

# Appendix F Local Transportation Analysis

**To:** Matt Keasling  
Taylor & Wiley

**From:** Tyler Mickelson, EIT  
Chris Gregerson, P.E., T.E., PTOE, PTP

**Re:** *Jesuit High School Stadium Lighting – Local Transportation Analysis*  
Sacramento County, California

**Date:** March 10, 2023



In accordance with our Scope of Services, we have prepared this memorandum to document the findings of the local transportation analysis (LTA) to address localized transportation concerns for the proposed Jesuit High School Stadium Lighting (“Project” or “Proposed Project”) in Sacramento County, California. This LTA study specifically addresses the following:

- LOS and queuing at the study intersections
- LOS at the study roadway segment
- Impacts to bicycle facilities and pedestrian circulation
- Parking supply and demand
- General safety analysis focusing on the transportation infrastructure in the immediate vicinity of the proposed project

### Project Description

Kimley-Horn understands that the project applicant proposes to install stadium lighting at the existing Marauder Stadium at Jesuit High School (the “Project”) to enable a variety of athletic competitions and practices to be scheduled at night rather than being restricted to daytime/daylight hours. The proposed project is located along Fair Oaks Boulevard in the County of Sacramento at the Fair Oaks Boulevard intersection with Arden Hills Lane/O’Donnell Lane. The project location and study area are shown in **Exhibit 1**. Though the project allows several sports to shift times, given the number of attendees that are involved, the primary focus of this analysis is the shifting of football games currently held on Saturdays in the afternoon to Friday nights with the addition of the stadium lighting.

### Existing Conditions

The study area as defined in **Exhibit 1** shows the following study intersections:

1. Fair Oaks Boulevard @ O’Donnell Lane/Arden Hills Lane
2. American River Drive @ Project Southern Driveway

The study area as defined in **Exhibit 1** shows the following study roadway segment:

1. Fair Oaks Boulevard between Gordon Lane and O’Donnell Lane

Turning movement volumes were obtained from the analysis completed in 2015 for the first renovation of the stadium. These counts were assumed to be representative of current conditions based on the Sacramento County Traffic Count program<sup>1</sup> which shows that volumes along Fair Oaks Boulevard are currently equal or less than the volumes experienced in 2015. This is consistent with traffic patterns

<sup>1</sup> *Traffic Count Program*. Sacramento County. <https://sacdot.saccounty.net/Pages/TrafficCountProgram.aspx>. Accessed November 9, 2022.

observed county- and state-wide as a result of post-pandemic travel characteristics. Traffic count data sheets are included in **Attachment A. Exhibit 2** displays the turning movement volumes, lane geometry, and traffic control for Existing Conditions at the study intersection.

*Level of Service*

Based on volumes presented in **Exhibit 2**, intersection approach delays estimated using the Highway Capacity Manual (HCM) 6<sup>th</sup> Edition methodologies using the Synchro 11 software. **Table 1** below summarizes the delay and Level of Service (LOS) for the study intersections for Existing Conditions. Synchro analysis worksheets can be found in **Appendix B**. As shown in **Table 1**, the study intersections are expected to operate at LOS C or better during Existing Conditions.

**Table 1 – Existing Conditions Intersection Delay and Level of Service**

ID	Intersection	Control	Peak Hour	Existing	
				Delay (sec)	LOS
1	Fair Oaks Boulevard @ O'Donnell Lane/Arden Hills Lane	Signal	PM	21.2	C
2	American River Drive @ Project South Access	SSSC	PM	0.3 (0.4 WB)	A

Note: Side Street Stop Controlled (SSSC) reported as intersection delay followed by worst movement's delay in parentheses.

**Table 2** below summarizes the daily volume and LOS for the study roadway segment for Existing Conditions. As shown in **Table 2**, the study roadway segment is expected to operate at LOS D during Existing Conditions.

**Table 2 – Existing Conditions Roadway Segment Volume and Level of Service**

Segment Name	Facility Type	Lanes	LOS E Threshold	Daily Traffic Volume	Level of Service
Fair Oaks Boulevard between Gordon Lane and O'Donnell Lane	Arterial, moderate access control	4	36,000	31,810	D

**Trip Generation**

The number of trips anticipated to be generated by the proposed project was approximated using the football game attendances summarized in **Appendix C**. As shown in **Appendix C**, football games produce the largest number of trips to and from the school for stadium events. Additionally, the proposed Project would change both the day and times at which football games are played – shifting from Saturday mid-day to Friday evenings – whereas the Project would cause such minimal shifts in the times of Soccer and Lacrosse games that it can reasonably be assumed not to alter any traffic patterns associated with those sports. Therefore, the focus of the analysis was to determine the impact of shifting the times associated with football games under Existing Conditions (on a Saturday during daylight hours) to under Existing plus Proposed Project Conditions (on a Friday evening with stadium lights), i.e., the PM peak-hour of travel.

As this analysis was completed after football season had ended, the number of attendees at football games was not counted. In lieu of conducting new counts which would only include one or two games, this analysis utilizes the attendance numbers that were provided by Jesuit High School based on actual event attendance records, as shown in **Appendix C**. As shown, the average attendance for a regular season home football game is 1,200 attendees based on attendances tabulated during Saturday afternoon games. Therefore, to be conservative and isolate variables beyond this analysis' ability to account for, the number of attendees was assumed to increase from an average of 1,200 attendees for Saturday games to 1,500 attendees for Friday night games (the maximum number of attendees shown in **Appendix C**).

To determine the average vehicle occupancy for trips heading to football games a literature review of traffic studies related to high school football stadiums was completed. Previous traffic studies, including a Valley High Sports Complex (Garland Assoc. 2014) and St Vincent Sports Complex (Missiman Inc. 2013), observed average vehicle occupancy of 5.0 and 4.0, respectively, for their evening and weekend events. However, a study conducted for a high school stadium lighting project in Carmel, CA<sup>2</sup> observed an average occupancy of 3.24 persons per vehicles, Therefore, a 3.24 vehicle occupancy was conservatively assumed for this study and held constant across Existing and Existing plus Proposed Project scenarios.

As shown in **Table 3**, for the purposes of this analysis it is assumed that 1,200 total people attend football games for Existing Conditions and 1,500 for Existing plus Proposed Project Conditions. When accounting for an average occupancy of 3.24, this results in 371 vehicle trips traveling to the school for football games under Existing Conditions. Under Existing plus Project Conditions, it is assumed that approximately 10-percent of attendees - or approximately 150 people - are already on campus. This assumption is based on several factors including:

- Junior Varsity (JV) games occur immediately after school so there is no time for students to leave campus and return. The JV team includes 35 students and 4 coaches<sup>3</sup>.
- Jesuit High School will require students on the Varsity football team to remain on campus after school under Existing plus Proposed Project Conditions. The Varsity team includes 50 student athletes, 6 student managers, and 9 coaches<sup>4</sup>.
- The Freshman football team includes 83 students<sup>5</sup>. Though these players do not play games on the same day as the JV and Varsity teams, it is assumed a large portion will remain on campus for the games occurring on Friday nights.
- The staff and students that will attend the JV game and/or assist in parking and other volunteer activities related to the football games are assumed to remain on campus for the games occurring on Friday nights.

**Table 3 – Existing and Existing plus Proposed Project Vehicle Trips**

Metric	Existing Conditions	Project Conditions
Total Event Attendees (people) <sup>1</sup>	1,200	1,500
Average vehicle occupancy <sup>2</sup>	3.24	3.24
Stay After School Reduction (%) <sup>3</sup>	0	10
Total Vehicle Trips Per Event	371	417
<b>Net Change in Vehicle Trips</b>		<b>46</b>

1. Based on average attendance size estimate provided by Jesuit High School of 800-1,500 and include both players, coaching staff, and spectators.
2. Previous traffic studies including a Valley High Sports Complex (Garland Assoc. 2014) and St Vincent Sports Complex (Missiman Inc. 2013) observed average vehicle occupancy of 5.0 and 4.0 respectively for their evening and weekend events. A 3.24 vehicle occupancy was conservatively assumed for this study and held constant across existing and project scenarios.
3. This represents those who choose to stay after school to attend or prepare for the upcoming football game and may include student athletes, staff and coaches, student concessions workers, or other friends and spectators.

<sup>2</sup> Carmel High School Stadium Lighting VMT Assessment. Hexagon Transportation Consultants, Inc. August 11, 2022.

<sup>3</sup> Jesuit High School Sacramento Junior Varsity Football Team Roster. Accessed February 17, 2023.

<https://jesuit.gorepu.com/football/jv/roster>

<sup>4</sup> Jesuit High School Sacramento Varsity Football Team Roster. Accessed February 17, 2023.

<https://jesuit.gorepu.com/football/varsity/roster>

<sup>5</sup> Jesuit High School Sacramento Junior Varsity Football Team Roster. Accessed February 17, 2023.

<https://jesuit.gorepu.com/football/frosh/roster>

Therefore, when accounting for the 10-percent reduction in vehicle trips for those attendees remaining on campus under Existing plus Proposed Project Conditions, the total number of trips is estimated to be 417.

### Trip Distribution and Assignment

Trip distribution was based on the Replica big data platform. As a proxy for student and family starting locations, home location data aggregated at the block group level for Spring 2021, the latest data available, was used. The block group for Jesuit High School was selected as the “Work/School Location” for associated trips. The remainder of the Jesuit High School’s block group contains residential land uses only so it was determined that only the trips associated with the school would be used for the analysis. The trips that began at homes and traveled to the school’s block group were selected and a trip distribution was developed based on the total number of trips that originate at each block group that have trips traveling to Jesuit High School’s block group. The proposed project trip distribution percentages and trip assignment are illustrated in **Exhibit 3** and are as follows:

- 45 percent to/from Fair Oaks Boulevard, west of the Project
- 30 percent to/from Fair Oaks Boulevard, east of the Project
- 17 percent to/from American River Drive, west of the Project
- 8 percent to/from American River Drive, east of the Project

### Existing plus Project Conditions

**Exhibit 4** displays the intersection turning movement volumes at the study intersections for Existing plus Proposed Project Conditions.

#### *Level of Service*

Based on volumes presented in **Exhibit 4**, intersection approach delays estimated using the Highway Capacity Manual (HCM) 6<sup>th</sup> Edition methodologies using the Synchro 11 software. **Table 4** below summarizes the delay and LOS for the study intersections for Existing plus Proposed Project Conditions. Synchro analysis worksheets can be found in **Appendix D**. As shown in **Table 4**, the study intersections are expected to operate at LOS D or better for Existing plus Proposed Project conditions.

**Table 4 – Existing plus Proposed Project Conditions Intersection Delay and Level of Service**

ID	Intersection	Control	Peak Hour	Existing		Existing Plus Proposed Project	
				Delay (sec)	LOS	Delay (sec)	LOS
1	Fair Oaks Boulevard @ O'Donnell Lane/Arden Hills Lane	Signal	PM	21.2	C	37.9	D
2	American River Drive @ Project South Access	SSSC	PM	0.3 (0.4 WB)	A	0.8 (1.1 EB)	A

Note: Side Street Stop Controlled (SSSC) reported as intersection delay followed by worst movement's delay in parentheses.

**Table 5** below summarizes the daily volume and LOS for the study roadway segment for Existing plus Proposed Project Conditions. As shown in **Table 5**, the study roadway segment is expected to operate at LOS D during Existing plus Proposed Project Conditions.

**Table 5** – Existing plus Proposed Project Conditions Roadway Segment Volume and Level of Service

Segment Name	Facility Type	Lanes	LOS E Threshold	Daily Traffic Volume	Level of Service
Fair Oaks Boulevard between Gordon Lane and O'Donnell Lane	Arterial, moderate access control	4	36,000	32,220	D

*Queuing Analysis*

Queueing for select turning movements was analyzed for the purpose of providing recommendations on turning movement storage lengths. **Table 6** summarizes the expected 95<sup>th</sup> percentile queues for Project traffic turning movements. As shown in **Table 6**, while the Proposed Project causes the queue length to exceed the available storage for the northbound-left and westbound-left movements, the additional queue length is less than one vehicle (25 feet) beyond the available storage. In addition, additional storage is provided at both movements as the westbound approach includes a two-way left-turn lane prior to the left-turn pocket, and the northbound approach occurs onsite and includes additional beyond the marketed storage pocket. Therefore, no safety issues are expected due to the addition of the Project. Queuing worksheets are provided in **Appendix B** and **Appendix D**.

**Table 6** – Turning Lane 95<sup>th</sup> Percentile Queues

Intersection / Analysis Scenario	Movement	PM Peak-Hour	
		Available Storage (ft)	95 <sup>th</sup> % Queue (ft)
<b>#1, Fair Oaks Boulevard @ O'Donnell Lane/Arden Hills Lane</b>			
Existing Conditions	NBL	95	86
Existing Plus Project Conditions	NBL	95	<b>110</b>
		<b>WBL</b>	
Existing Conditions	WBL	240	87
Existing Plus Project Conditions	WBL	240	<b>249</b>
<b>#2, American River Drive @ Project South Access</b>			
Existing Conditions	EBL	-	0
Existing Plus Project Conditions	EBL	-	38
Source: <i>Highway Capacity Manual (HCM) 2016</i> methodology per Synchro® v11/Simtraffic.			
Notes: For approaches with dual left-turn lanes, the longest queue length is reported.			

*Parking Supply/Demand Analysis*

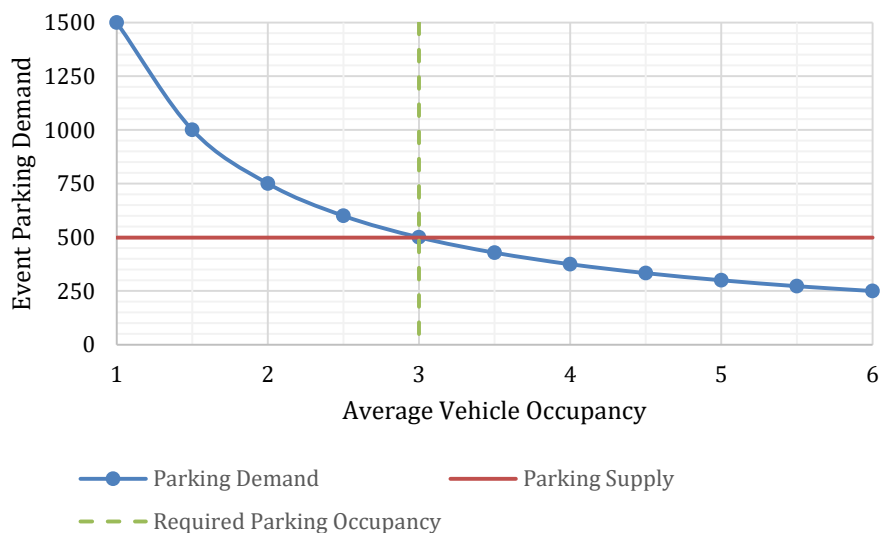
The existing Jesuit High School has 539 total parking stalls on campus with 499 of those stalls available to event attendees during a Friday evening football game. The remaining 40 spaces are dedicated strictly for campus residents and maintenance equipment. The estimated size of a Jesuit High School home football game is 1,200 attendees for Existing Conditions and 1,500 attendees for Existing plus Proposed Project Conditions. As noted in the Trip Generation section, previous traffic studies observed an average vehicle occupancy of 5.0, 4.0, and 3.24 for their evening and weekend events. Conservatively assuming a 3.24 vehicle occupancy, a Jesuit High School home football game would generate a peak parking demand of 371 vehicles for Existing Conditions and 463 vehicles for Existing plus Proposed Project Conditions. As summarized in **Table 7**, this would result in a surplus of 128 parking stalls during a football game for Existing Conditions and a surplus of 36 parking stalls for Existing plus Proposed Project Conditions.

**Table 7** – Estimated Football Event Parking Demand

Event Parking Demand	Existing	Existing plus Proposed Project
Event Attendees	1,200	1,500
Average Vehicle Occupancy	3.24	3.24
Expected Parking Demand	371	463
Available Event Parking Stalls	499	499
Surplus Parking	128	36

While **Table 7** shows a surplus of 36 parking stalls for Existing plus Proposed Project Conditions, it is understood that many of these additional parking stalls could also be used by faculty and staff supporting school functions not related to football games. In addition, the average occupancy of vehicles attending a Jesuit Football game has not yet been measured and could fall below the assumed 3.24 occupancy. Therefore, an analysis was performed to identify the average occupancy that would trigger a parking deficiency, which is provided **Figure 1**. As shown in **Figure 1**, an average event vehicle occupancy of 3.0 or higher is needed in order to not exceed the parking supply on campus assuming 1,500 attendees. While the County has been provided feedback from the public that vehicles park offsite during football games, it is likely that this is due to inefficiencies in managing the parking onsite rather than a deficient number of parking stalls. To put it another way, parking that occurs on surrounding streets is less likely a function of inadequate onsite parking, and more likely the result of onsite parking not being managed efficiently leading to delays which cause individuals to seek out more convenient and quicker offsite parking locations. This is a very common occurrence with event parking.

**Figure 1** – Event Parking Demand as a function of Average Vehicle Occupancy



As shown in **Appendix C**, in the event that the Varsity football team makes the playoffs, the number of attendees is likely to exceed 1,500 and could reach the approximately 3,000-person stadium capacity. However, the number of home playoff games would not exceed two games per season and the number of attendees for a playoff game would likely be equal under Existing Conditions compared to Existing plus Proposed Project Conditions since capacity is already being reached at these games. Therefore, it is unlikely that there would be a higher parking demand under Existing plus Proposed Project Conditions

compared to Existing Conditions due to the number of attendees and players that would already be on campus as noted previously.

## *Bicycle and Pedestrian Safety*

There are currently Class II bike lanes along both sides of Fair Oaks Boulevard and American River Drive in the immediate vicinity of the Project. There are currently sidewalks present along both sides of Fair Oaks Boulevard and American River Drive within the project vicinity as well. At the Fair Oaks Boulevard intersection with Arden Hills Lane/ O'Donnell Lane (Intersection #1), there are marked crosswalks at all four approaches with pedestrian push buttons and walk/don't walk indicators. The addition of the proposed Project is not expected to impact any of the existing bicycle and pedestrian infrastructure.

The American River Drive roadway segment between the Project South Access and Tennyson Way was reviewed to determine whether pedestrian safety improvements should be considered due to observed off-site parking. After a review of the existing conditions along the roadway, several observations were made:

- There is over 700 feet of sight distance for vehicles turning left into the project from the eastbound approach and no sight distance deficiencies are expected
- If an attendee parks offsite along Tennyson Way or Marlborough Way, there is approximately 330 feet of sight distance looking right and 270 feet of sight distance looking left
- The closest crossing is at the American River Drive intersection with Jacob Lane, an all-way stop controlled intersection
- No mid-block crossing facilities exist in the vicinity of the project

In the vicinity of the Project, American River Drive has one lane in either direction with a two-way, left-turn lane in the median, a posted speed limit of 35 mph, and an average daily volume less than 9,000 vehicles<sup>6</sup>.

Based on the FHWA pedestrian crossing guidance<sup>7</sup>, the pedestrian countermeasures that should “always be considered” include:

- High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs
- Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line

Other countermeasures that are candidate treatments at the crossing include:

- Curb extension
- Pedestrian refuge island
- Rectangular Rapid-Flashing Beacon (RRFB)
- Pedestrian Hybrid Beacon (PHB)

Since football games occur only about eight times a year on average (both regular season and playoffs) and other sporting events do not generate crowds of sufficient magnitude to result in offsite parking with midblock crossings at this location, it is likely that these additional countermeasures are unnecessary. Therefore, it is only recommended that the two countermeasures that should “always be considered” be considered to enhance pedestrian safety at this location.

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<sup>6</sup> *Traffic Count Program*. Sacramento County. <https://sacdot.saccounty.net/Pages/TrafficCountProgram.aspx>. Accessed November 9, 2022.

<sup>7</sup> *Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations*. U.S. Department of Transportation Federal Highway Administration. Updated July 2018.



## Findings

Based on the results of this analysis, the following findings are made:

- The addition of the Proposed Project is not expected to result in a Level of Service (LOS) worse than LOS D at either of the study intersections.
- The addition of the Proposed Project is not expected to result in a LOS worse than LOS D at the study roadway segment.
- As shown in **Table 6**, while the proposed project causes the queue length to exceed the available painted storage for the northbound-left and westbound-left movements, however the additional queue length is less than one vehicle (25 feet) beyond the available storage. In addition, additional storage is provided at both movements as the westbound approach includes a two-way left-turn lane prior to the left-turn pocket, and the northbound approach occurs onsite and includes additional beyond the marketed storage pocket. Therefore, no safety issues are expected due to the addition of the Project.
- As summarized in **Table 7**, assuming 1,500 attendees and an average occupancy of 3.24, a surplus of 36 parking stalls is expected during a football game.
- As shown in **Figure 1**, an average event vehicle occupancy of 3.0 or higher is needed in order to not exceed the parking supply on campus assuming 1,500 attendees. While the County has been provided feedback from the public that vehicles park offsite during football games, it is likely that this is due to inefficiencies in managing the parking onsite rather than a deficient number of parking stalls.
- As shown in **Appendix C**, in the event that the Varsity football team makes the playoffs, the number of attendees is likely to exceed 1,500. However, the number of home playoff games would not exceed two games per season and the number of attendees for a playoff game would most likely be equal under Existing Conditions compared to Existing plus Proposed Project Conditions. Therefore, it is unlikely that there would be a higher parking demand under Existing plus Proposed Project Conditions compared to Existing Conditions due to the number of attendees and players that would already be on campus.
- It is recommended that the two countermeasures that should “always be considered” be considered to enhance pedestrian safety at the American River Drive intersection with Tennyson Way. These countermeasures include high-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs, as well as Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line.

## Exhibits:

**Exhibit 1** – Project Location and Study Area

**Exhibit 2** – Existing Volumes, Lane Geometry, and Traffic Control

**Exhibit 3** – Project Trip Distribution and Assignment

**Exhibit 4** – Existing plus Proposed Project Volumes

## Attachments:

**Appendix A** – Intersection Turning Movement Volumes

**Appendix B** – Existing Conditions LOS and Queuing Worksheets

**Appendix C** – Jesuit High School Sacramento Anticipated Event Lighting

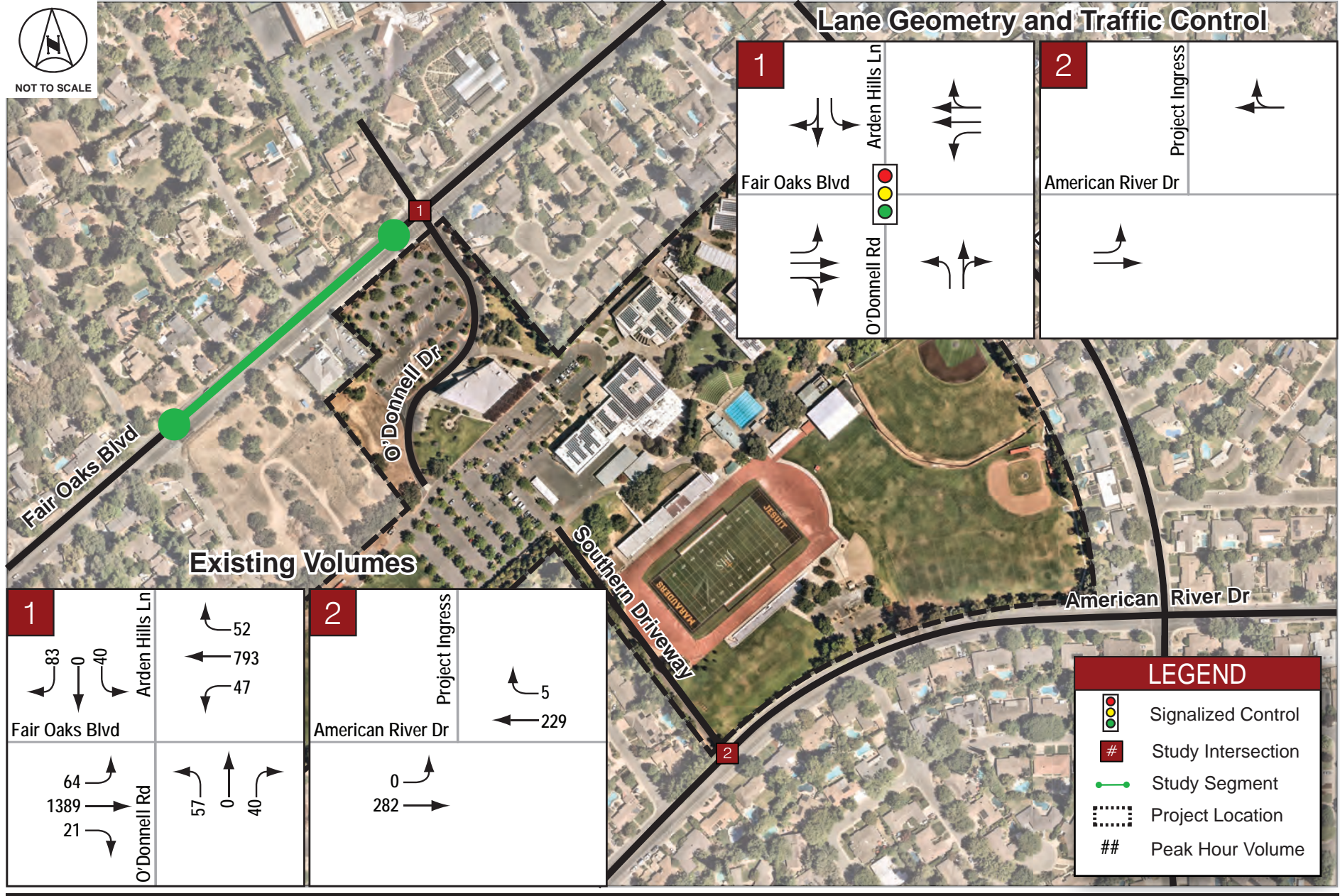
**Appendix D** – Existing Plus Project Conditions LOS and Queuing Worksheets

Sacramento County, Jesuit High School Stadium Lighting - Local Transportation Analysis

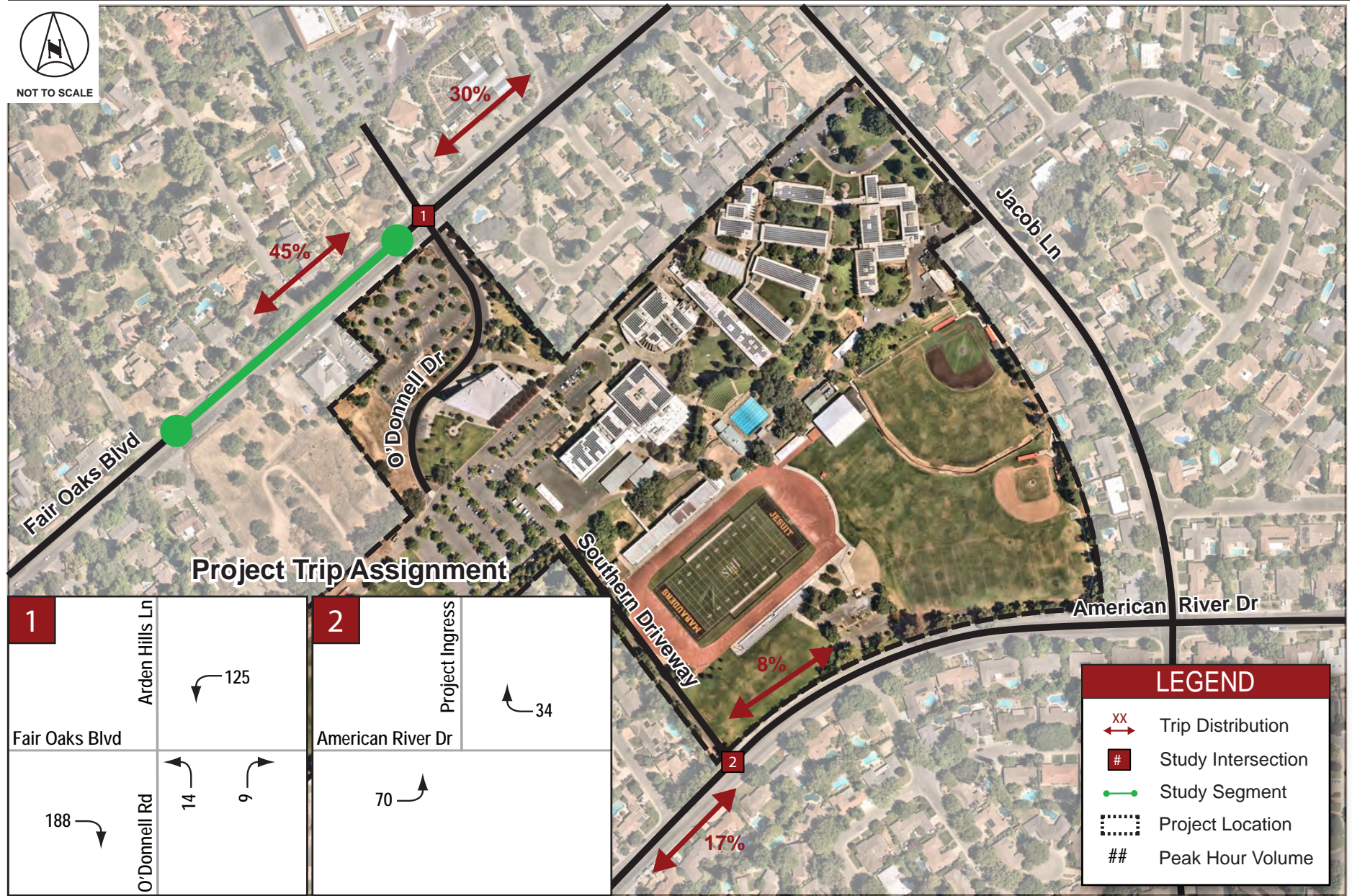


**LEGEND**

- # Study Intersection
- Study Segment
- - - Project Location



Sacramento County, Jesuit High School Stadium Lighting - Local Transportation Analysis



Sacramento County, Jesuit High School Stadium Lighting - Local Transportation Analysis

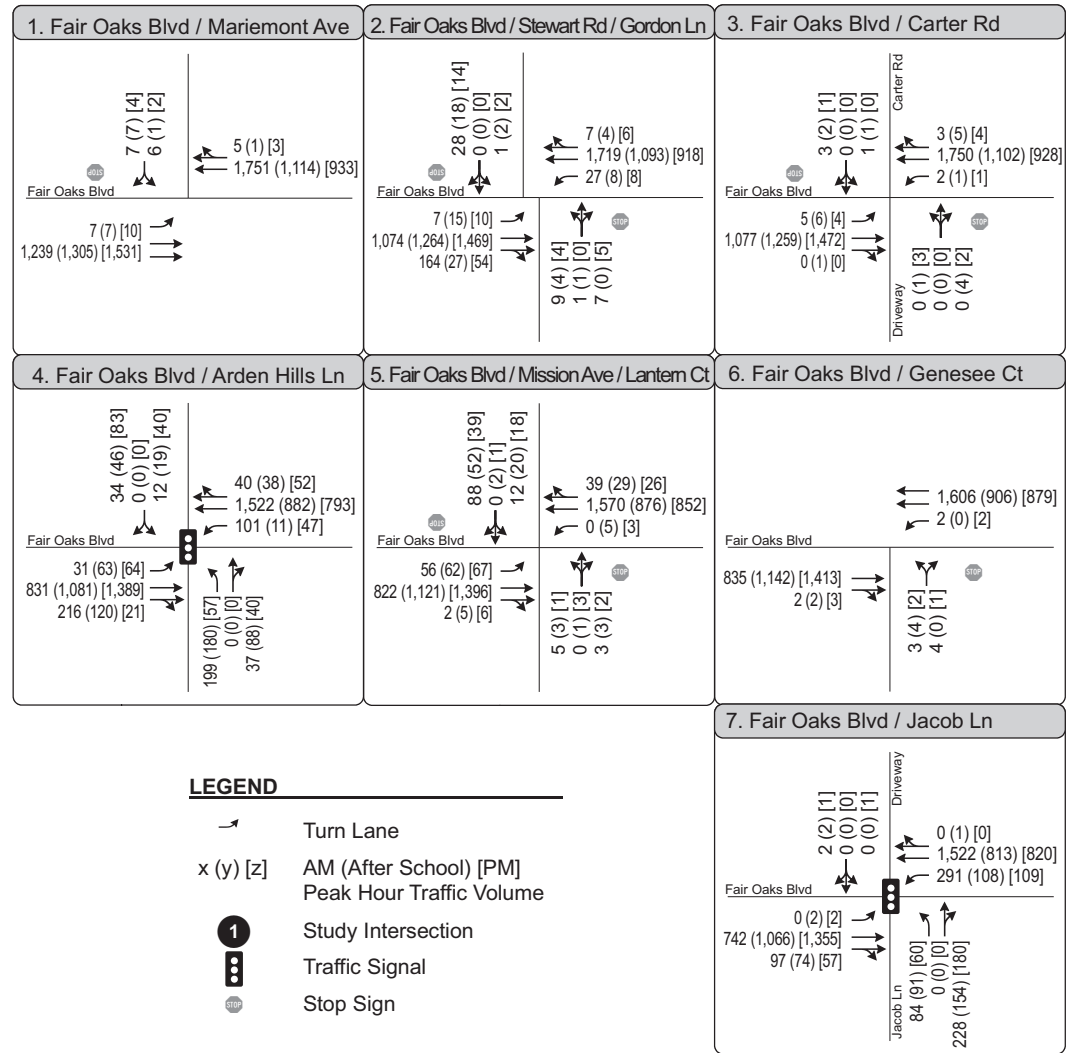


NOT TO SCALE



Appendix A

*Intersection Turning Movement Volumes*



**LEGEND**

- Turn Lane
- $x (y) [z]$  AM (After School) [PM] Peak Hour Traffic Volume
- Study Intersection
- Traffic Signal
- Stop Sign

Appendix B

*Existing Conditions LOS and Queuing Worksheets*



## SimTraffic Performance Report Existing Conditions

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### 1: O'Donnell Rd/Arden Hills Ln & Fair Oaks Blvd Performance by approach

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Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.3	0.3	2.4	1.5	0.5
Total Del/Veh (s)	22.4	18.0	33.4	20.6	21.2

### 2: American River Dr & Project South Access Performance by approach

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Approach	EB	WB	All
Denied Del/Veh (s)	0.2	0.2	0.2
Total Del/Veh (s)	0.2	0.4	0.3

### Total Network Performance

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Denied Del/Veh (s)	0.4
Total Del/Veh (s)	20.3

Queuing and Blocking Report  
Existing Conditions

Intersection: 1: O'Donnell Rd/Arden Hills Ln & Fair Oaks Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	282	418	395	104	273	263	98	75	78	95
Average Queue (ft)	67	246	238	40	157	129	46	25	34	34
95th Queue (ft)	174	368	359	87	236	220	86	61	72	70
Link Distance (ft)		1644	1644		1056	1056		581		533
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	183			240			95		64	
Storage Blk Time (%)		15			0		2		4	1
Queuing Penalty (veh)		10			0		1		4	0

Intersection: 2: American River Dr & Project South Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 15

Appendix C

*Jesuit High School Sacramento Anticipated Event Lighting*

## JESUIT HIGH SCHOOL SACRAMENTO ANTICIPATED EVENT LIGHTING

Event	Current Time	Proposed Time	Days	Months	Light Level (approx)	Size Estimate	Amplified Sound	Marching Band
Games - Lacrosse	3-6 p.m.	5-9 p.m.	TBD	Mar-Apr	100%	100-300	Yes	No
Games - Football	Sat. 10 - 4 p.m.	5-10 p.m.	F	Aug-Oct	100%	800-1500	Yes	Yes
Games - Soccer	3-6 p.m.	3-7 p.m.	Tu, Th	Dec-Feb	80%	100-300	No	No
Practice - Football	3:30-6:30	4-7 p.m.	M-Th	Aug-Nov	50%	N/A	No	No
Practice - Soccer	3:30-6:00	4-7 p.m.	M-F	Nov - Feb	50%	N/A	No	No
Practice - Track	3:30-5:00	4-7 p.m.	M-F	Feb-Apr	50%	N/A	No	No
Practice Lacrosse	3:30-6:30	4-8 p.m.	M-F	Feb-Apr	50%	N/A	No	No
Track & Field Special Event	3:00-6:00	3-8 p.m.	Rarely	Mar-Apr	80%	500-900	Yes	No
Soccer Playoffs	4:00-6:00	5-7 p.m.	TBD	Feb	80%	500-900	Yes	No
Lacrosse Playoffs	4:00-6:00	7-9 p.m.	TBD	May	100%	200-500	Yes	No
Football Playoffs	1-4 p.m.	7-10 p.m.	F	Nov	100%	1500-3000	Yes	Yes

Historical Average number of home games regular season	
Football	5
Lacrosse	10
Soccer	14

Historical Average number of home playoff games	
Football	2
Lacrosse	1
Soccer	4
Track & Field Special Event	1

Jesuit High School October 10, 2022

Appendix D

*Existing Plus Project Conditions LOS and Queuing Worksheets*

SimTraffic Performance Report  
Existing Plus Project

1: O'Donnell Rd/Arden Hills Ln & Fair Oaks Blvd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.2	0.2	0.1	0.0	0.5
Denied Del/Veh (s)	0.4	0.7	2.5	1.4	0.6
Total Delay (hr)	21.7	7.2	1.6	0.8	31.3
Total Del/Veh (s)	46.2	25.3	44.3	22.2	37.9
Stop Delay (hr)	13.6	5.6	1.5	0.8	21.6
Stop Del/Veh (s)	29.1	19.9	42.7	21.3	26.1

2: American River Dr & Project South Access Performance by approach

Approach	EB	WB	All
Denied Delay (hr)	0.1	0.0	0.1
Denied Del/Veh (s)	1.0	0.2	0.7
Total Delay (hr)	0.1	0.0	0.1
Total Del/Veh (s)	1.1	0.5	0.8
Stop Delay (hr)	0.0	0.0	0.0
Stop Del/Veh (s)	0.1	0.0	0.1

Total Network Performance

Denied Delay (hr)	0.6
Denied Del/Veh (s)	0.6
Total Delay (hr)	34.0
Total Del/Veh (s)	33.7
Stop Delay (hr)	21.7
Stop Del/Veh (s)	21.5

## Queuing and Blocking Report Existing Plus Project

### Intersection: 1: O'Donnell Rd/Arden Hills Ln & Fair Oaks Blvd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	283	807	800	281	330	291	112	122	79	91
Average Queue (ft)	99	440	445	147	161	135	63	35	35	34
95th Queue (ft)	260	775	770	249	271	234	110	94	69	66
Link Distance (ft)		1644	1644		1056	1056		581		533
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	183			240			95		64	
Storage Blk Time (%)	0	34		3	1		9	0	4	1
Queuing Penalty (veh)	0	22		12	1		5	0	3	0

### Intersection: 2: American River Dr & Project South Access

Movement	EB
Directions Served	L
Maximum Queue (ft)	42
Average Queue (ft)	12
95th Queue (ft)	38
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	100
Storage Blk Time (%)	
Queuing Penalty (veh)	

### Network Summary

Network wide Queuing Penalty: 43