164	200	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1058	-	-	476	-	-	~ 43	60	170	24	57	563
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 43	60	-	24	57	-
Stage 1	-	-	-	-	-	-	172	205	-	513	486	-
Stage 2	-	-	-	-	-	-	480	486	-	96	200	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	141.8	$ 329.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	43	170	1058	-	-	476	-	-	30
HCM Lane V/C Ratio	1.051	0.414	0.001	-	-	0.051	-	-	0.916
HCM Control Delay (s)	299.5	40.4	8.4	-	-	13	-	-	$ 329.2
HCM Lane LOS	F	E	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	4.3	1.8	0	-	-	0.2	-	-	3.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	97.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	206	1138	1	1	434	47	3	0	5	107	0	53
Future Vol, veh/h	206	1138	1	1	434	47	3	0	5	107	0	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	224	1237	1	1	472	51	3	0	5	116	0	58

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	523	0	0	1238	0	0	2215	2211	1238	2188	2186	498
Stage 1	-	-	-	-	-	-	1686	1686	-	500	500	-
Stage 2	-	-	-	-	-	-	529	525	-	1688	1686	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1049	-	-	566	-	-	32	44	215	~ 33	46	574
Stage 1	-	-	-	-	-	-	120	151	-	555	545	-
Stage 2	-	-	-	-	-	-	535	531	-	119	151	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1049	-	-	566	-	-	24	34	215	~ 27	36	574
Mov Cap-2 Maneuver	-	-	-	-	-	-	24	34	-	~ 27	36	-
Stage 1	-	-	-	-	-	-	94	119	-	436	544	-
Stage 2	-	-	-	-	-	-	480	530	-	~ 91	119	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0	84.1	$ 1196.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	54	1049	-	-	566	-	-	27	574
HCM Lane V/C Ratio	0.161	0.213	-	-	0.002	-	-	4.308	0.1
HCM Control Delay (s)	84.1	9.4	-	-	11.4	-	-	$ 1783.8	12
HCM Lane LOS	F	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	0.5	0.8	-	-	0	-	-	14.2	0.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	251	0	0	160	5	0
Future Vol, veh/h	251	0	0	160	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	273	0	0	174	5	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	273	0	447	273
Stage 1	-	-	-	-	273	-
Stage 2	-	-	-	-	174	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1290	-	569	766
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	856	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1290	-	569	766
Mov Cap-2 Maneuver	-	-	-	-	569	-
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	856	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	569	-	-	1290	-
HCM Lane V/C Ratio	0.01	-	-	-	-
HCM Control Delay (s)	11.4	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	246	5	0	160	0	0
Future Vol, veh/h	246	5	0	160	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	273	6	0	178	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	279	0	454	276
Stage 1	-	-	-	-	276	-
Stage 2	-	-	-	-	178	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1284	-	564	763
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	853	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1284	-	564	763
Mov Cap-2 Maneuver	-	-	-	-	564	-
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	853	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1284	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	656	48	24	401	6	41	0	47	7	2	7
Future Vol, veh/h	5	656	48	24	401	6	41	0	47	7	2	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	5	721	53	26	441	7	45	0	52	8	2	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	448	0	0	774	0	0	1260	1258	748	1281	1281	445
Stage 1	-	-	-	-	-	-	758	758	-	497	497	-
Stage 2	-	-	-	-	-	-	502	500	-	784	784	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1118	-	-	846	-	-	148	172	414	143	166	615
Stage 1	-	-	-	-	-	-	401	417	-	557	546	-
Stage 2	-	-	-	-	-	-	553	545	-	388	406	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1118	-	-	846	-	-	141	166	414	122	160	615
Mov Cap-2 Maneuver	-	-	-	-	-	-	141	166	-	122	160	-
Stage 1	-	-	-	-	-	-	399	415	-	555	529	-
Stage 2	-	-	-	-	-	-	527	528	-	338	404	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	27.6	25.1
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	141	414	1118	-	-	846	-	-	197
HCM Lane V/C Ratio	0.32	0.125	0.005	-	-	0.031	-	-	0.089
HCM Control Delay (s)	42.1	14.9	8.2	-	-	9.4	-	-	25.1
HCM Lane LOS	E	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.3	0.4	0	-	-	0.1	-	-	0.3

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	72	620	5	3	394	45	2	0	7	83	0	53
Future Vol, veh/h	72	620	5	3	394	45	2	0	7	83	0	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	75	646	5	3	410	47	2	0	7	86	0	55

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	457	0	0	651	0	0	1266	1262	649	1242	1241	434
Stage 1	-	-	-	-	-	-	799	799	-	440	440	-
Stage 2	-	-	-	-	-	-	467	463	-	802	801	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1109	-	-	940	-	-	147	171	472	152	176	624
Stage 1	-	-	-	-	-	-	381	399	-	598	579	-
Stage 2	-	-	-	-	-	-	578	566	-	379	398	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1109	-	-	940	-	-	127	159	472	142	164	624
Mov Cap-2 Maneuver	-	-	-	-	-	-	127	159	-	142	164	-
Stage 1	-	-	-	-	-	-	355	372	-	557	577	-
Stage 2	-	-	-	-	-	-	525	564	-	348	371	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	17.6	43.2
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	294	1109	-	-	940	-	-	142	624
HCM Lane V/C Ratio	0.032	0.068	-	-	0.003	-	-	0.609	0.088
HCM Control Delay (s)	17.6	8.5	-	-	8.8	-	-	63.6	11.3
HCM Lane LOS	C	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	3.2	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	116	0	0	137	3	0
Future Vol, veh/h	116	0	0	137	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	126	0	0	149	3	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	126	0	275	126
Stage 1	-	-	-	-	126	-
Stage 2	-	-	-	-	149	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1460	-	715	924
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	879	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1460	-	715	924
Mov Cap-2 Maneuver	-	-	-	-	715	-
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	879	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	715	-	-	1460	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	10.1	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	112	4	0	137	0	0
Future Vol, veh/h	112	4	0	137	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	124	4	0	152	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	128	0	278	126
Stage 1	-	-	-	-	126	-
Stage 2	-	-	-	-	152	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1458	-	712	924
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	876	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1458	-	712	924
Mov Cap-2 Maneuver	-	-	-	-	712	-
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	876	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1458	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	34.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1403	51	24	475	2	48	1	86	20	2	4
Future Vol, veh/h	2	1403	51	24	475	2	48	1	86	20	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	2	1542	56	26	522	2	53	1	95	22	2	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	524	0	0	1598	0	0	2152	2150	1570	2197	2177	523
Stage 1	-	-	-	-	-	-	1574	1574	-	575	575	-
Stage 2	-	-	-	-	-	-	578	576	-	1622	1602	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1048	-	-	413	-	-	~ 35	48	137	32	47	556
Stage 1	-	-	-	-	-	-	139	171	-	505	504	-
Stage 2	-	-	-	-	-	-	503	504	-	130	166	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1048	-	-	413	-	-	~ 32	45	137	~ 9	44	556
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 32	45	-	~ 9	44	-
Stage 1	-	-	-	-	-	-	139	171	-	504	472	-
Stage 2	-	-	-	-	-	-	465	472	-	40	166	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	266.3	$ 1407
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	32	137	1048	-	-	413	-	-	11
HCM Lane V/C Ratio	1.683	0.69	0.002	-	-	0.064	-	-	2.597
HCM Control Delay (s)	$ 600.9	75.6	8.4	-	-	14.3	-	-	$ 1407
HCM Lane LOS	F	F	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	6.1	3.9	0	-	-	0.2	-	-	4.6

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	158.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	244	1264	2	1	443	49	4	0	5	109	0	55
Future Vol, veh/h	244	1264	2	1	443	49	4	0	5	109	0	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	2	1	1	2	1	1	1	1	1	1	1
Mvmt Flow	265	1374	2	1	482	53	4	0	5	118	0	60

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	535	0	0	1376	0	0	2446	2442	1375	2419	2417	509
Stage 1	-	-	-	-	-	-	1905	1905	-	511	511	-
Stage 2	-	-	-	-	-	-	541	537	-	1908	1906	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1038	-	-	502	-	-	21	32	179	~ 22	33	566
Stage 1	-	-	-	-	-	-	89	117	-	547	539	-
Stage 2	-	-	-	-	-	-	527	524	-	~ 89	117	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1038	-	-	502	-	-	15	24	179	~ 17	25	566
Mov Cap-2 Maneuver	-	-	-	-	-	-	15	24	-	~ 17	25	-
Stage 1	-	-	-	-	-	-	66	87	-	408	538	-
Stage 2	-	-	-	-	-	-	470	523	-	~ 64	87	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.6	0	167.6	$ 2085
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	31	1038	-	-	502	-	-	17	566
HCM Lane V/C Ratio	0.316	0.256	-	-	0.002	-	-	6.969	0.106
HCM Control Delay (s)	167.6	9.7	-	-	12.2	-	-	$ 3130.9	12.1
HCM Lane LOS	F	A	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	1	1	-	-	0	-	-	15.5	0.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	291	0	0	165	5	0
Future Vol, veh/h	291	0	0	165	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	316	0	0	179	5	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	316	0	495	316
Stage 1	-	-	-	-	316	-
Stage 2	-	-	-	-	179	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1244	-	534	724
Stage 1	-	-	-	-	739	-
Stage 2	-	-	-	-	852	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1244	-	534	724
Mov Cap-2 Maneuver	-	-	-	-	534	-
Stage 1	-	-	-	-	739	-
Stage 2	-	-	-	-	852	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	534	-	-	1244	-
HCM Lane V/C Ratio	0.01	-	-	-	-
HCM Control Delay (s)	11.8	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	286	5	0	165	0	0
Future Vol, veh/h	286	5	0	165	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	318	6	0	183	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	324	0	504	321
Stage 1	-	-	-	-	321	-
Stage 2	-	-	-	-	183	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1236	-	528	720
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1236	-	528	720
Mov Cap-2 Maneuver	-	-	-	-	528	-
Stage 1	-	-	-	-	735	-
Stage 2	-	-	-	-	848	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1236	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	718	58	31	442	7	51	0	59	7	2	7
Future Vol, veh/h	6	718	58	31	442	7	51	0	59	7	2	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	25	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	7	789	64	34	486	8	56	0	65	8	2	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	494	0	0	853	0	0	1398	1397	821	1426	1425	490
Stage 1	-	-	-	-	-	-	835	835	-	558	558	-
Stage 2	-	-	-	-	-	-	563	562	-	868	867	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1075	-	-	790	-	-	119	142	376	114	136	580
Stage 1	-	-	-	-	-	-	363	384	-	516	513	-
Stage 2	-	-	-	-	-	-	513	511	-	348	371	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1075	-	-	790	-	-	112	135	376	91	129	580
Mov Cap-2 Maneuver	-	-	-	-	-	-	112	135	-	91	129	-
Stage 1	-	-	-	-	-	-	360	381	-	512	491	-
Stage 2	-	-	-	-	-	-	482	489	-	286	368	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.6	39.4	31.6
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	112	376	1075	-	-	790	-	-	153
HCM Lane V/C Ratio	0.5	0.172	0.006	-	-	0.043	-	-	0.115
HCM Control Delay (s)	65.7	16.6	8.4	-	-	9.8	-	-	31.6
HCM Lane LOS	F	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	2.3	0.6	0	-	-	0.1	-	-	0.4

Intersection	
Int Delay, s/veh	8.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	80	672	6	4	419	49	2	0	8	93	0	58
Future Vol, veh/h	80	672	6	4	419	49	2	0	8	93	0	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	25
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	83	700	6	4	436	51	2	0	8	97	0	60

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	487	0	0	706	0	0	1369	1364	703	1343	1342	462
Stage 1	-	-	-	-	-	-	869	869	-	470	470	-
Stage 2	-	-	-	-	-	-	500	495	-	873	872	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1081	-	-	897	-	-	124	148	439	130	153	602
Stage 1	-	-	-	-	-	-	348	371	-	576	562	-
Stage 2	-	-	-	-	-	-	555	548	-	346	369	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1081	-	-	897	-	-	105	136	439	120	141	602
Mov Cap-2 Maneuver	-	-	-	-	-	-	105	136	-	120	141	-
Stage 1	-	-	-	-	-	-	321	342	-	532	560	-
Stage 2	-	-	-	-	-	-	497	546	-	313	341	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	19	68.9
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	268	1081	-	-	897	-	-	120	602
HCM Lane V/C Ratio	0.039	0.077	-	-	0.005	-	-	0.807	0.1
HCM Control Delay (s)	19	8.6	-	-	9	-	-	104.7	11.6
HCM Lane LOS	C	A	-	-	A	-	-	F	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	4.8	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	129	0	0	152	3	0
Future Vol, veh/h	129	0	0	152	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	140	0	0	165	3	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	140	0	305	140
Stage 1	-	-	-	-	140	-
Stage 2	-	-	-	-	165	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1443	-	687	908
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	864	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1443	-	687	908
Mov Cap-2 Maneuver	-	-	-	-	687	-
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	864	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	687	-	-	1443	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	10.3	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	125	4	0	152	0	0
Future Vol, veh/h	125	4	0	152	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	139	4	0	169	0	0

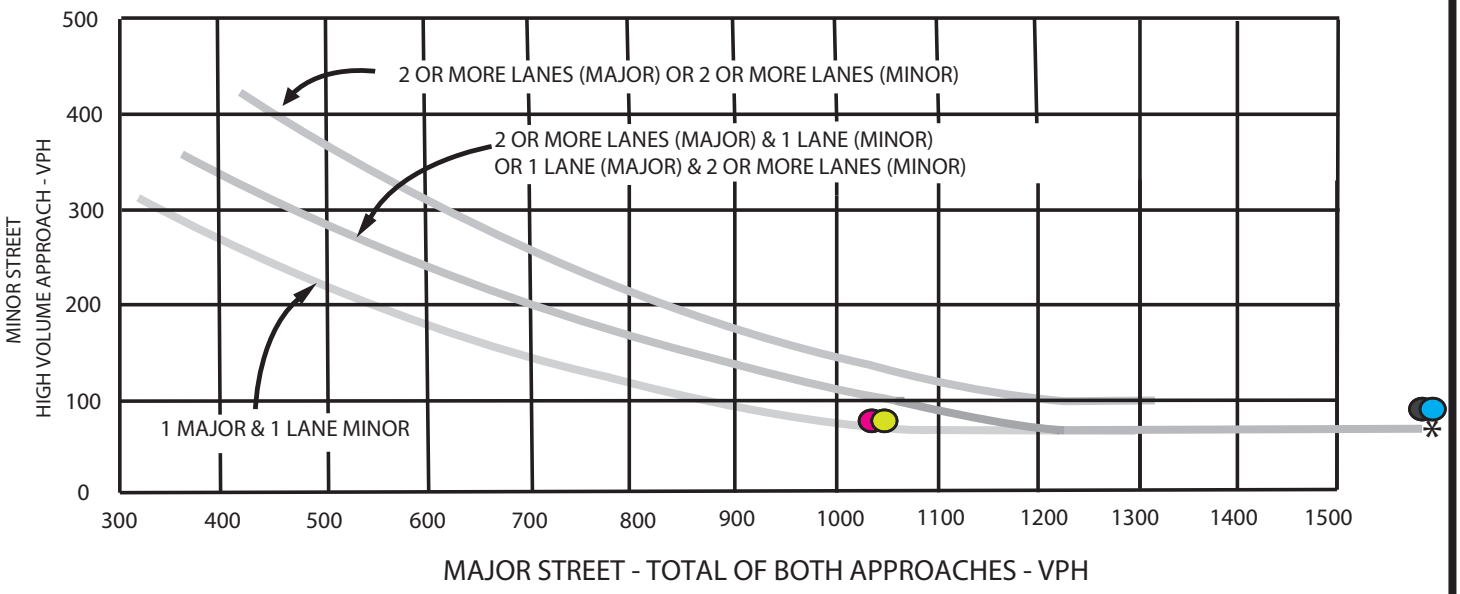
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	143	0	310	141
Stage 1	-	-	-	-	141	-
Stage 2	-	-	-	-	169	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1440	-	682	907
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	861	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1440	-	682	907
Mov Cap-2 Maneuver	-	-	-	-	682	-
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	861	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1440	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Appendix C

PEAK HOUR VOLUME WARRANT #3
(Rural Area)
Silverado Trail/Conn Creek Rd



= Existing (2019) Friday without Project
= Existing (2019) Friday with Project
= Existing (2019) Saturday without Project
= Existing (2019) Saturday with Project

* NOTE

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

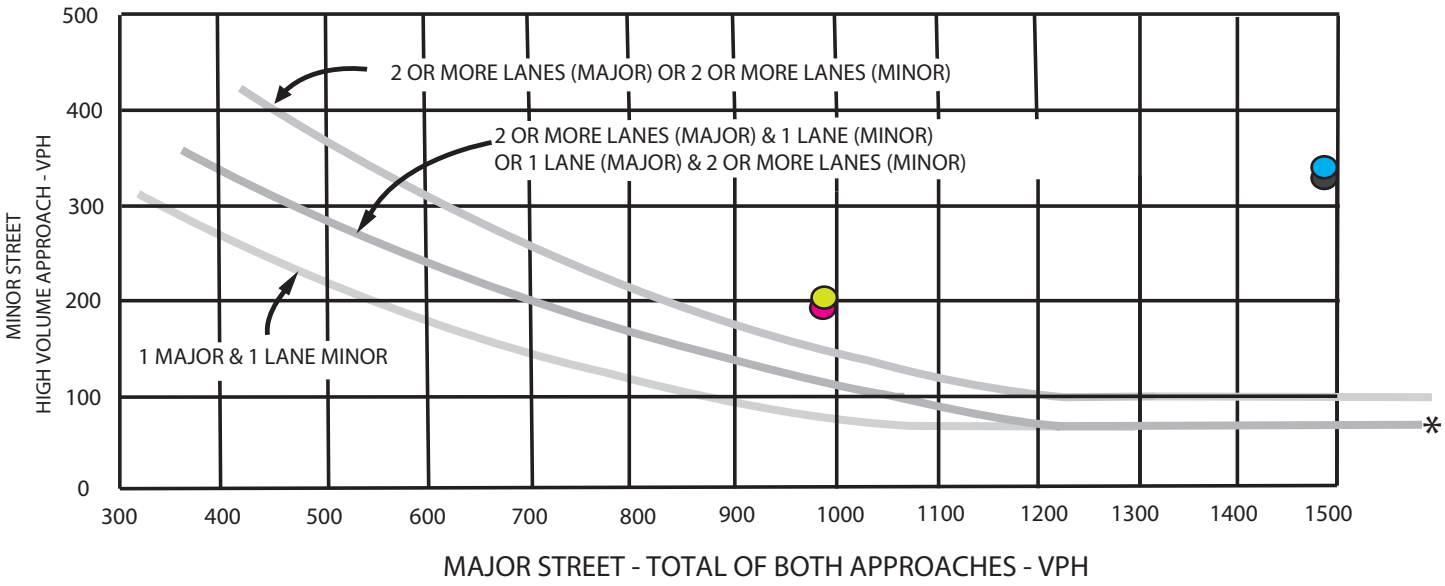
Source: Year 2014 Manual on Uniform Traffic Control Devices, Federal Highway Administration

CRANE TRANSPORTATION GROUP

Appendix Figure C-1

PEAK HOUR VOLUME WARRANT #3
(Rural Area)
Silverado Trail/Conn Creek Rd

PEAK HOUR VOLUME WARRANT #3
(Rural Area)
Silverado Trail/Sage Canyon Rd



● = Existing (2019) Friday without Project
● = Existing (2019) Friday with Project
● = Existing (2019) Saturday without Project
● = Existing (2019) Saturday with Project

* NOTE

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

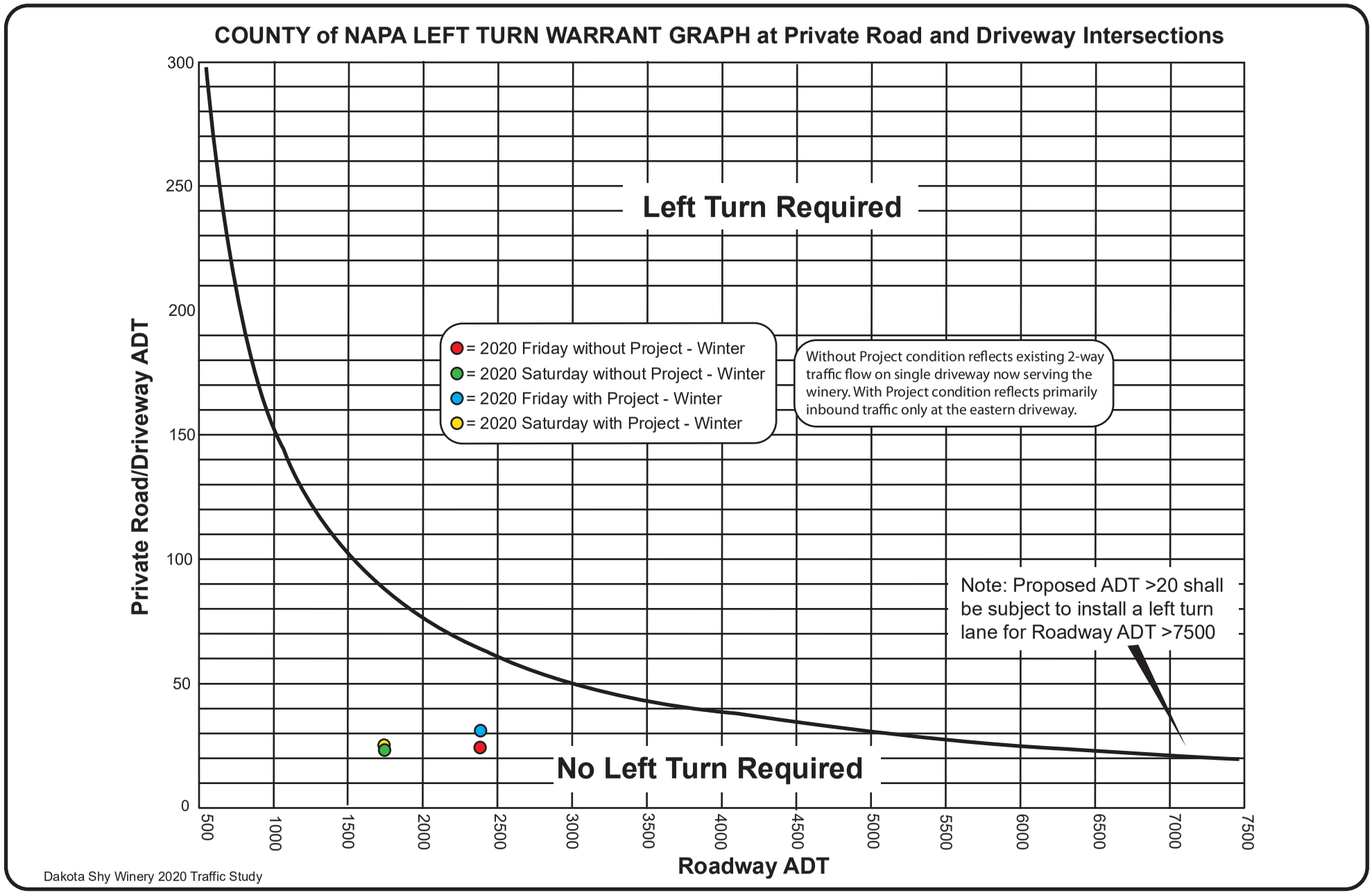
Source: Year 2014 Manual on Uniform Traffic Control Devices, Federal Highway Administration

Appendix Figure C-2

PEAK HOUR VOLUME WARRANT #3
(Rural Area)
Silverado Trail/Sage Canyon Rd

CRANE TRANSPORTATION GROUP

Appendix D



Dakota Shy Winery 2020 Traffic Study

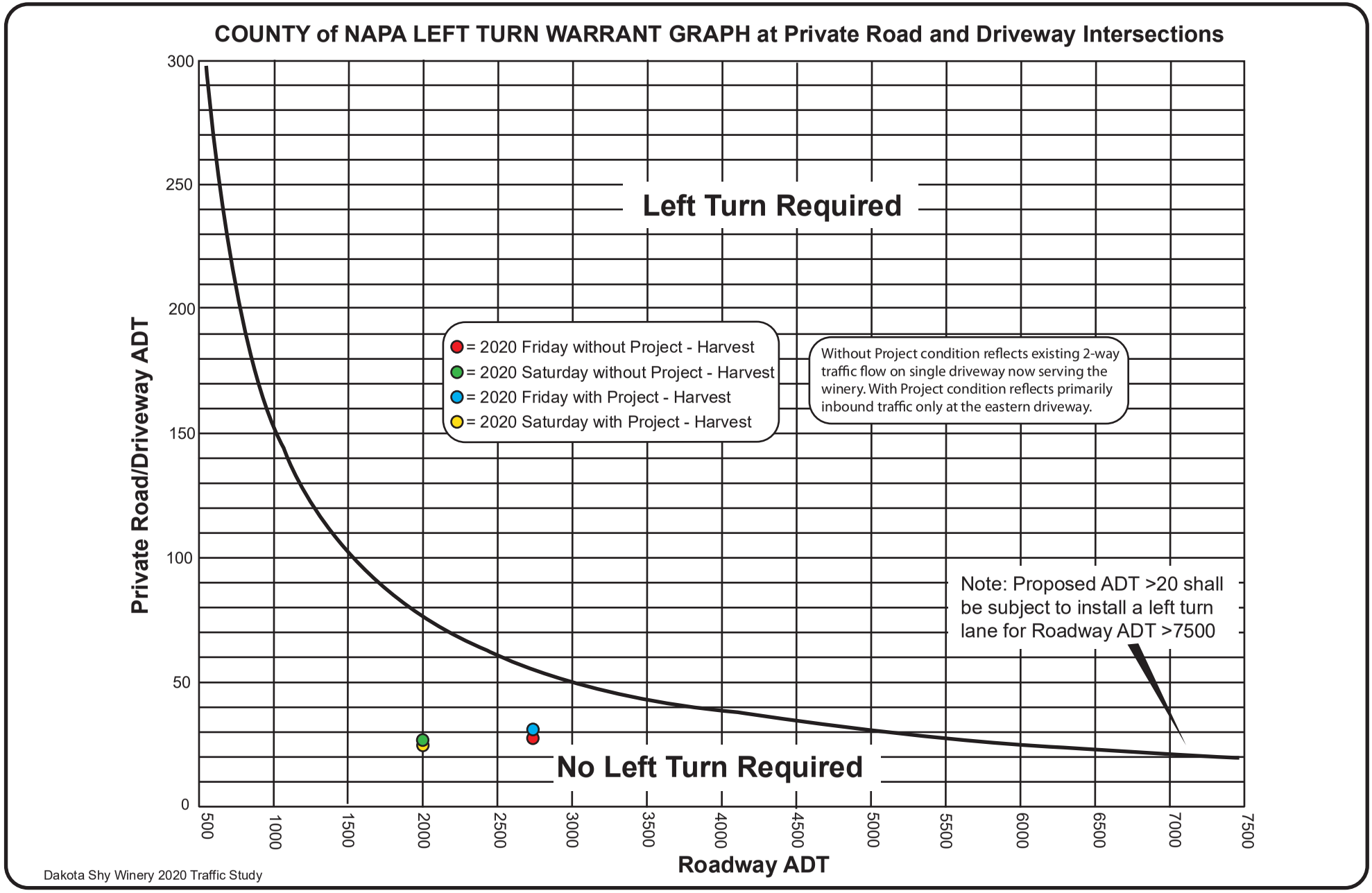
CRANE TRANSPORTATION GROUP

Appendix Figure D-1

COUNTY of NAPA LEFT TURN WARRANT GRAPH

Left Turn from Sage Canyon Rd to Eastern Project Driveway

Winter Conditions - January/February 2020



Dakota Shy Winery 2020 Traffic Study

CRANE TRANSPORTATION GROUP

Appendix Figure D-2
COUNTY of NAPA LEFT TURN WARRANT GRAPH
Left Turn from Sage Canyon Rd to Project Eastern Driveway
2020 Harvest Conditions

Appendix E

Appendix E

Trip Generation from Approved or Proposed (Not Built) Projects in Close Proximity to Dakota Shy Winery

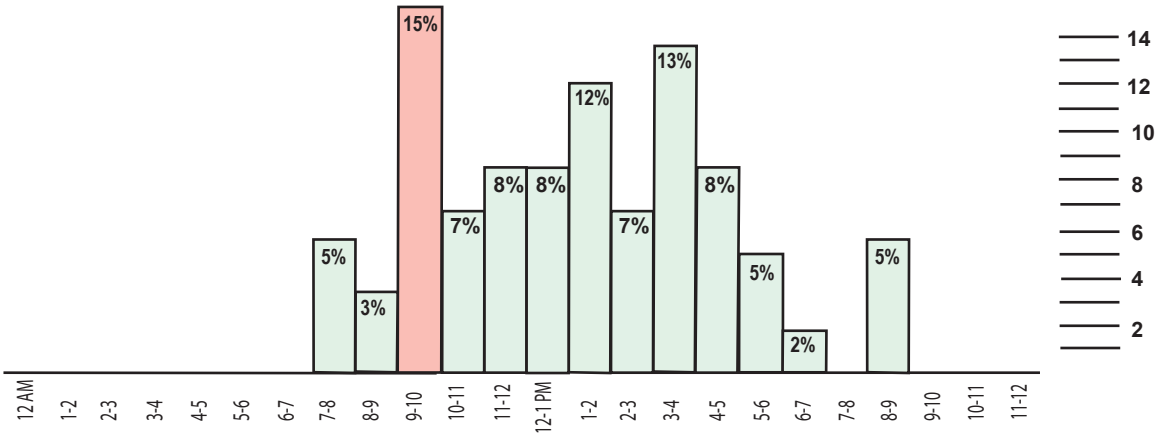
	Harvest Friday PM Peak Hour Trips		Harvest Saturday PM Peak Hour Trips	
	IN	**OUT**	**IN**	**OUT**
Lieff Winery	0	1	0	1
Frank Family Vineyard	9	9	10	10

Traffic Volume Source:
Lieff Winery Project Description: 3000 gallons/year, 2 employees, 8 visitors/week - by Crane Transportation Group, March 2020.
Frank Family Vineyard Draft Traffic Study by Crane Transportation Group, January 2019.

Compiled by: Crane Transportation Group

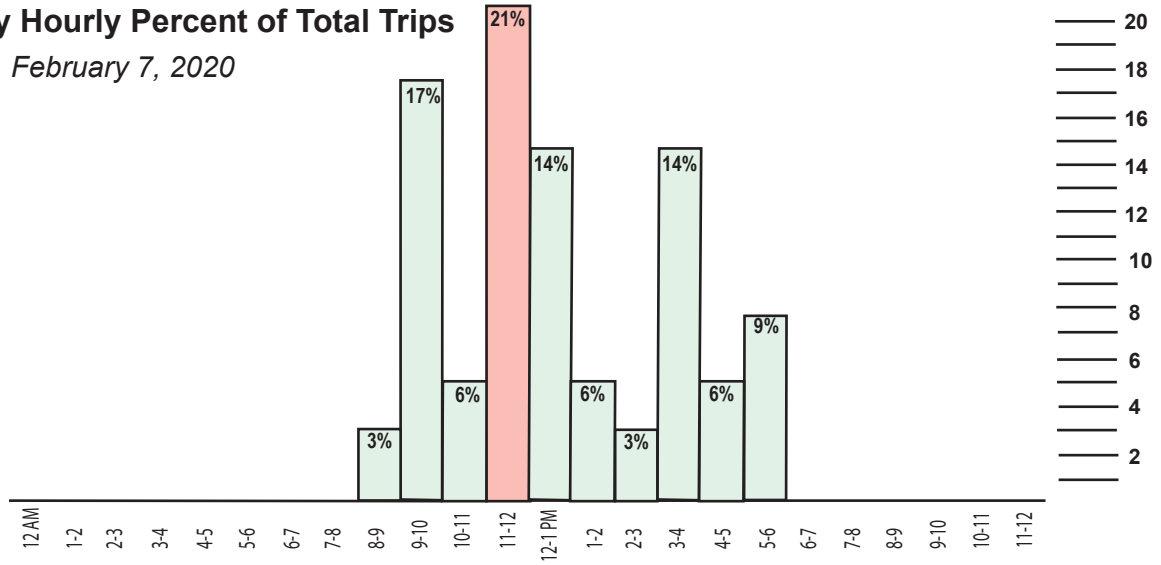
Appendix F

DAKOTA SHY WINERY DRIVEWAY
Friday Hourly Percent of Total Trips
Friday, January 31, 2020



Friday, January 31, 2020
Total In/Out - 59 Vehicles

DAKOTA SHY WINERY DRIVEWAY
Friday Hourly Percent of Total Trips
Friday, February 7, 2020

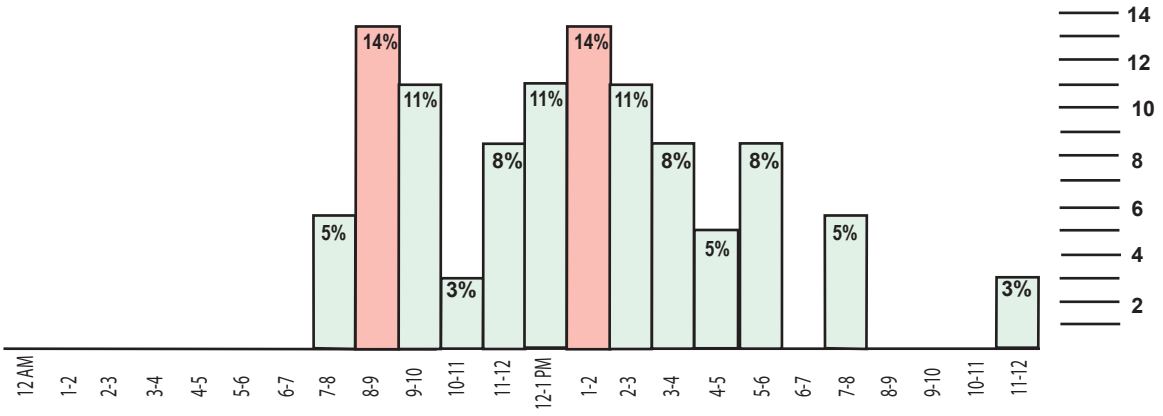


Friday, February 7, 2020
Total In/Out - 34 Vehicles

Appendix Figure F-1
Friday Traffic Percentages
Dakota Shy (by Hour) - January 31 and February 7, 2020

DAKOTA SHY WINERY DRIVEWAY
Saturday Hourly Percent of Total Trips

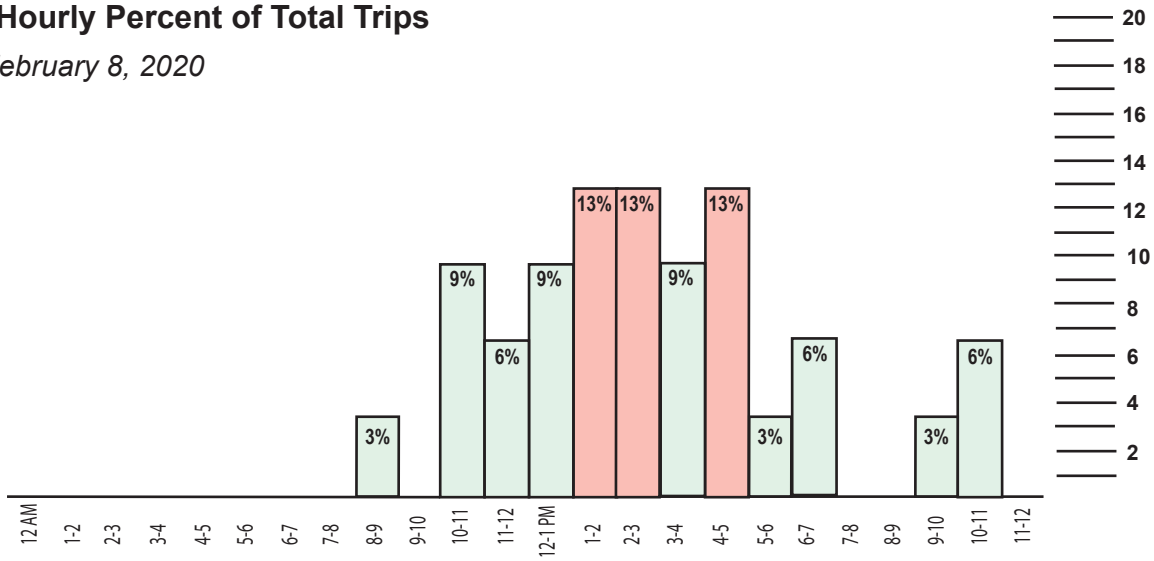
Saturday, February 1, 2020



Saturday, February 1, 2020
Total In/Out - 37 Vehicles

DAKOTA SHY WINERY DRIVEWAY
Saturday Hourly Percent of Total Trips

Saturday, February 8, 2020



Saturday, February 8, 2020
Total In/Out - 31 Vehicles

Appendix Figure F-2
Saturday Traffic Percentages
Dakota Shy (by Hour) - February 1 and February 8, 2020

DAKOTA SHY WINERY

Existing Conditions Winery Traffic Information / Trip Generation

Determine Winery Daily Trips. Complete Sections A through I below to determine your winery project's estimated baseline daily, peak hour trips, and annual trips.

Section A. Maximum Daily Weekday Traffic (Friday, non-harvest season)

1.	Total number of FT employees[1]: 2 x 3.05 one-way trips per employee	= 6.1	daily trips
2.	Total number of PT employees[1]: 2 x 1.90 one-way trips per employee	= 3.8	daily trips
3.	Maximum weekday visitors[2]: 16/2.6 visitors per vehicle x 2 one-way trips	= 12.3	daily trips
4.	Gallons of production: 14,000/1,000 x 0.009 daily truck trips[3] x 2 one-way trips	= 0.3	daily trips
5.	**TOTAL**	= 23	**daily trips**

Section B. Maximum Daily Weekday Traffic (Friday, harvest season)

6.	Total number of FT employees[1]: 2 x 3.05 one-way trips per employee	= 6.1	daily trips
7.	Total number of PT employees[1]: 2 x 1.90 one-way trips per employee	= 3.8	daily trips
8.	Maximum weekday visitors[2]: 16/2.6 visitors per vehicle x 2 one-way trips	= 12.3	daily trips
9.	Gallons of production: 14,000/1,000 x 0.009 daily truck trips x 2 one-way trips	= 0.3	daily trips
10.	Avg. annual tons of grape on-haul: 116 / 144 truck trips x 2 one-way trips	= 1.6	daily trips
11.	**TOTAL**	= 25	**daily trips**

Section C. Maximum Daily Weekend Traffic (Saturday, non-harvest season)

12.	Total number of FT Sat. employees[1]: 2 x 3.05 one-way trips per employee	= 6.1	daily trips
13.	Total number of PT Sat. employees[1]: 0 x 1.90 one-way trips per employee	= 0	daily trips
14.	Maximum Saturday visitors[2]: 20/2.8 visitors per vehicle x 2 one-way trips	= 14.3	daily trips
15.	Gallons of production: 14,000/1,000 x 0.009 daily truck trips[3] x 2 one-way trips	= 0.3	daily trips
16.	**TOTAL**	= 21	**daily trips**

Section D. Maximum Daily Weekend Traffic (Saturday, harvest season)

17.	Total number of FT Sat. employees[1]: 2 x 3.05 one-way trips per employee	= 6.1	daily trips
18.	Total number of PT Sat. employees[1]: 2 x 1.90 one-way trips per employee	= 3.8	daily trips
19.	Maximum Saturday visitors[2]: 20/2.8 visitors per vehicle x 2 one-way trips	= 14.3	daily trips
20.	Gallons of production: 14,000/1,000 x 0.009 daily truck trips x 2 one-way trips	= 0.3	daily trips
21.	Avg. annual tons of grape on-haul: 116 / 144 truck trips x 2 one-way trips	= 1.6	daily trips
22.	**TOTAL**	= 27	**daily trips**

[1] Full-Time and part-time employees that staff the largest of any event that is proposed to occur two or more times in a month, on average.

[2] The number of weekday visitors shall include guests of the largest of any event that is proposed to occur two or more times in a month, on average.

[3] Assumes 1.47 materials and supplies trips + 0.8 case goods trips per 1,000 gallons of production / 250 days per year

DAKOTA SHY WINERY

Existing Conditions Winery Traffic Information / Trip Generation (continued)

Section E. PM Peak Hour Trip Generation (Friday, non-harvest season)

(Sum of daily trips from Sec. A, lines 3 and 4) x 0.38 + (No. of FTE) + (line 2 / 2) = 8 PM peak trips

4.8 + 3

Section F. PM Peak Hour Trip Generation (Friday, harvest season)

(Sum of daily trips, Sec. B, lines 8, 9, 10) x 0.38 + (No. of FTE) + (line 7 / 2) = 9 PM peak trips

5.4 + 3

Section G. PM Peak Hour Trip Generation (Saturday, non-harvest season)

(Sum of daily trips from Sec. C, line 14 and 15) x 0.57 + (No. of FTE) + (line 13 / 2) = 11 PM peak trips

8.3 + 2

Section H. PM Peak Hour Trip Generation (Saturday, harvest season)

(Sum of daily trips Sec. D, lines 19, 20, and 21) x 0.57 + (No. of FTE) + (line 18 / 2) = 13 PM peak trips

9.2 + 3

Section I. Maximum Annual Trips

(Sec. A, line 5 x 206) + (Sec. B, line 11 x 55) + (Sec. C, line 16 x 82) + (Sec. D, line 22 x 22) = **8,429** Annual trips

4,738 + 1,375 + 1,722 + 594

DAKOTA SHY WINERY

Proposed Project Winery Traffic Information / Trip Generation

Determine Winery Daily Trips. Complete Sections J through R below to determine your winery project's estimated future daily, peak hour trips, and annual trips.

Section J. Maximum Daily Weekday Traffic (Friday, non-harvest season)

1.	Total number of FT employees[1]: 10 x 3.05 one-way trips per employee	= 30.5	daily trips
2.	Total number of PT employees[1]: 0 x 1.90 one-way trips per employee	= 0	daily trips
3.	Maximum weekday visitors[2]: 35 /2.6 visitors per vehicle x 2 one-way trips	= 26.9	daily trips
4.	Gallons of production: 20,000 /1,000 x 0.009 daily truck trips[3] x 2 one-way trips	= 0.4	daily trips
5.	**TOTAL**	= **58**	**daily trips**

Section K. Maximum Daily Weekday Traffic (Friday, harvest season)

6.	Total number of FT employees[1]: 10 x 3.05 one-way trips per employee	= 30.5	daily trips
7.	Total number of PT employees[1]: 0 x 1.90 one-way trips per employee	= 0	daily trips
8.	Maximum weekday visitors[2]: 35 /2.6 visitors per vehicle x 2 one-way trips	= 26.9	daily trips
9.	Gallons of production: 20,000 /1,000 x 0.009 daily truck trips x 2 one-way trips	= 0.4	daily trips
10.	Avg. annual tons of grape on-haul: 166 / 144 truck trips x 2 one-way trips	= 2.3	daily trips
11.	**TOTAL**	= **61**	**daily trips**

Section L. Maximum Daily Weekend Traffic (Saturday, non-harvest season)

12.	Total number of FT Sat. employees[1]: 4 x 3.05 one-way trips per employee	= 12.2	daily trips
13.	Total number of PT Sat. employees[1]: 0 x 1.90 one-way trips per employee	= 0	daily trips
14.	Maximum Saturday visitors[2]: 48 /2.8 visitors per vehicle x 2 one-way trips	= 34.3	daily trips
15.	Gallons of production: 20,000/1,000 x 0.009 daily truck trips[3] x 2 one-way trips	= 0.4	daily trips
16.	**TOTAL**	= **47**	**daily trips**

Section M. Maximum Daily Weekend Traffic (Saturday, harvest season)

17.	Total number of FT Sat. employees[1]: 4 x 3.05 one-way trips per employee	= 12.2	daily trips
18.	Total number of PT Sat. employees[1]: 0 x 1.90 one-way trips per employee	= 0	daily trips
19.	Maximum Saturday visitors[2]: 48 /2.8 visitors per vehicle x 2 one-way trips	= 34.3	daily trips
20.	Gallons of production: 20,000/1,000 x 0.009 daily truck trips x 2 one-way trips	= 0.4	daily trips
21.	Avg. annual tons of grape on-haul: 166 / 144 truck trips x 2 one-way trips	= 2.3	daily trips
22.	**TOTAL**	= **50**	**daily trips**

[1] Full-Time and part-time employees that staff the largest of any event that is proposed to occur two or more times in a month, on average.

[2] The number of weekday visitors shall include guests of the largest of any event that is proposed to occur two or more times in a month, on average.

[3] Assumes 1.47 materials and supplies trips + 0.8 case goods trips per 1,000 gallons of production / 250 days per year

DAKOTA SHY WINERY

Proposed Project Winery Traffic Information / Trip Generation (continued)

Determine Winery Peak Hour Trips. ***If the number of daily trips on either Section K, line 11, or Section M, line 21, is greater than 20, or Public Works Director determines that other circumstances such as access safety or other potential network impacts warrant further analysis, then the potential transportation impacts of your project must be evaluated in a traffic impact study (TIS) prepared in accordance with*** **Napa County Public Works TIS Guidelines.** ***Follow the direction outlined in*** **Traffic Impact Study Analysis,** ***below. If the number of daily trips on either Section K, line 11, or Section M, line 22, is equal to or less than 20, complete Sections N through R below to determine your project's estimated peak hour trips and annual trips. In lieu of completing Sections N through R, you may opt to prepare a project-specific traffic impact analysis if you anticipate the number of peak hour trips from your proposal is different from that estimated here.***

Section N. PM Peak Hour Trip Generation (Friday, non-harvest season)

(Sum of daily trips from Sec. J, lines 3 and 4) x 0.38 + (No. of FTE) + (line 2 / 2) = 21 PM peak trips

10.4 + 10

Section O. PM Peak Hour Trip Generation (Friday, harvest season)

(Sum of daily trips from Sec. K, lines 8, 9, 10) x 0.38 + (No. of FTE) + (line 7 / 2) = 21 PM peak trips

11.2 + 10

Section P. PM Peak Hour Trip Generation (Saturday, non-harvest season)

(Sum of daily trips from Sec. L, line 14 and 15) x 0.57 + (No. of FTE) + (line 13/ 2) = 24 PM peak trips

19.8 + 4

Section Q. PM Peak Hour Trip Generation (Saturday, harvest season)

(Sum of daily trips, Sec. M, lines 19, 20, and 21) x 0.57 + (No. of FTE) + (line 18 / 2) = 25 PM peak trips

21.1 + 4

Section R. Maximum Annual Trips

(Sec. J, line 5 x 206) + (Sec. K, line 11 x 55) + (Sec. L, line 16 x 82) + (Sec. M, line 22 x 22) = 20,257 Annual trips

11,948 + 3,355 + 3,854 + 1,100

Traffic Impact Study Analysis. ***If the number of daily trips on either Section K, line 11, or Section M, line 22, is greater than 20, then the potential transportation impacts of your project must be evaluated in a traffic impact study (TIS) prepared in accordance with*** **Napa County Public Works TIS Guidelines.** ***Existing trip counts on the transportation network should be collected during the harvest season (August 16 – October 31). If collected outside of the harvest season, during the months of November through February, counts shall be adjusted upward by 15 percent to estimate harvest season network volumes. If collected during the weeks between March 1 and August 15, counts shall be adjusted upward by seven percent.***

DAKOTA SHY WINERY

For peak hour analysis in the TIS, the County will allow any one of the following methodologies:

a) Use the peak hour factors in Sections E through I, above, to estimate the peak hour trips and annual trips generated by the project. To determine the potential peak hour impacts of the project, apply the harvest season estimated peak hour project trips (Sections F and H for the existing condition, and Sections O and Q for the proposed project) to roadway volumes during the hour between 3:00 p.m. and 4:00 p.m. on Fridays and Saturdays; or

b) For New Wineries use peak hour trip counts as projected using the Institute for Transportation Engineers' (ITE) peak hour factors for winery land uses from the most current version of ITE Trip Generation. ***To determine the potential peak hour impacts of the project, apply the estimated peak hour project trips from ITE to roadway volumes during the hour between 4:00 p.m. and 5:00 p.m. on a Friday and 1:45 p.m. and 2:45 p.m. on a Saturday; or***

c) Conduct a site-specific analysis informed by actual trip counts at the driveway of the project (for winery use permit modifications) or at the driveway of a project with comparable operating characteristics to that proposed (for new winery use permits). To determine the potential peak hour impacts of the project, apply the site-specific peak hour of generator to the peak hour of the network on a Friday and the peak hour of the roadway on a Saturday, based on the assembled trip count data.

For Average Daily Traffic (ADT) analysis in the TIS, the County will utilize one of the following methodologies:

a) Average of the Maximum Daily Weekday Traffic and the Maximum Daily Weekend Traffic during the harvest season, as given in the Winery Traffic Information / Trip Generation worksheet.

b) A site specific analysis which at a minimum 24-hour vehicle counts shall be collected during a continuous week period (7-days) for which traffic count data is collected for each day of the week. Existing trip counts should be collected during the harvest season (August 16 – October 31). If collected outside of the harvest season, during the months of November through February, counts shall be adjusted upward by 15 percent to estimate harvest season network volumes. If collected during the weeks between March 1 and August 15, counts shall be adjusted upward by seven percent. Projected daily trip counts shall be based on total number of full-time employee, part-time employees, daily visitors, gallons of production, grape on-haul and the factors identified in the Proposed Winery Traffic Information and Trip Generation worksheet, respectively.

c) For land uses other than wineries, the ADT shall be determined using the most current version of ITE Trip Generation.

Appendix G

Appendix G

DAKOTA SHY WINERY

Transportation Demand Management (TDM) Plan

1. A Dakota Shy administrative employee will be appointed TDM manager.
2. Electric car charging facilities have been provided for both employees and guests.
3. Bike racks and storage areas have been provided for employees and guests.
4. High occupancy vehicle use (vans and shuttle buses) will be encouraged for large marketing events.
5. Employee work hours will be staggered to the greatest extent possible to avoid congestion during the peak traffic hours on Silverado Trail.
6. Work at home or at remote location opportunities will be offered when possible.
7. Guest appointments will be scheduled, to the extent possible, to avoid travel during peak traffic hours on Silverado Trail.