TRAFFIC IMPACT ANALYSIS

FOR

THE FRUIT YARD
Stanislaus County, CA

Prepared For:

The Fruit Yard
7948 Yosemite Blvd
Modesto, CA

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3408-01

Fruit Yard.rpt

EXHIBIT F

THE FRUIT YARD
TRAFFIC IMPACT ANALYSIS

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EXECUTIVE SUMMARY

- **Project Description.** This study evaluates the traffic impacts for the proposed expansion of the Fruit Yard property, a 45± acre site located in the southwest quadrant of Yosemite Blvd (State Route 132) and Geer Road in Stanislaus County, east of Modesto.

  The proposed project will amend the zoning from Agriculture to Planned Development for the entire 45 acre site. The proposed development plan includes the existing facilities and the following new facilities:

  - Construction of new banquet facilities west of the existing restaurant;
  - relocation of the existing service station from north of the produce market to south of the produce market along Geer Road;
  - relocation of the existing gas card-lock fueling facility;
  - addition of retail space at the site of the existing service station;
  - addition of a storage facility for RV's and boats;
  - addition of overnight RV campground;
  - construction of a fruit packing / warehousing facility; and
  - a tractor sales showroom

  The project will be divided into three phases. Phase 1 will include construction of banquet facilities. Phase Two will add the RV campground and the RV / Boat storage facility while Phase Three will relocate the existing gas station and card lock facility while adding the tractor sales facility, the fruit packing / warehousing facility and the new retail space at the old gas station site. A new park site, covering about 14 acres will be developed throughout the three phases.

- **Existing Setting.** The project is in Stanislaus County, east of Modesto along Yosemite Blvd (SR 132). The project is located in the southwest quadrant of the Yosemite Blvd (SR 132) / Geer Road intersection. Existing primary access to the site is via two driveways adjacent to the Yosemite Blvd / Geer Road intersection.

  The site currently houses a gasoline service station with 6 pumps, a restaurant, a produce market and a card-lock fueling facility. This current development covers 6 acres with the remaining acreage consisting of open land and fruit trees. The existing restaurant provides banquet facilities and meeting rooms for various clubs and groups; in addition, some weddings take place annually, although, these are not identified as permissible under the current zoning.

The existing study intersections all operate at LOS C or better. Geer Road currently operates below the County LOS threshold, at LOS E. The County's General Plan identifies Geer Road as a Class C 6-lane expressway. Widening of Geer Road would result in LOS B or better conditions.

- **Existing Plus Project Specific Impacts.** The project is proposed to be constructed in three phases. The first phase will construct the banquet facility. Phase 2 will develop the RV Park and the RV / boat storage facility in the southeast side of the site. Phase 3 will complete the project by constructing a fruit packing / warehouse, providing a tractor sales showroom, relocation of the gas station to the existing gas card-lock facility, relocation of the card-lock facility and development of a small specialty retail store at the existing gas station location.

  Phase 1. Under Phase 1 conditions all intersections will operate above LOS thresholds. Geer Road will continue to operate below LOS C conditions. Widening Geer Road is part of the County's Traffic Impact Fee program; therefore, no additional mitigation is required.

  The project should contribute its fair share to the cost of regional circulation system improvements through the existing Stanislaus County traffic mitigation fee program.

  Yosemite Blvd (SR 132) should be widened to its ultimate width along the project frontage of Phase 1. This would include two through lanes, one half of a continuous left turn lane and shoulder per Caltrans standards.

  No other mitigations are necessary.

  Phase 1 + Phase 2. All of the proposed intersections will continue to operate within County and Caltrans LOS thresholds. Geer Road will continue to operate below LOS C conditions.

  Phase 2 of the project should contribute its fair share to the cost of regional circulation system improvements through the existing Stanislaus County traffic mitigation fee program.

  Geer Road should be widened to its ultimate half-width along the project frontage. The limits of widening would extend from the Yosemite Blvd (SR 132) intersection south of the project limits to D Drive. This would include three through lanes and half a median. The full median, once completed, should provide breaks to allow inbound left turns at the various driveways. Full access should be provided at D Drive. Geer Road will continue to operate below LOS C conditions. Widening Geer Road is part of the County's Traffic Impact Fee program; therefore, no other mitigation is required.

  Phase 1 + Phase 2 + Phase 3. All of the proposed intersections will continue to operate within County and Caltrans LOS thresholds. Geer Road will continue to operate below LOS C conditions.

Phase 3 of the project should contribute its fair share to the cost of regional circulation system improvements through the existing Stanislaus County traffic mitigation fee program.

Yosemite Blvd (SR 132) should be widened to its ultimate width along the project frontage of Phase 3. This would include two through lanes, one half of a continuous left turn lane and shoulder per Caltrans standards.

Geer Road should be widened to its ultimate half-width along the project frontage from D Drive to the south project limit, at MID Lateral No. 1. This would include three through lanes and half a median. The full median, once completed, should provide breaks to allow inbound left turns at the various driveways. Full access should be provided at F Way. Geer Road will continue to operate below LOS C conditions. Widening Geer Road is part of the County's Traffic Impact Fee program; therefore, no other mitigation is required.

- **2012 Setting.** Growth is expected to occur along both Yosemite Blvd (SR 132) and Geer Road. Each of the study intersections will operate at acceptable levels of service. No recommendations are necessary.

  Yosemite Blvd (SR 132) will decline to LOS E conditions. Widening Yosemite Blvd (SR 132) is identified as part of the County's Traffic Impact Fee program.

- **2012 plus Project Specific Impacts.** Each of the study intersections will operate at acceptable levels of service. No mitigations are necessary.

  Yosemite Blvd (SR 132) will continue to operate at LOS E conditions. Widening Yosemite Blvd (SR 132) is identified as part of the County's Traffic Impact Fee program. The project should pay its fair share of Traffic Impact Fees; therefore, no other mitigation is required.

  Geer Road will continue to operate below the County LOS threshold level. No additional mitigations are necessary as TIF fees have already been identified in the Existing scenario.

- **2030 Setting.** Each of the study intersections will operate at acceptable levels of service except the Geer Road / Fruityard access. This intersection is adjacent to the Yosemite Blvd / Geer Road intersection. Left turn access in and out of the driveway would need to be eliminated in order to improve the level of service at the intersection. This will result in LOS A conditions at the intersection. No other recommendations are necessary.

  Geer Road is projected to operate at LOS D conditions in 2030. To operate within County thresholds the County would have to adopt an LOS D threshold for six lane Type C Expressways.

- **2030 plus Project Specific Impacts.** Each of the study intersections except the Geer Road / D Drive intersection will operate at acceptable levels of service. The Geer Drive / D Drive

intersection will operate at LOS E in the a.m. peak hour and LOS D in the p.m. and Saturday peak hours. A traffic signal warrant analysis was conducted at each intersection where full access is proposed along both Yosemite Blvd (SR 132) and Geer Road. The analysis showed that no signal warrants are met for any of the study intersections; therefore, no significant impact exists at D Drive as an unwarranted signal may cause additional and unnecessary delays to traffic along Geer Road.

Geer Road is projected to continue to operate at LOS D conditions in 2030. To operate within County thresholds the County would have to adopt an LOS D threshold for six lane Type C Expressways.

No additional mitigations are necessary.

THE FRUIT YARD
TRAFFIC IMPACT ANALYSIS

STUDY PURPOSE AND OBJECTIVES

This study evaluates the traffic impact for the proposed expansion of the Fruit Yard property, a 45± acre site located in the southwest quadrant of Yosemite Blvd (State Route 132) and Geer Road in Stanislaus County, east of Modesto. The site currently houses a gasoline service station with 6 pumps, a restaurant, a produce market and a card-lock fueling facility. This current development covers 6 acres with the remaining acreage consisting of open land and fruit trees. The existing restaurant provides banquet facilities and meeting rooms for various clubs and groups; in addition, some weddings take place annually, although, these are not identified as permissible under the current zoning.

The proposed project will amend the zoning from Agriculture to Planned Development for the entire 45 acre site. The proposed development plan includes the existing facilities and the following new facilities:

- additional banquet facilities west of the existing restaurant;
- relocation of the existing service station from north of the produce market to south of the produce market along Geer Road;
- relocation of the card-lock fueling facility;
- addition of retail space at the site of the existing service station;
- addition of a storage facility for RV's and boats;
- a small overnight RV campground;
- a fruit packing / warehousing facility; and
- a tractor sales facility

The project will be divided into three phases. Phase 1 will include construction of banquet facilities. Phase Two will add the RV campground and the RV / Boat storage facility while Phase Three will relocate the existing gas station and card lock facility while adding the tractor sales facility, the fruit packing / warehousing facility and the new retail space at the old gas station site. A new park site, covering about 14 acres will be developed throughout the three phases.

Study parameters are consistent with Stanislaus County and California Department of Transportation (Caltrans) guidelines.

This study addresses the following scenarios:

1. Existing Traffic Conditions;
2. Existing Plus Phase 1;
3. Existing Plus Phase 1 + Phase 2;
4. Existing Plus Phase 1 + Phase 2 + Phase 3;
5. Short Term 2012 Traffic Conditions
6. Short Term 2012 + Full Build-out of the Fruit Yard;
7. Cumulative Traffic Conditions (year 2030) with current General Plan conditions
8. Cumulative Traffic Conditions with General Plan Amendment and Full Buildout of the Fruit Yard

The objective of this study is to identify those roads and street intersections that may be impacted by development of this project and to suggest strategies for mitigating the impacts of this project.

PROJECT DESCRIPTION

This study evaluates the traffic impact for the proposed expansion of the Fruit Yard property, a 45± acre site located in the southwest quadrant of Yosemite Blvd (State Route 132) and Geer Road in Stanislaus County, east of Modesto. The site currently houses a gasoline service station with 6 pumps, a restaurant, a produce market and a card-lock fueling facility. This current development covers 6 acres with the remaining acreage consisting of open land and fruit trees. The existing restaurant provides banquet facilities and meeting rooms for various clubs and groups; in addition, some weddings take place annually, although, these are not identified as permissible under the current zoning.

The proposed project will amend the zoning from Agriculture to Planned Development for the entire 45 acre site. The proposed development plan includes the existing facilities and the following new facilities:

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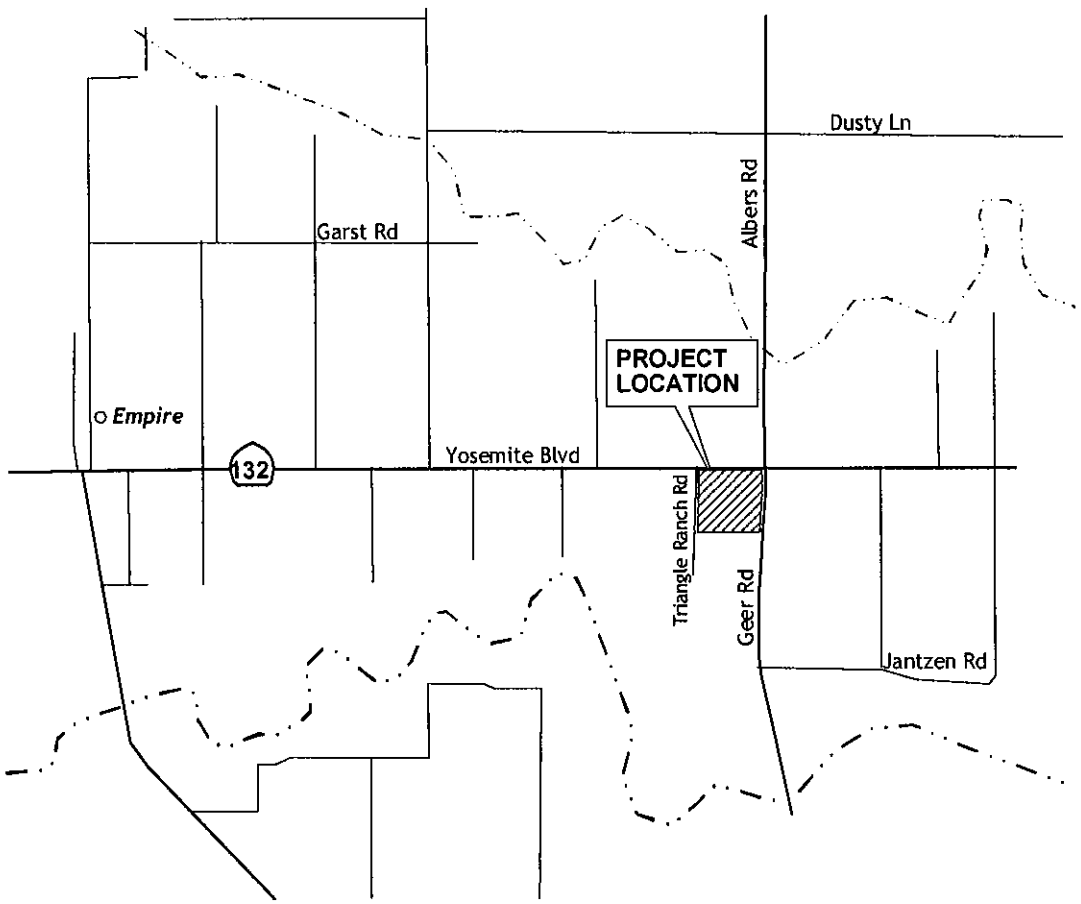
Phase One will maintain the existing land uses. A 9,000 square foot banquet facility will be added along the Yosemite Blvd frontage, west of the existing restaurant.

Phase Two will include addition of a 4.2-acre RV Park and a 6.67 acre RV / Boat storage facility. The RV park will accommodate 66 overnight campgrounds while the storage facility will accommodate up to 322 spaces for RV / boat storage.

Phase Three will relocate the existing 6-pump gas station to south of the fruit stand. The card lock facility will also be moved, to a location along the west side of the property, adjacent to Yosemite Blvd (SR 132). New land uses will include a 2.67-acre fresh fruit packing and warehouse facility and a 2-acre tractor sales facility. The fruit packing and warehouse is proposed to have a 35,000 square foot facility while the tractor sales facility will have a 10,000 square foot showroom. A

4,100 square foot retail shop is proposed at the former gas station location with drive-through capability.

Figure 1 locates the project within Stanislaus County. Figure 2 provides the conceptual phasing plan for the project site.



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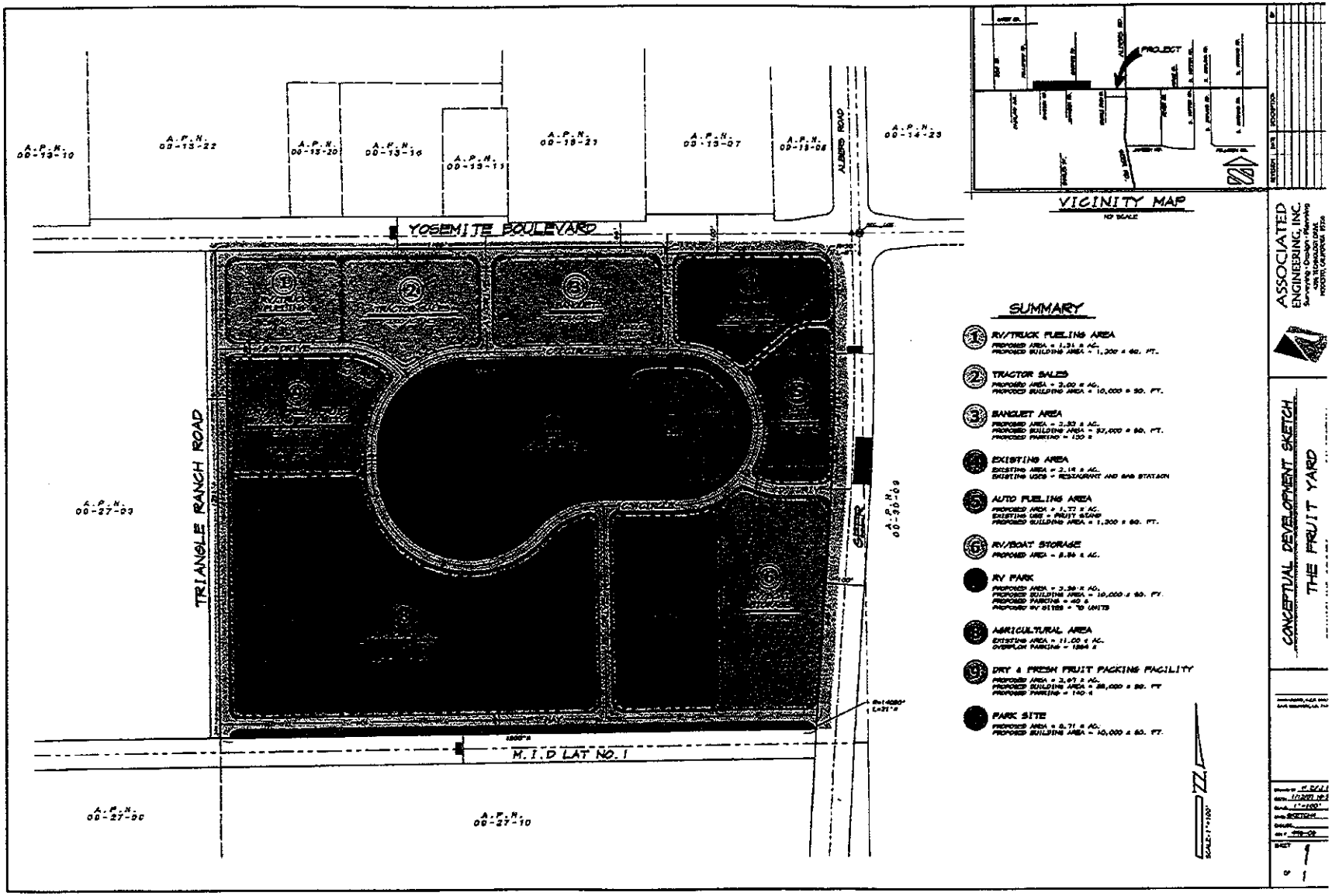
VICINITY MAP

figure 1



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SITE PLAN

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figure 2

EXISTING SETTING

Study Area

This study addresses traffic conditions on Yosemite Blvd and Geer Road that will be used to access the site. The limits of the study area were identified through discussions with Stanislaus County Planning staff and Caltrans Metropolitan Planning staff. The text that follows describes the facilities included in this analysis.

Yosemite Blvd (SR 132) is an east-west principal arterial providing circulation through central Stanislaus County. SR 132 begins at an intersection on I-580 in western San Joaquin County and extends east for twenty miles to Modesto. Yosemite Blvd originates in Modesto at an intersection with D Street in downtown Modesto and continues easterly through the Modesto's south industrial area to the community of Empire before continuing for about eight miles to the City of Waterford. SR 132 then continues to the community of Coulterville in Mariposa County.

Today SR 132 is generally a two lane road with an ultimate plan for a 5 lane conventional highway with continuous left turn lane. SR 132 has four lanes in eastern Modesto, but is a two-lane road through Empire and most of Waterford. The roadway has been widened at the project site and includes left turn lanes, a through lane and a through-right lane along SR 132. Lane drops are present eastbound about 520 east of the intersection and about 400 to the west for westbound traffic.

The volume of traffic on Yosemite Blvd varies by location. Current Traffic counts summarized by Caltrans reveal that Yosemite Blvd (SR 132) carries an *Average Daily Traffic (ADT)* volume of about 8,300 vehicles per day (vpd) west of Geer Road – Albers Road and 10,600 vpd east of the intersection (year 2006).

Geer Road – Albers Road. Geer Road – Albers Road, also referred to as County Road J14, is generally a two-lane roadway that begins in Oakdale as Yosemite Avenue. Just outside of Oakdale the road name changes to Albers Road. At the Yosemite Blvd (SR 132) intersection the road name changes to Geer Road south and continues as Geer Road to Turlock. Geer Road / Albers Road has also been widened at the Yosemite Blvd intersection and includes a left turn lane, two through lanes and a right turn lane along northbound Geer Road while Albers Road consists of a left turn lane, a through lane and a through-right lane. Lane drops are present northbound about 300' north of the intersection and about 500' to the south for southbound traffic.

Daily volumes along Geer Road – Albers Road were based on the peak hour volumes and adjusted by the 9.4% peak hour factor along Yosemite Blvd. The projected daily volume on Albers Road is 9,780 vpd while the projected ADT along Geer Road is 10,830 vpd.

Study Area Intersections

The quality of traffic flow is often governed by the operation of major intersections. Intersections selected for evaluation in consultation with Stanislaus County and Caltrans staff include:

1. Yosemite Blvd (SR 132) / Triangle Ranch Road (NB stop)
2. Yosemite Blvd (SR 132) / Geer Road – Albers Road (signal)

The **Yosemite Blvd (SR 132) / Triangle Ranch Road intersection** is a major access intersection for motorists traveling between I-5 and Waterford. This intersection is a minor leg stop controlled intersection. All approaches are single lanes with Triangle Ranch Road a gravel road at the west side of the project site.

The **Yosemite Blvd (SR 132) / Geer Road – Albers Road intersection** is a signalized intersection east of the town of Empire. The intersection is located about midway between Oakdale and Turlock along Geer Road - Albers Road and about midway between Modesto and Waterford along Yosemite Blvd. Recent improvements to the intersection include widening of all approaches to include left turn lanes as well as two through lanes. Along northbound Geer Road a dedicated right turn lane is also present.

Level of Service Analysis

Methodology. *Level of Service Analysis* has been employed to provide a basis for describing existing traffic conditions and for evaluating the significance of project traffic impacts. Level of Service measures the *quality* of traffic flow and is represented by letter designations from "A" to "F", with a grade of "A" referring to the best conditions, and "F" representing the worst conditions. Table 1 presents typical Level of Service characteristics.

Intersection Level of Service. As the operation of major intersections primarily governs the quality of traffic flow conditions in the immediate vicinity of the site, intersection Level of Service analysis has been used for this study to determine the significance of resulting traffic conditions with development of the site.

TABLE 1
LEVEL OF SERVICE DEFINITION

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay ≤ 10.0 sec	Little or no delay. Delay ≤ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and ≤ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and ≤ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestions of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and ≤ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and ≤ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.
Sources: 2000 Highway Capacity Manual.			

Procedures used for calculating Levels of Service at intersections is presented in the Highway Capacity Manual, 2000 edition. At signalized intersections, information regarding signal timing and lane geometry, as well as hourly traffic volumes is used to determine the overall average delay for motorists waiting at the intersection. At unsignalized intersections, the number of gaps in through traffic and corresponding delays is used for evaluation of Level of Service at intersections controlled by side street stop signs. Average delays for each approach are determined for all-way stop controlled intersections based on typical vehicle headway.

The significance of delays at unsignalized intersections is typically determined through evaluation of the need for a traffic signal. Because unsignalized Level of Service calculations ignore the condition of through traffic flow (which is assumed to flow freely), a traffic signal warrant analysis is performed. While the unsignalized Level of Service may indicate long delays (i.e., LOS "E"), traffic conditions are generally not assumed to be unacceptable unless signal warrants are satisfied.

Computer software is employed for Level of Service calculation, and the software programs used account for various factors. The simplest software (TRAFFIX) employs the 2000 HCM methodology but treats each intersection as an isolated location. Caltrans District 10 requires more sophisticated software (SYNCRO-Simtraffic) that accounts for the relationship between adjoining intersections. For this analysis, SYNCRO-Simtraffic has been used.

The level of service threshold along Yosemite Blvd (SR 132) is LOS D per Caltrans while Stanislaus County thrives to maintain an LOS C or better condition on all roadways.

Roadway Segment Level of Service. The quality of traffic flow can also be described in general terms based on the daily traffic volume occurring on individual roadway segments. Agencies typically make use of general Level of Service thresholds that equate daily traffic volume to peak hour Level of Service.

The Stanislaus County Congestion Management Plan (CMP) and Regional Transportation Plan (RTP) as well as other local jurisdictions makes use of Level of Service thresholds originally developed by the Florida Department of Transportation. As shown, these thresholds identify typical daily traffic volumes that would be expected to result in LOS B, C, D or E conditions at major intersections during the peak hour.

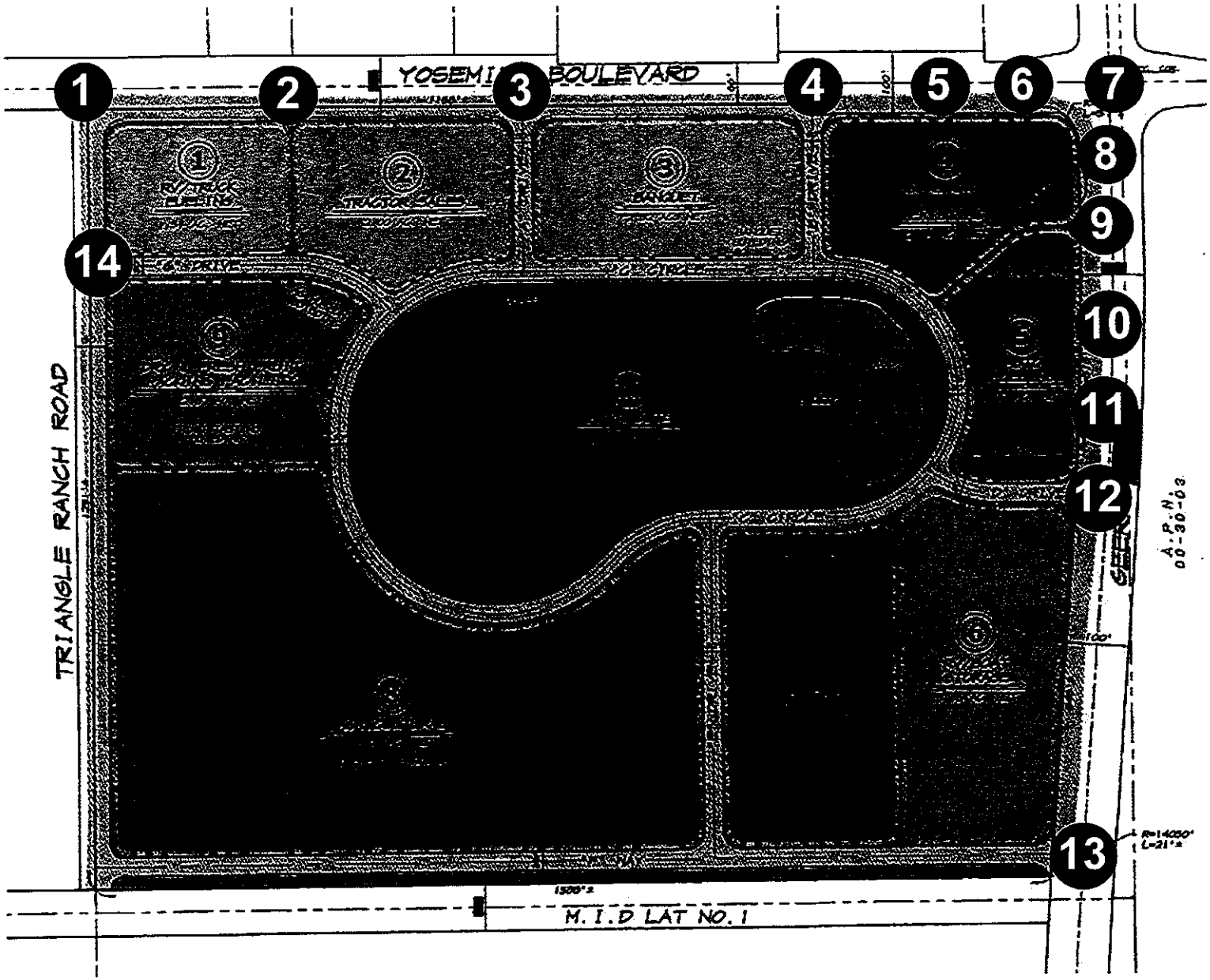
TABLE 2
ROADWAY SEGMENT LEVEL OF SERVICE DEFINITIONS

Street Classification	Lanes	Daily Traffic Volume at LOS			
		B (v/c < 0.45)	C (v/c<0.60)	D (v/c < 0.90)	E (v/c <1.00)
Collector	2	5,800	7,700	11,600	12,900
Arterial	2	7,000	9,200	13,700	15,450
	4	15,000	20,100	30,200	33,200
Expressway	4	16,200	21,600	32,400	36,000
	6	23,400	31,200	46,800	52,000

Existing Traffic Volumes

New a.m. and p.m. peak hour intersection turning movement counts were used to evaluate existing traffic conditions. New turning movement count data was collected at the study intersections during the first full week of September 2007. Midweek average daily traffic averages 8,880 vpd along Yosemite Blvd between Empire and Geer Road while between Geer Road and Waterford the ADT averages 11,450 vpd. Weekend traffic averages 6,540 vpd west of Geer Road and 8,810 vpd east of Geer Road. Midweek ADT volume data along Geer Road averages 14,110 vpd while weekend ADT averages 10,970 vpd.

Figure 3 illustrates the study intersection index while Figure 4 displays existing peak hour used for this analysis, as well as the current geometric configuration of study intersections.



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STUDY INTERSECTION INDEX

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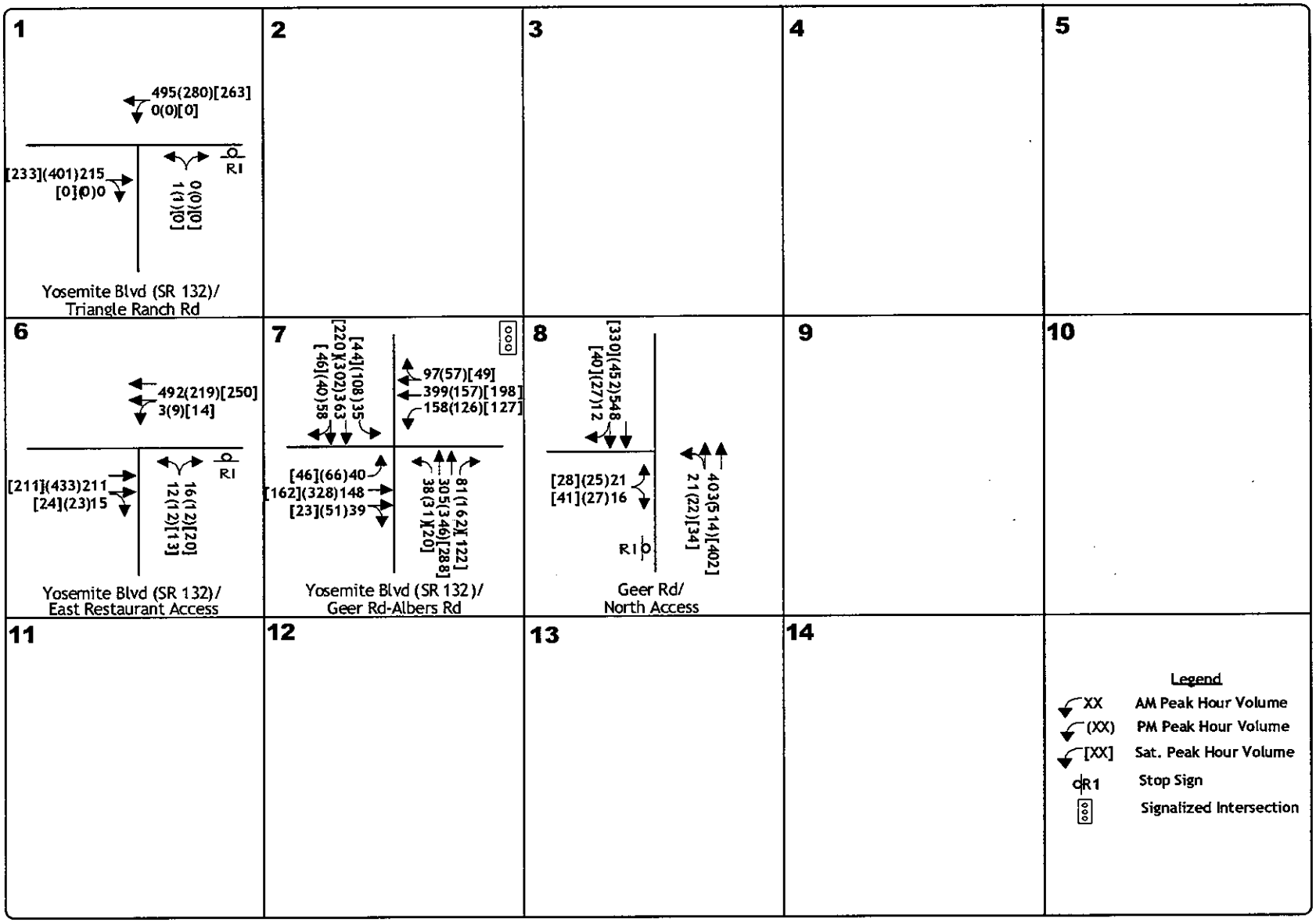
figure 3



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EXISTING TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

figure 4

Levels of Service Based on Daily Traffic Volumes. Table 3 identifies current daily traffic volumes and accompanying Levels of Service on study area roadways. Yosemite Blvd, west of Geer Road currently operates at LOS C conditions while east of Geer Road the segment operates at LOS D conditions. Geer Road, south of Yosemite Blvd currently operates at LOS E.

TABLE 3
EXISTING LEVELS OF SERVICE BASED ON DAILY TRAFFIC VOLUMES

Street	Location		Class	Lanes	Daily Volume	LOS
	From	To				
Yosemite Blvd	Empire	Geer Road	Arterial	2	8,880	C
(SR 132)	Geer Road	Waterford	Arterial	2	11,450	D
Geer Road	Yosemite Blvd (SR 132)	Hatch Road	Arterial	2	14,110	E

Existing Levels of Service

Intersection Levels of Service. Table 4 summarizes the results of Level of Service calculations completed for each study intersection. In addition, the two main driveway access points to the site were evaluated. Level of Service calculations are provided in the Appendix.

All study intersections currently operate at LOS B conditions or better. The longest delays occur at the Yosemite Blvd (SR 132) / Geer Road – Albers Road intersection, and this intersection operates at LOS B.

TABLE 4
EXISTING INTERSECTION LEVELS OF SERVICE

Intersection	Traffic Control	AM Peak Hour Existing		PM Peak Hour Existing	
		LOS	Average Delay	LOS	Average Delay
1. Yosemite Blvd (SR 132) / Triangle Ranch Rd					
overall	NB Stop	A	0.0	A	0.0
WB left turn		B	14.8	B	14.4
NB		A	0.0	A	0.0
6. Yosemite Blvd (SR 132) / Fruit Yard Access					
overall	NB Stop	A	0.4	A	0.5
NB		B	10.2	B	12.0
WB left turn		A	0.2	A	1.0
7.Yosemite Blvd (SR 132)/ Geer Rd	Signal	B	18.6	B	17.7
8. Geer Road / Fruit Yard Access					
overall	EB Stop	A	0.7	A	0.9
NB left turn		A	1.4	A	1.2
EB		B	14.4	B	13.8

Non-Automobile Transportation

Transit System. Stanislaus County's public transit system includes a fixed-route bus service as well as a "runabout' service between Waterford and Modesto. The runabout service operates Monday through Saturday between 6:45 a.m. and 6:40 p.m. Three runs are made daily eastbound while four runs are made westbound. Headways are approximately 3 hours.

Bicycle and Pedestrian System. In general, facilities for bicycles and pedestrians may be installed as development occurs in Stanislaus County. Yosemite Blvd (SR 132), in the project vicinity, is identified as a low-cost bicycle facility. These are projects that can be developed by signing and striping existing roadways.

EXISTING PLUS PROJECT IMPACTS

Trip Generation

The development of this project will attract additional traffic to the project site. The amount of additional traffic on a particular section of the street network is dependent upon two factors:

- Trip Generation, the number of new trips generated by the project, and
- Trip Distribution and Assignment, the specific routes that the new traffic takes.

Trip generation is determined by identifying the type and size of land use being developed. Recognized sources of trip generation data may then be used to calculate the total number of trip ends.

The project is assumed to include new land uses as well as relocation of existing land uses. The site will be constructed in three phases. Phase One includes addition of a banquet facility west of the existing restaurant. Phase Two will add the RV campground and RV storage facility in the southeast corner of the site. Phase Three will relocate the existing gas station to the south, relocate the existing card-lock gas station to the northwest quadrant of the site while adding a tractor sales facility and fruit packing / warehousing facility; both of these new buildings will be constructed in the northwest quadrant, adjacent to the card-lock facility. In addition, a retail store will be constructed at the existing gas station location.

Traffic generation for new land uses were developed based on various methodologies. If available, trip generation for the new uses were computed using trip generation rates published in *Trip Generation* (Institute of Transportation Engineers, 7th Edition, 2003). If unavailable, trip generators resembling the proposed land uses were used to estimate project traffic. SANDAG (San Diego Trip Generators) was also consulted to determine if similar uses were developed.

Trip generation rates and/or similar uses were unavailable for the proposed banquet land use. The banquet land use will provide 144 parking stalls. During the mid-week it was assumed that a single event would occur during the p.m. peak hour. During the weekend it was assumed that two events per day could occur. In each case, all of the 144 parking stalls was assumed used, creating the projected peak hour trips.

Trips generated by commercial / retail projects fit into two categories. Some trips will be made by patrons who would not otherwise be on the local street system and who go out of their way to reach the site. These are "new" trips. Other trips will be made by patrons who are already driving by the site and simply interrupt a trip already being made to other destinations. These are 'pass-by', or diverted trips. For the Specialty Retail land use a pass-by rate of 15% was used along with a 5% internal capture. These figures are outlined in the Caltrans "Guide for the Preparation of Traffic Impact Studies." Pass by trips were not considered for the remaining new uses.

Table 5 presents a.m. and p.m. peak hour trip generation estimates for the project. Build-out of the development area is expected to result in about 68 a.m. peak hour trips, 238 p.m. peak hour trips and 219 Saturday peak hour trips.

After accounting for the pass-by traffic and the internally captured trips, the project is expected to generate 67 new a.m. peak hour trips, 235 new p.m. peak hour trips and 216 new Saturday peak hour trips.

Truck traffic is expected to vary with the new land uses. For the warehouse / fruit packing and RV land uses 80% of the traffic was assumed to be truck or trailered vehicle traffic. For the tractor sales land use 20% of the traffic was assumed to be trailered vehicles.

TABLE 5
PROJECT TRIP GENERATION

Land Use	Size	Trip Rates				Trips			
		Daily	AM	PM	Saturday	Daily	AM	PM	Saturday
Phase 1 Development									
Banquet Facility[1]	144	2	0	1	1	288	0	144	144
Phase 2 Development									
RV Park	75	3.05	0.20	0.37	0.60	229	15	28	45[5]
RV Storage[2]	3.36	38.87	2.80	3.83	6.53	131	9	13	22
Total Phase 2 Trips						360	24	41	67
Phase 3 Development									
Tractor Sales[3]	10 ksf	33.34	2.05	2.64	2.97	333	21	26	30
Fruit Packing / Warehouse	35 ksf	4.96	0.45	0.47	0.12	174	16	16	4
Specialty Retail	4.1 ksf	44.32	1.71[4]	2.71	2.57	182	7	11	11
Pass-By Trips - Specialty Retail (15%)						(27)	(1)	(2)	(2)
Internal Reduction (5%)						(9)	(0)	(1)	(1)
Total Phase 3 Trips						653	43	50	42
Net New Trips						1,301	67	235	216

[1] parking stalls

[2] LU 151 (mini-warehouse) used

[3] LU 841 (new car sales) used

[4] 25% of peak AM generator used

[5] LU 413 (Picnic Sites) used for Saturday RV Park rate

ksf – thousand square feet

volumes rounded

Trip Distribution

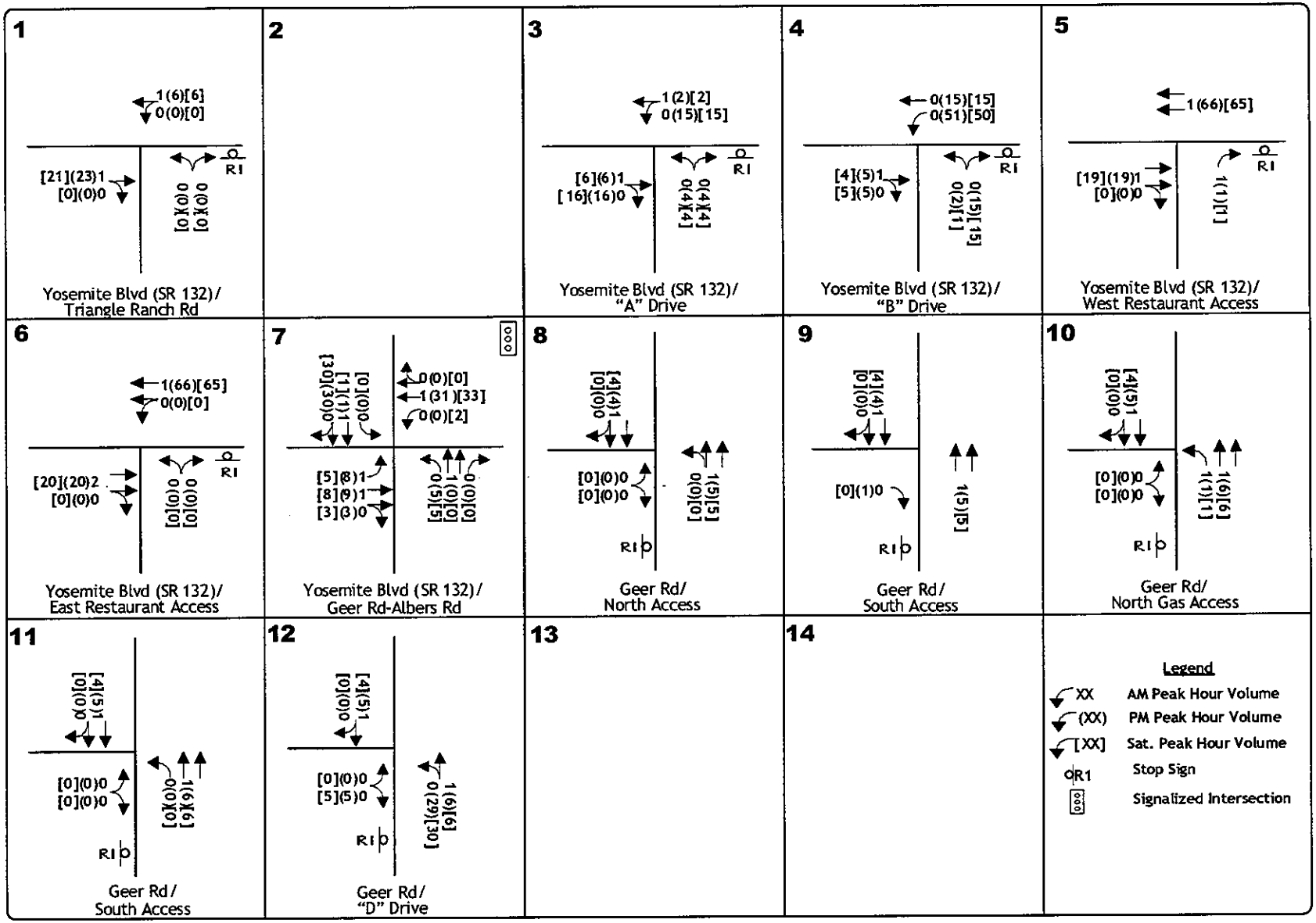
The distribution of project traffic was determined based on review of existing traffic counts, the travel patterns in the area and the projected market base for the retail store. Project trips are expected to be oriented roughly evenly along all four directions. Table 6 provides the projected trip distribution for the project for the peak periods.

TABLE 6
PROJECT TRIP DISTRIBUTION

Route	AM	PM	Saturday
West on Yosemite Blvd (SR 132)	21%	19%	18%
East on Yosemite Blvd (SR 132)	26%	26%	26%
North on Albers Road	25%	26%	26%
South on Geer Road	28%	30%	30%
Total	**100%**	**100%**	**100%**

Trip Assignment

Traffic generated by the project is shown in Figures 5, 6, 7A and 7B, representing Phase 1 development, Phases 1 and 2 development and Phases 1 through 3 fully developed. Figure 7B presents an alternative trip assignment for 2030 with limited access allowed along Yosemite Blvd (SR 132) and Geer Road. Project traffic for the various phases was incrementally added to the existing peak hours based on the distribution percentages. Year 2012 and 2030 scenarios assumed that full buildout, i.e. Phases 1, 2 and 3, are completed.



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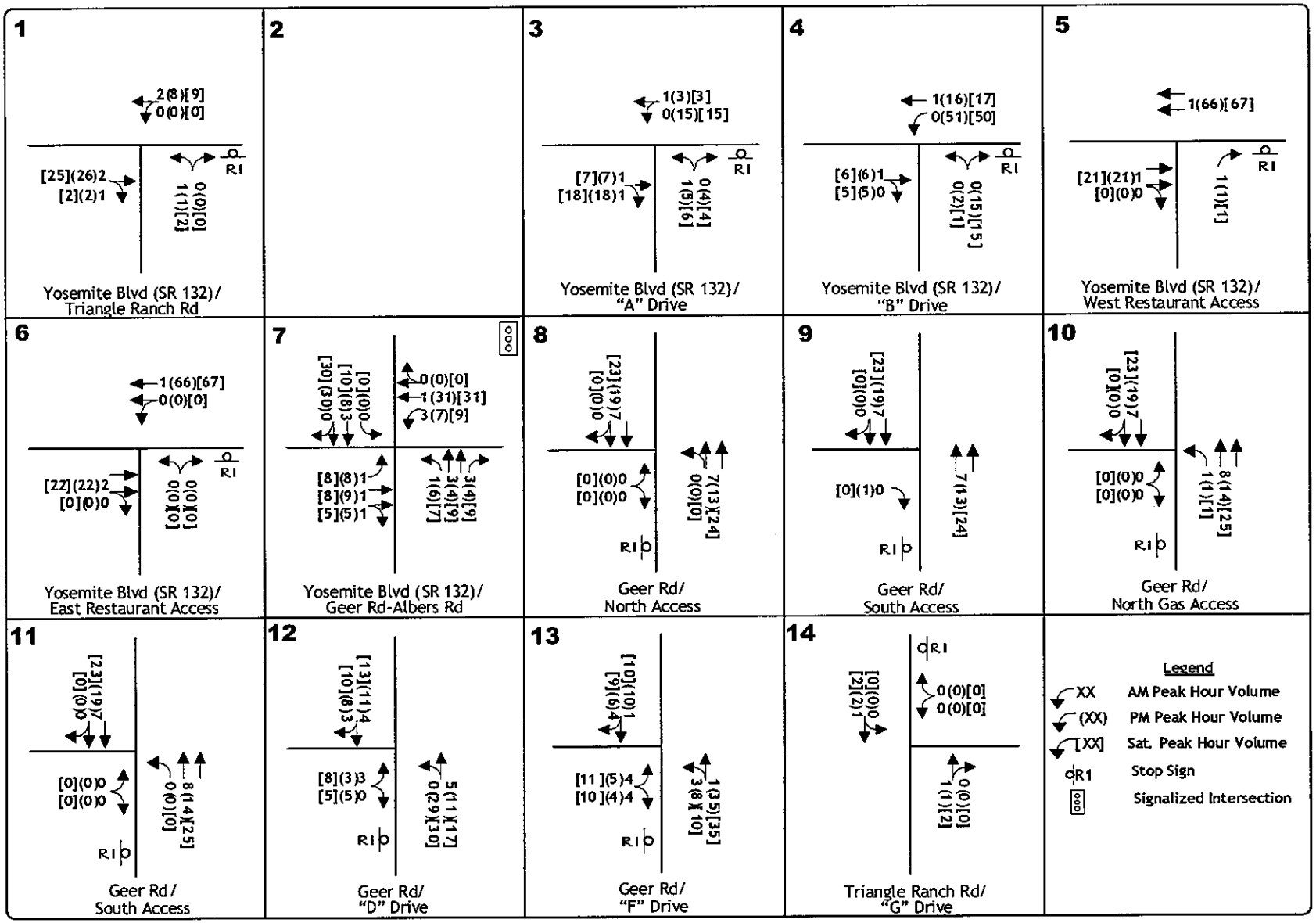
PROJECT ONLY PHASE 1
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

3408-01 REV 1.VSD 12/3/2007

figure 5



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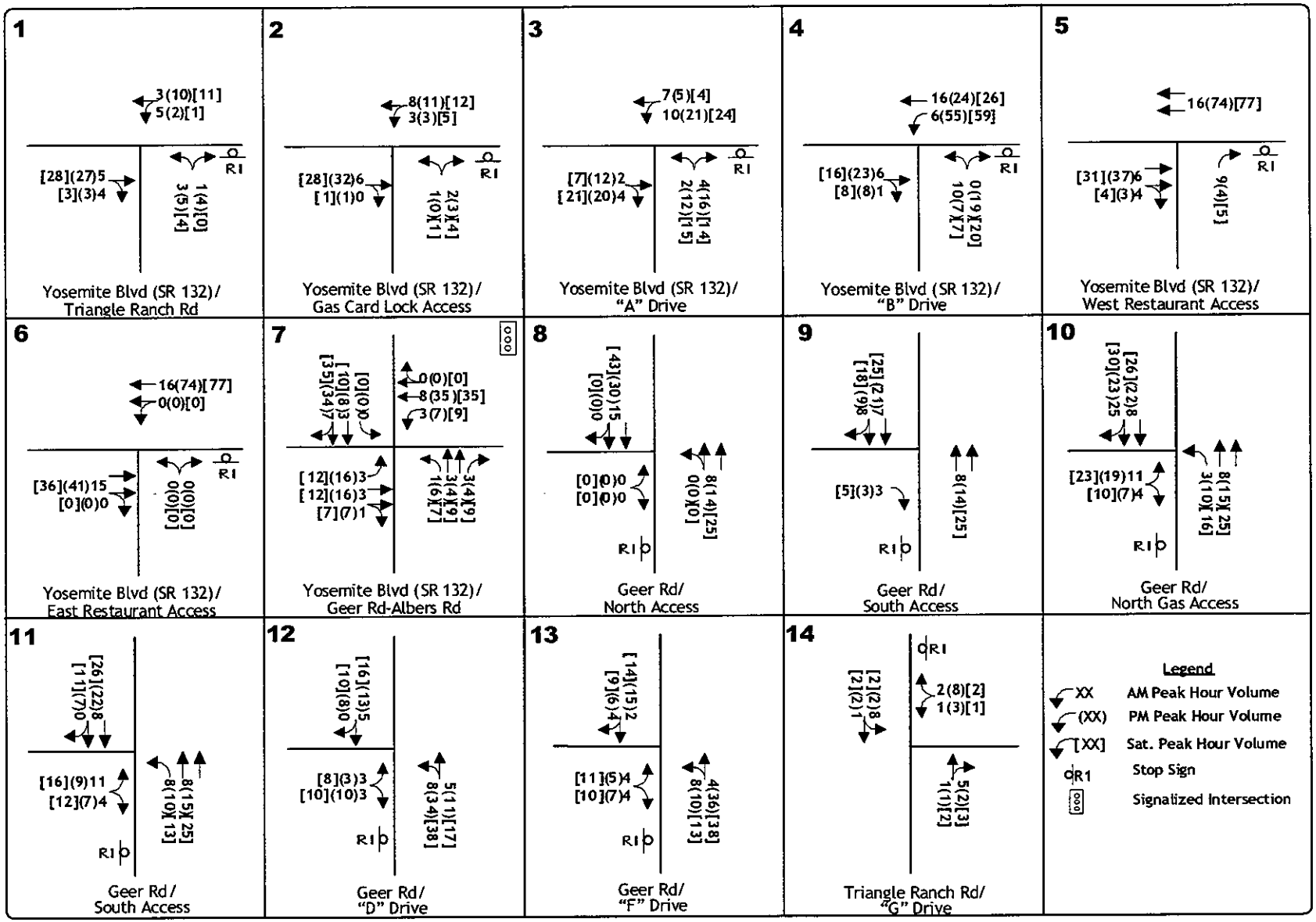
PROJECT ONLY PHASE 1& 2
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

3408-01 REV 1.VSD 12/3/2007

figure 6



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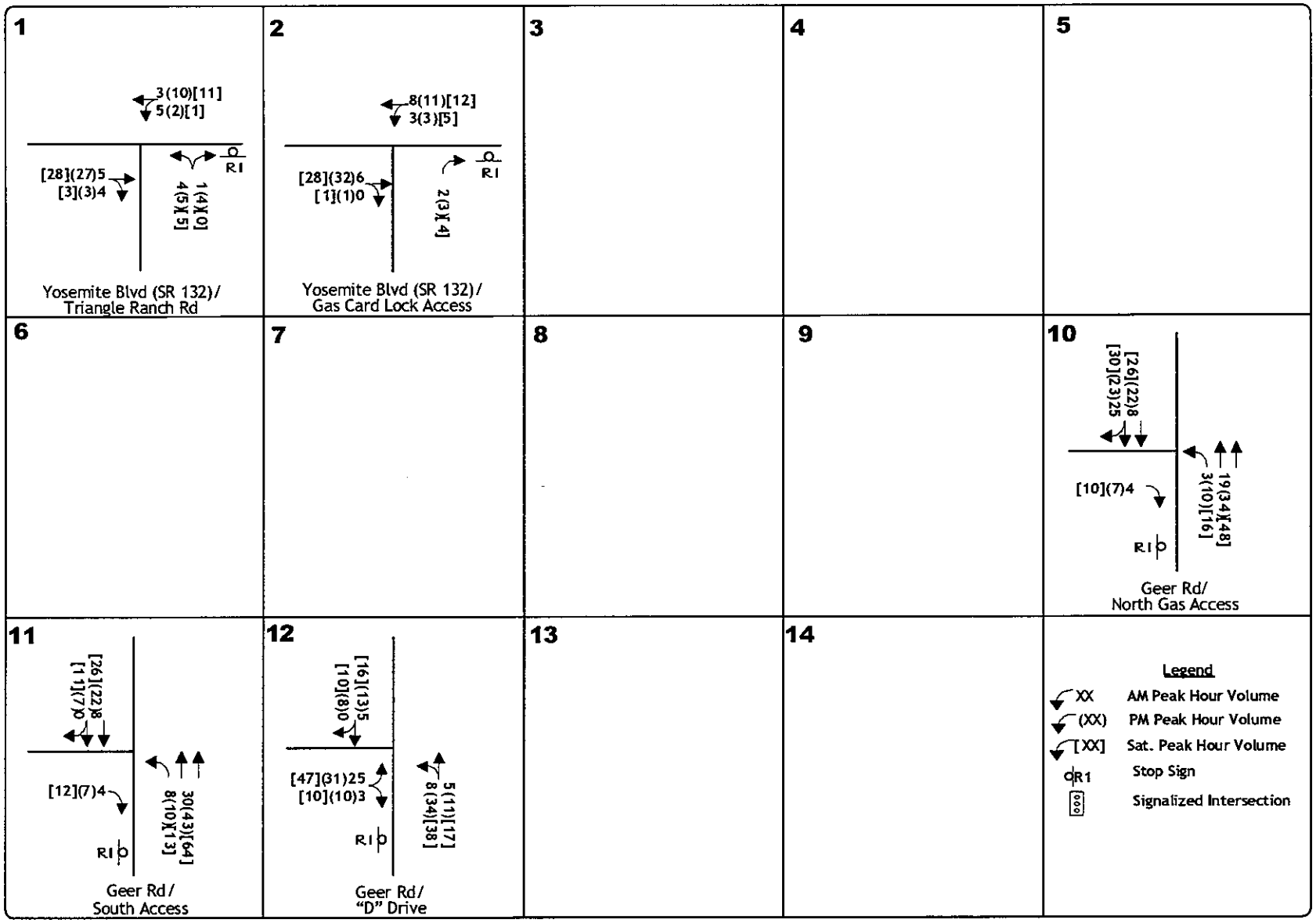
PROJECT ONLY PHASE 1, 2 &3
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

3408-01 REV 1.VSD 12/3/2007

figure 7A



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PROJECT TRAFFIC-LIMITED ACCESS ALTERNATIVE (YEAR 2030)
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

3408-01 REV 1.VSD 12/3/2007

figure 7B

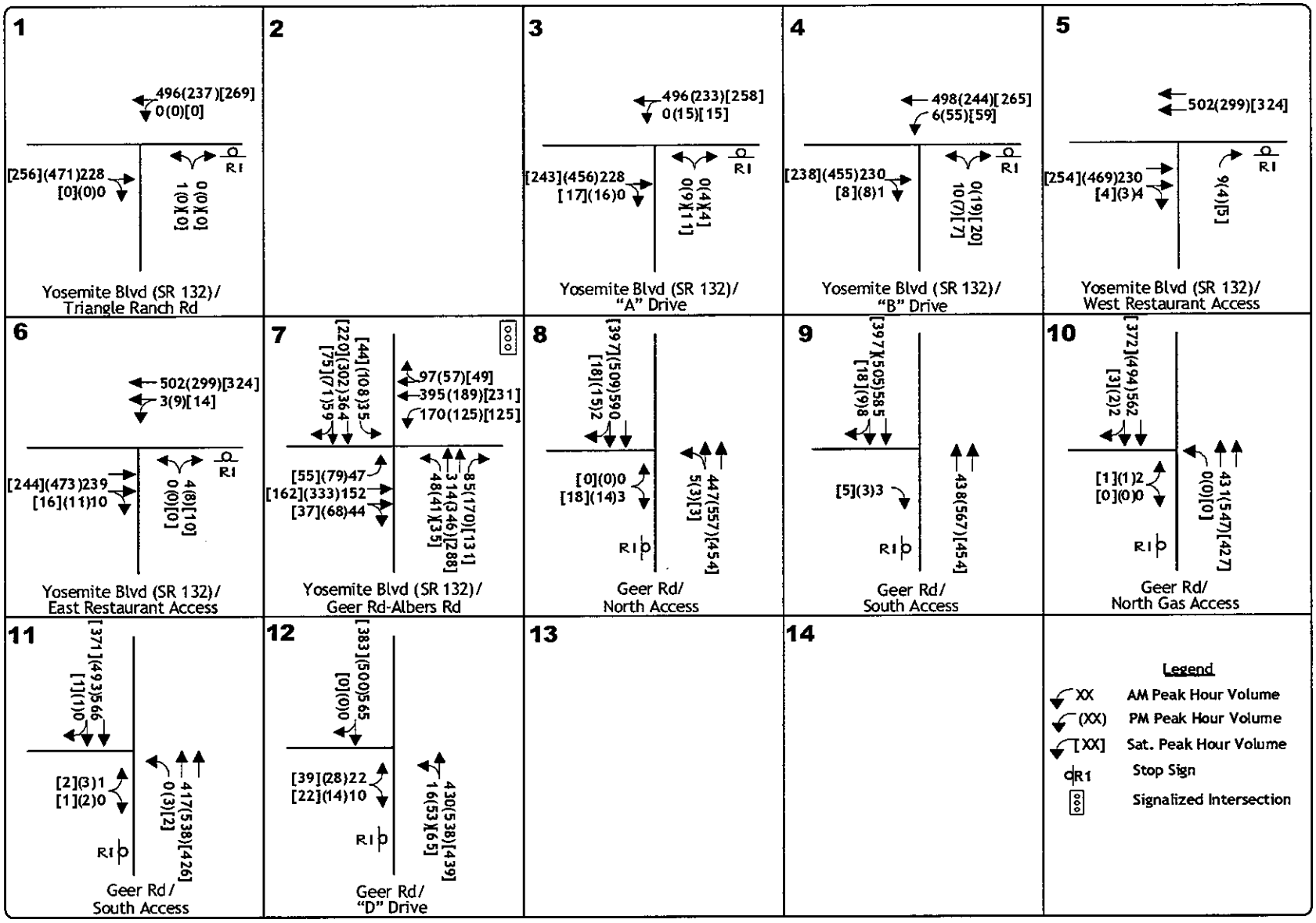
Existing Plus Phase 1 Conditions

The impacts of developing Phase 1 have been identified by superimposing Phase 1 project traffic onto Year 2007 background conditions. Resulting intersection Levels of Service were then calculated and used as the basis for evaluating potential project impacts.

Intersection Levels of Service. Figure 8 displays the "Existing Plus Phase 1" traffic volumes while Table 7 presents the a.m. and p.m. peak hour Levels of Service at each study intersection with and without the project. All intersections will continue to operate at LOS C conditions or better.

Daily Traffic Volumes Levels of Service. Table 8 summarizes the roadway segment Levels of Service based on the current daily traffic volumes on study area roads and the Phase 1 traffic. Daily roadway traffic is expected to increase along Yosemite Blvd west of the project by about 60 vehicles and by about 70 vehicles east of Geer Road. Traffic along Geer Road is projected to increase by about 90 vehicles.

The level of service along Yosemite Blvd will continue to be LOS C between Empire and Geer Road and LOS D from Geer Road toward Waterford. Geer Road will continue to operate at LOS E conditions south of Yosemite Blvd.



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EXISTING PLUS PROJECT PHASE 1
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

3408-01 REV 1.VSD 12/3/2007

figure 8

TABLE 7
PEAK HOUR INTERSECTION LEVELS OF SERVICE
EXISTING PLUS PHASE 1 CONDITIONS

Location	Control	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay
1.Yosemite Blvd (SR 132) / Triangle Ranch Rd	NB Stop						
overall		A	0.0	---	---	---	---
WB left turn		C	15.0	---	---	---	---
NB		---	---	---	---	---	---
2.Yosemite Blvd (SR 132) / Card Lock Access	NB Stop						
overall		N/A	N/A	N/A	N/A	N/A	N/A
WB left turn							
NB							
3. Yosemite Blvd (SR 132) / A Dr	NB Stop						
overall		---	---	A	0.5	A	0.6
WB left turn		---	---	B	14.4	B	12.1
NB		---	---	A	0.7	A	0.5
4. Yosemite Blvd (SR 132) / B Dr	NB Stop						
overall		A	0.2	A	1.1	A	1.4
WB left turn		B	11.8	B	13.0	B	10.7
NB		A	0.2	A	3.0	A	2.7
5. Yosemite Blvd (SR 132) / Restaurant Access	NB Stop						
overall		A	0.1	A	0.1	A	0.1
NB		A	9.0	A	9.9	A	9.1
6. Yosemite Blvd (SR 132) / Fruit Yard Access	NB Stop						
overall		A	0.1	A	0.2	A	0.3
NB		A	9.1	A	10.0	A	9.1
WB left turn		A	0.2	A	0.8	A	1.0
7.Yosemite Blvd (SR 132)/ Geer Rd	Signal	B	21.7	B	17.6	B	15.7
8. Geer Road / Fruit Yard Access							
overall	EB Stop	A	0.1	A	0.2	A	0.2
NB left turn		A	0.3	A	0.2	A	0.2
EB		A	9.7	A	9.7	A	9.7
9. Geer Rd / North of Fruit Stand	EB Stop						
overall		A	0.0	A	0.0	A	0.1
EB		A	9.7	A	9.6	A	9.7
10. Geer Rd / New Gas North Access	EB Stop						
overall		A	0.0	A	0.0	A	0.0
EB		A	0.2	A	0.0	A	0.0
NB left turn		B	12.4	B	12.1	B	11.2
11. Geer Rd / New Gas South Access	EB Stop						
overall		A	0.0	A	0.1	A	0.1
EB		---	---	A	0.2	A	0.1
NB left turn		B	12.5	B	11.3	B	10.6

N/A - no side street traffic --- available movement, no traffic recorded in peak hour

TABLE 7 (cont'd)
PEAK HOUR INTERSECTION LEVELS OF SERVICE
EXISTING PLUS PHASE 1 CONDITIONS

Location	Control	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay
12. Geer Rd / D Dr	EB Stop						
overall		A	0.3	A	1.3	A	1.8
EB		A	0.5	A	1.5	A	1.7
NB left turn		B	10.1	B	14.3	B	13.3
13. Geer Rd /F Way	EB Stop						
overall							
EB		N/A	N/A	N/A	N/A	N/A	N/A
NB left turn							
14. Triangle Ranch Rd / G Dr	EB Stop						
overall							
WB		N/A	N/A	N/A	N/A	N/A	N/A
SB left turn							

N/A - no side street traffic --- available movement, no traffic recorded in peak hour

TABLE 8
EXISTING PLUS PHASE 1 CONDITIONS
ROADWAY SEGMENT LEVELS OF SERVICE

Roadway	Location		Standard		Existing Conditions		Existing + Phase 1 Project Conditions	
	From	To	LOS	Daily Volume Threshold	LOS	Daily Volume	LOS	Daily Volume
Yosemite Blvd	Empire	Geer Road	D	13,700	C	8,880	C	8,940
(SR 132)	Geer Road	Waterford	D	13,700	D	11,450	D	11,520
Geer Road	Yosemite Blvd (SR 132)	Hatch Road	C	9,200	E	14,110	E	14,200

Source: Stanislaus County Circulation Element

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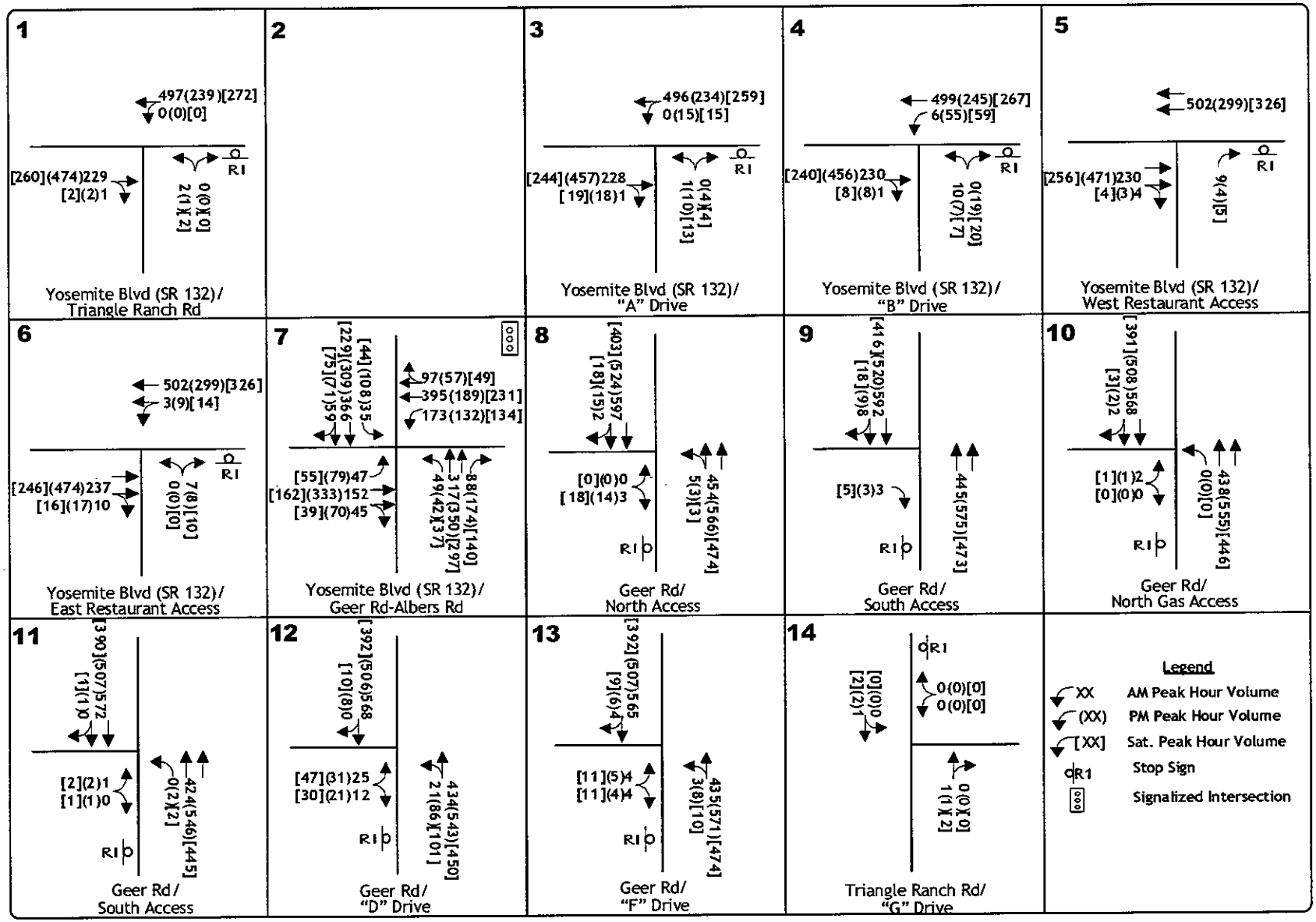
Existing Plus Phases 1 and 2 Conditions

The impacts of developing Phases 1 and 2 have been identified by superimposing this project traffic onto Year 2007 background conditions. Resulting intersection Levels of Service were then calculated and used as the basis for evaluating potential project impacts.

Intersection Levels of Service. Figure 9 displays the "Existing Plus Phases 1 and 2" traffic volumes while Table 9 displays the a.m. and p.m. peak hour Levels of Service at each study intersection with and without the project. All intersections will continue to operate at LOS C conditions or better.

Daily Traffic Volumes Levels of Service. Table 10 summarizes the roadway segment Levels of Service based on the current daily traffic volumes on study area roads and Phase 1 and 2 traffic. Daily roadway traffic is expected to increase along Yosemite Blvd west of the project by about 130 vehicles and by about 170 vehicles east of Geer Road. Traffic along Geer Road is projected to increase by about 180 vehicles.

The level of service along Yosemite Blvd will continue to be LOS C between Empire and Geer Road and LOS D from Geer Road toward Waterford. Geer Road will continue to operate at LOS E conditions south of Yosemite Blvd.



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EXISTING PLUS PROJECT PHASE 1& 2
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

3408-01 REV 1.VSD 12/3/2007

figure 9

TABLE 9
PEAK HOUR INTERSECTION LEVELS OF SERVICE
EXISTING PLUS PHASES 1 & 2 CONDITIONS

Location	Control	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay
1.Yosemite Blvd (SR 132) / Triangle Ranch Rd	NB Stop						
overall		A	0.0	A	0.0	A	0.0
WB left turn		C	18.5	C	18.1	B	14.8
NB		---	---	---	---	---	---
2.Yosemite Blvd (SR 132) / Card Lock Access	NB Stop						
overall		N/A	N/A	N/A	N/A	N/A	N/A
WB left turn							
NB							
3. Yosemite Blvd (SR 132) / A Dr	NB Stop						
overall		A	0.0	A	0.5	A	0.6
WB left turn		C	16.4	B	14.6	B	12.3
NB		---	0.0	A	0.7	A	0.5
4. Yosemite Blvd (SR 132) / B Dr	NB Stop						
overall		A	0.2	A	1.1	A	1.4
WB left turn		B	11.4	B	13.0	B	10.7
NB		A	0.2	A	3.0	A	2.7
5. Yosemite Blvd (SR 132) / Restaurant Access	NB Stop						
overall		A	0.1	A	0.1	A	0.1
NB		A	9.0	A	9.9	A	9.1
6. Yosemite Blvd (SR 132) / Fruit Yard Access	NB Stop						
overall		A	0.1	A	0.2	A	0.3
NB		A	9.1	A	10.0	A	9.1
WB left turn		A	0.2	A	0.8	A	1.0
7.Yosemite Blvd (SR 132)/ Geer Rd	Signal	B	18.1	B	19.5	B	17.1
8. Geer Road / Fruit Yard Access							
overall	EB Stop	A	0.1	A	0.1	A	0.2
NB left turn		A	0.3	A	0.2	A	0.2
EB		A	9.7	A	9.7	A	9.8
9. Geer Rd / North of Fruit Stand	EB Stop						
overall		A	0.0	A	0.0	A	0.1
EB		A	9.7	A	9.6	A	9.7
10. Geer Rd / New Gas North Access	EB Stop						
overall		A	0.0	A	0.0	A	0.0
EB		A	0.0	A	0.0	A	0.0
NB left turn		B	12.4	B	12.2	B	11.4
11. Geer Rd / New Gas South Access	EB Stop						
overall		A	0.3	A	0.1	A	0.1
EB		A	0.6	A	0.2	A	0.1
NB left turn		B	12.0	B	11.5	B	10.8

N/A - no side street traffic --- available movement, no traffic recorded in peak hour

TABLE 9 (cont'd)
PEAK HOUR INTERSECTION LEVELS OF SERVICE
EXISTING PLUS PHASES 1 & 2 CONDITIONS

Location	Control	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay
12. Geer Rd / D Dr	EB Stop						
overall		A	1.1	A	3.1	A	3.8
EB		A	1.1	A	4.0	A	3.9
NB left turn		C	17.8	C	22.7	C	22.2
13. Geer Rd /F Way	EB Stop						
overall		A	0.2	A	0.3	A	0.5
EB		A	0.2	A	0.4	A	0.4
NB left turn		C	16.1	C	15.8	B	14.0
14. Triangle Ranch Rd / G Dr	EB Stop						
overall							
WB		N/A	N/A	N/A	N/A	N/A	N/A
SB left turn							

N/A - no side street traffic --- available movement, no traffic recorded in peak hour

TABLE 10
EXISTING PLUS PHASES 1 & 2 CONDITIONS
ROADWAY SEGMENT LEVELS OF SERVICE

Roadway	Location		Standard		Existing Conditions		Existing + Phase 1 Project Conditions	
	From	To	LOS	Daily Volume Threshold	LOS	Daily Volume	LOS	Daily Volume
Yosemite Blvd	Empire	Geer Road	D	13,700	C	8,880	C	9,010
(SR 132)	Geer Road	Waterford	D	13,700	D	11,450	D	11,620
Geer Road	Yosemite Blvd (SR 132)	Hatch Road	C	9,200	E	14,110	E	14,290

Source: Stanislaus County Circulation Element

200

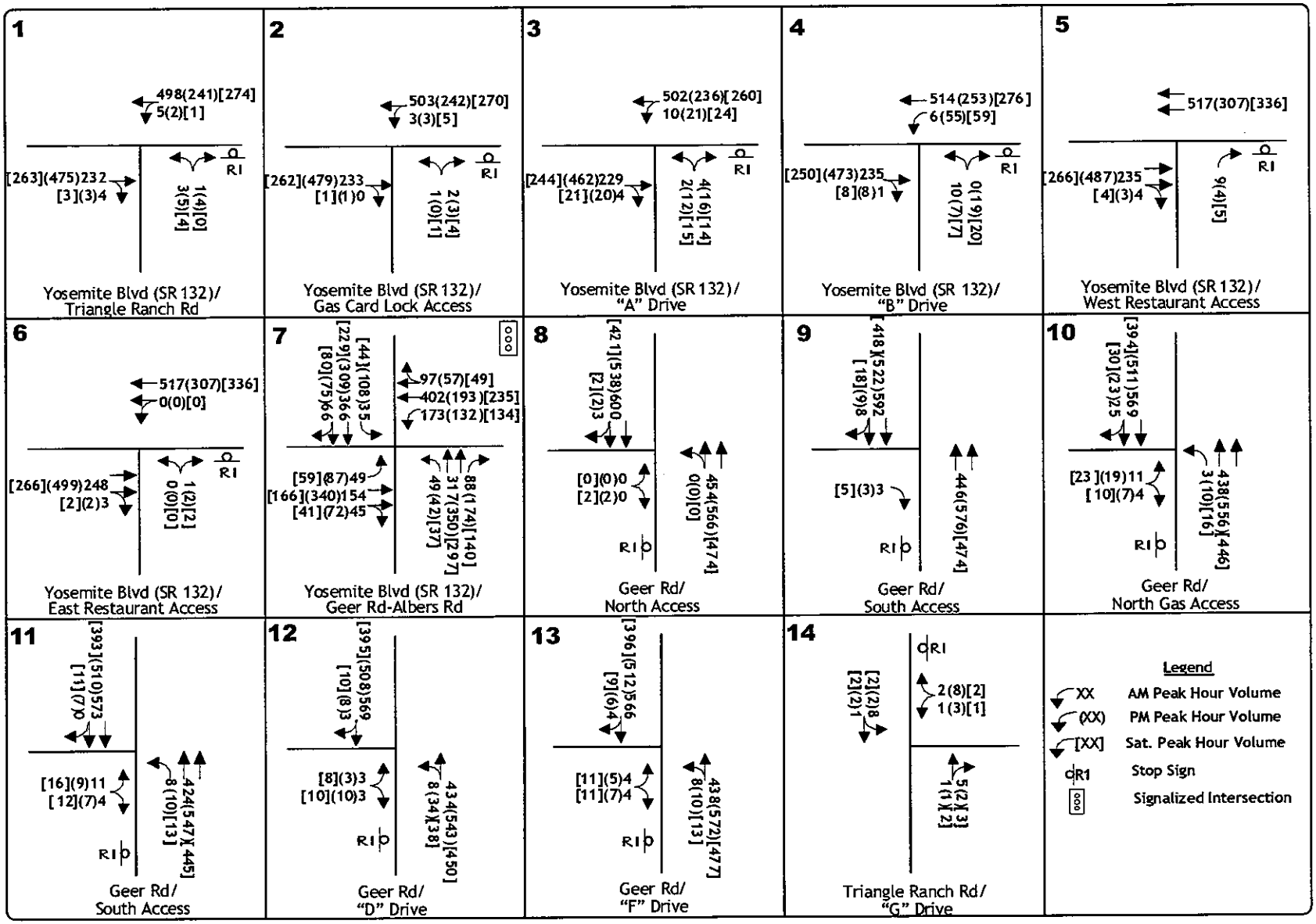
Existing Plus Phases 1, 2 and 3 Conditions

The impacts of developing the entire project, Phases 1, 2 and 3, were identified by superimposing this project traffic onto Year 2007 background conditions. Resulting intersection Levels of Service were then calculated and used as the basis for evaluating potential project impacts.

Intersection Levels of Service. Figure 10 displays the "Existing Plus Phases 1, 2 and 3" traffic volumes while Table 11 displays the a.m. and p.m. peak hour Levels of Service at each study intersection with and without the project. All intersections will continue to operate at LOS C conditions or better.

Daily Traffic Volumes Levels of Service. Table 12 summarizes the roadway segment Levels of Service based on the current daily traffic volumes on study area roads and the traffic generated by the entire project. Daily roadway traffic is expected to increase along Yosemite Blvd west of the project by about 270 vehicles and by about 340 vehicles east of Geer Road. Traffic along Geer Road is projected to increase by about 380 vehicles.

The level of service along Yosemite Blvd will continue to be LOS C between Empire and Geer Road and LOS D from Geer Road toward Waterford. Geer Road will continue to operate at LOS E conditions south of Yosemite Blvd.



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EXISTING PLUS PROJECT PHASE 1, 2 &3
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

3408-01 REV 1.VSD 12/3/2007

figure 10

TABLE 11
PEAK HOUR INTERSECTION LEVELS OF SERVICE
EXISTING PLUS PHASES 1, 2 & 3 CONDITIONS

Location	Control	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay
1.Yosemite Blvd (SR 132) / Triangle Ranch Rd	NB Stop						
overall		A	0.2	A	0.2	A	0.1
WB left turn		C	16.9	C	16.4	C	15.0
NB		A	0.2	A	0.1	---	---
2.Yosemite Blvd (SR 132) / Card Lock Access	NB Stop						
overall		A	0.1	A	0.1	A	0.2
WB left turn		B	12.4	B	11.9	B	10.9
NB		A	0.1	A	0.1	A	0.2
3. Yosemite Blvd (SR 132) / A Dr	NB Stop						
overall		A	0.3	A	0.8	A	1.0
WB left turn		B	12.1	B	13.9	B	11.8
NB		A	0.2	A	0.9	A	0.8
4. Yosemite Blvd (SR 132) / B Dr	NB Stop						
overall		A	0.2	A	1.1	A	1.3
WB left turn		B	11.5	B	13.2	B	10.8
NB		A	0.2	A	3.0	A	2.7
5. Yosemite Blvd (SR 132) / Restaurant Access	NB Stop						
overall		A	0.1	A	0.0	A	0.1
NB		A	9.1	A	9.9	A	9.1
6. Yosemite Blvd (SR 132) / Fruit Yard Access	NB Stop						
overall		A	0.0	A	0.0	A	0.0
NB		A	9.1	A	10.0	A	9.1
WB left turn		A	0.0	A	0.0	A	0.0
7.Yosemite Blvd (SR 132)/ Geer Rd	Signal	B	18.3	B	19.6	B	17.4
8. Geer Road / Fruit Yard Access							
overall	EB Stop	A	0.0	A	0.0	A	0.0
NB left turn		A	0.0	A	0.0	A	0.0
EB		A	0.0	A	9.7	A	9.7
9. Geer Rd / North of Fruit Stand	EB Stop						
overall		A	0.0	A	0.0	A	0.1
EB		A	9.7	A	9.6	A	9.7
10. Geer Rd / New Gas North Access	EB Stop						
overall		A	0.2	A	0.4	A	0.6
EB		A	0.2	A	0.5	A	0.9
NB left turn		B	11.9	B	12.0	B	11.4
11. Geer Rd / New Gas South Access	EB Stop						
overall		A	0.3	A	0.3	A	0.5
EB		A	0.6	A	0.5	A	0.8
NB left turn		B	12.0	B	11.5	B	11.0

N/A - no side street traffic --- available movement, no traffic recorded in peak hour

KDA

TABLE 11 (cont'd)
PEAK HOUR INTERSECTION LEVELS OF SERVICE
EXISTING PLUS PHASES 1, 2 & 3 CONDITIONS

Location	Control	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay
12. Geer Rd / D Dr	EB Stop						
overall		A	0.3	A	1.0	A	1.1
EB		A	0.4	A	1.6	A	1.6
NB left turn		C	15.0	B	14.1	B	14.5
13. Geer Rd /F Way	EB Stop						
overall		A	0.3	A	0.4	A	0.6
EB		A	0.4	A	0.4	A	0.5
NB left turn		C	16.2	C	15.7	B	14.1
14. Triangle Ranch Rd / G Dr	EB Stop						
overall		A	4.6	A	6.0	A	3.3
WB		A	6.4	A	3.6	A	3.6
SB left turn		A	8.4	A	8.4	A	8.4

N/A - no side street traffic --- available movement, no traffic recorded in peak hour

TABLE 12
EXISTING PLUS PHASES 1, 2 & 3 CONDITIONS
ROADWAY SEGMENT LEVELS OF SERVICE

Roadway	Location		Standard		Existing Conditions		Existing + Phase 1 Project Conditions	
	From	To	LOS	Daily Volume Threshold	LOS	Daily Volume	LOS	Daily Volume
Yosemite Blvd	Empire	Geer Road	D	13,700	C	8,880	C	9,150
(SR 132)	Geer Road	Waterford	D	13,700	D	11,450	D	11,790
Geer Road	Yosemite Blvd (SR 132)	Hatch Road	C	9,200	E	14,110	E	14,490

Source: Stanislaus County Circulation Element

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YEAR 2012 IMPACTS

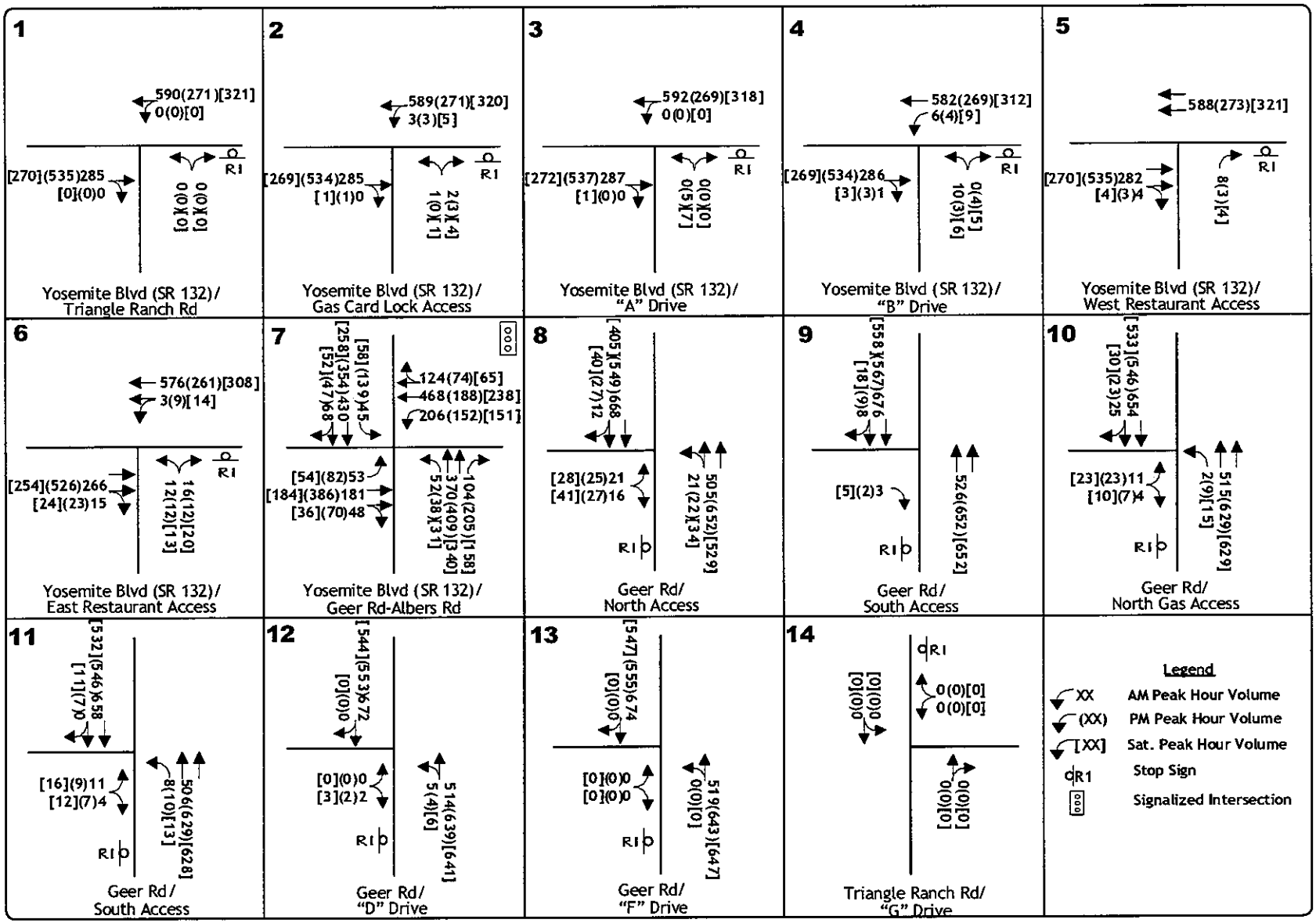
The analysis of the near term 2012 cumulative condition is intended to consider the impact of this project within the context of the conditions in 2012. Future traffic projections were obtained from the Stanislaus County Circulation Element. Straight-line interpolation was used to determine annual volume increases along the roadways. These increases were then annualized over a five-year period; Furness factoring was used to develop turning movement volumes at the study intersections.

Year 2012 Lane Configurations. Lane configurations along Yosemite Blvd and Geer Road – Albers Road are assumed to remain in their current configurations.

Intersection Levels of Service. Figure 11 displays the "2012" traffic volumes with the lane configurations for each study intersection while Figure 12 presents the "2012 plus Project" volumes. Table 13 displays the a.m., p.m. and Saturday peak hour Levels of Service at the Yosemite Blvd (SR 132) / Geer Road intersection without the project. This intersection will operate at LOS B conditions. Table 14 displays the levels of service with the project at each of the proposed project access intersections and the Yosemite Blvd (SR 132) / Geer Road intersection. All intersections will continue to operate at LOS C conditions or better.

Daily Traffic Volumes Levels of Service. Table 15 summarizes the roadway segment Levels of Service based on the projected 2012 daily traffic volumes on study area roads and the entire project traffic. Daily roadway traffic is expected to increase along both Yosemite Blvd and Geer Road. The level of service along Yosemite Blvd between Empire and Geer Road is projected to decline to LOS D conditions without the project, to 10,300 ADT. Addition of daily project traffic will increase the ADT to about 10,560 vpd; this will maintain a LOS D condition.

Yosemite Blvd, east of Geer Road is projected to decline to LOS E conditions, with about 13,900 vpd on the roadway. With the project added to the network this segment will remain at LOS E conditions, with about 14,230 ADT. Geer Road, south of the project, is projected to operate at LOS F conditions, with about 17,800 ADT on the roadway. Addition of project traffic will increase the ADT to 18,180 vpd and maintain the LOS F condition.



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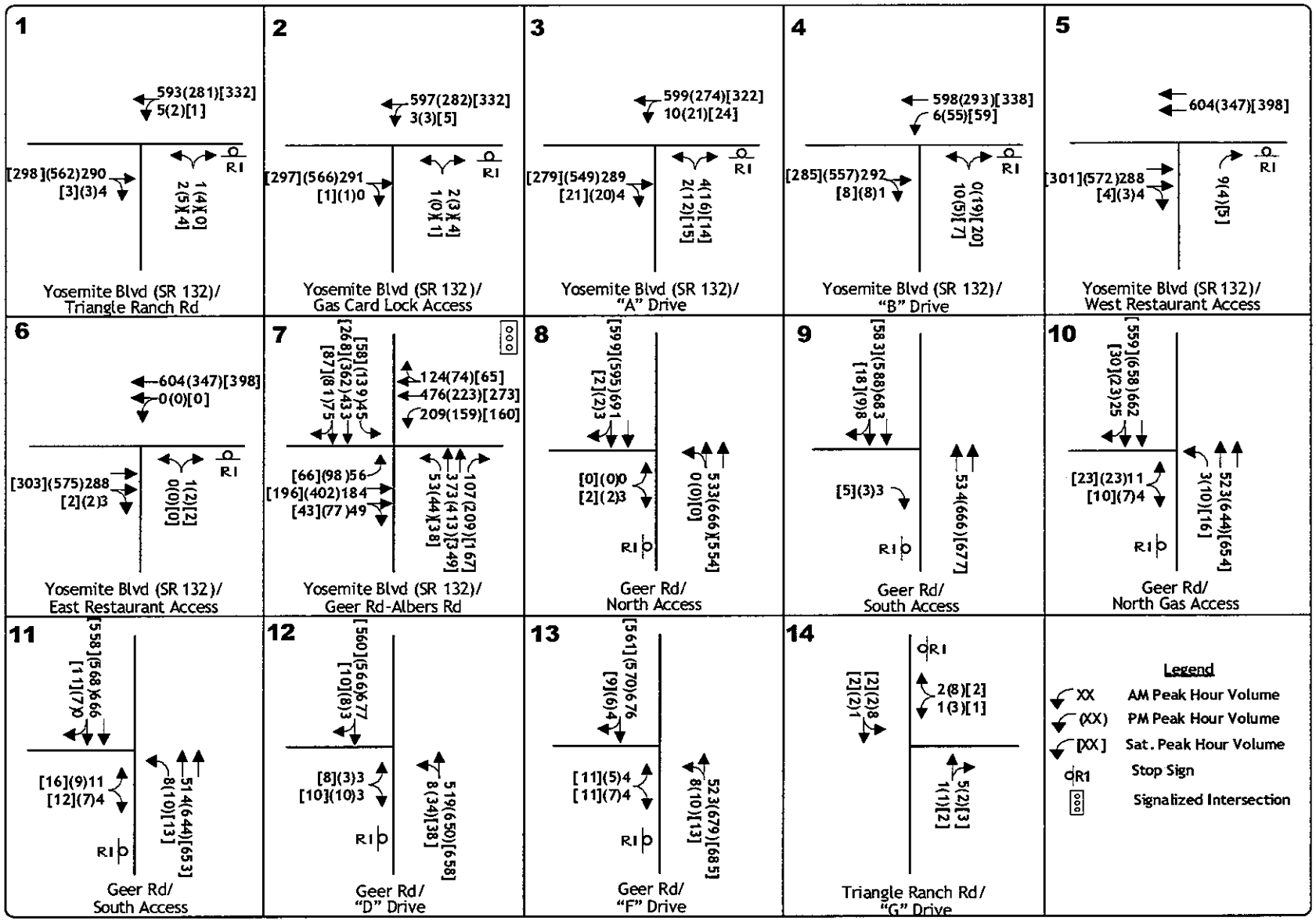
YEAR 2012 TRAFFIC VOLUMES AND LANE CONFIGURATIONS

figure 11



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YEAR 2012 PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

3408-01 REV 1.VSD 12/3/2007

figure 12

TABLE 13
PEAK HOUR INTERSECTION LEVELS OF SERVICE
2012 CONDITIONS

Location	Control	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay
1.Yosemite Blvd (SR 132)/ Geer Rd	Signal	B	19.1	B	22.0	B	15.2
6. Yosemite Blvd (SR 132) / Fruit Yard Access	NB Stop						
overall		A	0.4	A	0.5	A	0.7
NB		B	10.8	B	13.1	B	10.5
WB left turn		A	0.1	A	0.9	A	1.0
8. Geer Road / Fruit Yard Access							
overall	EB Stop	A	0.7	A	0.8	A	1.2
NB left turn		A	1.3	A	1.0	A	1.6
EB		C	17.5	C	16.4	B	13.8

TABLE 14
PEAK HOUR INTERSECTION LEVELS OF SERVICE
2012 PLUS PROJECT CONDITIONS

Location	Control	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay
1.Yosemite Blvd (SR 132) / Triangle Ranch Rd	NB Stop						
overall		A	0.2	A	0.2	A	0.1
WB left turn		C	19.1	C	18.9	C	16.9
NB		A	0.2	A	0.1	A	0.0
2.Yosemite Blvd (SR 132) / Card Lock Access	NB Stop						
overall		A	0.1	A	0.1	A	0.2
WB left turn		B	14.5	B	12.9	B	11.2
NB		A	0.1	A	0.1	A	0.2
3. Yosemite Blvd (SR 132) / A Dr	NB Stop						
overall		A	0.3	A	0.8	A	0.9
WB left turn		B	14.2	C	15.9	B	12.9
NB		A	0.2	A	0.9	A	0.8
4. Yosemite Blvd (SR 132) / B Dr	NB Stop						
overall		A	0.2	A	1.0	A	1.2
WB left turn		B	12.1	B	14.3	B	11.2
NB		A	0.2	A	2.9	A	2.4
5. Yosemite Blvd (SR 132) / Restaurant Access	NB Stop						
overall		A	0.1	A	0.0	A	0.1
NB		A	9.2	B	10.3	A	9.3

TABLE 14 (cont'd)
PEAK HOUR INTERSECTION LEVELS OF SERVICE
2012 PLUS PROJECT CONDITIONS

Location	Control	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay
6. Yosemite Blvd (SR 132) / Fruit Yard Access	NB Stop						
overall		A	0.0	A	0.0	A	0.0
NB		A	9.2	B	10.3	A	9.2
WB left turn		A	0.0	A	0.0	A	0.0
7.Yosemite Blvd (SR 132)/ Geer Rd	Signal	B	19.1	B	22.0	B	15.2
8. Geer Road / Fruit Yard Access							
overall	EB Stop	A	0.0	A	0.0	A	0.0
NB left turn		A	0.0	A	0.0	A	0.0
EB		A	0.0	A	9.7	B	10.2
9 Geer Rd / North of Fruit Stand	EB Stop						
overall		A	0.0	A	0.0	A	0.0
EB		A	9.8	A	9.7	B	10.2
10. Geer Rd / New Gas North Access	EB Stop						
overall		A	0.2	A	0.4	A	0.5
EB		A	0.2	A	0.5	A	0.8
NB left turn		B	12.7	B	12.7	B	13.0
11. Geer Rd / New Gas South Access	EB Stop						
overall		A	0.2	A	0.2	A	0.4
EB		A	0.5	A	0.5	A	0.6
NB left turn		B	12.8	B	11.8	B	12.4
12. Geer Rd / D Dr	EB Stop						
overall		A	0.3	A	1.1	A	1.3
EB		A	0.5	A	1.8	A	2.0
NB left turn		C	16.4	B	14.7	C	18.1
13. Geer Rd /F Way	EB Stop						
overall		A	0.3	A	0.4	A	0.6
EB		A	0.5	A	0.5	A	0.6
NB left turn		C	19.1	C	17.3	C	17.5
14. Triangle Ranch Rd / G Dr	EB Stop						
overall		A	4.6	A	6.0	A	3.3
WB		A	6.4	A	3.6	A	3.6
SB left turn		A	8.4	A	8.4	A	8.4

N/A - no side street traffic --- available movement, no traffic recorded in peak hour

TABLE 15
2012 PLUS PROJECT CONDITIONS
ROADWAY SEGMENT LEVELS OF SERVICE

Roadway	Location		Standard		2012 Conditions		2012 + Project Conditions	
	From	To	LOS	Daily Volume Threshold	LOS	Daily Volume	LOS	Daily Volume
Yosemite Blvd	Empire	Geer Road	D	13,700	D	10,300	D	10,560
(SR 132)	Geer Road	Waterford	D	13,700	E	13,890	E	14,230
Geer Road	Yosemite Blvd (SR 132)	Hatch Road	C	9,200	F	17,800	F	18,180

Source: Stanislaus County Circulation Element

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FUTURE IMPACTS

Background Traffic Volume Forecasts. Year 2030 traffic volume forecasts developed for the Stanislaus County General Plan were the basis for the cumulative impact analysis. The results of the traffic model is based on the StanCOG regional travel demand forecasting model prepared by Dowling Associates as past of the County's Traffic Circulation update. Furness factoring was used to develop turning movement volumes at the study intersections.

Year 2030 Lane Configurations. The Stanislaus County General Plan identifies Yosemite Blvd (SR 132) and Geer Road / Albers Road to be Class C Expressways by 2030. These include limited access controlled roadways with traffic controls at intersections with Major Roads and other Expressways. The Circulation Element identifies Yosemite Blvd (SR 132) to be four lanes while Albers Road – Geer Road is identified as a six-lane expressway. For analysis purposes full access intersections are assumed at the following locations:

Yosemite Blvd (SR 132) / Triangle Ranch Road
Yosemite Blvd (SR 132) / Gas Card Lock Access
Yosemite Blvd (SR 132) / 'A' Drive
Yosemite Blvd (SR 132) / 'B' Drive
Geer Road / 'D' Drive
Geer Road / 'F' Way

If a median is installed along Geer Road in the future, existing and any future driveways would be subjected to restricted access. The intersections adjacent to the Yosemite Blvd (SR 132) / Geer Road intersection would be limited to right-in, right-out movements while the remaining driveways along Geer Road are assumed to have right-in, right-out and left-in access. The left-in access would include turn pockets along northbound Geer Road to allow queuing off of the through lanes.

At the Yosemite Blvd (SR 132) / Gas Card Lock Access intersection an alternative layout was considered due to the proximity of the intersection to Triangle Ranch Road. It is possible that adequate distance may not exist between the two locations meeting Highway Design Manual criteria for lane acceleration and lane deceleration. An alternative was considered that eliminated left-out movements from the Gas Card Lock driveway; these movements would use the Triangle Ranch Road intersection.

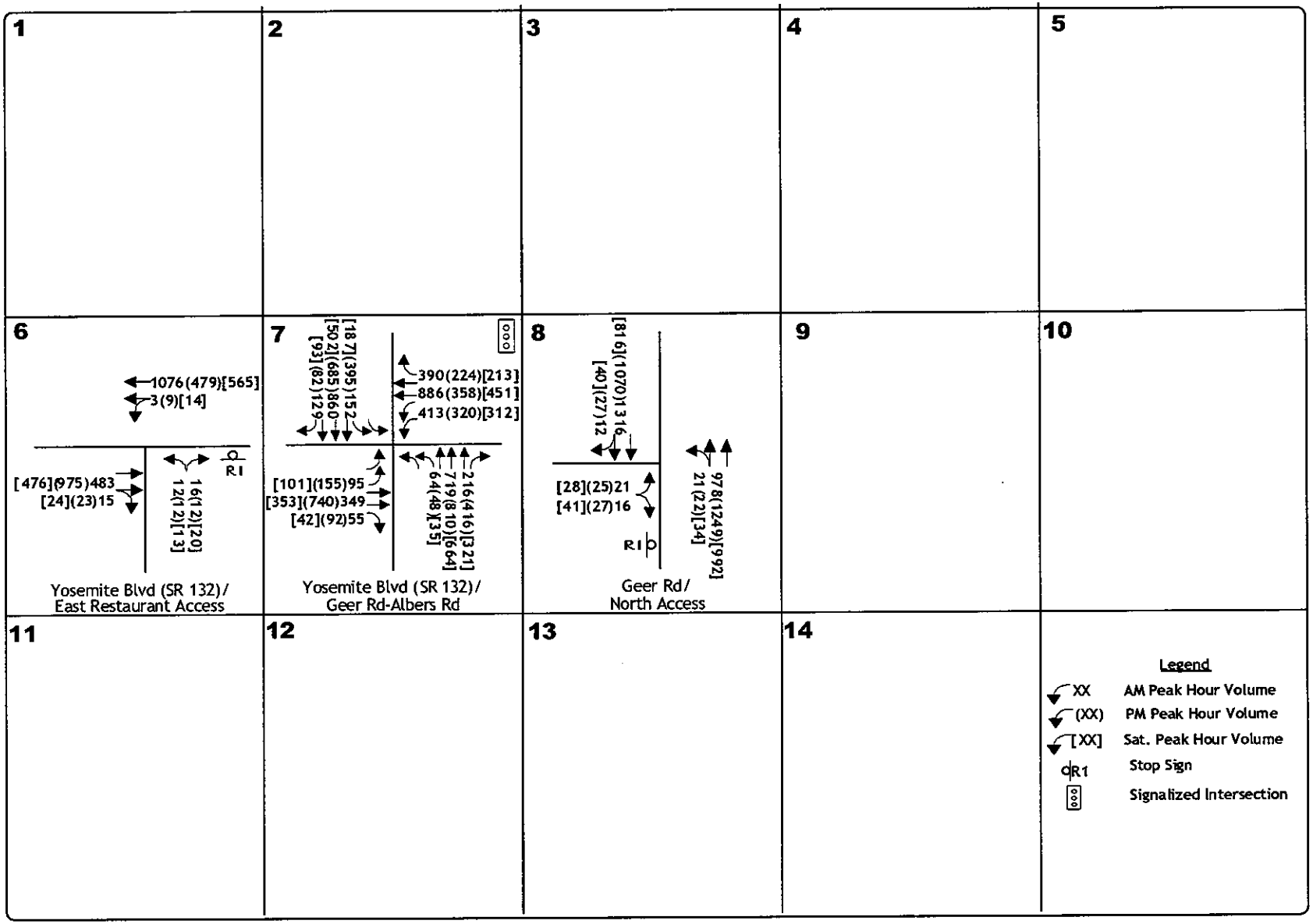
Future Traffic Conditions

Intersection Levels of Service. Figure 13 displays the 2030 traffic volumes with the lane configurations for each study intersection. Table 16 displays the a.m., p.m. and Saturday peak hour Levels of Service at the Yosemite Blvd (SR 132) / Geer Road intersection and the adjacent driveways without the project. The Yosemite Blvd / Geer Rd intersection will operate at LOS C conditions in the p.m. peak hour and LOS B conditions during the remaining peak hours. The Fruityard access along Yosemite Blvd is projected to operate at LOS C or better; however, the Fruityard access along Geer Road will decline to LOS E conditions for traffic leaving the site.

Figure 14A displays the 2030 plus Project conditions assuming full access is available at all intersections except the two adjacent to the Yosemite Blvd (SR 132) / Geer Road intersection. Table 17 displays the levels of service with the project at each of the proposed project access intersections and the Yosemite Blvd (SR 132) / Geer Road intersection. All intersections will operate at LOS C conditions or better except the Geer Road / 'D' Drive intersection. The eastbound approach will operate at LOS E conditions in the a.m. peak hour and LOS D in the p.m. peak hour and Saturday peak hour. This is not considered significant as the intersection does not meet traffic signal warrants. Installation of an unwarranted signal may cause additional and unnecessary delays to traffic along Geer Road. The existing Fruityard access at Geer Road will improve to LOS C or better conditions due to the realignment of on-site traffic patterns due to the projected development.

Figure 14B presents the traffic volumes and lane configurations under the limited access control alternative. Table 17 also presents the levels of service at the intersections affected by the limited access alternative. Under this alternative the intersections along Yosemite Blvd (SR 132) will continue to operate at LOS C or better.

Daily Traffic Volumes Levels of Service. Table 18 summarizes the roadway segment Levels of Service based on the projected 2030 daily traffic volumes on the study area roads. Daily roadway traffic is expected to increase along both Yosemite Blvd and Geer Road. Yosemite Blvd between Empire and Geer Road is projected to operate at LOS C while between Geer Road and Waterford the roadway will operate at LOS D conditions. The roadway is projected to be a four-lane expressway and carry 17,550 vpd and 27,800 vpd, respectively. The level of service along Geer Road is projected to be LOS D with 41,080 ADT. Under project conditions, the levels of service along each segment will remain at either LOS C or D.



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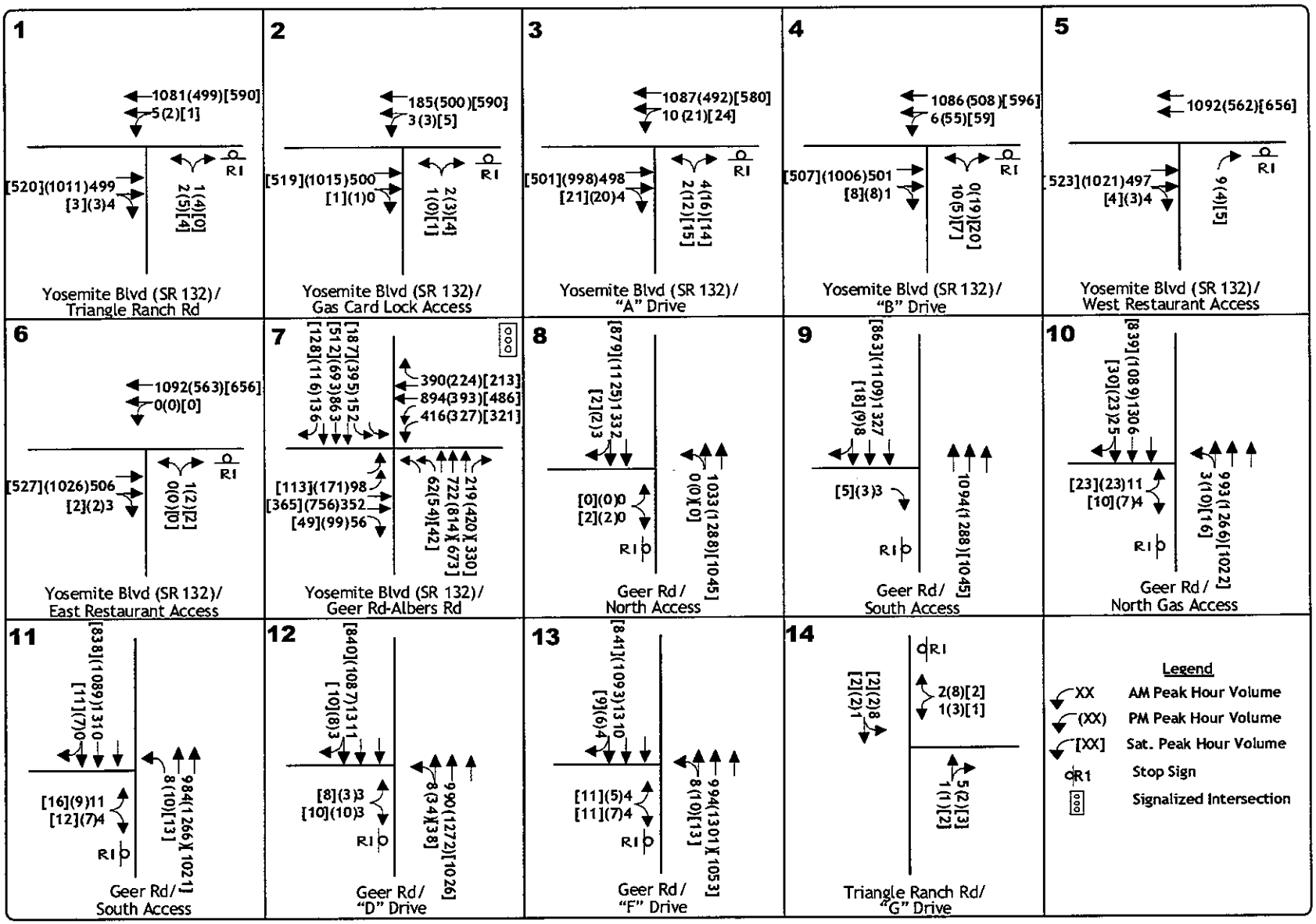
Transportation Engineers

3408-01 REV 1.VSD 12/3/2007

YEAR 2030 TRAFFIC VOLUMES
AND LANE CONFIGURATIONS

figure 13



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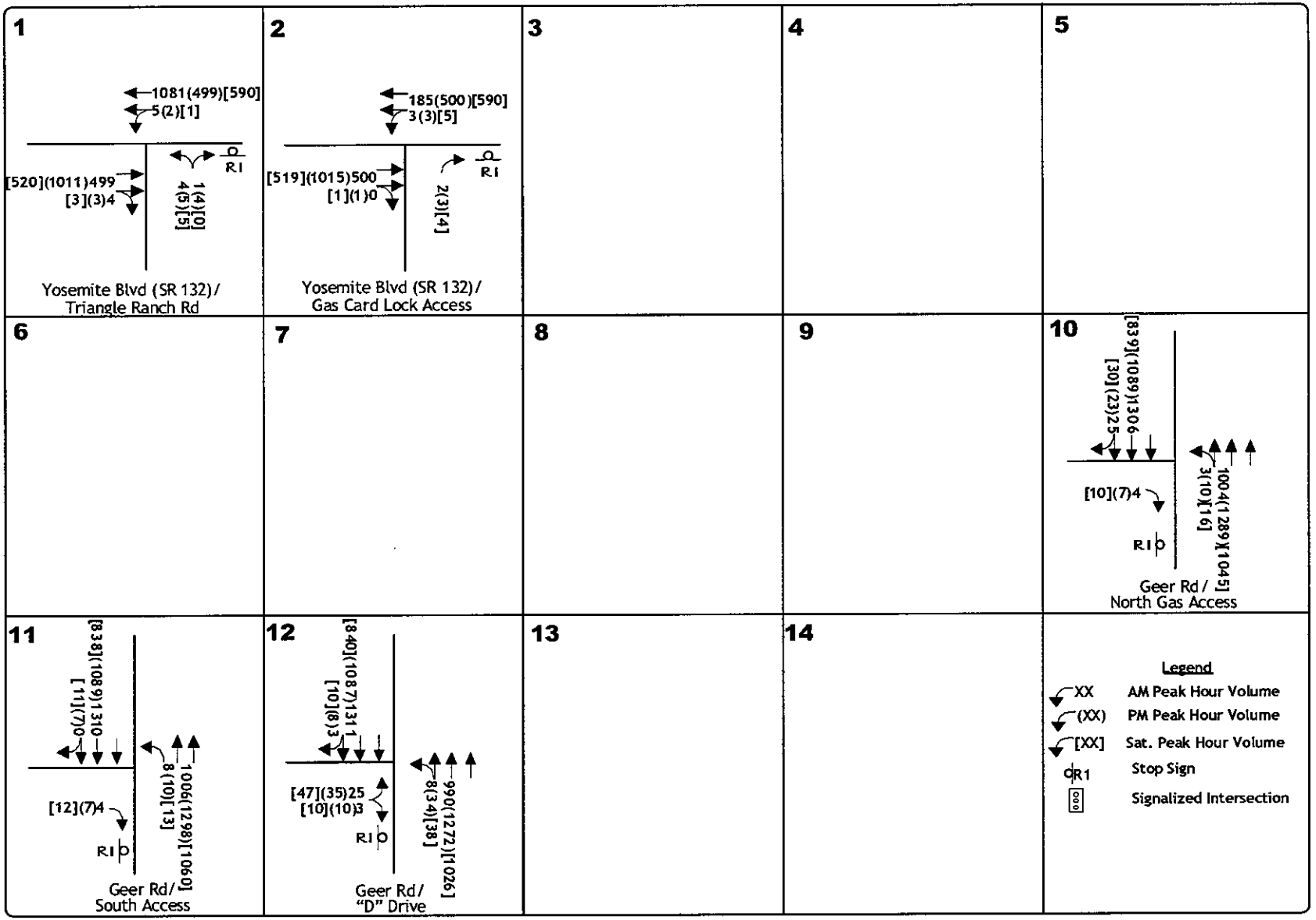
Transportation Engineers

YEAR 2030 PLUS PROJECT
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

3408-01 REV 1.VSD 12/3/2007

figure 14A



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Transportation Engineers

YEAR 2030 PLUS PROJECT LIMITED ACCESS ALTERNATIVE
TRAFFIC VOLUMES AND LANE CONFIGURATIONS

3408-01 REV 1.VSD 12/3/2007

figure 14B

TABLE 16
PEAK HOUR INTERSECTION LEVELS OF SERVICE
2030 CONDITIONS

Location	Control	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay
1.Yosemite Blvd (SR 132)/ Geer Rd	Signal	B	20.9	C	28.9	B	18.8
6. Yosemite Blvd (SR 132) / Fruit Yard Access	NB Stop						
overall		A	0.3	A	0.5	A	0.5
NB		C	15.5	C	23.9	B	13.2
WB left turn		A	0.1	A	0.7	A	0.7
8. Geer Road / Fruit Yard Access							
overall	EB Stop	A	0.9	A	0.9	A	1.0
NB left turn		A	1.4	A	1.4	A	1.9
EB		E	35.7	E	35.7	C	21.1

TABLE 17
PEAK HOUR INTERSECTION LEVELS OF SERVICE
2030 PLUS PROJECT CONDITIONS

Location	Control	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay
1.Yosemite Blvd (SR 132) / Triangle Ranch Rd	NB Stop						
overall		A (A)	0.1 (0.1)	A (A)	0.2 (0.2)	A (A)	0.1 (0.1)
WB left turn		C (C)	15.6 (16.5)	C (C)	23.8 (23.8)	C (C)	15.7 (15.7)
NB		A (A)	0.1 (0.3)	A (A)	0.3 (0.3)	A (B)	0.1 (10.9)
2.Yosemite Blvd (SR 132) / Card Lock Access	NB Stop						
overall		A (A)	0.0 (0.0)	A (A)	0.1 (0.0)	A (A)	0.1 (0.1)
WB left turn		B (B)	11.3 (10.4)	B (B)	13.4 (13.4)	B (B)	10.9 (10.5)
NB		A (A)	0.1 (9.0)	A (B)	0.3 (11.8)	A (A)	0.3 (0.1)
3. Yosemite Blvd (SR 132) / A Dr	NB Stop						
overall		A	0.1	A	0.5	A	0.5
WB left turn		B	10.8	C	15.8	B	11.4
NB		A	0.3	A	1.6	A	1.2
4. Yosemite Blvd (SR 132) / B Dr	NB Stop						
overall		A	0.1	A	0.6	A	0.9
WB left turn		B	13.3	C	15.0	B	11.1
NB		A	8.6	B	11.3	A	2.0
5. Yosemite Blvd (SR 132) / Restaurant Access	NB Stop						
overall		A	0.1	A	0.0	A	0.0
NB		B	10.0	B	12.7	B	10.1

N/A - no side street traffic --- available movement, no traffic recorded in peak hour

(left-out prohibited) – left turn traffic uses Triangle Ranch Road

TABLE 17 (cont'd)
PEAK HOUR INTERSECTION LEVELS OF SERVICE
2030 PLUS PROJECT CONDITIONS

Location	Control	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Average Delay	LOS	Average Delay	LOS	Average Delay
6. Yosemite Blvd (SR 132) / Fruit Yard Access	NB Stop						
overall		A	0.0	A	0.0	A	0.0
NB		B	10.0	B	12.7	B	10.1
WB left turn		A	0.0	A	0.0	A	0.0
7.Yosemite Blvd (SR 132)/ Geer Rd	Signal	B	20.4	C	28.8	B	19.8
8. Geer Road / Fruit Yard Access							
overall	EB Stop	A	0.0	A	0.0	A	0.0
NB left turn		A	0.0	A	0.0	A	0.0
EB		A	0.0	A	9.4	A	9.2
9. Geer Rd / North of Fruit Stand	EB Stop						
overall		A	0.0	A	0.0	A	0.0
EB		A	9.0	A	9.3	A	9.2
10. Geer Rd / New Gas North Access	EB Stop						
overall		A	0.0	A	0.1	A	0.1
EB		B	12.2	B	11.0	A	9.8
NB left turn		A	9.2	A	9.5	A	9.5
11. Geer Rd / New Gas South Access	EB Stop						
overall		A	0.1	A	0.1	A	0.1
EB		B	12.2	B	10.9	A	9.8
NB left turn		A	9.2	A	9.5	A	9.7
12. Geer Rd / D Dr	EB Stop						
overall		A	0.6	A	0.9	A	1.1
EB		E	40.5	D	33.1	D	26.8
NB left turn		C	19.7	C	17.5	B	14.4
13. Geer Rd /F Way	EB Stop						
overall		A	0.2	A	0.2	A	0.4
EB		A	1.6	A	1.3	A	1.4
NB left turn		C	24.8	C	20.2	C	18.1
14. Triangle Ranch Rd / G Dr	EB Stop						
overall		A	4.6	A	6.0	A	3.3
WB		A	6.4	A	3.6	A	3.6
SB left turn		A	8.4	A	8.4	A	8.4

N/A - no side street traffic --- available movement, no traffic recorded in peak hour

(left-out prohibited) – left turn traffic uses Triangle Ranch Road

TABLE 18
2030 PLUS PROJECT CONDITIONS
ROADWAY SEGMENT LEVELS OF SERVICE

Roadway	Location		Standard		2030 Conditions		2030 + Project Conditions	
	From	To	LOS	Daily Volume Threshold	LOS	Daily Volume	LOS	Daily Volume
Yosemite Blvd	Empire	Geer Road	D	32,400	C	17,550	C	17,810
(SR 132)	Geer Road	Waterford	D	32,400	D	27,800	D	28,140
Geer Road	Yosemite Blvd (SR 132)	Hatch Road	C	31,200	D	41,080	D	41,460

Source: Stanislaus County Circulation Element

QUEUING

A queuing analysis was completed for each of the study intersections. 95% queues were determined based on the queue results in the Synchro analysis. Table 19 presents the results for each of the analysis scenarios. Generally, all queues into and out of the project site will be less than a single vehicle. The queues at the Geer Road / D Dr. intersection with the completion of Phases 1 and 2 will be higher than during any other scenario. This is due to the projected re-routing of gas station traffic to D Drive on a temporary basis. The projected 95% queue waiting to enter Geer Road will be 29 feet. The completion of Phase 3 will relocate the gas station and will provide full access driveways to Geer Road.

Through lane queues were also reported for the Yosemite Blvd (SR 132) / Geer Road intersection to determine whether any access driveways along the project site could be blocked. The longest eastbound queue will develop during 2030 when the queue is projected to reach 285' with the project. This will occur in the p.m. peak hour and may block the right-in, right-out access, closest to the intersection. The worst northbound queue along Geer Road is projected to be 189', again in 2030 buildout. Motorists should be able to access northbound Geer Road at any of the full access points proposed.

TABLE 19
PROJECTED QUEUES

Location	Exist	Exist + Ph 1	Exist + Ph 1,2	Exist + Ph 1,2,3	2012	2012 + Project	2030	2030 + Project
1. Yosemite Blvd (SR 132) / Triangle Ranch Rd								
WB left turn	0 (0) <0>	0 (0) <0>	0 (0) <0>	0 (0) <0>	0 (0) <0>	0 (0) <0>	0 (0) <0>	1 (1) <0>
NB	0 (0) <0>	0 (0) <0>	0 (0) <0>	1 (2) <1>	0 (0) <0>	1 (3) <1>	0 (0) <0>	1 (4) <1>
2.Yosemite Blvd (SR 132) / Card Lock Access								
WB left turn	---	---	---	0 (0) <0>	---	0 (0) <0>	---	0 (0) <0>
NB				1 (0) <1>		1 (1) <1>		0 (1) <1>
3. Yosemite Blvd (SR 132) / A Dr								
WB left turn	---	0 (1) <1>	0 (1) <1>	1 (2) <2>	---	1 (2) <2>	---	1 (3) <2>
NB		0 (3) <2>	0 (3) <3>	1 (6) <4>		1 (7) <5>		1 (7) <4>
4. Yosemite Blvd (SR 132) / B Dr								
WB left turn	---	0 (4) <4>	0 (4) <4>	0 (5) <4>	0 (0) <1>	0 (5) <4>	0 (1) <1>	0 (8) <5>
NB		2 (5) <3>	1 (5) <4>	1 (5) <4>	2 (1) <1>	2 (5) <4>	2 (2) <2>	2 (5) <4>
5. Yosemite Blvd (SR 132) / Restaurant Access	---							
NB		1 (0) <1>	1 (0) <0>	1 (0) <0>	1 (0) <0>	0 (1) <0>	1 (1) <0>	1 (1) <1>
6. Yosemite Blvd (SR 132) / Fruit Yard Access								
NB	3 (4) <4>	0 (1) <1>	1 (1) <1>	0 (0) <0>	4 (4) <4>	0 (0) <0>	7 (10) <6>	0 (0) <0>
WB left turn	0 (1) <1>	0 (1) <1>	0 (1) <1>	0 (0) <0>	0 (1) <1>	0 (0) <0>	0 (1) <1>	0 (0) <0>
7. Yosemite Blvd (SR 132)/ Geer Rd								
NB Left	40 (38) <22>	51 (42) <33>	50 (43) <34>	51 (44) <34>	62 (40) <31>	63 (47) <36>	31 (27) <18>	28 (31) <22>
NB Thru	84 (102) <66>	81 (102) <67>	92 (103) <70>	92 (103) <70>	98 (120) <81>	99 (121) <83>	137 (165) <116>	124 (189) <128>
SB Left	37 (94) <33>	35 (94) <40>	38 (95) <40>	39 (95) <40>	51 (140) <59>	51 (140) <62>	70 (170) <67>	72 (168) <71>
SB Thru	105 (90) <58>	98 (104) <60>	112 (106) <62>	114 (106) <62>	127 (116) <71>	130 (118) <78>	163 (120) <90>	151 (135) <99>
EB Left	41 (64) <39>	44 (71) <41>	48 (71) <45>	50 (76) <47>	51 (74) <46>	53 (84) <55>	43 (64) <42>	41 (74) <48>
EB Thru	46 (107) <45>	48 (112) <46>	54 (112) <46>	54 (115) <47>	54 (131) <54>	55 (138) <50>	105 (275) <71>	95 (285) <110>
WB Left	143 (106)<95>	148 (105)<95>	123 (117)<106>	123 (117)<106>	199 (145)<117>	202 (155)<132>	136 (148)<99>	163 (146)<109>
WB Thru	113 (51) <52>	86 (62) <62>	121 (62) <63>	123 (65) <63>	141 (63) <66>	144 (77) <78>	241 (109) <79>	263 (123) <130>

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TABLE 19 (CONT'D)
PROJECTED QUEUES

Location	Exist	Exist + Ph 1	Exist + Ph 1, 2	Exist + Ph 1, 2, 3	2012	2012 + Project	2030	2030 + Project
8. Geer Road / Fruit Yard Access								
NB left turn	2 (2) <2>	0 (0) <0>	0 (0) <0>	0 (0) <0>	2 (2) <3>	0 (0) <0>	4 (3) <4>	0 (0) <0>
EB	8 (10) <11>	0 (1) <2>	0 (1) <2>	0 (0) <0>	10, (13) <14>	0 (0) <0>	32 (33) <24>	0 (0) <0>
9. Geer Rd / North of Fruit Stand								
EB	---	0 (0) <1>	0 (0) <1>	0 (0) <1>	0 (0) <1>	0 (0) <1>	0 (0) <0>	0 (0) <0>
10. Geer Rd / New Gas North Access								
EB	---	0 (0) <0>	0 (0) <0>	2 (4) <5>	3 (5) <6>	3 (5) <6>	5 (8) <7>	5 (9) <7>
NB left turn		0 (0) <0>	0 (0) <0>	0 (1) <1>	0 (1) <1>	0 (1) <1>	0 (1) <2>	0 (1) <2>
11. Geer Rd / New Gas South Access								
EB	---	0 (1) <0>	2 (0) <0>	2 (2) <4>	3 (2) <5>	3 (2) <5>	5 (4) <5>	5 (4) <5>
NB left turn		0 (0) <0>	1 (0) <0>	1 (1) <1>	1 (1) <1>	1 (1) <1>	1 (1) <1>	1 (1) <1>
12. Geer Rd / D Dr								
EB	---	0 (4) <11>	11 (20) <29>	1 (3) <4>	0 (0) <6>	2 (3) <5>	0 (0) <0>	3 (3) <5>
NB left turn		1 (9) <5>	3 (13) <13>	1 (5) <5>	0 (0) <1>	1 (5) <6>	1 (1) <1>	3 (10) <8>
13. Geer Rd /F Way								
EB	---	---	2 (2) <4>	2 (3) <4>	---	3 (3) <6>	---	4 (4) <6>
NB left turn			0 (1) <1>	1 (1) <1>		1 (1) <2>		3 (3) <3>
14. Triangle Ranch Rd / G Dr								
WB	---	---	---	0 (1) <0>	---	0 (1) <0>	---	0 (1) <0>
SB left turn				0 (0) <0>		0 (0) <0>		0 (0) <0>

a.m. (p.m.) <Saturday>

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FINDINGS / RECOMMENDATIONS / MITIGATIONS

The preceding analysis has identified project impacts that may occur without mitigation. The text that follows identifies a strategy for mitigating the impacts of the proposed project. Recommendations are identified for facilities that require mitigation but are not a result of the proposed project. If the project causes a significant impact, mitigations are identified for the facility.

Existing Conditions - Recommendations

Each of the four study intersections currently operate at acceptable levels of service. No recommendations are necessary.

Geer Road, south of Yosemite Blvd (SR 132) currently operates below the County LOS threshold, at LOS E. The County's General Plan identifies Geer Road as a Class C 6-lane expressway. Widening of Geer Road would result in LOS B or better conditions.

Existing Plus Phase 1 Mitigations

All of the proposed intersections will operate within County and Caltrans LOS thresholds. Geer Road will continue to operate below LOS C conditions. Widening Geer Road is part of the County's Traffic Impact Fee program; therefore, no additional mitigation is required.

The project should contribute its fair share to the cost of regional circulation system improvements through the existing Stanislaus County traffic mitigation fee program.

Yosemite Blvd (SR 132) should be widened to its ultimate width along the project frontage of Phase 1. This would include two through lanes, one half of a continuous left turn lane and shoulder per Caltrans standards.

No other mitigations are necessary.

Existing Plus Phase 1 & Phase 2 Mitigations

All of the proposed intersections will continue to operate within County and Caltrans LOS thresholds. Geer Road will continue to operate below LOS C conditions.

Phase 2 of the project should contribute its fair share to the cost of regional circulation system improvements through the existing Stanislaus County traffic mitigation fee program.

Geer Road should be widened to its ultimate half-width along the project frontage. The limits of widening would extend from the Yosemite Blvd (SR 132) intersection south of the project limits to D Drive. This would include three through lanes and half a median. The full median, once completed, should provide breaks to allow inbound left turns at the various driveways. Full access

should be provided at D Drive. Geer Road will continue to operate below LOS C conditions. Widening Geer Road is part of the County's Traffic Impact Fee program; therefore, no other mitigation is required.

Existing Plus Phase 1, Phase 2 & Phase 3 Mitigations

All of the proposed intersections will continue to operate within County and Caltrans LOS thresholds. Geer Road will continue to operate below LOS C conditions.

Phase 3 of the project should contribute its fair share to the cost of regional circulation system improvements through the existing Stanislaus County traffic mitigation fee program.

Yosemite Blvd (SR 132) should be widened to its ultimate width along the project frontage of Phase 3. This would include two through lanes, one half of a continuous left turn lane and shoulder per Caltrans standards.

Geer Road should be widened to its ultimate half-width along the project frontage from D Drive to the south project limit, at MID Lateral No. 1. This would include three through lanes and half a median. The full median, once completed, should provide breaks to allow inbound left turns at the various driveways. Full access should be provided at F Way. Geer Road will continue to operate below LOS C conditions. Widening Geer Road is part of the County's Traffic Impact Fee program; therefore, no other mitigation is required.

2012 Conditions - Recommendations

Each of the study intersections will operate at acceptable levels of service. No recommendations are necessary.

Yosemite Blvd (SR 132) will decline to LOS E conditions. Widening Yosemite Blvd (SR 132) is identified as part of the County's Traffic Impact Fee program.

2012 plus Phase 1, Phase 2 & Phase 3 Mitigations

Each of the study intersections will operate at acceptable levels of service. No mitigations are necessary.

Yosemite Blvd (SR 132) will continue to operate at LOS E conditions. Widening Yosemite Blvd (SR 132) is identified as part of the County's Traffic Impact Fee program. The project should pay its fair share of Traffic Impact Fees; therefore, no other mitigation is required.

Geer Road will continue to operate below the County LOS threshold level. No additional mitigations are necessary as TIF fees have already been identified in the Existing scenario.

2030 Conditions - Recommendations

Each of the study intersections will operate at acceptable levels of service except the Geer Road / Fruityard access. This intersection is adjacent to the Yosemite Blvd / Geer Road intersection. Left turn access in and out of the driveway would need to be eliminated in order to improve the level of service at the intersection. This will result in LOS A conditions at the intersection. No other recommendations are necessary.

Geer Road is projected to operate at LOS D conditions in 2030. To operate within County thresholds the County would have to adopt an LOS D threshold for six lane Type C Expressways.

2030 plus Phase 1, Phase 2 & Phase 3 Mitigations

Each of the study intersections except the Geer Road / D Drive intersection will operate at acceptable levels of service. The Geer Drive / D Drive intersection will operate at LOS E in the a.m. peak hour and LOS D in the p.m. and Saturday peak hours. A traffic signal warrant analysis was conducted at each intersection where full access is proposed along both Yosemite Blvd (SR 132) and Geer Road. The analysis showed that no signal warrants are met for any of the study intersections; therefore, no significant impact exists at D Drive as an unwarranted signal may cause additional and unnecessary delays to traffic along Geer Road.

Geer Road is projected to continue to operate at LOS D conditions in 2030. To operate within County thresholds the County would have to adopt an LOS D threshold for six lane Type C Expressways.

No additional mitigations are necessary.

REFERENCES

1. *Stanislaus County General Plan Update to the Circulation Element, April 2006*
2. *STANCOG Bicycle Action Plan, 2001*
3. *STANCOG 2004 DRAFT Regional Transportation Plan*
4. Transportation Research Board, Special Report 209, *Highway Capacity Manual*, 2000
5. California MUTCD, September 2006

APPENDIX

PINNACLE TRAFFIC ENGINEERING
831 C Street
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(831) 638-9260 • (805) 644-9260
PinnacleTE.com

August 23, 2016

Miguel Galvez, Deputy Director
Stanislaus County
Planning and Community Development
1010 10th Street, Suite 3400
Modesto, CA 95354

RE: The Fruit Yard Project (PLN2015-0130 / SCH#20160072019); Stanislaus County, CA
Supplemental Traffic Analysis Material (STIA) and Response to Comment Letters
Submittal for Caltrans Office of Metropolitan Planning

Dear Mr. Galvez,

Enclosed are two (2) copies of the STIA (Feb 5, 2016) and response to comment letters. The hard copies of the traffic analysis material are provided in response to comments (letter dated July 25, 2016) and direction received from Caltrans staff (Tom Dumas and Eduardo Fuentes). Caltrans requires that any related project material be routed through the County. Please forward the enclosed traffic analysis material to the following address as soon as possible:

Tom Dumas, Chief
Caltrans Office of Metropolitan Planning
P.O. Box 2048
Stockton, CA 95021
(209) 941-1921

Please contact my office or Jim P. Freitas at Associated Engineering Group (209-545-3390) with any questions regarding the Caltrans request.

Pinnacle Traffic Engineering

Larry D. Hail, CE, TE, PTOE
President

ldh:msw
enclosures - STIA and Response to Comment Letters

cc: Jim P. Freitas - Associated Engineering Group, Inc.

The Fruit Yard L03

EXHIBIT G

PINNACLE TRAFFIC ENGINEERING
831 C Street
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August 13, 2016

Mr. Jim P. Freitas
Associated Engineering Group, Inc.
4206 Technology Drive, Ste. 4
Modesto, CA 95356

RE: The Fruit Yard Project (PLN2015-0130); Stanislaus County, California
Response to Caltrans Comments

Dear Mr. Freitas,
Pinnacle Traffic Engineering (PTE) has reviewed the comments provided by Caltrans (letter from the Office of Metropolitan Planning dated July 25, 2016). Based on our discussions, the project description should be modified to include the hours of operation and frequency of events at the Amphitheater site. The project description in the Supplemental Traffic Impact Analysis (STIA) prepared by PTE (Feb. 5, 2016) indicates the project includes hosting events or concerts at the outside amphitheater within the existing park site. The majority of events will occur on a weekend day or Holiday, during the months between May and September. Events on weekdays (Monday-Friday) will begin after 7:00 PM and end by 10:30 PM. The STIA provides an evaluation of the potential impacts associated with the Amphitheater project. Comments on the STIA were received from Stanislaus County (Andrew Malizia) and addressed in a "response to comment" letter (April 28, 2016). The Caltrans comments are addressed in the existing traffic analysis material. A copy of the STIA, County comments, and "response to comment" letter are attached. The following is a brief response to the Caltrans comments:

1. Associated Engineering Group (AEG) should address the comments regarding the site design, and construction/closure of driveways on Yosemite Boulevard (SR 132) and Geer Road.

2. a. The STIA provides an evaluation of access at the project site driveways.
   b. A-Drive and B- Drive are existing (there is +/-300 feet between the driveways).
   c. The 2007 TIA identified the potential impacts associated with the Project Development Plan. The project's contribution to the County's Regional Transportation Impact Fee (RTIF) program served as mitigation to reduce the potential impacts to a level of "less than significant." The STIA concluded that events at the amphitheater will not significantly impact operations at the Yosemite Boulevard (SR 132) / Geer Road intersection. However, the amphitheater project could potentially impact operations on segments of Yosemite

Boulevard (SR 132) and Geer Road - Albers Road. Therefore, the project's contribution to the RTIF program will serve as mitigation to reduce the potential impact to a level of "less than significant," which is consistent with the mitigations approved for the Project Development Plan. Information regarding the construction of future roadway widening projects included in the RTIF should be requested from the County.

3. a. An analysis of LOS, vehicle queues, and delay are presented in the STIA and subsequent "response to comment" material prepared for the project.
   b. The Yosemite Boulevard (SR 132) / Geer Road intersection is already signalized.
   c. A SimTraffic micro-simulation model was prepared for the STIA (copy of files and/or the video are available upon request).
   d. The STIA provides an evaluation of access at the project site driveways, including stopping and corner sight distance.
   e. References to the length of left- and right-turns lanes is provided in the STIA.

It is my understanding that the County has completed a review of the project application and does not have any additional questions regarding the Amphitheater event traffic.

Please contact my office with any questions regarding the response to comment material.

Pinnacle Traffic Engineering

Larry D. Hail, CE, TE, PTOE
President

ldh:msw

attachments: Supplemental Traffic Impact Analysis (STIA; Feb. 5, 2016)
County Comments on STIA (April 28, 2016)
Response to Comment Letter (April 14, 2016)

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April 28, 2016

Mr. Jim P. Freitas
Associated Engineering Group, Inc.
4206 Technology Drive, Ste. 4
Modesto, CA 95356

RE: The Fruit Yard Project; Stanislaus County, California
Supplemental Traffic Impact Analysis (TIA) - Response to County Comments

Dear Mr. Freitas,

Pinnacle Traffic Engineering (PTE) has reviewed the comments provided by Andrew Malizia at Stanislaus County (email dated April 14, 2016). The Supplemental Traffic Impact Analysis (TIA) was reviewed and the specific comments were discussed with Andrew. The following is a brief response for each comment received from Stanislaus County:

1. The Supplemental TIA presents a focused analysis of the existing plus approved uses plus the amphitheater project conditions at Yosemite Boulevard (SR 132) / Geer Road - Albers Road intersection. As stated in the report (Page 19), the analysis presents a "worst" case scenario assuming that the amphitheater traffic could arrive before 6:00 PM. However, the proposed Transportation Demand Management (TDM) measures are designed to avoid generating any amphitheater traffic before 6:00 PM (e.g. a concert on a Friday would start at 7:00 PM or later). Based on my discussion with Andrew, I took a quick look at the "levels of service" (LOS) for the Geer Road / "D" Driveway intersection. I also added the traffic associated with the existing and approved project site uses. The analysis shows that average delays at the "D" Driveway intersection would be in the LOS A range, while delays on the "D" Driveway approach (traffic exiting the site) would be in the LOS D range (26.5 seconds). The delay is only slightly over the LOS C threshold (25.0 seconds). If County staff could provide the hourly directional volumes associated with the average daily traffic (ADT) data used for the initial analysis the peak period volumes could be adjusted to reflect the 6:00 to 7:00 PM period.

2. As indicated in the Supplemental TIA report (Page 24), the existing pavement width on Geer Road adjacent to "D" Driveway is sufficient to stripe a short northbound left turn lane. Therefore, the SimTraffic modeling included a short left turn lane on the approach to the "D" Driveway. The 95th percentile queue for the northbound left turn is estimated at 2.6 vehicles (approximately 65').

3. The peak hour factor (PHF) for the amphitheater traffic movements at the Yosemite Boulevard (SR 132) / Geer Road - Albers Road and Geer Road / "D" Driveway intersections were reduced to 0.75, which means all arriving traffic would enter within 45-minute period. Average delays at both intersections would still be within the LOS C range (see attached LOS worksheets). The percent heavy vehicles were also increased to 10% for the N-S and E-W movements along Geer Road and Yosemite Boulevard (SR 132), respectively. The LOS analysis referred under the previous responses was performed using the adjusted PHF and percent heavy vehicles. I've uploaded a new SimTraffic video to my DropBox folder (link provided below):

   (https://www.dropbox.com/s/3i7oounbiounsr1/Ex%20%2B%20App%20%2B%20Amph%20%28Inbound%29%20PM%20-%20Friday%20-%20SimTraffic%20-%20PTE%204-28-16%20Adjusted%20PHF.wmv?dl=0)

4. Input signal timing parameters for the Synchro 8 software include a 4 second "minimum initial", 3.5 second "yellow" clearance, and a 0.5 second "on-red" clearance. The "Phase Duration" (G + Y + Rc) is a calculated value produced by the software.

It is my understanding that Associated Engineering Group will investigate the possibilities of striping an exclusive left turn lane on the northbound approach of Geer Road at the "D" Driveway. In addition, the remaining County comments are to be addressed by the project team.

Please contact my office with any questions regarding the response to comment material.

Pinnacle Traffic Engineering

Larry D. Hail, CE, TE, PTOE
President

ldh:msw

attachments - Synchro 8 LOS Worksheets

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	8	21	313	636	689	222
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	75	92	92	75
Heavy Vehicles, %	0	0	0	10	10	0
Mvmt Flow	9	23	417	691	749	296

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2275	749	749	0	-	0
Stage 1	749	-	-	-	-	-
Stage 2	1526	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	45	415	869	-	-	-
Stage 1	471	-	-	-	-	-
Stage 2	200	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	23	415	869	-	-	-
Mov Cap-2 Maneuver	84	-	-	-	-	-
Stage 1	471	-	-	-	-	-
Stage 2	104	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.5	4.9	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	869	-	199	-	-
HCM Lane V/C Ratio	0.48	-	0.158	-	-
HCM Control Delay (s)	12.9	-	26.5	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	2.6	-	0.6	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	69	266	78	207	328	64	55	423	166	101	626	134
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1756	1900	1863	1745	1900	1863	1727	1863	1863	1750	1900
Adj Flow Rate, veh/h	75	289	85	276	437	70	60	460	180	110	835	179
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.75	0.75	0.92	0.92	0.92	0.92	0.92	0.75	0.75
Percent Heavy Veh, %	2	10	10	2	10	10	2	10	2	2	10	10
Cap, veh/h	97	405	117	319	813	129	77	1301	627	140	1177	252
Arrive On Green	0.05	0.16	0.16	0.18	0.28	0.28	0.04	0.40	0.40	0.08	0.43	0.43
Sat Flow, veh/h	1774	2556	738	1774	2866	456	1774	3282	1583	1774	2725	584
Grp Volume(v), veh/h	75	187	187	276	252	255	60	460	180	110	509	505
Grp Sat Flow(s),veh/h/ln	1774	1668	1626	1774	1658	1664	1774	1641	1583	1774	1662	1647
Q Serve(g_s), s	3.6	9.1	9.4	13.0	11.0	11.1	2.9	8.4	6.6	5.2	21.5	21.5
Cycle Q Clear(g_c), s	3.6	9.1	9.4	13.0	11.0	11.1	2.9	8.4	6.6	5.2	21.5	21.5
Prop In Lane	1.00		0.45	1.00		0.27	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	97	264	258	319	470	472	77	1301	627	140	718	711
V/C Ratio(X)	0.78	0.71	0.73	0.87	0.54	0.54	0.78	0.35	0.29	0.78	0.71	0.71
Avail Cap(c_a), veh/h	186	311	303	455	560	563	186	1301	627	248	718	711
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	34.2	34.3	34.2	26.0	26.0	40.6	18.2	17.6	38.8	20.0	20.0
Incr Delay (d2), s/veh	12.4	5.9	7.0	11.7	0.9	1.0	15.3	0.8	1.1	9.2	5.9	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	4.6	4.7	7.4	5.2	5.2	1.7	4.0	3.1	2.9	10.9	10.8
LnGrp Delay(d),s/veh	52.4	40.1	41.4	45.9	26.9	27.0	55.9	18.9	18.8	48.0	25.8	25.9
LnGrp LOS	D	D	D	D	C	C	E	B	B	D	C	C
Approach Vol, veh/h		449			783			700			1124	
Approach Delay, s/veh		42.7			33.6			22.1			28.0	
Approach LOS		D			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	38.0	19.4	17.6	7.7	41.1	8.7	28.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	34.0	22.0	16.0	9.0	37.0	9.0	29.0
Max Q Clear Time (g_c+I1), s	7.2	10.4	15.0	11.4	4.9	23.5	5.6	13.1
Green Ext Time (p_c), s	0.1	12.0	0.5	2.2	0.0	8.4	0.0	5.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.2
HCM 2010 LOS	C

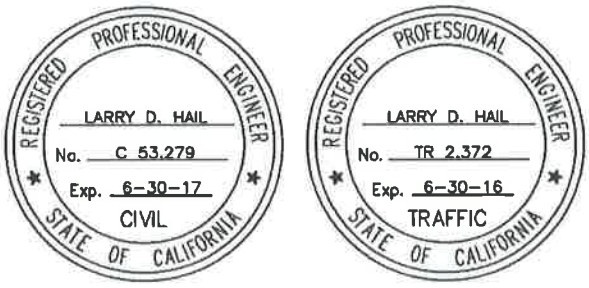
THE FRUIT YARD PROJECT

- Stanislaus County -

- Supplemental - Traffic Impact Analysis

Prepared for:

ASSOCIATED ENGINEERING GROUP, INC.
4206 Technology Drive, Suite 4
Modesto, CA 95356



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February 5, 2016

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- Summary of Traffic Count Data
- New Traffic Count Data
- Level of Service (LOS) Descriptions
- Level of Service (LOS) to Vehicle Delays Relationship Data
- Level of Service (LOS) Worksheets

1.0 INTRODUCTION

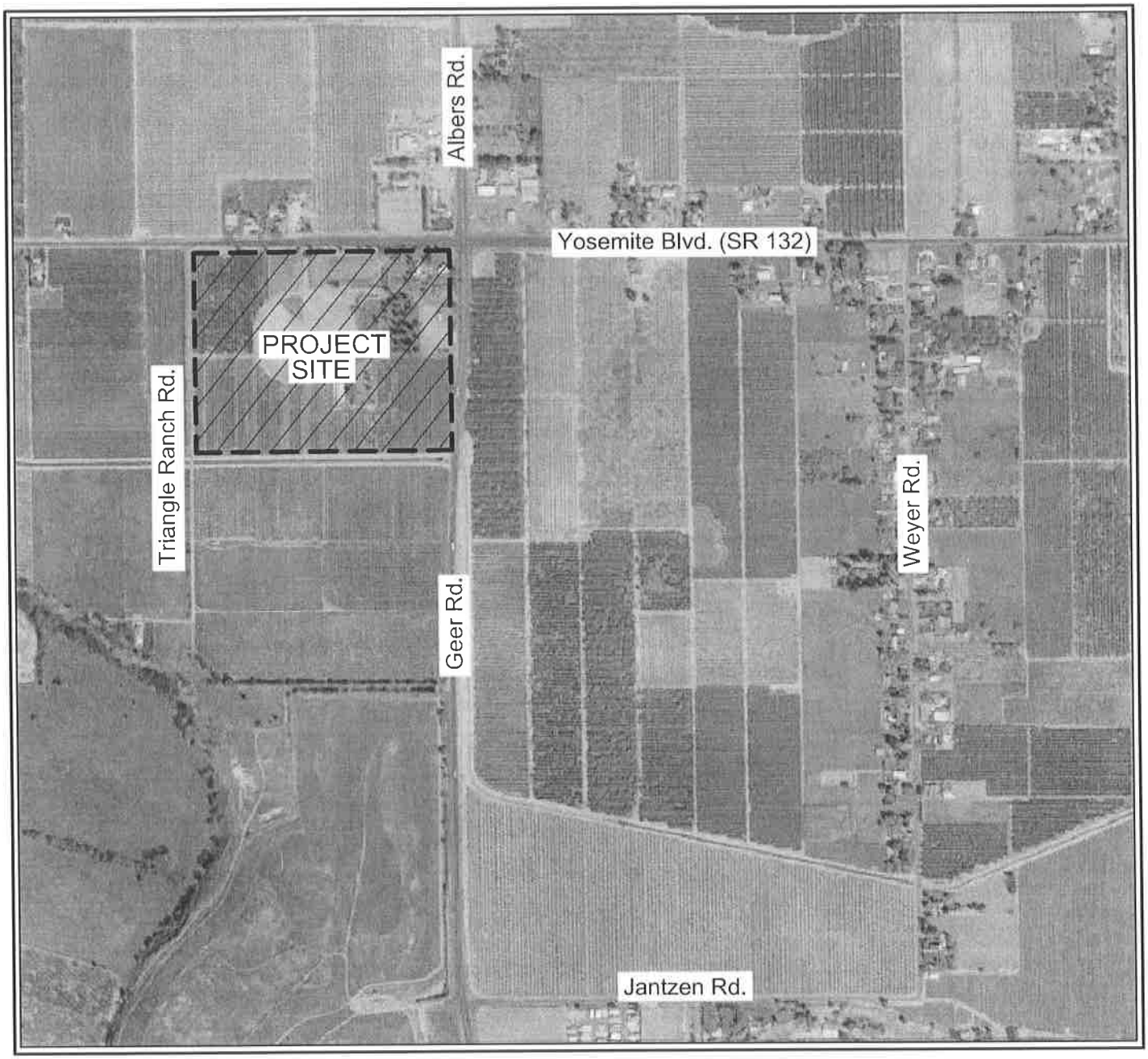
The Supplemental Traffic Impact Analysis (TIA) presents an evaluation of the potential impacts associated with the proposed modification (by Use Permit) to the previously approved General Plan Amendment (No. 2007-03) and Rezoning Application (No. 2007-03). The existing project site is located in the unincorporated area about 4 miles east of the City of Modesto (7948 Yosemite Boulevard). The site is comprised of approximately 45 acres and includes various commercial related uses (i.e. restaurant and lounge, produce market, service station facilities, park site, etc). Project access is currently provided via multiple driveways on the south side of Yosemite Boulevard (State Route 132) and west side of Geer Road. The general location of the project site is shown on Figure 1.

The General Plan Amendment and Rezoning Application were approved in 2008 (Mitigated Negative Declaration). The Project Development Plan approved in 2008 included a new banquet center, a recreational vehicle (RV) / boat storage facility, a RV park, a fruit packing / warehouse facility, a site for retail tractor sales, and additional retail space. In addition, the plan included relocating the existing service station facilities to accommodate the new development components. Hosting outdoor events at the existing park site was also approved. An evaluation of the potential impacts associated with the General Plan Amendment and Rezoning Application project was presented in the TIA prepared by KD Anderson & Associates (Dec. 6, 2007).

The proposed modification to the approved development plan includes the addition of an outside amphitheater within the existing park site. The amphitheater will host events or concerts and have a capacity to accommodate a maximum of 3,500 guests. The majority of events will occur on a weekend or Holiday. All parking associated with the amphitheater operations will be accommodated on-site. On-site circulation will be provided via a paved road, with access to Yosemite Boulevard (State Route 132) and Geer Road provided via existing and/or future driveway connections.

The scope of the Supplemental TIA was based on a review of the project material and subsequent discussions with the project team. The analysis presents an evaluation of the potential impacts associated with a capacity size event at the amphitheater (3,500 guests). An evaluation of traffic operations at the Yosemite Boulevard (State Route 132) / Geer Road intersection is presented for the following study periods:

- Average Weekday Afternoon (PM) Peak Commuter Period (4:00-6:00 PM)
- Average Weekday Evening Period (10:00-11:00 PM)
- Friday Afternoon (PM) Peak Commuter Period (4:00-6:00 PM)
- Friday Evening Period (10:00-11:00 PM)
- Saturday Mid-Day (MD) Peak Period (1:00-3:00 PM)
- Saturday Evening Period (10:00-11:00 PM)



LEGEND

= Project Site

NORTH

PINNACLE TRAFFIC ENGINEERING

The Fruit Yard
- Supplemental TIA -

FIGURE 1
PROJECT LOCATION MAP

The evaluation of potential project impacts on near-term traffic operations focuses on the analysis of the following scenarios:

- Existing Traffic Conditions
- Existing Plus Approved Project Site Uses Traffic Conditions
- Existing Plus Approved Project Site Uses Plus Amphitheater Event Traffic Conditions

The Supplemental TIA also presents a review of project access and addresses concerns raised by residences regarding additional traffic on Weyer Road. Information in the following reference documents was reviewed during the course of conducting the supplemental analysis:

- Stanislaus County Regional Transportation Plan (RTP) - StanCOG (2014)
- Stanislaus County Recommended Final Capital Improvement Plan (2013)
- Stanislaus County Congestion Management Plan (CMP) - StanCOG (2009)
- The Fruit Yard Traffic Impact Analysis- KD Anderson & Associates (2007)
- Stanislaus County General Plan Circulation Element (2006)
- Stanislaus County General Plan Circulation Support Documentation

2.0 EXISTING CONDITIONS

The roadway network serving the project site includes Yosemite Boulevard (State Route 132), Geer Road and Albers Road. The following is a brief description of the network and an evaluation of existing traffic operations.

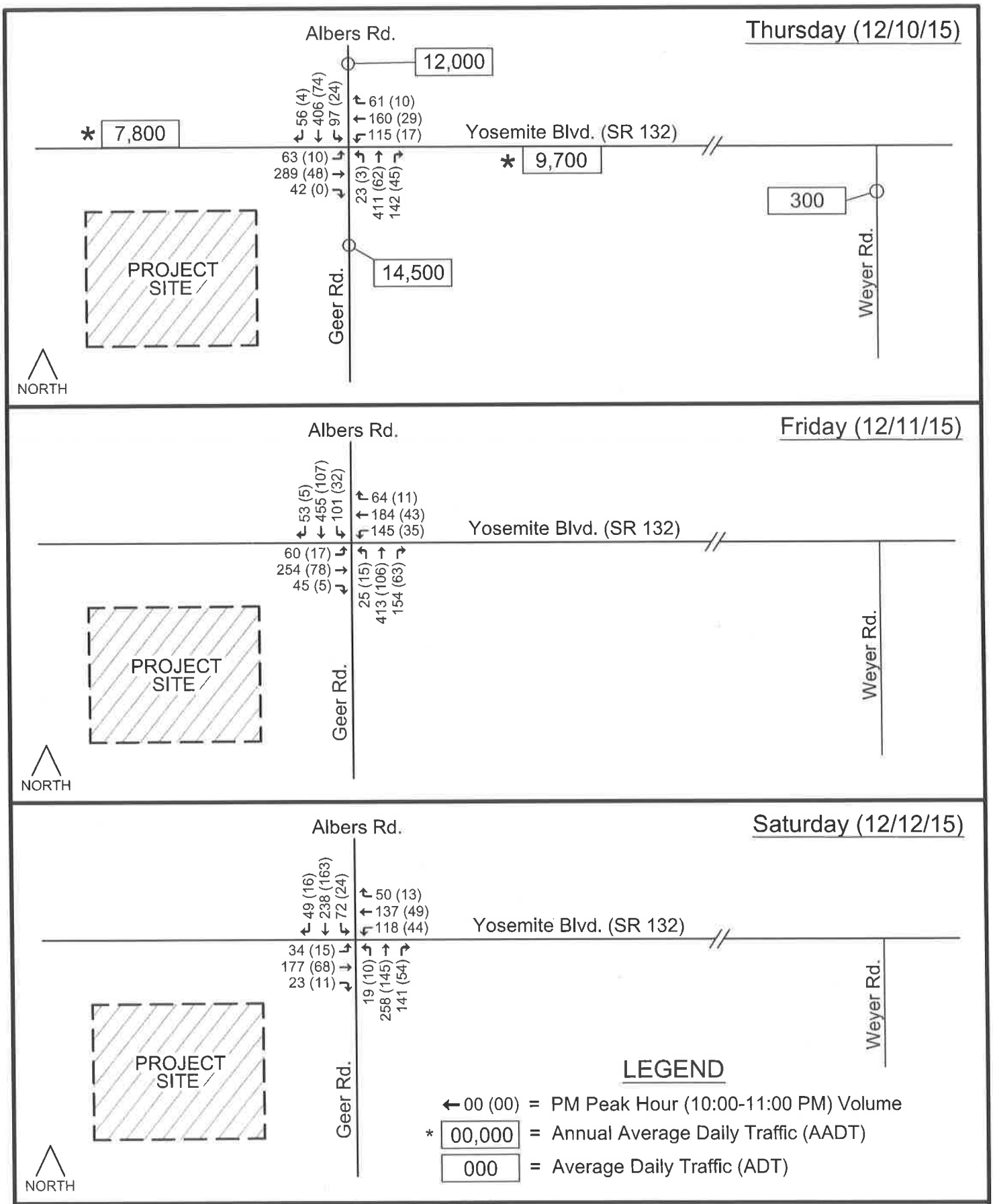
Network Description

Yosemite Boulevard (State Route 132) is a principal east-west route extending east from the City of Modesto and passing through Empire, Waterford and La Grange. State Route (SR) 132 also serves as a principal east-west route between I-580 and SR 99 in the City of Modesto. Yosemite Boulevard (SR 132) between Modesto and Waterford is classified as a Class C Expressway. The majority of Yosemite Boulevard (SR 132) east of Modesto has a single lane in each direction, with a 55 miles per hour (mph) speed limit. The Yosemite Boulevard (SR 132) / Geer Road - Albers Road intersection is signalized. The sections (+/-500') of Yosemite Boulevard (SR 132) east and west of Geer Road - Albers Road have been improved, and have 2 lanes in each direction with left turn lane channelization. Two-to-one lane transition tapers are provided for east and westbound traffic adjacent to the project site.

Geer Road and Albers Road is a principal north-south route between the City of Turlock and City of Oakdale. Geer Road and Albers Road are both classified as a Class C Expressway. The majority of Geer Road and Albers Road between Turlock and Oakdale have a single lane in each direction, with a 55 mph speed limit. The sections (+/-400') of Geer Road and Albers Road north and south of Yosemite Boulevard (SR 132) have been improved, and have 2 lanes in each direction with left turn lane channelization. Two-to-one lane transition tapers are provided for north and southbound traffic adjacent to the project site.

Traffic Volumes

To document existing conditions at the Yosemite Boulevard (SR 132) / Geer Road - Albers Road intersection, new turning movement traffic count data was collected for the six (6) study periods. Daily traffic volume data was referenced from the Caltrans website and obtained from Stanislaus County. At the request of the project applicant, new 24-hour traffic count data was also collected for a 7-day period on Weyer Road south of Yosemite Boulevard (SR 132). The existing traffic volumes are illustrated on Figure 2. A summary of the new traffic count data and a comparison of the hourly volumes (PM peak hour vs. 10:00-11:00 PM) is provided in the Appendix. Copies of the new traffic count data are also included in the Appendix.



PINNACLE TRAFFIC ENGINEERING

The Fruit Yard
- Supplemental TIA -

FIGURE 2
EXISTING
TRAFFIC VOLUMES

Level of Service Operational Analysis

Various "level of service" (LOS) methodologies are used to evaluate traffic operations. Operating conditions range from LOS "A" (free-flowing) to LOS "F" (forced-flow). Overall daily operations and LOS values for roadway segments can be estimated by comparing average daily traffic (ADT) volume data with standard or accepted twenty-four (24) hour ADT threshold criteria. Stanislaus County has established the LOS C threshold as the lower limit for acceptable traffic operations. The Caltrans traffic study guidelines (Guide for the Preparation of Traffic Impact Studies, Dec. 2002) state, Caltrans endeavors to maintain a target LOS at the transition between LOS C and D on State highway facilities. A brief description of the LOS values is included in the Appendix.

The analysis presented in the 2007 TIA for the project site (KD Anderson & Associates) indicated that existing daily volumes on Yosemite Boulevard (adjacent to the project) were in LOS C range, while daily volumes on Geer Road (adjacent to the project site) were in the LOS E range. Daily traffic volumes on Yosemite Boulevard (SR 132) and Geer Road have remained relatively stable since 2007. The traffic analysis prepared for the County's General Plan Circulation Element utilized a "vehicle per lane per hour" (vplph) capacity to evaluate roadway segment LOS (1,000 vplph). The volume-to-capacity (V/C) ratios were then equated to LOS. The peak hour data on Figure 2 (average weekday) was used to estimate the roadway segment LOS adjacent to the project site. The existing roadway segment analysis is presented in Table 1.

Table 1 - Existing Roadway Segment Analysis (Average Weekday)

Roadway Segment	Direction	Volume	V/C Ratio	LOS (a)
Yosemite Blvd. (SR 132) w/o Geer Rd. - Albers Rd.	EB WB	394 239	0.39 0.24	D (B) C (A)
Yosemite Blvd. (SR 132) e/o Geer Rd. - Albers Rd.	EB WB	528 336	0.53 0.34	D (C) C (B)
Geer Rd. s/o Yosemite Blvd (SR 132)	NB SB	576 563	0.58 0.56	D (C) D (C)
Albers Rd. n/o Yosemite Blvd (SR 132)	NB SB	535 559	0.54 0.56	D (C) D (C)

(a) LOS for a 2-lane major roadway (LOS for 4-lane major roadway in parenthesis)

The roadway segment analysis indicates that existing segment volumes on Yosemite Boulevard (SR 132) are within acceptable limits as defined by Caltrans (LOS D or better). However, hourly directional volumes on the 2-lane segments of Geer Road and Albers Road exceed the County's defined threshold (LOS C or better). It is noted that the hourly volumes on the 4-lane segments of Geer Road (adjacent to the project site) and Albers Road (north of Yosemite Boulevard) are within the County's LOS C standard. It should also be noted that average daily traffic volumes on Weyer Road south of Yosemite Boulevard (300 ADT) are well within acceptable limits.

The LOS values for intersection operations are evaluated using estimated vehicle "control" delay (number of seconds per vehicle). Vehicle delays and LOS are reported for the overall intersection operations as an "average." During peak commuter periods, operations can be constrained at local intersections. Therefore, an analysis of peak hour operations is a good method for evaluating existing and/or future conditions, and the potential impact associated with a specific project. A copy of the vehicle delay-to-LOS relationship data is included with the Appendix Material.

The Synchro 8 software was used to evaluate the peak hour operations at the Yosemite Boulevard (SR 132) / Geer Road - Albers Road intersection. Methodologies in the 2010 Highway Capacity Manual (HCM) were used for the peak hour intersection LOS analysis. It is noted that since the amphitheater will have some events or concerts that will end after 10:00 PM the analysis of existing conditions includes an evaluation of the 10:00 to 11:00 PM period. The results of the existing intersection LOS analysis are presented in Table 2. Copies of the LOS worksheets are included in the Appendix Material.

Table 2 - Existing Intersection LOS Analysis

Study Period	Average Delay - LOS Value
Thursday:	
PM Peak Hour -	21.9 - C
10:00 to 11:00 PM -	16.6 - B
Friday:	
PM Peak Hour -	21.7 - C
10:00 to 11:00 PM -	18.2 - B
Saturday:	
Mid-Day Peak Hour -	19.4 - B
10:00 to 11:00 PM -	15.3 - B

The data in Table 2 indicates that average vehicle delays during the six (6) study periods are within acceptable limits as defined by the County (LOS C or better) and Caltrans (LOS C/D).

Vehicle Speeds

A sampling of vehicle speeds was recorded on Yosemite Boulevard (SR 132) and Geer Road adjacent to the project site. Eastbound speeds on Yosemite Boulevard (SR 132) and northbound speeds on Geer Road were approximately 56-58 mph. Westbound speeds on Yosemite Boulevard (SR 132) and southbound speeds on Geer Road were slightly less since vehicles were coming from the signalized Yosemite Boulevard (SR 132) / Geer Road - Albers Road intersection.

3.0 PROJECT CONDITIONS

The following is a description of the project and proposed modification, an estimate of the project site trip generation quantities for the approved uses and amphitheater component, an assignment of the project site trips to the adjacent street system, and an evaluation of the potential project (amphitheater) impacts on existing operations. The analysis of potential project (amphitheater) impacts assumes the development of all approved uses on the project site.

Description

As previously stated, a General Plan Amendment and Rezoning Application were approved in 2008. The approved development plan included a relocation of the existing service and card-lock service station facilities and the construction of various new commercial related uses (i.e. new banquet center, a RV / boat storage facility, a RV park, a fruit packing / warehouse facility, a site for retail tractor sales, and additional retail space). A summary of the existing and approved project site uses is presented in Table 3. It is noted that the floor areas for the retail tractor sales site and fruit packing / warehouse facility are based on the square footages analyzed in the 2007 TIA (KD Anderson & Associates). A copy of the 2008 Project Development Plan is provided on Figure 3A.

Table 3 - Existing and Approved Project Site Uses

Existing Uses		Approved Uses	
Restaurant (a)	8,000 SF	Banquet Center	9,000 SF
Produce / Fruit Market (a)	5,000 SF	New Retail Space	3,000 SF
Service Station (b)	4 Pumps	RV / Boat Storage	322 Spaces
	(8 Fueling Pos.)	RV Camping Park	66 Sites
Card-Lock Service Station (c)	3 Pumps	Retail Tractor Sales	10,000 SF
	(6 Fueling Pos.)	Fruit Packing / Warehouse	35,000 SF

(a) Existing project site use to remain
(b) Existing service sta. to be relocated (new site will have 6 pumps with 12 fueling positions)
(c) Exist. card-lock station to be relocated (new site will have 3 pumps & conv. market)

The proposed project site modification includes the addition of an outside amphitheater within the existing park site (west of the pond). The amphitheater will host events or concerts and have a capacity to accommodate a maximum of 3,500 guests. The majority of events will occur on a weekend or Holiday, between May and September (especially capacity size events or concerts). Events on weekdays (Monday-Friday) will begin after 7:00 PM and end by 10:30 PM. Parking for amphitheater guests will be accommodated on-site in various surface lots. On-site parking will be provided for 1,167 vehicles (plus 135 overflow spaces). On-site circulation will be provided via a paved road (covered under previous approval), with initial access provided via two (2) driveways on Yosemite Boulevard ("A" Drive and "B" Drive) and one (1) driveway on Geer Road ("D" Drive). Future access may also be provided via Triangle Ranch Road and "F" Way. A copy of the Park Site Development Plan (Amphitheater) is provided on Figure 3B.

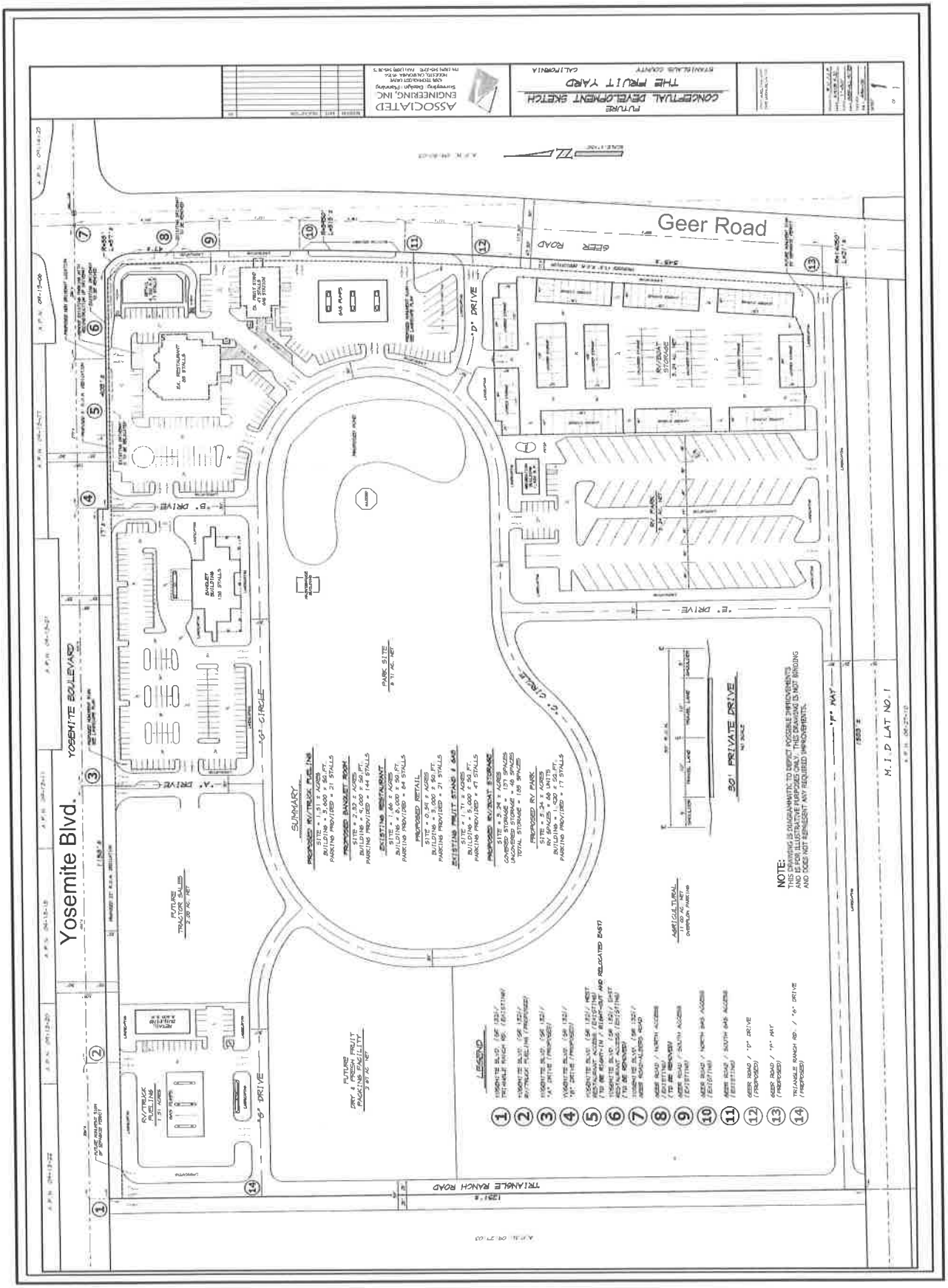


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FIGURE 3A
APPROVED
DEVELOPMENT PLAN

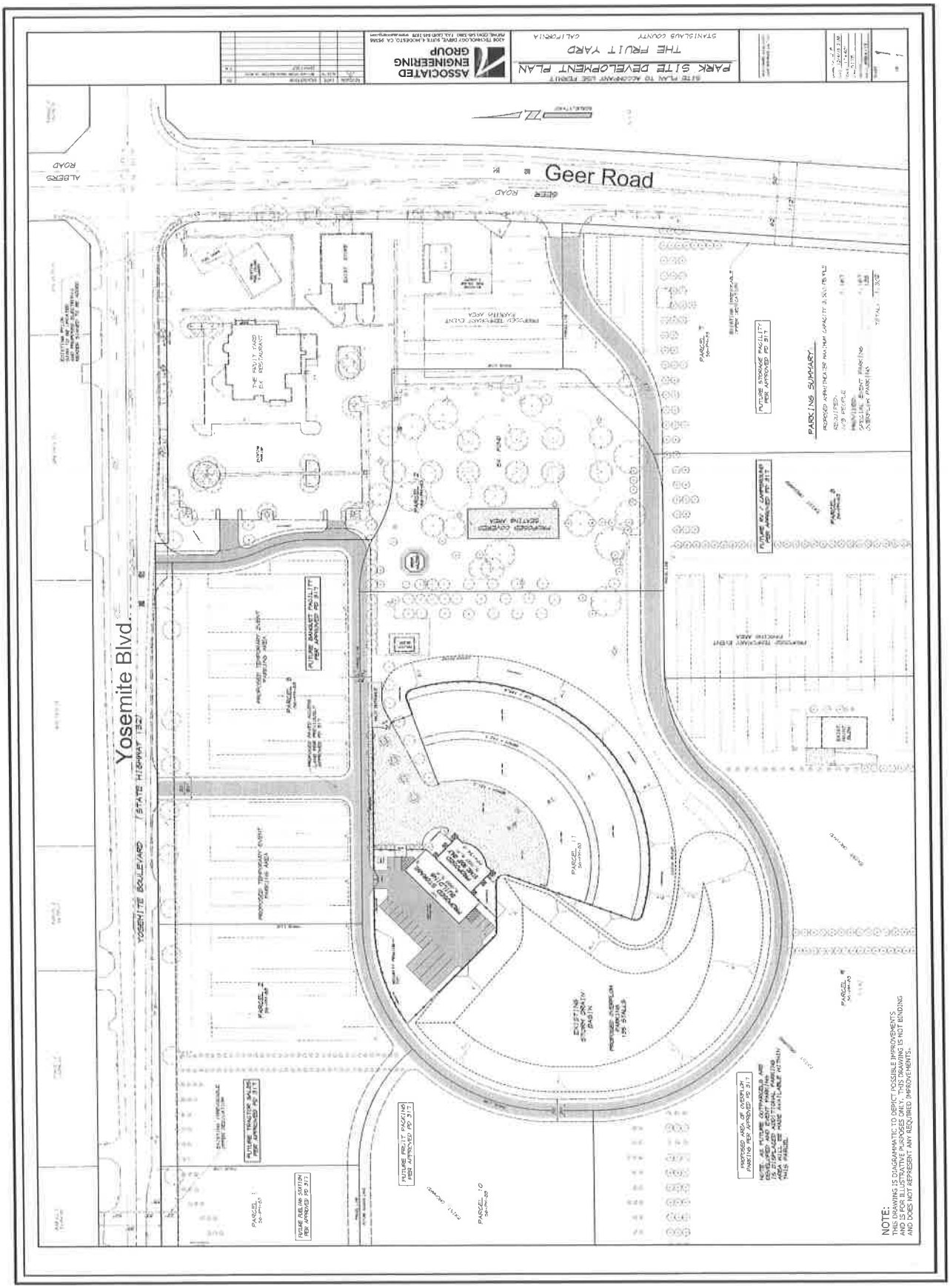

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FIGURE 3B
PARK SITE
DEVELOPMENT PLAN

Project Site Trip Generation Estimates

Trip generation rate data in the Institute of Transportation Engineers (ITE) Trip Generation Manual (9th Edition) and a Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (San Diego Association of Governments, SANDAG) was used to estimate the number of vehicle trips associated with the existing and approved project site uses. The applicable trip generation rates are presented in Table 4.

Table 4 - Applicable ITE Trip Generation Rates

Land Use Category	Trip Generation Rate					
	Weekday			Weekend Day		
	PM Peak Hour		Daily	Mid-Day Peak Hour		Daily
	In	Out		In	Out	
ITE #150 - Warehousing (a)	0.08	0.24	3.56	0.08	0.05	1.23
ITE #151 - Mini Warehouse Storage (b)	0.01	0.01	0.25	0.02	0.02	0.22
ITE #416 - Campground / RV Park (c & e)	0.18	0.09	4.00	0.27	0.14	6.00
ITE #826 - Specialty Retail Uses (a & f)	1.19	1.52	44.32	1.36	1.36	42.04
ITE #841 - Automobile Sales (a)	1.05	1.57	32.30	2.01	2.01	29.74
ITE #931 - Quality Restaurant (a)	5.02	2.47	89.95	6.38	4.44	94.36
ITE #944 - Service Station (d & g)	6.94	6.93	168.56	6.94	6.93	168.56
ITE #945 - Serv. Sta. w/ Conv. Market (d & g)	6.76	6.75	162.78	6.76	6.75	162.78

(a) Number of vehicle trips per 1,000 SF
(b) Number of vehicle trips per storage unit / space
(c) Number of vehicle trips per camping (RV) site - weekday daily rate based on SANDAG rates
(d) Number of vehicle trips per fueling position (2 fueling positions per pump)
(e) Weekend day rates assumed to be 1.5 times weekday rates
(f) Weekend mid-day peak rate assumed to be same as weekday PM peak rate (50% in / 50% out)
(g) Weekend day rates assumed to be same as weekday rates (daily and peak hour)

To the quantify the trips associated with the project site, the trip generation estimates were derived for both the existing and approved project site uses (to represent base-line existing conditions). The "specialty retail" category (ITE #826) rates were used to estimate the number of trips associated with the existing produce market / fruit stand. It is noted that the trip rates associated with the "service station with convenience market" category (ITE #945) are slightly lower than the standard "service station" (ITE #944) rates. Therefore, the standard service station rates were used to estimate the trip generation associated with the existing card-lock service station (relocated facility will also have a convenience market). As previously noted, the floor areas associated with the retail tractor sales site and fruit packing / warehouse facility are based on the square footages analyzed in the 2007 TIA. In a similar manner, the trip generation estimates associated with the banquet center are also based on the estimates analyzed in the 2007 TIA (number of trips based on number of parking spaces). It was assumed that an event at the banquet center could start around

6:00 PM on an average weekday, and therefore, guests would arrive during the PM peak hour. Guests attending a banquet would then exit the project site between 10:00 PM and 12:00 Midnight.

Information in the ITE Trip Generation Handbook demonstrates that a significant portion of the retail related trips will be pass-by and/or diverted link type trips coming from traffic already on the adjacent street system. The Caltrans traffic study methodologies allow a 15% trip reduction for pass-by traffic and a 5% reduction for captured trips (typically internal trips between uses). The trip generation estimates associated with the existing and approved project site uses are presented in Table 5.

Table 5 - Project Site Uses Trip Generation Estimates

Project Site Component	Number of Vehicle Trips					
	Weekday			Weekend Day		
	PM Peak Hour		Daily	Mid-Day Peak Hour		Daily
	In	Out		In	Out	
Existing Project Site Uses:						
Restaurant - 8,000 SF	40	20	720	51	36	754
Produce Market / Fruit Stand - 5,000 SF	6	8	222	7	7	210
Service Station - 8 Fueling Positions	56	55	1,348	56	55	1,348
Card-Lock Service Sta. - 6 Fueling Pos. (a)	42	42	1,012	42	42	1,012
Existing Uses Sub-Totals:	144	125	3,302	156	140	3,324
(-20% Pass-by & Internal Trip Reduction)	(-21)	(-21)	(-516)	(-21)	(-21)	(-514)
Approved Project Site Uses:						
Banquet Facility - 9,000 SF (b)	144	0	288	72	72	144
New Retail Space - 3,000 SF	4	5	134	4	4	126
RV / Boat Storage - 322 Spaces	3	3	80	6	6	70
RV Camping Park - 66 Site / Spaces	12	6	264	18	9	396
Retail Tractor Sales - 10,000 SF	11	16	324	20	20	298
Fruit Packing / Warehouse - 35,000 SF	3	8	124	3	2	44
Relocated Service Sta. (c)	28	28	674	28	28	674
Approved Uses Sub-Totals:	205	66	1,888	151	141	1,752
(20% Pass-by & Internal Trip Reduction)	(-6)	(-7)	(-162)	(-6)	(-6)	(-160)
Total Project Site Trip Generation:	349	191	5,190	307	281	5,076
External Traffic Demands:	322	163	4,512	280	254	4,402

(a) Relocated card-lock service station will have same number of pump (fueling positions), with a convenience market
(b) Trip generation based on number of parking stalls (referenced from 2007 TIA)
(c) Relocated service station will have 2 additional pumps, with 4 new fueling positions

The data in Table 5 indicates that the existing site uses generate a total of approximately 3,300 vehicle trips on an average weekday and weekend day (two-way trip ends). Development of the approved site will increase the total daily trip generation to approximately 5,100-5,200 ADT. On an average weekday the existing and approved uses are estimated to generate approximately 540 trips during the PM peak hour (349 inbound and 191 outbound). On a typical weekend day, the project site uses (exiting and approved) are estimated to generate 588 trips during the mid-day (MD) peak hour (307 inbound and 281 outbound). It is noted that the mid-day peak hour trip generation estimates for a weekend day represent the "peak hour of generation," which may not be the same period for each project site use. Therefore, the project site trip generation estimates presented in Table 5 may slightly overestimate the actual trip generation.

Information in the Urban Land Institute (ULI) Shared Parking publication indicates that parking demands associated with typical retail uses are about 30% of the peak demand (100%) during the 10:00-11:00 PM period. Therefore, to derive the trip generation estimates for the 10:00-11:00 PM period the peak period demands for the retail uses (restaurant and services station) were multiplied by 0.30 (weekday and weekend day). Though it is not anticipated that the RV / boat storage, RV park or fruit packing / warehouse uses will generate much traffic during the 10:00-11:00 PM period, the peak period demands in Table 5 were also multiplied by 0.30 to present a conservative analysis for the 10:00-11:00 PM period. As previously stated, it was assumed that traffic associated with the banquet center could be exiting the site between 10:00 PM and Midnight. Therefore, on a typical weekday 144 trips could be exiting the site during the 10:00-11:00 PM period (72 trips exiting the site on a weekend day). It is estimated that on an average weekday the existing and approved uses generate approximately 264 trips during the 10:00-11:00 PM period (62 inbound and 202 outbound). On a typical weekend day, the existing and approved project site uses are estimated to generate 207 trips during the 10:00-11:00 PM period (71 inbound and 136 outbound).

The "Approved Project Site Uses" trip generation estimates in Table 5 were based on the 2008 Project Development Plan. The trip generation estimates for the "Approved Project Site Uses" are slightly higher than the trip generation estimates analyzed in the 2007 TIA. Several differences were identified, which included that the 2007 trip generation estimates did not account for the additional fuel pumps associated with one of the relocated service stations.

Existing and Approved Site Uses Traffic Volumes

The trip generation estimates for the existing and approved site uses were assigned to the local street system based a review of existing travel patterns and the distribution percentages used in the 2007 TIA. The distribution of trips associated with the existing uses "to be relocated" (i.e. service station facilities) was performed based on the new locations (refer to the Approved Development Plan - Figure 3A). The trips for each use were assigned to the appropriate driveway(s). The driveways immediately adjacent to the Yosemite Boulevard (SR 132) / Geer Road - Albers Road intersection were combined with the appropriate left turn restrictions. Approximately 50% of the project site trips were assigned to Yosemite Boulevard (25% west and east of the project site), 30%

were assigned to Geer Road (south of project site) and 20% were assigned to Albers Road (north of Yosemite Boulevard). The project site traffic volumes associated with the existing and approved uses are illustrated on Figures 4A (Weekday) and 4B (Weekend Day). It again is noted that the trips associated with the existing uses to be relocated were assigned to the street system based on the new locations as shown on the approved Project Development Plan.

Existing Traffic Volumes Plus Project Site (Existing and Approved Uses) Traffic Volumes

The project site traffic volumes associated with the existing and approved uses were combined with the existing traffic volumes on Figure 2. The existing traffic volumes on Figure 2 were first adjusted the reflect the relocation of the existing site uses "to be relocated" (existing volumes minus the existing service station uses), since the relocated service station and card-lock service station volumes are included in the volumes on Figures 4A and 4B. The existing traffic volumes plus the project site traffic volumes (existing and approved uses) are illustrated on Figure 5.

Amphitheater Trip Generation and Traffic Volumes

As previously described, the proposed project site modification includes the addition of an outside amphitheater with a maximum seating capacity for 3,500 guests. The amphitheater will host events or concerts, with the majority occurring on a weekend or Holiday. Event parking for the amphitheater will be provided on-site for 1,167 vehicles; which is a vehicle occupancy of 3 guest per vehicle (3,500/3). For study purposes, it was assumed that a capacity size event (or concert) at the amphitheater will generate approximately 1,170 vehicles (inbound and outbound). A total of 2,340 vehicle trips (two-way trip ends) will be generated by a capacity size event at the amphitheater. The distribution of trips associated with a capacity size event were assigned to the adjacent street system based on the populations of local communities (Modesto, Empire, Waterford, La Grange, Turlock and Oakdale). Approximately 55% of the amphitheater event trips were assigned to Yosemite Boulevard (40% west of the project site and 15% east of the project site), 25% were assigned to Geer Road (south of project site) and 20% were assigned to Albers Road (north of Yosemite Boulevard). As previously stated, initial access will be provided via "A" Drive and "B" Drive (driveways on Yosemite Boulevard) and "D" Drive (driveway on Geer Road). Future access may also eventually be provided via Triangle Ranch Road and "F" Way. The total amphitheater event traffic volumes are illustrated on Figure 6. It is noted that all inbound trips will occur prior to (before) an event and all outbound trips will occur after an event has concluded, and therefore, inbound and outbound trips will not occur within the same 2-3 hour period.

It is anticipated that 90-95% of all guests will be on-site within 15-30 minutes prior to the start of an event. Transportation Demand Management (TDM) strategies will be used in the scheduling of events as required to avoid generating any guest traffic during typical weekday (between 4:00-6:00 PM) and weekend day (between 1:00-3:00 PM) peak periods. In addition, no activities will occur at the new banquet center on the same day as an event at the amphitheater.

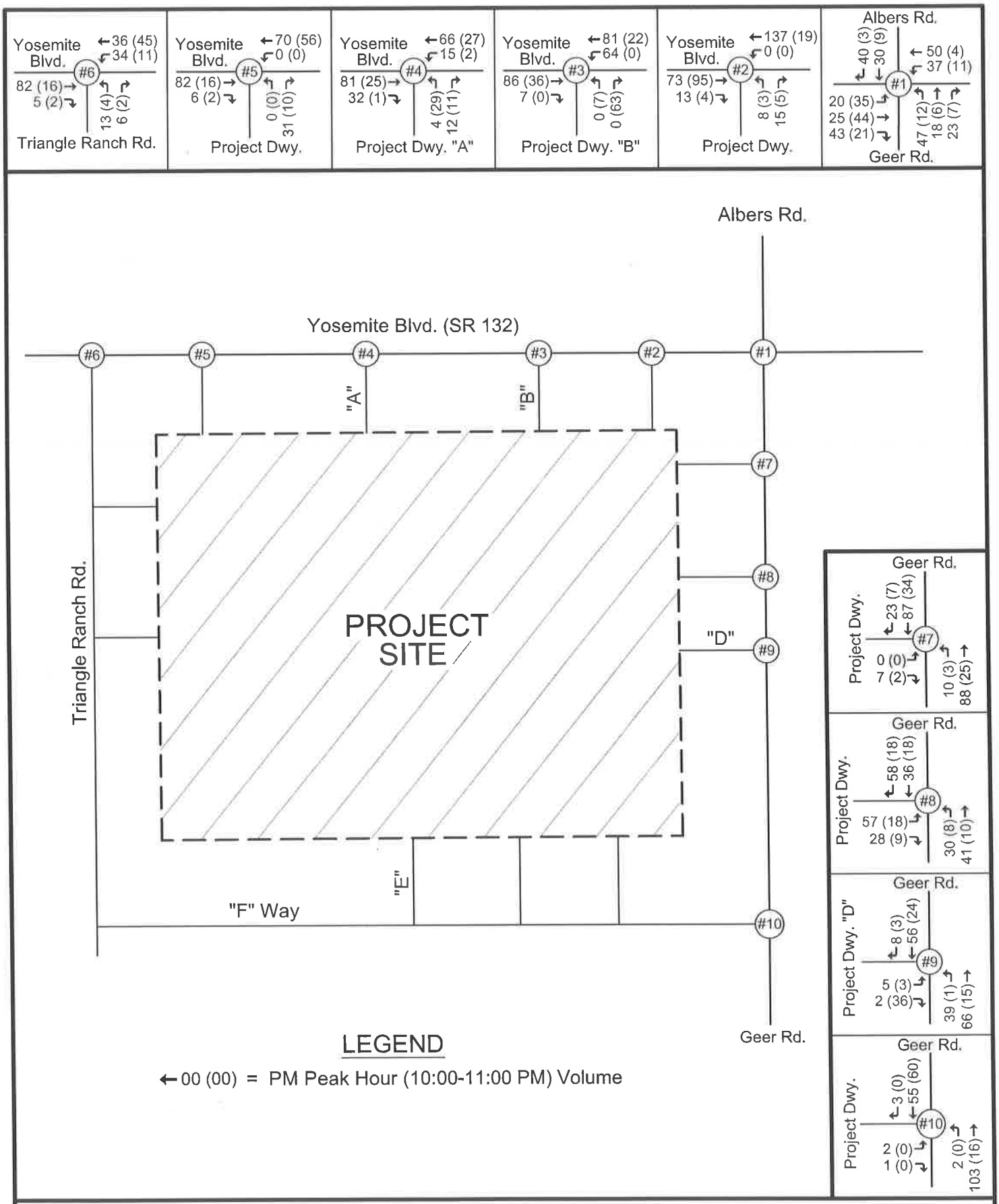

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FIGURE 4A
EXISTING AND APPROVED USES WEEKDAY VOLUMES

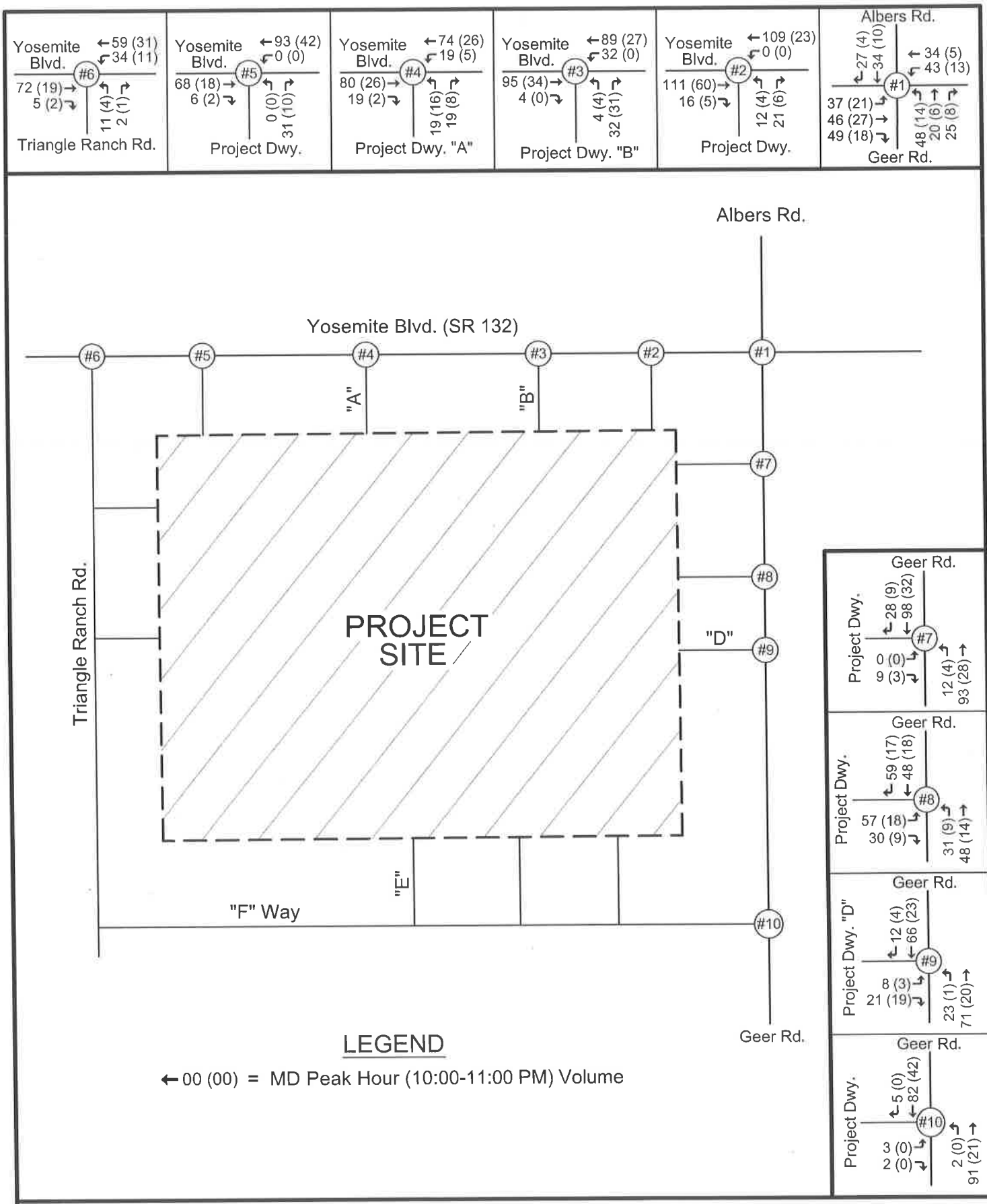

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FIGURE 4B
EXISTING AND APPROVED USES
WEEKEND DAY VOLUMES

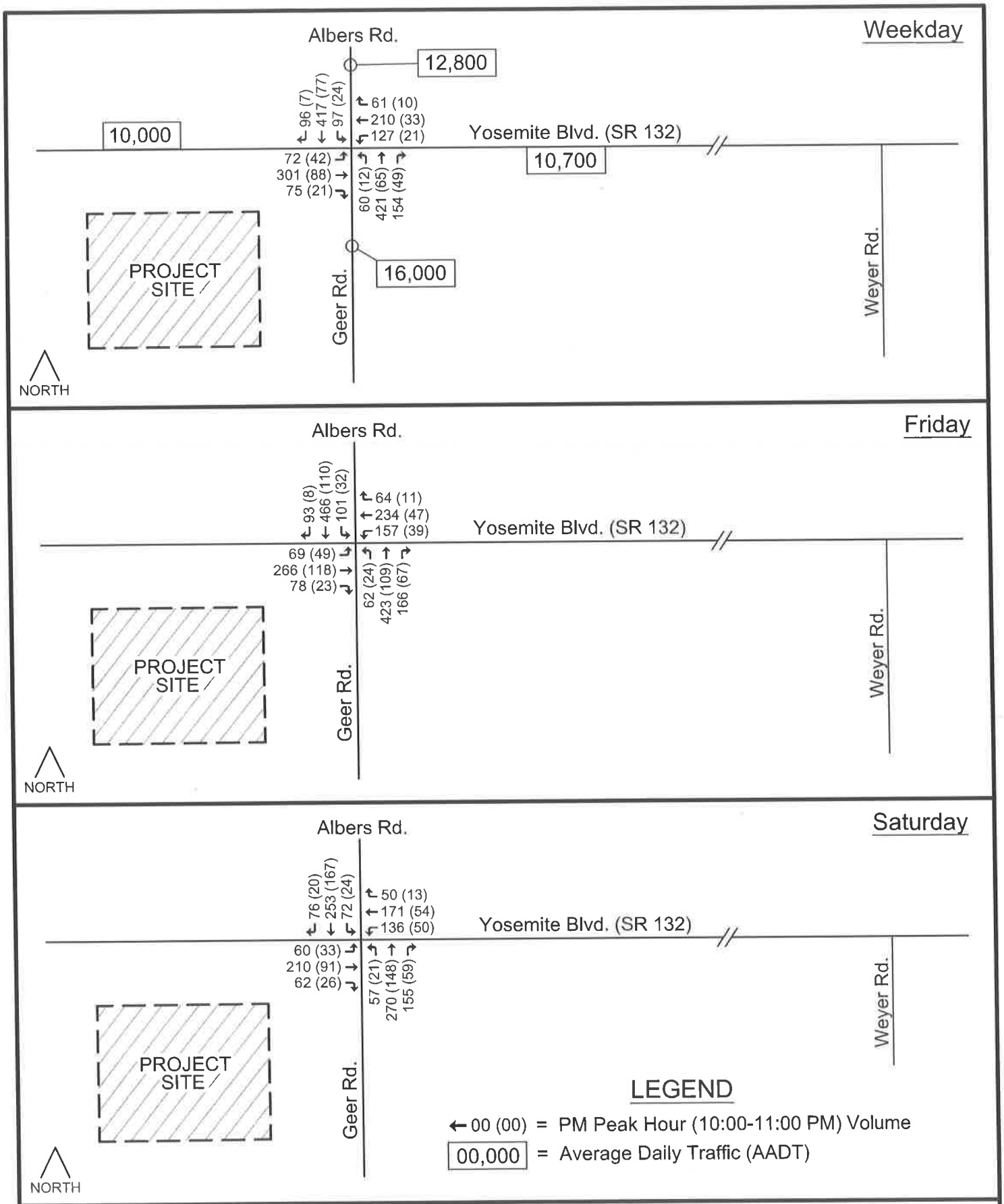

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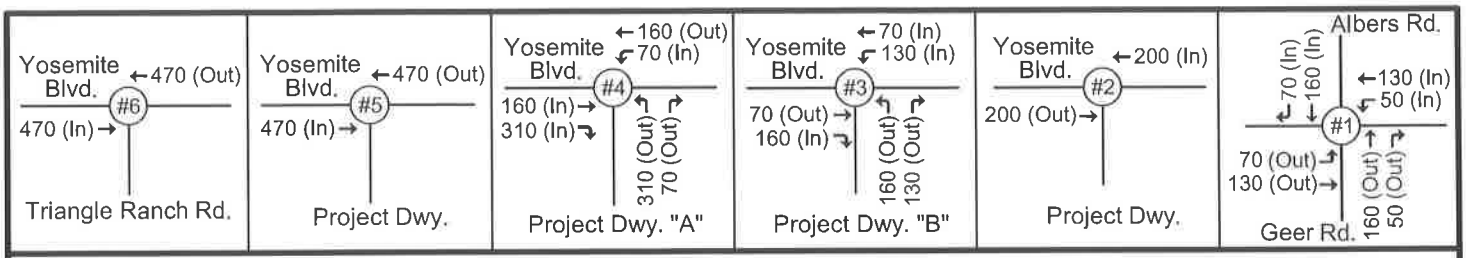
FIGURE 5
EXISTING VOLUMES PLUS PROJECT SITE USES TRAFFIC VOLUMES



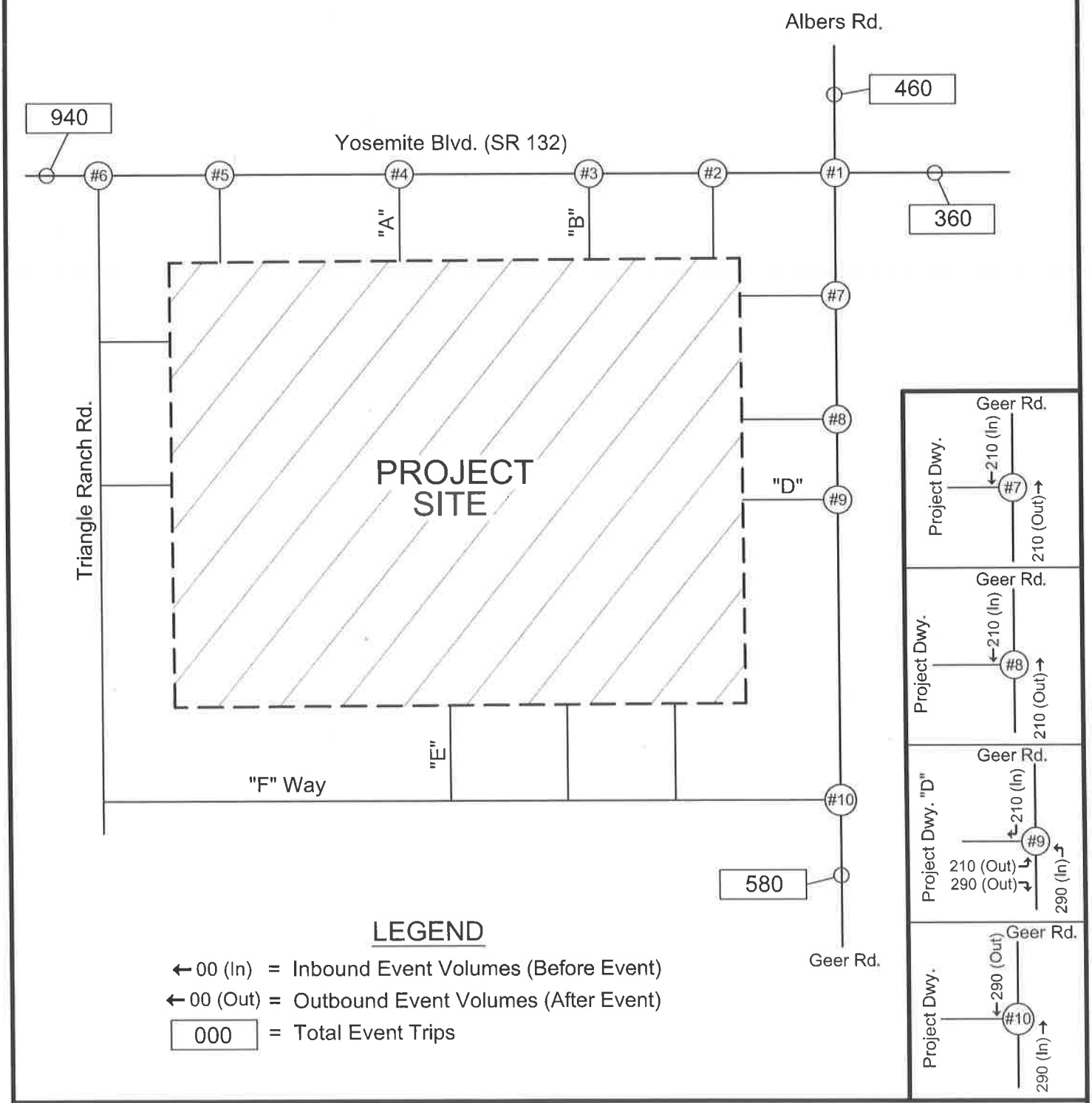


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FIGURE 6
TOTAL AMPHITHEATER TRAFFIC VOLUMES

Existing Volumes Plus Project Site Volumes Plus Amphitheater Traffic Volumes

The amphitheater event traffic volumes on Figure 6 were combined with the existing volumes on Figure 2 (adjusted to reflect new service station and card-lock service station locations) and the project site volumes (existing and approved uses) on Figures 4A and 4B. The project site volumes were first adjusted to reflect no activity at the banquet center, since the TDM measures require that no activity occur on the same day as an event at the amphitheater. Though the amphitheater TDM measures are designed to avoid generating any guest traffic during typical weekday or weekend day peak periods, it was deemed appropriate to analyze a "worst case" scenario for study purposes. Therefore, the "worst case" scenario assumes that traffic arriving at an amphitheater event could coincide with the peak hour period on the adjacent street system (between 5:00-6:00 PM on a weekday and 1:00-3:00 PM on a weekend day). All event exiting traffic would occur during the 10:00-11:00 PM period (on weekdays and weekend days). The existing traffic volumes (adjusted) plus the project site traffic volumes (existing and approved uses with no banquet center activity) plus the amphitheater traffic volumes (worst case) are illustrated on Figure 7.

Level of Service Operational Analysis

Similar to the existing conditions analysis, the existing traffic volumes plus the project site traffic volumes (existing and approved uses) on Figure 5 were compared to the ADT thresholds used in the 2007 TIA. The comparison indicated that daily volumes on Yosemite Boulevard (SR 132) will be in the LOS D range, while the daily volumes on the 2-lane segments of Geer Road south of the project site will be in the LOS E-F range. However, it is noted that daily traffic volumes on the 4-lane segments of Geer Road (adjacent to the project site) and Albers Road (north of Yosemite Boulevard) will be within the County's LOS C standard (<20,100 ADT). The peak hour data on Figure 5 (average weekday) was again used to evaluate the roadway segment LOS associated with the existing volumes plus the project site volumes (existing and approved uses) scenario. The existing plus project site uses segment analysis is presented in Table 6.

Table 6 - Existing Plus Project Site Uses Roadway Segment Analysis (Average Weekday)

Roadway Segment	Direction	Volume	V/C Ratio	LOS (a)
Yosemite Blvd. (SR 132) w/o Geer Rd. - Albers Rd.	EB WB	448 366	0.45 0.37	D (B) D (B)
Yosemite Blvd. (SR 132) e/o Geer Rd. - Albers Rd.	EB WB	552 398	0.55 0.40	D (C) D (B)
Geer Rd. s/o Yosemite Blvd (SR 132)	NB SB	635 619	0.64 0.62	E (C) E (C)
Albers Rd. n/o Yosemite Blvd (SR 132)	NB SB	554 610	0.55 0.61	D (C) E (C)

(a) LOS report for a 2-lane major roadway (4-lane major roadway LOS in parenthesis)

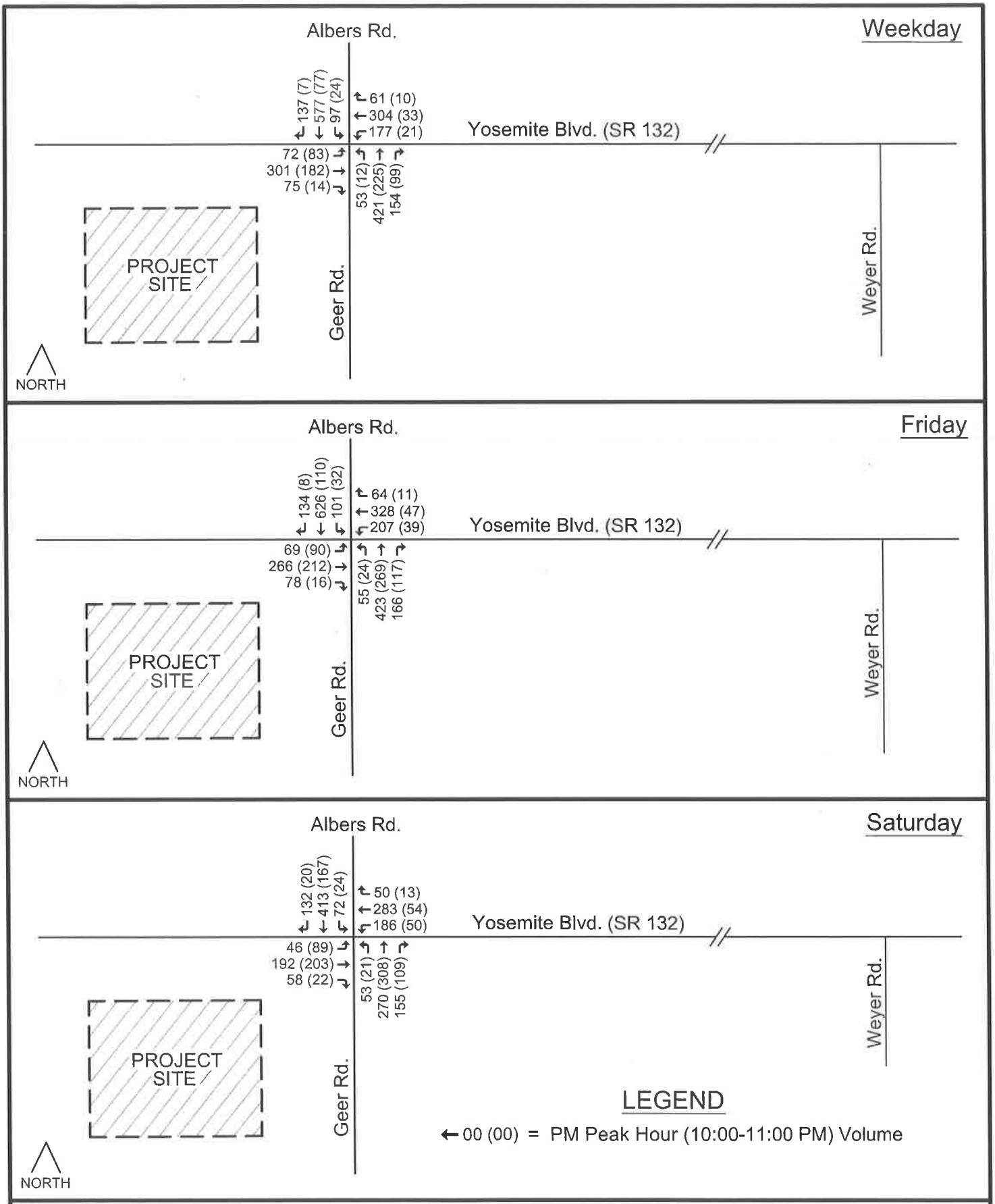

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FIGURE 7
EXISTING VOLUMES PLUS PROJECT SITE USES PLUS AMPHITHEATER VOLUMES

The roadway segment analysis indicates that the existing plus project site (existing and approved uses) hourly segment volumes on Yosemite Boulevard (SR 132) will remain within acceptable limits as defined by Caltrans (LOS D or better). However, hourly directional volumes on the 2-lane segments of Geer Road and Albers Road will continue to exceed the County's LOS C standard. It is noted that the hourly volumes on the 4-lane segments of Geer Road (adjacent to the project site) and Albers Road (north of Yosemite Boulevard) will remain within the County's LOS C standard.

Information in the County's General Plan Circulation Element and StanCOG's RTP has identified the future need to widen both Yosemite Boulevard (4-lane) and Geer Road - Albers Road (6-lane) to expressway standards. The future widening improvements have been incorporated into the RTP and will be partially funded by developer contributions to the County's Regional Transportation Impact Fee (RTIF) program. The analysis presented in the 2007 TIA identified the potential impacts to existing facilities that would be associated with the approved Project Development Plan. The project's contribution to the RTIF program served as mitigation to reduce the potential impacts to a level of "less than significant." As previously stated, the 2008 General Plan Amendment and Rezoning Application were approved with a Mitigated Negative Declaration.

The proposed amphitheater will host events or concerts, with a majority of the events occurring on a weekend or holiday (only 5-6 events will be held on a weekday). However, traffic associated with the amphitheater operations will increase traffic demands on Yosemite Boulevard and Geer Road - Albers Road on selected weekdays. Therefore, it is concluded that the amphitheater project will potentially impact operations on the local street system. Similar to the mitigation measure recommended for the approved 2008 Project Development Plan, the project shall contribute it's fair-share towards the cost of future regional circulation system improvements. Contribution to the RTIF program shall serve as mitigation to reduce the potential impact to a level of "less than significant." The proposed mitigation is consistent with the mitigations approved for the 2008 Project Development Plan (analyzed in the 2007 TIA).

At the applicant's request, new 24-hour traffic count data was collected on Weyer Road. The existing conditions analysis documented that average daily traffic volumes on Weyer Road south of Yosemite Boulevard (300 ADT) are well within the acceptable capacity for a rural roadway (<1,200 ADT). A review of the local roadway system was conducted to address concerns raised by local residences regarding the use of Weyer Road for access to and/or from the amphitheater site. Weyer Road is a narrow rural 2-lane rural roadway with no shoulders or lighting. There are 15 mph curve advisory signs posted on Weyer Road (for southbound traffic) and Jantzen Road (for eastbound traffic). Due to the populations of Waterford, Hickman and La Grange, it is anticipated that only 15-20% of the amphitheater traffic would have an origin or destination east of Geer Road - Albers Road. A review of the potential alternative route between Yosemite Boulevard and the amphitheater site indicates that using Weyer Road and Jantzen Road would be at least 3 times the distance as compared to using Yosemite Boulevard west of Weyer Road and Geer Road south of Yosemite Boulevard (3,200' vs. 10,500'). In addition, since the traffic signal

at the Yosemite Boulevard (SR 132) / Geer Road - Albers Road intersection operates well within acceptable limits it is concluded that little-to-no traffic would use Weyer Road and Jantzen Road route for access to and/or from the amphitheater site. Therefore, the amphitheater traffic will not impact operations along Weyer Road.

The Synchro 8 software was again used to evaluate the peak hour traffic operations at the Yosemite Boulevard (SR 132) / Geer Road - Albers Road intersection. The analysis was concluded for the "existing traffic plus the project site traffic (existing and approved uses)" and the "existing traffic plus the project site traffic (existing and approved uses) plus the amphitheater traffic" scenarios. The "existing traffic plus the project site traffic (existing and approved uses)" scenario represents the base-line conditions for the analysis of potential impacts associated with the amphitheater project. The results of the intersection LOS analysis are presented in Table 7. Copies of the LOS worksheets are included in the Appendix Material.

Table 7 - Existing Plus Project Site Uses Plus Amphitheater
Intersection LOS Analysis

Study Scenario	Average Vehicle Delay - LOS Value		
	Existing Conditions	Existing Plus Approved Uses Conditions	Existing Plus Approved Uses Plus Amphitheater Conditions
Thursday:			
PM Peak Hour -	21.9 - C	24.2 - C	24.8 - C
10:00-11:00 PM -	16.6 - B	20.2 - C	17.9 - B
Friday:			
PM Peak Hour -	21.7 - C	23.2 - C	25.4 - C
10:00-11:00 PM -	18.2 - B	19.7 - B	18.1 - B
Saturday:			
Mid-Day Peak Hour -	19.4 - B	21.1 - C	22.3 - C
10:00-11:00 PM -	15.3 - B	17.0 - B	17.8 - B

The data in Table 7 indicates that average vehicle delays during the six (6) study periods will remain within acceptable limits as defined by Stanislaus County (LOS C or better) and Caltrans (LOS C/D). Therefore, it is concluded that the amphitheater project will not significantly impact peak period operations at the Yosemite Boulevard (SR 132) / Geer Road intersection.

Amphitheater Site Access

As previously described, initial access for the amphitheater traffic will be provided via two (2) driveways on Yosemite Boulevard ("A" Drive and "B" Drive) and one (1) driveway on Geer Road ("D" Drive). The total event traffic volumes on Figure 6 illustrate the turning movements at each driveway. It is again noted that the inbound and outbound trips will not occur within the same 2-3 hour period. The evaluation of site access includes a review of sight distance along Yosemite

Boulevard (SR 132) and Geer Road. In addition, a micro-simulation model was developed using the Synchro / SimTraffic 8 software to identify any potential access issues.

A review of sight distance was conducted using criteria in the Caltrans Highway Design Manual (HDM, Chapters 200 and 400). Stopping sight distance is the minimum distance required by a driver to bring a vehicle to a complete stop after an object has become visible on the roadway. Corner sight distance is the minimum time required for a waiting vehicle to either cross all lanes of through traffic, or cross the near lanes and turn left or right, without requiring through traffic to radically alter their speed. Caltrans uses a minimum time of 7.5 seconds to evaluate the adequacy of corner sight distance for highway and public road intersections (Table 405.1A). The Caltrans HDM states that at private road intersections and rural driveways the minimum corner sight distance shall be equal to the stopping sight distance (Topic 405.1-2c).

Yosemite Boulevard (SR 132) and Geer Road have a relative straight horizontal and level vertical alignment adjacent to the project site. Stopping sight distance for traffic on both roadways was measured by placing a portable delineator near the shoulder line stripe. The delineator was visible from at least 750' in both directions on Yosemite Boulevard (SR 132) and Geer Road. As documented under existing conditions, eastbound speeds on Yosemite Boulevard (SR 132) and northbound speeds on Geer Road were approximately 56-58 mph. Westbound speeds on Yosemite Boulevard (SR 132) and southbound speeds on Geer Road were slightly less since vehicles were coming from the signalized Yosemite Boulevard (SR 132) / Geer Road - Albers Road intersection. Therefore, it is concluded that there is adequate stopping sight distance for vehicles traveling on Yosemite Boulevard (SR 132) and Geer Road approaching the project site driveway locations.

Corner sight distance at the project driveways was measured using a +/-15' setback from the shoulder line striping on both Yosemite Boulevard (SR 132) and Geer Road. A sampling of corner sight distance at each driveway location indicated that there was at least twice the minimum as required by Caltrans looking in both directions. Therefore, it is concluded that there is adequate corner sight distance for vehicles exiting the project site driveway locations.

The Synchro / SimTraffic 8 software is an industry standard that can be used to simulate peak period operations. SimTraffic uses the Synchro 8 output data to produce a micro-simulation model, which is based on the actual volumes, signal phasing and timing. The SimTraffic model can demonstrate how an intersection or network operates. Though the SimTraffic software may have some limitations, it is a good tool for presenting visual data to decision makers. The SimTraffic model was developed for the local roadway network using the volume data on Figure 7 (Friday PM peak hour). Again, this period represents a worst case scenario assuming that traffic arriving for an amphitheater event could coincide with the peak hour period on the adjacent street system (between 5:00-6:00 PM). It should be noted that the amphitheater TDM measures are designed to avoid generating any guest traffic during typical weekday or weekend day peak periods.

The network developed for the SimTraffic model was based on aerial photography (Google Earth), which represents that the actual spacing of intersections and driveways. The actual turn lane and transition taper lengths at the Yosemite Boulevard (SR 132) / Geer Road - Albers Road intersection were input in the SimTraffic Model. As described under the existing conditions, there are two-to-one lane transition tapers for westbound traffic on Yosemite Boulevard (SR 132) and northbound traffic on Geer Road. Near the project driveways the pavement widths on Yosemite Boulevard (westbound) and Geer Road (northbound) exceed 24'. Therefore, short turn lanes were modeled for the left turn movements from both roadways. Though exclusive left turn lanes are not striped at the driveway locations the roadway widths (+24') will function as there are approach 2 lanes.

The SimTraffic models were developed for the Friday PM peak hour and 10:00-11:00 PM periods. Videos of the peak period operations were recorded using a faster play back setting (8x) to enable viewing of the entire hour in a relatively short period (7-8 minutes). A copy of the SimTraffic model video files is provided on a DVD included with the Attachment Material. The SimTraffic model video files can also be downloaded from the following Dropbox link (The Fruit Yard folder):

https://www.dropbox.com/home/The%20Fruit%20Yard

The SimTraffic model videos demonstrate that the peak period operations associated with an amphitheater event will not significantly impact operations on Yosemite Boulevard (SR 132) or Geer Road, or at the Yosemite Boulevard (SR 132) / Geer Road - Albers Road intersection. During arrival periods westbound vehicle queues at the Yosemite Boulevard (SR 132) driveways were not observed backing up to the Yosemite Boulevard (SR 132) / Geer Road - Albers Road intersection. In addition, no significant queuing was observed on either Yosemite Boulevard (SR 132) or Geer Road. A review of the video for the 10:00-11:00 PM period indicated that vehicles could exit the site at a rate of approximately 20-25 vehicles per minute. This would require at least 45 minutes for all vehicles to exit the site. It should be noted that the SimTraffic model assumes that vehicles will be able to enter and exit the site in an efficient manner. Therefore, it will be imperative that on-site parking operations be conducted effectively in order to avoid impacting operations on Yosemite Boulevard (SR 132) and Geer Road. In addition, the appropriate TDM measures should be implemented to avoid generating any guests traffic during peak periods on the adjacent street system (between 5:00-6:00 PM on a weekday and 1:00-3:00 PM on a weekend day).

4.0 SUMMARY

A General Plan Amendment and Rezoning Application were approved for the project site in 2008. The approved development plan included a relocation of existing facilities and the construction of various new commercial related uses. The proposed project site modification includes the addition of an outside amphitheater within the existing park site. The amphitheater will host events or concerts, and have a capacity to accommodate a maximum of 3,500 guests. The majority of events will occur on weekend or Holidays, between May and September. Events on weekdays will begin after 7:00 PM and end by 10:30 PM. Parking for amphitheater guests will be accommodated on-site. Initial access will be provided via two (2) driveways on Yosemite Boulevard ("A" Drive and "B" Drive) and one (1) driveway on Geer Road ("D" Drive).

The trip generation estimates for the existing and approved project site uses was based on data published in the ITE Trip Generation Manual and a Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region. The existing site uses (existing and approved) will generate a total of approximately 5,100-5,200 vehicle trips on an average weekday and weekend day. The existing and approved uses are estimated to generate approximately 540 trips during an average weekday PM peak hour and 588 trips during a typical Saturday mid-day peak hour. During the 10:00-11:00 PM peak period, the existing and approved site uses are estimated to generate 264 trips on a weekday and 207 trips on a weekend day. The project site trip generation estimates for the "Approved Project Site Uses" are slightly higher than the trip generation estimates analyzed in the 2007 TIA.

A capacity size event (or concert) at the amphitheater is estimated to generate approximately 2,340 vehicle trips (approximately 1,170 inbound and 1,170 outbound vehicles). Inbound trips will occur prior to (before) an event and outbound trips will occur after an event has concluded. Inbound and outbound vehicle trips will not occur within the same 2-3 hour period. Transportation Demand Management (TDM) strategies will be used in the scheduling of events as required to avoid generating any guest traffic during typical weekday and weekend day peak periods. In addition, no activities will occur at the new banquet center on the same day as an event at the amphitheater.

An evaluation of existing conditions was based on new traffic count data, and data obtained from the Caltrans and Stanislaus County. New traffic count data was also collected on Weyer Road. The 2007 Traffic Impact Analysis (TIA) prepared for the approved 2008 Project Development Plan indicated that existing daily volumes on Yosemite Boulevard (adjacent to the project site) were in "level of service" (LOS) C range, while daily volumes on Geer Road were in the LOS E range. An analysis of roadway segment LOS was also conducted using the new hourly volumes and the current methodology used in the County's General Plan Circulation Element. The analysis concluded that existing segment volumes on Yosemite Boulevard (SR 132) are within acceptable limits as defined by Caltrans (LOS D or better). However, hourly volumes on the 2-lane segments of Geer Road and Albers Road exceed the County's defined threshold (LOS C or better). It is noted that the hourly volumes on the 4-lane segments of Geer Road and Albers Road are within

the County's LOS C standard. Existing average daily traffic volumes on Weyer Road south of Yosemite Boulevard (300 ADT) are well within acceptable limits for a rural residential roadway.

An evaluation of existing peak period operations at the Yosemite Boulevard (SR 132) / Geer Road - Albers Road intersection was conducted using the methodologies outlined in the 2010 Highway Capacity Manual (HCM). Since an event at the amphitheater would typically end after 10:00 PM the analysis of existing conditions also includes an evaluation of the 10:00-11:00 PM period. The intersection LOS analysis indicates that average vehicle delays during the six (6) study periods are within acceptable limits as defined by the County (LOS C or better) and Caltrans (LOS C/D). The existing conditions analysis is consistent with the analysis presented in the 2007 TIA.

Similar to the existing conditions analysis, the roadway segment and intersection LOS analysis was concluded for the "existing traffic plus project site traffic (existing and approved uses)" and "existing traffic plus project site traffic (existing and approved uses) plus amphitheater traffic" scenarios. The roadway segment analysis concluded that daily and hourly traffic volumes on the 2-lane segments of Geer Road and Albers Road will continue to exceed the County's minimum acceptable threshold (LOS C or better). However, daily and directional hourly volumes on Yosemite Boulevard (SR 132) will remain within acceptable limits as defined by Caltrans. The analysis is consistent with the analysis presented in the 2007 TIA.

Information in the County's General Plan Circulation Element and StanCOG's RTP has identified the future need to widen both Yosemite Boulevard (4-lane) and Geer Road - Albers Road (6-lane) to expressway standards. The future widening improvements have been incorporated into the RTP and will be partially funded by developer contributions to the County's Regional Transportation Impact Fee (RTIF) program. The analysis in the 2007 TIA identified the potential impacts to existing facilities that would be associated with the Project Development Plan. The project's contribution to the RTIF program served as mitigation to reduce the potential impacts to a level of "less than significant."

The proposed amphitheater will host events or concerts, with a maximum seating capacity for 3,500 guests. The majority of events will occur on a weekend or Holiday. The amphitheater operations will increase traffic demands on Yosemite Boulevard (SR 132), Geer Road and Albers Road on selected weekdays. Therefore, the amphitheater will potentially impact operations on the local street system. Similar to the 2008 Project Development Plan mitigation, the project shall contribute it's fair-share towards the cost of future regional circulation system improvements. Contribution to the County's RTIF program shall serve as mitigation to reduce the potential impact to a level of "less than significant." The proposed mitigation is consistent with the mitigations approved for the 2008 Project Development Plan (analyzed in the 2007 TIA).

A review of the local roadway system was conducted to address concerns raised by local residences regarding the use of Weyer Road for access to and/or from the amphitheater site. Weyer Road is a narrow rural 2-lane rural roadway with no shoulders or lighting. There are 15 mph curve advisory

signs posted on Weyer Road (for southbound traffic) and Jantzen Road (for eastbound traffic). It is anticipated that only 15-20% of the amphitheater traffic would have an origin or destination east of Geer Road - Albers Road. A review of the potential alternative route between Yosemite Boulevard and the amphitheater site indicates that using Weyer Road and Jantzen Road would be at least 3 times the distance as compared to using Yosemite Boulevard west of Weyer Road and Geer Road south of Yosemite Boulevard. In addition, since the traffic signal at the Yosemite Boulevard (SR 132) / Geer Road - Albers Road intersection operates well within acceptable limits it is concluded that little-to-no traffic would use Weyer Road and Jantzen Road route for access to and/or from the amphitheater site. Therefore, the amphitheater traffic will not impact operations along Weyer Road.

The intersection LOS analysis was also concluded for the "existing traffic plus project site traffic (existing and approved uses)" and "existing traffic plus project site traffic (existing and approved uses) plus amphitheater traffic" scenarios. The analysis concluded that average vehicle delays during the six (6) study periods will remain within acceptable limits as defined by Stanislaus County (LOS C or better) and Caltrans (LOS C/D). Therefore, it is concluded that the amphitheater project will not significantly impact peak period operations at the Yosemite Boulevard (SR 132) / Geer Road intersection.

The evaluation of site access includes a review of sight distance along Yosemite Boulevard (SR 132) and Geer Road. A micro-simulation model was also developed using the Synchro / SimTraffic 8 software to identify any potential access issues. The evaluation of sight distance concluded that there is adequate stopping sight distance for vehicles traveling on Yosemite Boulevard (SR 132) and Geer Road approaching the project site driveway locations. In addition, the analysis concluded that there is also adequate corner sight distance for vehicles exiting the project site driveway locations.

The SimTraffic micro-simulation models were developed for the Friday PM peak hour and 10:00-11:00 PM periods. The SimTraffic models demonstrate that the peak period operations associated with an amphitheater event will not significantly impact operations on Yosemite Boulevard (SR 132) or Geer Road, or at the Yosemite Boulevard (SR 132) / Geer Road - Albers Road intersection. During arrival periods westbound vehicle queues at the Yosemite Boulevard (SR 132) driveways were not observed backing up to the Yosemite Boulevard (SR 132) / Geer Road - Albers Road intersection. No significant queuing was observed on either Yosemite Boulevard (SR 132) or Geer Road. It should be noted that the SimTraffic model assumes that vehicles will be able to enter and exit the site in an efficient manner. Therefore, it will be imperative that on-site parking operations be conducted effectively in order to avoid impacting operations on Yosemite Boulevard (SR 132) and Geer Road. In addition, the appropriate TDM measures should be implemented to avoid generating any guests traffic during peak periods on the adjacent street system (between 5:00-6:00 PM on a weekday and 1:00-3:00 PM on a weekend day).

END

- Supplemental -
Traffic Impact Analysis

- APPENDIX MATERIAL -

THE FRUIT YARD PROJECT
- Stanislaus County -

CONTENTS:

- Summary of Traffic Count Data
- Level of Service (LOS) Descriptions
- Level of Service (LOS) to Vehicle Delays Relationship Data
- Level of Service (LOS) Worksheets

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February 5, 2016

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The Fruit Yard Project; Stanislaus County, California

Summary of ITM Count Data at Yosemite Blvd. (SR 132) / Geer Rd. - Albers Rd. - Dec. 10th (Thursday), 11th (Friday) and 12th (Saturday)

	Afternoon Peak Hour		Evening Period		% of
	Time	Volume	Time	Volume	PM Pk.
Dec. 10th (Thursday) -	4:30-5:30 PM	1,866	10:00-11:00 PM	326	17%
Dec. 11th (Friday) -	4:45-5:45 PM	1,953	10:00-11:00 PM	517	26%
Dec. 12th (Saturday) -	2:00-3:00 PM	1,316	10:00-11:00 PM	612	47%

Summary of 7-Day Traffic Count Data (Dec. 9th - 15th , 2015)

Weyer Road, South of Yosemite Boulevard (SR 132):

Date		Sun. Dec. 13th	Mon. Dec. 14th	Tue. Dec. 15th	Wed. Dec. 9th	Thur. Dec. 10th	Fri. Dec. 11th	Sat. Dec. 12th
ADT		**204**	**303**	**279**	**299**	**301**	**273**	**213**
24 Hr. Vol.	NB	97	138	122	136	141	120	95
	SB	107	165	157	163	160	153	118

November 2013 -

3-Day Avg. Weekday (Tuesday, Wednesday & Thursday): **293** ADT

5-Day Avg. Weekday (Monday - Friday): **291** ADT

7-Day Average (Sunday - Saturday): **267** ADT

Saturday: 73% 5-Day Weekday Average

Sunday: 70% 5-Day Weekday Average

ALL TRAFFIC DATA

(916) 771-8700
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City of Modesto
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

File Name : 15-7942-001 Albers Road/Geer Road & Yosemite Boulevard
Date : 12/10/2015

Unshifted Count = All Vehicles & Uturns

	Albers Road/Geer Road Southbound					Yosemite Boulevard Westbound					Albers Road/Geer Road Northbound					Yosemite Boulevard Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
16:00	28	99	10	0	137	43	53	16	0	112	6	83	41	0	130	17	56	13	0	86	465	0
16:15	18	113	12	0	143	26	36	7	0	69	6	94	53	0	153	20	71	14	0	105	470	0
16:30	23	84	13	0	120	28	49	18	0	95	3	96	38	0	137	12	64	9	0	85	437	0
16:45	24	117	15	0	156	35	27	14	0	76	8	99	30	0	137	14	85	8	0	107	476	0
Total	93	413	50	0	556	132	165	55	0	352	23	372	162	0	557	63	276	44	0	383	1848	0
17:00	23	91	20	0	134	30	46	11	1	88	5	101	38	0	144	17	70	14	0	101	467	1
17:15	27	114	8	0	149	22	38	18	0	78	7	115	36	0	158	20	70	11	0	101	486	0
17:30	30	87	7	0	124	38	42	15	0	95	8	80	43	0	131	17	52	16	0	85	435	0
17:45	22	79	14	0	115	24	27	10	0	61	6	70	37	0	113	13	38	8	0	59	348	0
Total	102	371	49	0	522	114	153	54	1	322	26	366	154	0	546	67	230	49	0	346	1736	1
22:00	7	22	1	0	30	6	4	5	0	15	1	13	15	0	29	2	14	0	0	16	90	0
22:15	5	12	1	0	18	4	8	1	0	13	0	18	11	0	29	2	11	0	0	13	73	0
22:30	6	22	1	0	29	3	10	1	0	14	1	17	8	0	26	4	12	0	0	16	85	0
22:45	6	18	1	0	25	4	7	3	0	14	1	14	11	0	26	2	11	0	0	13	78	0
Total	24	74	4	0	102	17	29	10	0	56	3	62	45	0	110	10	48	0	0	58	325	0
Grand Total	219	858	103	0	1180	263	347	119	1	730	52	800	361	0	1213	140	554	93	0	787	3910	1
Apprch %	18.6%	72.7%	8.7%	0.0%		36.0%	47.5%	16.3%	0.1%		4.3%	66.0%	29.8%	0.0%		17.8%	70.4%	11.8%	0.0%			
Total %	5.6%	21.9%	2.6%	0.0%	30.2%	6.7%	8.9%	3.0%	0.0%	18.7%	1.3%	20.5%	9.2%	0.0%	31.0%	3.6%	14.2%	2.4%	0.0%	20.1%	100.0%	

NOON PEAK	Albers Road/Geer Road Southbound					Yosemite Boulevard Westbound					Albers Road/Geer Road Northbound					Yosemite Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	23	84	13	0	120	28	49	18	0	95	3	96	38	0	137	12	64	9	0	85	437
16:45	24	117	15	0	156	35	27	14	0	76	8	99	30	0	137	14	85	8	0	107	476
17:00	23	91	20	0	134	30	46	11	1	88	5	101	38	0	144	17	70	14	0	101	467
17:15	27	114	8	0	149	22	38	18	0	78	7	115	36	0	158	20	70	11	0	101	486
Total Volume	97	406	56	0	559	115	160	61	1	337	23	411	142	0	576	63	289	42	0	394	1866
% App Total	17.4%	72.6%	10.0%	0.0%		34.1%	47.5%	18.1%	0.3%		4.0%	71.4%	24.7%	0.0%		16.0%	73.4%	10.7%	0.0%		
PHF	.898	.858	.700	.000	.896	.821	.816	.847	.250	.887	.719	.893	.934	.000	.911	.788	.850	.750	.000	.921	.960

PM PEAK HOUR	Albers Road/Geer Road Southbound					Yosemite Boulevard Westbound					Albers Road/Geer Road Northbound					Yosemite Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 22:00 to 23:00																					
Peak Hour For Entire Intersection Begins at 22:00																					
22:00	7	22	1	0	30	6	4	5	0	15	1	13	15	0	29	2	14	0	0	16	90
22:15	5	12	1	0	18	4	8	1	0	13	0	18	11	0	29	2	11	0	0	13	73
22:30	6	22	1	0	29	3	10	1	0	14	1	17	8	0	26	4	12	0	0	16	85
22:45	6	18	1	0	25	4	7	3	0	14	1	14	11	0	26	2	11	0	0	13	78
Total Volume	24	74	4	0	102	17	29	10	0	56	3	62	45	0	110	10	48	0	0	58	326
% App Total	23.5%	72.5%	3.9%	0.0%		30.4%	51.8%	17.9%	0.0%		2.7%	56.4%	40.9%	0.0%		17.2%	82.8%	0.0%	0.0%		
PHF	.857	.841	1.000	.000	.850	.708	.725	.500	.000	.933	.750	.861	.750	.000	.948	.625	.857	.000	.000	.906	.906

ALL TRAFFIC DATA

City of Modesto
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7942-001 Albers Road/Geer Road & Yosemite Boulevard
Date : 12/11/2015

Unshifted Count = All Vehicles & Uturns

	Albers Road/Geer Road Southbound					Yosemite Boulevard Westbound					Albers Road/Geer Road Northbound					Yosemite Boulevard Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
16:00	17	101	8	0	126	41	45	15	0	101	4	83	45	0	132	10	63	11	0	84	443	0
16:15	18	117	25	0	160	40	57	15	0	112	9	104	38	0	151	19	64	5	0	88	511	0
16:30	24	94	10	0	128	36	42	16	0	94	5	95	30	0	130	23	53	9	0	85	437	0
16:45	31	116	22	0	169	35	46	14	0	95	4	99	25	0	128	14	66	10	0	90	482	0
Total	90	428	65	0	583	152	190	60	0	402	22	381	138	0	541	66	246	35	0	347	1873	0
17:00	26	130	9	0	165	43	50	17	0	110	10	81	52	0	143	21	57	9	0	87	505	0
17:15	22	97	9	0	128	27	45	16	0	88	6	131	37	0	174	14	66	17	0	97	487	0
17:30	22	112	13	0	147	40	43	17	0	100	5	102	40	0	147	11	65	9	0	85	479	0
17:45	18	94	14	0	126	44	45	11	0	100	8	102	44	0	154	10	58	8	0	76	456	0
Total	88	433	45	0	566	154	183	61	0	398	29	416	173	0	618	56	246	43	0	345	1927	0
22:00	6	29	1	0	36	9	6	1	0	16	4	39	20	0	63	6	22	0	0	28	143	0
22:15	11	33	1	0	45	9	13	3	0	25	3	19	18	0	40	3	19	2	0	24	134	0
22:30	3	26	0	0	29	11	8	4	0	23	6	30	9	0	45	4	19	3	0	26	123	0
22:45	12	19	3	0	34	6	16	3	0	25	2	18	16	0	36	4	18	0	0	22	117	0
Total	32	107	5	0	144	35	43	11	0	89	15	106	63	0	184	17	78	5	0	100	517	0
Grand Total	210	968	115	0	1293	341	416	132	0	889	66	903	374	0	1343	139	570	83	0	792	4317	0
Apprch %	16.2%	74.9%	8.9%	0.0%		38.4%	46.8%	14.8%	0.0%		4.9%	67.2%	27.8%	0.0%		17.6%	72.0%	10.5%	0.0%			
Total %	4.9%	22.4%	2.7%	0.0%	30.0%	7.9%	9.6%	3.1%	0.0%	20.6%	1.5%	20.9%	8.7%	0.0%	31.1%	3.2%	13.2%	1.9%	0.0%	18.3%	100.0%	

NOON PEAK	Albers Road/Geer Road Southbound					Yosemite Boulevard Westbound					Albers Road/Geer Road Northbound					Yosemite Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	31	116	22	0	169	35	46	14	0	95	4	99	25	0	128	14	66	10	0	90	482
17:00	26	130	9	0	165	43	50	17	0	110	10	81	52	0	143	21	57	9	0	87	505
17:15	22	97	9	0	128	27	45	16	0	88	6	131	37	0	174	14	66	17	0	97	487
17:30	22	112	13	0	147	40	43	17	0	100	5	102	40	0	147	11	65	9	0	85	479
Total Volume	101	455	53	0	609	145	184	64	0	393	25	413	154	0	592	60	254	45	0	359	1953
% App Total	16.6%	74.7%	8.7%	0.0%		36.9%	46.8%	16.3%	0.0%		4.2%	69.8%	26.0%	0.0%		16.7%	70.8%	12.5%	0.0%		
PHF	.815	.875	.602	.000	.901	.843	.920	.941	.000	.893	.625	.788	.740	.000	.851	.714	.962	.662	.000	.925	.967

PM PEAK HOUR	Albers Road/Geer Road Southbound					Yosemite Boulevard Westbound					Albers Road/Geer Road Northbound					Yosemite Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 22:00 to 23:00																					
Peak Hour For Entire Intersection Begins at 22:00																					
22:00	6	29	1	0	36	9	6	1	0	16	4	39	20	0	63	6	22	0	0	28	143
22:15	11	33	1	0	45	9	13	3	0	25	3	19	18	0	40	3	19	2	0	24	134
22:30	3	26	0	0	29	11	8	4	0	23	6	30	9	0	45	4	19	3	0	26	123
22:45	12	19	3	0	34	6	16	3	0	25	2	18	16	0	36	4	18	0	0	22	117
Total Volume	32	107	5	0	144	35	43	11	0	89	15	106	63	0	184	17	78	5	0	100	517
% App Total	22.2%	74.3%	3.5%	0.0%		39.3%	48.3%	12.4%	0.0%		8.2%	57.6%	34.2%	0.0%		17.0%	78.0%	5.0%	0.0%		
PHF	.667	.811	.417	.000	.800	.795	.672	.688	.000	.890	.625	.679	.788	.000	.730	.708	.886	.417	.000	.893	.904

ALL TRAFFIC DATA

City of Modesto
All Vehicles & Uturns On Unshifted
Nothing On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 15-7942-001 Albers Road/Geer Road & Yosemite Boulevard
Date : 12/12/2015

Unshifted Count = All Vehicles & Uturns

	Albers Road/Geer Road Southbound					Yosemite Boulevard Westbound					Albers Road/Geer Road Northbound					Yosemite Boulevard Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
13:00	12	57	11	0	80	33	37	11	0	81	2	80	43	0	125	16	35	9	0	60	346	0
13:15	18	66	11	0	95	26	46	15	0	87	4	56	35	0	95	10	47	8	0	65	342	0
13:30	11	65	9	0	85	25	35	10	0	70	5	74	42	0	121	7	41	7	0	55	331	0
13:45	18	62	6	0	86	26	30	7	0	63	9	53	35	0	97	9	32	4	0	45	291	0
Total	59	250	37	0	346	110	148	43	0	301	20	263	155	0	438	42	155	28	0	225	1310	0
14:00	11	73	16	0	100	21	34	14	0	69	4	56	30	0	90	9	41	6	0	56	315	0
14:15	24	56	13	0	93	30	40	10	0	80	5	76	40	0	121	8	41	7	0	56	350	0
14:30	18	52	7	0	77	36	29	12	0	77	5	54	37	0	96	14	47	6	0	67	317	0
14:45	19	57	13	0	89	31	34	14	0	79	5	72	34	0	111	3	48	4	0	55	334	0
Total	72	238	49	0	359	118	137	50	0	305	19	258	141	0	418	34	177	23	0	234	1316	0
22:00	4	31	2	0	37	11	11	5	0	27	2	39	8	0	49	4	21	4	0	29	142	0
22:15	5	45	5	0	55	14	14	4	0	32	3	30	17	0	50	4	17	3	0	24	161	0
22:30	12	49	5	0	66	7	12	3	0	22	4	36	14	0	54	4	17	1	0	22	164	0
22:45	3	38	4	0	45	12	12	1	0	25	1	40	15	0	56	3	13	3	0	19	145	0
Total	24	163	16	0	203	44	49	13	0	106	10	145	54	0	209	15	68	11	0	94	612	0
Grand Total	155	651	102	0	908	272	334	106	0	712	49	666	350	0	1065	91	400	62	0	553	3238	0
Apprch %	17.1%	71.7%	11.2%	0.0%		38.2%	46.9%	14.9%	0.0%		4.6%	62.5%	32.9%	0.0%		16.5%	72.3%	11.2%	0.0%			
Total %	4.8%	20.1%	3.2%	0.0%	28.0%	8.4%	10.3%	3.3%	0.0%	22.0%	1.5%	20.6%	10.8%	0.0%	32.9%	2.8%	12.4%	1.9%	0.0%	17.1%	100.0%	

NOON PEAK	Albers Road/Geer Road Southbound					Yosemite Boulevard Westbound					Albers Road/Geer Road Northbound					Yosemite Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 14:00 to 15:00																					
Peak Hour For Entire Intersection Begins at 14:00																					
14:00	11	73	16	0	100	21	34	14	0	69	4	56	30	0	90	9	41	6	0	56	315
14:15	24	56	13	0	93	30	40	10	0	80	5	76	40	0	121	8	41	7	0	56	350
14:30	18	52	7	0	77	36	29	12	0	77	5	54	37	0	96	14	47	6	0	67	317
14:45	19	57	13	0	89	31	34	14	0	79	5	72	34	0	111	3	48	4	0	55	334
Total Volume	72	238	49	0	359	118	137	50	0	305	19	258	141	0	418	34	177	23	0	234	1316
% App Total	20.1%	66.3%	13.6%	0.0%		38.7%	44.9%	16.4%	0.0%		4.5%	61.7%	33.7%	0.0%		14.5%	75.6%	9.8%	0.0%		
PHF	.750	.815	.766	.000	.898	.819	.856	.893	.000	.953	.950	.849	.881	.000	.864	.607	.922	.821	.000	.873	.940

PM PEAK HOUR	Albers Road/Geer Road Southbound					Yosemite Boulevard Westbound					Albers Road/Geer Road Northbound					Yosemite Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 22:00 to 23:00																					
Peak Hour For Entire Intersection Begins at 22:00																					
22:00	4	31	2	0	37	11	11	5	0	27	2	39	8	0	49	4	21	4	0	29	142
22:15	5	45	5	0	55	14	14	4	0	32	3	30	17	0	50	4	17	3	0	24	161
22:30	12	49	5	0	66	7	12	3	0	22	4	36	14	0	54	4	17	1	0	22	164
22:45	3	38	4	0	45	12	12	1	0	25	1	40	15	0	56	3	13	3	0	19	145
Total Volume	24	163	16	0	203	44	49	13	0	106	10	145	54	0	209	15	68	11	0	94	612
% App Total	11.8%	80.3%	7.9%	0.0%		41.5%	46.2%	12.3%	0.0%		4.8%	69.4%	25.8%	0.0%		16.0%	72.3%	11.7%	0.0%		
PHF	.500	.832	.800	.000	.769	.786	.875	.650	.000	.828	.625	.906	.794	.000	.933	.938	.810	.688	.000	.810	.933

Prepared by NDS/ATD

VOLUME

Weyer Road south of Yosemite Boulevard

Day: Wednesday
Date: 12/9/2015

City: Modesto
Project #: 15-7943-001

DAILY TOTALS	NB	SB	EB	WB	Total
	136	163	0	0	299

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0		0	0	0		12:00	1		5		0	0	6	
00:15	0		0		0	0	0		12:15	4		3		0	0	7	
00:30	0		0		0	0	0		12:30	5		9		0	0	14	
00:45	0		0		0	0	0		12:45	1	11	2	19	0	0	3	30
01:00	0		0		0	0	0		13:00	1		0		0	0	1	
01:15	0		0		0	0	0		13:15	3		4		0	0	7	
01:30	0		0		0	0	0		13:30	0		2		0	0	2	
01:45	0		0		0	0	0		13:45	4	8	5	11	0	0	9	19
02:00	0		0		0	0	0		14:00	1		2		0	0	3	
02:15	0		0		0	0	0		14:15	3		7		0	0	10	
02:30	0		0		0	0	0		14:30	5		1		0	0	6	
02:45	0		0		0	0	0		14:45	3	12	5	15	0	0	8	27
03:00	0		0		0	0	0		15:00	5		3		0	0	8	
03:15	1		0		0	0	1		15:15	1		2		0	0	3	
03:30	0		0		0	0	0		15:30	3		5		0	0	8	
03:45	1	2	1	1	0	0	2	3	15:45	2	11	4	14	0	0	6	25
04:00	0		0		0	0	0		16:00	2		1		0	0	3	
04:15	0		0		0	0	0		16:15	4		2		0	0	6	
04:30	0		1		0	0	1		16:30	3		3		0	0	6	
04:45	0		0	1	0	0	0	1	16:45	4	13	2	8	0	0	6	21
05:00	0		0		0	0	0		17:00	6		5		0	0	11	
05:15	0		2		0	0	2		17:15	2		6		0	0	8	
05:30	1		1		0	0	2		17:30	3		0		0	0	3	
05:45	0	1	0	3	0	0	0	4	17:45	1	12	0	11	0	0	1	23
06:00	0		0		0	0	0		18:00	3		4		0	0	7	
06:15	2		3		0	0	5		18:15	2		2		0	0	4	
06:30	0		1		0	0	1		18:30	3		2		0	0	5	
06:45	1	3	0	4	0	0	1	7	18:45	2	10	2	10	0	0	4	20
07:00	0		3		0	0	3		19:00	4		0		0	0	4	
07:15	0		5		0	0	5		19:15	1		3		0	0	4	
07:30	3		3		0	0	6		19:30	3		3		0	0	6	
07:45	2	5	4	15	0	0	6	20	19:45	1	9	0	6	0	0	1	15
08:00	1		4		0	0	5		20:00	0		4		0	0	4	
08:15	3		2		0	0	5		20:15	1		0		0	0	1	
08:30	2		4		0	0	6		20:30	0		1		0	0	1	
08:45	0	6	1	11	0	0	1	17	20:45	1	2	0	5	0	0	1	7
09:00	1		3		0	0	4		21:00	2		1		0	0	3	
09:15	2		1		0	0	3		21:15	2		0		0	0	2	
09:30	2		3		0	0	5		21:30	1		0		0	0	1	
09:45	1	6	2	9	0	0	3	15	21:45	1	6	0	1	0	0	1	7
10:00	5		0		0	0	5		22:00	0		0		0	0	0	
10:15	2		3		0	0	5		22:15	0		1		0	0	1	
10:30	1		3		0	0	4		22:30	1		0		0	0	1	
10:45	3	11	2	8	0	0	5	19	22:45	0	1	1	2	0	0	1	3
11:00	2		3		0	0	5		23:00	0		0		0	0	0	
11:15	3		4		0	0	7		23:15	0		0		0	0	0	
11:30	0		0		0	0	0		23:30	0		0		0	0	0	
11:45	2	7	2	9	0	0	4	16	23:45	0		0		0	0	0	
TOTALS	41		61				102		TOTALS	95		102				197	
SPLIT %	40.2%		59.8%				34.1%		SPLIT %	48.2%		51.8%				65.9%	

DAILY TOTALS	NB	SB	EB	WB	Total
	136	163	0	0	299

AM Peak Hour	11:45	11:45	11:45	PM Peak Hour	16:15	12:00	14:15
AM Pk Volume	12	19	31	PM Pk Volume	17	19	32
Pk Hr Factor	0.600	0.528	0.554	Pk Hr Factor	0.708	0.528	0.800
7 - 9 Volume	11	26	37	4 - 6 Volume	25	19	44
7 - 9 Peak Hour	07:30	07:15	07:15	4 - 6 Peak Hour	16:15	16:30	16:30
7 - 9 Pk Volume	9	16	22	4 - 6 Pk Volume	17	16	31
Pk Hr Factor	0.750	0.800	0.917	Pk Hr Factor	0.708	0.667	0.705

Prepared by NDS/ATD

VOLUME

Weyer Road south of Yosemite Boulevard

Day: Thursday
Date: 12/10/2015

City: Modesto
Project #: 15-7943-001

DAILY TOTALS	NB	SB	EB	WB	Total
	141	160	0	0	301

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0		0	0	0		12:00	4		1		0	0	5	
00:15	0		0		0	0	0		12:15	3		1		0	0	4	
00:30	0		0		0	0	0		12:30	1		5		0	0	6	
00:45	0		0		0	0	0		12:45	2	10	3	10	0	0	5	20
01:00	0		0		0	0	0		13:00	2		3		0	0	5	
01:15	0		0		0	0	0		13:15	1		2		0	0	3	
01:30	0		0		0	0	0		13:30	2		1		0	0	3	
01:45	0		0		0	0	0		13:45	1	6	2	8	0	0	3	14
02:00	0		1		0	0	1		14:00	11		5		0	0	16	
02:15	2		0		0	0	2		14:15	7		4		0	0	11	
02:30	0		1		0	0	1		14:30	5		3		0	0	8	
02:45	0	2	0	2	0	0	0	4	14:45	4	27	5	17	0	0	9	44
03:00	0		0		0	0	0		15:00	7		5		0	0	12	
03:15	1		0		0	0	1		15:15	2		2		0	0	4	
03:30	0		0		0	0	0		15:30	1		4		0	0	5	
03:45	0	1	0		0	0	0	1	15:45	2	12	2	13	0	0	4	25
04:00	1		0		0	0	1		16:00	2		4		0	0	6	
04:15	0		0		0	0	0		16:15	2		1		0	0	3	
04:30	0		0		0	0	0		16:30	2		5		0	0	7	
04:45	0	1	0		0	0	0	1	16:45	3	9	3	13	0	0	6	22
05:00	0		2		0	0	2		17:00	3		4		0	0	7	
05:15	0		0		0	0	0		17:15	2		2		0	0	4	
05:30	0		2		0	0	2		17:30	2		3		0	0	5	
05:45	1	1	0	4	0	0	1	5	17:45	2	9	1	10	0	0	3	19
06:00	0		1		0	0	1		18:00	1		5		0	0	6	
06:15	1		2		0	0	3		18:15	2		0		0	0	2	
06:30	0		2		0	0	2		18:30	4		1		0	0	5	
06:45	1	2	2	7	0	0	3	9	18:45	4	11	4	10	0	0	8	21
07:00	0		2		0	0	2		19:00	1		1		0	0	2	
07:15	2		3		0	0	5		19:15	3		1		0	0	4	
07:30	2		4		0	0	6		19:30	1		3		0	0	4	
07:45	4	8	8	17	0	0	12	25	19:45	2	7	1	6	0	0	3	13
08:00	3		3		0	0	6		20:00	3		3		0	0	6	
08:15	0		2		0	0	2		20:15	0		3		0	0	3	
08:30	0		1		0	0	1		20:30	1		0		0	0	1	
08:45	0	3	1	7	0	0	1	10	20:45	0	4	0	6	0	0	0	10
09:00	1		2		0	0	3		21:00	1		0		0	0	1	
09:15	0		1		0	0	1		21:15	1		0		0	0	1	
09:30	1		3		0	0	4		21:30	0		1		0	0	1	
09:45	2	4	1	7	0	0	3	11	21:45	0	2	0	1	0	0	0	3
10:00	3		2		0	0	5		22:00	2		0		0	0	2	
10:15	4		3		0	0	7		22:15	0		0		0	0	0	
10:30	3		1		0	0	4		22:30	1		1		0	0	2	
10:45	2	12	2	8	0	0	4	20	22:45	1	4	2	3	0	0	3	7
11:00	0		2		0	0	2		23:00	0		1		0	0	1	
11:15	2		4		0	0	6		23:15	0		1		0	0	1	
11:30	2		2		0	0	4		23:30	0		0		0	0	0	
11:45	2	6	1	9	0	0	3	15	23:45	0		0	2	0	0	0	2
TOTALS		40		61				101	TOTALS		101		99				200
SPLIT %		39.6%		60.4%				33.6%	SPLIT %		50.5%		49.5%				66.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	141	160	0	0	301

AM Peak Hour	09:45	07:15	07:15	PM Peak Hour	14:00	14:00	14:00
AM Pk Volume	12	18	29	PM Pk Volume	27	17	44
Pk Hr Factor	0.750	0.563	0.604	Pk Hr Factor	0.614	0.850	0.688
7 - 9 Volume	11	24	35	4 - 6 Volume	18	23	41
7 - 9 Peak Hour	07:15	07:15	07:15	4 - 6 Peak Hour	16:15	16:30	16:30
7 - 9 Pk Volume	11	18	29	4 - 6 Pk Volume	10	14	24
Pk Hr Factor	0.688	0.563	0.604	Pk Hr Factor	0.833	0.700	0.857

Prepared by NDS/ATD

VOLUME

Weyer Road south of Yosemite Boulevard

Day: Friday
Date: 12/11/2015

City: Modesto
Project #: 15-7943-001

DAILY TOTALS	NB	SB	EB	WB	Total
	120	153	0	0	273

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0		0	0	0		12:00	4		5		0	0	9	
00:15	0		0		0	0	0		12:15	2		3		0	0	5	
00:30	0		0		0	0	0		12:30	1		4		0	0	5	
00:45	0		0		0	0	0		12:45	4	11	3	15	0	0	7	26
01:00	0		0		0	0	0		13:00	2		2		0	0	4	
01:15	0		0		0	0	0		13:15	1		1		0	0	2	
01:30	1		0		0	0	1		13:30	0		6		0	0	6	
01:45	0	1	0		0	0	0	1	13:45	4	7	3	12	0	0	7	19
02:00	0		1		0	0	1		14:00	3		2		0	0	5	
02:15	1		0		0	0	1		14:15	4		4		0	0	8	
02:30	1		0		0	0	1		14:30	4		2		0	0	6	
02:45	0	2	1	2	0	0	1	4	14:45	3	14	5	13	0	0	8	27
03:00	1		0		0	0	1		15:00	3		2		0	0	5	
03:15	0		0		0	0	0		15:15	3		2		0	0	5	
03:30	0		0		0	0	0		15:30	3		1		0	0	4	
03:45	0	1	0		0	0	0	1	15:45	1	10	1	6	0	0	2	16
04:00	0		0		0	0	0		16:00	3		5		0	0	8	
04:15	0		0		0	0	0		16:15	1		0		0	0	1	
04:30	0		0		0	0	0		16:30	2		5		0	0	7	
04:45	0		0		0	0	0		16:45	3	9	1	11	0	0	4	20
05:00	0		1		0	0	1		17:00	10		6		0	0	16	
05:15	0		0		0	0	0		17:15	4		7		0	0	11	
05:30	0		2		0	0	2		17:30	3		2		0	0	5	
05:45	0		0	3	0	0	0	3	17:45	0	17	4	19	0	0	4	36
06:00	0		0		0	0	0		18:00	1		2		0	0	3	
06:15	0		1		0	0	1		18:15	0		1		0	0	1	
06:30	1		0		0	0	1		18:30	3		1		0	0	4	
06:45	1	2	1	2	0	0	2	4	18:45	1	5	0	4	0	0	1	9
07:00	0		2		0	0	2		19:00	2		0		0	0	2	
07:15	1		5		0	0	6		19:15	1		1		0	0	2	
07:30	2		6		0	0	8		19:30	3		2		0	0	5	
07:45	2	5	2	15	0	0	4	20	19:45	3	9	2	5	0	0	5	14
08:00	1		3		0	0	4		20:00	0		0		0	0	0	
08:15	1		3		0	0	4		20:15	0		1		0	0	1	
08:30	2		2		0	0	4		20:30	0		1		0	0	1	
08:45	0	4	3	11	0	0	3	15	20:45	0		3	5	0	0	3	5
09:00	1		2		0	0	3		21:00	1		0		0	0	1	
09:15	1		3		0	0	4		21:15	2		0		0	0	2	
09:30	1		3		0	0	4		21:30	1		1		0	0	2	
09:45	2	5	2	10	0	0	4	15	21:45	0	4	1	2	0	0	1	6
10:00	0		4		0	0	4		22:00	1		2		0	0	3	
10:15	1		1		0	0	2		22:15	1		0		0	0	1	
10:30	4		4		0	0	8		22:30	1		1		0	0	2	
10:45	2	7	2	11	0	0	4	18	22:45	1	4	0	3	0	0	1	7
11:00	0		0		0	0	0		23:00	0		0		0	0	0	
11:15	1		0		0	0	1		23:15	0		0		0	0	0	
11:30	2		3		0	0	5		23:30	0		0		0	0	0	
11:45	0	3	1	4	0	0	1	7	23:45	0		0		0	0	0	
TOTALS		30		58				88	TOTALS		90		95				185
SPLIT %		34.1%		65.9%				32.2%	SPLIT %		48.6%		51.4%				67.8%

DAILY TOTALS	NB	SB	EB	WB	Total
	120	153	0	0	273

AM Peak Hour	11:30	07:15	07:15	PM Peak Hour	16:45	16:30	16:30
AM Pk Volume	8	16	22	PM Pk Volume	20	19	38
Pk Hr Factor	0.500	0.667	0.688	Pk Hr Factor	0.500	0.679	0.594
7 - 9 Volume	9	26	35	4 - 6 Volume	26	30	56
7 - 9 Peak Hour	07:15	07:15	07:15	4 - 6 Peak Hour	16:45	16:30	16:30
7 - 9 Pk Volume	6	16	22	4 - 6 Pk Volume	20	19	38
Pk Hr Factor	0.750	0.667	0.688	Pk Hr Factor	0.500	0.679	0.594

Prepared by NDS/ATD

VOLUME

Weyer Road south of Yosemite Boulevard

Day: Saturday
Date: 12/12/2015

City: Modesto
Project #: 15-7943-001

DAILY TOTALS	NB	SB	EB	WB	Total
	95	118	0	0	213

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0		0	0	0		12:00	1		3		0	0	4	
00:15	0		0		0	0	0		12:15	2		2		0	0	4	
00:30	0		0		0	0	0		12:30	3		3		0	0	6	
00:45	0		1	1	0	0	1	1	12:45	2	8	0	8	0	0	2	16
01:00	0		0		0	0	0		13:00	0		2		0	0	2	
01:15	0		0		0	0	0		13:15	3		2		0	0	5	
01:30	0		0		0	0	0		13:30	1		1		0	0	2	
01:45	0		0		0	0	0		13:45	3	7	1	6	0	0	4	13
02:00	0		0		0	0	0		14:00	4		3		0	0	7	
02:15	0		0		0	0	0		14:15	0		3		0	0	3	
02:30	1		1		0	0	2		14:30	2		1		0	0	3	
02:45	0	1	0	1	0	0	0	2	14:45	3	9	5	12	0	0	8	21
03:00	0		1		0	0	1		15:00	0		2		0	0	2	
03:15	2		2		0	0	4		15:15	1		5		0	0	6	
03:30	1		0		0	0	1		15:30	1		0		0	0	1	
03:45	0	3	0	3	0	0	0	6	15:45	2	4	0	7	0	0	2	11
04:00	0		0		0	0	0		16:00	3		4		0	0	7	
04:15	0		0		0	0	0		16:15	1		3		0	0	4	
04:30	0		0		0	0	0		16:30	1		1		0	0	2	
04:45	0		0		0	0	0		16:45	3	8	1	9	0	0	4	17
05:00	1		0		0	0	1		17:00	3		2		0	0	5	
05:15	0		0		0	0	0		17:15	1		1		0	0	2	
05:30	0		0		0	0	0		17:30	1		3		0	0	4	
05:45	0	1	0		0	0	0	1	17:45	1	6	1	7	0	0	2	13
06:00	0		0		0	0	0		18:00	0		1		0	0	1	
06:15	1		0		0	0	1		18:15	1		2		0	0	3	
06:30	0		2		0	0	2		18:30	3		4		0	0	7	
06:45	1	2	0	2	0	0	1	4	18:45	3	7	0	7	0	0	3	14
07:00	0		1		0	0	1		19:00	2		3		0	0	5	
07:15	4		0		0	0	4		19:15	1		2		0	0	3	
07:30	0		1		0	0	1		19:30	0		2		0	0	2	
07:45	1	5	1	3	0	0	2	8	19:45	0	3	2	9	0	0	2	12
08:00	1		3		0	0	4		20:00	1		0		0	0	1	
08:15	2		0		0	0	2		20:15	1		3		0	0	4	
08:30	0		0		0	0	0		20:30	1		0		0	0	1	
08:45	4	7	1	4	0	0	5	11	20:45	1	4	0	3	0	0	1	7
09:00	0		1		0	0	1		21:00	0		0		0	0	0	
09:15	1		3		0	0	4		21:15	1		2		0	0	3	
09:30	0		5		0	0	5		21:30	0		1		0	0	1	
09:45	1	2	3	12	0	0	4	14	21:45	0	1	1	4	0	0	1	5
10:00	0		0		0	0	0		22:00	0		2		0	0	2	
10:15	0		0		0	0	0		22:15	0		1		0	0	1	
10:30	3		3		0	0	6		22:30	1		2		0	0	3	
10:45	2	5	1	4	0	0	3	9	22:45	0	1	0	5	0	0	0	6
11:00	1		0		0	0	1		23:00	1		0		0	0	1	
11:15	5		6		0	0	11		23:15	1		0		0	0	1	
11:30	2		2		0	0	4		23:30	0		0		0	0	0	
11:45	1	9	3	11	0	0	4	20	23:45	0	2	0		0	0	0	2
TOTALS	35		41					76	TOTALS	60		77					137
SPLIT %	46.1%		53.9%					35.7%	SPLIT %	43.8%		56.2%					64.3%

DAILY TOTALS	NB	SB	EB	WB	Total
	95	118	0	0	213

AM Peak Hour	10:30	11:15	11:15	PM Peak Hour	13:15	14:30	14:00
AM Pk Volume	11	14	23	PM Pk Volume	11	13	21
Pk Hr Factor	0.550	0.583	0.523	Pk Hr Factor	0.688	0.650	0.656
7 - 9 Volume	12	7	19	4 - 6 Volume	14	16	30
7 - 9 Peak Hour	08:00	07:15	07:15	4 - 6 Peak Hour	16:00	16:00	16:00
7 - 9 Pk Volume	7	5	11	4 - 6 Pk Volume	8	9	17
Pk Hr Factor	0.438	0.417	0.688	Pk Hr Factor	0.667	0.563	0.607

Prepared by NDS/ATD

VOLUME

Weyer Road south of Yosemite Boulevard

Day: Sunday
Date: 12/13/2015

City: Modesto
Project #: 15-7943-001

DAILY TOTALS	NB	SB	EB	WB	Total
	97	107	0	0	204

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0		0	0	0		12:00	1		5		0	0	6	
00:15	0		0		0	0	0		12:15	5		0		0	0	5	
00:30	0		0		0	0	0		12:30	5		1		0	0	6	
00:45	0		0		0	0	0		12:45	3	14	4	10	0	0	7	24
01:00	0		0		0	0	0		13:00	1		1		0	0	2	
01:15	0		0		0	0	0		13:15	0		6		0	0	6	
01:30	0		0		0	0	0		13:30	3		2		0	0	5	
01:45	0		0		0	0	0		13:45	0	4	0	9	0	0	0	13
02:00	0		0		0	0	0		14:00	1		0		0	0	1	
02:15	0		0		0	0	0		14:15	1		0		0	0	1	
02:30	0		0		0	0	0		14:30	1		3		0	0	4	
02:45	0		0		0	0	0		14:45	1	4	1	4	0	0	2	8
03:00	0		0		0	0	0		15:00	3		0		0	0	3	
03:15	0		0		0	0	0		15:15	7		5		0	0	12	
03:30	1		0		0	0	1		15:30	3		3		0	0	6	
03:45	0	1	0		0	0	0	1	15:45	3	16	8	16	0	0	11	32
04:00	0		0		0	0	0		16:00	1		1		0	0	2	
04:15	2		0		0	0	2		16:15	4		2		0	0	6	
04:30	0		0		0	0	0		16:30	2		3		0	0	5	
04:45	0	2	0		0	0	0	2	16:45	2	9	4	10	0	0	6	19
05:00	0		0		0	0	0		17:00	2		5		0	0	7	
05:15	0		0		0	0	0		17:15	3		3		0	0	6	
05:30	0		0		0	0	0		17:30	1		1		0	0	2	
05:45	0		1	1	0	0	1	1	17:45	0	6	0	9	0	0	0	15
06:00	1		0		0	0	1		18:00	5		3		0	0	8	
06:15	0		0		0	0	0		18:15	2		1		0	0	3	
06:30	0		0		0	0	0		18:30	1		0		0	0	1	
06:45	0	1	0		0	0	0	1	18:45	2	10	2	6	0	0	4	16
07:00	1		0		0	0	1		19:00	0		2		0	0	2	
07:15	1		1		0	0	2		19:15	2		0		0	0	2	
07:30	0		1		0	0	1		19:30	1		1		0	0	2	
07:45	0	2	2	4	0	0	2	6	19:45	2	5	0	3	0	0	2	8
08:00	0		1		0	0	1		20:00	0		0		0	0	0	
08:15	0		1		0	0	1		20:15	1		0		0	0	1	
08:30	1		2		0	0	3		20:30	1		1		0	0	2	
08:45	1	2	1	5	0	0	2	7	20:45	0	2	0	1	0	0	0	3
09:00	1		1		0	0	2		21:00	0		1		0	0	1	
09:15	0		2		0	0	2		21:15	0		0		0	0	0	
09:30	0		2		0	0	2		21:30	1		0		0	0	1	
09:45	1	2	2	7	0	0	3	9	21:45	0	1	0	1	0	0	0	2
10:00	1		2		0	0	3		22:00	1		0		0	0	1	
10:15	3		4		0	0	7		22:15	0		0		0	0	0	
10:30	1		4		0	0	5		22:30	1		2		0	0	3	
10:45	3	8	3	13	0	0	6	21	22:45	0	2	0	2	0	0	0	4
11:00	2		2		0	0	4		23:00	0		0		0	0	0	
11:15	0		1		0	0	1		23:15	1		0		0	0	1	
11:30	2		2		0	0	4		23:30	0		0		0	0	0	
11:45	1	5	1	6	0	0	2	11	23:45	0	1	0		0	0	0	1
TOTALS		23		36				59	TOTALS		74		71				145
SPLIT %		39.0%		61.0%				28.9%	SPLIT %		51.0%		49.0%				71.1%

DAILY TOTALS	NB	SB	EB	WB	Total
	97	107	0	0	204

AM Peak Hour	11:45	10:00	10:15	PM Peak Hour	15:00	15:15	15:00
AM Pk Volume	12	13	22	PM Pk Volume	16	17	32
Pk Hr Factor	0.600	0.813	0.786	Pk Hr Factor	0.571	0.531	0.667
7 - 9 Volume	4	9	13	4 - 6 Volume	15	19	34
7 - 9 Peak Hour	07:00	07:45	07:45	4 - 6 Peak Hour	16:15	16:30	16:15
7 - 9 Pk Volume	2	6	7	4 - 6 Pk Volume	10	15	24
Pk Hr Factor	0.500	0.750	0.583	Pk Hr Factor	0.625	0.750	0.857

Prepared by NDS/ATD

VOLUME

Weyer Road south of Yosemite Boulevard

Day: Monday
Date: 12/14/2015

City: Modesto
Project #: 15-7943-001

DAILY TOTALS	NB	SB	EB	WB	Total
	138	165	0	0	303

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0		0	0	0		12:00	4		2		0	0	6	
00:15	0		0		0	0	0		12:15	4		6		0	0	10	
00:30	0		0		0	0	0		12:30	2		4		0	0	6	
00:45	0		0		0	0	0		12:45	1	11	4	16	0	0	5	27
01:00	0		0		0	0	0		13:00	2		1		0	0	3	
01:15	0		0		0	0	0		13:15	5		3		0	0	8	
01:30	0		0		0	0	0		13:30	3		4		0	0	7	
01:45	0		0		0	0	0		13:45	1	11	4	12	0	0	5	23
02:00	1		0		0	0	1		14:00	3		4		0	0	7	
02:15	0		1		0	0	1		14:15	5		7		0	0	12	
02:30	0		0		0	0	0		14:30	0		3		0	0	3	
02:45	0	1	0	1	0	0	0	2	14:45	6	14	2	16	0	0	8	30
03:00	0		0		0	0	0		15:00	2		3		0	0	5	
03:15	0		0		0	0	0		15:15	5		2		0	0	7	
03:30	0		0		0	0	0		15:30	1		6		0	0	7	
03:45	0		0		0	0	0		15:45	5	13	1	12	0	0	6	25
04:00	0		0		0	0	0		16:00	5		3		0	0	8	
04:15	0		0		0	0	0		16:15	1		3		0	0	4	
04:30	0		0		0	0	0		16:30	4		3		0	0	7	
04:45	1	1	0		0	0	1	1	16:45	2	12	3	12	0	0	5	24
05:00	1		1		0	0	2		17:00	5		6		0	0	11	
05:15	0		2		0	0	2		17:15	2		2		0	0	4	
05:30	0		0		0	0	0		17:30	1		0		0	0	1	
05:45	0	1	0	3	0	0	0	4	17:45	0	8	2	10	0	0	2	18
06:00	0		0		0	0	0		18:00	4		5		0	0	9	
06:15	0		0		0	0	0		18:15	3		2		0	0	5	
06:30	1		1		0	0	2		18:30	1		5		0	0	6	
06:45	2	3	3	4	0	0	5	7	18:45	0	8	0	12	0	0	0	20
07:00	2		4		0	0	6		19:00	2		1		0	0	3	
07:15	1		3		0	0	4		19:15	3		1		0	0	4	
07:30	1		4		0	0	5		19:30	2		1		0	0	3	
07:45	0	4	2	13	0	0	2	17	19:45	1	8	0	3	0	0	1	11
08:00	4		3		0	0	7		20:00	2		1		0	0	3	
08:15	4		4		0	0	8		20:15	1		1		0	0	2	
08:30	4		2		0	0	6		20:30	0		0		0	0	0	
08:45	1	13	6	15	0	0	7	28	20:45	3	6	1	3	0	0	4	9
09:00	1		2		0	0	3		21:00	0		0		0	0	0	
09:15	2		1		0	0	3		21:15	0		0		0	0	0	
09:30	1		1		0	0	2		21:30	0		0		0	0	0	
09:45	3	7	2	6	0	0	5	13	21:45	0		0		0	0	0	
10:00	1		2		0	0	3		22:00	0		0		0	0	0	
10:15	1		6		0	0	7		22:15	0		1		0	0	1	
10:30	4		3		0	0	7		22:30	2		0		0	0	2	
10:45	1	7	3	14	0	0	4	21	22:45	0	2	1	2	0	0	1	4
11:00	4		2		0	0	6		23:00	0		0		0	0	0	
11:15	2		1		0	0	3		23:15	1		0		0	0	1	
11:30	0		4		0	0	4		23:30	0		0		0	0	0	
11:45	1	7	3	10	0	0	4	17	23:45	0	1	1	1	0	0	1	2
TOTALS		44		66				110	TOTALS		94		99				193
SPLIT %		40.0%		60.0%				36.3%	SPLIT %		48.7%		51.3%				63.7%

DAILY TOTALS	NB	SB	EB	WB	Total
	138	165	0	0	303

AM Peak Hour	08:00	08:00	08:00	PM Peak Hour	15:15	13:30	13:30
AM Pk Volume	13	15	28	PM Pk Volume	16	19	31
Pk Hr Factor	0.813	0.625	0.875	Pk Hr Factor	0.800	0.679	0.646
7 - 9 Volume	17	28	45	4 - 6 Volume	20	22	42
7 - 9 Peak Hour	08:00	08:00	08:00	4 - 6 Peak Hour	16:30	16:15	16:15
7 - 9 Pk Volume	13	15	28	4 - 6 Pk Volume	13	15	27
Pk Hr Factor	0.813	0.625	0.875	Pk Hr Factor	0.650	0.625	0.614

Prepared by NDS/ATD

VOLUME

Weyer Road south of Yosemite Boulevard

Day: Tuesday
Date: 12/15/2015

City: Modesto
Project #: 15-7943-001

DAILY TOTALS	NB	SB	EB	WB	Total
	122	157	0	0	279

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0		0	0	0		12:00	2		3		0	0	5	
00:15	0		0		0	0	0		12:15	4		4		0	0	8	
00:30	0		0		0	0	0		12:30	4		2		0	0	6	
00:45	0		0		0	0	0		12:45	3	13	4	13	0	0	7	26
01:00	0		0		0	0	0		13:00	1		4		0	0	5	
01:15	0		0		0	0	0		13:15	2		0		0	0	2	
01:30	0		0		0	0	0		13:30	1		1		0	0	2	
01:45	0		0		0	0	0		13:45	2	6	5	10	0	0	7	16
02:00	0		0		0	0	0		14:00	2		3		0	0	5	
02:15	0		0		0	0	0		14:15	4		6		0	0	10	
02:30	0		1		0	0	1		14:30	3		7		0	0	10	
02:45	0		0	1	0	0	0	1	14:45	4	13	3	19	0	0	7	32
03:00	0		0		0	0	0		15:00	4		3		0	0	7	
03:15	1		1		0	0	2		15:15	3		2		0	0	5	
03:30	0		0		0	0	0		15:30	1		5		0	0	6	
03:45	0	1	0	1	0	0	0	2	15:45	4	12	3	13	0	0	7	25
04:00	0		0		0	0	0		16:00	2		1		0	0	3	
04:15	0		0		0	0	0		16:15	3		2		0	0	5	
04:30	0		0		0	0	0		16:30	1		2		0	0	3	
04:45	0		1	1	0	0	1	1	16:45	2	8	1	6	0	0	3	14
05:00	0		1		0	0	1		17:00	2		3		0	0	5	
05:15	0		0		0	0	0		17:15	3		3		0	0	6	
05:30	0		2		0	0	2		17:30	1		0		0	0	1	
05:45	0		0	3	0	0	0	3	17:45	3	9	1	7	0	0	4	16
06:00	0		0		0	0	0		18:00	3		1		0	0	4	
06:15	0		1		0	0	1		18:15	2		3		0	0	5	
06:30	0		3		0	0	3		18:30	4		2		0	0	6	
06:45	0		1	5	0	0	1	5	18:45	4	13	1	7	0	0	5	20
07:00	1		3		0	0	4		19:00	1		4		0	0	5	
07:15	1		5		0	0	6		19:15	2		5		0	0	7	
07:30	2		4		0	0	6		19:30	2		1		0	0	3	
07:45	3	7	2	14	0	0	5	21	19:45	3	8	1	11	0	0	4	19
08:00	2		4		0	0	6		20:00	3		1		0	0	4	
08:15	0		3		0	0	3		20:15	1		1		0	0	2	
08:30	0		1		0	0	1		20:30	1		1		0	0	2	
08:45	0	2	1	9	0	0	1	11	20:45	1	6	0	3	0	0	1	9
09:00	1		2		0	0	3		21:00	1		0		0	0	1	
09:15	2		3		0	0	5		21:15	0		1		0	0	1	
09:30	0		2		0	0	2		21:30	1		0		0	0	1	
09:45	2	5	3	10	0	0	5	15	21:45	0	2	0	1	0	0	0	3
10:00	3		1		0	0	4		22:00	1		0		0	0	1	
10:15	0		3		0	0	3		22:15	0		0		0	0	0	
10:30	2		0		0	0	2		22:30	0		0		0	0	0	
10:45	2	7	4	8	0	0	6	15	22:45	0	1	0		0	0	0	1
11:00	2		5		0	0	7		23:00	0		0		0	0	0	
11:15	2		3		0	0	5		23:15	0		0		0	0	0	
11:30	2		2		0	0	4		23:30	0		0		0	0	0	
11:45	2	8	3	13	0	0	5	21	23:45	1	1	2	2	0	0	3	3
TOTALS		30		65				95	TOTALS		92		92				184
SPLIT %		31.6%		68.4%				34.1%	SPLIT %		50.0%		50.0%				65.9%

DAILY TOTALS	NB	SB	EB	WB	Total
	122	157	0	0	279

AM Peak Hour	11:45	07:15	11:45	PM Peak Hour	14:15	13:45	14:15
AM Pk Volume	12	15	24	PM Pk Volume	15	21	34
Pk Hr Factor	0.750	0.750	0.750	Pk Hr Factor	0.938	0.750	0.850
7 - 9 Volume	9	23	32	4 - 6 Volume	17	13	30
7 - 9 Peak Hour	07:15	07:15	07:15	4 - 6 Peak Hour	17:00	16:30	16:30
7 - 9 Pk Volume	8	15	23	4 - 6 Pk Volume	9	9	17
Pk Hr Factor	0.667	0.750	0.958	Pk Hr Factor	0.750	0.750	0.708

TWO-WAY STOP SIGN CONTROLLED INTERSECTIONS

EXHIBIT 17-2. LEVEL-OF-SERVICE CRITERIA FOR TWSC INTERSECTIONS

Level of Service	Average Control Delay (s/veh)
A	0–10
B	> 10–15
C	> 15–25
D	> 25–35
E	> 35–50
F	> 50

ALL-WAY STOP SIGN CONTROLLED INTERSECTIONS

The level-of-service criteria are given in Exhibit 17-22. The criteria for AWSC intersections have different threshold values than do those for signalized intersections primarily because drivers expect different levels of performance from distinct types of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an AWSC intersection. Thus a higher level of control delay is acceptable at a signalized intersection for the same LOS.

EXHIBIT 17-22. LEVEL-OF-SERVICE CRITERIA FOR AWSC INTERSECTIONS

Level of Service	Control Delay (s/veh)
A	0–10
B	> 10–15
C	> 15–25
D	> 25–35
E	> 35–50
F	> 50

SIGNALIZED INTERSECTIONS

The average control delay per vehicle is estimated for each lane group and aggregated for each approach and for the intersection as a whole. LOS is directly related to the control delay value. The criteria are listed in Exhibit 16-2.

EXHIBIT 16-2. LOS CRITERIA FOR SIGNALIZED INTERSECTIONS

LOS	Control Delay per Vehicle (s/veh)
A	≤ 10
B	> 10–20
C	> 20–35
D	> 35–55
E	> 55–80
F	> 80

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	289	42	115	160	61	23	411	142	97	406	56
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	66	301	44	120	167	64	24	428	148	101	423	58
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	85	485	70	156	496	183	37	1642	735	132	1619	221
Arrive On Green	0.05	0.16	0.16	0.09	0.20	0.20	0.02	0.46	0.46	0.07	0.52	0.52
Sat Flow, veh/h	1774	3104	449	1774	2532	935	1774	3539	1583	1774	3130	427
Grp Volume(v), veh/h	66	170	175	120	115	116	24	428	148	101	238	243
Grp Sat Flow(s),veh/h/ln	1774	1770	1783	1774	1770	1698	1774	1770	1583	1774	1770	1787
Q Serve(g_s), s	2.7	6.6	6.7	4.9	4.1	4.3	1.0	5.4	4.1	4.1	5.5	5.6
Cycle Q Clear(g_c), s	2.7	6.6	6.7	4.9	4.1	4.3	1.0	5.4	4.1	4.1	5.5	5.6
Prop In Lane	1.00		0.25	1.00		0.55	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	85	276	278	156	347	333	37	1642	735	132	915	924
V/C Ratio(X)	0.77	0.62	0.63	0.77	0.33	0.35	0.64	0.26	0.20	0.77	0.26	0.26
Avail Cap(c_a), veh/h	314	506	510	435	626	601	169	1642	735	386	915	924
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	28.9	29.0	32.8	25.4	25.5	35.7	12.0	11.6	33.4	9.9	9.9
Incr Delay (d2), s/veh	13.8	2.2	2.3	7.8	0.6	0.6	16.9	0.4	0.6	8.9	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	3.4	3.5	2.7	2.1	2.1	0.7	2.7	1.9	2.3	2.8	2.9
LnGrp Delay(d),s/veh	48.4	31.2	31.3	40.6	26.0	26.1	52.5	12.4	12.3	42.3	10.6	10.6
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		411			351			600			582	
Approach Delay, s/veh		34.0			31.0			14.0			16.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	38.1	10.5	15.5	5.5	42.0	7.5	18.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	29.0	18.0	21.0	7.0	38.0	13.0	26.0
Max Q Clear Time (g_c+I1), s	6.1	7.4	6.9	8.7	3.0	7.6	4.7	6.3
Green Ext Time (p_c), s	0.1	6.6	0.2	2.7	0.0	7.3	0.1	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	21.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	48	0	17	29	10	3	62	45	24	74	4
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	11	53	0	19	32	11	3	68	49	26	81	4
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	20	206	0	32	171	56	6	2162	967	42	2169	106
Arrive On Green	0.01	0.06	0.00	0.02	0.07	0.07	0.00	0.61	0.61	0.02	0.63	0.63
Sat Flow, veh/h	1774	3632	0	1774	2624	857	1774	3539	1583	1774	3434	168
Grp Volume(v), veh/h	11	53	0	19	21	22	3	68	49	26	41	44
Grp Sat Flow(s),veh/h/ln	1774	1770	0	1774	1770	1712	1774	1770	1583	1774	1770	1833
Q Serve(g_s), s	0.3	0.8	0.0	0.6	0.6	0.7	0.1	0.4	0.7	0.8	0.5	0.5
Cycle Q Clear(g_c), s	0.3	0.8	0.0	0.6	0.6	0.7	0.1	0.4	0.7	0.8	0.5	0.5
Prop In Lane	1.00		0.00	1.00		0.50	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	20	206	0	32	116	112	6	2162	967	42	1117	1158
V/C Ratio(X)	0.55	0.26	0.00	0.59	0.18	0.20	0.52	0.03	0.05	0.62	0.04	0.04
Avail Cap(c_a), veh/h	416	1277	0	544	766	741	384	2162	967	576	1117	1158
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.3	25.0	0.0	27.0	24.5	24.5	27.6	4.3	4.3	26.8	3.9	3.9
Incr Delay (d2), s/veh	21.7	0.7	0.0	15.6	0.7	0.8	57.4	0.0	0.1	13.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.4	0.0	0.4	0.3	0.3	0.1	0.2	0.3	0.6	0.2	0.3
LnGrp Delay(d),s/veh	48.9	25.6	0.0	42.6	25.2	25.4	85.0	4.3	4.4	40.5	3.9	3.9
LnGrp LOS	D	C		D	C	C	F	A	A	D	A	A
Approach Vol, veh/h		64			62			120			111	
Approach Delay, s/veh		29.6			30.6			6.4			12.5	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.3	37.9	5.0	7.2	4.2	39.0	4.6	7.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	18.0	29.0	17.0	20.0	12.0	35.0	13.0	24.0
Max Q Clear Time (g_c+I1), s	2.8	2.7	2.6	2.8	2.1	2.5	2.3	2.7
Green Ext Time (p_c), s	0.0	1.0	0.0	0.4	0.0	1.1	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	16.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	254	45	145	184	64	25	413	154	101	455	53
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	62	262	46	149	190	66	26	426	159	104	469	55
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	444	77	192	546	184	40	1579	707	136	1597	187
Arrive On Green	0.04	0.15	0.15	0.11	0.21	0.21	0.02	0.45	0.45	0.08	0.50	0.50
Sat Flow, veh/h	1774	3018	523	1774	2602	876	1774	3539	1583	1774	3194	373
Grp Volume(v), veh/h	62	152	156	149	127	129	26	426	159	104	259	265
Grp Sat Flow(s),veh/h/ln	1774	1770	1771	1774	1770	1708	1774	1770	1583	1774	1770	1797
Q Serve(g_s), s	2.5	5.8	5.9	5.9	4.4	4.6	1.0	5.5	4.4	4.1	6.2	6.2
Cycle Q Clear(g_c), s	2.5	5.8	5.9	5.9	4.4	4.6	1.0	5.5	4.4	4.1	6.2	6.2
Prop In Lane	1.00		0.30	1.00		0.51	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	80	260	260	192	372	359	40	1579	707	136	885	899
V/C Ratio(X)	0.78	0.58	0.60	0.78	0.34	0.36	0.65	0.27	0.23	0.77	0.29	0.29
Avail Cap(c_a), veh/h	320	492	492	518	688	665	173	1579	707	394	885	899
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	28.6	28.7	31.3	24.2	24.3	34.9	12.5	12.3	32.6	10.5	10.5
Incr Delay (d2), s/veh	14.9	2.1	2.2	6.7	0.5	0.6	16.4	0.4	0.7	8.7	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	3.0	3.1	3.3	2.2	2.2	0.7	2.8	2.1	2.3	3.2	3.3
LnGrp Delay(d),s/veh	48.9	30.7	30.9	37.9	24.7	24.9	51.3	13.0	13.0	41.3	11.4	11.4
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		370			405			611			628	
Approach Delay, s/veh		33.8			29.6			14.6			16.3	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	36.1	11.8	14.6	5.6	40.0	7.2	19.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	27.0	21.0	20.0	7.0	36.0	13.0	28.0
Max Q Clear Time (g_c+I1), s	6.1	7.5	7.9	7.9	3.0	8.2	4.5	6.6
Green Ext Time (p_c), s	0.2	6.7	0.3	2.7	0.0	7.5	0.1	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	21.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	17	78	5	35	43	11	15	106	63	32	107	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	19	87	6	39	48	12	17	118	70	36	119	6
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	32	224	15	57	228	55	29	2119	948	54	2101	105
Arrive On Green	0.02	0.07	0.07	0.03	0.08	0.08	0.02	0.60	0.60	0.03	0.61	0.61
Sat Flow, veh/h	1774	3362	230	1774	2830	682	1774	3539	1583	1774	3430	172
Grp Volume(v), veh/h	19	45	48	39	29	31	17	118	70	36	61	64
Grp Sat Flow(s),veh/h/ln	1774	1770	1822	1774	1770	1742	1774	1770	1583	1774	1770	1832
Q Serve(g_s), s	0.6	1.4	1.5	1.3	0.9	1.0	0.6	0.8	1.1	1.2	0.8	0.8
Cycle Q Clear(g_c), s	0.6	1.4	1.5	1.3	0.9	1.0	0.6	0.8	1.1	1.2	0.8	0.8
Prop In Lane	1.00		0.13	1.00		0.39	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	32	118	121	57	143	140	29	2119	948	54	1084	1122
V/C Ratio(X)	0.59	0.38	0.39	0.69	0.21	0.22	0.58	0.06	0.07	0.67	0.06	0.06
Avail Cap(c_a), veh/h	392	662	682	483	753	741	302	2119	948	483	1084	1122
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.6	26.3	26.3	28.2	25.3	25.3	28.7	4.9	4.9	28.2	4.6	4.6
Incr Delay (d2), s/veh	16.0	2.0	2.0	13.6	0.7	0.8	16.9	0.1	0.2	13.5	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.8	0.8	0.8	0.5	0.5	0.4	0.4	0.5	0.8	0.4	0.4
LnGrp Delay(d),s/veh	44.6	28.3	28.3	41.8	26.0	26.1	45.6	4.9	5.1	41.7	4.7	4.7
LnGrp LOS	D	C	C	D	C	C	D	A	A	D	A	A
Approach Vol, veh/h		112			99			205			161	
Approach Delay, s/veh		31.1			32.2			8.4			13.0	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.8	39.2	5.9	7.9	5.0	40.0	5.1	8.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	30.0	16.0	22.0	10.0	36.0	13.0	25.0
Max Q Clear Time (g_c+I1), s	3.2	3.1	3.3	3.5	2.6	2.8	2.6	3.0
Green Ext Time (p_c), s	0.0	1.7	0.0	0.7	0.0	1.8	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	34	177	23	118	137	50	19	258	141	72	238	49
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	36	188	24	126	146	53	20	274	150	77	253	52
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	53	384	48	166	477	167	33	1675	749	100	1499	303
Arrive On Green	0.03	0.12	0.12	0.09	0.19	0.19	0.02	0.47	0.47	0.06	0.51	0.51
Sat Flow, veh/h	1774	3163	399	1774	2574	900	1774	3539	1583	1774	2934	593
Grp Volume(v), veh/h	36	104	108	126	99	100	20	274	150	77	151	154
Grp Sat Flow(s),veh/h/ln	1774	1770	1792	1774	1770	1704	1774	1770	1583	1774	1770	1758
Q Serve(g_s), s	1.3	3.4	3.5	4.3	3.0	3.2	0.7	2.8	3.5	2.7	2.9	2.9
Cycle Q Clear(g_c), s	1.3	3.4	3.5	4.3	3.0	3.2	0.7	2.8	3.5	2.7	2.9	2.9
Prop In Lane	1.00		0.22	1.00		0.53	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	53	215	218	166	328	316	33	1675	749	100	904	898
V/C Ratio(X)	0.68	0.48	0.50	0.76	0.30	0.32	0.60	0.16	0.20	0.77	0.17	0.17
Avail Cap(c_a), veh/h	283	593	601	623	932	897	255	1675	749	425	904	898
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.1	25.7	25.7	27.7	22.0	22.1	30.5	9.4	9.6	29.2	8.2	8.2
Incr Delay (d2), s/veh	14.4	1.7	1.7	6.9	0.5	0.6	16.1	0.2	0.6	11.7	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.8	1.8	2.5	1.5	1.6	0.5	1.4	1.6	1.6	1.5	1.5
LnGrp Delay(d),s/veh	44.5	27.4	27.5	34.6	22.5	22.7	46.6	9.6	10.2	40.9	8.6	8.6
LnGrp LOS	D	C	C	C	C	C	D	A	B	D	A	A
Approach Vol, veh/h		248			325			444			382	
Approach Delay, s/veh		29.9			27.3			11.5			15.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	33.6	9.9	11.6	5.2	36.0	5.9	15.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	26.0	22.0	21.0	9.0	32.0	10.0	33.0
Max Q Clear Time (g_c+I1), s	4.7	5.5	6.3	5.5	2.7	4.9	3.3	5.2
Green Ext Time (p_c), s	0.1	4.1	0.3	2.1	0.0	4.4	0.0	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	19.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	68	11	44	49	13	10	145	54	24	163	16
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	16	73	12	47	53	14	11	156	58	26	175	17
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	28	204	33	66	247	63	20	2064	924	42	1945	187
Arrive On Green	0.02	0.07	0.07	0.04	0.09	0.09	0.01	0.58	0.58	0.02	0.60	0.60
Sat Flow, veh/h	1774	3055	491	1774	2796	711	1774	3539	1583	1774	3263	314
Grp Volume(v), veh/h	16	42	43	47	33	34	11	156	58	26	94	98
Grp Sat Flow(s),veh/h/ln	1774	1770	1776	1774	1770	1737	1774	1770	1583	1774	1770	1807
Q Serve(g_s), s	0.5	1.2	1.3	1.5	1.0	1.0	0.3	1.1	0.9	0.8	1.3	1.3
Cycle Q Clear(g_c), s	0.5	1.2	1.3	1.5	1.0	1.0	0.3	1.1	0.9	0.8	1.3	1.3
Prop In Lane	1.00		0.28	1.00		0.41	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	28	118	119	66	156	153	20	2064	924	42	1054	1077
V/C Ratio(X)	0.57	0.35	0.37	0.71	0.21	0.22	0.55	0.08	0.06	0.62	0.09	0.09
Avail Cap(c_a), veh/h	384	671	674	609	895	878	352	2064	924	481	1054	1077
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.1	24.7	24.7	26.4	23.5	23.5	27.2	5.0	5.0	26.8	4.8	4.8
Incr Delay (d2), s/veh	17.1	1.8	1.9	13.3	0.7	0.7	21.6	0.1	0.1	13.7	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.7	0.7	0.9	0.5	0.5	0.3	0.5	0.4	0.6	0.6	0.7
LnGrp Delay(d),s/veh	44.2	26.5	26.6	39.6	24.1	24.2	48.9	5.1	5.1	40.4	4.9	4.9
LnGrp LOS	D	C	C	D	C	C	D	A	A	D	A	A
Approach Vol, veh/h		101			114			225			218	
Approach Delay, s/veh		29.3			30.5			7.2			9.2	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.3	36.3	6.1	7.7	4.6	37.0	4.9	8.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	29.0	19.0	21.0	11.0	33.0	12.0	28.0
Max Q Clear Time (g_c+I1), s	2.8	3.1	3.5	3.3	2.3	3.3	2.5	3.0
Green Ext Time (p_c), s	0.0	2.3	0.1	0.7	0.0	2.4	0.0	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	15.3
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	72	301	75	127	210	61	60	421	154	97	417	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	75	314	78	132	219	64	62	439	160	101	434	100
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	480	117	169	572	163	79	1615	722	131	1390	318
Arrive On Green	0.05	0.17	0.17	0.10	0.21	0.21	0.04	0.46	0.46	0.07	0.49	0.49
Sat Flow, veh/h	1774	2820	690	1774	2720	776	1774	3539	1583	1774	2862	654
Grp Volume(v), veh/h	75	195	197	132	141	142	62	439	160	101	267	267
Grp Sat Flow(s),veh/h/ln	1774	1770	1741	1774	1770	1726	1774	1770	1583	1774	1770	1747
Q Serve(g_s), s	3.3	8.1	8.3	5.7	5.3	5.6	2.7	6.0	4.8	4.4	7.2	7.3
Cycle Q Clear(g_c), s	3.3	8.1	8.3	5.7	5.3	5.6	2.7	6.0	4.8	4.4	7.2	7.3
Prop In Lane	1.00		0.40	1.00		0.45	1.00		1.00	1.00		0.37
Lane Grp Cap(c), veh/h	97	301	296	169	372	363	79	1615	722	131	859	848
V/C Ratio(X)	0.77	0.65	0.66	0.78	0.38	0.39	0.78	0.27	0.22	0.77	0.31	0.31
Avail Cap(c_a), veh/h	295	475	467	408	588	573	159	1615	722	363	859	848
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	30.3	30.4	34.6	26.5	26.6	37.0	13.2	12.9	35.6	12.2	12.2
Incr Delay (d2), s/veh	12.0	2.4	2.6	7.6	0.6	0.7	15.2	0.4	0.7	9.1	0.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.1	4.2	3.1	2.7	2.7	1.7	3.0	2.2	2.5	3.7	3.7
LnGrp Delay(d),s/veh	48.5	32.7	33.0	42.2	27.1	27.3	52.2	13.6	13.6	44.7	13.1	13.2
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		467			415			661			635	
Approach Delay, s/veh		35.3			32.0			17.2			18.2	
Approach LOS		D			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	39.7	11.5	17.3	7.5	42.0	8.3	20.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	29.0	18.0	21.0	7.0	38.0	13.0	26.0
Max Q Clear Time (g_c+I1), s	6.4	8.0	7.7	10.3	4.7	9.3	5.3	7.6
Green Ext Time (p_c), s	0.1	7.1	0.2	3.0	0.0	7.8	0.1	3.9

Intersection Summary	
HCM 2010 Ctrl Delay	24.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	42	88	21	21	33	10	12	65	49	24	77	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	46	97	23	23	36	11	13	71	54	26	85	8
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	235	54	38	181	53	23	2088	934	42	1967	183
Arrive On Green	0.04	0.08	0.08	0.02	0.07	0.07	0.01	0.59	0.59	0.02	0.60	0.60
Sat Flow, veh/h	1774	2859	658	1774	2704	789	1774	3539	1583	1774	3274	304
Grp Volume(v), veh/h	46	59	61	23	23	24	13	71	54	26	45	48
Grp Sat Flow(s),veh/h/ln	1774	1770	1747	1774	1770	1723	1774	1770	1583	1774	1770	1809
Q Serve(g_s), s	1.5	1.8	1.9	0.7	0.7	0.7	0.4	0.5	0.8	0.8	0.6	0.6
Cycle Q Clear(g_c), s	1.5	1.8	1.9	0.7	0.7	0.7	0.4	0.5	0.8	0.8	0.6	0.6
Prop In Lane	1.00		0.38	1.00		0.46	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	65	145	143	38	119	116	23	2088	934	42	1063	1087
V/C Ratio(X)	0.71	0.41	0.43	0.60	0.19	0.21	0.56	0.03	0.06	0.62	0.04	0.04
Avail Cap(c_a), veh/h	596	750	741	470	625	609	345	2088	934	470	1063	1087
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	24.7	24.7	27.5	25.0	25.0	27.8	4.9	4.9	27.4	4.6	4.6
Incr Delay (d2), s/veh	13.5	1.8	2.0	14.5	0.8	0.9	19.5	0.0	0.1	13.8	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.9	1.0	0.5	0.4	0.4	0.3	0.2	0.4	0.6	0.3	0.3
LnGrp Delay(d),s/veh	40.5	26.5	26.7	41.9	25.7	25.9	47.3	4.9	5.0	41.2	4.7	4.7
LnGrp LOS	D	C	C	D	C	C	D	A	A	D	A	A
Approach Vol, veh/h		166			70			138			119	
Approach Delay, s/veh		30.5			31.1			8.9			12.7	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.3	37.4	5.2	8.6	4.7	38.0	6.1	7.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	30.0	15.0	24.0	11.0	34.0	19.0	20.0
Max Q Clear Time (g_c+I1), s	2.8	2.8	2.7	3.9	2.4	2.6	3.5	2.7
Green Ext Time (p_c), s	0.0	1.1	0.0	0.8	0.0	1.2	0.1	0.8

Intersection Summary	
HCM 2010 Ctrl Delay	20.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	69	266	78	157	234	64	62	423	166	101	466	93
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	71	274	80	162	241	66	64	436	171	104	480	96
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	442	127	206	628	168	82	1502	672	135	1337	266
Arrive On Green	0.05	0.16	0.16	0.12	0.23	0.23	0.05	0.42	0.42	0.08	0.45	0.45
Sat Flow, veh/h	1774	2717	778	1774	2761	740	1774	3539	1583	1774	2944	585
Grp Volume(v), veh/h	71	177	177	162	153	154	64	436	171	104	287	289
Grp Sat Flow(s),veh/h/ln	1774	1770	1725	1774	1770	1732	1774	1770	1583	1774	1770	1759
Q Serve(g_s), s	2.9	6.7	7.0	6.5	5.3	5.5	2.6	5.9	5.1	4.2	7.7	7.8
Cycle Q Clear(g_c), s	2.9	6.7	7.0	6.5	5.3	5.5	2.6	5.9	5.1	4.2	7.7	7.8
Prop In Lane	1.00		0.45	1.00		0.43	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	92	288	281	206	402	394	82	1502	672	135	804	799
V/C Ratio(X)	0.77	0.61	0.63	0.79	0.38	0.39	0.78	0.29	0.25	0.77	0.36	0.36
Avail Cap(c_a), veh/h	269	463	451	513	707	692	269	1502	672	366	804	799
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	28.3	28.4	31.2	23.7	23.8	34.3	13.7	13.5	32.9	12.9	12.9
Incr Delay (d2), s/veh	12.9	2.1	2.3	6.5	0.6	0.6	14.5	0.5	0.9	8.8	1.2	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	3.5	3.5	3.5	2.7	2.7	1.6	2.9	2.3	2.4	4.0	4.0
LnGrp Delay(d),s/veh	46.9	30.4	30.7	37.7	24.3	24.4	48.7	14.2	14.4	41.7	14.2	14.2
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		425			469			671			680	
Approach Delay, s/veh		33.3			29.0			17.6			18.4	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	34.8	12.4	15.8	7.4	37.0	7.8	20.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	29.0	21.0	19.0	11.0	33.0	11.0	29.0
Max Q Clear Time (g_c+I1), s	6.2	7.9	8.5	9.0	4.6	9.8	4.9	7.5
Green Ext Time (p_c), s	0.1	7.4	0.3	2.9	0.1	7.7	0.1	4.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	49	118	23	39	47	11	24	109	67	32	110	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	54	131	26	43	52	12	27	121	74	36	122	9
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	288	56	62	264	59	43	1946	871	54	1860	136
Arrive On Green	0.04	0.10	0.10	0.03	0.09	0.09	0.02	0.55	0.55	0.03	0.56	0.56
Sat Flow, veh/h	1774	2958	574	1774	2877	642	1774	3539	1583	1774	3345	244
Grp Volume(v), veh/h	54	77	80	43	31	33	27	121	74	36	64	67
Grp Sat Flow(s),veh/h/ln	1774	1770	1762	1774	1770	1749	1774	1770	1583	1774	1770	1820
Q Serve(g_s), s	1.7	2.3	2.4	1.3	0.9	1.0	0.8	0.9	1.2	1.1	0.9	0.9
Cycle Q Clear(g_c), s	1.7	2.3	2.4	1.3	0.9	1.0	0.8	0.9	1.2	1.1	0.9	0.9
Prop In Lane	1.00		0.33	1.00		0.37	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	72	173	172	62	162	160	43	1946	871	54	984	1012
V/C Ratio(X)	0.75	0.45	0.46	0.69	0.19	0.20	0.62	0.06	0.08	0.66	0.07	0.07
Avail Cap(c_a), veh/h	605	762	758	509	667	659	414	1946	871	477	984	1012
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	23.7	23.8	26.6	23.4	23.4	26.9	5.8	5.9	26.7	5.7	5.7
Incr Delay (d2), s/veh	14.3	1.8	2.0	13.1	0.6	0.6	13.6	0.1	0.2	12.9	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.2	1.2	0.9	0.5	0.5	0.6	0.4	0.6	0.7	0.5	0.5
LnGrp Delay(d),s/veh	40.7	25.5	25.7	39.7	24.0	24.1	40.5	5.9	6.1	39.6	5.8	5.8
LnGrp LOS	D	C	C	D	C	C	D	A	A	D	A	A
Approach Vol, veh/h		211			107			222			167	
Approach Delay, s/veh		29.5			30.3			10.2			13.1	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.7	34.7	5.9	9.4	5.4	35.0	6.3	9.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	29.0	16.0	24.0	13.0	31.0	19.0	21.0
Max Q Clear Time (g_c+I1), s	3.1	3.2	3.3	4.4	2.8	2.9	3.7	3.0
Green Ext Time (p_c), s	0.0	1.7	0.0	1.1	0.0	1.8	0.1	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	19.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	210	62	136	171	50	57	270	155	72	253	76
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	64	223	66	145	182	53	61	287	165	77	269	81
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	415	120	190	584	165	78	1502	672	100	1178	348
Arrive On Green	0.05	0.15	0.15	0.11	0.21	0.21	0.04	0.42	0.42	0.06	0.44	0.44
Sat Flow, veh/h	1774	2711	783	1774	2724	772	1774	3539	1583	1774	2696	795
Grp Volume(v), veh/h	64	144	145	145	116	119	61	287	165	77	175	175
Grp Sat Flow(s),veh/h/ln	1774	1770	1725	1774	1770	1727	1774	1770	1583	1774	1770	1722
Q Serve(g_s), s	2.2	4.6	4.8	4.9	3.4	3.6	2.1	3.1	4.1	2.6	3.8	3.9
Cycle Q Clear(g_c), s	2.2	4.6	4.8	4.9	3.4	3.6	2.1	3.1	4.1	2.6	3.8	3.9
Prop In Lane	1.00		0.45	1.00		0.45	1.00		1.00	1.00		0.46
Lane Grp Cap(c), veh/h	82	271	264	190	379	370	78	1502	672	100	773	752
V/C Ratio(X)	0.78	0.53	0.55	0.76	0.31	0.32	0.79	0.19	0.25	0.77	0.23	0.23
Avail Cap(c_a), veh/h	373	601	586	660	888	866	373	1502	672	431	773	752
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.2	24.1	24.2	26.8	20.4	20.5	29.3	11.1	11.4	28.8	10.9	10.9
Incr Delay (d2), s/veh	14.9	1.6	1.8	6.2	0.5	0.5	15.8	0.3	0.9	11.7	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	2.4	2.4	2.7	1.7	1.8	1.4	1.6	2.0	1.6	2.0	2.0
LnGrp Delay(d),s/veh	44.0	25.7	26.0	33.0	20.9	21.0	45.0	11.4	12.3	40.5	11.6	11.6
LnGrp LOS	D	C	C	C	C	C	D	B	B	D	B	B
Approach Vol, veh/h		353			380			513			427	
Approach Delay, s/veh		29.1			25.5			15.7			16.8	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	30.2	10.6	13.5	6.7	31.0	6.8	17.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	25.0	23.0	21.0	13.0	27.0	13.0	31.0
Max Q Clear Time (g_c+I1), s	4.6	6.1	6.9	6.8	4.1	5.9	4.2	5.6
Green Ext Time (p_c), s	0.1	4.4	0.3	2.7	0.1	4.6	0.1	3.2

Intersection Summary	
HCM 2010 Ctrl Delay	21.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	33	91	26	50	54	13	21	148	59	24	167	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	35	98	28	54	58	14	23	159	63	26	180	22
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	53	236	65	72	276	64	38	1983	887	42	1789	216
Arrive On Green	0.03	0.09	0.09	0.04	0.10	0.10	0.02	0.56	0.56	0.02	0.56	0.56
Sat Flow, veh/h	1774	2743	756	1774	2850	665	1774	3539	1583	1774	3181	384
Grp Volume(v), veh/h	35	62	64	54	35	37	23	159	63	26	99	103
Grp Sat Flow(s),veh/h/ln	1774	1770	1729	1774	1770	1745	1774	1770	1583	1774	1770	1795
Q Serve(g_s), s	1.1	1.8	1.9	1.7	1.0	1.1	0.7	1.1	1.0	0.8	1.4	1.5
Cycle Q Clear(g_c), s	1.1	1.8	1.9	1.7	1.0	1.1	0.7	1.1	1.0	0.8	1.4	1.5
Prop In Lane	1.00		0.44	1.00		0.38	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	53	152	149	72	171	169	38	1983	887	42	995	1010
V/C Ratio(X)	0.66	0.41	0.43	0.75	0.21	0.22	0.60	0.08	0.07	0.62	0.10	0.10
Avail Cap(c_a), veh/h	449	704	687	577	831	820	417	1983	887	417	995	1010
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6	23.9	24.0	26.3	23.0	23.1	26.8	5.6	5.6	26.8	5.6	5.6
Incr Delay (d2), s/veh	12.8	1.7	2.0	14.1	0.6	0.6	14.3	0.1	0.2	13.7	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.0	1.0	1.1	0.5	0.6	0.5	0.6	0.5	0.6	0.7	0.8
LnGrp Delay(d),s/veh	39.4	25.7	26.0	40.4	23.6	23.7	41.1	5.7	5.7	40.4	5.8	5.8
LnGrp LOS	D	C	C	D	C	C	D	A	A	D	A	A
Approach Vol, veh/h		161			126			245			228	
Approach Delay, s/veh		28.8			30.8			9.0			9.8	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.3	35.0	6.3	8.8	5.2	35.1	5.7	9.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	31.0	18.0	22.0	13.0	31.0	14.0	26.0
Max Q Clear Time (g_c+I1), s	2.8	3.1	3.7	3.9	2.7	3.5	3.1	3.1
Green Ext Time (p_c), s	0.0	2.5	0.1	1.0	0.0	2.5	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	17.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	72	301	75	177	304	61	53	421	154	97	577	137
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	75	314	78	184	317	64	55	439	160	101	601	143
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	480	117	228	718	143	70	1502	672	130	1301	309
Arrive On Green	0.05	0.17	0.17	0.13	0.24	0.24	0.04	0.42	0.42	0.07	0.46	0.46
Sat Flow, veh/h	1774	2820	690	1774	2942	587	1774	3539	1583	1774	2839	674
Grp Volume(v), veh/h	75	195	197	184	189	192	55	439	160	101	374	370
Grp Sat Flow(s),veh/h/ln	1774	1770	1741	1774	1770	1759	1774	1770	1583	1774	1770	1744
Q Serve(g_s), s	3.3	8.1	8.3	7.9	7.1	7.3	2.4	6.4	5.1	4.4	11.4	11.5
Cycle Q Clear(g_c), s	3.3	8.1	8.3	7.9	7.1	7.3	2.4	6.4	5.1	4.4	11.4	11.5
Prop In Lane	1.00		0.40	1.00		0.33	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	97	301	296	228	432	429	70	1502	672	130	811	799
V/C Ratio(X)	0.78	0.65	0.66	0.81	0.44	0.45	0.78	0.29	0.24	0.77	0.46	0.46
Avail Cap(c_a), veh/h	203	428	421	452	676	672	203	1502	672	271	811	799
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	30.4	30.5	33.3	25.1	25.2	37.4	14.9	14.5	35.8	14.6	14.6
Incr Delay (d2), s/veh	12.3	2.3	2.6	6.7	0.7	0.7	17.1	0.5	0.8	9.4	1.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.2	4.2	4.3	3.6	3.6	1.5	3.2	2.3	2.5	5.9	5.9
LnGrp Delay(d),s/veh	49.0	32.7	33.0	40.0	25.8	25.9	54.5	15.4	15.3	45.1	16.5	16.6
LnGrp LOS	D	C	C	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		467			565			654			845	
Approach Delay, s/veh		35.5			30.5			18.6			19.9	
Approach LOS		D			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	37.3	14.1	17.4	7.1	40.0	8.3	23.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	33.0	20.0	19.0	9.0	36.0	9.0	30.0
Max Q Clear Time (g_c+I1), s	6.4	8.4	9.9	10.3	4.4	13.5	5.3	9.3
Green Ext Time (p_c), s	0.1	9.3	0.3	3.1	0.0	9.0	0.0	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	24.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	83	182	14	21	33	10	12	225	99	24	77	7
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	91	200	15	23	36	11	13	247	109	26	85	8
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	120	390	29	38	190	56	23	1985	888	42	1872	174
Arrive On Green	0.07	0.12	0.12	0.02	0.07	0.07	0.01	0.56	0.56	0.02	0.57	0.57
Sat Flow, veh/h	1774	3340	249	1774	2704	789	1774	3539	1583	1774	3274	304
Grp Volume(v), veh/h	91	105	110	23	23	24	13	247	109	26	45	48
Grp Sat Flow(s),veh/h/ln	1774	1770	1819	1774	1770	1723	1774	1770	1583	1774	1770	1809
Q Serve(g_s), s	2.9	3.2	3.3	0.7	0.7	0.8	0.4	1.9	1.9	0.8	0.7	0.7
Cycle Q Clear(g_c), s	2.9	3.2	3.3	0.7	0.7	0.8	0.4	1.9	1.9	0.8	0.7	0.7
Prop In Lane	1.00		0.14	1.00		0.46	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	120	207	213	38	125	121	23	1985	888	42	1011	1034
V/C Ratio(X)	0.76	0.51	0.52	0.61	0.18	0.20	0.56	0.12	0.12	0.62	0.04	0.05
Avail Cap(c_a), veh/h	768	981	1008	338	552	537	246	1985	888	338	1011	1034
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	23.9	24.0	28.0	25.3	25.3	28.3	6.0	6.0	27.9	5.4	5.4
Incr Delay (d2), s/veh	9.2	1.9	1.9	14.6	0.7	0.8	19.6	0.1	0.3	14.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	1.7	1.8	0.5	0.4	0.4	0.3	1.0	0.9	0.6	0.3	0.4
LnGrp Delay(d),s/veh	35.7	25.9	25.9	42.6	26.0	26.1	48.0	6.1	6.3	41.9	5.5	5.5
LnGrp LOS	D	C	C	D	C	C	D	A	A	D	A	A
Approach Vol, veh/h		306			70			369			119	
Approach Delay, s/veh		28.8			31.5			7.6			13.5	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	36.4	5.2	10.7	4.8	37.0	7.9	8.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	30.0	11.0	32.0	8.0	33.0	25.0	18.0
Max Q Clear Time (g_c+I1), s	2.8	3.9	2.7	5.3	2.4	2.7	4.9	2.8
Green Ext Time (p_c), s	0.0	2.5	0.0	1.5	0.0	2.6	0.2	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	17.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	69	266	78	207	328	64	55	423	166	101	626	134
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	71	274	80	213	338	66	57	436	171	104	645	138
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	413	118	258	728	141	73	1513	677	134	1340	286
Arrive On Green	0.05	0.15	0.15	0.15	0.25	0.25	0.04	0.43	0.43	0.08	0.46	0.46
Sat Flow, veh/h	1774	2717	778	1774	2960	572	1774	3539	1583	1774	2903	620
Grp Volume(v), veh/h	71	177	177	213	201	203	57	436	171	104	393	390
Grp Sat Flow(s),veh/h/ln	1774	1770	1725	1774	1770	1762	1774	1770	1583	1774	1770	1753
Q Serve(g_s), s	3.2	7.5	7.8	9.3	7.7	7.9	2.6	6.4	5.6	4.6	12.3	12.3
Cycle Q Clear(g_c), s	3.2	7.5	7.8	9.3	7.7	7.9	2.6	6.4	5.6	4.6	12.3	12.3
Prop In Lane	1.00		0.45	1.00		0.32	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	92	269	262	258	435	433	73	1513	677	134	817	810
V/C Ratio(X)	0.78	0.66	0.68	0.82	0.46	0.47	0.78	0.29	0.25	0.78	0.48	0.48
Avail Cap(c_a), veh/h	199	353	345	487	640	638	199	1513	677	266	817	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	32.0	32.1	33.2	25.7	25.8	38.1	15.0	14.7	36.4	14.9	14.9
Incr Delay (d2), s/veh	13.0	2.7	3.4	6.5	0.8	0.8	16.4	0.5	0.9	9.3	2.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.9	3.9	5.0	3.9	3.9	1.6	3.2	2.6	2.6	6.5	6.4
LnGrp Delay(d),s/veh	50.5	34.7	35.5	39.8	26.5	26.6	54.4	15.5	15.6	45.6	16.9	17.0
LnGrp LOS	D	C	D	D	C	C	D	B	B	D	B	B
Approach Vol, veh/h		425			617			664			887	
Approach Delay, s/veh		37.7			31.1			18.9			20.3	
Approach LOS		D			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	38.2	15.7	16.2	7.3	41.0	8.1	23.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	34.0	22.0	16.0	9.0	37.0	9.0	29.0
Max Q Clear Time (g_c+I1), s	6.6	8.4	11.3	9.8	4.6	14.3	5.2	9.9
Green Ext Time (p_c), s	0.1	9.8	0.4	2.4	0.0	9.3	0.0	4.5

Intersection Summary	
HCM 2010 Ctrl Delay	25.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	212	16	39	47	11	24	269	117	32	110	8
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	100	236	18	43	52	12	27	299	130	36	122	9
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	133	445	34	61	269	60	43	1842	824	54	1761	129
Arrive On Green	0.07	0.13	0.13	0.03	0.09	0.09	0.02	0.52	0.52	0.03	0.53	0.53
Sat Flow, veh/h	1774	3335	253	1774	2877	642	1774	3539	1583	1774	3345	244
Grp Volume(v), veh/h	100	124	130	43	31	33	27	299	130	36	64	67
Grp Sat Flow(s),veh/h/ln	1774	1770	1818	1774	1770	1749	1774	1770	1583	1774	1770	1820
Q Serve(g_s), s	3.1	3.7	3.8	1.4	0.9	1.0	0.9	2.5	2.4	1.1	1.0	1.0
Cycle Q Clear(g_c), s	3.1	3.7	3.8	1.4	0.9	1.0	0.9	2.5	2.4	1.1	1.0	1.0
Prop In Lane	1.00		0.14	1.00		0.37	1.00		1.00	1.00		0.13
Lane Grp Cap(c), veh/h	133	236	243	61	165	163	43	1842	824	54	932	958
V/C Ratio(X)	0.75	0.53	0.53	0.70	0.19	0.20	0.62	0.16	0.16	0.67	0.07	0.07
Avail Cap(c_a), veh/h	778	963	989	374	559	553	343	1842	824	374	932	958
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	23.0	23.0	27.2	23.8	23.9	27.5	7.2	7.1	27.3	6.6	6.6
Incr Delay (d2), s/veh	8.3	1.8	1.8	13.4	0.5	0.6	13.7	0.2	0.4	13.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	2.0	2.0	0.9	0.5	0.5	0.6	1.3	1.2	0.8	0.5	0.5
LnGrp Delay(d),s/veh	34.2	24.8	24.8	40.6	24.4	24.5	41.3	7.3	7.5	40.5	6.8	6.8
LnGrp LOS	C	C	C	D	C	C	D	A	A	D	A	A
Approach Vol, veh/h		354			107			456			167	
Approach Delay, s/veh		27.5			30.9			9.4			14.0	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.7	33.7	6.0	11.6	5.4	34.0	8.3	9.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	29.0	12.0	31.0	11.0	30.0	25.0	18.0
Max Q Clear Time (g_c+I1), s	3.1	4.5	3.4	5.8	2.9	3.0	5.1	3.0
Green Ext Time (p_c), s	0.0	3.2	0.0	1.8	0.0	3.3	0.2	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	18.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	192	58	186	283	50	53	270	155	72	413	132
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	49	204	62	198	301	53	56	287	165	77	439	140
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	381	113	249	743	129	71	1528	684	100	1186	375
Arrive On Green	0.04	0.14	0.14	0.14	0.25	0.25	0.04	0.43	0.43	0.06	0.45	0.45
Sat Flow, veh/h	1774	2694	797	1774	3015	525	1774	3539	1583	1774	2648	837
Grp Volume(v), veh/h	49	132	134	198	175	179	56	287	165	77	292	287
Grp Sat Flow(s),veh/h/ln	1774	1770	1722	1774	1770	1770	1774	1770	1583	1774	1770	1715
Q Serve(g_s), s	1.9	4.8	5.0	7.5	5.8	5.9	2.2	3.5	4.6	3.0	7.6	7.7
Cycle Q Clear(g_c), s	1.9	4.8	5.0	7.5	5.8	5.9	2.2	3.5	4.6	3.0	7.6	7.7
Prop In Lane	1.00		0.46	1.00		0.30	1.00		1.00	1.00		0.49
Lane Grp Cap(c), veh/h	62	250	243	249	436	436	71	1528	684	100	793	768
V/C Ratio(X)	0.78	0.53	0.55	0.80	0.40	0.41	0.79	0.19	0.24	0.77	0.37	0.37
Avail Cap(c_a), veh/h	281	458	446	613	790	790	281	1528	684	306	793	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.3	27.7	27.8	28.9	21.9	21.9	33.0	12.2	12.5	32.3	12.7	12.7
Incr Delay (d2), s/veh	19.0	1.7	1.9	5.7	0.6	0.6	17.1	0.3	0.8	11.8	1.3	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	2.5	2.5	4.1	2.9	3.0	1.4	1.7	2.2	1.8	3.9	3.9
LnGrp Delay(d),s/veh	52.2	29.4	29.7	34.6	22.5	22.6	50.2	12.5	13.4	44.2	14.0	14.1
LnGrp LOS	D	C	C	C	C	C	D	B	B	D	B	B
Approach Vol, veh/h		315			552			508			656	
Approach Delay, s/veh		33.1			26.9			16.9			17.6	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	34.0	13.7	13.8	6.8	35.1	6.4	21.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	30.0	24.0	18.0	11.0	31.0	11.0	31.0
Max Q Clear Time (g_c+I1), s	5.0	6.6	9.5	7.0	4.2	9.7	3.9	7.9
Green Ext Time (p_c), s	0.1	6.5	0.5	2.8	0.0	6.3	0.0	3.8

Intersection Summary	
HCM 2010 Ctrl Delay	22.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	89	203	22	50	54	13	21	308	109	24	167	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	96	218	24	54	58	14	23	331	117	26	180	22
Adj No. of Lanes	1	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	406	44	71	269	63	38	1913	856	42	1726	208
Arrive On Green	0.07	0.13	0.13	0.04	0.09	0.09	0.02	0.54	0.54	0.02	0.54	0.54
Sat Flow, veh/h	1774	3220	351	1774	2850	665	1774	3539	1583	1774	3181	384
Grp Volume(v), veh/h	96	119	123	54	35	37	23	331	117	26	99	103
Grp Sat Flow(s),veh/h/ln	1774	1770	1801	1774	1770	1745	1774	1770	1583	1774	1770	1795
Q Serve(g_s), s	3.1	3.7	3.8	1.8	1.1	1.2	0.8	2.8	2.2	0.9	1.6	1.6
Cycle Q Clear(g_c), s	3.1	3.7	3.8	1.8	1.1	1.2	0.8	2.8	2.2	0.9	1.6	1.6
Prop In Lane	1.00		0.19	1.00		0.38	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	127	223	227	71	167	165	38	1913	856	42	960	974
V/C Ratio(X)	0.76	0.53	0.54	0.77	0.21	0.22	0.61	0.17	0.14	0.62	0.10	0.11
Avail Cap(c_a), veh/h	659	747	760	479	568	560	330	1913	856	330	960	974
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	24.2	24.3	28.2	24.8	24.8	28.7	6.9	6.7	28.6	6.6	6.6
Incr Delay (d2), s/veh	8.8	2.0	2.0	15.7	0.6	0.7	14.8	0.2	0.3	14.2	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.9	2.0	1.2	0.6	0.6	0.5	1.4	1.0	0.6	0.8	0.9
LnGrp Delay(d),s/veh	35.8	26.2	26.3	43.8	25.4	25.5	43.5	7.1	7.1	42.9	6.8	6.8
LnGrp LOS	D	C	C	D	C	C	D	A	A	D	A	A
Approach Vol, veh/h		338			126			471			228	
Approach Delay, s/veh		29.0			33.3			8.9			10.9	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.4	36.0	6.4	11.5	5.3	36.1	8.2	9.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	32.0	16.0	25.0	11.0	32.0	22.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	4.8	3.8	5.8	2.8	3.6	5.1	3.2
Green Ext Time (p_c), s	0.0	4.0	0.1	1.7	0.0	4.0	0.2	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	17.8
HCM 2010 LOS	B

Environmental Noise Analysis

The Fruit Yard Project

Stanislaus County, CA

BAC Job # 2015-129

Prepared For:

Associated Engineering Group

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Prepared By:

Bollard Acoustical Consultants, Inc.

Paul Bollard, President

Revised December 30, 2016

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Project History

Bollard Acoustical Consultants, Inc. (BAC) prepared a noise analysis for the Fruit Yard project dated August 31, 2015. On November 6, 2015, comments were received from Stanislaus County on the BAC noise analysis. The specific comments provided by the County in November 2015, are as follows:

1) A method for verifying compliance with the measures identified on page 12 needs to be incorporated into the project. The method may include a system for monitoring and recording sound levels for the duration of events in order to allow for enforcement. Simply identifying sound output limits without a means of monitoring is not sufficient.

2) The noise consultant should make an initial attempt to identify crowd noise based on previous work/other projects. Any error in the initial attempt will be captured when the evaluation of actual concerts occurs. If this type of initial attempt is not feasible, the analysis should clearly state such.

3) The noise analysis needs to define “large concert” and “small events” based on an actual measurable scale (such as crowd size).

4) The noise analysis provided only evaluates noise levels generated from the amphitheater. Unless all amplified noise will be limited to the amphitheater, an additional noise assessment needs to be conducted for amplified noise events to be conducted elsewhere on the site. A simple assumption that smaller events are expected to generate considerably lower sound levels then a concert event is not an adequate assessment and does not qualify in addressing the noise analysis needed for compliance with the 2008 approval.

5) The noise analysis provided only focuses on A-weighted sound levels expressed in dBA. An analysis of the bass or dBC levels generated from any sound event occurring in the park/amphitheater areas is needed. The bass "thump" is commonly the source of noise complaints.

6) The mapped contour lines provided in the noise analysis are very helpful and should be revised to incorporate the expanded evaluation of the park area.

7) The noise analysis needs to consider changes that may occur to intervening orchards which are identified as helping to absorb sound. Orchards are subject to removal and cannot be relied upon for long term sound mitigation. If the model used is accurate, what would the sound be without the orchards? Is mitigation needed to address changes in future conditions if the orchards are removed?

8) The noise analysis should clarify if the existing ambient noise environment factored in any nut harvesting activities, or other seasonal activities, that may have been occurring during the test period, but are not a constant factor.

9) The noise analysis needs to more specifically define the size and construction of the "sound wall along the rear of the stage" as identified on page 8 (of the original analysis).

Based on the County's November 2015 comments, additional analysis was conducted by BAC to expand the scope of the noise study beyond the original focus of the amphitheater, and to develop responses to the above comments provided by the County. The original noise study report was revised to include the supplemental information requested by Stanislaus County and the revised report date was February 3, 2016.

Following the release of the revised February 3, 2016 noise study, Stanislaus County commissioned j.c. brennan & associates (JCB) to prepare a peer review of that study. That peer review was completed with the results presented in a letter from JCB to BaseCamp Environmental dated November 15, 2016. That peer review letter is incorporated into this report by reference.

In response to the JCB peer review, BAC prepared a letter to Associated Engineering Group (Jim Freitas) dated December 30, 2016 which contains BAC's responses to the peer review comments. In addition, BAC revised the February 3, 2016 noise study to incorporate changes and to include additional information where appropriate based on the JCB peer review. This report, dated December 30, 2016, contains those revisions and additional information.

Introduction

The proposed Fruit Yard project site is located at the southwest quadrant of the intersection of Yosemite Boulevard (SR 132) and Geer Road, in unincorporated Stanislaus County, California. The project site address is 7948 Yosemite Boulevard, on Assessor's Parcel Number 009-027-004. The site is zoned Planned Development (PD) and is surrounded by agricultural land uses and dispersed rural residences. Figure 1 shows the project site location and surrounding land uses. Figure 2 shows the proposed amphitheater site plan.

Due to the presence of rural residences in the general project vicinity, the Stanislaus County project conditions of approval (COA) contain provisions with respect to allowable noise generation of the proposed amphitheater. The specific COA's which are applicable to noise are as follows:

8. An acoustical analysis shall be prepared in accordance with the Noise Element of the Stanislaus County General Plan prior to any outdoor use of amplified sound or blasting devices to insure noise levels do not exceed the maximum allowable noise levels as allowed by the Noise Element.

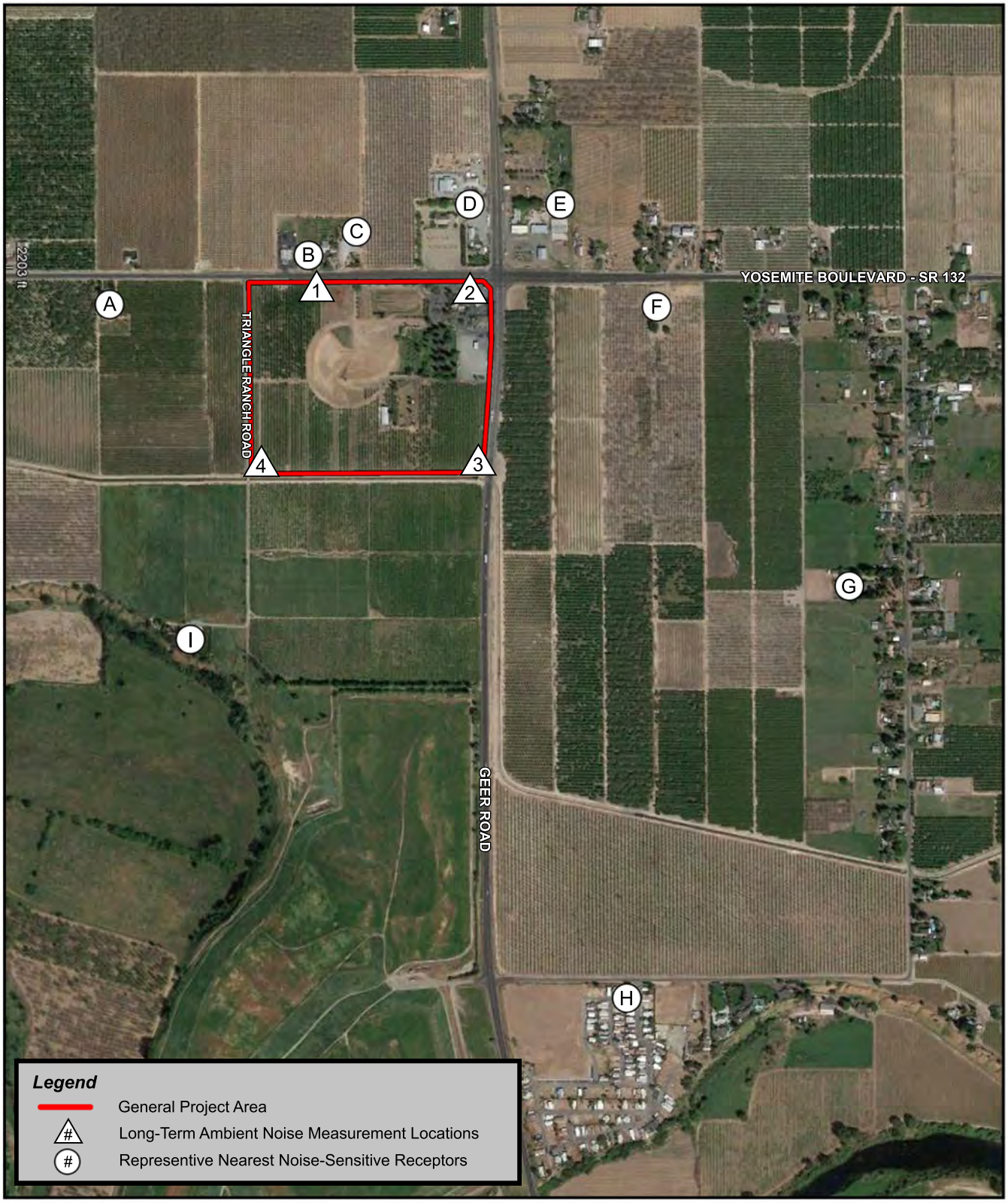
72. In accordance with the Noise Element of the Stanislaus County General Plan, noise levels associated with all on-site activities shall not exceed the maximum allowable noise levels as allowed by the Noise Element. The property owner shall be responsible for verifying compliance and for any costs associated with verification.

In response to these conditions, as well as November 2015 comments made by Stanislaus County, and November 2016 peer review comments made by j.c. brennan, Inc., the project applicant has retained Bollard Acoustical Consultants, Inc. (BAC) to prepare this revised analysis of potential noise impacts associated with the project.

Specifically, this analysis has been prepared to quantify pre-project ambient noise levels in the immediate project vicinity, to identify the appropriate Stanislaus County noise level standards, to predict amplified music sound levels occurring anywhere on the site at the nearest potentially affected noise-sensitive land uses to the project site, to predict changes in off-site traffic noise levels, to predict noise and vibration levels caused by project construction, and to compare those levels against the applicable noise and vibration standards of Stanislaus County, and to recommend additional noise control measures if it is determined that those standards would be exceeded. This report contains the results of the sound study.

Figure 1

Project Area, Monitoring Sites, and Representative Receptor Locations
The Fruit Yard Project - Stanislaus County, California



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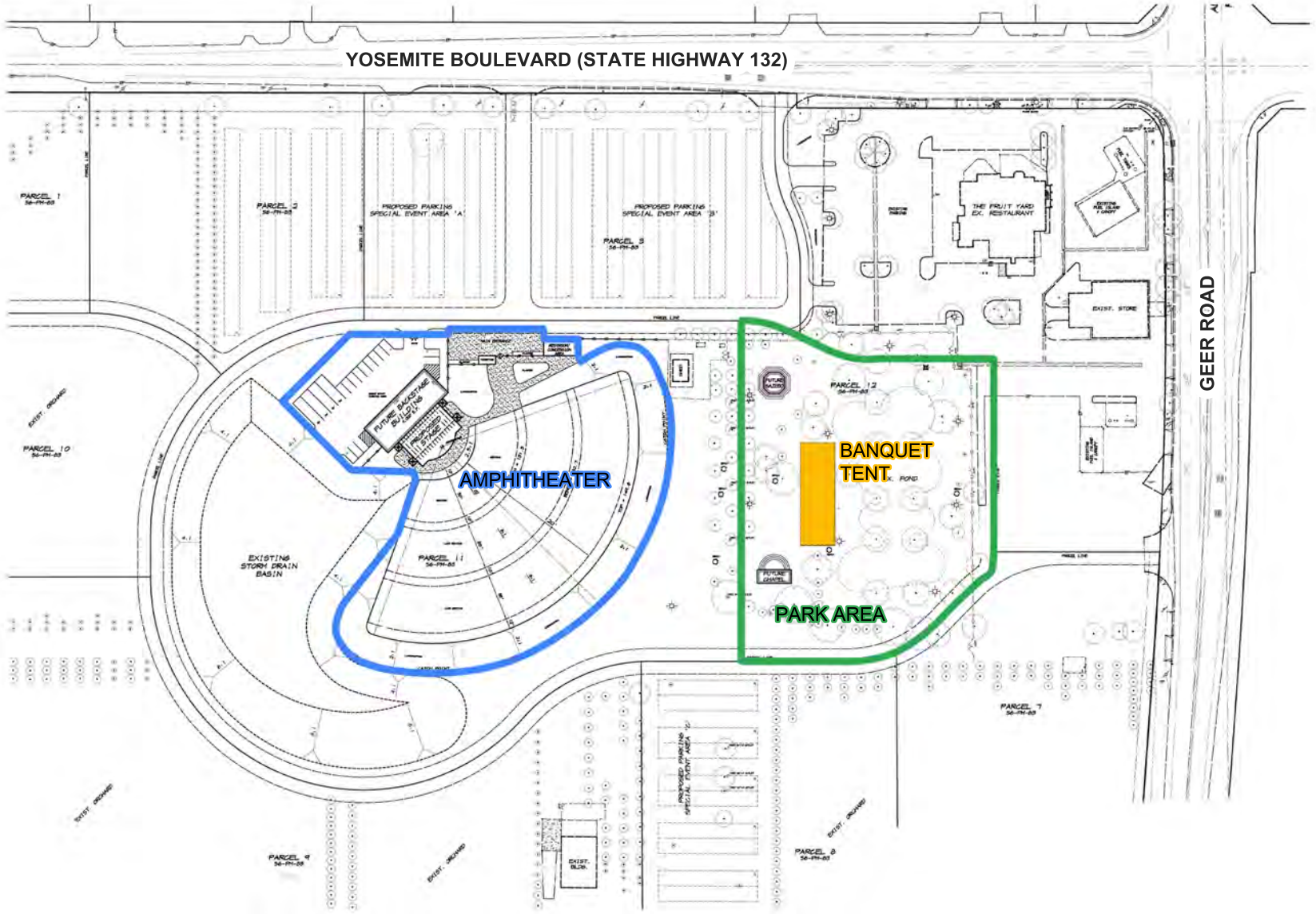
Scale (feet)
0 600 1,200

Figure 2

Project Site Plan

The Fruit Yard Project - Stanislaus County, California



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Acoustic Fundamentals & Terminology

Noise is often defined simply as unwanted sound. Loudness is the human impression of the strength of a sound pressure waves impacting the eardrum. The loudness of a noise does not necessarily correlate with its sound level.

The human ear does not perceive all frequencies equally. For sound levels in the normal range of human hearing, the human ear does not perceive very low and very high frequencies as well as mid-range frequencies. In other words, for two sounds of equal intensity in the normal range of human hearing, a mid-frequency sound is perceived as being louder than a low-frequency or very high frequency sound. This may seem counterintuitive as often times we may hear only low-frequency sounds, such as the bass of music being played in a nearby car or the sound of a distant concert. But this phenomenon is due to the fact that, due to their longer wavelengths, low-frequency sounds pass through barriers more efficiently than mid and high-frequency sounds, as well as the fact that low frequency sounds are not absorbed into the atmosphere as readily as higher frequency sounds (i.e. low frequency sound "carries" further over distance).

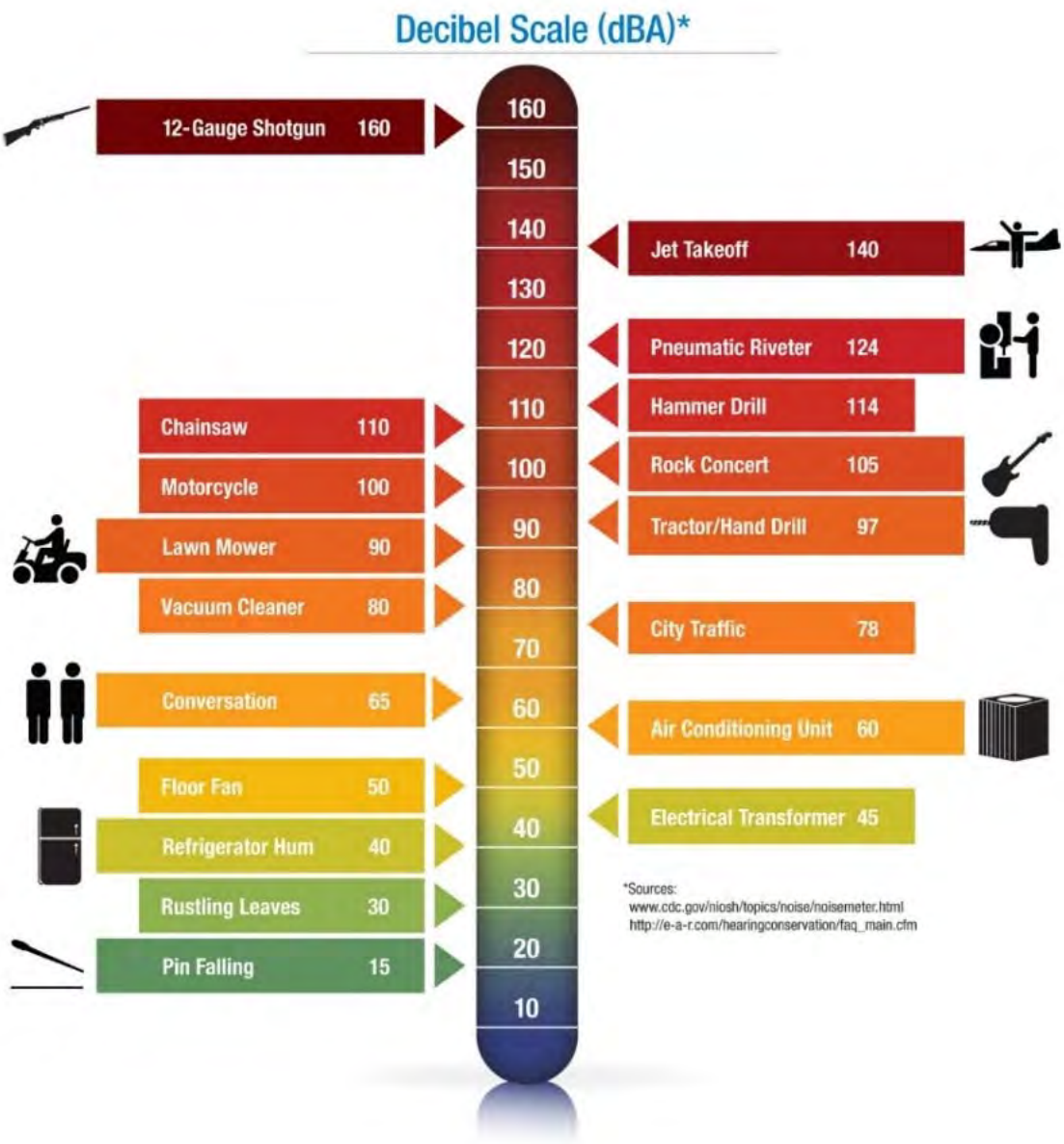
To account for the differences in perception of human hearing to different frequencies, the A-weighting scale was developed. A-weighted noise levels are basically linear, or flat, sound pressure levels shaped by a filter. The A-weighting filter adjusts the linear measurement to account for the way in which the ear responds to different frequencies of sound. Measurements in dBA are decibel scale readings that have been adjusted using the A-weighting filter to attempt to take into account the varying sensitivity of the human ear to different frequencies of sound. Researchers have generally agreed that A-weighted sound pressure levels (sound levels) are very well correlated with community reaction to noise for sound levels in the normal range of human hearing. Figure 3 provides examples of maximum sound levels associated with common noise sources.

At very high noise levels, the human ear perceives very low and very high frequency sounds better than at the more moderate ranges of noise levels commonly encountered in society. To better represent the loudness of very high noise levels, the C-weighting scale was developed. The C-weighting scale is quite flat, and therefore includes much more of the low-frequency range of sounds than the A scale. The effect of using a C-weighting scale vs. an A-weighting scale is that the C-weighting scale will report higher noise levels (due to less low-frequency sound being filtered as compared to the A-weighting filter).

The decibel notation used for sound levels describes a logarithmic relationship of acoustical energy, so that sound levels cannot be added or subtracted in the conventional arithmetic manner. For example, a doubling of acoustical energy results in a change of 3 decibels (dB), which is usually considered to be barely perceptible. A 10-fold increase in acoustical energy yields a 10 decibel change, which is subjectively like a doubling of loudness.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent sound level (L_{eq}), usually measured over a one-hour period.

Figure 3
Typical A-Weighted Sound Levels of Common Noise Sources



Stanislaus County Criteria for Acceptable Noise Exposure

Stanislaus County General Plan Noise Element

The Stanislaus County General Plan Noise Element establishes acceptable noise level limits for new projects affected by both transportation and non-transportation noise sources. The primary objective of the Noise Element is to prescribe policies that lead to the preservation and enhancement of the quality of life for the residents of Stanislaus County by securing and maintaining an environment free from excessive noise.

For stationary noise sources, such as the proposed amphitheater, Stanislaus County regulates the level of noise that may impact adjacent noise-sensitive uses. For this project, the evaluation period is considered to be the worst-case hour during which amplified music would be in use. Noise generated by the project which exceeds the County's noise exposure limits at the closest noise-sensitive uses would require noise mitigation. The County's General noise exposure limits applicable to this project are summarized in Table 1.

Table 1
Maximum Allowable Noise Exposure[1] for Stationary Noise Sources
Stanislaus County Noise Element of the General Plan

	Daytime Standard (7 a.m.-10 p.m.)	Nighttime Standard (10 p.m.-7 a.m.)
Hourly L_{eq}, dBA	55	45
Maximum Level (L_{max}), dBA	75	65

1. Each of the noise level standards specified in Table 1 shall be reduced by five (5) dBA for pure tone noises, noise consisting primarily of speech or music, or for recurring impulsive noises. The standards in Table 1 should be applied at a residential or other noise-sensitive land use and not on the property of a noise-generating land use. Where measured ambient noise levels exceed the standards, the standards shall be increased to the ambient levels.

Source: Stanislaus County Noise Element of the General Plan

As noted in the footnote to Table 1, a -5 dB adjustment is applied to the County's noise standards for sounds consisting of music. In addition, in areas with elevated ambient conditions, the noise standards are increased to match ambient conditions. While it is clear that a -5 dB offset to the Table 1 standards is warranted because the noise source is music, an ambient noise survey was required to determine if existing ambient conditions are sufficiently elevated so as to warrant increasing the noise level standards. Ambient conditions in the immediate project vicinity are described in the following section.

Stanislaus County Code (Noise Ordinance)

Section 10.46 of the Stanislaus County Code (Noise Ordinance) contains the County's noise standards for existing land uses. The Noise Ordinance standards are generally similar to, but not identical to, the County's General Plan noise standards described above. While the Noise Element standards shown in Table 1 are provided in terms of hourly average (Leq) and individual

maximum (Lmax) noise level limits, the Noise Ordinance standards contain more categories and, as a result, are more complex to apply. Specifically, the Noise Ordinance standards are graduated depending on the percentage of the hour the noise source in question is present at a given level. Table 2 shows the County Noise Ordinance exterior noise standards for residential uses.

Table 2
Exterior Residential Noise Standards
Stanislaus County Noise Ordinance

Jurisdiction	Metric	Minutes per Hour Sound is Present	Daytime (7 am – 10 pm)	Nighttime (10 pm – 7 am)
Stanislaus County	L_{max}	0	70	65
	L_{02}	1	65	60
	L_{08}	5	60	55
	L_{25}	15	55	50
	L_{50}	30	50	45

Stanislaus County Code Section 10.46.050

1. Pure Tone Noise, Speech and Music. The exterior noise level standards set forth in Table 2 shall be reduced by five dB(A) for pure tone noises, noises consisting primarily of speech or music, or reoccurring impulsive noise.

2. In the event the measured ambient noise level exceeds the applicable noise level standard above, the ambient noise level shall become the applicable exterior noise level standard.

Comparison of Tables 1 and 2 indicates that the Noise Ordinance nighttime standard of 65 dB Lmax is identical to the County Noise Element nighttime standard of 65 dB Lmax. However, the daytime maximum noise level standards differ by 5 dB, with the Noise Ordinance standard being lower (more restrictive).

Both the County Noise Element and Noise Ordinance require increasing the noise level standard equal to ambient conditions in cases where the measured ambient noise levels already exceed the County's noise standards. For this project, because measured daytime maximum noise levels exceeded the noise ordinance standards by a wide margin, both the Noise Element and Noise Ordinance maximum noise level limits would be increased to equal the ambient levels. (A detailed discussion of ambient conditions in the project vicinity follows in the next section). As a result, the maximum noise level allowed by both the Noise Ordinance and Noise Element would be identical for this project during both daytime and nighttime periods after adjusting for ambient conditions. Therefore, analysis of impacts associated with project-generated maximum noise levels using the County General Plan noise standards would ensure compliance with the County's maximum Noise Ordinance standards as well.

The most restrictive noise standard metric contained in the County's Noise Ordinance is the median, or L50, standards. The median, or L50, noise metric represents the noise level limit applicable to sound levels present for 50% of the hour. If a noise source is not present for 50% of the hour (30 minutes), it would not be captured by the L50 metric.

As shown in Table 2, the Noise Ordinance median daytime and nighttime noise standards are 50 and 45 dB L50, respectively. As shown in Table 1, the Noise Element average daytime and nighttime noise standards are 55 and 45 dB Leq, respectively. After accounting for the fact that median noise levels are typically 5 dB lower than average noise levels for time-varying noise sources (such as concerts), the differences between the County's General Plan Noise Element and County Code Noise Ordinance standards are essentially equivalent. However, because the Noise Ordinance median noise standard only applies to sources of noise which are present for at least 30 minutes out of the hour, whereas the General Plan Noise Element average noise level standard pertains to all noise generated during the hour, the County's General Plan noise standards could result in a more conservative assessment of project noise impacts than use of the County Noise Ordinance median noise level standards.

The County Noise Ordinance also contains intermediate noise standards for sound levels present for 1 minute, 5 minutes, and 15 minutes per hour. The purpose of these standards is to allow higher levels of noise at the nearest residences provided that noise is present for shorter durations of the hour. Because this analysis uses the hourly average and maximum noise level descriptors to bracket all of the noise generation of the project, this analysis is believed to provide a conservative assessment of project noise impacts at the nearest residences. Additional analysis of the intermediate Noise Ordinance metrics is not expected to result in either greater noise protection at the nearest residences or different findings from those reached in this analysis.

Discussion of Alternative Noise Standards for Amplified Music

Pursuant to the County's adopted noise level standards shown in Table 1, the original noise analysis focused on A-weighted sound levels expressed in dBA. As noted in Stanislaus County Comment #5 (see Page 1), the County is requesting that this revised report include an analysis of the bass (low frequency) levels generated from any sound event occurring in the park/amphitheater area using the C-weighting scale This request was made because the bass "thump" is commonly the source of noise complaints in the County.

As noted in the Acoustic Fundamentals and Terminology section of this report, sound levels measured using the C-weighting scale will always be higher than levels measured using the A-weighting scale. This is because the C-weighted filter is much flatter than the A-weighted filter. The result is that more low-frequency sound is included in a C-weighted measurement than in an A-weighted measurement. The numeric difference in measured A and C-weighted sound levels associated with amplified music at the project site will depend on the level of low-frequency sound generated by the sound systems utilized at the site.

To evaluate potential noise impacts of the proposed amplified music at the project site in terms of C-weighted levels, appropriate C-weighted noise standards must be considered. Stanislaus County recently conditioned an event center in the County to comply with C-weighted sound level limits *within* the entertainment venue. However, these limits were applied *inside* an enclosed venue whereas amplified music at the Project site will occur *outdoors*.

For guidance in developing *exterior* C-weighted noise level standards for this project, the City of Roseville Noise Ordinance was consulted. Section 9.24.110 of the Roseville Municipal Code

(Noise Regulation), contains exterior noise level limits for amplified sound in terms of A and C-weighting scales, as well as one-third octave band thresholds. Those standards indicate that the C-weighted noise level standards are 25 dB higher than the corresponding A-weighting standards for amplified music during both daytime and nighttime periods. For example, the daytime A-weighted standard for amplified music is 50 dBA and the daytime C-weighted noise standard is 75 dBC.

On the surface, the use of a C-weighted noise level standard that is 25 dB higher than the corresponding A-weighting noise standard might appear to indicate the C-weighted standard is less restrictive than the A-weighted standard. However, in the 31.5 hertz 1/3 octave frequency band, the difference between A and C weighting filters is 35 dB. Therefore, if the sound source in question contains considerable content in that low frequency band, the use of a C-weighted standard which is 25 dB greater than the A-weighted standard would result in a 10 dB *reduction* in very low frequency sound at the receiver. A 10 dB reduction is substantial, representing a halving of perceived loudness.

In BAC's professional opinion, the most effective means of controlling sound in the community resulting from amplified sound at the Project site would be to place logical limits on the level of the low-frequency sound originating at the source. Specific recommendations for such limits are included in the Conclusions and Recommendations section of this report. To provide additional protection to the residences located in the project vicinity, this revised noise study report also recommends C-weighted noise level standards applicable at the nearest residences as follows:

- Daytime: 80 dBC Leq
- Nighttime: 70 dBC Leq

As with the County's Noise Element and Noise Ordinance standards cited in Tables 1 and 2, the C-weighted noise level standards cited above should be adjusted upward or downward to reflect local ambient conditions at the nearest residences. Because the ambient noise survey originally conducted for this project was prepared to address compliance with the County's A-weighted General Plan Noise Element standards, C-weighted ambient noise level data has not been collected for this project. Such C-weighted data can be collected in the days immediately prior to and following the first amphitheater events, and the C-weighted noise level standards shown above can, and should, be adjusted accordingly based on C-weighted ambient conditions.

Existing Ambient Noise Environment

The ambient noise environment in the immediate project vicinity is primarily defined by traffic on Yosemite Boulevard and Geer Road, as well as by local agricultural-related activities. To generally quantify the existing ambient noise environment in the immediate project vicinity, continuous hourly noise level measurements were conducted at four locations surrounding the project site from Friday, June 19 through Sunday, June 21, 2015. The noise measurement locations are shown on Figure 1.

Larson-Davis Laboratories (LDL) Model 820 precision integrating sound levels meter were used to complete the noise level measurement survey. The meters were calibrated before use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy off the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

The noise level measurement survey results are summarized below in Table 3. The detailed results of the ambient noise surveys are contained in Appendix B in tabular format and graphically in Appendix C. The Table 3 noise level data is reported in terms of average (Leq) and maximum (Lmax) noise levels, as those are the descriptors contained within the County's General Plan Noise Element. However, median (L50) and 90th percentile (L90) noise levels are also included in Appendix B.

Table 3
Summary of Ambient Noise Measurement Results
Fruit Yard Project Vicinity

				Daytime (7 am - 10 pm)		Nighttime (10 pm - 7 am)	
Site	**Dist. to Roadway C/L**	**Date**	**L_{dn}**	**L_{eq}**	**L_{max}**	**L_{eq}**	**L_{max}**
1	100 ft. SR 132	Friday, June 19	67	65	96	59	83
		Saturday, June 20	66	63	90	58	81
		Sunday, June 21	64	62	93	56	83
		Average	**66**	**63**	**93**	**58**	**82**
2	125 ft. SR 132	Friday, June 19	71	66	94	64	92
	200 ft. Geer Rd.	Saturday, June 20	71	66	97	64	94
		Sunday, June 21	69	66	98	61	86
		Average	**70**	**66**	**96**	**63**	**91**
3	95 ft. Geer Rd.	Friday, June 19	67	64	93	60	83
		Saturday, June 20	66	62	91	60	82
		Sunday, June 21	65	61	90	57	86
		Average	**66**	**62**	**91**	**59**	**84**
4	1,300 ft. SR 132	Friday, June 19	58	58	94	49	67
	1,500 ft. Geer Rd.	Saturday, June 20	55	49	80	49	74
		Sunday, June 21	53	48	73	47	74
		Average	**55**	**52**	**82**	**48**	**72**

Source: Bollard Acoustical Consultants, Inc. 2015 ambient noise survey results.

The Table 3 data indicate that measured ambient noise levels in the immediate project vicinity currently exceed the Stanislaus County noise level standards shown in Table 1 at the existing residences located adjacent to Both Yosemite Boulevard and Geer Road (Representative Receptors A, B, C, D, E and F on Figure 1). As a result, the County noise standards for those receptors were adjusted upwards based on the ambient noise level data collected at Sites 1 and 2. At the residences which are more removed from the local roadways (Receptors G, H and I), ambient noise levels are lower. As a result, the County noise standards for those receptors were adjusted downwards based on the ambient noise level data collected at measurement Site 4.

It should be noted that, while Receptor B is located approximately the same distance from SR-132 as noise measurement Site 1, Receptor C is located 250 feet from the SR-132 centerline. Given this additional distance, ambient noise levels at Receptor C are predicted to be 5 dB lower than levels at Receptor B. A similar situation exists at Receptor E.

After adjusting the County noise standards to reflect local ambient conditions, a -5 dB offset was applied to the adjusted standards to account for the fact that the noise source in question consists of music. Table 4 provides the adjusted noise level standards for the two types of residential receptors in the immediate project vicinity.

Table 4
Stanislaus County Noise Standards Applied to this Project
After Adjustment for Elevated Ambient and Noise Source Consisting of Music

Receptor	Noise Metric	Adjusted Daytime Standard (7 a.m.-10 p.m.)	Adjusted Nighttime Standard (10 p.m.-7 a.m.)
A, B, D, F	Hourly L_{eq}, dBA	60	55
(near busy roadways)	Maximum Level (L_{max}), dBA	80	70
C, E	Hourly L_{eq}, dBA	55	50
(setback from roadways 250-350 feet)	Maximum Level (L_{max}), dBA	75	65
G, H, I	Hourly L_{eq}, dBA	50	40
(isolated from busy roads)	Maximum Level (L_{max}), dBA	65	55

Source: Stanislaus County Noise Element of the General Plan adjusted for ambient conditions and music noise source.

It should be noted that the dominant noise source during the ambient survey period was local traffic on SR-132 and Geer Road. This was particularly evident at measurement Sites 1-3, which represented existing residences located in the immediate vicinity of those roadways. Measurement Site 4 was removed from the local roadways, but distant roadway noise remained the major noise source affecting that location.

No orchard harvesting operations were observed by BAC staff during the noise survey in the vicinity of Measurement Site 4. Although the passing of farm vehicles near measurement Site 4 resulted in brief periods of elevated noise levels, Appendices C10-C12 indicate that average daytime noise levels at that location did not fluctuate in a manner consistent with nearby harvesting operations.

Project-Generated Amplified Music Analysis

Pursuant to Stanislaus County Comments 3 and 4 shown on Page 1, this revised analysis includes an evaluation of the sound generated by larger concerts and events held at the amphitheater as well as smaller events held in the park area. A separate discussion of potential impacts of amplified music played at both locations follows.

Amplified Music Originating in Amphitheater

The proposed amphitheater site plan is shown on Figure 2. That figure illustrates that the amphitheater stage will face southeast, away from the nearest existing residences located immediately opposite the project site on Yosemite, Boulevard. With the exception of stage monitors, the speakers used during a concert at this venue would similarly face towards the southeast. Due to the directionality of speakers, this measure will substantially reduce the noise exposure at existing residences to the north of the project site. In addition, the project applicant is proposing a solid wall along the rear of the stage, which would further attenuate sound from both main and monitor speakers in the northerly direction.

The earthen berm which forms the amphitheater, is estimated to be approximately 20 feet tall around the rear of the amphitheater. See Appendix D for photographs of the existing site grading which indicate the amphitheater slope. This earthen berm will provide substantial shielding of music noise in the south and east directions.

To quantify the sound propagation from the amphitheater during a concert event, BAC utilized the SoundPLAN 7.1 model. SoundPlan is a state-of-the-art, three-dimensional, sound propagation model. Inputs to the model included site aerial photography, existing earthen berm elevations, the proposed sound barrier at the rear of the stage, and inputs pertaining to speaker locations and sound output of those speakers. Atmospheric conditions modeled using SoundPlan consisted of a cool evening/nighttime temperature of 60 degrees F and relative humidity of 70%. While atmospheric conditions will vary, the atmospheric inputs to the SoundPlan model are considered to be reasonably representative of conditions which will be present during evening/nighttime concert conditions at the amphitheater.

To provide a reasonably worst-case assessment of amphitheater sound generation, reference sound pressure levels of 90 dBA Leq and 100 dBA Lmax were assumed at a distance of 100 feet from the front of the stage. The results of the SoundPlan Model run are shown in Figure 4a for average (Leq) sound levels, and in Figure 5 for maximum (Lmax) noise levels. Figure 4b shows predicted amphitheater music sound levels with worst-case modelled sound levels from crowd noise superimposed. Crowd noise is discussed in the following section of this report.

The modeling results shown on Figure 4a indicate that the average music noise levels generated during concert events would range from approximately 29 to 51 dB Leq at the nearest residences. The modeling results shown on Figure 5 indicate that the maximum noise levels generated during concert events would range from approximately 39 to 61 dB Lmax at the nearest residences.

The SoundPlan results shown in Figures 4 and 5 indicate that, with the exception of Receptor I, project noise generation would be acceptable at all of the nearest residential receptor locations relative to the adjusted noise level standards shown in Table 4.

At the Residence represented by Receptor I, the predicted average and maximum noise levels are predicted to be approximately 52 dB Leq and 62 dB Lmax, respectively. While these predicted noise levels would exceed Table 4 noise standards, the SoundPlan Model did not account for the considerable sound absorption provided by the approximately 1,000 feet of intervening orchards. As a result, the Figure 4 and 5 noise levels are predicted to be overstated at Receptor I by approximately 10 dB.

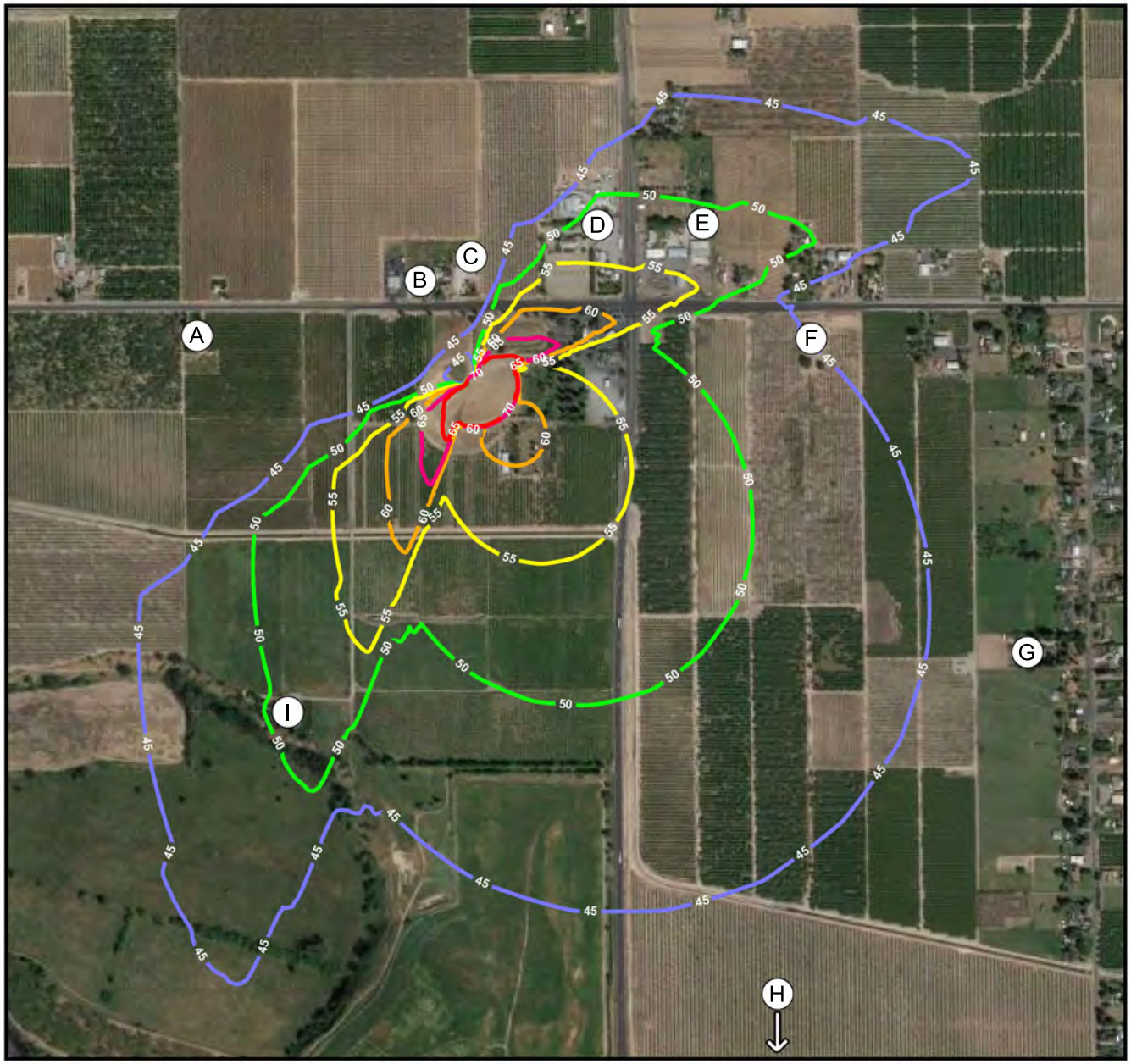
Table 5 shows the predicted music sound levels at each of the sensitive receptor locations shown on Figure 1, and the relationship of those levels to the Stanislaus County Noise Element standards. Because the adjusted maximum noise level standards are 15-20 dB higher than the adjusted average noise level standards, and because maximum sound levels generated during concert events are predicted to be 10 dB higher than average levels, compliance with the average noise level standards would result in compliance with the maximum noise level standards as well. Therefore, the focus of the Table 5 data is on predicted average sound levels at the nearest residences.

Table 5
Predicted Music Sound Levels at Nearest Residences Relative to Adjusted Noise Standards
Fruit-Yard Amphitheater Events

Receptor	Predicted Music Level Leq, dBA	Day / Night Leq Standard, dBA	Exceedance of Standards?
A	29	60 / 55	No
B	37	60 / 55	No
C	40	55 / 50	No
D	42	60 / 55	No
E	51	55 / 50	Nighttime (1 dBA)
F	47	60 / 55	No
G	44	50 / 40	Nighttime (4 dBA)
H	42	50 / 40	Nighttime (2 dBA)
I[1]	42	50 / 40	Nighttime (2 dBA)

Source: BAC using SoundPlan Noise Prediction model with directional source level of 90 dBA Leq at 100 feet from speakers.
1. An additional 10 dBA was subtracted from SoundPlan model results to account for attenuation provided by intervening orchards.

The Table 5 data indicate that sound generated by music during amphitheater events would be satisfactory relative to the County's adjusted daytime noise level standards, but that it could exceed the County's nighttime noise level standards at 4 of the nearest representative residential receptor areas. As a result, amphitheater events should be limited to daytime hours (7 am to 10 pm) until it can be determined through monitoring of daytime concerts that compliance with the recommended nighttime noise level standards can be achieved.



Noise contours created with SoundPLAN 7.1

Figure 4A

The Fruit Yard Project
Stanislaus County, California
Concert Noise Level Contours

BOLLARD
Acoustical Consultants

Scale
0 200 400 800 1200
feet

Leq, dBA

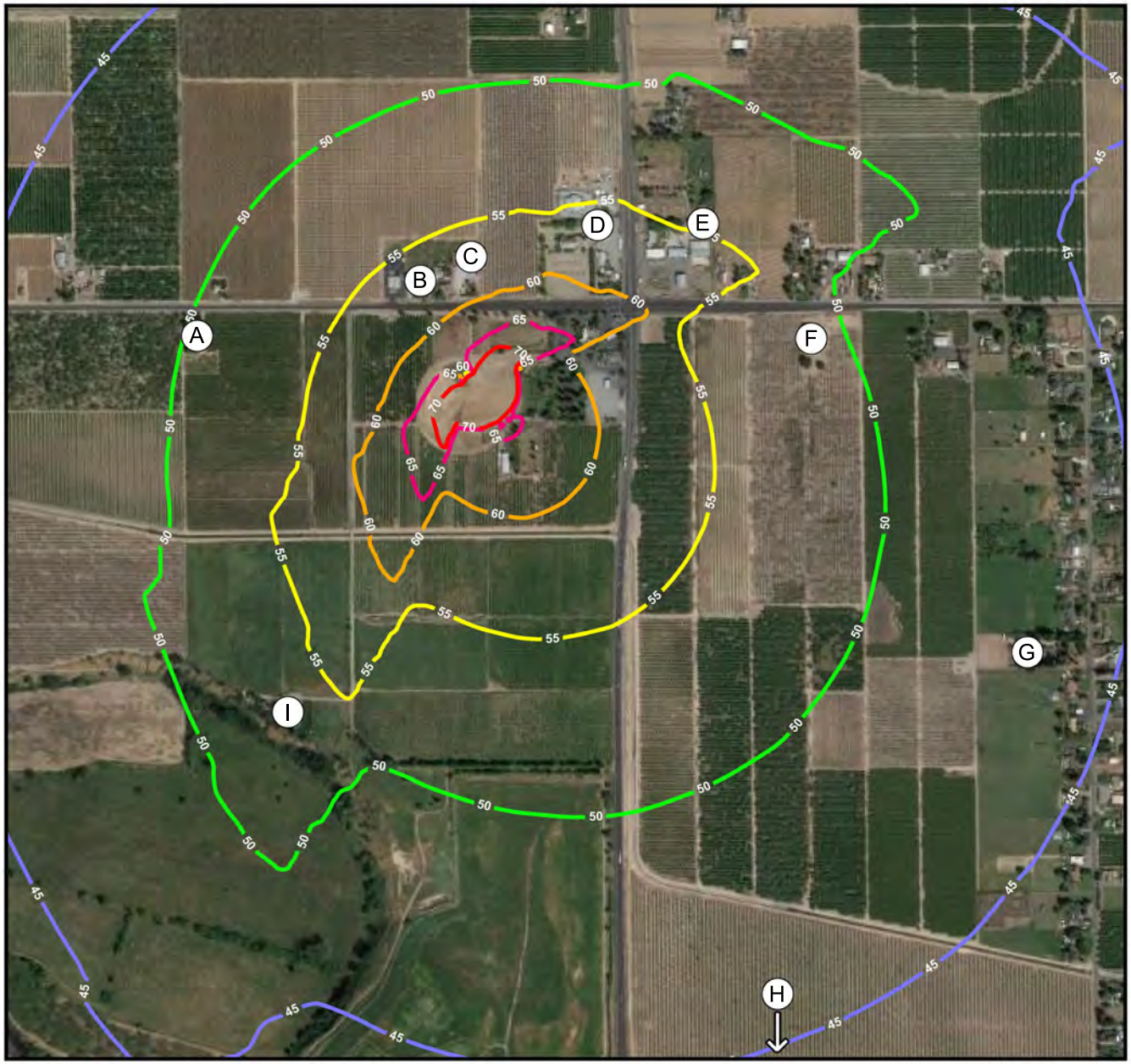
= 45
= 50
= 55
= 60
= 65
= 70

Legend

(#) Representive Nearest Noise-Sensitive Receptors

Notes:

- Average noise level contours
- Based on reference noise level of 90 dB Leq 100 feet from stage



Noise contours created with SoundPLAN 7.1

Figure 4B

The Fruit Yard Project
Stanislaus County, California
Amphitheater with Crowd
Noise Level Contours

BOLLARD
Acoustical Consultants

Scale
0 200 400 800 1200 feet

Leq, dBA

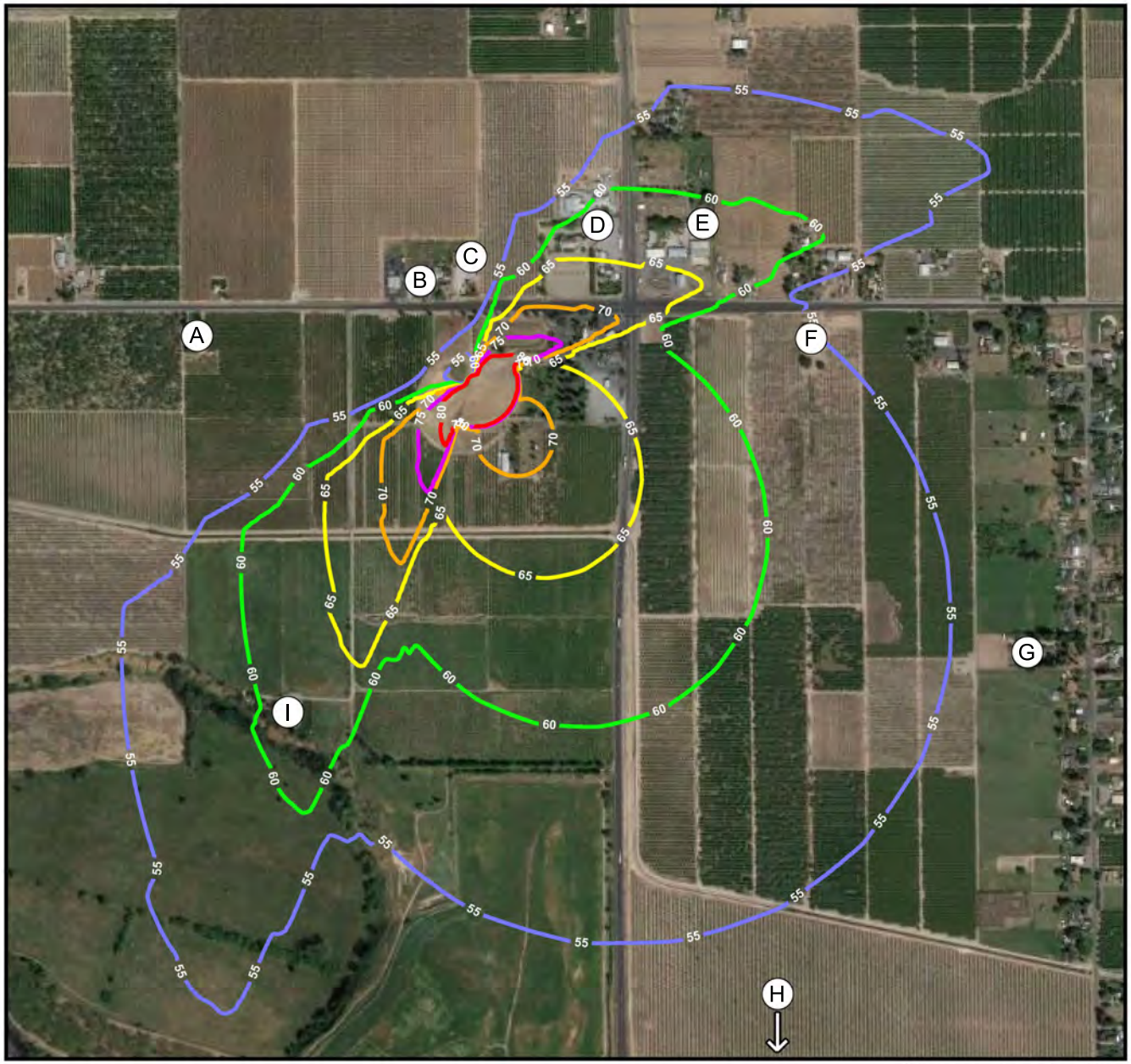
= 45
= 50
= 55
= 60
= 65
= 70

Legend

(#) Representive Nearest Noise-Sensitive Receptors

Notes:

- Average noise level contours
- Based on amphitheater reference noise level of 90 dB Leq 100 feet from stage
- Based on crowd area noise level of 83 dB per square meter



Noise contours created with SoundPLAN 7.1

Figure 5

The Fruit Yard Project
Stanislaus County, California
Concert Noise Level Contours

BOLLARD
Acoustical Consultants

Scale
0 200 400 800 1200 feet

Lmax, dBA

= 55
= 60
= 65
= 70
= 75
= 80

Legend

(#) Representive Nearest Noise-Sensitive Receptors

Notes:

- Maximum noise level contours
- Based on reference noise level of 100 dB Lmax 100 feet from the stage

To check the accuracy of the SoundPlan model in predicting amphitheater-generated sound levels at the nearest receptors, an event simulation was conducted at the project site on Thursday, June 18, 2015. The methodology and results of that simulation are provided in the following section of this report.

Amphitheater Event Simulation

To check the accuracy of the SoundPlan Model in predicting amphitheater sound levels at the nearest potentially affected receptor locations, BAC conducted an event simulation at the amphitheater site on June 18, 2015. The simulation consisted of playing amplified music at high sound levels through four (4) Yamaha MSR 400 watt concert speakers with built-in amplifiers and a Yamaha MSR 800 watt sub-woofer with built in amplifier, using an MP3 player as the source. The sound system was placed at the graded stage area of the proposed amphitheater with the speakers oriented to the southeast. Appendix D shows photographs of the event simulation speaker array.

While sound was played through the sound system to a reference level of 85-90 dBA at 100 feet from the speakers, noise level measurements were conducted at eight (8) locations in the vicinity of the amphitheater. Those locations included the following:

- A reference location 100 feet from the speaker array.
- Three locations on top of the amphitheater berm 225 feet from the speaker array corresponding to the left, middle, and right side limits of amphitheater seating.
- A position directly south of the amphitheater berm.
- A position at long-term noise monitoring Site 1 shown on Figure 1.
- A position adjacent to Receptor H shown on Figure 1.
- A position adjacent to Receptor I shown on Figure 1.

The results of the simulation are as follows:

- The amphitheater berm was measured to reduce music levels by approximately 15 dB at the position directly behind (south of) the berm relative to sound levels measured on top of the berm with direct line of sight to the speakers. This is generally consistent with the SoundPlan model predictions. Appendix E-1 shows the results of the simulation at this location directly shielded by the amphitheater berm.

- The amphitheater berm orientation is in the optimum direction to reduce event-related sound levels at the largest concentration of existing residences on Weyer Road and beyond. Without the amphitheater berm, event sound levels in that direction would be considerably higher at those residences (approximately 10+ dB higher).

- After considering the proposed sound barrier at the rear of the sound stage (which was not present during the simulation), sound levels measured at Receptor B, the nearest residence on the north side of Yosemite Boulevard (SR-132), were consistent with the simulation results. The specific barrier modeled for this assessment was the backstage building identified as being 100 feet wide. BAC assumed this building would be 20 feet tall relative to the stage.

- At Receptor I, which is the nearest residence to the southwest of the amphitheater, sound levels measured during the event simulation were nearly inaudible, and were approximately 10 dB lower than levels predicted using the SoundPlan Model. This is believed to be due to the considerable absorption of sound provided by the intervening 1,000 feet of orchards between the amphitheater and this receptor. Appendix E-2 shows the results of the amphitheater simulation for this receptor. As a result of this shielding, a -10 dB offset was applied to levels predicted at Receptor I, resulting in projected compliance with the County's daytime noise standards at this receptor.

  In Stanislaus County Comment #7 on page 1 of this report, the County requested that the analysis evaluate potential noise impacts should intervening orchards be removed. If the intervening orchards are removed at some point in the future, the -10 dB of attenuation identified during the simulation would no longer apply, and additional analysis of potential noise mitigation measures would be required to ensure compliance with the applicable County noise standards at Receptor I.

- At Receptor H, which represents the mobile home park at the southeast corner of Jantzen Road and Geer Road, the simulation sound levels were completely inaudible. Based on this finding, exceedance of the County's noise standards is not anticipated at this location despite the reported 2 dB exceedance of the nighttime noise level limit for this receptor in Table 5.

Amphitheater Crowd Noise Evaluation

As stated previously, the proposed amphitheater has been oriented such that the stage speakers would be directed away from the nearest residential receptors location on the north side of State Route 132 (Yosemite Boulevard). While the amphitheater speakers would generally face southeast, amphitheaters crowds would face predominately northwest, towards the residences on the north side of SR 132.

Crowd noise would be generated by a combination of patrons clapping and verbally expressing their appreciation for the performers (cheering). The level of crowd noise received at the existing residences located on the north side of SR 132 (Receptors B and C on Figure 1), would depend on the size and enthusiasm of the crowd, as well as the duration of the hour during which the crowd is clapping and cheering.

Regarding crowd cheering, the *Handbook of Noise Control* (Harris, Acoustical Society of America, 1998), provides average A-weighted sound levels of speech for different vocal efforts (Table 16.1, p16.2.). Those vocal efforts are categorized as casual, normal, raised, loud and shouting. BAC utilized these reference levels in the computations of crowd noise at the nearest potentially impacted residences.

During a normal event such as a concert, it is BAC's experience that the crowd noise is intermittent, peaking in intensity at the beginning of a popular song, and at the end of nearly every song. The percentage of the hour during which a crowd is cheering/applauding is also a function of the duration of the song being played and the duration of time between songs. For a

conservative estimate of crowd noise generation, this analysis assumed the crowd would be cheering/applauding during approximately 10% of a given hour during a concert performance. The volume level of cheering patrons during that time is expected to vary from “raised” to “loud” to “shouting”.

Based on a maximum capacity crowd of 3,500 patrons in the amphitheater and the above-described assumptions, BAC computed a worst-case hourly noise level of 57 dBA Leq the nearest residence, located approximately 750 feet to the northwest of the center of the amphitheater seating area. This level does not include shielding by other patrons or the building at the rear of the stage which will serve as a sound barrier. After consideration of that shielding, BAC estimates that worst-case hourly average crowd noise level would be approximately 55 dB L_{eq} or less at the nearest residences to the north.

BAC file data for patrons clapping also varies depending on the intensity of the applause. Applause generally ranges from “polite” to “normal” to “enthusiastic”. At a concert, applause normally falls within the normal to enthusiastic categories. Assuming comparable durations of clapping as cheering during a given hour of a concert event, the computed noise level at the nearest residence from crowd applause also computed to be 55 dB L_{eq} or less.

Combined level for worst-case crowd cheering and applause was conservatively modelled to be 58 dBA Leq or less at the nearest residences to the north. Actual daytime combined crowd cheering and applause sound levels are predicted to be approximately 55 dBA Leq at the nearest residences to the north. This level would be considered satisfactory relative to County daytime noise criteria but would exceed the County’s nighttime noise standards at those nearest residences to the north. As a result, initial daytime amphitheater events should be monitored to determine more precisely the range of crowd noise levels which can be expected prior to the allowance of nighttime events. Depending on the results of that monitoring, it may be necessary to limit events with higher numbers of patrons to daytime hours to ensure crowd noise does not exceed acceptable limits. Once concert events have been held at the amphitheater site, noise level data collected during the event can be correlated with crowd sizes to confirm these assumptions.

Amplified Music Originating in the Park Area

According to project representatives, larger events generally consisting of crowd sizes of 500 or more would typically be held in the amphitheater, whereas smaller events with crowd sizes below 500 would typically be held in the park area.

The park area is shown on Figure 2. That figure also shows a proposed banquet tent located in the central portion of the park, just west of the lake feature. It is likely that receptions with amplified music would occur within the banquet tent, but the park area could accommodate amplified music at other locations as well. It was assumed that the speakers could be positioned in a variety of locations and oriented to the north, south, east or west.

To quantify the sound propagation from the park area during an amplified sound event, BAC utilized the same SoundPLAN 7.1 model previously used to model amphitheater sound levels.

Given the smaller size of the park events relative to events held in the amphitheater, a reference sound pressure level of 75 dBA Leq was assumed at a distance of 100 feet from the front of the speakers. This level of sound is consistent with that generated during a wedding reception or small concert. The results of the SoundPlan Model run are shown in Figures 6-9 for speaker positions facing north, east, south and west, respectively. The SoundPlan model runs also conservatively assume a crowd of 500 persons facing directly opposite the speaker orientation.

Figure 6

The Fruit Yard Project
Stanislaus County, California
Park Area Noise Level Contours

BOLLARD
Acoustical Consultants

Scale
0 200 400 800 1200 feet

Leq, dBA

= 45
= 50
= 55
= 60
= 65
= 70

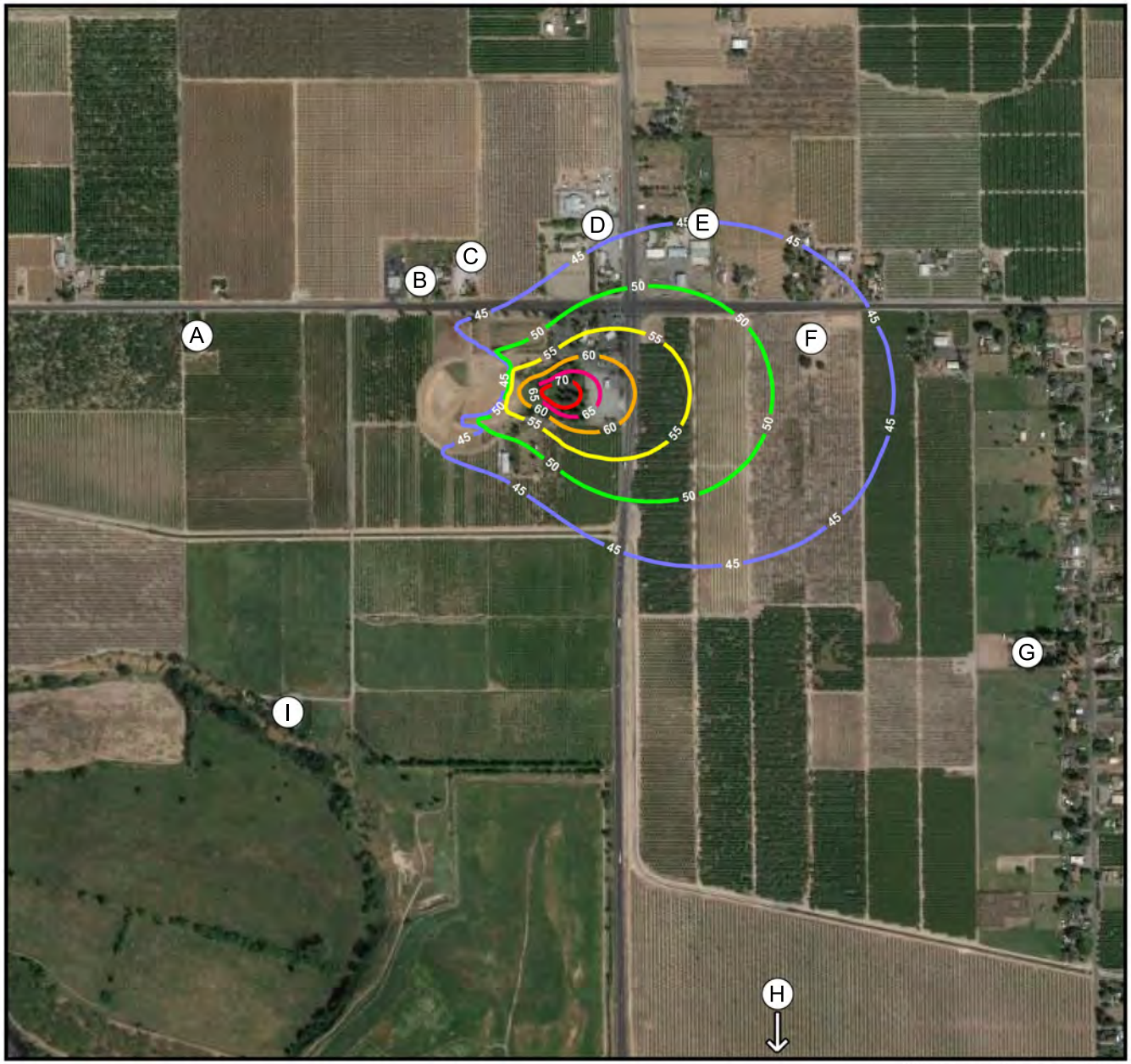
Legend

(#) Representive Nearest Noise-Sensitive Receptors

Notes:

- Park/banquet area sound system
- Speakers facing north
- Average noise level contours
- Based on reference noise level of 75 dB Leq 100 feet from stage
- Plus 500 person crowd

Figure 7



The Fruit Yard Project
Stanislaus County, California
Park Area Noise Level Contours

BOLLARD
Acoustical Consultants

Scale
0 200 400 800 1200 feet

Leq, dBA

= 45
= 50
= 55
= 60
= 65
= 70

Legend

(#) Representive Nearest Noise-Sensitive Receptors

Notes:

- Park/banquet area sound system
- Speakers facing east
- Average noise level contours
- Based on reference noise level of 75 dB Leq 100 feet from stage
- Plus 500 person crowd

Figure 8

The Fruit Yard Project
Stanislaus County, California
Park Area Noise Level Contours

BOLLARD
Acoustical Consultants

Scale
0 200 400 800 1200 feet

Leq, dBA

= 45
= 50
= 55
= 60
= 65
= 70

Legend

(#) Representive Nearest Noise-Sensitive Receptors

Notes:

- Park/banquet area sound system
- Speakers facing south
- Average noise level contours
- Based on reference noise level of 75 dB Leq 100 feet from stage
- Plus 500 person crowd

Noise contours created with SoundPLAN 7.1

Figure 9

The Fruit Yard Project
Stanislaus County, California
Park Area Noise Level Contours

BOLLARD
Acoustical Consultants

Scale
0 200 400 800 1200 feet

Leq, dBA

= 45
= 50
= 55
= 60
= 65
= 70

Legend

(#) Representive Nearest Noise-Sensitive Receptors

Notes:

- Park/banquet area sound system
- Speakers facing west
- Average noise level contours
- Based on reference noise level of 75 dB Leq 100 feet from stage
- Plus 500 person crowd

The modeling results shown on Figures 6-9 indicate the directionality of sound speakers as well as the directionality of the crowd noise. Evaluation of those figures indicate that the average noise levels generated during small amplified music events in the park area would be satisfactory relative to the Table 4 noise standards are all of the nearest residences to the project site during both daytime and nighttime hours. Figure 8 shows that the south-facing speaker orientation would result in the lowest off-site noise levels. Therefore, if small event sound levels are to exceed 75 dBA Leq at a reference distance of 100 feet, a south or southwest-facing speaker orientation is recommended.

As with amplified music generated at the amphitheater area, low frequency sound generated during amplified music events within the park area is also a concern to Stanislaus County. Specific recommendations for control of low-frequency sound are provided in the following section.

Increases in Traffic Noise Levels Resulting from the Project

During events held at either the amphitheater or park area, traffic volumes on the local roadway network would increase. BAC utilized traffic data provided by the project transportation consultant with the Federal Highway Administration Traffic Noise Prediction Model (FHWA-RD-77-108) to evaluate changes in both 24-hour weighted average sound levels (Ldn) and peak hour average sound levels (Leq). FHWA Model Inputs are provided in Appendix F.

Table 6 shows the predicted worst-case traffic noise generation of the project based on maximum amphitheater trip generation in terms of both Ldn and Leq.

The Table 6 data indicate that traffic noise levels would increase on the local roadway network from 0.2 to 0.9 dB L_{dn}, and 1.1 to 3.3 dB L_{eq} during the peak hour. Although the Table 6 data is presented at a distance of 100 feet from the roadway centerline, which represents the approximate exposure of the nearest residences to the local roadway network, the increases shown in Table 6 would be applicable at more distant residences as well.

Relative to baseline traffic noise levels without the project, the short-term project-related traffic noise increases on the days of large amphitheater events are predicted to be less than significant. Furthermore, smaller events held at the park area would generate considerably lower increases in both daily and average traffic noise levels, and would similarly be considered less than significant.

Although future (cumulative) traffic data was not available, it is logical to conclude that future baseline traffic volumes on the local roadway network would be higher than existing volumes due to general growth in the region. Since the Table 6 data includes evaluation of worst-case project trip generation during a large amphitheater event, a similar increase in future project traffic noise levels resulting from large amphitheater events is not anticipated. As a result, the relative increase of project traffic noise generation would be smaller when compared to a greater future baseline. Therefore, the project's contribution to the future traffic noise environment is not expected to be cumulatively considerable.

Table 6
Existing vs. Existing Plus Project Traffic Noise Levels
(100 feet from roadway centerlines)
The Fruit Yard – Stanislaus County, California

		Day/Night Average Level (Ldn)				Peak Hour Average Level (Leq)			
Roadway	**Segment**	**Existing**	**Existing + Project**	**Change**	**Substantial Increase?**	**Existing**	**Existing + Project**	**Change**	**Substantial Increase?**
Yosemite Blvd	West of Project Site	61.2	62.1	0.9	No	51.2	54.5	3.3	No
Yosemite Blvd	East of Project Site	62.9	63.1	0.2	No	52.9	54.0	1.1	No
Albers Road	North of Project Site	63.7	63.9	0.3	No	53.7	54.9	1.2	No
Geer Road	South of Project Site	64.1	64.4	0.3	No	54.1	55.4	1.4	No

Sources: FHWA-RD-77-108, project traffic study, and Bollard Acoustical Consultants, Inc.

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In addition to indicating that the project would not result in a significant noise level increase on the local roadways, Table 6 also indicates that the project would not result in exceedance of the County's traffic noise standards at the nearest residences where those standards are not already exceeded.

Noise and Vibration Generated During Project Construction

Construction Noise Levels

During the construction of the proposed project, noise from construction-related activities would add to the noise environment in the immediate project vicinity. Activities involved in construction would vary by site, but heavy construction equipment would generate maximum noise levels, as indicated in Table 7, ranging from 73 to 85 dB L_{max} a distance of 50 feet. The level of project construction noise exposure received at existing noise-sensitive land uses in the project vicinity will depend primarily on the proximity of the construction activities to those residences. It should be noted that the majority of the site grading and amphitheater berm construction has been completed. As a result, substantial construction noise associated with heavy earthmoving equipment is not anticipated.

The nearest existing sensitive uses (residences) to the project site are located on the north side of SR-132 (Receptors B and C on Figure 1). Those residences are located approximately 125+ feet from onsite construction activities. At that distance, the levels shown in Table 7 would be reduced by approximately 8 dB based on spherical spreading of sound alone. Resulting maximum noise levels would range from approximately 65 to 77 dB Lmax. This range of maximum noise levels is well below measured maximum noise levels resulting from existing traffic on SR-132 (See Table 1 and Appendix B & C data), so adverse noise impacts associated with project construction are not anticipated provided construction activities are limited to daytime hours.

Table 7
General Construction Equipment Noise Levels at 50 feet

Type of Equipment	L_{max}, dBA
Backhoe	80
Compactor (ground)	80
Compressor (air)	80
Concrete mixer truck	85
Concrete pump truck	82
Concrete saw	90
Crane (mobile or stationary)	85
Dozer	85
Dump truck	84
Excavator	85
Flatbed truck	84
Front end loader	80
Generator (25 kilovolt-amperes [kVA] or less)	70
Generator (more than 25 kVA)	82
Grader	85
Jackhammer	85
Paver	85
Pneumatic tools	85
Pumps	77
Scraper	85
Tractor	84
Vibratory concrete mixer	80
Welder/Torch	73

Source: Federal Highway Administration's Construction Noise Model, V1.1, December 8, 2008.

Construction Vibration Levels

To quantify reference vibration levels generated by heavy equipment typically utilized in construction, BAC vibration measurement data pertaining to heavy equipment were utilized. Table 8 summarizes that vibration data.

Table 8
Reference Heavy Equipment Vibration Levels

Vibration Source	Measurement Distance, ft.	Peak Particle Velocity (in/sec)
Bulldozers	35	0.0209
Front-Loaders	100	0.0047
Haul Truck	100	0.0062
Water Truck	100	0.0070
Pneumatic Tools	50	0.0187

Source: Bollard Acoustical Consultants, Inc.

The nearest residences would be located approximately 125+ feet from project construction activities. At that distance, construction vibration levels are predicted to be well below 0.01 inches per second, which would be imperceptible. As a result, no adverse vibration impacts associated with project construction are identified for this project.

Conclusions and Recommendations

This analysis concludes that events at the Fruit Yard Amphitheater and Park Area utilizing amplified music can comply with the applicable Stanislaus County noise standards with appropriate noise mitigation measures incorporated into the project design and operation. The following specific recommendations are provided to ensure the project is both within compliance with those County noise regulations and to reduce the potential for nuisance noise complaints associated with audible low-frequency sound even if it is within compliance with County noise standards:

Amphitheater Event Recommendations

1. Amplified music events at the amphitheater should be limited to daytime hours (ending prior to 10 pm) until it can be demonstrated through noise level measurements of concert events that nighttime operations could occur without resulting in adverse nighttime noise impacts. BAC recommends that the first two large concerts held at the amphitheater be limited to daytime hours (music ending at or before 10 pm) to provide an opportunity to evaluate facility noise generation, including crowd noise, at the nearest residences during the less sensitive daytime hours.

2. To ensure compliance with County noise standards, amphitheater sound system output should be limited to an average of 90 dBA Leq averaged over a 5 minute period and a maximum of 100 dBA Lmax at a position located 100 feet from the Amphitheater stage.

3. To control low-frequency sound in the surrounding neighborhood, C-weighted sound levels should be limited to 100 dBC Leq averaged over a 5 minute period and a maximum of 110 dBC Lmax at a position located 100 feet from the Amphitheater stage. In addition,

amplified music shall be limited to an average of 85 dB (Linear) in each of the 1/3 octave band center frequencies from 31.5 to 80 Hertz.

4. In addition to the noise level limits shown in Table 4, daytime and nighttime C-weighted noise level limits of 80 dBC Leq and 70 dBC Leq should be applied at the nearest residences, respectively. These standards should be adjusted upwards or downwards as appropriate following collection of C-weighted ambient noise level data near the existing residences immediately before and after the first 2 large amphitheater events.

5. During the first 2 large concerts held at the amphitheater, noise levels should be monitored by a qualified acoustical consultant. The monitoring should be conducted continuously from the sound stage, with periodic noise monitoring near the closest residences in all directions surrounding the amphitheater. The noise measurements should include the sound check prior to the concert so the event promoters understand the noise thresholds to be satisfied during the concert event. The purpose of the measurements is to verify compliance with the project's noise standards. If the measurement results indicate that the music levels exceed the appropriate noise standards, additional sound controls should implemented prior to the following concert. Such measures could include reducing the overall output of the amplified sound system, relocating and/or reorienting speakers, use of acoustic curtains along the sides of the speakers to further focus the sound energy into the amphitheater seating area, and limiting amplified music to before 10 pm.

6. Portable sound level meters should be procured and used at the soundstage as well as at the nearest residences to periodically monitor the sound system output during all subsequent amphitheater events. Only by being aware of the instantaneous sound levels can the sound technicians make the appropriate adjustments to the sound mixing board. The meter should meet a Type/Class 1 or 2 compliance and be capable of monitoring in both A and C weighting Scales. In addition, the meter shall be fitted with the manufacturer's windscreen and calibrated before use. A cost-effective option for noise monitoring equipment would be an iOS option available in combination with an iPad/iPhone using microphone and acquisition hardware from AudioControl and software from Studio Six Digital. SSD software would include the AudioTools and several in-app purchases including SPL Graph and SPL Traffic Light.

7. If the results of the initial event noise monitoring is determined to approach or exceed the noise standards developed for this project, a permanent noise monitoring system should be installed at the mixing board area and used to monitor all subsequent amphitheater events until such a time as it is determined that adequate noise controls have been implemented to render permanent monitoring unnecessary.

8. For simplification and to minimize equipment costs, sound level limit triggers shall be set to Leq, C-weighting. The sound technician shall locally check both C-weighted and 1/3-octave band results during sound check prior to an event to establish system gain limits and ensure compliance with the specified limits.

9. The amphitheater owner should make it very clear to event producers what the sound level limits are at the sound stage and the time at which music is required to cease. Suitable measures should be implemented to both ensure the limits are maintained and penalties established if producers fail to comply with the noise level limits.

10. Although sound generated by concert activities at the amphitheater are predicted to be satisfactory relative to Stanislaus County noise standards following implementation of the recommendations cited herein, music will likely be audible at some of the nearest residences to the project site at times. This audibility will vary depending on atmospheric conditions and size of concert, but audibility is not a test of significance for noise impact. Nonetheless, a mechanism should be developed whereby residents concerned about concert sound levels can reach a Fruit Yard representative during the concert so that appropriate investigation of those concerns can be accommodated. Typical smaller events, such as weddings, charity auctions, etc., are expected to generate considerably lower sound levels than a concert event.

11. To maintain crowd noise at acceptable levels, amphitheater events exceeding 2,000 attendees should be concluded by 10 pm. Noise monitoring of crowd noise during the first two events can be utilized to determine if this measure will be necessary long-term.

Park Event Recommendations

1. To ensure compliance with County noise standards, park sound system output should be limited to an average of 75 dBA Leq averaged over a 5 minute period and a maximum of 85 dBA Lmax at a position located 100 feet from the sound system speakers. Sound levels up to 80 dBA Leq at the 100 foot reference distance would be acceptable provided the sound system speakers are oriented south or southwest.

2. To control low-frequency sound in the surrounding neighborhood, C-weighted sound levels should be limited to 85 dBC Leq averaged over a 5 minute period and a maximum of 95 dBC Lmax at a position located 100 feet from the speakers. In addition, amplified music shall be limited to an average of 75 dB (Linear) in each of the 1/3 octave band center frequencies from 31.5 to 80 Hertz.

3. In addition to the noise level limits shown in Table 4, daytime and nighttime C-weighted noise level limits of 80 dBC Leq and 70 dBC Leq should be applied at the nearest residences, respectively. These standards should be adjusted upwards or downwards as appropriate following collection of C-weighted ambient noise level data near the existing residences immediately before and after the first 2 large amphitheater events.

4. If monitoring of representative amplified music events in the park area indicates that those events are within compliance with the County's noise standards and the C-weighted standards recommended in this report, consideration should be given to eliminating the requirement for routine monitoring of all park events.

This concludes BAC's analysis of amplified sound generated during events held at the Fruit Yard project in Stanislaus County, CA. Please contact Paul Bollard at (916) 663-0500 or PaulB@bacnoise.com with any questions regarding this report.

Appendix A

Acoustical Terminology

Acoustics The science of sound.

Ambient Noise The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.

Attenuation The reduction of an acoustic signal.

A-Weighting A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.

Decibel or dB Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.

CNEL Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.

Frequency The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.

Ldn Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.

Leq Equivalent or energy-averaged sound level.

Lmax The highest root-mean-square (RMS) sound level measured over a given period of time.

Loudness A subjective term for the sensation of the magnitude of sound.

Masking The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.

Noise Unwanted sound.

Peak Noise The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the Maximum level, which is the highest RMS level.

RT_{60} The time it takes reverberant sound to decay by 60 dB once the source has been removed.

Sabin The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 sabin.

SEL A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy of the event into a 1-s time period.

Threshold of Hearing The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.

Threshold of Pain Approximately 120 dB above the threshold of hearing.

Appendix B-1

2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 1
Friday, June 19, 2015

Hour	Leq	Lmax	L50	L90
0:00	55	78	42	37
1:00	54	78	41	35
2:00	54	76	41	35
3:00	56	76	46	39
4:00	58	75	50	43
5:00	63	83	57	50
6:00	63	78	57	50
7:00	63	82	57	48
8:00	65	90	56	45
9:00	63	85	56	44
10:00	63	85	56	43
11:00	66	96	57	45
12:00	66	95	58	45
13:00	63	82	58	46
14:00	64	84	60	50
15:00	71	95	61	49
16:00	64	89	59	46
17:00	64	83	60	48
18:00	63	83	57	45
19:00	61	77	56	46
20:00	61	80	56	50
21:00	62	81	56	50
22:00	61	78	56	46
23:00	59	83	51	43

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	71	61	65	63	54	59
Lmax (Maximum)	96	77	86	83	75	78
L50 (Median)	61	56	58	57	41	49
L90 (Background)	50	43	47	50	35	42

Computed Ldn, dB	67
% Daytime Energy	86%
% Nighttime Energy	14%

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Appendix B-2

2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 1
Saturday, June 20, 2015

Hour	Leq	Lmax	L50	L90
0:00	56	77	46	40
1:00	55	77	44	37
2:00	55	76	44	38
3:00	56	80	43	38
4:00	57	74	49	41
5:00	61	79	56	48
6:00	62	81	54	47
7:00	61	80	53	46
8:00	61	76	54	44
9:00	62	80	57	45
10:00	64	87	58	45
11:00	63	83	59	46
12:00	64	87	59	47
13:00	63	81	58	47
14:00	62	80	58	47
15:00	63	86	57	46
16:00	63	79	59	47
17:00	64	85	58	45
18:00	62	84	56	45
19:00	62	90	55	43
20:00	61	78	55	44
21:00	63	90	53	43
22:00	59	78	52	43
23:00	57	74	48	43

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	64	61	63	62	55	58
Lmax (Maximum)	90	76	83	81	74	77
L50 (Median)	59	53	57	56	43	48
L90 (Background)	47	43	45	48	37	42

Computed Ldn, dB	66
% Daytime Energy	82%
% Nighttime Energy	18%

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Appendix B-3

2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 1
Sunday, June 21, 2015

Hour	Leq	Lmax	L50	L90
0:00	56	83	46	41
1:00	57	81	44	37
2:00	53	74	41	36
3:00	52	73	41	34
4:00	52	69	42	36
5:00	58	81	51	43
6:00	57	74	48	43
7:00	58	79	49	42
8:00	61	90	50	42
9:00	61	81	55	43
10:00	61	80	56	44
11:00	63	81	59	46
12:00	64	88	59	45
13:00	61	77	58	44
14:00	62	82	57	44
15:00	62	83	57	45
16:00	61	81	56	44
17:00	66	93	56	45
18:00	61	80	56	46
19:00	62	82	56	45
20:00	61	83	55	45
21:00	66	92	59	47
22:00	60	81	51	43
23:00	54	76	44	38

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	66	58	62	60	52	56
Lmax (Maximum)	93	77	83	83	69	77
L50 (Median)	59	49	56	51	41	45
L90 (Background)	47	42	44	43	34	39

Computed Ldn, dB	64
% Daytime Energy	87%
% Nighttime Energy	13%

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Appendix B-4

2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 2
Friday, June 19, 2015

Hour	Leq	Lmax	L50	L90
0:00	59	86	53	45
1:00	60	85	51	42
2:00	63	92	53	40
3:00	61	80	56	47
4:00	63	80	59	52
5:00	67	86	64	59
6:00	68	91	65	61
7:00	71	91	67	62
8:00	67	89	63	59
9:00	65	82	63	58
10:00	66	82	63	58
11:00	65	83	62	58
12:00	66	86	63	58
13:00	66	86	63	59
14:00	67	90	63	59
15:00	65	81	62	58
16:00	65	86	62	57
17:00	65	80	63	59
18:00	66	94	61	57
19:00	64	85	60	56
20:00	64	83	61	57
21:00	65	87	60	57
22:00	66	90	60	56
23:00	64	86	58	52

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	71	64	66	68	59	64
Lmax (Maximum)	94	80	86	92	80	86
L50 (Median)	67	60	62	65	51	58
L90 (Background)	62	56	58	61	40	50

Computed Ldn, dB	71
% Daytime Energy	73%
% Nighttime Energy	27%

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Appendix B-5

2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 2
Saturday, June 20, 2015

Hour	Leq	Lmax	L50	L90
0:00	66	94	56	50
1:00	61	86	53	42
2:00	61	82	56	45
3:00	61	89	51	43
4:00	62	84	56	49
5:00	64	81	60	55
6:00	69	88	66	61
7:00	66	84	62	58
8:00	65	82	61	56
9:00	66	90	61	56
10:00	65	91	61	56
11:00	64	84	60	56
12:00	66	90	61	57
13:00	66	89	61	57
14:00	64	85	60	56
15:00	65	85	61	56
16:00	66	88	63	58
17:00	69	94	61	56
18:00	65	88	60	55
19:00	65	87	60	55
20:00	64	81	60	55
21:00	68	97	59	54
22:00	63	85	59	54
23:00	63	83	59	53

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	69	64	66	69	61	64
Lmax (Maximum)	97	81	88	94	81	86
L50 (Median)	63	59	61	66	51	57
L90 (Background)	58	54	56	61	42	50

Computed Ldn, dB	71
% Daytime Energy	69%
% Nighttime Energy	31%

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Appendix B-6

2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 2
Sunday, June 21, 2015

Hour	Leq	Lmax	L50	L90
0:00	62	86	56	48
1:00	60	80	55	47
2:00	59	80	54	42
3:00	58	80	51	40
4:00	58	72	54	44
5:00	62	84	57	52
6:00	64	85	61	57
7:00	62	81	60	55
8:00	62	79	60	56
9:00	66	88	61	56
10:00	64	91	60	56
11:00	64	85	61	56
12:00	64	83	61	57
13:00	63	81	60	55
14:00	64	83	60	56
15:00	65	87	60	55
16:00	63	81	60	56
17:00	71	98	61	56
18:00	64	84	60	55
19:00	65	87	61	56
20:00	66	89	61	56
21:00	70	94	61	56
22:00	64	86	58	52
23:00	62	85	55	47

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	71	62	66	64	58	61
Lmax (Maximum)	98	79	86	86	72	82
L50 (Median)	61	60	60	61	51	56
L90 (Background)	57	55	56	57	40	48

Computed Ldn, dB	69
% Daytime Energy	81%
% Nighttime Energy	19%

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Appendix B-7

2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 3
Friday, June 19, 2015

Hour	Leq	Lmax	L50	L90
0:00	55	74	45	39
1:00	55	75	42	37
2:00	54	75	42	36
3:00	58	79	48	41
4:00	60	79	52	43
5:00	62	75	58	48
6:00	64	78	60	51
7:00	63	77	60	50
8:00	63	85	59	51
9:00	69	93	60	51
10:00	62	79	57	47
11:00	61	78	58	47
12:00	62	77	58	48
13:00	61	77	58	49
14:00	62	77	58	49
15:00	62	79	58	49
16:00	62	80	60	49
17:00	63	78	60	51
18:00	64	90	60	51
19:00	63	83	59	51
20:00	63	80	60	53
21:00	65	92	59	53
22:00	62	83	57	51
23:00	60	78	55	49

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	69	61	64	64	54	60
Lmax (Maximum)	93	77	82	83	74	77
L50 (Median)	60	57	59	60	42	51
L90 (Background)	53	47	50	51	36	44

Computed Ldn, dB	67
% Daytime Energy	79%
% Nighttime Energy	21%

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Appendix B-8

2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 3
Saturday, June 20, 2015

Hour	Leq	Lmax	L50	L90
0:00	59	82	51	48
1:00	57	79	49	47
2:00	57	80	49	48
3:00	57	77	49	47
4:00	60	81	52	48
5:00	61	79	56	50
6:00	61	78	57	50
7:00	61	78	56	49
8:00	61	79	57	48
9:00	61	77	58	50
10:00	61	82	58	51
11:00	62	81	58	50
12:00	61	83	58	50
13:00	60	78	57	50
14:00	61	82	57	50
15:00	63	90	58	51
16:00	62	81	59	51
17:00	65	87	60	53
18:00	64	91	60	50
19:00	62	79	59	49
20:00	63	87	59	49
21:00	61	77	58	48
22:00	61	80	56	47
23:00	61	77	55	46

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	65	60	62	61	57	60
Lmax (Maximum)	91	77	82	82	77	79
L50 (Median)	60	56	58	57	49	53
L90 (Background)	53	48	50	50	46	48

Computed Ldn, dB	66
% Daytime Energy	75%
% Nighttime Energy	25%

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Appendix B-9

2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 3
Sunday, June 21, 2015

Hour	Leq	Lmax	L50	L90
0:00	57	77	49	44
1:00	56	75	48	43
2:00	55	72	46	42
3:00	56	79	46	43
4:00	55	75	46	44
5:00	57	74	48	45
6:00	60	86	50	45
7:00	58	74	52	45
8:00	59	75	55	45
9:00	61	85	57	48
10:00	61	85	57	48
11:00	61	75	58	49
12:00	60	76	58	50
13:00	60	77	57	48
14:00	61	76	58	49
15:00	61	82	57	49
16:00	61	78	58	49
17:00	62	86	58	49
18:00	62	75	59	49
19:00	63	85	59	50
20:00	62	82	60	50
21:00	65	90	58	49
22:00	59	75	54	47
23:00	59	85	50	45

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	65	58	61	60	55	57
Lmax (Maximum)	90	74	80	86	72	77
L50 (Median)	60	52	57	54	46	48
L90 (Background)	50	45	48	47	42	44

Computed Ldn, dB	65
% Daytime Energy	81%
% Nighttime Energy	19%

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Appendix B-10

2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 4
Friday, June 19, 2015

Hour	Leq	Lmax	L50	L90
0:00	42	57	40	37
1:00	42	59	40	36
2:00	43	61	41	36
3:00	46	58	43	39
4:00	47	59	46	41
5:00	52	64	51	48
6:00	53	66	52	49
7:00	48	60	48	45
8:00	48	68	46	43
9:00	51	72	45	41
10:00	49	71	45	41
11:00	50	66	48	44
12:00	51	64	47	42
13:00	69	94	56	45
14:00	49	62	47	43
15:00	48	63	46	42
16:00	48	70	44	41
17:00	47	63	45	42
18:00	46	64	44	41
19:00	48	65	45	42
20:00	49	68	47	44
21:00	49	60	48	45
22:00	52	67	50	44
23:00	48	61	46	42

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	69	46	58	53	42	49
Lmax (Maximum)	94	60	67	67	57	61
L50 (Median)	56	44	47	52	40	45
L90 (Background)	45	41	43	49	36	41

Computed Ldn, dB	58
% Daytime Energy	92%
% Nighttime Energy	8%

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Appendix B-11

2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 4
Saturday, June 20, 2015

Hour	Leq	Lmax	L50	L90
0:00	46	64	44	39
1:00	44	59	42	37
2:00	44	59	42	37
3:00	43	59	40	37
4:00	44	59	43	39
5:00	55	74	51	48
6:00	52	64	50	47
7:00	53	80	48	45
8:00	46	63	45	42
9:00	47	69	44	41
10:00	46	63	43	40
11:00	47	65	43	40
12:00	47	62	43	39
13:00	55	76	43	39
14:00	45	60	42	38
15:00	46	57	44	40
16:00	49	71	45	41
17:00	49	68	46	42
18:00	49	68	47	43
19:00	50	71	46	42
20:00	46	61	44	41
21:00	45	63	43	40
22:00	44	57	43	40
23:00	46	65	44	41

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	55	45	49	55	43	49
Lmax (Maximum)	80	57	66	74	57	62
L50 (Median)	48	42	44	51	40	44
L90 (Background)	45	38	41	48	37	41

Computed Ldn, dB	55
% Daytime Energy	66%
% Nighttime Energy	34%

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Appendix B-12

2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 4
Sunday, June 21, 2015

Hour	Leq	Lmax	L50	L90
0:00	44	60	43	39
1:00	44	58	41	36
2:00	42	60	39	35
3:00	41	59	39	34
4:00	40	52	39	35
5:00	53	74	49	44
6:00	48	64	46	43
7:00	48	64	44	41
8:00	46	65	43	40
9:00	47	66	43	39
10:00	44	60	43	39
11:00	49	70	44	40
12:00	51	73	42	39
13:00	43	58	41	38
14:00	44	59	42	38
15:00	45	64	43	39
16:00	45	62	43	40
17:00	51	71	45	41
18:00	50	70	45	41
19:00	49	72	45	41
20:00	47	71	44	41
21:00	48	68	46	42
22:00	45	59	43	40
23:00	45	67	41	37

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	51	43	48	53	40	47
Lmax (Maximum)	73	58	66	74	52	61
L50 (Median)	46	41	44	49	39	42
L90 (Background)	42	38	40	44	34	38

Computed Ldn, dB	53
% Daytime Energy	70%
% Nighttime Energy	30%

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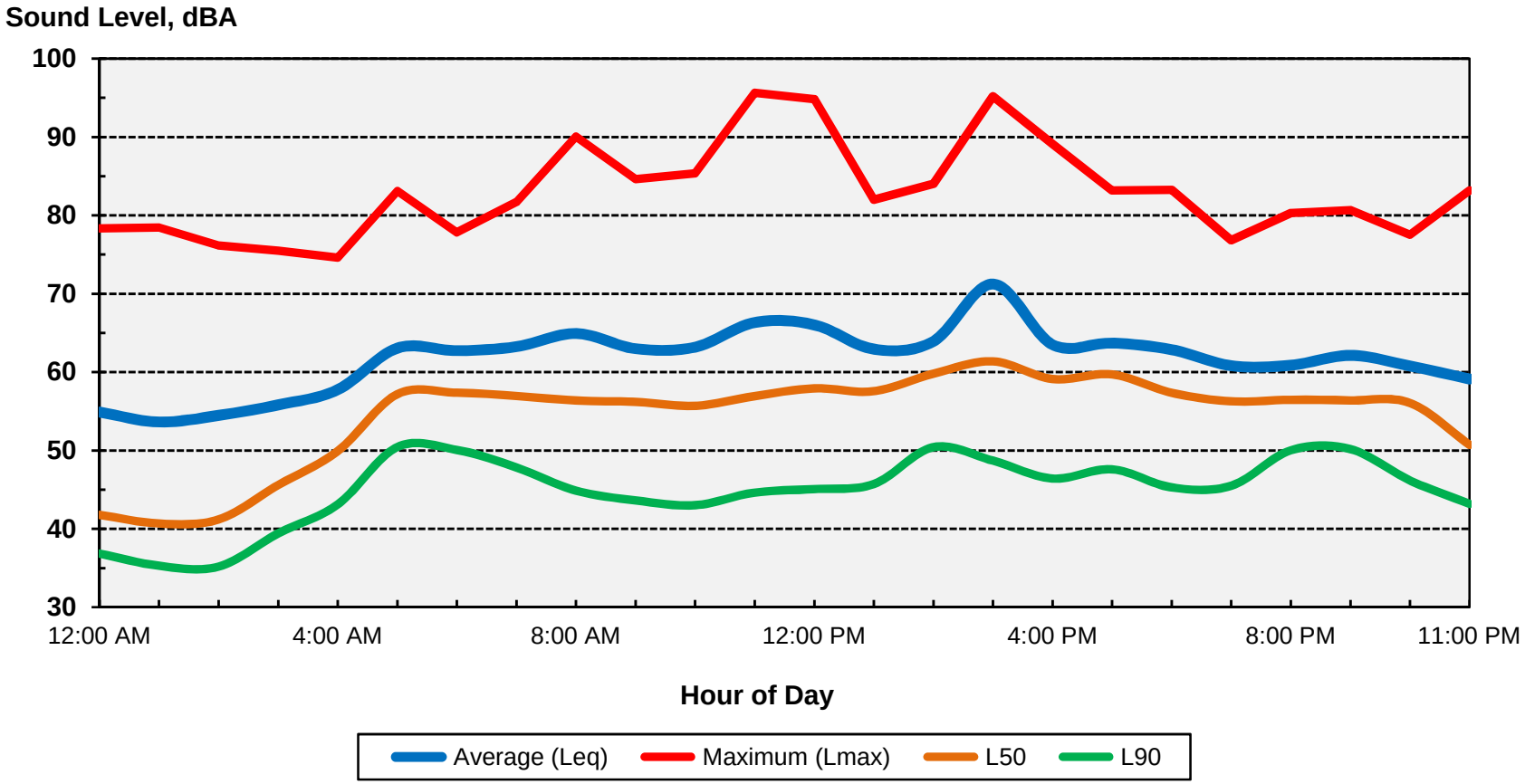
Appendix C-1
2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 1
Friday, June 19, 2015



Ldn: 67 dB

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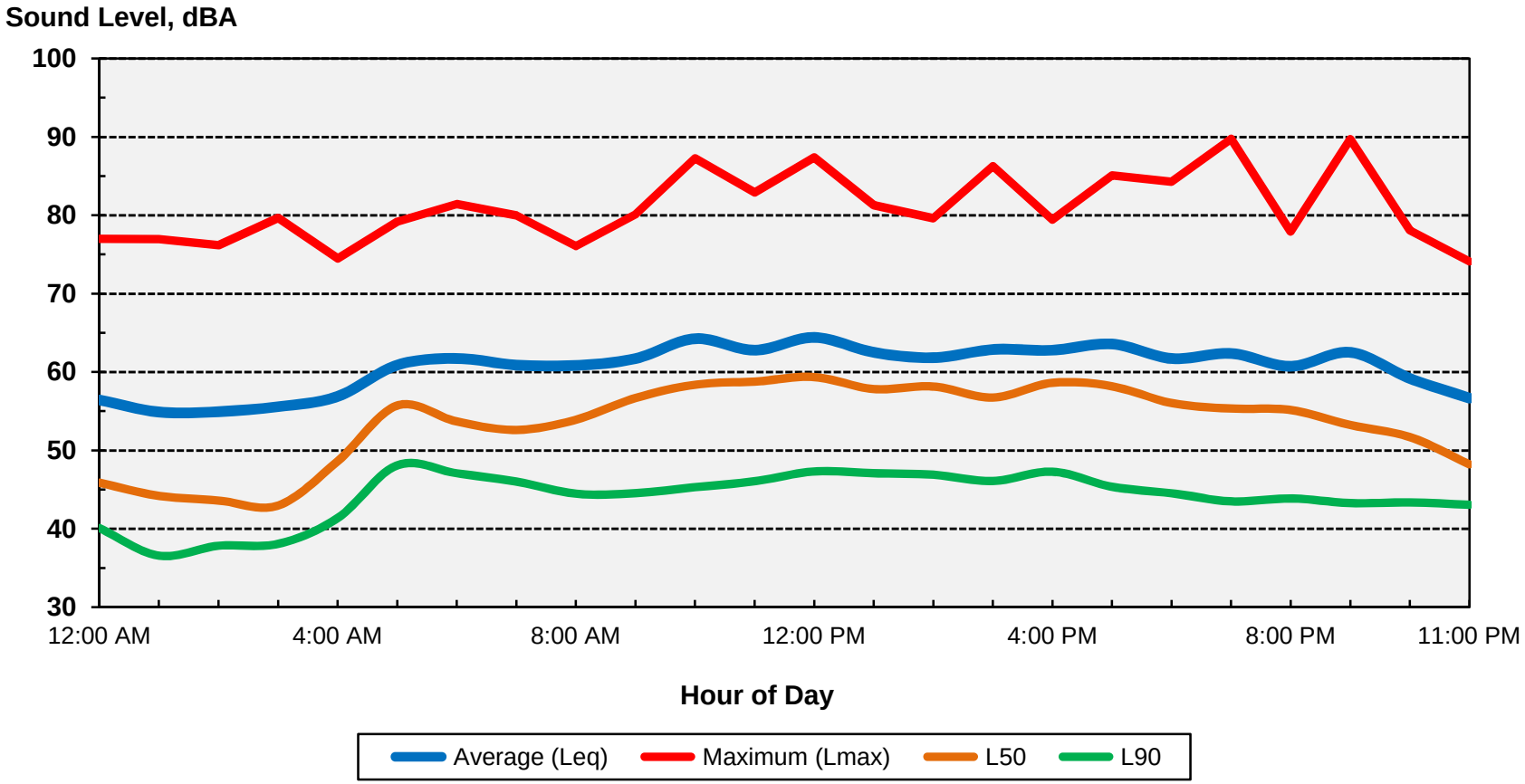
Appendix C-2
2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 1
Saturday, June 20, 2015



Ldn: 66 dB

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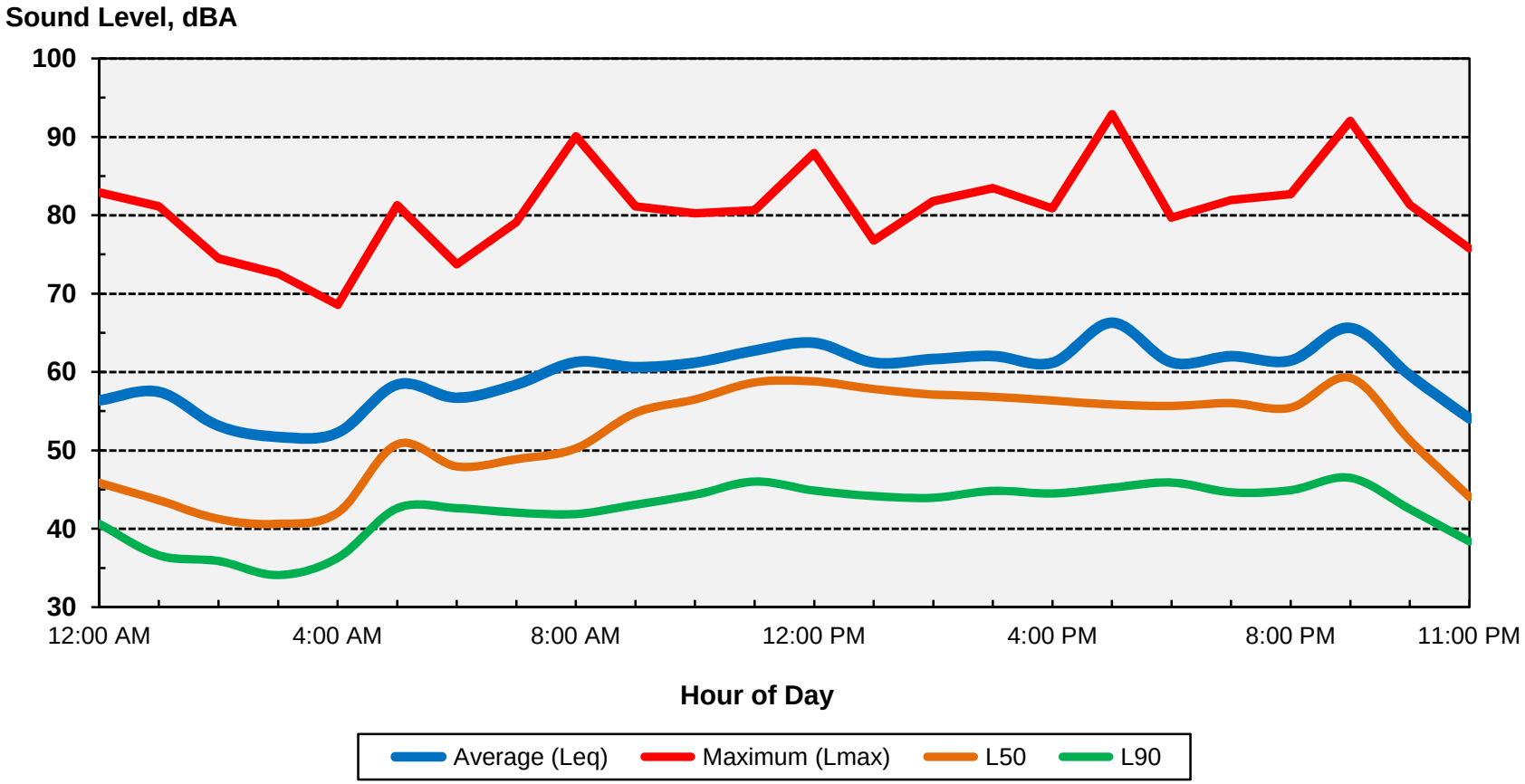
Appendix C-3
2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 1
Sunday, June 21, 2015



Ldn: 64 dB

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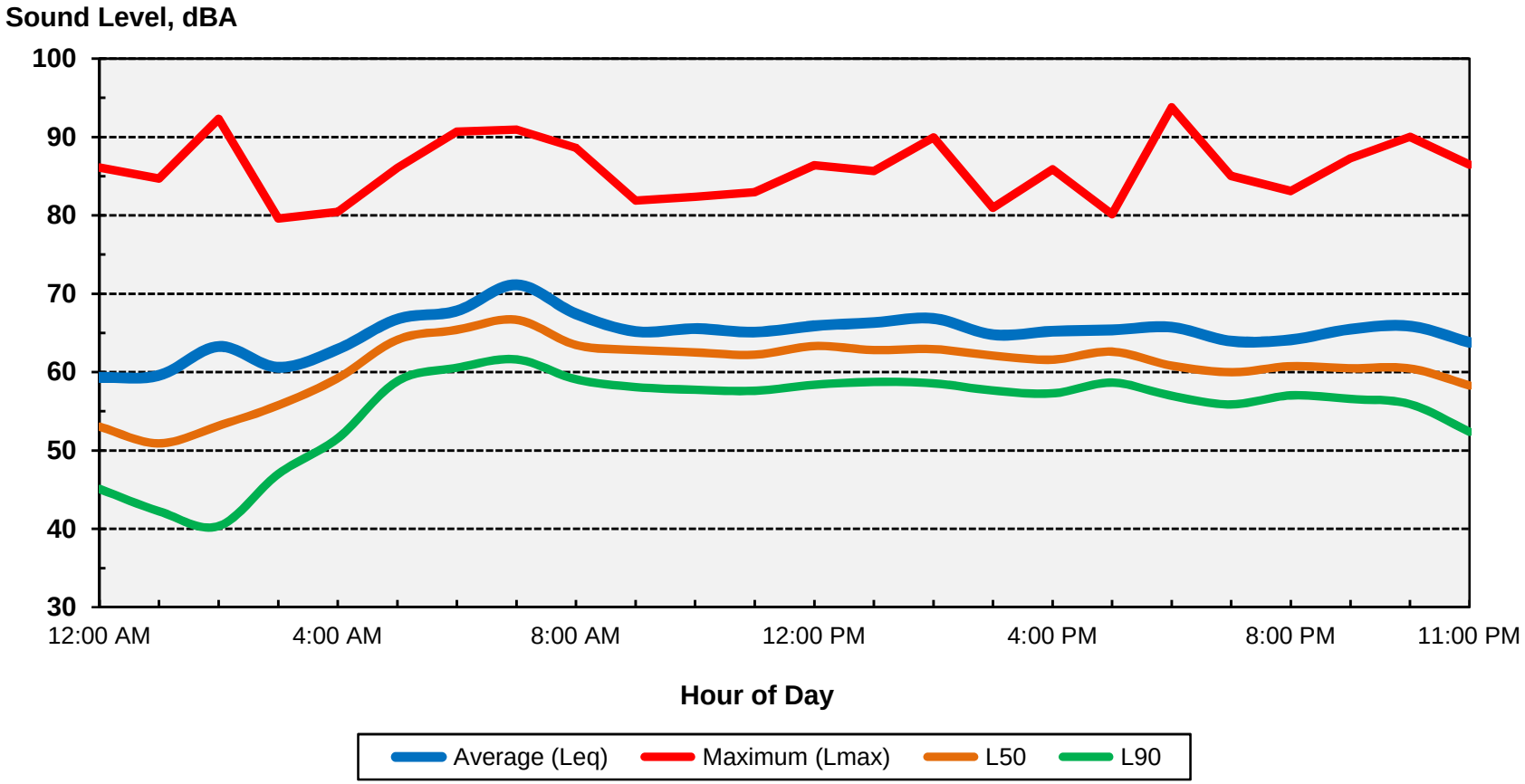
Appendix C-4
2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 2
Friday, June 19, 2015



Ldn: 71 dB

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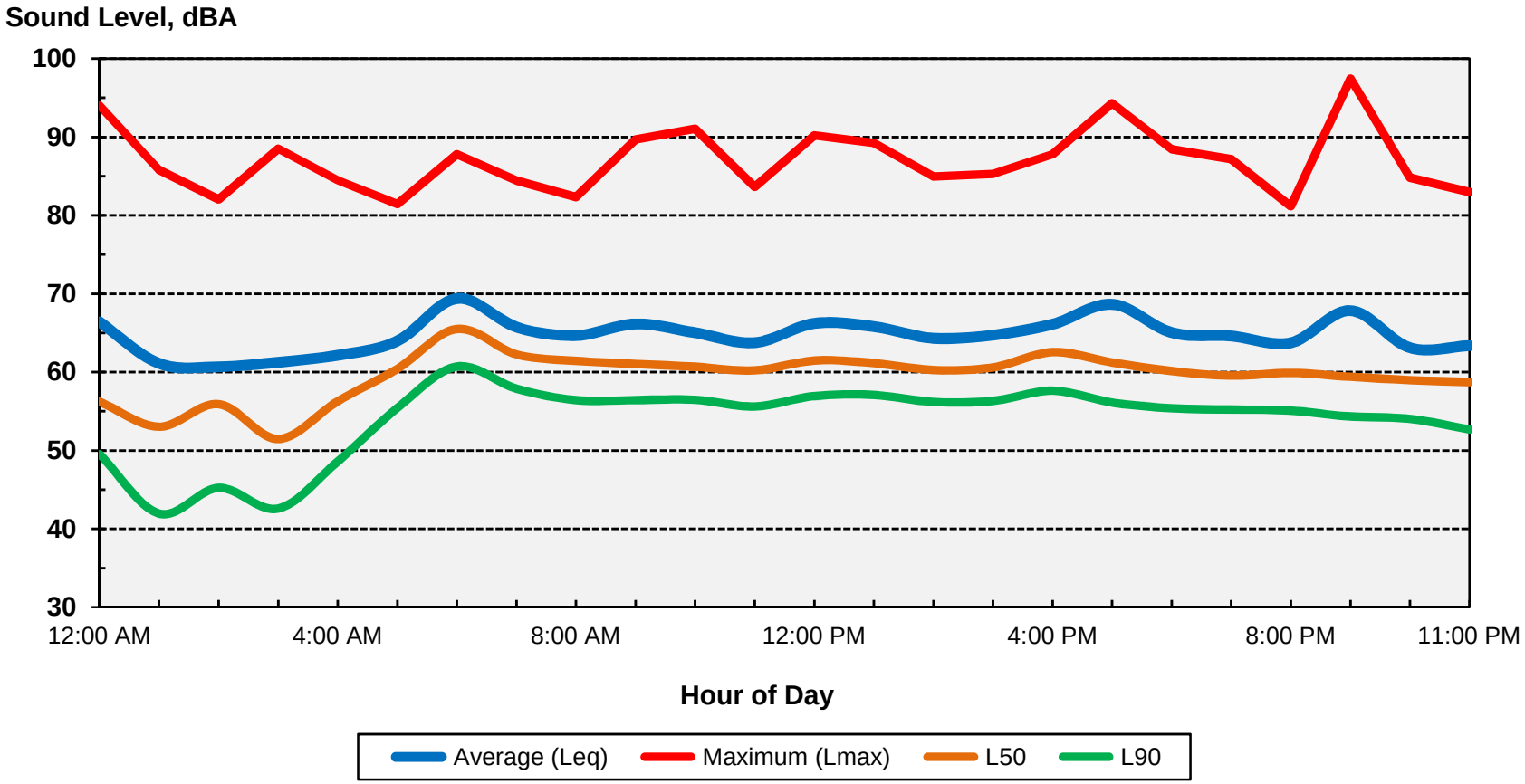
Appendix C-5
2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 2
Saturday, June 20, 2015



Ldn: 71 dB

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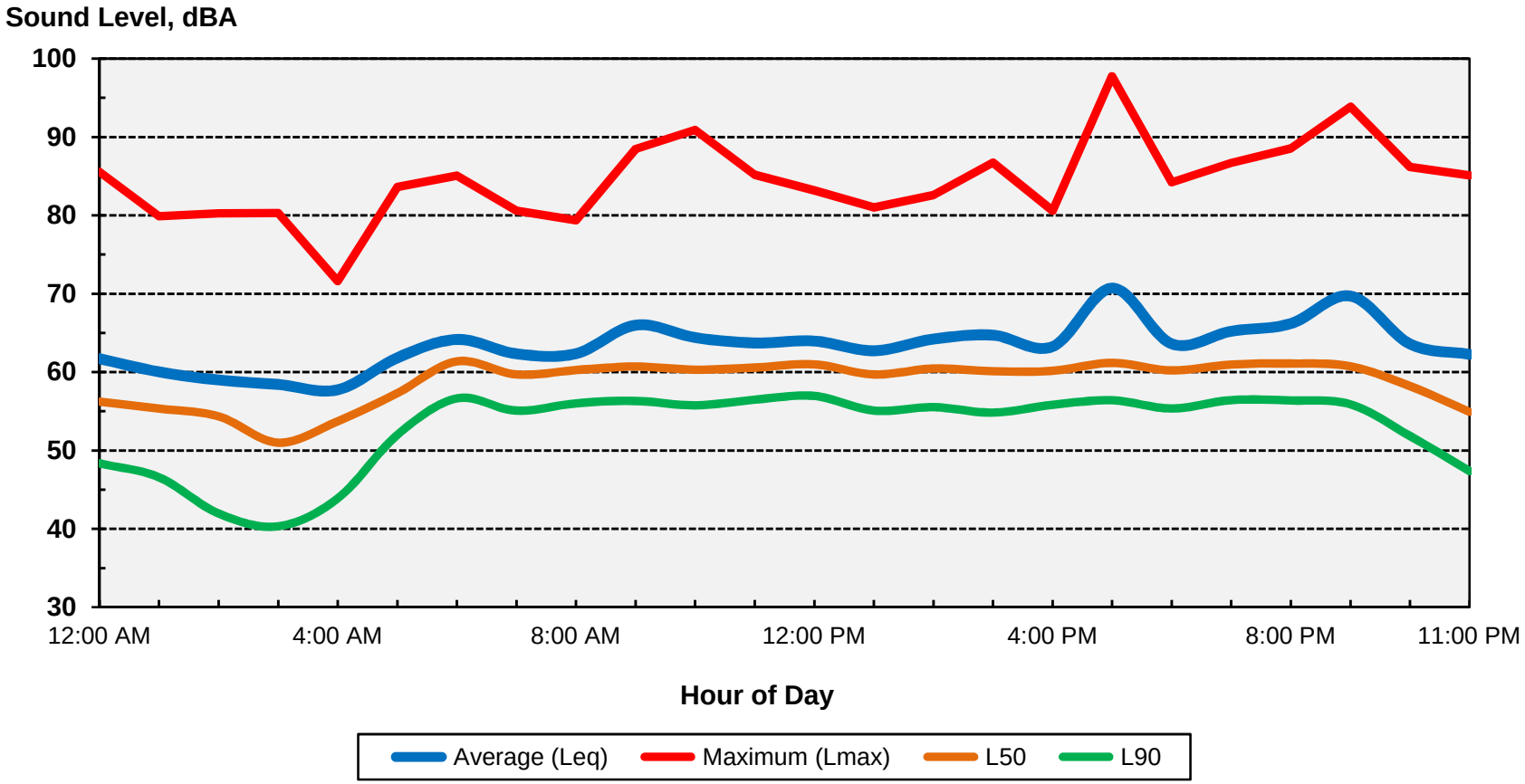
Appendix C-6
2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 2
Sunday, June 21, 2015



Ldn: 69 dB

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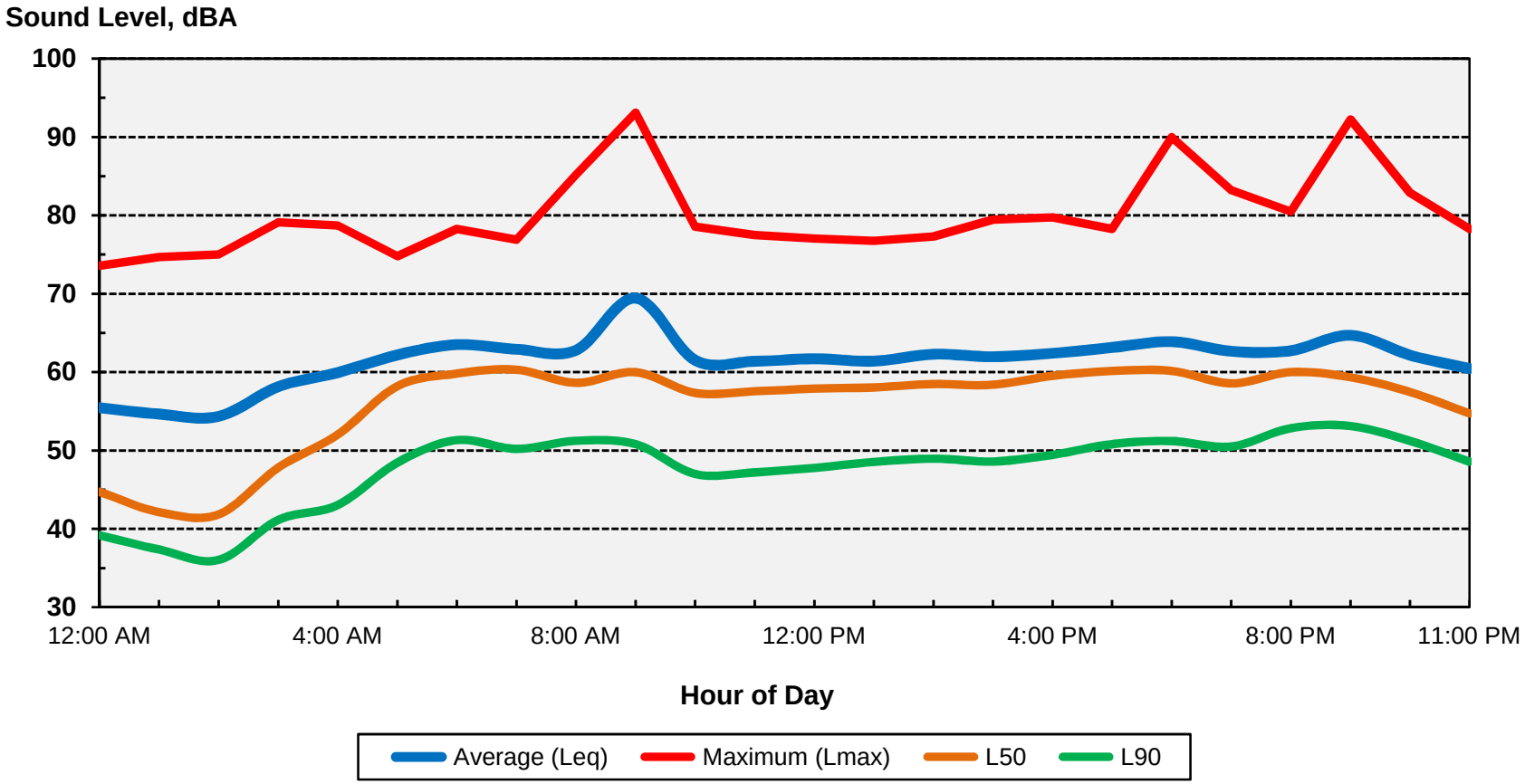
Appendix C-7
2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 3
Friday, June 19, 2015



Ldn: 67 dB

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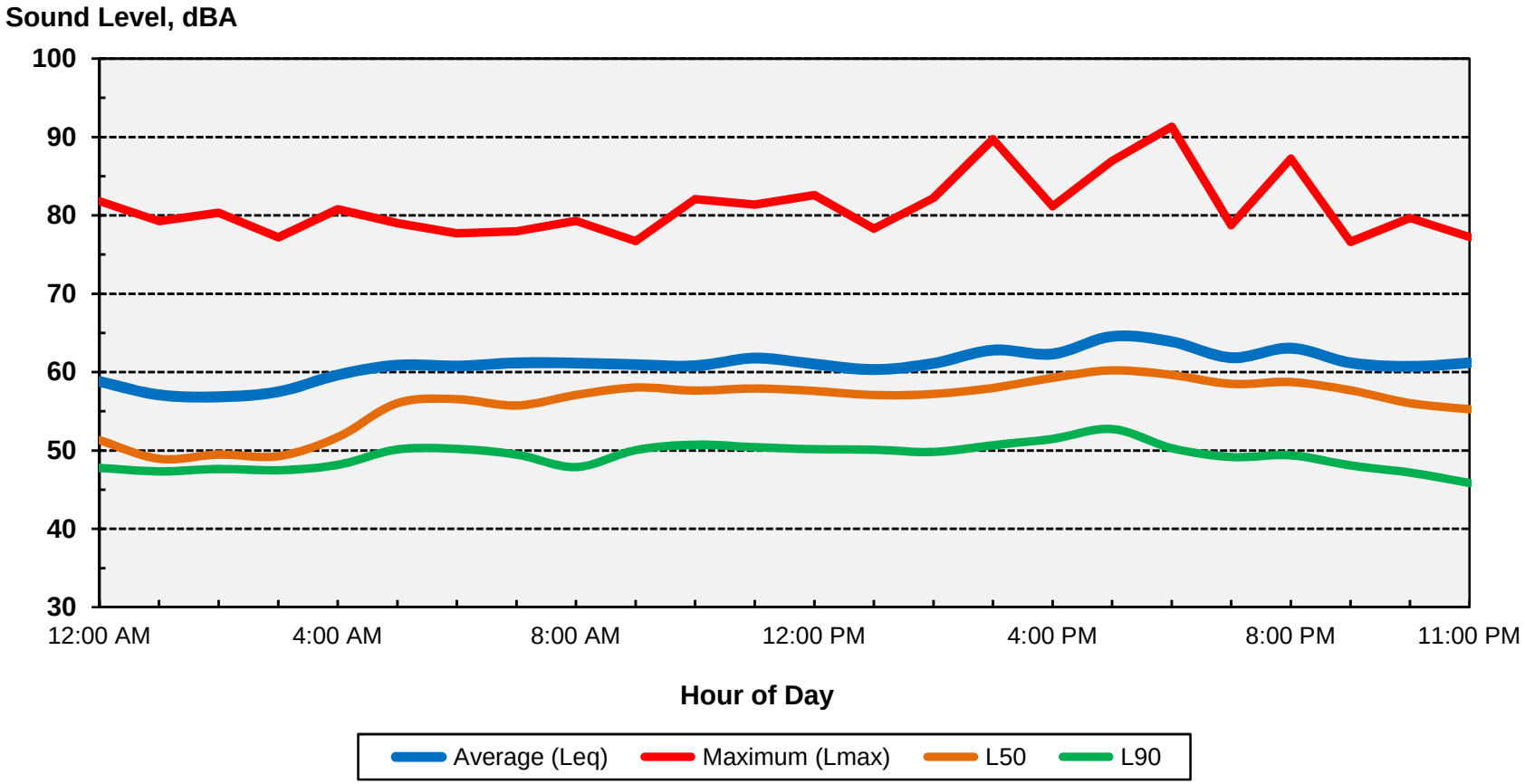
Appendix C-8
2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 3
Saturday, June 20, 2015



Ldn: 66 dB

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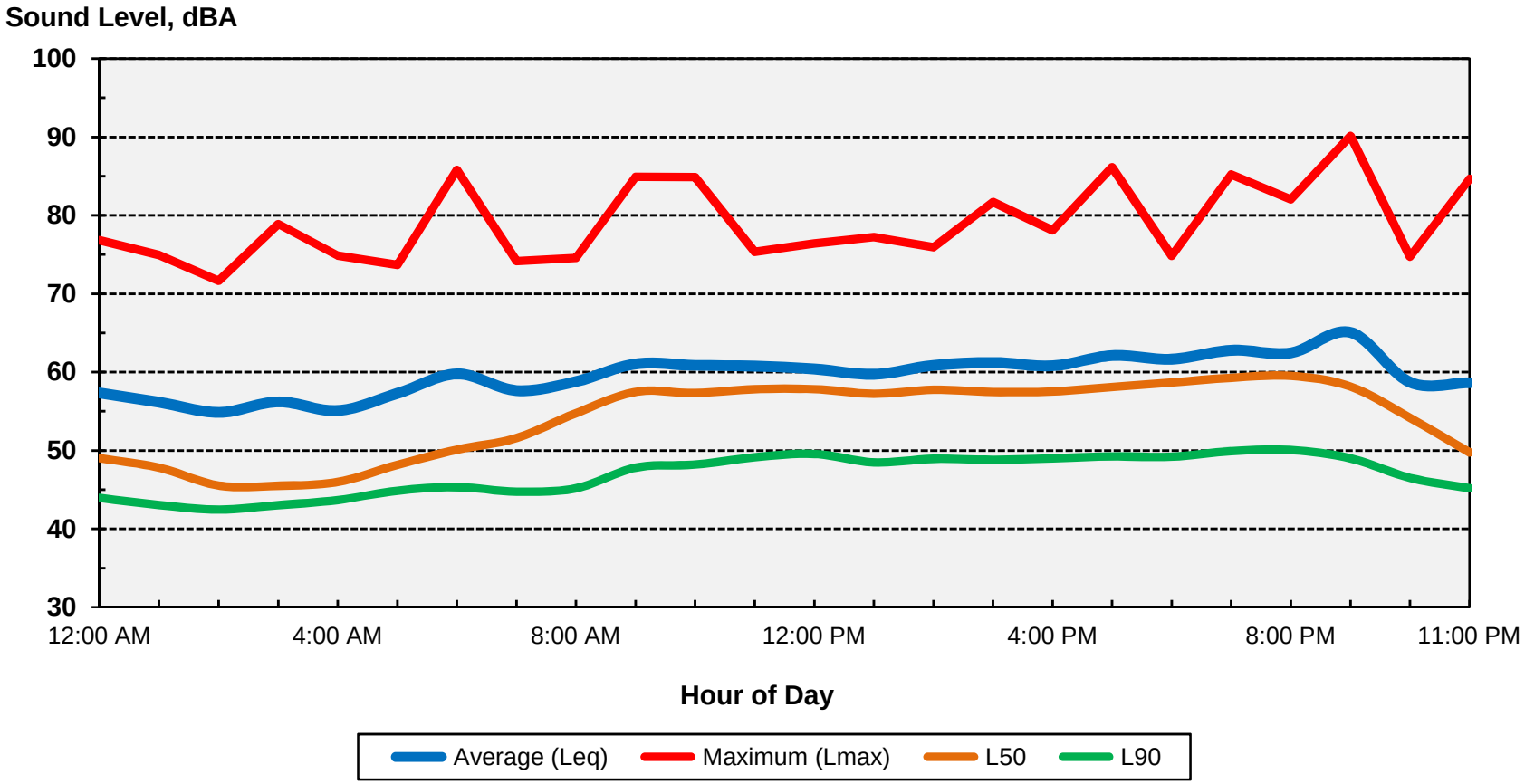
Appendix C-9
2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 3
Sunday, June 21, 2015



Ldn: 65 dB

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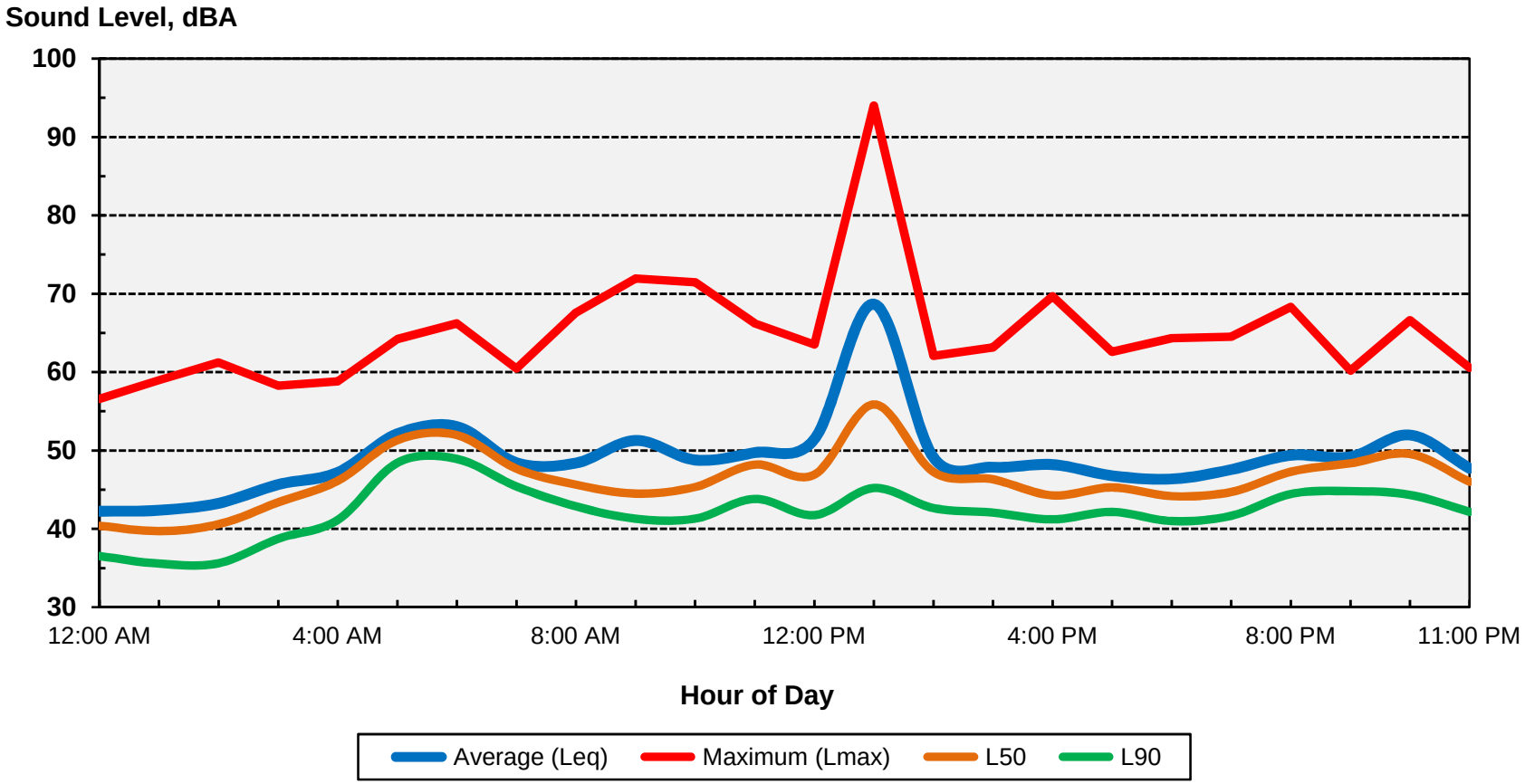
Appendix C-10
2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 4
Friday, June 19, 2015



Ldn: 58 dB

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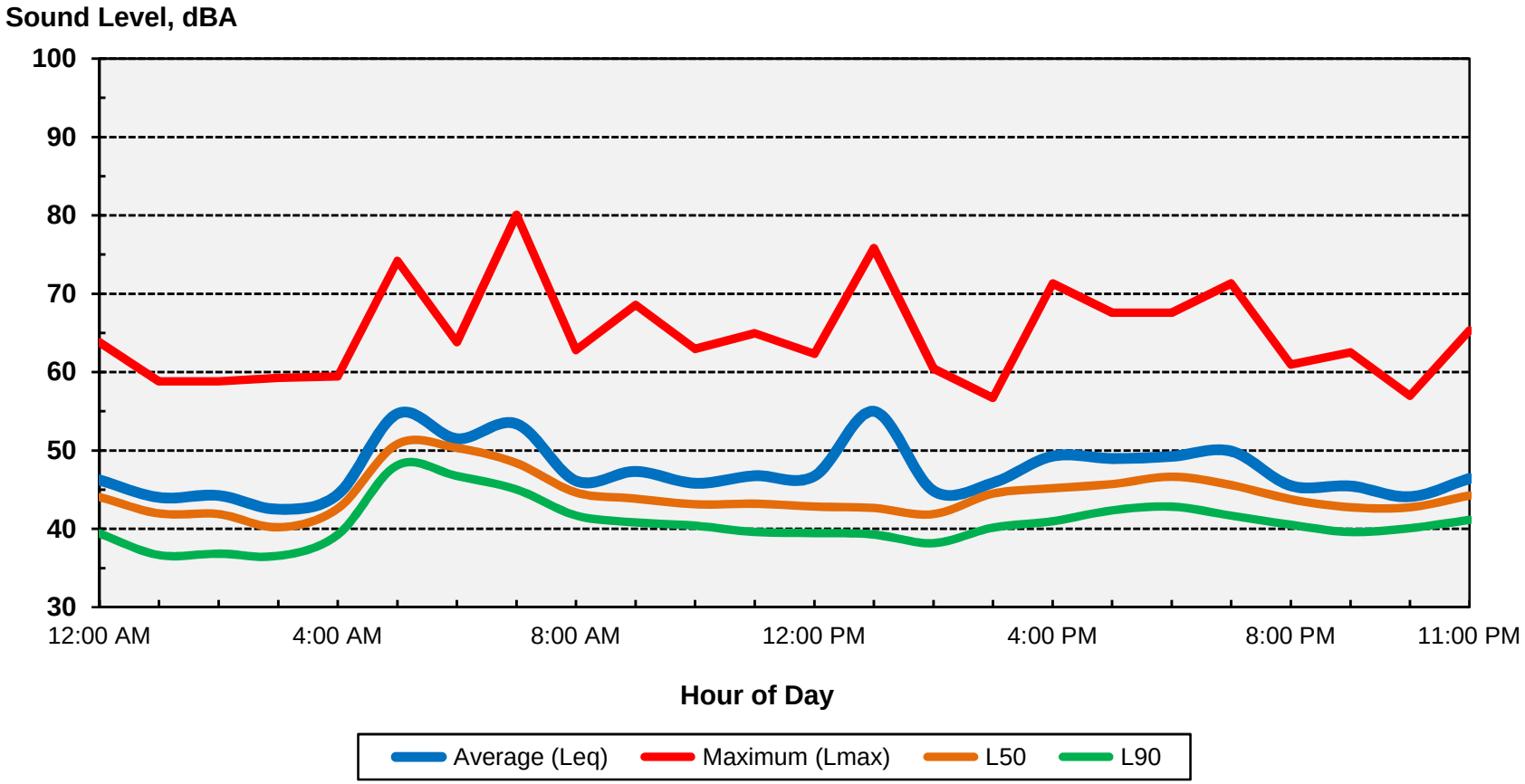
Appendix C-11
2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 4
Saturday, June 20, 2015



Ldn: 55 dB

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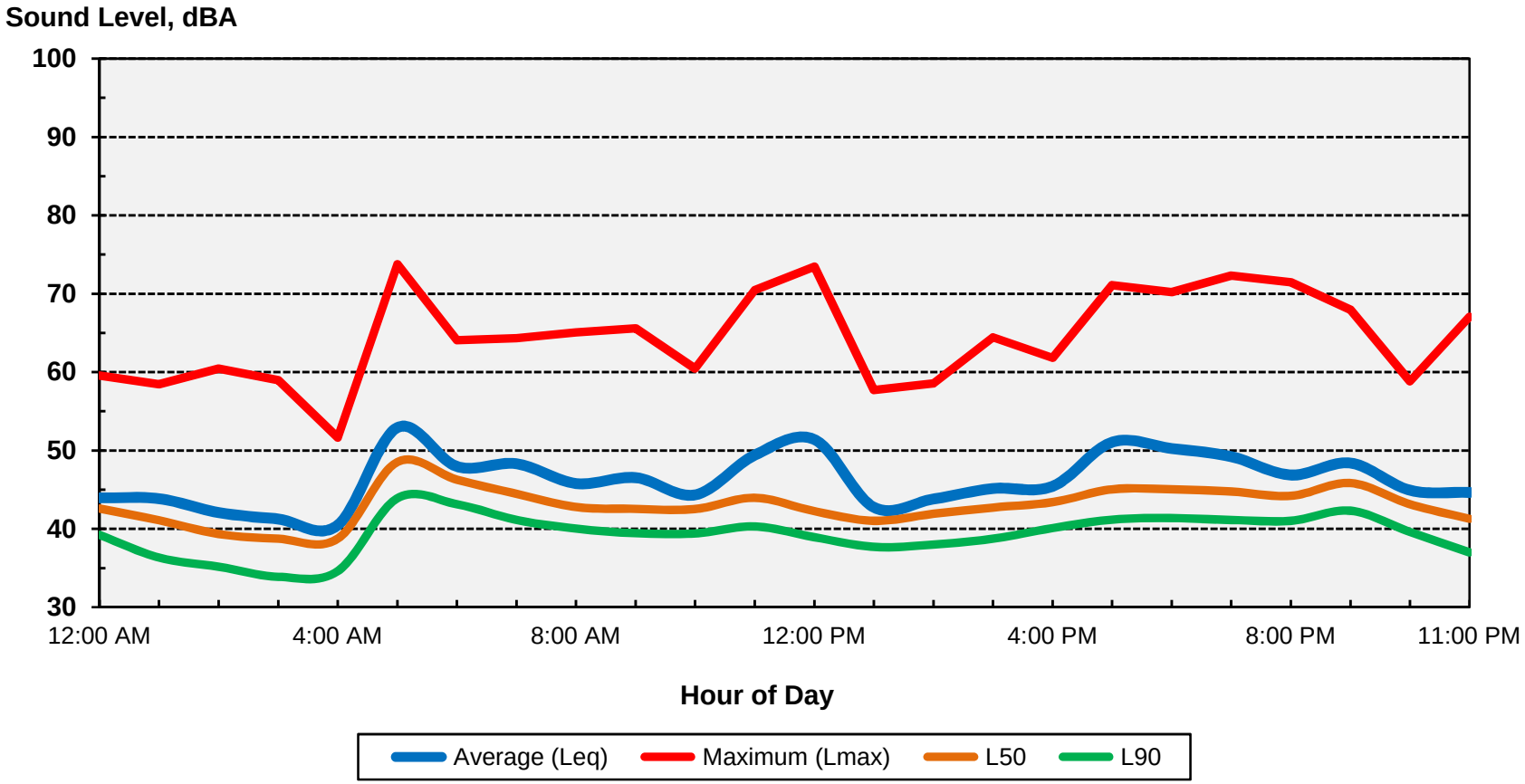
Appendix C-12
2015-129 The Fruit Yard Project
Ambient Noise Monitoring Results - Site 4
Sunday, June 21, 2015



Ldn: 53 dB

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Appendix D

Event Simulation and Noise Monitoring Photos
The Fruit Yard Project - Stanislaus County, California

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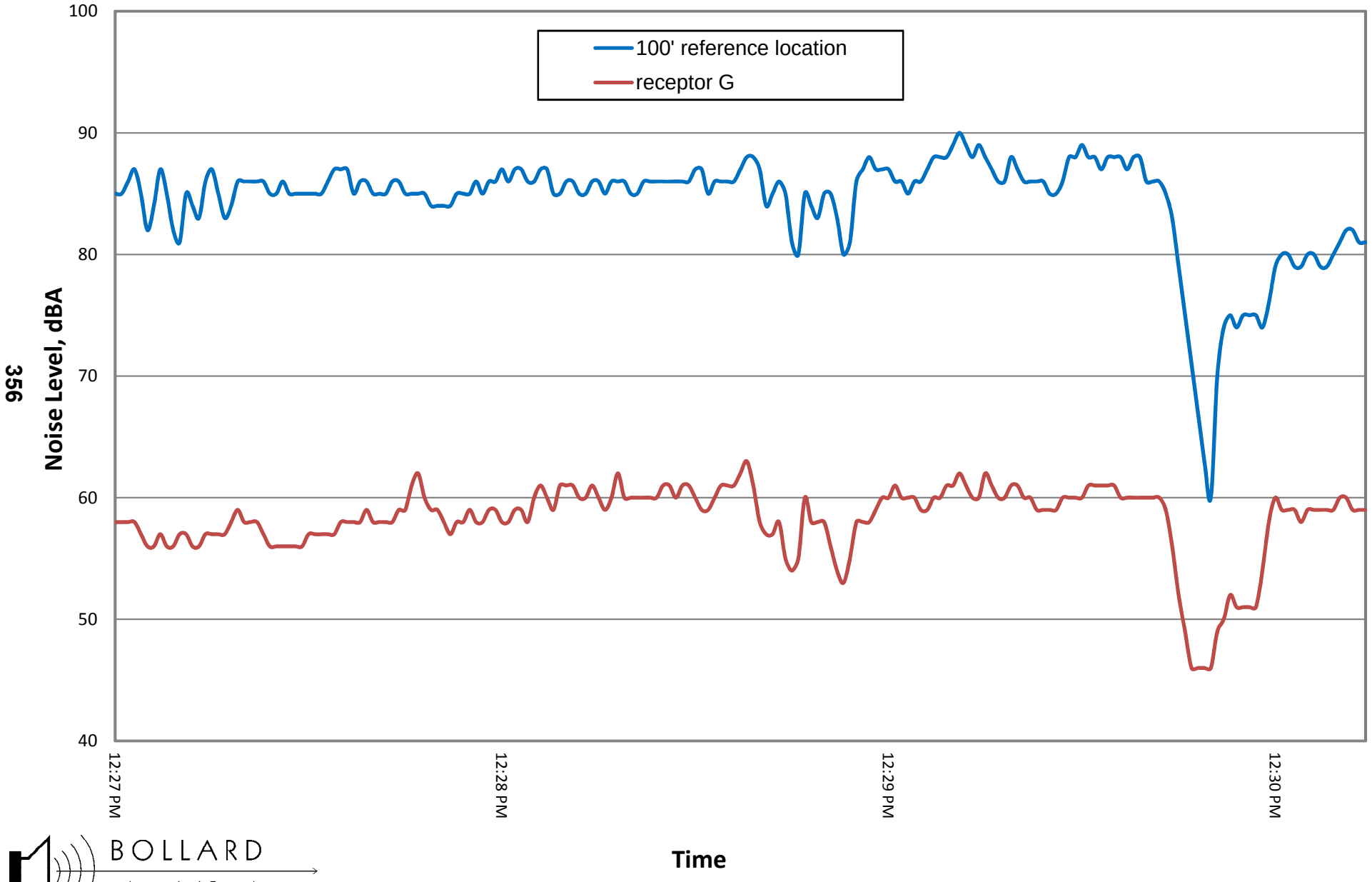
Appendix E-1
Measured Noise Levels Directly Behind Ampitheater Berm
The Fruit Yard Amphitehater Simulation - June 18, 2015



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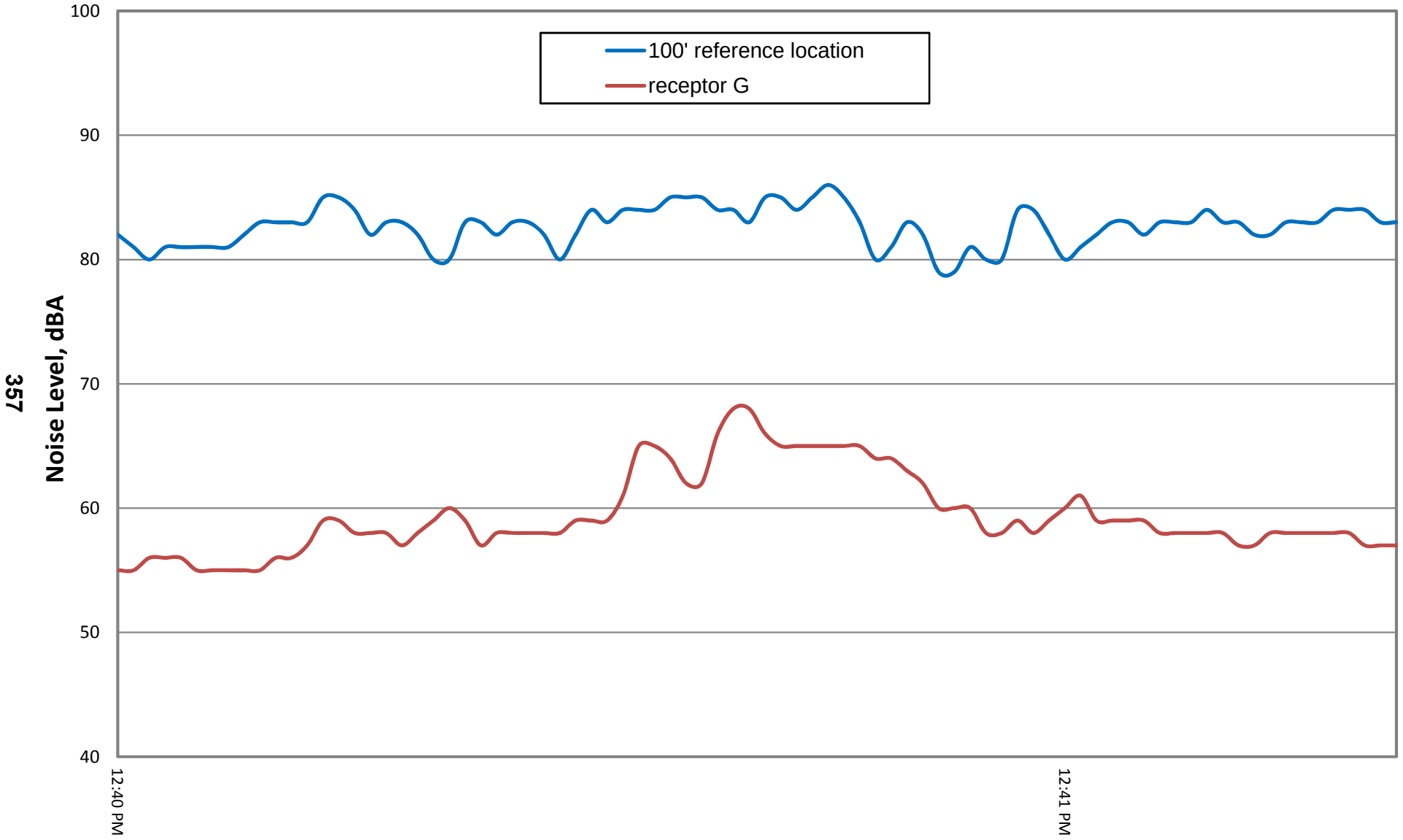
Appendix E-2
Measured Noise Levels at Receptor G (see Figure 1)
The Fruit Yard Event Ampitheater Simulation - June 18, 2015



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Appendix F-1

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2015-129 The Fruit Yard Events
Description: Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Yosemite Boulevard	West of Project Site	3,533	80		20	2	1	55	100	
2	Yosemite Boulevard	East of Project Site	5,247	80		20	2	1	55	100	
3	Albers Road	North of Project Site	6,300	80		20	2	1	55	100	
4	Geer Road	South of Project Site	6,887	80		20	2	1	55	100	

Appendix F-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2015-129 The Fruit Yard Events
Description: Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Yosemite Boulevard	West of Project Site	936	80		20	1	0	55	100	
2	Yosemite Boulevard	East of Project Site	351	80		20	1	0	55	100	
3	Albers Road	North of Project Site	468	80		20	1	0	55	100	
4	Geer Road	South of Project Site	585	80		20	1	0	55	100	