Appendix F:
Traffic Impact Analysis

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The Vines at Oakley

Traffic Impact Analysis

Oakley, CA

Administrative Draft Report

May 2019

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1. INTRODUCTION

This report describes results of the Transportation Impact Assessment (TIA) for a proposed residential development (The Vines) on Oakley Road in the City of Oakley in Contra Costa County.

Study Purpose

The purpose of the TIA is to evaluate potential transportation impacts that could result from the proposed project, identify short- and long-term multi-modal circulation needs where relevant to site access and/or project impacts, identify potential mitigation measures for any significant transportation impacts, and evaluate the adequacy of the proposed site plan for accommodating multi-modal site access and meeting City of Oakley Guidelines.

Report Overview

This report is organized into the following chapters:

- **Chapter 1 Introduction** describes the study methodology, impact significance criteria and regulatory setting.
- **Chapter 2 Existing Conditions** describes existing transportation conditions in the study area.
- **Chapter 3 Project Conditions** provides a forecast of traffic volumes that would be generated by the proposed project, and assesses the significance of impacts to the transportation network resulting from the project under Existing plus Project conditions. In addition, Chapter 3 provides general recommendations concerning site ingress and egress provisions.
- **Chapter 4 Cumulative Impacts** provides an assessment of potential cumulative traffic impacts, based on forecasted traffic growth under Background Conditions (without the proposed project) and Background plus Project Conditions (with the addition of project-generated traffic).
- **Chapter 5 Site Analysis & Recommendations** provides site distance analysis, site access and on-site circulation assessment and recommendations.

Project Overview

The location of the project site is shown in **Figure 1**. The project site is located at 2371 Oakley Road in northwest Oakley, on the south side of Oakley Road between Live Oak Avenue and Beldin Lane. The project would provide 63 residential lots on a 9.37-acre site currently used for agricultural uses. The proposed site plan is illustrated in **Figure 2**. Direct access to the site would be provided for all travel modes to/from Oakley Road. Bicycle, pedestrian and emergency vehicle (EV) access would also be provided via Thomas Drive. Thomas Drive is proposed to have removable bollards. Access from Oakley Road would be via a gated, bidirectional access road. Sidewalks would be provided on both sides of each internal street, and a sidewalk would be provided on the project frontage along Oakley Road.

Although not shown on the project site plan: an existing raised median on Oakley Road would need to be modified to accommodate left-turns inbound and outbound.

Figure 1: Vicinity Map

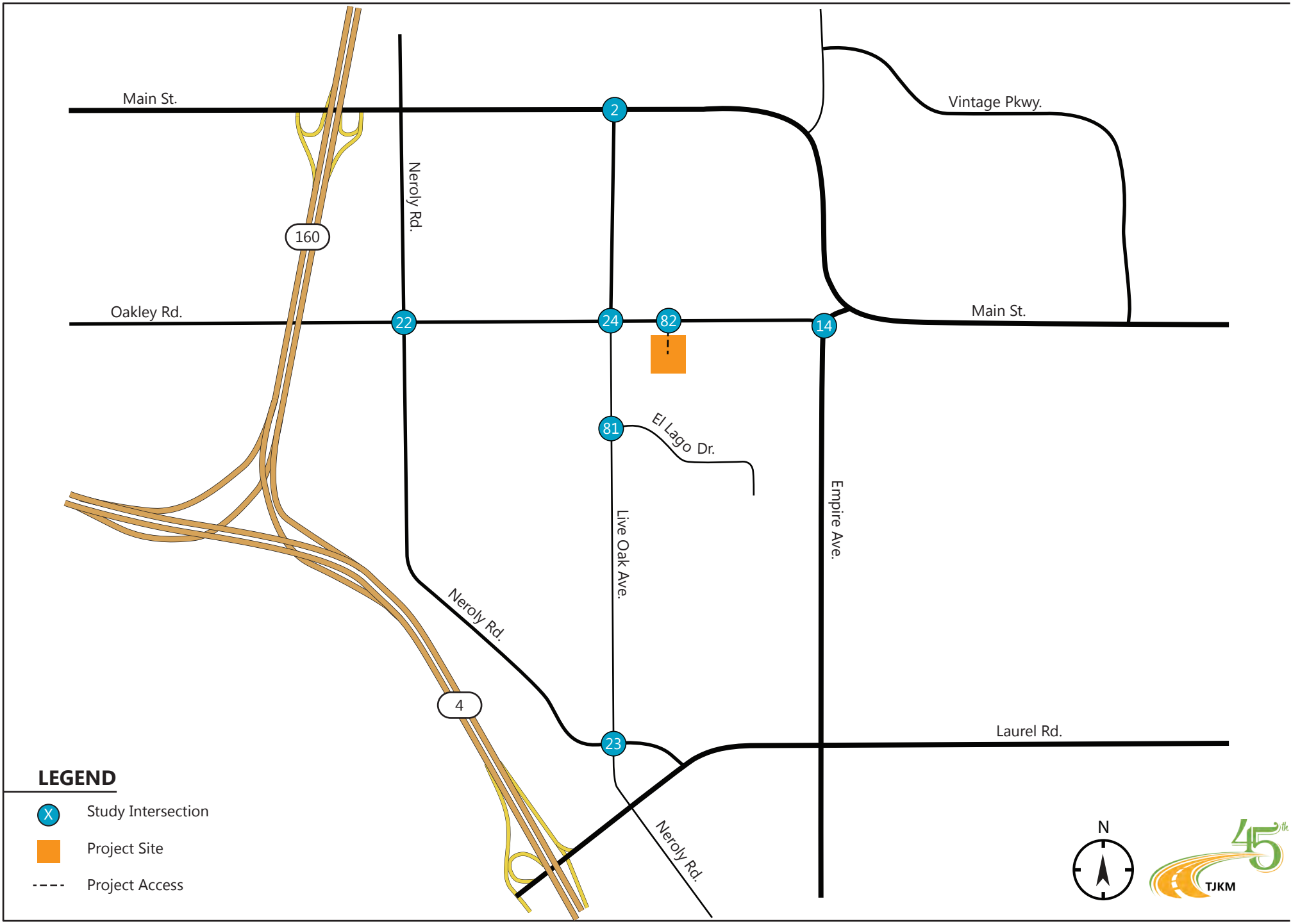

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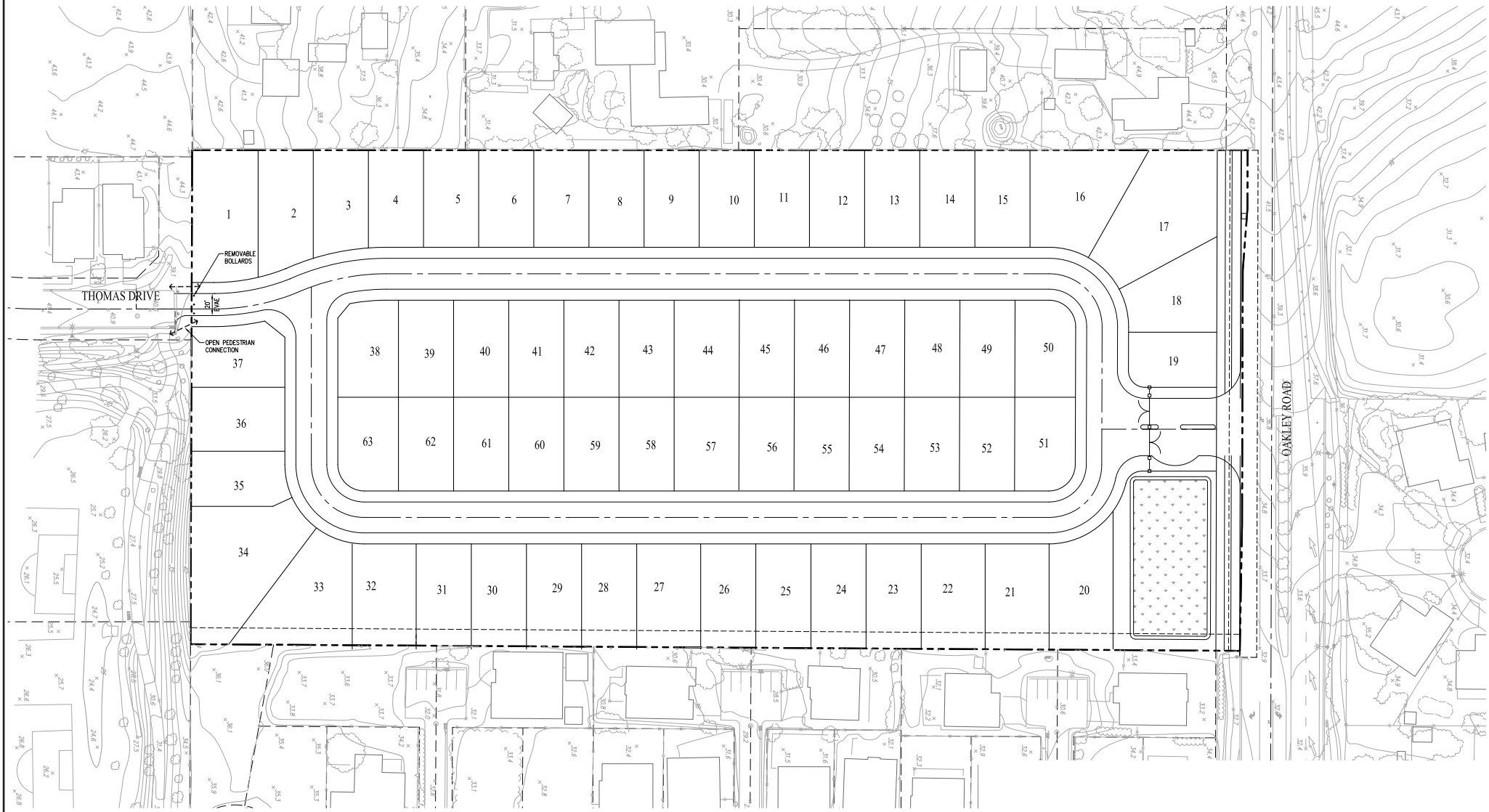
Figure 2: Site Plan



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Analysis Scenarios and Study Area

Potential transportation impacts were assessed based on the following scenarios addressed in this study:

- ***Existing Conditions*** – This scenario describes existing transportation conditions in the study area based on the current roadway and sidewalk network characteristics, transit service, field observations and intersection counts conducted on April 4, 2019.
- ***Existing plus Project Conditions*** – This scenario is similar to Existing Conditions but with the net new trips that would generated by the project.
- ***Background Conditions*** –This scenario describes the projected peak hour traffic operations based on the net change to travel patterns anticipated from approved (but not yet constructed) or fully/partially occupied developments in the City at the time of the Existing Conditions assessment. This includes additional trips that would be generated if the proposed developments were to operate at full occupancy. The conditions in this scenario were developed using the Vistro Model.
- ***Background plus Project Conditions*** – This scenario is similar to Background Conditions but with the inclusion of vehicle trips that would be generated by the project. The Background plus Project Conditions analysis provides an assessment of project impacts that takes into account other projects that would be completed within a similar timeframe as the project.

Study Intersections

TJKM evaluated transportation conditions at six existing study intersections, and one proposed new intersection that would serve the project site. Five intersections were evaluated based on conditions provided from the citywide model, and the remaining two study intersections were evaluated during a.m. (7:00 a.m.-9:00 a.m.) and p.m. (4:00 p.m.-6:00 p.m.) peak periods for a typical weekday with clear weather. The following study intersections were selected in consultation with City staff based on the anticipated trip generation and travel pattern for project trips:

- Live Oak Avenue/Main Street
- Empire Avenue/Oakley Road
- Neroly Road/Live Oak Avenue
- Neroly Road/Oakley Road
- Live Oak Avenue/Oakley Road
- Live Oak Avenue/El Lago Drive*
- Proposed Project Access/Oakley Road*

* Indicates new count location (not in citywide model)

Level of Service Methodology

Level of Service (LOS) is a qualitative measure that describes operational conditions as they relate to the traffic stream and perceptions by motorists and passengers. The LOS generally describes these conditions in terms of speed and travel time, delays, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. The operational levels of service are given letter designations from A to F, with A representing the best operating conditions (free-flow with little or no delay) and F representing the worst conditions (severely congested flow with high delays). Intersections are generally the capacity-controlling locations, with respect to traffic operations, on arterial and collector streets.

Signalized Intersections

The study intersections under traffic signal control were analyzed using Highway Capacity Manual 6th Edition (HCM 6) Operations Methodology for Signalized Intersections (Transportation Research Board, 2016), as described in Chapter 19. This methodology determines LOS based on overall average control delay per vehicle for the intersection during peak hour operating conditions. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for signalized intersections was calculated using Vistro analysis software version 7.00-04 and correlated to a LOS designation. **Table 1** presents the HCM 6 delay and LOS definitions.

Unsignalized Intersections

Stop-Control study intersections were analyzed using HCM 6 Operations Methodology for Unsignalized Intersections, as described in Chapters 20 and 21. LOS ratings for Stop-Control intersections are based on average control delay expressed in seconds per vehicle. At the side street of one-way stop-controlled intersections or two-way stop sign intersections, the control delay is calculated for each movement, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. The weighted average delay for the entire intersections is presented for all-way stop-controlled (AWSC) intersections, while the worst-movement delay is presented for side-street stop-controlled intersections. The average control delay for unsignalized intersections was calculated using Vistro analysis software version (7.00-04) and correlated to a LOS designation. At an unsignalized intersection, most of the major street traffic is not delayed, and by definition has acceptable conditions. The major street left-turn movements and minor street movements are all susceptible to delay of varying degrees. Generally, higher major street traffic volumes are associated with higher delay for minor movements. HCM 6 definitions for delay and LOS at unsignalized intersections are presented in **Table 1**. The analysis methodology described above was used to measure a.m. and p.m. peak hour traffic operations for all study intersections.

Table 1 describes the LOS thresholds from HCM 6 for intersections. The intersection LOS thresholds differ between signalized and unsignalized intersections.

Table 1: Level of Service Thresholds Based on Intersection Control Delay

Level of Service	Description	Signalized Intersection Delay (D) (sec)	Unsignalized Intersection Delay (D) (sec)
A	Very low control delay, up to 10 seconds per vehicle. Progression is extremely favorable, and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.	$0 \leq D \leq 10$	$0 \leq D \leq 10$
B	Control delay greater than 10 and up to 20 seconds per vehicle. There is good progression or short cycle lengths or both. More vehicles stop causing higher levels of delay.	$10 < D \leq 20$	$10 < D \leq 15$
C	Control delay greater than 20 and up to 35 seconds per vehicle. Fair progression or longer cycle lengths, or both cause higher delays. Individual cycle failures may begin to appear. Cycle failure occurs when a given green phase does not serve queued vehicles and overflow occurs. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.	$20 < D \leq 35$	$15 < D \leq 25$
D	Control delay greater than 35 and up to 55 seconds per vehicle. The influence of congestions becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volumes. Many vehicles stop, the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	$35 < D \leq 55$	$25 < D \leq 35$
E	Control delay greater than 55 and up to 80 seconds per vehicle. The limit of acceptable delay. High delays usually indicate poor progression, long cycle lengths, and high volumes. Individual cycle failures are frequent.	$55 < D \leq 80$	$35 < D \leq 50$
F	Control delay in excess of 80 seconds per vehicle. Unacceptable to most drivers. Oversaturation, arrival flow rates exceed the capacity of the intersection. Many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to higher delay.	$80 < D$	$50 < D$

Source: HCM 6th Edition

Regulatory Setting

All Contra Costa jurisdictions, including the City of Oakley, participate in the *Measure J – Growth Management Program*. The overall goal of this program is to achieve a cooperative process for Growth Management on a countywide basis, while maintaining local authority over land use decisions and the establishment of performance standards. Using a formula based on road miles and population, Contra Costa County Transportation Authority (CCTA) allocates 18 percent of sales tax revenues to local jurisdictions that comply with Growth Management requirements. Oakley participates in the Measure C program as a member of the TRANSPLAN subregional transportation planning committee, which consists of the Cities of Antioch, Oakley, and Pittsburg, and Contra Costa County.

The Contra Costa Transportation Authority (CCTA) serves as the Congestion Management Agency (CMA) for Contra Costa County. CCTA adopted the most recent Congestion Management Program (CMP) in 2015. The 2015 CMP requires an analysis of any project that is expected to generate more than 100 peak hour vehicle trips.

Significant Impact/Level of Service Standards

Per the City of Oakley General Plan, LOS D or a volume-to-capacity (V/C) ratio of 0.90 are the thresholds of acceptability for signalized intersections. Any signalized intersection operating worse than LOS D would be considered inconsistent with this standard. For this study, the study intersections were analyzed using HCM 6th Edition Methodology as per the City's guidance. Average control delay is reported in seconds per vehicle for signalized and all-way-stop-control intersections and critical delay for minor approaches is reported for two-way-stop-control intersections. Signalized intersections or unsignalized intersection operating worse than LOS D are considered inconsistent with the City's standard.

Appendix G of the State CEQA Guidelines includes significance criteria for potential transportation impacts. These include whether a project would result in one of the following:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, bicycle and pedestrian paths, and mass transit.
- Conflict with an applicable congestion management program, including, but not limited to LOS standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

2. EXISTING CONDITIONS

Roadway Network

Key roadways and freeways in the vicinity are discussed below.

State Route (SR) 4 – SR 4 is a major east-west freeway that connects Oakley with adjacent cities and regional freeways. SR 4 serves as a major route connecting Oakley to the greater Bay Area and providing connection between Contra Costa County and San Joaquin County. SR 4 typically has two to three travel lanes in each direction with the posted speed limit of 65 miles per hour (mph).

State Route (SR) 160 – SR 160 is a north-south freeway that connects SR 4 with Main Street and other destinations. This roadway serves as a major route connecting Oakley with Sacramento County to the north, and with SR 4 to the west. SR 160 typically has two lanes in each direction, narrowing to one lane per direction north of the Antioch Bridge toll plaza.

Oakley Road – Oakley Road is a two-lane, east-west minor arterial that connects the City of Oakley and the City of Antioch. It extends west of SR 160 in Antioch to its eastern terminus at Empire Avenue. Oakley Road provides access to residential, agricultural and commercial uses on both sides of the roadway. Posted speed limits on Oakley Road range from 30 mph to 45 mph, with a posted speed limit of 35 mph in the vicinity of the project.

Main Street – Main Street is a two to four lane major arterial roadway. Main Street is currently the major north-south transportation corridor in the City of Oakley. Mixed residential, commercial, and agricultural uses characterize the lands along both sides of Main Street between Rose Avenue and Laurel Avenue. Maximum speeds posted on Main Street are 35 miles per hour (mph) west of Rose Avenue, 45 mph between Rose Avenue and Bernard Road, and 40 mph south of Bernard Road.

Empire Avenue – Empire Avenue is a four-lane, north-south divided arterial roadway. Empire Avenue extends north of Oakley Street and travels beyond Shady Willow Lane to the south. It provides access to local residential and regional commercial areas. The posted speed limit is 40 mph in the southbound direction and 45 mph in the northbound direction.

Neroly/Bridgehead Road – Neroly Road/Bridgehead Road is a two-lane, north-south roadway connecting Oakley and Brentwood. This roadway provides local access to residential and commercial developments.

Live Oak Avenue – Live Oak Avenue is a two-lane roadway extending from Main Street to the north to Neroly Road to the south. In the project vicinity, Live Oak Avenue serves as a two-lane, bidirectional connection between Oakley Road and Main Street. The roadway has posted speed of 40 mph in the project area and is likely to serve vehicle and pedestrian traffic between the project site and Orchard Park School to the north. An extension of Live Oak Avenue, as a major arterial, is anticipated to be constructed by 2030 to proposed industrial areas in the north with grade-separated crossings at the railroad tracks.

El Lago Drive – El Lago Drive, is a two lane, east-west undivided roadway. El Lago Drive extends from Live Oak Avenue in the west and terminates at El Monte Drive in the east. The posted speed limit on El Lago Drive is 25 mph.

Pedestrian Facilities

Walkability is defined as the ability to travel easily and safely between various origins and destinations without having to rely on automobiles or other motorized travel. The ideal "walkable" community includes wide sidewalks, a mix of land uses providing residential, employment, and shopping opportunities, minimal conflict points with vehicle traffic, and access to transit facilities and services.

Pedestrian facilities are comprised of crosswalks, sidewalks, pedestrian signals, and off-street paths, which provide safe and convenient routes for pedestrians to access destinations such as institutions, businesses, public transportation, and recreation facilities.

Near the project site: intermittent sidewalks are provided on both sides of Oakley Road, with buffered sidewalks provided on the north side of Oakley Road connecting to Live Oak Avenue. Sidewalks are not yet provided on the project frontage bordering Oakley Road.

Bicycle Facilities

Bicycle facilities include the following:

- **Multi-Use Paths (Class I)** – A path physically separated from motor vehicle traffic by an open space or barrier, and either within a highway or an independent right-of-way (ROW), used by bicyclists, pedestrians, joggers, skaters, and other non-motorized travelers. Class I paths are the most popular type of facility. Because the availability of uninterrupted ROW is limited, this type of facility may be difficult to locate and expensive to build, relative to other types of bicycle facilities, but inexpensive compared to new roadways. Ideal locations for bike paths are areas such as powerline easements, utility easements, canal banks, river levees, drainage easements, railroad or highway ROW, or regional community parks.
- **Bike Lanes (Class II)** – A portion of a roadway designated by striping and pavement markings for the preferential or exclusive use of bicyclists. Bike lanes are intended to promote an orderly flow of bicycle and vehicle traffic. This type of facility is established by using the appropriate striping, pavement legends, and signs.
- **Bike Routes (Class III)** – Bike routes are shared facilities between bicycle and motor vehicle traffic. They provide for specific bicycle demand and may be used to connect discontinuous segments of bike lanes. In addition, bike routes are located on residential streets and rural roads. If the pavement width is sufficient, and traffic volume/speeds warrant, an edge line may be painted to further delineate the bike route. Bike routes are signed with the G-93 Bike Route marker but no striping or legends are required.

The City of Oakley General Plan (September 2002), City of Oakley Parks, Recreation, and Trails Master Plan (Summer 2007), and the Contra Costa County Bicycle and Pedestrian Plan (October 2009) propose that several new bicycle facilities be constructed in the future.

The existing striped shoulder on Oakley Road accommodates bicyclists under existing conditions.

Existing Transit Facilities

Tri-Delta Transit provides transit services in the City of Oakley, with three lines connecting Brentwood and the Pittsburg/Bay Point Bay Area Rapid Transit (BART) station.

- *Route 300,* the Pittsburg BART/Brentwood Park & Ride route, is a weekday express route connecting Brentwood to the Pittsburg/Bay Point BART station via Oakley and Antioch. This bus travels along Main Street, operating from 4:15 a.m. to approximately 10:00 p.m. with 15 to 30-minute headways.
- *Route 383,* the Oakley/Antioch/Freedom High School route, connects Oakley to Antioch and Freedom High School in Oakley. This route, in both clockwise and counterclockwise directions, provides only weekday service. The counterclockwise route runs with approximate one-hour headways, and the clockwise route runs twice during the a.m. peak hour period only.
- *Route 391,* the BART/Pittsburg/Antioch/Oakley/Brentwood route, provides weekday service to most East County Cities. The route operates from 4:00 a.m. to 1:15 a.m. with 30 to 60-minute headways.
- *Route 393*, the BART/Pittsburg/Antioch/Oakley/Brentwood route, provides weekend service to Route 391. The route operates from 5:20 a.m. to 2:00 a.m. with approximately 60-minute headways.

Table 2 summarizes the services and frequency during the weekday and on weekends for transit in the City of Oakley. **Figure 3** shows a map of transit routes operated by Tri-Delta Transit.

At the project site, the nearest bus stops are located at the intersections of Main Street/Empire Avenue (0.5 miles east of the project site) served by Routes 300, 383,391, and 393, and Empire Avenue/Gamay Drive (0.6 miles east and south of the project site) served by Route 383.

Table 2: Existing Transit Facilities

Route	From	To	Weekdays		Saturday		Sunday	
			Hours	Headway (min)	Hours	Headway (min)	Hours	Headway (min)
300	Pittsburg/ Bay Point BART Station	Brentwood Park & Ride	4:15 a.m. – 10:00 p.m.	10-30	....	....	....	....
383	Antioch Park & Ride	Antioch Park & Ride 1	6:52 a.m. – 5:26 p.m.	60-120	....	....	....	....
391	Pittsburg/ Bay Point BART Station	Brentwood Park & Ride	4:03 a.m. - 1:14 a.m.	30-60	....	....	....	....
393	Pacifica & Mariners Cove	Brentwood Park & Ride	....	....	5:22 a.m. – 1:39 a.m.	60	6:24 a.m. – 1:49 a.m.	60

Source: www.trideltatransit.com

Figure 3: Transit Service Map

Existing Peak Hour Intersection Volumes

Turning movement volumes for vehicles, bicycles and pedestrians at most study intersections (with the exception of the two intersections at Live Oak Avenue/El Lago Drive and Proposed Project Access/Oakley Road) were provided by the City of Oakley Citywide Traffic Model for the a.m. and p.m. peak hours. To determine existing volumes at the remaining locations new counts were conducted during the a.m. (7:00 a.m.-9:00 a.m.) and p.m. (4:00 p.m.-6:00 p.m.) peak periods on Thursday, April 4, 2019. Existing lane geometry and intersection controls are illustrated in **Figure 4.** Existing turning movement volumes at each existing study intersection are illustrated on **Figure 5**. **Appendix A** includes all of the data sheets for the collected vehicle, bicycle and pedestrian counts.

Existing Conditions Traffic Level of Service Analysis

Table 3 summarizes peak hour levels of service at the six study intersections under Existing Conditions. Detailed LOS worksheets for this scenario are provided in **Appendix B**. Each of the study intersections operate at an acceptable LOS C or better under Existing Conditions.

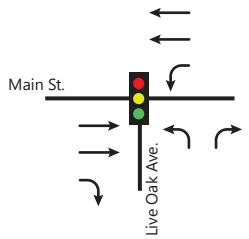
Table 3: Existing Conditions Traffic Level of Service Analysis Results

ID	Intersection	Control	Peak Hour	Existing Conditions	
				Average Delay[1]	LOS[2]
2	Live Oak Avenue / Main Street	Signalized	A.M.	18.8	B
			P.M.	7.2	A
14	Empire Avenue / Oakley Road	Signalized	A.M.	21.6	C
			P.M.	27.7	C
22	Neroly Road / Oakley Road	All-way Stop	A.M.	10.2	B
			P.M.	9.6	A
23	Neroly Road / Live Oak Avenue	All-way Stop	A.M.	12.2	B
			P.M.	10.3	B
24	Live Oak Avenue / Oakley Road	All-way Stop	A.M.	18.4	C
			P.M.	9.0	A
81	Live Oak Avenue / El Lago Drive	One-way Stop	A.M.	11.8	B
			P.M.	9.7	A
82	Proposed Project Access / Oakley Road	One-way Stop	A.M.	N/A	---
			P.M.	N/A	---

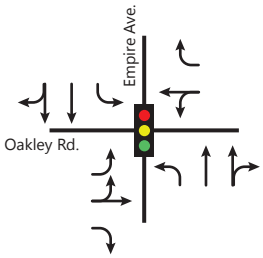
Notes: [1]Delay: Average control delay in seconds per vehicle, reported values are overall for signalized and all-way-stop-control intersections; and critical minor approaches for two-way- stop-control intersections.
[2]LOS: Level of Service.

Figure 4: Existing Lane Geometry & Traffic Control

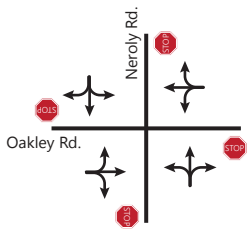
Intersection #2
Live Oak Ave. / Main St.



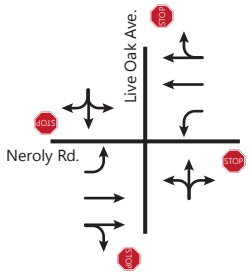
Intersection #14
Empire Ave. / Oakley Rd.



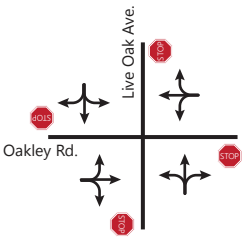
Intersection #22
Neroly Rd. / Oakley Rd.



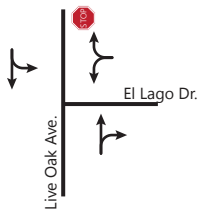
Intersection #23
Neroly Rd. / Live Oak Ave.



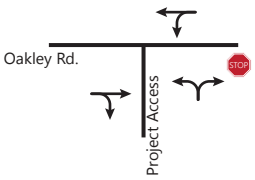
Intersection #24
Live Oak Ave. / Oakley Rd.



Intersection #81
Live Oak Ave. / El Lago Dr.



Intersection #82
Oakley Rd. / Project Access



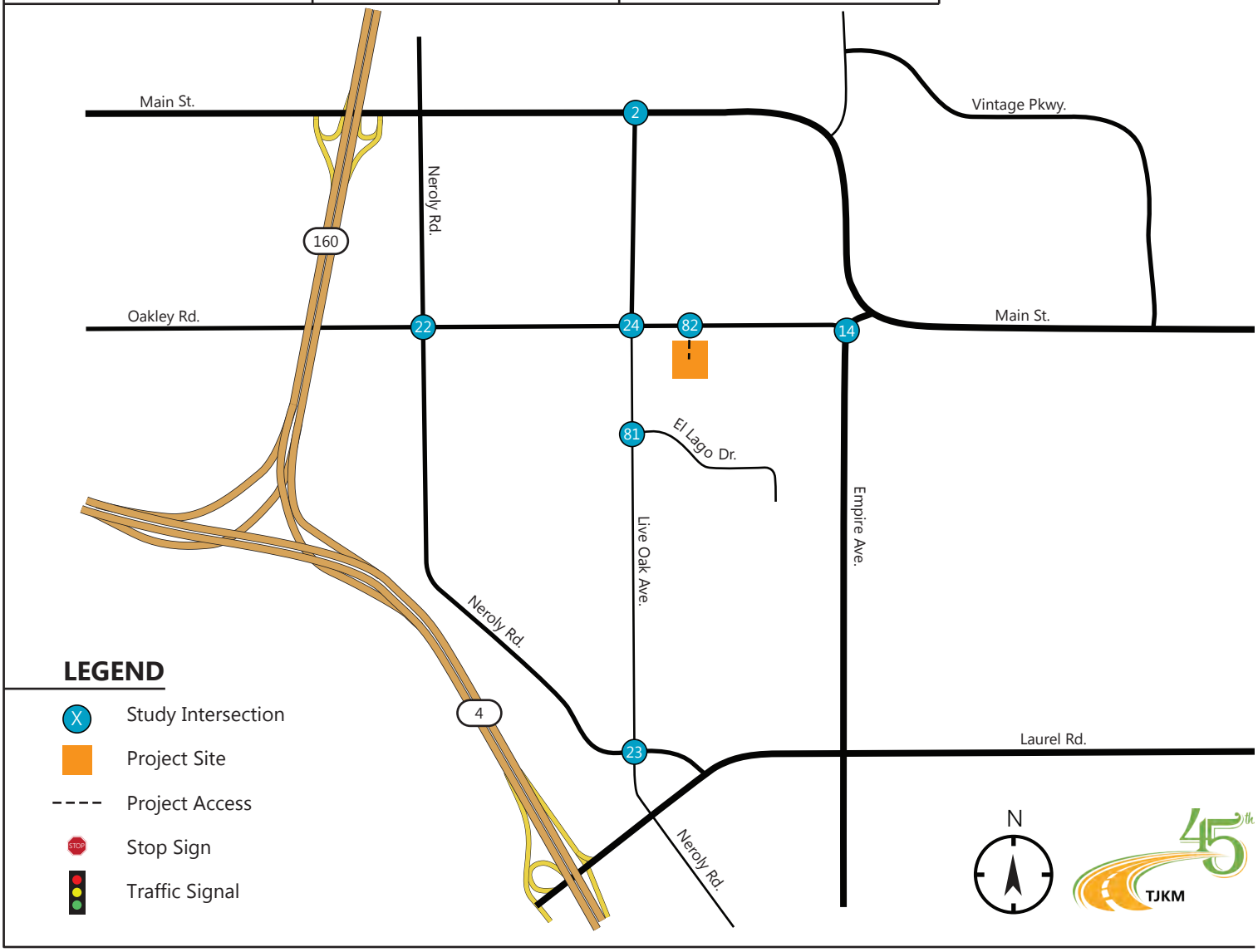
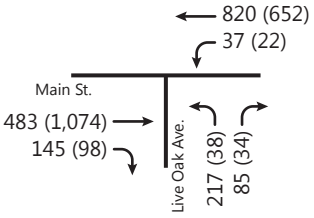
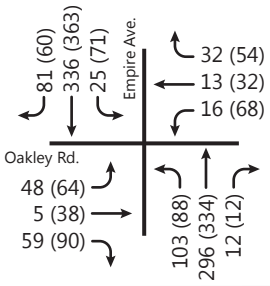


Figure 5: Existing Peak Hour Traffic Volumes

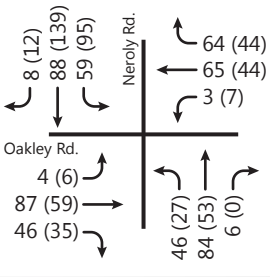
Intersection #2
Live Oak Ave. / Main St.



Intersection #14
Empire Ave. / Oakley Rd.



Intersection #22
Neroly Rd. / Oakley Rd.



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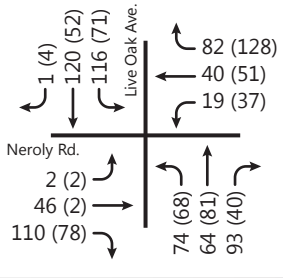
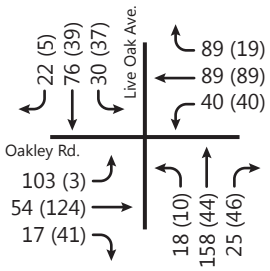
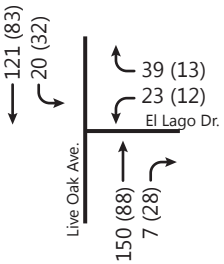
Neroly Rd. / Live Oak Ave.



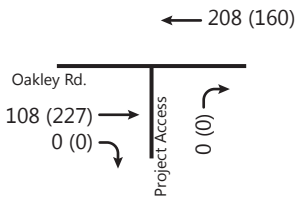
Intersection #24
Live Oak Ave. / Oakley Rd.

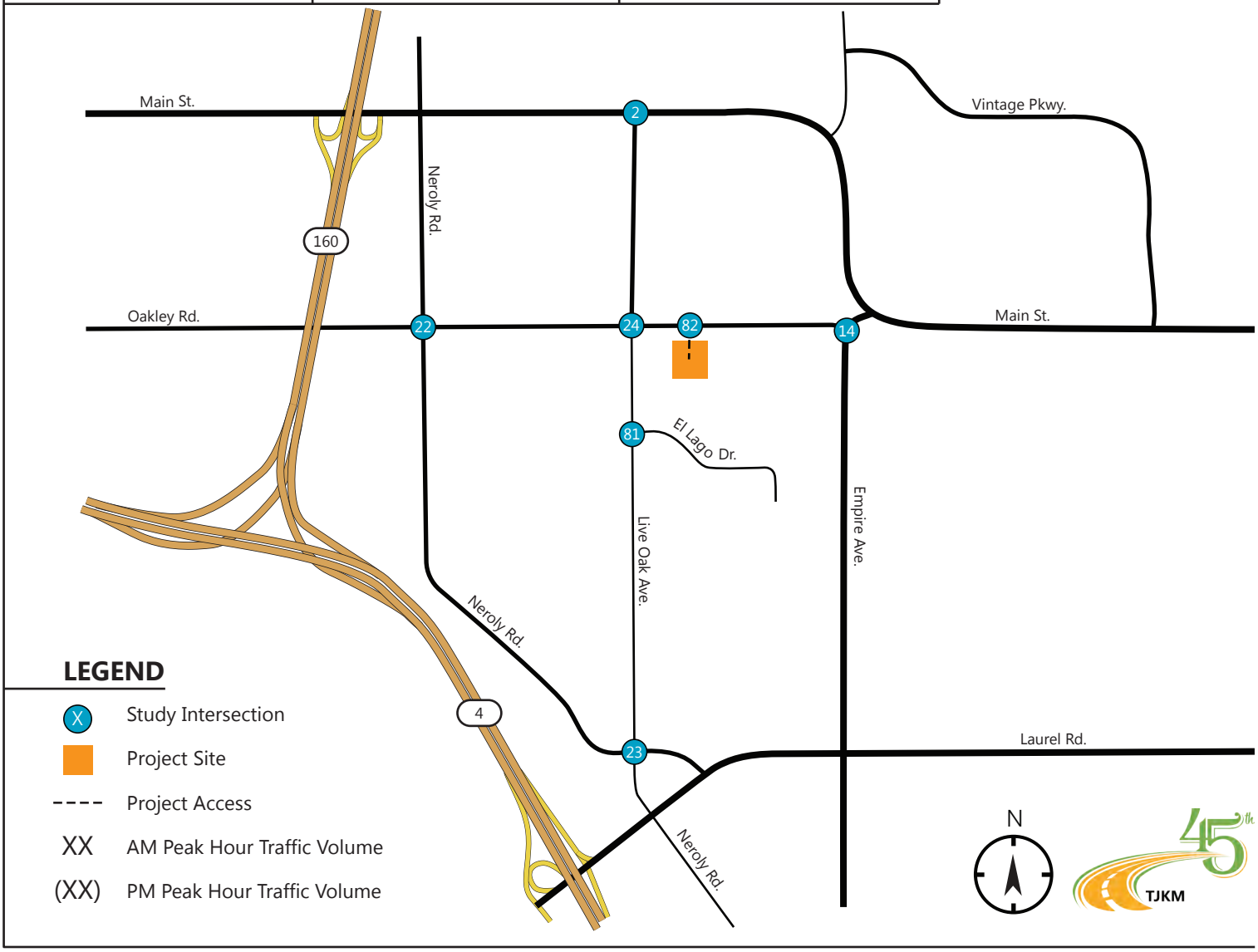


Intersection #81
Live Oak Ave. / El Lago Dr.



Intersection #82
Oakley Rd. / Project Dwy.





3. PROJECT CONDITIONS

Project Trip Generation

The project vehicle trip generation rates were obtained from the reference *Trip Generation, 10th Edition*, published by the Institute of Transportation Engineers (ITE). Based on the applicable rates single-family detached housing, the Project is forecasted to generate 595 daily vehicle trips, including 47 a.m. peak hour and 62 p.m. peak hour vehicle trips, as summarized in **Table 4**.

Table 4: Project Vehicle Trip Generation

Land Use (ITE Code)	Size	Daily Vehicle Trips		AM Peak Hour Vehicle Trips					PM Peak Hour Vehicle Trips				
		Rate	Trips	Rate	In/ Out (%)	In	Out	Total	Rate	In/ Out (%)	In	Out	Total
Single Family Detached Housing (210)	63 du[1]	9.44	**595**	0.74	25/ 75	12	35	**47**	0.99	63/ 37	39	23	**62**
Total			**595**					**47**					**62**

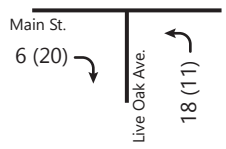
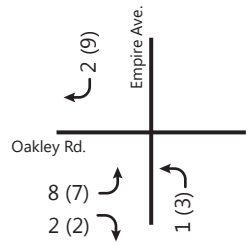
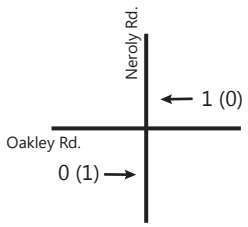
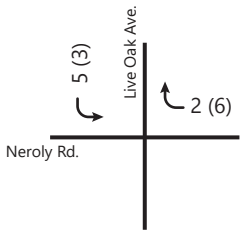
Note: [1] du= dwelling units.
Source: ITE *Trip Generation Manual*, 10th Edition

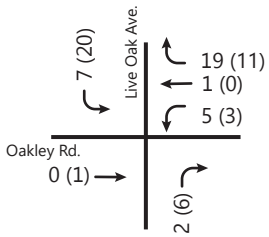
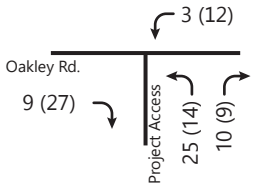
Vehicle Trip Distribution & Assignment

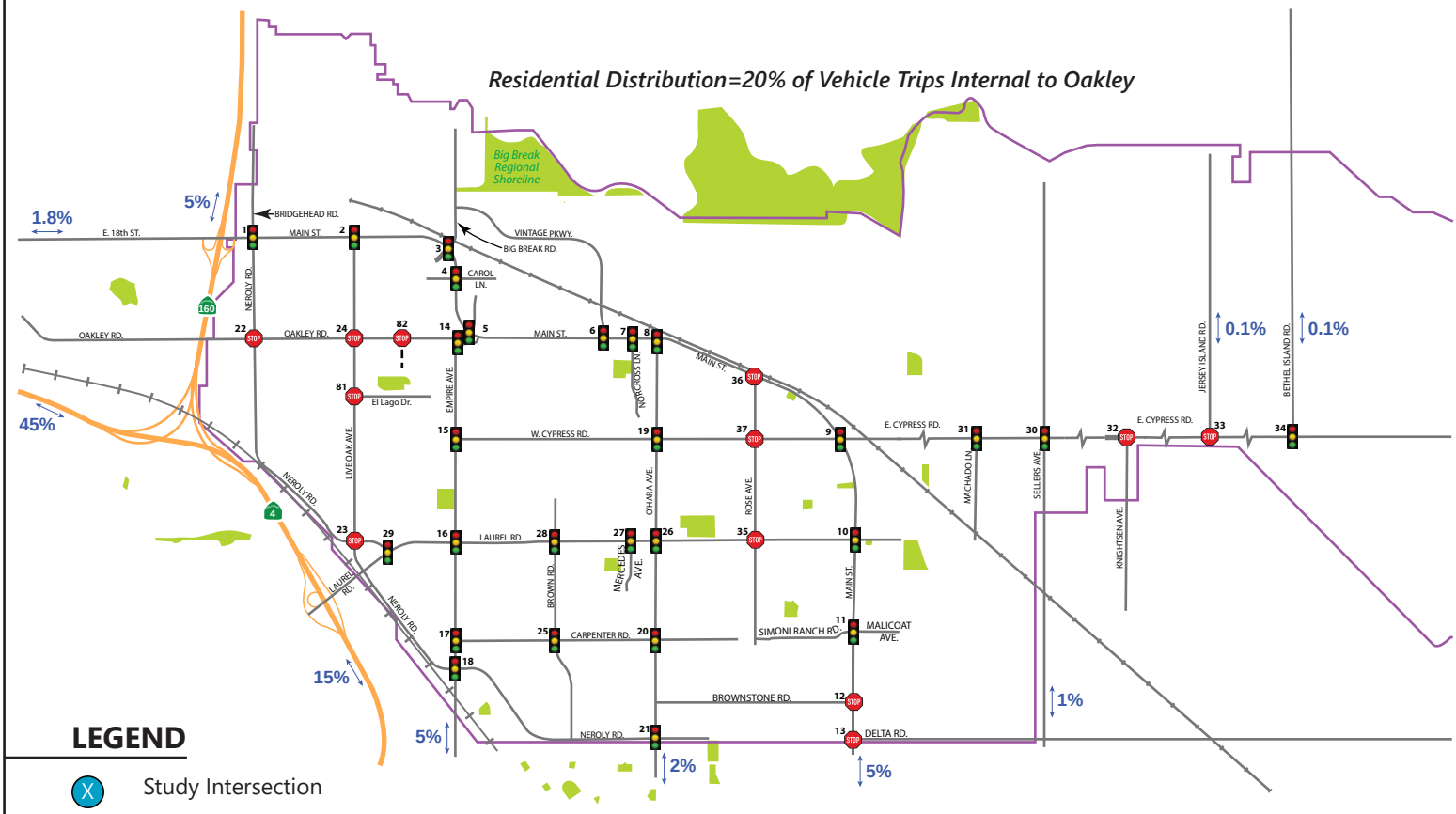
The distribution of peak-hour vehicle trips generated by the project was determined based on the methodology used for the Citywide Traffic Model. Based on that methodology: for residential developments, 45 percent of peak-hour trips are to/from origins and designations west of Oakley via SR 4; 15 percent are to/from origins and destinations south/east of Oakley via SR 4; five percent are to/from origins and destinations north of Oakley via California 160; 15 percent are to/from other destinations near Oakley via other routes; and 20 percent are internal to Oakley. Based on that distribution: peak-hour vehicle trips generated by the project were manually assigned to each study intersection.

Figure 6 illustrates the distribution of project trips to origins/destinations, and the assignment of project trips to study intersections based on the anticipated path(s) of travel.

Figure 6: Project Trips

Intersection #2 Live Oak Ave. / Main St.	**Intersection #14** Empire Ave. / Oakley Rd.	**Intersection #22** Neroly Rd. / Oakley Rd.	**Intersection #23** Neroly Rd. / Live Oak Ave.
			

Intersection #24 Live Oak Ave. / Oakley Rd.	**Intersection #81** Live Oak Ave. / El Lago Dr.	**Intersection #82** Oakley Rd. / Project Access
		



LEGEND

- Study Intersection
- Project Site
- Project Access
- XX — AM Peak Hour Traffic Volume
- (XX) — PM Peak Hour Traffic Volume

N

TJKM

Existing plus Project Conditions Traffic Analysis

Table 5 summarizes peak hour levels of service at the study intersections under Existing plus Project Conditions, based on the addition of project trips to each study intersection. Detailed LOS worksheets for this scenario are provided in **Appendix C**. Each of the study intersections operate at an acceptable LOS C or better under Existing plus Project Conditions. Based on the City of Oakley impact criteria, the project is expected to have a less-than-significant impact at all the study intersections.

Table 5: Existing plus Project Conditions Traffic Level of Service Analysis Results

ID	Intersection	Control	Peak Hour	Existing Conditions		Existing plus Project Conditions		
				Average Delay[1]	LOS[2]	Average Delay[1]	LOS[2]	Significant LOS Impact?
2	Live Oak Avenue / Main Street	Signalized	A.M.	18.8	B	19.6	B	No
			P.M.	7.2	A	7.5	A	No
14	Empire Avenue / Oakley Road	Signalized	A.M.	21.6	C	21.9	C	No
			P.M.	27.7	C	27.9	C	No
22	Neroly Road / Oakley Road	All-way Stop	A.M.	10.2	B	10.2	B	No
			P.M.	9.6	A	9.6	A	No
23	Neroly Road / Live Oak Avenue	All-way Stop	A.M.	12.2	B	12.4	B	No
			P.M.	10.3	B	10.3	B	No
24	Live Oak Avenue / Oakley Road	All-way Stop	A.M.	18.4	C	20.3	C	No
			P.M.	9.0	A	9.3	A	No
81	Live Oak Avenue / El Lago Drive	One-way Stop	A.M.	11.8	B	11.8	B	No
			P.M.	9.7	A	9.8	A	No
82	Proposed Project Access / Oakley Road	One-way Stop	A.M.	N/A	---	11.8	B	No
			P.M.	N/A	---	11.4	B	No

Notes: [1]Delay: Average control delay in seconds per vehicle, reported values are overall for signalized and all-way-stop-control intersections; and critical minor approaches for two-way- stop-control intersections.
[2]LOS: Level of Service.

Pedestrian, Bicycle, and Transit Impacts

Impact findings relevant to the CEQA checklist are described below:

- *Would the project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.*

The proposed project does not conflict with existing and planned pedestrian or bicycle facilities, and will add relatively few trips to existing transit facilities, which can be accommodated by the existing transit capacity. Therefore, impacts to pedestrian, bicycle, and transit facilities are **less-than-significant**.

4. CUMULATIVE IMPACTS

This scenario evaluates the project's contribution to potential background traffic impacts.

Traffic Growth

Using the calibrated and validated Citywide Traffic Model, additional traffic projected to be generated from approved developments was forecasted for Background Conditions. The Background Conditions scenario includes additional traffic that would be generated by various specific plans and approved projects completed within the City of Oakley.

Figure 7 shows the forecasted volumes at each intersection under Background Conditions, based on the Oakley Citywide Traffic Model. **Table 6** summarizes peak hour levels of service at the study intersections under Background Conditions, without the proposed Project. Detailed LOS worksheets for this scenario are provided in **Appendix D**. Each of the study intersections operate at an acceptable LOS D or better under Background Conditions.

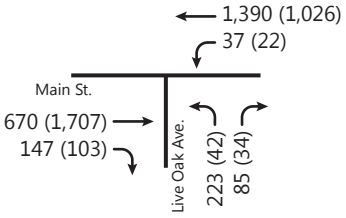
Table 6: Cumulative Traffic Level of Service – Background Conditions without Project

ID	Intersection	Control	Peak Hour	Background Conditions	
				Average Delay[1]	LOS[2]
2	Live Oak Avenue / Main Street	Signalized	A.M.	18.6	B
			P.M.	8.2	A
14	Empire Avenue / Oakley Road	Signalized	A.M.	24.2	C
			P.M.	33.5	C
22	Neroly Road / Oakley Road	All-way Stop	A.M.	11.5	B
			P.M.	11.8	B
23	Neroly Road / Live Oak Avenue	All-way Stop	A.M.	16.8	C
			P.M.	12.8	B
24	Live Oak Avenue / Oakley Road	All-way Stop	A.M.	31.6	D
			P.M.	10.3	B
81	Live Oak Avenue / El Lago Drive	One-way Stop	A.M.	13.9	B
			P.M.	10.7	B
82	Proposed Project Access / Oakley Road	One-way Stop	A.M.	N/A	---
			P.M.	N/A	---

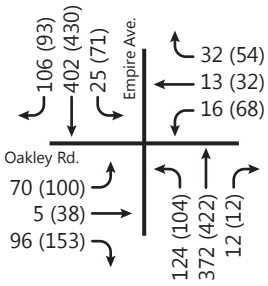
Notes: [1]Delay: Average control delay in seconds per vehicle, reported values are overall for signalized and all-way-stop-control Intersections; and critical minor approaches for two-way- stop-control intersections.
[2]LOS: Level of Service.

Figure 7: Background Traffic Volumes (without Project)

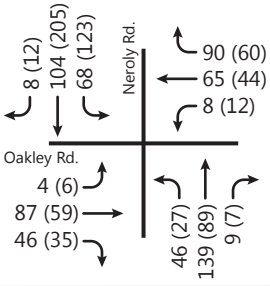
Intersection #2
Live Oak Ave. / Main St.



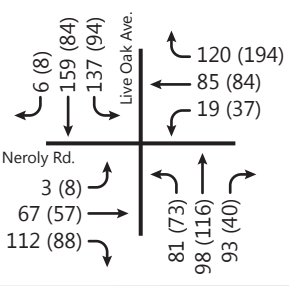
Intersection #14
Empire Ave. / Oakley Rd.



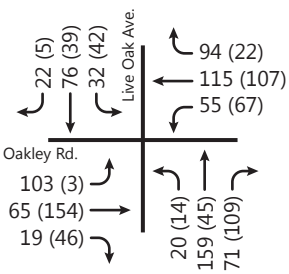
Intersection #22
Neroly Rd. / Oakley Rd.



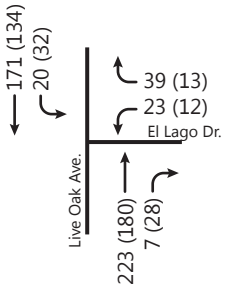
Intersection #23
Neroly Rd. / Live Oak Ave.



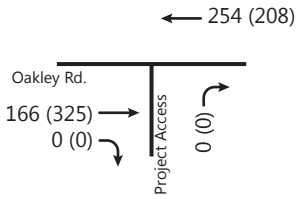
Intersection #24
Live Oak Ave. / Oakley Rd.

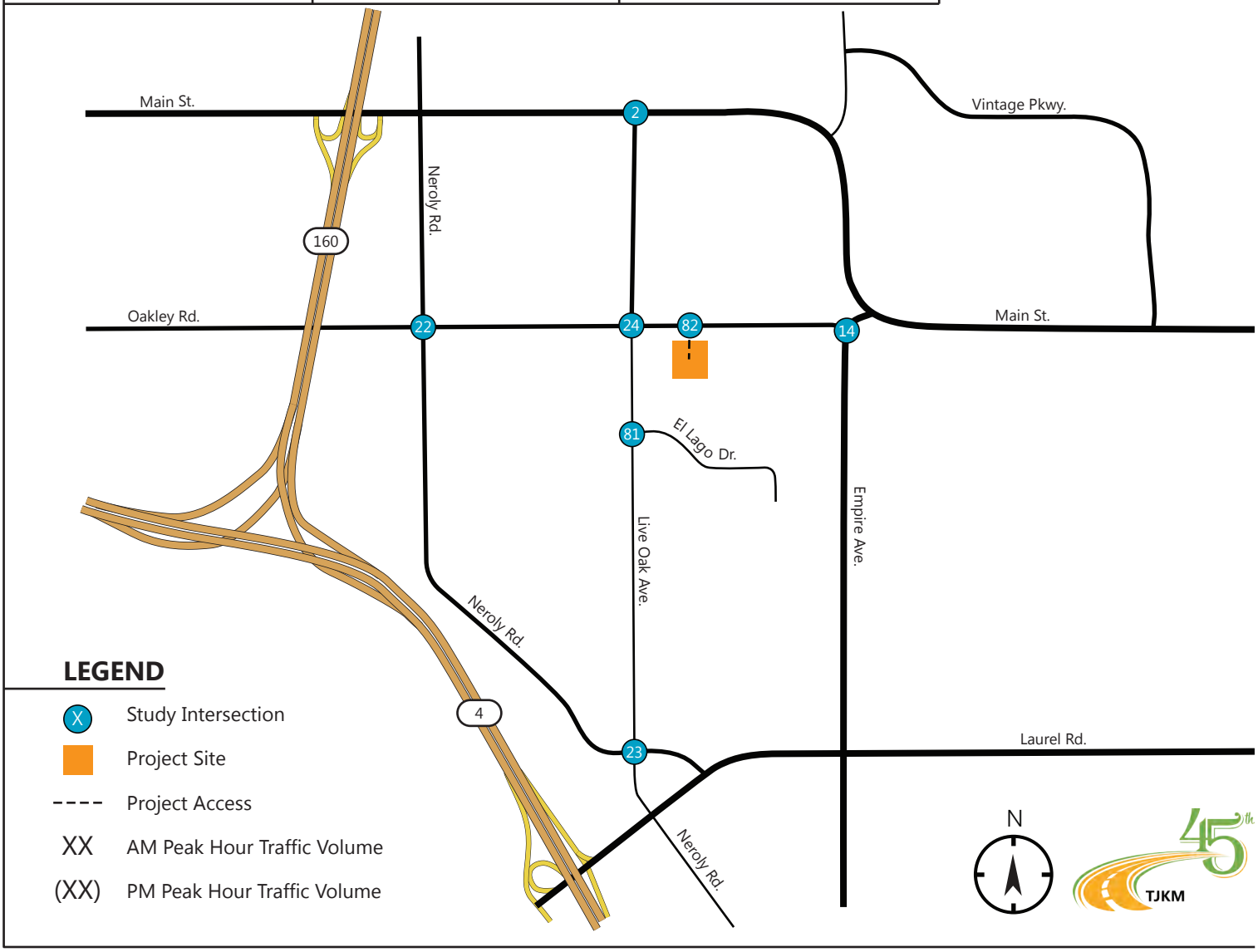


Intersection #81
Live Oak Ave. / El Lago Dr.



Intersection #82
Oakley Rd. / Project Access





Background Level of Service with the Proposed Project

Table 7 summarizes peak hour levels of service at the study intersections under Background and Background plus Project Conditions, without and with the proposed Project. Detailed LOS worksheets for both scenarios scenario are provided in **Appendix D and E**. As shown, the project would contribute to increased delay at one study intersection that would operate unacceptably without the proposed project.

Table 7: Cumulative Traffic Level of Service – Background plus Project Conditions

ID	Intersection	Control	Peak Hour	Background Conditions		Background plus Project Conditions		
				Average Delay[1]	LOS[2]	Average Delay[1]	LOS[2]	Potentially Significant Cumulative LOS Impact?
2	Live Oak Avenue / Main Street	Signalized	A.M.	18.6	B	19.7	B	No
			P.M.	8.2	A	8.5	A	No
14	Empire Avenue / Oakley Road	Signalized	A.M.	24.2	C	24.6	C	No
			P.M.	33.5	C	34.0	C	No
22	Neroly Road / Oakley Road	All-way Stop	A.M.	11.5	B	11.5	B	No
			P.M.	11.8	B	11.8	B	No
23	Neroly Road / Live Oak Avenue	All-way Stop	A.M.	16.8	C	17.1	C	No
			P.M.	12.8	B	12.9	B	No
24	Live Oak Avenue / Oakley Road	All-way Stop	A.M.	31.6	D	**38.8**	**E**	**Yes[3]**
			P.M.	10.3	B	10.7	B	No
81	Live Oak Avenue / El Lago Drive	One-way Stop	A.M.	13.9	B	14.1	B	No
			P.M.	10.7	B	10.8	B	No
82	Proposed Project Access / Oakley Road	One-way Stop	A.M.	N/A	---	13.4	B	No
			P.M.	N/A	---	12.9	B	No

Notes: **Bold** text indicates unacceptable intersection operations.

[1]Delay: Average control delay in seconds per vehicle. [2]LOS: Level of Service.

[3]Recommended cumulative mitigation is for the project to contribute towards the cost of installing a future traffic signal at the Live Oak Avenue /Oakley Road intersection. With this mitigation, the intersection would operate at acceptable LOS D (11.4 seconds of average delay) under Background plus Project conditions (mitigated).

Cumulative Impact Findings

The project would result in increased delay at one study intersection forecasted to operate unacceptably due to cumulative traffic growth generated by background growth and the proposed project**.** ***The project contribution to cumulative impacts would be considered less than significant with mitigations, by contributing a "fair share" contribution towards the funding of future mitigations, based on the project share of forecasted traffic growth at each impacted intersection.***

The recommended cumulative mitigations are described below:

- The stop-sign controlled intersection of Live Oak Avenue/Oakley Road (study intersection #24) is forecasted to operate at LOS E during the a.m. peak hour under Background plus Project Conditions. The recommended cumulative mitigation is for the project to contribute towards the cost of installing a future traffic signal at the Live Oak Avenue/Oakley Road intersection. With this mitigation, the intersection would operate at acceptable LOS B (11.4 seconds of average delay) under Background plus Project conditions (mitigated). Detailed LOS worksheets for Background plus Project conditions (mitigated) are provided in **Appendix F**.

5. SITE ANALYSIS & RECOMMENDATIONS

Site Design Impact Findings

Based on review of the site plan, impact findings relevant to the CEQA checklist are described below:

- *Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

Project design could result in safety impacts due to an existing median on Oakley Road that would impede left-turn movements into the site and could result in sight obstructions to drivers on Oakley Road approaching the project entrance. As described below: modification of the median to accommodate left-turns inbound and outbound, while maintaining adequate site distance, would mitigate this potential impact.

Sight Distance Analysis

The proposed intersection at Proposed Project Access & Oakley Road would generate left and right turning traffic onto Oakley Road from the project site. The intersection is proposed to be one-way stop-sign controlled at the driveway with a posted speed limit of 15 mph into the project site.

Oakley Road has a posted speed limit of 35 miles per hour (mph) and requires at least 250 feet of stopping distance for oncoming vehicles from the point where they can see a vehicle exiting the driveway. Oncoming traffic travelling eastbound on Oakley Road have a clear line of sight to vehicles exiting the driveway well above the minimum stopping distance.

With schools and freeway access located west of the project driveway it is expected that heavy left turn movements onto Oakley Road will occur from the project driveway. Vehicles turning left from the project driveway and oncoming traffic travelling westbound on Oakley Road have a line of sight that could be obstructed by landscaping in the median.

Impacts due to project design would be less than significant with modification. Modification of the existing median on Oakley Road to accommodate left-turns inbound and outbound, while maintaining at least 250 feet of stopping sight distance for motorists traveling on Oakley Road, would mitigate this impact.

Site Access and On-Site Circulation

Vehicles will have access to/from the project site via a proposed gated driveway on Oakley Road. The driveway has separate gates for each direction and connects to an extension of Thomas Drive which circles around the project site. The extension of Thomas Drive will serve bidirectional travel by bicyclists, motorists and pedestrians and allow for parallel, on-street parking on one side of the internal street. The City of Oakley requires at least two covered, off-street automobile parking spaces for each single family dwelling unit (*City of Oakley Municipal Code, Article 14, Sec. 9.1.1402*), resulting in a total of 126 required parking spaces for the project site. Dwelling units in Oakley are required to have driveways of a minimum length of 25 feet (*City of Oakley Municipal Code, Article 4, Sec. 9.1.404*).

Appendix A

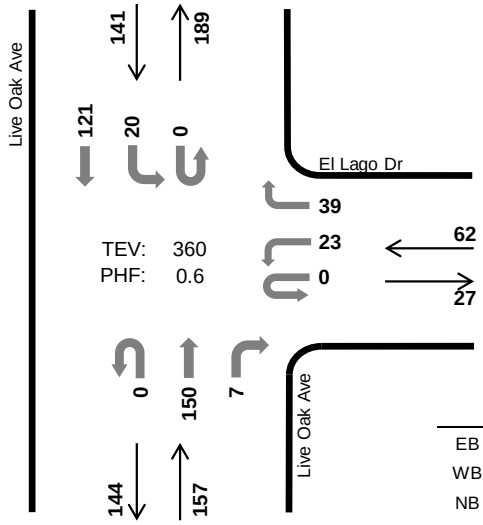
Intersection Count Sheets

Live Oak Ave
El Lago Dr

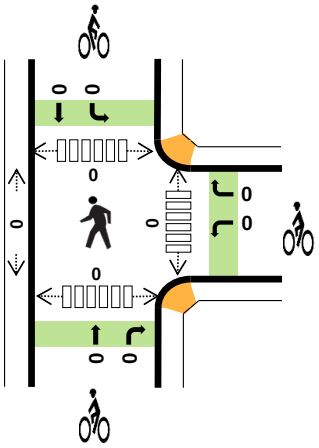
Date: 04-04-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM

N

Peak Hour



	HV %:	PHF
EB	-	-
WB	0.0%	0.53
NB	1.3%	0.54
SB	1.4%	0.73
TOTAL	1.1%	0.60



Two-Hour Count Summaries

Interval Start		n/a Eastbound				El Lago Dr Westbound				Live Oak Ave Northbound				Live Oak Ave Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	0	0	0	7	0	3	0	0	4	1	0	3	2	0	20	0
7:15 AM		0	0	0	0	0	2	0	4	0	0	15	0	0	1	14	0	36	0
7:30 AM		**0**	**0**	**0**	**0**	**0**	**2**	**0**	**9**	**0**	**0**	**31**	**2**	**0**	**3**	**27**	**0**	**74**	0
7:45 AM		**0**	**0**	**0**	**0**	**0**	**12**	**0**	**17**	**0**	**0**	**72**	**1**	**0**	**4**	**43**	**0**	**149**	279
8:00 AM		**0**	**0**	**0**	**0**	**0**	**4**	**0**	**10**	**0**	**0**	**22**	**1**	**0**	**10**	**38**	**0**	**85**	344
8:15 AM		**0**	**0**	**0**	**0**	**0**	**5**	**0**	**3**	**0**	**0**	**25**	**3**	**0**	**3**	**13**	**0**	**52**	**360**
8:30 AM		0	0	0	0	0	2	0	4	0	0	12	2	0	2	24	0	46	332
8:45 AM		0	0	0	0	0	6	0	4	0	0	12	2	0	1	20	0	45	228
Count Total		0	0	0	0	0	40	0	54	0	0	193	12	0	27	181	0	507	0
Peak Hour	**All**	**0**	**0**	**0**	**0**	**0**	**23**	**0**	**39**	**0**	**0**	**150**	**7**	**0**	**20**	**121**	**0**	**360**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**1**	**0**	**4**	**0**
	HV%	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**0%**	**-**	**-**	**1%**	**0%**	**-**	**5%**	**1%**	**-**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	0	0	0	1	*1*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:30 AM	0	1	1	3	*5*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	0	0	0	11	*11*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	1	3	17	*21*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hr	**0**	**0**	**2**	**2**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	n/a				El Lago Dr				Live Oak Ave				Live Oak Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	3
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**2**	5
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
8:30 AM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	3	0	5	9
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	11	18
Count Total	0	0	0	0	0	0	0	1	0	0	3	0	0	1	16	0	21	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**1**	**0**	**4**	**0**

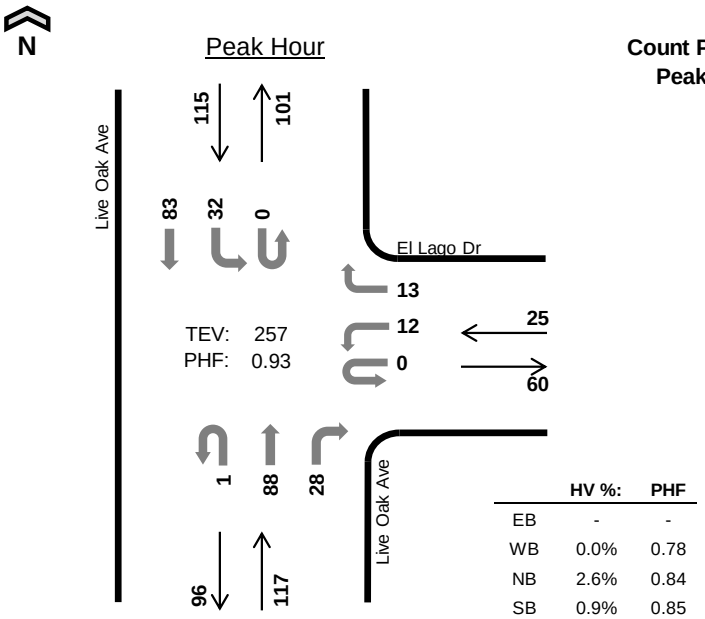
Two-Hour Count Summaries - Bikes

Interval Start	n/a			El Lago Dr			Live Oak Ave			Live Oak Ave			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

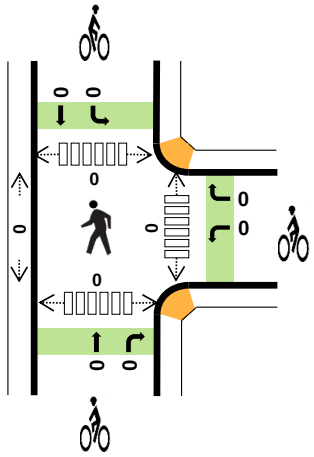
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Live Oak Ave
El Lago Dr

Date: 04-04-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	-	-
WB	0.0%	0.78
NB	2.6%	0.84
SB	0.9%	0.85
TOTAL	1.6%	0.93



Two-Hour Count Summaries

Interval Start	n/a				El Lago Dr				Live Oak Ave				Live Oak Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	5	0	5	0	0	18	1	0	5	22	0	56	0
4:15 PM	0	0	0	0	0	2	0	4	0	0	29	7	0	4	25	0	71	0
4:30 PM	0	0	0	0	0	2	0	1	0	0	22	3	0	8	23	0	59	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**29**	**5**	**0**	**6**	**19**	**0**	**62**	248
5:00 PM	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**1**	**0**	**0**	**15**	**2**	**0**	**8**	**26**	**0**	**58**	250
5:15 PM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**6**	**1**	**0**	**24**	**10**	**0**	**7**	**18**	**0**	**68**	247
5:30 PM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**5**	**0**	**0**	**20**	**11**	**0**	**11**	**20**	**0**	**69**	**257**
5:45 PM	0	0	0	0	0	5	0	6	0	0	23	5	0	7	14	0	60	255
Count Total	0	0	0	0	0	26	0	29	1	0	180	44	0	56	167	0	503	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**13**	**1**	**0**	**88**	**28**	**0**	**32**	**83**	**0**	**257**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**4**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**0%**	**0%**	**-**	**3%**	**0%**	**-**	**0%**	**1%**	**-**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	2	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	0	0	0	1	*1*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	0	0	1	0	*1*	0	0	1	0	*1*	0	0	0	0	*0*
4:45 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:30 PM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	0	6	2	*8*	0	0	1	0	*1*	0	0	0	0	*0*
Peak Hr	**0**	**0**	**3**	**1**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	n/a				El Lago Dr				Live Oak Ave				Live Oak Ave				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	3
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	**4**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	0	0	0	0	0	0	0	0	0	6	0	0	0	2	0	8	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**4**	**0**

Two-Hour Count Summaries - Bikes

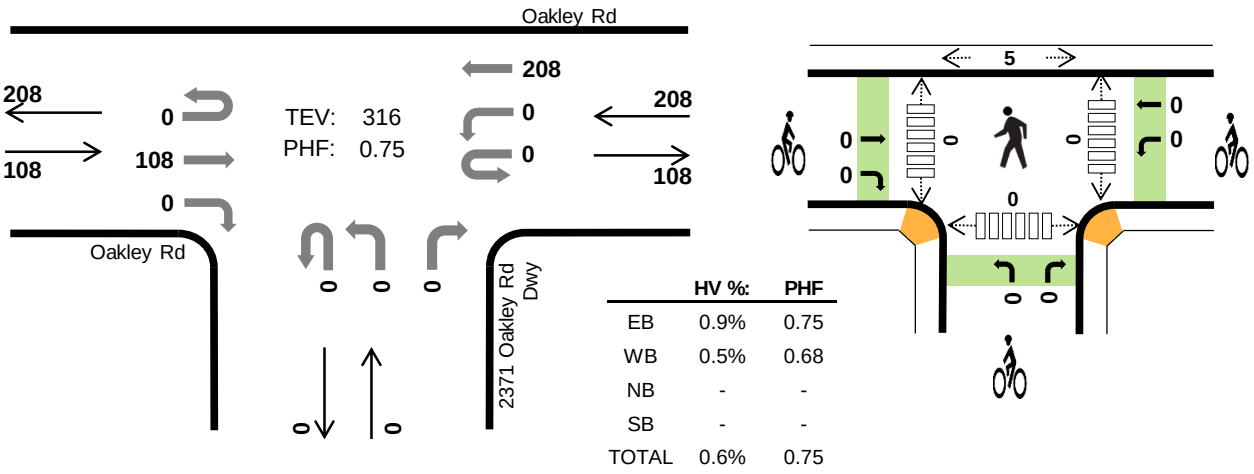
Interval Start	n/a			El Lago Dr			Live Oak Ave			Live Oak Ave			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	1	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

2371 Oakley Rd Dwy
Oakley Rd

Peak Hour

Date: 04-04-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



	HV %:	PHF
EB	0.9%	0.75
WB	0.5%	0.68
NB	-	-
SB	-	-
TOTAL	0.6%	0.75

Two-Hour Count Summaries

Interval Start	Oakley Rd Eastbound				Oakley Rd Westbound				2371 Oakley Rd Dwy Northbound				n/a Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	7	0	0	0	19	0	0	0	0	0	0	0	0	0	26	0
7:15 AM	0	0	15	0	0	0	27	0	0	0	0	0	0	0	0	0	42	0
7:30 AM	**0**	**0**	**17**	**0**	**0**	**0**	**42**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**59**	0
7:45 AM	**0**	**0**	**29**	**0**	**0**	**0**	**77**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**106**	233
8:00 AM	**0**	**0**	**36**	**0**	**0**	**0**	**60**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**96**	303
8:15 AM	**0**	**0**	**26**	**0**	**0**	**0**	**29**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**55**	**316**
8:30 AM	0	0	21	0	0	0	23	0	0	0	0	0	0	0	0	0	44	301
8:45 AM	0	0	15	0	0	0	27	0	0	0	0	0	0	0	0	0	42	237
Count Total	0	0	166	0	0	0	304	0	0	0	0	0	0	0	0	0	470	0
Peak Hour All	**0**	**0**	**108**	**0**	**0**	**0**	**208**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**316**	**0**
Peak Hour HV	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**
Peak Hour HV%	**-**	**-**	**1%**	**-**	**-**	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	1	0	*1*
7:15 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	2	0	*2*
7:30 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	*1*
7:45 AM	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**3**	**0**	*3*
8:00 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	*1*
8:15 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:30 AM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	1	2	0	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	3	3	0	0	*6*	0	0	0	0	*0*	0	0	8	0	*8*
Peak Hr	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**5**	**0**	***5***

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

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Oakley Rd				Oakley Rd				2371 Oakley Rd Dwy				n/a				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	2
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
8:45 AM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	4
Count Total	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	6	0
Peak Hour	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Oakley Rd			Oakley Rd			2371 Oakley Rd Dwy			n/a			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

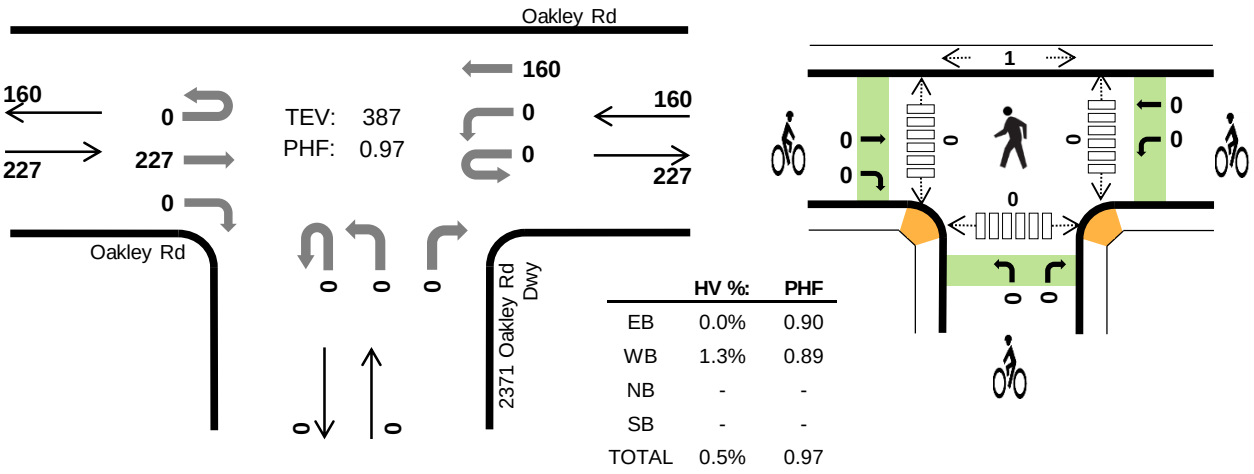
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

2371 Oakley Rd Dwy
Oakley Rd

N

Peak Hour

Date: 04-04-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	0.0%	0.90
WB	1.3%	0.89
NB	-	-
SB	-	-
TOTAL	0.5%	0.97

Two-Hour Count Summaries

Interval Start		Oakley Rd Eastbound				Oakley Rd Westbound				2371 Oakley Rd Dwy Northbound				n/a Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	38	0	0	0	27	0	0	0	0	0	0	0	0	0	65	0
4:15 PM		0	0	48	0	0	0	38	0	0	0	0	0	0	0	0	0	86	0
4:30 PM		0	0	59	0	0	0	25	0	0	0	0	0	0	0	0	0	84	0
4:45 PM		**0**	**0**	**54**	**0**	**0**	**0**	**45**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**99**	334
5:00 PM		**0**	**0**	**50**	**0**	**0**	**0**	**42**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**92**	361
5:15 PM		**0**	**0**	**63**	**0**	**0**	**0**	**37**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**100**	375
5:30 PM		**0**	**0**	**60**	**0**	**0**	**0**	**36**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**96**	**387**
5:45 PM		0	0	48	0	0	0	26	0	0	0	0	0	0	0	0	0	74	362
Count Total		0	0	420	0	0	0	276	0	0	0	0	0	0	0	0	0	696	0
Peak Hour	**All**	**0**	**0**	**227**	**0**	**0**	**0**	**160**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**387**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**
	HV%	**-**	**-**	**0%**	**-**	**-**	**-**	**1%**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	0	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	0	1	0	0	*1*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:30 PM	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	***1***
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	1	0	*1*
Count Total	1	3	0	0	*4*	0	0	0	0	*0*	0	0	2	0	*2*
Peak Hr	**0**	**2**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	***1***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Oakley Rd				Oakley Rd				2371 Oakley Rd Dwy				n/a				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	4	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Oakley Rd			Oakley Rd			2371 Oakley Rd Dwy			n/a			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Appendix B

Existing Conditions LOS Analysis

Table of Contents

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Existing Conditions_AM.pdf

Scenario 1 Existing Conditions AM
5/1/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Live Oak Rd/Main St	Signalized	HCM 6th Edition	WB Left	0.462	18.8	B
14	Empire Ave/Oakley Rd	Signalized	HCM 6th Edition	SWB Left	0.306	21.6	C
22	Neroly Rd/Oakley Rd	All-way stop	HCM 6th Edition	SB Thru	0.323	10.2	B
23	Neroly Rd/Live Oak Ave	All-way stop	HCM 6th Edition	SB Thru	0.468	12.2	B
24	Live Oak Ave/Oakley Rd	All-way stop	HCM 6th Edition	EB Left	0.691	18.4	C
81	Live Oak Ave/El Lago Dr	Two-way stop	HCM 6th Edition	WB Left	0.083	13.2	B
82	Oakley Rd/Project Access	Two-way stop	HCM 6th Edition	WB Thru	0.003	0.0	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Live Oak Rd/Main St

Control Type:	Signalized	Delay (sec / veh):	18.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.462

Intersection Setup

Name	Live Oak Avenue		Main St		Main St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	1	1	1	0
Pocket Length [ft]	100.00	260.00	100.00	160.00	255.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	Live Oak Avenue		Main St		Main St	
Base Volume Input [veh/h]	217	85	483	145	37	820
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.30	4.30	4.30	4.30	4.30	4.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	217	85	483	145	37	820
Peak Hour Factor	0.6800	0.6800	0.7900	0.7900	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	31	153	46	11	244
Total Analysis Volume [veh/h]	319	125	611	184	44	976
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LagFO
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	8	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	8	0	10	0	6	10
Maximum Green [s]	47	0	44	0	11	61
Amber [s]	4.7	0.0	5.0	0.0	5.0	5.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	53	0	50	0	17	67
Vehicle Extension [s]	3.0	0.0	4.0	0.0	3.0	4.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	26	0	0	0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	3.7	0.0	4.0	0.0	4.0	4.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.70	5.70	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.70	3.70	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	24	24	73	73	5	84
g / C, Green / Cycle	0.20	0.20	0.61	0.61	0.04	0.70
(v / s)_i Volume / Saturation Flow Rate	0.18	0.08	0.17	0.12	0.03	0.28
s, saturation flow rate [veh/h]	1748	1560	3495	1560	1748	3495
c, Capacity [veh/h]	357	318	2129	950	69	2441
d1, Uniform Delay [s]	46.49	41.32	11.11	10.39	56.80	7.57
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.90	0.79	0.34	0.45	9.53	0.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.39	0.29	0.19	0.64	0.40
d, Delay for Lane Group [s/veh]	54.39	42.10	11.45	10.85	66.33	8.06
Lane Group LOS	D	D	B	B	E	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	9.93	3.25	3.59	2.09	1.47	4.55
50th-Percentile Queue Length [ft/ln]	248.15	81.34	89.87	52.22	36.67	113.76
95th-Percentile Queue Length [veh/ln]	15.09	5.86	6.47	3.76	2.64	8.05
95th-Percentile Queue Length [ft/ln]	377.32	146.42	161.76	93.99	66.01	201.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.39	42.10	11.45	10.85	66.33	8.06
Movement LOS	D	D	B	B	E	A
d_A, Approach Delay [s/veh]	50.93		11.31		10.58	
Approach LOS	D		B		B	
d_I, Intersection Delay [s/veh]	18.77					
Intersection LOS	B					
Intersection V/C	0.462					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.209	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	4.132	4.788	4.974
Bicycle LOS	D	E	E

Sequence

Ring 1	1	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 14: Empire Ave/Oakley Rd

Control Type:	Signalized	Delay (sec / veh):	21.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.306

Intersection Setup

Name	Oakley Rd			Empire Ave			Empire Ave			Driveway		
Approach	Eastbound			Northeastbound			Southwestbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	315.00	100.00	100.00	110.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			40.00			40.00			15.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oakley Rd			Empire Ave			Empire Ave			Driveway		
Base Volume Input [veh/h]	48	5	59	103	296	12	25	336	81	16	13	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	5	59	103	296	12	25	336	81	16	13	32
Peak Hour Factor	0.7700	0.7700	0.7700	0.8200	0.8200	0.8200	0.7300	0.7300	0.7300	0.7700	0.7700	0.7700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	2	19	31	90	4	9	115	28	5	4	10
Total Analysis Volume [veh/h]	62	6	77	126	361	15	34	460	111	21	17	42
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	1			1			1			0		
v_di, Inbound Pedestrian Volume crossing m	1			1			0			1		
v_co, Outbound Pedestrian Volume crossing	2			1			2			2		
v_ci, Inbound Pedestrian Volume crossing mi	2			2			2			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			1			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	1.0
Offset Reference	LagFO
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split
Signal group	0	4	0	5	2	0	1	6	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	4	0	4	4	0	4	4	0	0	4	0
Maximum Green [s]	0	11	0	15	38	0	12	35	0	0	30	0
Amber [s]	0.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	0.0	1.0	0.0
Split [s]	0	16	0	19	44	0	16	41	0	0	34	0
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	4	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	23	0	0	26	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0	0.0	2.0	0.0
Minimum Recall		No		No	No		No	No			No	
Maximum Recall		No		No	Yes		No	Yes			No	
Pedestrian Recall		No		No	No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.10	5.10	5.10	4.00	6.40	6.40	4.00	6.40	6.40	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	3.10	2.00	4.40	4.40	2.00	4.40	4.40	2.00	2.00
g_i, Effective Green Time [s]	8	8	8	9	75	75	3	68	68	5	5
g / C, Green / Cycle	0.07	0.07	0.07	0.09	0.68	0.68	0.02	0.62	0.62	0.04	0.04
(v / s)_i Volume / Saturation Flow Rate	0.02	0.02	0.05	0.07	0.10	0.10	0.02	0.16	0.16	0.02	0.03
s, saturation flow rate [veh/h]	1781	1796	1552	1781	1870	1840	1781	1870	1744	1820	1579
c, Capacity [veh/h]	127	128	110	154	1275	1255	43	1159	1081	82	72
d1, Uniform Delay [s]	48.38	48.38	49.88	49.40	6.19	6.19	53.37	9.43	9.45	51.20	51.49
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.42	0.41	2.96	4.03	0.25	0.25	10.81	0.53	0.57	1.49	2.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.27	0.70	0.82	0.15	0.15	0.78	0.25	0.26	0.46	0.59
d, Delay for Lane Group [s/veh]	48.80	48.79	52.84	53.43	6.43	6.44	64.18	9.95	10.02	52.68	54.31
Lane Group LOS	D	D	D	D	A	A	E	A	B	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	0.89	0.89	2.14	3.51	1.42	1.41	1.05	3.05	2.89	1.08	1.22
50th-Percentile Queue Length [ft/ln]	22.22	22.31	53.40	87.63	35.62	35.29	26.20	76.25	72.34	27.02	30.50
95th-Percentile Queue Length [veh/ln]	1.60	1.61	3.84	6.31	2.56	2.54	1.89	5.49	5.21	1.95	2.20
95th-Percentile Queue Length [ft/ln]	40.00	40.16	96.12	157.74	64.11	63.53	47.17	137.25	130.21	48.64	54.89

Movement, Approach, & Intersection Results

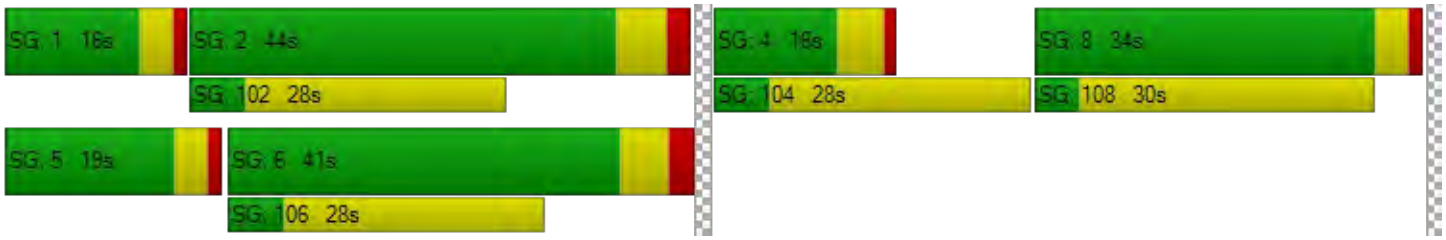
d_M, Delay for Movement [s/veh]	48.80	48.79	52.84	53.43	6.44	6.44	64.18	9.98	10.02	52.68	52.68	54.31
Movement LOS	D	D	D	D	A	A	E	A	B	D	D	D
d_A, Approach Delay [s/veh]	50.94			18.23			13.03			53.54		
Approach LOS	D			B			B			D		
d_I, Intersection Delay [s/veh]	21.55											
Intersection LOS	C											
Intersection V/C	0.306											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	8.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	1824.93	3826.47	6948.99	2621.24
d_p, Pedestrian Delay [s]	46.37	46.37	47.29	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.256	2.587	2.697	1.973
Crosswalk LOS	B	B	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	198	684	629	545
d_b, Bicycle Delay [s]	44.66	23.84	25.84	29.09
l_b,int, Bicycle LOS Score for Intersection	1.799	1.974	2.059	1.692
Bicycle LOS	A	A	B	A

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 22: Neroly Rd/Oakley Rd

Control Type:	All-way stop	Delay (sec / veh):	10.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.323

Intersection Setup

Name	Neroly Rd			Neroly Rd			Oakley Rd			Oakley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Neroly Rd			Neroly Rd			Oakley Rd			Oakley Rd		
Base Volume Input [veh/h]	46	84	6	59	88	8	4	87	46	3	65	64
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	84	6	59	88	8	4	87	46	3	65	64
Peak Hour Factor	0.7700	0.7700	0.7700	0.7600	0.7600	0.7600	0.5900	0.5900	0.5900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	27	2	19	29	3	2	37	19	1	18	18
Total Analysis Volume [veh/h]	60	109	8	78	116	11	7	147	78	3	73	72
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	679	685	718	713
Degree of Utilization, x	0.26	0.30	0.32	0.21

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.04	1.26	1.40	0.78
95th-Percentile Queue Length [ft]	25.98	31.38	34.95	19.43
Approach Delay [s/veh]	10.15	10.49	10.38	9.37
Approach LOS	B	B	B	A
Intersection Delay [s/veh]	10.16			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 23: Neroly Rd/Live Oak Ave

Control Type:	All-way stop	Delay (sec / veh):	12.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.468

Intersection Setup

Name	Live Oak Ave			Live Oak Ave			Neroly Rd			Neroly Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00	100.00	155.00	100.00	100.00
Speed [mph]	50.00			40.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Live Oak Ave			Live Oak Ave			Neroly Rd			Neroly Rd		
Base Volume Input [veh/h]	74	64	93	116	120	1	2	46	110	19	40	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	74	64	93	116	120	1	2	46	110	19	40	82
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.7900	0.7900	0.7900	0.7200	0.7200	0.7200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	19	27	34	35	0	1	15	35	7	14	28
Total Analysis Volume [veh/h]	87	75	109	136	141	1	3	58	139	26	56	114
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	619	595	506	545	612	504	544	610
Degree of Utilization, x	0.44	0.47	0.01	0.11	0.23	0.05	0.10	0.19

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.22	2.48	0.02	0.36	0.87	0.16	0.34	0.68
95th-Percentile Queue Length [ft]	55.54	61.98	0.45	8.88	21.72	4.07	8.57	17.05
Approach Delay [s/veh]	13.26	14.26	10.23			10.03		
Approach LOS	B	B	B			B		
Intersection Delay [s/veh]	12.24							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 24: Live Oak Ave/Oakley Rd

Control Type:	All-way stop	Delay (sec / veh):	18.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.691

Intersection Setup

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Base Volume Input [veh/h]	18	158	25	30	76	22	103	54	17	40	89	89
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	158	25	30	76	22	103	54	17	40	89	89
Peak Hour Factor	0.6100	0.6100	0.6100	0.6200	0.6200	0.6200	0.4500	0.4500	0.4500	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	65	10	12	31	9	57	30	9	12	26	26
Total Analysis Volume [veh/h]	30	259	41	48	123	35	229	120	38	48	106	106
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	552	525	560	555
Degree of Utilization, x	0.60	0.39	0.69	0.47

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	3.92	1.86	5.38	2.48
95th-Percentile Queue Length [ft]	97.97	46.39	134.53	61.97
Approach Delay [s/veh]	18.79	14.24	22.60	15.08
Approach LOS	C	B	C	C
Intersection Delay [s/veh]	18.43			
Intersection LOS	C			

Intersection Level Of Service Report
Intersection 81: Live Oak Ave/El Lago Dr

Control Type:	Two-way stop	Delay (sec / veh):	13.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.083

Intersection Setup

Name	Live Oak Ave		Live Oak Ave		El Lago Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Live Oak Ave		Live Oak Ave		El Lago Dr	
Base Volume Input [veh/h]	150	7	20	121	23	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	150	7	20	121	23	39
Peak Hour Factor	0.5400	0.5400	0.7300	0.7300	0.5300	0.5300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	69	3	7	41	11	18
Total Analysis Volume [veh/h]	278	13	27	166	43	74
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.08	0.10
d_M, Delay for Movement [s/veh]	0.00	0.00	7.88	0.00	13.16	10.96
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.06	0.65	0.65
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.62	1.62	16.35	16.35
d_A, Approach Delay [s/veh]	0.00		1.10		11.77	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.65					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 82: Oakley Rd/Project Access

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Project Access		Oakley Rd		Oakley Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	15.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project Access		Oakley Rd		Oakley Rd	
Base Volume Input [veh/h]	0	0	108	0	0	208
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	1.00	1.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	108	0	0	208
Peak Hour Factor	0.2500	0.2500	0.7500	0.2500	0.2500	0.6800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	36	0	0	76
Total Analysis Volume [veh/h]	0	0	144	0	0	306
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.31	8.96	0.00	0.00	7.49	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.14		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Existing Conditions_AM.pdf

Scenario 1 Existing Conditions AM
5/1/2019

Turning Movement Volume: Summary

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	Live Oak Rd/Main St	217	85	483	145	37	820	1787

ID	Intersection Name	Eastbound			Northeastbound			Southwestbound			Northwestbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14	Empire Ave/Oakley Rd	48	5	59	103	296	12	25	336	81	16	13	32	1026

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
22	Neroly Rd/Oakley Rd	46	84	6	59	88	8	4	87	46	3	65	64	560

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
23	Neroly Rd/Live Oak Ave	74	64	93	116	120	1	2	46	110	19	40	82	767

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	18	158	25	30	76	22	103	54	17	40	89	89	721

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
81	Live Oak Ave/El Lago Dr	150	7	20	121	23	39	360

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
82	Oakley Rd/Project Access	0	0	108	0	0	208	316

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Existing Conditions_AM.pdf

Scenario 1 Existing Conditions AM
5/1/2019

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	Live Oak Rd/Main St	Final Base	217	85	483	145	37	820	1787
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**217**	**85**	**483**	**145**	**37**	**820**	**1787**

ID	Intersection Name	Volume Type	Eastbound			Northeastbound			Southwestbound			Northwestbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14	Empire Ave/Oakley Rd	Final Base	48	5	59	103	296	12	25	336	81	16	13	32	1026
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**48**	**5**	**59**	**103**	**296**	**12**	**25**	**336**	**81**	**16**	**13**	**32**	**1026**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
22	Neroly Rd/Oakley Rd	Final Base	46	84	6	59	88	8	4	87	46	3	65	64	560
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**46**	**84**	**6**	**59**	**88**	**8**	**4**	**87**	**46**	**3**	**65**	**64**	**560**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
23	Neroly Rd/Live Oak Ave	Final Base	74	64	93	116	120	1	2	46	110	19	40	82	767
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**74**	**64**	**93**	**116**	**120**	**1**	**2**	**46**	**110**	**19**	**40**	**82**	**767**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	Final Base	18	158	25	30	76	22	103	54	17	40	89	89	721
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**18**	**158**	**25**	**30**	**76**	**22**	**103**	**54**	**17**	**40**	**89**	**89**	**721**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
81	Live Oak Ave/El Lago Dr	Final Base	150	7	20	121	23	39	360
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**150**	**7**	**20**	**121**	**23**	**39**	**360**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
82	Oakley Rd/Project Access	Final Base	0	0	108	0	0	208	316
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**0**	**0**	**108**	**0**	**0**	**208**	**316**

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The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
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Scenario 3 Existing Conditions PM
5/1/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Live Oak Rd/Main St	Signalized	HCM 6th Edition	WB Left	0.370	7.2	A
14	Empire Ave/Oakley Rd	Signalized	HCM 6th Edition	SWB Left	0.311	27.7	C
22	Neroly Rd/Oakley Rd	All-way stop	HCM 6th Edition	SB Thru	0.385	9.6	A
23	Neroly Rd/Live Oak Ave	All-way stop	HCM 6th Edition	NB Thru	0.355	10.3	B
24	Live Oak Ave/Oakley Rd	All-way stop	HCM 6th Edition	EB Thru	0.256	9.0	A
81	Live Oak Ave/El Lago Dr	Two-way stop	HCM 6th Edition	WB Left	0.022	10.5	B
82	Oakley Rd/Project Access	Two-way stop	HCM 6th Edition	EB Thru	0.003	0.0	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Live Oak Rd/Main St

Control Type:	Signalized	Delay (sec / veh):	7.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.370

Intersection Setup

Name	Live Oak Avenue		Main St		Main St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	1	1	1	0
Pocket Length [ft]	100.00	260.00	100.00	160.00	255.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	Live Oak Avenue		Main St		Main St	
Base Volume Input [veh/h]	38	34	1074	98	22	652
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.30	4.30	4.30	4.30	4.30	4.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	38	34	1074	98	22	652
Peak Hour Factor	0.8600	0.8600	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	10	289	26	6	175
Total Analysis Volume [veh/h]	44	40	1155	105	24	701
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LagFO
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	8	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	8	0	10	0	6	10
Maximum Green [s]	47	0	44	0	11	61
Amber [s]	4.7	0.0	5.0	0.0	5.0	5.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	53	0	50	0	17	67
Vehicle Extension [s]	4.0	0.0	4.0	0.0	3.0	4.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	26	0	0	0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	3.7	0.0	4.0	0.0	4.0	4.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.70	5.70	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.70	3.70	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	8	8	91	91	3	101
g / C, Green / Cycle	0.06	0.06	0.76	0.76	0.03	0.84
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.33	0.07	0.01	0.20
s, saturation flow rate [veh/h]	1748	1560	3495	1528	1748	3495
c, Capacity [veh/h]	112	100	2659	1163	49	2931
d1, Uniform Delay [s]	53.93	53.96	5.13	3.68	57.50	1.96
k, delay calibration	0.15	0.15	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.19	3.68	0.52	0.15	7.57	0.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.40	0.43	0.09	0.49	0.24
d, Delay for Lane Group [s/veh]	57.12	57.64	5.65	3.83	65.07	2.15
Lane Group LOS	E	E	A	A	E	A
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.37	1.26	3.97	0.54	0.80	0.86
50th-Percentile Queue Length [ft/ln]	34.20	31.40	99.29	13.57	20.10	21.62
95th-Percentile Queue Length [veh/ln]	2.46	2.26	7.15	0.98	1.45	1.56
95th-Percentile Queue Length [ft/ln]	61.55	56.52	178.72	24.43	36.18	38.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.12	57.64	5.65	3.83	65.07	2.15
Movement LOS	E	E	A	A	E	A
d_A, Approach Delay [s/veh]	57.37		5.49		4.23	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	7.16					
Intersection LOS	A					
Intersection V/C	0.370					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.035	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	4.132	5.172	4.731
Bicycle LOS	D	F	E

Sequence

Ring 1	1	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 14: Empire Ave/Oakley Rd

Control Type:	Signalized	Delay (sec / veh):	27.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.311

Intersection Setup

Name	Oakley Rd			Empire Ave			Empire Ave			Driveway		
Approach	Eastbound			Northeastbound			Southwestbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	315.00	100.00	100.00	110.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			40.00			40.00			15.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oakley Rd			Empire Ave			Empire Ave			Driveway		
Base Volume Input [veh/h]	64	38	90	88	334	12	71	363	60	68	32	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	64	38	90	88	334	12	71	363	60	68	32	54
Peak Hour Factor	0.8500	0.8500	0.8500	0.9200	0.9200	0.9200	0.9300	0.9300	0.9300	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	11	26	24	91	3	19	98	16	19	9	15
Total Analysis Volume [veh/h]	75	45	106	96	363	13	76	390	65	76	36	61
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	1			2			2			1		
v_di, Inbound Pedestrian Volume crossing m	2			1			1			2		
v_co, Outbound Pedestrian Volume crossing	0			1			0			1		
v_ci, Inbound Pedestrian Volume crossing mi	0			1			0			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			0			1			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	1.0
Offset Reference	LagFO
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split
Signal group	0	4	0	5	2	0	1	6	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	4	0	4	4	0	4	4	0	0	4	0
Maximum Green [s]	0	13	0	13	38	0	10	35	0	0	30	0
Amber [s]	0.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	0.0	1.0	0.0
Split [s]	0	18	0	17	43	0	14	40	0	0	35	0
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	4	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	23	0	0	26	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0	0.0	2.0	0.0
Minimum Recall		No		No	No		No	No			No	
Maximum Recall		No		No	Yes		No	Yes			No	
Pedestrian Recall		No		No	No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.10	5.10	5.10	4.00	6.40	6.40	4.00	6.40	6.40	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	3.10	2.00	4.40	4.40	2.00	4.40	4.40	2.00	2.00
g_i, Effective Green Time [s]	10	10	10	7	65	65	6	63	63	10	10
g / C, Green / Cycle	0.09	0.09	0.09	0.07	0.59	0.59	0.05	0.57	0.57	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.07	0.05	0.10	0.10	0.04	0.12	0.13	0.06	0.04
s, saturation flow rate [veh/h]	1781	1846	1548	1781	1870	1847	1781	1870	1766	1809	1573
c, Capacity [veh/h]	164	170	142	121	1097	1084	98	1072	1013	162	141
d1, Uniform Delay [s]	46.92	46.91	48.60	50.49	10.45	10.46	51.33	11.43	11.46	48.62	47.42
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.50	0.48	2.91	4.33	0.34	0.35	4.97	0.46	0.50	1.98	0.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.36	0.75	0.79	0.17	0.17	0.78	0.22	0.22	0.69	0.43
d, Delay for Lane Group [s/veh]	47.42	47.38	51.51	54.82	10.79	10.80	56.30	11.89	11.96	50.60	48.21
Lane Group LOS	D	D	D	D	B	B	E	B	B	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.53	1.57	2.91	2.70	2.05	2.03	2.16	2.70	2.61	3.15	1.66
50th-Percentile Queue Length [ft/ln]	38.31	39.27	72.84	67.43	51.27	50.87	54.07	67.52	65.23	78.73	41.41
95th-Percentile Queue Length [veh/ln]	2.76	2.83	5.24	4.85	3.69	3.66	3.89	4.86	4.70	5.67	2.98
95th-Percentile Queue Length [ft/ln]	68.96	70.69	131.11	121.37	92.29	91.56	97.33	121.54	117.42	141.71	74.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.42	47.38	51.51	54.82	10.80	10.80	56.30	11.92	11.96	50.60	50.60	48.21
Movement LOS	D	D	D	D	B	B	E	B	B	D	D	D
d_A, Approach Delay [s/veh]	49.33			19.75			18.27			49.75		
Approach LOS	D			B			B			D		
d_I, Intersection Delay [s/veh]	27.66											
Intersection LOS	C											
Intersection V/C	0.311											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	8.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	2450.66	2244.07	3947.00
d_p, Pedestrian Delay [s]	46.37	46.37	47.29	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.263	2.582	2.688	2.001
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	235	665	611	564
d_b, Bicycle Delay [s]	42.90	24.49	26.54	28.37
l_b,int, Bicycle LOS Score for Intersection	1.933	1.949	1.998	1.845
Bicycle LOS	A	A	A	A

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Neroly Rd/Oakley Rd

Control Type:	All-way stop	Delay (sec / veh):	9.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.385

Intersection Setup

Name	Neroly Rd			Neroly Rd			Oakley Rd			Oakley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Neroly Rd			Neroly Rd			Oakley Rd			Oakley Rd		
Base Volume Input [veh/h]	27	53	0	95	139	12	6	59	35	7	44	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	53	0	95	139	12	6	59	35	7	44	44
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8100	0.8100	0.8100	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	16	0	29	42	4	2	18	11	2	13	13
Total Analysis Volume [veh/h]	33	64	0	114	167	14	7	73	43	8	50	50
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	725	766	741	747
Degree of Utilization, x	0.13	0.39	0.17	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.46	1.82	0.59	0.50
95th-Percentile Queue Length [ft]	11.52	45.57	14.82	12.60
Approach Delay [s/veh]	8.73	10.61	8.83	8.63
Approach LOS	A	B	A	A
Intersection Delay [s/veh]	9.62			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 23: Neroly Rd/Live Oak Ave

Control Type:	All-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.355

Intersection Setup

Name	Live Oak Ave			Live Oak Ave			Neroly Rd			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00	100.00	155.00	100.00	100.00
Speed [mph]	50.00			40.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Live Oak Ave			Live Oak Ave			Neroly Rd			Live Oak Ave		
Base Volume Input [veh/h]	68	81	40	71	52	4	2	2	78	37	51	128
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	68	81	40	71	52	4	2	2	78	37	51	128
Peak Hour Factor	0.8300	0.8300	0.8300	0.8800	0.8800	0.8800	0.7100	0.7100	0.7100	0.7800	0.7800	0.7800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	24	12	20	15	1	1	1	27	12	16	41
Total Analysis Volume [veh/h]	82	98	48	81	59	5	3	3	110	47	65	164
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	642	613	549	595	674	566	615	701
Degree of Utilization, x	0.36	0.24	0.01	0.01	0.16	0.08	0.11	0.23

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.60	0.91	0.02	0.02	0.58	0.27	0.35	0.90
95th-Percentile Queue Length [ft]	40.07	22.86	0.41	0.38	14.50	6.77	8.82	22.61
Approach Delay [s/veh]	11.67	10.68	9.07			9.40		
Approach LOS	B	B	A			A		
Intersection Delay [s/veh]	10.27							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 24: Live Oak Ave/Oakley Rd

Control Type:	All-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.256

Intersection Setup

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Base Volume Input [veh/h]	10	44	46	37	39	5	3	124	41	40	89	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	44	46	37	39	5	3	124	41	40	89	19
Peak Hour Factor	0.8100	0.8100	0.8100	0.7800	0.7800	0.7800	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	14	14	12	13	2	1	37	12	12	26	6
Total Analysis Volume [veh/h]	12	54	57	47	50	6	4	148	49	48	106	23
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	762	711	785	761
Degree of Utilization, x	0.16	0.14	0.26	0.23

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.57	0.50	1.02	0.90
95th-Percentile Queue Length [ft]	14.35	12.62	25.47	22.45
Approach Delay [s/veh]	8.64	8.92	9.16	9.16
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	9.01			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 81: Live Oak Ave/El Lago Dr

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name	Live Oak Ave		Live Oak Ave		El lago Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Live Oak Ave		Live Oak Ave		El lago Dr	
Base Volume Input [veh/h]	88	28	32	83	12	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	1.00	1.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	88	28	32	83	12	13
Peak Hour Factor	0.8400	0.8400	0.8500	0.8500	0.7800	0.7800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	8	9	24	4	4
Total Analysis Volume [veh/h]	105	33	38	98	15	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.02	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	7.55	0.00	10.48	9.04
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.08	0.08	0.13	0.13
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.01	2.01	3.14	3.14
d_A, Approach Delay [s/veh]	0.00		2.11		9.71	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.95					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 82: Oakley Rd/Project Access

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Project Access		Oakley Rd		Oakley Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	15.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project Access		Oakley Rd		Oakley Rd	
Base Volume Input [veh/h]	0	0	227	0	0	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	227	0	0	160
Peak Hour Factor	0.2500	0.2500	0.9000	0.2500	0.2500	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	63	0	0	45
Total Analysis Volume [veh/h]	0	0	252	0	0	180
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.16	9.55	0.00	0.00	7.73	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.35		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Existing Conditions_PM.pdf

Scenario 3 Existing Conditions PM
5/1/2019

Turning Movement Volume: Summary

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	Live Oak Rd/Main St	38	34	1074	98	22	652	1918

ID	Intersection Name	Eastbound			Northeastbound			Southwestbound			Northwestbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14	Empire Ave/Oakley Rd	64	38	90	88	334	12	71	363	60	68	32	54	1274

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
22	Neroly Rd/Oakley Rd	27	53	0	95	139	12	6	59	35	7	44	44	521

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
23	Neroly Rd/Live Oak Ave	68	81	40	71	52	4	2	2	78	37	51	128	614

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	10	44	46	37	39	5	3	124	41	40	89	19	497

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
81	Live Oak Ave/El Lago Dr	88	28	32	83	12	13	256

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
82	Oakley Rd/Project Access	0	0	227	0	0	160	387

The Vines at Oakley TIS

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Report File: J:\...\Existing Conditions_PM.pdf

Scenario 3 Existing Conditions PM
5/1/2019

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	Live Oak Rd/Main St	Final Base	38	34	1074	98	22	652	1918
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**38**	**34**	**1074**	**98**	**22**	**652**	**1918**

ID	Intersection Name	Volume Type	Eastbound			Northeastbound			Southwestbound			Northwestbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14	Empire Ave/Oakley Rd	Final Base	64	38	90	88	334	12	71	363	60	68	32	54	1274
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**64**	**38**	**90**	**88**	**334**	**12**	**71**	**363**	**60**	**68**	**32**	**54**	**1274**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
22	Neroly Rd/Oakley Rd	Final Base	27	53	0	95	139	12	6	59	35	7	44	44	521
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**27**	**53**	**0**	**95**	**139**	**12**	**6**	**59**	**35**	**7**	**44**	**44**	**521**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
23	Neroly Rd/Live Oak Ave	Final Base	68	81	40	71	52	4	2	2	78	37	51	128	614
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**68**	**81**	**40**	**71**	**52**	**4**	**2**	**2**	**78**	**37**	**51**	**128**	**614**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	Final Base	10	44	46	37	39	5	3	124	41	40	89	19	497
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**10**	**44**	**46**	**37**	**39**	**5**	**3**	**124**	**41**	**40**	**89**	**19**	**497**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
81	Live Oak Ave/El Lago Dr	Final Base	88	28	32	83	12	13	256
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**88**	**28**	**32**	**83**	**12**	**13**	**256**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
82	Oakley Rd/Project Access	Final Base	0	0	227	0	0	160	387
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0
		Future Total	**0**	**0**	**227**	**0**	**0**	**160**	**387**

Appendix C

Existing plus Project Conditions LOS Analysis

Table of Contents

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Existing plus Project Conditions_AM.pdf

Scenario 2 Existing Plus Project Conditions AM
5/3/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Live Oak Rd/Main St	Signalized	HCM 6th Edition	WB Left	0.477	19.6	B
14	Empire Ave/Oakley Rd	Signalized	HCM 6th Edition	SWB Left	0.309	21.9	C
22	Neroly Rd/Oakley Rd	All-way stop	HCM 6th Edition	SB Thru	0.323	10.2	B
23	Neroly Rd/Live Oak Ave	All-way stop	HCM 6th Edition	SB Left	0.479	12.4	B
24	Live Oak Ave/Oakley Rd	All-way stop	HCM 6th Edition	EB Left	0.720	20.3	C
81	Live Oak Ave/El Lago Dr	Two-way stop	HCM 6th Edition	WB Left	0.084	13.3	B
82	Oakley Rd/Project Access	Two-way stop	HCM 6th Edition	NB Left	0.127	12.5	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Live Oak Rd/Main St

Control Type:	Signalized	Delay (sec / veh):	19.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.477

Intersection Setup

Name	Live Oak Avenue		Main St		Main St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	1	1	1	0
Pocket Length [ft]	100.00	260.00	100.00	160.00	255.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	Live Oak Avenue		Main St		Main St	
Base Volume Input [veh/h]	217	85	483	145	37	820
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.30	4.30	4.30	4.30	4.30	4.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	18	0	0	6	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	235	85	483	151	37	820
Peak Hour Factor	0.6800	0.6800	0.7900	0.7900	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	86	31	153	48	11	244
Total Analysis Volume [veh/h]	346	125	611	191	44	976
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LagFO
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	8	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	8	0	10	0	6	10
Maximum Green [s]	47	0	44	0	11	61
Amber [s]	4.7	0.0	5.0	0.0	5.0	5.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	53	0	50	0	17	67
Vehicle Extension [s]	3.0	0.0	4.0	0.0	3.0	4.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	26	0	0	0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	3.7	0.0	4.0	0.0	4.0	4.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.70	5.70	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.70	3.70	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	26	26	71	71	5	82
g / C, Green / Cycle	0.22	0.22	0.59	0.59	0.04	0.68
(v / s)_i Volume / Saturation Flow Rate	0.20	0.08	0.17	0.12	0.03	0.28
s, saturation flow rate [veh/h]	1748	1560	3495	1560	1748	3495
c, Capacity [veh/h]	384	342	2075	926	69	2387
d1, Uniform Delay [s]	45.58	39.74	12.00	11.28	56.80	8.36
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.92	0.65	0.36	0.50	9.53	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.37	0.29	0.21	0.64	0.41
d, Delay for Lane Group [s/veh]	53.50	40.39	12.36	11.79	66.33	8.88
Lane Group LOS	D	D	B	B	E	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	10.73	3.18	3.79	2.30	1.47	4.90
50th-Percentile Queue Length [ft/ln]	268.26	79.41	94.71	57.39	36.67	122.62
95th-Percentile Queue Length [veh/ln]	16.10	5.72	6.82	4.13	2.64	8.54
95th-Percentile Queue Length [ft/ln]	402.56	142.93	170.48	103.30	66.01	213.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.50	40.39	12.36	11.79	66.33	8.88
Movement LOS	D	D	B	B	E	A
d_A, Approach Delay [s/veh]	50.02		12.22		11.36	
Approach LOS	D		B		B	
d_I, Intersection Delay [s/veh]	19.60					
Intersection LOS	B					
Intersection V/C	0.477					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.222	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	4.132	4.794	4.974
Bicycle LOS	D	E	E

Sequence

Ring 1	1	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 14: Empire Ave/Oakley Rd

Control Type:	Signalized	Delay (sec / veh):	21.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.309

Intersection Setup

Name	Oakley Rd			Empire Ave			Empire Ave			Driveway		
Approach	Eastbound			Northeastbound			Southwestbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	315.00	100.00	100.00	110.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			40.00			40.00			15.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oakley Rd			Empire Ave			Empire Ave			Driveway		
Base Volume Input [veh/h]	48	5	59	103	296	12	25	336	81	16	13	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	8	0	2	1	0	0	0	0	2	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	56	5	61	104	296	12	25	336	83	16	13	32
Peak Hour Factor	0.7700	0.7700	0.7700	0.8200	0.8200	0.8200	0.7300	0.7300	0.7300	0.7700	0.7700	0.7700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	2	20	32	90	4	9	115	28	5	4	10
Total Analysis Volume [veh/h]	73	6	79	127	361	15	34	460	114	21	17	42
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	1			1			1			0		
v_di, Inbound Pedestrian Volume crossing m	1			1			0			1		
v_co, Outbound Pedestrian Volume crossing	0			1			0			2		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			0			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	1.0
Offset Reference	LagFO
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split
Signal group	0	4	0	5	2	0	1	6	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	4	0	4	4	0	4	4	0	0	4	0
Maximum Green [s]	0	11	0	15	38	0	12	35	0	0	30	0
Amber [s]	0.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	0.0	1.0	0.0
Split [s]	0	16	0	19	44	0	16	41	0	0	34	0
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	4	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	23	0	0	26	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0	0.0	2.0	0.0
Minimum Recall		No		No	No		No	No			No	
Maximum Recall		No		No	Yes		No	Yes			No	
Pedestrian Recall		No		No	No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.10	5.10	5.10	4.00	6.40	6.40	4.00	6.40	6.40	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	3.10	2.00	4.40	4.40	2.00	4.40	4.40	2.00	2.00
g_i, Effective Green Time [s]	8	8	8	10	75	75	3	68	68	5	5
g / C, Green / Cycle	0.07	0.07	0.07	0.09	0.68	0.68	0.02	0.62	0.62	0.04	0.04
(v / s)_i Volume / Saturation Flow Rate	0.02	0.02	0.05	0.07	0.10	0.10	0.02	0.16	0.16	0.02	0.03
s, saturation flow rate [veh/h]	1781	1794	1553	1781	1870	1843	1781	1870	1744	1820	1552
c, Capacity [veh/h]	129	130	113	155	1273	1254	43	1155	1078	82	70
d1, Uniform Delay [s]	48.38	48.38	49.79	49.37	6.25	6.25	53.37	9.54	9.56	51.20	51.49
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.49	0.48	2.95	4.03	0.25	0.25	10.81	0.53	0.58	1.49	2.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.30	0.70	0.82	0.15	0.15	0.78	0.26	0.26	0.46	0.60
d, Delay for Lane Group [s/veh]	48.88	48.87	52.74	53.40	6.49	6.50	64.18	10.08	10.14	52.68	54.48
Lane Group LOS	D	D	D	D	A	A	E	B	B	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	1.03	1.04	2.19	3.53	1.43	1.42	1.05	3.09	2.93	1.08	1.22
50th-Percentile Queue Length [ft/ln]	25.87	25.97	54.75	88.31	35.86	35.52	26.20	77.37	73.27	27.02	30.55
95th-Percentile Queue Length [veh/ln]	1.86	1.87	3.94	6.36	2.58	2.56	1.89	5.57	5.28	1.95	2.20
95th-Percentile Queue Length [ft/ln]	46.56	46.74	98.54	158.95	64.55	63.93	47.17	139.26	131.89	48.64	54.99

Movement, Approach, & Intersection Results

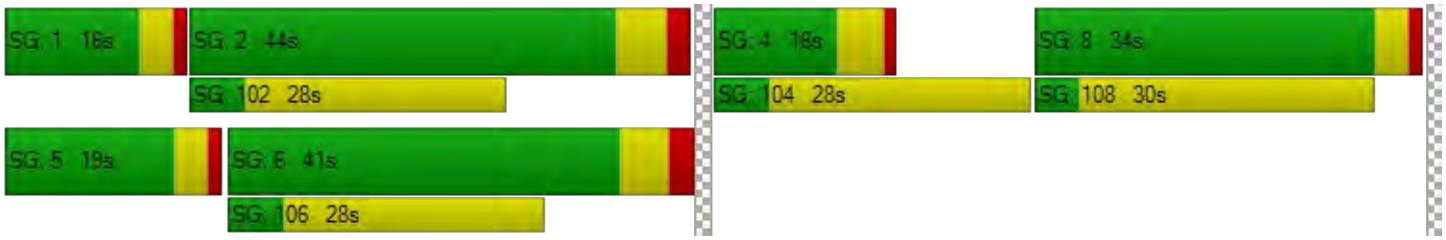
d_M, Delay for Movement [s/veh]	48.87	48.87	52.74	53.40	6.50	6.50	64.18	10.10	10.14	52.68	52.68	54.48
Movement LOS	D	D	D	D	A	A	E	B	B	D	D	D
d_A, Approach Delay [s/veh]	50.80			18.34			13.13			53.62		
Approach LOS	D			B			B			D		
d_I, Intersection Delay [s/veh]	21.89											
Intersection LOS	C											
Intersection V/C	0.309											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	8.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	3816.13	6948.99	2621.24
d_p, Pedestrian Delay [s]	46.37	46.37	47.29	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.261	2.587	2.700	1.973
Crosswalk LOS	B	B	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	198	684	629	545
d_b, Bicycle Delay [s]	44.66	23.83	25.84	29.11
l_b,int, Bicycle LOS Score for Intersection	1.820	1.975	2.061	1.692
Bicycle LOS	A	A	B	A

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 22: Neroly Rd/Oakley Rd

Control Type:	All-way stop	Delay (sec / veh):	10.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.323

Intersection Setup

Name	Neroly Rd			Neroly Rd			Oakley Rd			Oakley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Neroly Rd			Neroly Rd			Oakley Rd			Oakley Rd		
Base Volume Input [veh/h]	46	84	6	59	88	8	4	87	46	3	65	64
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	1	0
Total Hourly Volume [veh/h]	46	84	6	59	88	8	4	87	46	3	66	64
Peak Hour Factor	0.7700	0.7700	0.7700	0.7600	0.7600	0.7600	0.5900	0.5900	0.5900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	27	2	19	29	3	2	37	19	1	19	18
Total Analysis Volume [veh/h]	60	109	8	78	116	11	7	147	78	3	74	72
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	679	685	718	713
Degree of Utilization, x	0.26	0.30	0.32	0.21

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.04	1.26	1.40	0.78
95th-Percentile Queue Length [ft]	26.00	31.41	34.98	19.61
Approach Delay [s/veh]	10.16	10.49	10.38	9.38
Approach LOS	B	B	B	A
Intersection Delay [s/veh]	10.17			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 23: Neroly Rd/Live Oak Ave

Control Type:	All-way stop	Delay (sec / veh):	12.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.479

Intersection Setup

Name	Live Oak Ave			Live Oak Ave			Neroly Rd			Neroly Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00	100.00	155.00	100.00	100.00
Speed [mph]	50.00			40.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Live Oak Ave			Live Oak Ave			Neroly Rd			Neroly Rd		
Base Volume Input [veh/h]	74	64	93	116	120	1	2	46	110	19	40	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	5	0	0	0	0	0	0	0	2
Total Hourly Volume [veh/h]	74	64	93	121	120	1	2	46	110	19	40	84
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.7900	0.7900	0.7900	0.7200	0.7200	0.7200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	19	27	36	35	0	1	15	35	7	14	29
Total Analysis Volume [veh/h]	87	75	109	142	141	1	3	58	139	26	56	117
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	617	593	503	543	609	502	541	607
Degree of Utilization, x	0.44	0.48	0.01	0.11	0.23	0.05	0.10	0.19

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.24	2.58	0.02	0.36	0.87	0.16	0.34	0.71
95th-Percentile Queue Length [ft]	55.92	64.61	0.45	8.92	21.87	4.08	8.61	17.70
Approach Delay [s/veh]	13.34	14.52	10.28			10.09		
Approach LOS	B	B	B			B		
Intersection Delay [s/veh]	12.37							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 24: Live Oak Ave/Oakley Rd

Control Type:	All-way stop	Delay (sec / veh):	20.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.720

Intersection Setup

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Base Volume Input [veh/h]	18	158	25	30	76	22	103	54	17	40	89	89
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	2	7	0	0	0	0	0	5	1	19
Total Hourly Volume [veh/h]	18	158	27	37	76	22	103	54	17	45	90	108
Peak Hour Factor	0.6100	0.6100	0.6100	0.6200	0.6200	0.6200	0.4500	0.4500	0.4500	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	65	11	15	31	9	57	30	9	13	27	32
Total Analysis Volume [veh/h]	30	259	44	60	123	35	229	120	38	54	107	129
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	530	503	538	539
Degree of Utilization, x	0.63	0.43	0.72	0.54

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	4.32	2.17	5.88	3.17
95th-Percentile Queue Length [ft]	108.06	54.13	146.91	79.35
Approach Delay [s/veh]	20.62	15.53	25.04	17.20
Approach LOS	C	C	D	C
Intersection Delay [s/veh]	20.30			
Intersection LOS	C			

Intersection Level Of Service Report
Intersection 81: Live Oak Ave/El Lago Dr

Control Type:	Two-way stop	Delay (sec / veh):	13.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.084

Intersection Setup

Name	Live Oak Ave		Live Oak Ave		El Lago Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Live Oak Ave		Live Oak Ave		El Lago Dr	
Base Volume Input [veh/h]	150	7	20	121	23	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	2	0	0	5	0	0
Total Hourly Volume [veh/h]	152	7	20	126	23	39
Peak Hour Factor	0.5400	0.5400	0.7300	0.7300	0.5300	0.5300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	3	7	43	11	18
Total Analysis Volume [veh/h]	281	13	27	173	43	74
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.08	0.10
d_M, Delay for Movement [s/veh]	0.00	0.00	7.89	0.00	13.28	11.00
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.06	0.66	0.66
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.62	1.62	16.51	16.51
d_A, Approach Delay [s/veh]	0.00		1.06		11.84	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.62					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 82: Oakley Rd/Project Access

Control Type:	Two-way stop	Delay (sec / veh):	12.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.127

Intersection Setup

Name	Project Access		Oakley Rd		Oakley Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	15.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project Access		Oakley Rd		Oakley Rd	
Base Volume Input [veh/h]	0	0	108	0	0	208
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	1.00	1.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	25	10	0	9	3	0
Total Hourly Volume [veh/h]	25	10	108	9	3	208
Peak Hour Factor	0.3500	0.3500	0.7500	0.7500	0.6800	0.6800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	7	36	3	1	76
Total Analysis Volume [veh/h]	71	29	144	12	4	306
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.03	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.53	10.08	0.00	0.00	7.52	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.56	0.56	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	14.10	14.10	0.00	0.00	0.21	0.21
d_A, Approach Delay [s/veh]	11.82		0.00		0.10	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	2.14					
Intersection LOS	B					

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Existing plus Project Conditions_AM.pdf

Scenario 2 Existing Plus Project Conditions AM
5/3/2019

Turning Movement Volume: Summary

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	Live Oak Rd/Main St	235	85	483	151	37	820	1811

ID	Intersection Name	Eastbound			Northeastbound			Southwestbound			Northwestbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14	Empire Ave/Oakley Rd	56	5	61	104	296	12	25	336	83	16	13	32	1039

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
22	Neroly Rd/Oakley Rd	46	84	6	59	88	8	4	87	46	3	66	64	561

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
23	Neroly Rd/Live Oak Ave	74	64	93	121	120	1	2	46	110	19	40	84	774

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	18	158	27	37	76	22	103	54	17	45	90	108	755

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
81	Live Oak Ave/El Lago Dr	152	7	20	126	23	39	367

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
82	Oakley Rd/Project Access	25	10	108	9	3	208	363

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Existing plus Project Conditions_AM.pdf

Scenario 2 Existing Plus Project Conditions AM
5/3/2019

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	Live Oak Rd/Main St	Final Base	217	85	483	145	37	820	1787
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	18	0	0	6	0	0	24
		Future Total	**235**	**85**	**483**	**151**	**37**	**820**	**1811**

ID	Intersection Name	Volume Type	Eastbound			Northeastbound			Southwestbound			Northwestbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14	Empire Ave/Oakley Rd	Final Base	48	5	59	103	296	12	25	336	81	16	13	32	1026
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	8	0	2	1	0	0	0	0	2	0	0	0	13
		Future Total	**56**	**5**	**61**	**104**	**296**	**12**	**25**	**336**	**83**	**16**	**13**	**32**	**1039**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
22	Neroly Rd/Oakley Rd	Final Base	46	84	6	59	88	8	4	87	46	3	65	64	560
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	0	0	0	1	0	1
		Future Total	**46**	**84**	**6**	**59**	**88**	**8**	**4**	**87**	**46**	**3**	**66**	**64**	**561**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
23	Neroly Rd/Live Oak Ave	Final Base	74	64	93	116	120	1	2	46	110	19	40	82	767
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	5	0	0	0	0	0	0	0	2	7
		Future Total	**74**	**64**	**93**	**121**	**120**	**1**	**2**	**46**	**110**	**19**	**40**	**84**	**774**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	Final Base	18	158	25	30	76	22	103	54	17	40	89	89	721
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	2	7	0	0	0	0	0	5	1	19	34
		Future Total	**18**	**158**	**27**	**37**	**76**	**22**	**103**	**54**	**17**	**45**	**90**	**108**	**755**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
81	Live Oak Ave/El Lago Dr	Final Base	150	7	20	121	23	39	360
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	2	0	0	5	0	0	7
		Future Total	**152**	**7**	**20**	**126**	**23**	**39**	**367**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
82	Oakley Rd/Project Access	Final Base	0	0	108	0	0	208	316
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	25	10	0	9	3	0	47
		Future Total	**25**	**10**	**108**	**9**	**3**	**208**	**363**

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The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
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Scenario 4 Existing Plus Project Conditions PM
5/3/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Live Oak Rd/Main St	Signalized	HCM 6th Edition	WB Left	0.377	7.5	A
14	Empire Ave/Oakley Rd	Signalized	HCM 6th Edition	SWB Left	0.317	27.9	C
22	Neroly Rd/Oakley Rd	All-way stop	HCM 6th Edition	SB Thru	0.385	9.6	A
23	Neroly Rd/Live Oak Ave	All-way stop	HCM 6th Edition	NB Thru	0.357	10.3	B
24	Live Oak Ave/Oakley Rd	All-way stop	HCM 6th Edition	WB Thru	0.264	9.3	A
81	Live Oak Ave/El Lago Dr	Two-way stop	HCM 6th Edition	WB Left	0.022	10.6	B
82	Oakley Rd/Project Access	Two-way stop	HCM 6th Edition	NB Left	0.062	12.2	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Live Oak Rd/Main St

Control Type:	Signalized	Delay (sec / veh):	7.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.377

Intersection Setup

Name	Live Oak Avenue		Main St		Main St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	1	1	1	0
Pocket Length [ft]	100.00	260.00	100.00	160.00	255.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	Live Oak Avenue		Main St		Main St	
Base Volume Input [veh/h]	38	34	1074	98	22	652
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.30	4.30	4.30	4.30	4.30	4.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	11	0	0	20	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	49	34	1074	118	22	652
Peak Hour Factor	0.8600	0.8600	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	10	289	32	6	175
Total Analysis Volume [veh/h]	57	40	1155	127	24	701
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LagFO
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	8	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	8	0	10	0	6	10
Maximum Green [s]	47	0	44	0	11	61
Amber [s]	4.7	0.0	5.0	0.0	5.0	5.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	53	0	50	0	17	67
Vehicle Extension [s]	4.0	0.0	4.0	0.0	3.0	4.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	26	0	0	0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	3.7	0.0	4.0	0.0	4.0	4.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.70	5.70	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.70	3.70	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	8	8	91	91	3	101
g / C, Green / Cycle	0.06	0.06	0.76	0.76	0.03	0.84
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.33	0.08	0.01	0.20
s, saturation flow rate [veh/h]	1748	1560	3495	1528	1748	3495
c, Capacity [veh/h]	114	102	2654	1160	49	2926
d1, Uniform Delay [s]	54.18	53.80	5.19	3.78	57.50	1.99
k, delay calibration	0.15	0.15	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.74	3.47	0.52	0.19	7.57	0.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.39	0.44	0.11	0.49	0.24
d, Delay for Lane Group [s/veh]	58.92	57.27	5.71	3.97	65.07	2.18
Lane Group LOS	E	E	A	A	E	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.80	1.25	4.01	0.67	0.80	0.89
50th-Percentile Queue Length [ft/ln]	45.10	31.26	100.33	16.85	20.10	22.15
95th-Percentile Queue Length [veh/ln]	3.25	2.25	7.22	1.21	1.45	1.59
95th-Percentile Queue Length [ft/ln]	81.18	56.27	180.59	30.32	36.18	39.86

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	58.92	57.27	5.71	3.97	65.07	2.18
Movement LOS	E	E	A	A	E	A
d_A, Approach Delay [s/veh]	58.24		5.54		4.27	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	7.53					
Intersection LOS	A					
Intersection V/C	0.377					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.048	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	4.132	5.190	4.731
Bicycle LOS	D	F	E

Sequence

Ring 1	1	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 14: Empire Ave/Oakley Rd

Control Type:	Signalized	Delay (sec / veh):	27.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.317

Intersection Setup

Name	Oakley Rd			Empire Ave			Empire Ave			Driveway		
Approach	Eastbound			Northeastbound			Southwestbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	315.00	100.00	100.00	110.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			40.00			40.00			15.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oakley Rd			Empire Ave			Empire Ave			Driveway		
Base Volume Input [veh/h]	64	38	90	88	334	12	71	363	60	68	32	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	7	0	2	3	0	0	0	0	9	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	38	92	91	334	12	71	363	69	68	32	54
Peak Hour Factor	0.8500	0.8500	0.8500	0.9200	0.9200	0.9200	0.9300	0.9300	0.9300	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	11	27	25	91	3	19	98	19	19	9	15
Total Analysis Volume [veh/h]	84	45	108	99	363	13	76	390	74	76	36	61
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	1			2			2			1		
v_di, Inbound Pedestrian Volume crossing m	2			1			1			2		
v_co, Outbound Pedestrian Volume crossing	0			1			0			1		
v_ci, Inbound Pedestrian Volume crossing mi	0			1			0			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			0			1			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	1.0
Offset Reference	LagFO
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split
Signal group	0	4	0	5	2	0	1	6	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	4	0	4	4	0	4	4	0	0	4	0
Maximum Green [s]	0	13	0	13	38	0	10	35	0	0	30	0
Amber [s]	0.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	0.0	1.0	0.0
Split [s]	0	18	0	17	43	0	14	40	0	0	35	0
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	4	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	23	0	0	26	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0	0.0	2.0	0.0
Minimum Recall		No		No	No		No	No			No	
Maximum Recall		No		No	Yes		No	Yes			No	
Pedestrian Recall		No		No	No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.10	5.10	5.10	4.00	6.40	6.40	4.00	6.40	6.40	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	3.10	2.00	4.40	4.40	2.00	4.40	4.40	2.00	2.00
g_i, Effective Green Time [s]	10	10	10	8	64	64	6	63	63	10	10
g / C, Green / Cycle	0.09	0.09	0.09	0.07	0.59	0.59	0.05	0.57	0.57	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.04	0.04	0.07	0.06	0.10	0.10	0.04	0.13	0.13	0.06	0.04
s, saturation flow rate [veh/h]	1781	1841	1548	1781	1870	1847	1781	1870	1755	1809	1573
c, Capacity [veh/h]	166	171	144	125	1095	1081	98	1066	1001	162	141
d1, Uniform Delay [s]	46.92	46.91	48.54	50.38	10.51	10.52	51.33	11.63	11.66	48.62	47.42
k, delay calibration	0.04	0.04	0.04	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.54	0.52	2.93	4.29	0.34	0.35	4.97	0.48	0.53	1.98	0.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.38	0.38	0.75	0.79	0.17	0.17	0.78	0.22	0.23	0.69	0.43
d, Delay for Lane Group [s/veh]	47.46	47.42	51.47	54.66	10.86	10.86	56.30	12.11	12.19	50.60	48.21
Lane Group LOS	D	D	D	D	B	B	E	B	B	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	1.65	1.69	2.97	2.78	2.06	2.04	2.16	2.80	2.69	3.15	1.66
50th-Percentile Queue Length [ft/ln]	41.26	42.26	74.21	69.45	51.48	51.07	54.07	69.93	67.26	78.73	41.41
95th-Percentile Queue Length [veh/ln]	2.97	3.04	5.34	5.00	3.71	3.68	3.89	5.04	4.84	5.67	2.98
95th-Percentile Queue Length [ft/ln]	74.27	76.07	133.57	125.01	92.66	91.92	97.33	125.88	121.07	141.71	74.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.45	47.42	51.47	54.66	10.86	10.86	56.30	12.14	12.19	50.60	50.60	48.21
Movement LOS	D	D	D	D	B	B	E	B	B	D	D	D
d_A, Approach Delay [s/veh]	49.28			19.99			18.36			49.75		
Approach LOS	D			B			B			D		
d_I, Intersection Delay [s/veh]	27.86											
Intersection LOS	C											
Intersection V/C	0.317											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	8.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	2409.22	2212.70	3893.60
d_p, Pedestrian Delay [s]	46.37	46.37	47.29	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.269	2.584	2.692	2.001
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	235	665	611	564
d_b, Bicycle Delay [s]	42.90	24.49	26.54	28.37
l_b,int, Bicycle LOS Score for Intersection	1.951	1.951	2.005	1.845
Bicycle LOS	A	A	B	A

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Neroly Rd/Oakley Rd

Control Type:	All-way stop	Delay (sec / veh):	9.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.385

Intersection Setup

Name	Neroly Rd			Neroly Rd			Oakley Rd			Oakley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Neroly Rd			Neroly Rd			Oakley Rd			Oakley Rd		
Base Volume Input [veh/h]	27	53	0	95	139	12	6	59	35	7	44	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	1	0	0	0	0
Total Hourly Volume [veh/h]	27	53	0	95	139	12	6	60	35	7	44	44
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8100	0.8100	0.8100	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	16	0	29	42	4	2	19	11	2	13	13
Total Analysis Volume [veh/h]	33	64	0	114	167	14	7	74	43	8	50	50
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	725	766	741	747
Degree of Utilization, x	0.13	0.39	0.17	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.46	1.82	0.60	0.50
95th-Percentile Queue Length [ft]	11.53	45.61	14.97	12.60
Approach Delay [s/veh]	8.74	10.62	8.84	8.63
Approach LOS	A	B	A	A
Intersection Delay [s/veh]	9.63			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 23: Neroly Rd/Live Oak Ave

Control Type:	All-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.357

Intersection Setup

Name	Live Oak Ave			Live Oak Ave			Neroly Rd			Neroly Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00	100.00	155.00	100.00	100.00
Speed [mph]	50.00			40.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Live Oak Ave			Live Oak Ave			Neroly Rd			Neroly Rd		
Base Volume Input [veh/h]	68	81	40	71	52	4	2	2	78	37	51	128
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	3	0	0	0	0	0	0	0	6
Total Hourly Volume [veh/h]	68	81	40	74	52	4	2	2	78	37	51	134
Peak Hour Factor	0.8300	0.8300	0.8300	0.8800	0.8800	0.8800	0.7100	0.7100	0.7100	0.7800	0.7800	0.7800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	24	12	21	15	1	1	1	27	12	16	43
Total Analysis Volume [veh/h]	82	98	48	84	59	5	3	3	110	47	65	172
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	639	611	547	592	671	565	614	699
Degree of Utilization, x	0.36	0.24	0.01	0.01	0.16	0.08	0.11	0.25

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.61	0.94	0.02	0.02	0.58	0.27	0.35	0.97
95th-Percentile Queue Length [ft]	40.35	23.60	0.41	0.38	14.58	6.78	8.84	24.14
Approach Delay [s/veh]	11.73	10.77	9.11			9.49		
Approach LOS	B	B	A			A		
Intersection Delay [s/veh]	10.33							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 24: Live Oak Ave/Oakley Rd

Control Type:	All-way stop	Delay (sec / veh):	9.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.264

Intersection Setup

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Base Volume Input [veh/h]	10	44	46	37	39	5	3	124	41	40	89	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	6	20	0	0	0	1	0	3	0	11
Total Hourly Volume [veh/h]	10	44	52	57	39	5	3	125	41	43	89	30
Peak Hour Factor	0.8100	0.8100	0.8100	0.7800	0.7800	0.7800	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	14	16	18	13	2	1	37	12	13	26	9
Total Analysis Volume [veh/h]	12	54	64	73	50	6	4	149	49	51	106	36
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	748	697	764	750
Degree of Utilization, x	0.17	0.19	0.26	0.26

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.63	0.68	1.06	1.03
95th-Percentile Queue Length [ft]	15.65	16.88	26.57	25.64
Approach Delay [s/veh]	8.82	9.34	9.40	9.46
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	9.29			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 81: Live Oak Ave/El Lago Dr

Control Type:	Two-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name	Live Oak Ave		Live Oak Ave		El Lago Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Live Oak Ave		Live Oak Ave		El Lago Dr	
Base Volume Input [veh/h]	88	28	32	83	12	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	1.00	1.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	6	0	0	3	0	0
Total Hourly Volume [veh/h]	94	28	32	86	12	13
Peak Hour Factor	0.8400	0.8400	0.8500	0.8500	0.7800	0.7800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	8	9	25	4	4
Total Analysis Volume [veh/h]	112	33	38	101	15	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.02	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	7.56	0.00	10.56	9.08
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.08	0.08	0.13	0.13
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.03	2.03	3.18	3.18
d_A, Approach Delay [s/veh]	0.00		2.07		9.77	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.90					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 82: Oakley Rd/Project Access

Control Type:	Two-way stop	Delay (sec / veh):	12.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.062

Intersection Setup

Name	Project Access		Oakley Rd		Oakley Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	15.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project Access		Oakley Rd		Oakley Rd	
Base Volume Input [veh/h]	0	0	227	0	0	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	14	9	0	27	12	0
Total Hourly Volume [veh/h]	14	9	227	27	12	160
Peak Hour Factor	0.4100	0.4100	0.9000	0.9000	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	5	63	8	3	45
Total Analysis Volume [veh/h]	34	22	252	30	13	180
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.03	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	12.16	10.21	0.00	0.00	7.83	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.30	0.30	0.00	0.00	0.03	0.03
95th-Percentile Queue Length [ft/ln]	7.43	7.43	0.00	0.00	0.77	0.77
d_A, Approach Delay [s/veh]	11.39		0.00		0.53	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.39					
Intersection LOS	B					

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Existing plus Project Conditions_PM.pdf

Scenario 4 Existing Plus Project Conditions PM
5/3/2019

Turning Movement Volume: Summary

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	Live Oak Rd/Main St	49	34	1074	118	22	652	1949

ID	Intersection Name	Eastbound			Northeastbound			Southwestbound			Northwestbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14	Empire Ave/Oakley Rd	71	38	92	91	334	12	71	363	69	68	32	54	1295

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
22	Neroly Rd/Oakley Rd	27	53	0	95	139	12	6	60	35	7	44	44	522

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
23	Neroly Rd/Live Oak Ave	68	81	40	74	52	4	2	2	78	37	51	134	623

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	10	44	52	57	39	5	3	125	41	43	89	30	538

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
81	Live Oak Ave/El Lago Dr	94	28	32	86	12	13	265

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
82	Oakley Rd/Project Access	14	9	227	27	12	160	449

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Existing plus Project Conditions_PM.pdf

Scenario 4 Existing Plus Project Conditions PM
5/3/2019

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	Live Oak Rd/Main St	Final Base	38	34	1074	98	22	652	1918
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	11	0	0	20	0	0	31
		Future Total	**49**	**34**	**1074**	**118**	**22**	**652**	**1949**

ID	Intersection Name	Volume Type	Eastbound			Northeastbound			Southwestbound			Northwestbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14	Empire Ave/Oakley Rd	Final Base	64	38	90	88	334	12	71	363	60	68	32	54	1274
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	7	0	2	3	0	0	0	0	9	0	0	0	21
		Future Total	**71**	**38**	**92**	**91**	**334**	**12**	**71**	**363**	**69**	**68**	**32**	**54**	**1295**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
22	Neroly Rd/Oakley Rd	Final Base	27	53	0	95	139	12	6	59	35	7	44	44	521
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	0	0	0	0	1	0	0	0	0	1
		Future Total	**27**	**53**	**0**	**95**	**139**	**12**	**6**	**60**	**35**	**7**	**44**	**44**	**522**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
23	Neroly Rd/Live Oak Ave	Final Base	68	81	40	71	52	4	2	2	78	37	51	128	614
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	0	3	0	0	0	0	0	0	0	6	9
		Future Total	**68**	**81**	**40**	**74**	**52**	**4**	**2**	**2**	**78**	**37**	**51**	**134**	**623**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	Final Base	10	44	46	37	39	5	3	124	41	40	89	19	497
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
		Other	0	0	6	20	0	0	0	1	0	3	0	11	41
		Future Total	**10**	**44**	**52**	**57**	**39**	**5**	**3**	**125**	**41**	**43**	**89**	**30**	**538**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
81	Live Oak Ave/El Lago Dr	Final Base	88	28	32	83	12	13	256
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	6	0	0	3	0	0	9
		Future Total	**94**	**28**	**32**	**86**	**12**	**13**	**265**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
82	Oakley Rd/Project Access	Final Base	0	0	227	0	0	160	387
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	0	0	0	0	0
		Other	14	9	0	27	12	0	62
		Future Total	**14**	**9**	**227**	**27**	**12**	**160**	**449**

Appendix D

Background Conditions LOS Analysis

Table of Contents

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Background Conditions_AM.pdf
Scenario 7 7 Background Conditions AM
5/1/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Live Oak Rd/Main St	Signalized	HCM 6th Edition	WB Left	0.661	18.6	B
14	Empire Ave/Oakley Rd	Signalized	HCM 6th Edition	SWB Left	0.385	24.2	C
22	Neroly Rd/Oakley Rd	All-way stop	HCM 6th Edition	NB Thru	0.389	11.5	B
23	Neroly Rd/Live Oak Ave	All-way stop	HCM 6th Edition	SB Thru	0.666	16.8	C
24	Live Oak Ave/Oakley Rd	All-way stop	HCM 6th Edition	EB Left	0.851	31.6	D
81	Live Oak Ave/El Iago Dr	Two-way stop	HCM 6th Edition	WB Left	0.109	16.2	C
82	Oakley Rd/Project Access	Two-way stop	HCM 6th Edition	WB Thru	0.004	0.0	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Live Oak Rd/Main St

Control Type:	Signalized	Delay (sec / veh):	18.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.661

Intersection Setup

Name	Live Oak Avenue		Main St		Main St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	1	1	1	0
Pocket Length [ft]	100.00	260.00	100.00	160.00	255.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	Live Oak Avenue		Main St		Main St	
Base Volume Input [veh/h]	217	85	483	145	37	820
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.30	4.30	4.30	4.30	4.30	4.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	187	2	0	570
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	223	85	670	147	37	1390
Peak Hour Factor	0.6800	0.6800	0.7900	0.7900	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	82	31	212	47	11	414
Total Analysis Volume [veh/h]	328	125	848	186	44	1655
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LagFO
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	8	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	8	0	10	0	6	10
Maximum Green [s]	47	0	44	0	11	61
Amber [s]	4.7	0.0	5.0	0.0	5.0	5.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	53	0	50	0	17	67
Vehicle Extension [s]	3.0	0.0	4.0	0.0	3.0	4.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	26	0	0	0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	3.7	0.0	4.0	0.0	4.0	4.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.70	5.70	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.70	3.70	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	25	25	73	73	5	83
g / C, Green / Cycle	0.21	0.21	0.60	0.60	0.04	0.69
(v / s)_i Volume / Saturation Flow Rate	0.19	0.08	0.24	0.12	0.03	0.47
s, saturation flow rate [veh/h]	1748	1560	3495	1560	1748	3495
c, Capacity [veh/h]	366	326	2111	942	69	2423
d1, Uniform Delay [s]	46.19	40.79	12.42	10.68	56.80	10.72
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.91	0.74	0.57	0.47	9.53	1.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.38	0.40	0.20	0.64	0.68
d, Delay for Lane Group [s/veh]	54.09	41.53	12.99	11.15	66.33	12.30
Lane Group LOS	D	D	B	B	E	B
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	10.19	3.23	5.55	2.15	1.47	10.98
50th-Percentile Queue Length [ft/ln]	254.87	80.69	138.68	53.80	36.67	274.51
95th-Percentile Queue Length [veh/ln]	15.43	5.81	9.41	3.87	2.64	16.41
95th-Percentile Queue Length [ft/ln]	385.78	145.25	235.24	96.84	66.01	410.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	54.09	41.53	12.99	11.15	66.33	12.30
Movement LOS	D	D	B	B	E	B
d_A, Approach Delay [s/veh]	50.62		12.66		13.70	
Approach LOS	D		B		B	
d_I, Intersection Delay [s/veh]	18.62					
Intersection LOS	B					
Intersection V/C	0.661					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.213	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	4.132	4.985	5.534
Bicycle LOS	D	E	F

Sequence

Ring 1	1	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 14: Empire Ave/Oakley Rd

Control Type:	Signalized	Delay (sec / veh):	24.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.385

Intersection Setup

Name	Oakley Rd			Empire Ave			Empire Ave			Driveway		
Approach	Eastbound			Northeastbound			Southwestbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	315.00	100.00	100.00	110.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			40.00			40.00			15.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oakley Rd			Empire Ave			Empire Ave			Driveway		
Base Volume Input [veh/h]	48	5	59	103	296	12	25	336	81	16	13	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	22	0	37	21	76	0	0	66	25	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	5	96	124	372	12	25	402	106	16	13	32
Peak Hour Factor	0.7700	0.7700	0.7700	0.8200	0.8200	0.8200	0.7300	0.7300	0.7300	0.7700	0.7700	0.7700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	2	31	38	113	4	9	138	36	5	4	10
Total Analysis Volume [veh/h]	91	6	125	151	454	15	34	551	145	21	17	42
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	1			1			1			0		
v_di, Inbound Pedestrian Volume crossing m	1			1			0			1		
v_co, Outbound Pedestrian Volume crossing	0			1			0			2		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			0			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	1.0
Offset Reference	LagFO
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split
Signal group	0	4	0	5	2	0	1	6	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	4	0	4	4	0	4	4	0	0	4	0
Maximum Green [s]	0	11	0	15	38	0	12	35	0	0	30	0
Amber [s]	0.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	0.0	1.0	0.0
Split [s]	0	16	0	19	44	0	16	41	0	0	34	0
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	4	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	23	0	0	26	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0	0.0	2.0	0.0
Minimum Recall		No		No	No		No	No			No	
Maximum Recall		No		No	Yes		No	Yes			No	
Pedestrian Recall		No		No	No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.10	5.10	5.10	4.00	6.40	6.40	4.00	6.40	6.40	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	3.10	2.00	4.40	4.40	2.00	4.40	4.40	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	11	72	72	3	64	64	5	5
g / C, Green / Cycle	0.10	0.10	0.10	0.10	0.65	0.65	0.02	0.58	0.58	0.04	0.04
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.08	0.08	0.13	0.13	0.02	0.19	0.19	0.02	0.03
s, saturation flow rate [veh/h]	1781	1791	1557	1781	1870	1849	1781	1870	1738	1820	1552
c, Capacity [veh/h]	176	178	154	180	1223	1209	43	1080	1003	82	70
d1, Uniform Delay [s]	45.89	45.89	48.45	48.57	7.54	7.54	53.37	12.17	12.18	51.20	51.49
k, delay calibration	0.04	0.04	0.16	0.08	0.50	0.50	0.04	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.31	0.31	13.42	8.00	0.35	0.36	10.81	0.83	0.90	1.49	2.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.27	0.81	0.84	0.19	0.19	0.78	0.33	0.33	0.46	0.60
d, Delay for Lane Group [s/veh]	46.20	46.19	61.87	56.57	7.89	7.89	64.18	13.00	13.08	52.68	54.48
Lane Group LOS	D	D	E	E	A	A	E	B	B	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	1.23	1.23	3.89	4.38	2.07	2.05	1.05	4.51	4.24	1.08	1.22
50th-Percentile Queue Length [ft/ln]	30.75	30.87	97.20	109.54	51.65	51.19	26.20	112.84	105.88	27.02	30.55
95th-Percentile Queue Length [veh/ln]	2.21	2.22	7.00	7.81	3.72	3.69	1.89	8.00	7.61	1.95	2.20
95th-Percentile Queue Length [ft/ln]	55.35	55.57	174.95	195.36	92.97	92.15	47.17	199.94	190.25	48.64	55.00

Movement, Approach, & Intersection Results

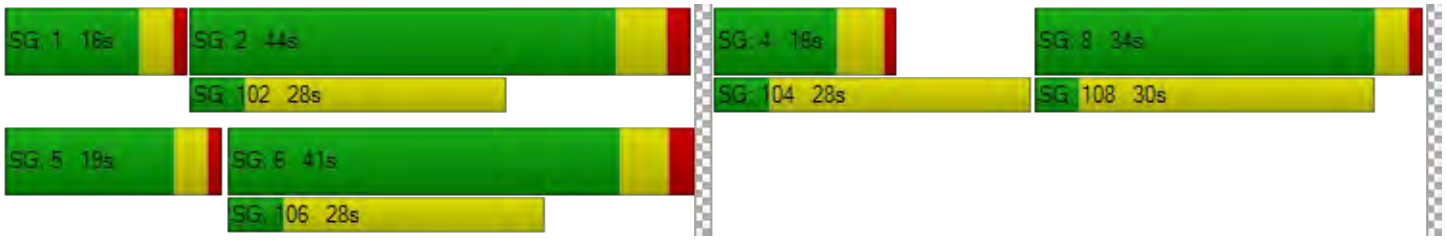
d_M, Delay for Movement [s/veh]	46.19	46.19	61.87	56.57	7.89	7.89	64.18	13.03	13.08	52.68	52.68	54.48
Movement LOS	D	D	E	E	A	A	E	B	B	D	D	D
d_A, Approach Delay [s/veh]	55.02			19.75			15.42			53.63		
Approach LOS	E			B			B			D		
d_I, Intersection Delay [s/veh]	24.22											
Intersection LOS	C											
Intersection V/C	0.385											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	8.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	3578.39	6948.99	2621.24
d_p, Pedestrian Delay [s]	46.37	46.37	47.29	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.294	2.653	2.750	1.973
Crosswalk LOS	B	B	C	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	198	684	629	545
d_b, Bicycle Delay [s]	44.66	23.83	25.84	29.11
l_b,int, Bicycle LOS Score for Intersection	1.926	2.071	2.162	1.692
Bicycle LOS	A	B	B	A

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 22: Neroly Rd/Oakley Rd

Control Type:	All-way stop	Delay (sec / veh):	11.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.389

Intersection Setup

Name	Neroly Rd			Neroly Rd			Oakley Rd			Oakley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Neroly Rd			Neroly Rd			Oakley Rd			Oakley Rd		
Base Volume Input [veh/h]	46	84	6	59	88	8	4	87	46	3	65	64
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	55	3	9	16	0	0	0	0	5	0	26
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	139	9	68	104	8	4	87	46	8	65	90
Peak Hour Factor	0.7700	0.7700	0.7700	0.7600	0.7600	0.7600	0.5900	0.5900	0.5900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	45	3	22	34	3	2	37	19	2	18	25
Total Analysis Volume [veh/h]	60	181	12	89	137	11	7	147	78	9	73	101
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	650	644	659	663
Degree of Utilization, x	0.39	0.37	0.35	0.28

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.84	1.69	1.58	1.12
95th-Percentile Queue Length [ft]	46.11	42.31	39.55	28.08
Approach Delay [s/veh]	12.03	11.82	11.40	10.49
Approach LOS	B	B	B	B
Intersection Delay [s/veh]	11.50			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 23: Neroly Rd/Live Oak Ave

Control Type:	All-way stop	Delay (sec / veh):	16.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.666

Intersection Setup

Name	Live Oak Ave			Live Oak Ave			Neroly Rd			Neroly Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00	100.00	155.00	100.00	100.00
Speed [mph]	50.00			40.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Live Oak Ave			Live Oak Ave			Neroly Rd			Neroly Rd		
Base Volume Input [veh/h]	74	64	93	116	120	1	2	46	110	19	40	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	34	0	21	39	5	1	21	2	0	45	38
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	81	98	93	137	159	6	3	67	112	19	85	120
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.7900	0.7900	0.7900	0.7200	0.7200	0.7200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	29	27	40	47	2	1	21	35	7	30	42
Total Analysis Volume [veh/h]	95	115	109	161	187	7	4	85	142	26	118	167
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	543	534	444	475	526	452	484	536
Degree of Utilization, x	0.59	0.67	0.01	0.18	0.27	0.06	0.24	0.31

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	3.77	4.90	0.03	0.65	1.09	0.18	0.95	1.32
95th-Percentile Queue Length [ft]	94.16	122.42	0.68	16.13	27.13	4.56	23.70	32.93
Approach Delay [s/veh]	18.64	22.16	11.99			12.34		
Approach LOS	C	C	B			B		
Intersection Delay [s/veh]	16.79							
Intersection LOS	C							

Intersection Level Of Service Report
Intersection 24: Live Oak Ave/Oakley Rd

Control Type:	All-way stop	Delay (sec / veh):	31.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.851

Intersection Setup

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Base Volume Input [veh/h]	18	158	25	30	76	22	103	54	17	40	89	89
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	46	2	0	0	0	11	2	15	26	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	159	71	32	76	22	103	65	19	55	115	94
Peak Hour Factor	0.6100	0.6100	0.6100	0.6200	0.6200	0.6200	0.4500	0.4500	0.4500	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	65	29	13	31	9	57	36	11	16	34	28
Total Analysis Volume [veh/h]	33	261	116	52	123	35	229	144	42	65	137	112
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	496	446	488	480
Degree of Utilization, x	0.83	0.47	0.85	0.65

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	8.15	2.47	8.74	4.64
95th-Percentile Queue Length [ft]	203.67	61.76	218.60	116.09
Approach Delay [s/veh]	36.27	18.10	39.78	23.62
Approach LOS	E	C	E	C
Intersection Delay [s/veh]	31.58			
Intersection LOS	D			

Intersection Level Of Service Report
Intersection 81: Live Oak Ave/El lago Dr

Control Type:	Two-way stop	Delay (sec / veh):	16.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.109

Intersection Setup

Name	Live Oak Ave		Live Oak Ave		El Lago Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Live Oak Ave		Live Oak Ave		El Lago Dr	
Base Volume Input [veh/h]	150	7	20	121	23	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	73	0	0	50	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	223	7	20	171	23	39
Peak Hour Factor	0.5400	0.5400	0.7300	0.7300	0.5300	0.5300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	103	3	7	59	11	18
Total Analysis Volume [veh/h]	413	13	27	234	43	74
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.11	0.12
d_M, Delay for Movement [s/veh]	0.00	0.00	8.24	0.00	16.16	12.65
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.07	0.07	0.86	0.86
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.82	1.82	21.44	21.44
d_A, Approach Delay [s/veh]	0.00		0.85		13.94	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.30					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 82: Oakley Rd/Project Access

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Project Access		Oakley Rd		Oakley Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	15.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project Access		Oakley Rd		Oakley Rd	
Base Volume Input [veh/h]	0	0	108	0	0	208
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	1.00	1.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	58	0	0	46
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	166	0	0	254
Peak Hour Factor	0.2500	0.2500	0.7500	0.2500	0.2500	0.6800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	55	0	0	93
Total Analysis Volume [veh/h]	0	0	221	0	0	374
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.65	9.37	0.00	0.00	7.66	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.01		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Background Conditions_AM.pdf

Scenario 7 7 Background Conditions AM
5/1/2019

Turning Movement Volume: Summary

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	Live Oak Rd/Main St	223	85	670	147	37	1390	2552

ID	Intersection Name	Eastbound			Northeastbound			Southwestbound			Northwestbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14	Empire Ave/Oakley Rd	70	5	96	124	372	12	25	402	106	16	13	32	1273

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
22	Neroly Rd/Oakley Rd	46	139	9	68	104	8	4	87	46	8	65	90	674

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
23	Neroly Rd/Live Oak Ave	81	98	93	137	159	6	3	67	112	19	85	120	980

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	20	159	71	32	76	22	103	65	19	55	115	94	831

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
81	Live Oak Ave/El Iago Dr	223	7	20	171	23	39	483

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
82	Oakley Rd/Project Access	0	0	166	0	0	254	420

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Background Conditions_AM.pdf

Scenario 7 7 Background Conditions AM
5/1/2019

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	Live Oak Rd/Main St	Final Base	217	85	483	145	37	820	1787
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	6	0	187	2	0	570	765
		Other	0	0	0	0	0	0	0
		Future Total	**223**	**85**	**670**	**147**	**37**	**1390**	**2552**

ID	Intersection Name	Volume Type	Eastbound			Northeastbound			Southwestbound			Northwestbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14	Empire Ave/Oakley Rd	Final Base	48	5	59	103	296	12	25	336	81	16	13	32	1026
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	22	0	37	21	76	0	0	66	25	0	0	0	247
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**70**	**5**	**96**	**124**	**372**	**12**	**25**	**402**	**106**	**16**	**13**	**32**	**1273**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
22	Neroly Rd/Oakley Rd	Final Base	46	84	6	59	88	8	4	87	46	3	65	64	560
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	55	3	9	16	0	0	0	0	5	0	26	114
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**46**	**139**	**9**	**68**	**104**	**8**	**4**	**87**	**46**	**8**	**65**	**90**	**674**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
23	Neroly Rd/Live Oak Ave	Final Base	74	64	93	116	120	1	2	46	110	19	40	82	767
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	7	34	0	21	39	5	1	21	2	0	45	38	213
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**81**	**98**	**93**	**137**	**159**	**6**	**3**	**67**	**112**	**19**	**85**	**120**	**980**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	Final Base	18	158	25	30	76	22	103	54	17	40	89	89	721
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	2	1	46	2	0	0	0	11	2	15	26	5	110
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**20**	**159**	**71**	**32**	**76**	**22**	**103**	**65**	**19**	**55**	**115**	**94**	**831**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
81	Live Oak Ave/El Iago Dr	Final Base	150	7	20	121	23	39	360
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	73	0	0	50	0	0	123
		Other	0	0	0	0	0	0	0
		Future Total	**223**	**7**	**20**	**171**	**23**	**39**	**483**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
82	Oakley Rd/Project Access	Final Base	0	0	108	0	0	208	316
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	58	0	0	46	104
		Other	0	0	0	0	0	0	0
		Future Total	**0**	**0**	**166**	**0**	**0**	**254**	**420**

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The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Background Conditions_PM.pdf

Scenario 6 6 6 Background Conditions PM
5/1/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Live Oak Rd/Main St	Signalized	HCM 6th Edition	WB Left	0.567	8.2	A
14	Empire Ave/Oakley Rd	Signalized	HCM 6th Edition	EB Right	0.398	33.5	C
22	Neroly Rd/Oakley Rd	All-way stop	HCM 6th Edition	SB Thru	0.559	11.8	B
23	Neroly Rd/Live Oak Ave	All-way stop	HCM 6th Edition	NB Thru	0.486	12.8	B
24	Live Oak Ave/Oakley Rd	All-way stop	HCM 6th Edition	WB Thru	0.337	10.3	B
81	Live Oak Ave/El Lago Dr	Two-way stop	HCM 6th Edition	WB Left	0.028	11.9	B
82	Oakley Rd/Project Access	Two-way stop	HCM 6th Edition	EB Thru	0.004	0.0	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Live Oak Rd/Main St

Control Type:	Signalized	Delay (sec / veh):	8.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.567

Intersection Setup

Name	Live Oak Avenue		Main St		Main St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	1	1	1	0
Pocket Length [ft]	100.00	260.00	100.00	160.00	255.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	Live Oak Avenue		Main St		Main St	
Base Volume Input [veh/h]	38	34	1074	98	22	652
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.30	4.30	4.30	4.30	4.30	4.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	633	5	0	374
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	34	1707	103	22	1026
Peak Hour Factor	0.8600	0.8600	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	10	459	28	6	276
Total Analysis Volume [veh/h]	49	40	1835	111	24	1103
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LagFO
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	8	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	8	0	10	0	6	10
Maximum Green [s]	47	0	44	0	11	61
Amber [s]	4.7	0.0	5.0	0.0	5.0	5.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	53	0	50	0	17	67
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	26	0	0	0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	3.7	0.0	4.0	0.0	4.0	4.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.70	5.70	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.70	3.70	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	8	8	91	91	3	101
g / C, Green / Cycle	0.06	0.06	0.76	0.76	0.03	0.84
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.53	0.07	0.01	0.32
s, saturation flow rate [veh/h]	1748	1560	3495	1528	1748	3495
c, Capacity [veh/h]	113	101	2657	1162	49	2929
d1, Uniform Delay [s]	54.02	53.89	7.26	3.71	57.50	2.30
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.62	2.52	1.50	0.16	7.57	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.40	0.69	0.10	0.49	0.38
d, Delay for Lane Group [s/veh]	56.64	56.41	8.76	3.88	65.07	2.67
Lane Group LOS	E	E	A	A	E	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.50	1.22	9.06	0.58	0.80	1.61
50th-Percentile Queue Length [ft/ln]	37.46	30.60	226.45	14.47	20.10	40.32
95th-Percentile Queue Length [veh/ln]	2.70	2.20	13.99	1.04	1.45	2.90
95th-Percentile Queue Length [ft/ln]	67.43	55.07	349.85	26.05	36.18	72.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.64	56.41	8.76	3.88	65.07	2.67
Movement LOS	E	E	A	A	E	A
d_A, Approach Delay [s/veh]	56.54		8.48		4.00	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	8.24					
Intersection LOS	A					
Intersection V/C	0.567					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.039	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
I_b,int, Bicycle LOS Score for Intersection	4.132	5.738	5.062
Bicycle LOS	D	F	F

Sequence

Ring 1	1	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 14: Empire Ave/Oakley Rd

Control Type:	Signalized	Delay (sec / veh):	33.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.398

Intersection Setup

Name	Oakley Rd			Empire Ave			Empire Ave			Driveway		
Approach	Eastbound			Northeastbound			Southwestbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	315.00	100.00	100.00	110.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			40.00			40.00			15.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oakley Rd			Empire Ave			Empire Ave			Driveway		
Base Volume Input [veh/h]	64	38	90	88	334	12	71	363	60	68	32	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	36	0	63	16	88	0	0	67	33	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	100	38	153	104	422	12	71	430	93	68	32	54
Peak Hour Factor	0.8500	0.8500	0.8500	0.9200	0.9200	0.9200	0.9300	0.9300	0.9300	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	11	45	28	115	3	19	116	25	19	9	15
Total Analysis Volume [veh/h]	118	45	180	113	459	13	76	462	100	76	36	61
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	1			2			2			1		
v_di, Inbound Pedestrian Volume crossing m	2			1			1			2		
v_co, Outbound Pedestrian Volume crossing	0			1			0			1		
v_ci, Inbound Pedestrian Volume crossing mi	0			1			0			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			0			1			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	1.0
Offset Reference	LagFO
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split
Signal group	0	4	0	5	2	0	1	6	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	4	0	4	4	0	4	4	0	0	4	0
Maximum Green [s]	0	13	0	13	38	0	10	35	0	0	30	0
Amber [s]	0.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	0.0	1.0	0.0
Split [s]	0	18	0	17	43	0	14	40	0	0	35	0
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	4	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	23	0	0	26	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0	0.0	2.0	0.0
Minimum Recall		No		No	No		No	No			No	
Maximum Recall		No		No	Yes		No	Yes			No	
Pedestrian Recall		No		No	No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.10	5.10	5.10	4.00	6.40	6.40	4.00	6.40	6.40	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	3.10	2.00	4.40	4.40	2.00	4.40	4.40	2.00	2.00
g_i, Effective Green Time [s]	13	13	13	9	62	62	6	59	59	10	10
g / C, Green / Cycle	0.12	0.12	0.12	0.08	0.56	0.56	0.05	0.54	0.54	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.12	0.06	0.13	0.13	0.04	0.15	0.16	0.06	0.04
s, saturation flow rate [veh/h]	1781	1828	1553	1781	1870	1852	1781	1870	1742	1809	1573
c, Capacity [veh/h]	209	214	182	140	1050	1039	98	1005	936	162	141
d1, Uniform Delay [s]	44.89	44.88	48.33	49.86	12.12	12.13	51.33	13.92	13.96	48.62	47.43
k, delay calibration	0.04	0.04	0.31	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.43	0.42	49.63	4.13	0.50	0.51	4.97	0.72	0.79	1.98	0.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.38	0.99	0.81	0.23	0.23	0.78	0.29	0.29	0.69	0.43
d, Delay for Lane Group [s/veh]	45.32	45.30	97.96	53.99	12.62	12.63	56.30	14.64	14.75	50.60	48.21
Lane Group LOS	D	D	F	D	B	B	E	B	B	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.04	2.09	7.35	3.16	2.87	2.85	2.16	3.88	3.70	3.15	1.66
50th-Percentile Queue Length [ft/ln]	50.94	52.16	183.84	78.88	71.81	71.28	54.07	97.04	92.45	78.73	41.41
95th-Percentile Queue Length [veh/ln]	3.67	3.76	11.80	5.68	5.17	5.13	3.89	6.99	6.66	5.67	2.98
95th-Percentile Queue Length [ft/ln]	91.68	93.88	295.02	141.99	129.26	128.30	97.33	174.67	166.41	141.72	74.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.31	45.30	97.96	53.99	12.63	12.63	56.30	14.68	14.75	50.60	50.60	48.21
Movement LOS	D	D	F	D	B	B	E	B	B	D	D	D
d_A, Approach Delay [s/veh]	72.94			20.62			19.65			49.76		
Approach LOS	E			C			B			D		
d_I, Intersection Delay [s/veh]	33.48											
Intersection LOS	C											
Intersection V/C	0.398											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	8.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	2164.69	2212.70	3893.60
d_p, Pedestrian Delay [s]	46.37	46.37	47.29	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.311	2.650	2.741	2.001
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	235	665	611	564
d_b, Bicycle Delay [s]	42.90	24.49	26.54	28.37
l_b,int, Bicycle LOS Score for Intersection	2.126	2.042	2.086	1.845
Bicycle LOS	B	B	B	A

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Neroly Rd/Oakley Rd

Control Type:	All-way stop	Delay (sec / veh):	11.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.559

Intersection Setup

Name	Neroly Rd			Neroly Rd			Oakley Rd			Oakley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Neroly Rd			Neroly Rd			Oakley Rd			Oakley Rd		
Base Volume Input [veh/h]	27	53	0	95	139	12	6	59	35	7	44	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	36	7	28	66	0	0	0	0	5	0	16
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	27	89	7	123	205	12	6	59	35	12	44	60
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8100	0.8100	0.8100	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	27	2	37	62	4	2	18	11	3	13	17
Total Analysis Volume [veh/h]	33	107	8	148	247	14	7	73	43	14	50	68
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	688	731	666	679
Degree of Utilization, x	0.22	0.56	0.18	0.19

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.81	3.50	0.67	0.72
95th-Percentile Queue Length [ft]	20.32	87.49	16.82	17.91
Approach Delay [s/veh]	9.66	13.97	9.62	9.58
Approach LOS	A	B	A	A
Intersection Delay [s/veh]	11.81			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 23: Neroly Rd/Live Oak Ave

Control Type:	All-way stop	Delay (sec / veh):	12.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.486

Intersection Setup

Name	Live Oak Ave			Live Oak Ave			Neroly Rd			Neroly Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00	100.00	155.00	100.00	100.00
Speed [mph]	50.00			40.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Live Oak Ave			Live Oak Ave			Neroly Rd			Neroly Rd		
Base Volume Input [veh/h]	68	81	40	71	52	4	2	2	78	37	51	128
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	35	0	23	32	4	6	55	10	0	33	66
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	73	116	40	94	84	8	8	57	88	37	84	194
Peak Hour Factor	0.8300	0.8300	0.8300	0.8800	0.8800	0.8800	0.7100	0.7100	0.7100	0.7800	0.7800	0.7800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	35	12	27	24	2	3	20	31	12	27	62
Total Analysis Volume [veh/h]	88	140	48	107	95	9	11	80	124	47	108	249
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	568	548	487	523	586	507	547	614
Degree of Utilization, x	0.49	0.39	0.02	0.15	0.21	0.09	0.20	0.41

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.64	1.80	0.07	0.54	0.80	0.30	0.73	1.96
95th-Percentile Queue Length [ft]	66.10	45.06	1.73	13.38	19.88	7.62	18.22	49.04
Approach Delay [s/veh]	15.18	13.63	10.60			11.84		
Approach LOS	C	B	B			B		
Intersection Delay [s/veh]	12.77							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 24: Live Oak Ave/Oakley Rd

Control Type:	All-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.337

Intersection Setup

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Base Volume Input [veh/h]	10	44	46	37	39	5	3	124	41	40	89	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	1	63	5	0	0	0	30	5	27	18	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	45	109	42	39	5	3	154	46	67	107	22
Peak Hour Factor	0.8100	0.8100	0.8100	0.7800	0.7800	0.7800	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	14	34	13	13	2	1	46	14	20	32	7
Total Analysis Volume [veh/h]	17	56	135	54	50	6	4	183	55	80	127	26
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	723	647	720	700
Degree of Utilization, x	0.29	0.17	0.34	0.33

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.19	0.61	1.48	1.46
95th-Percentile Queue Length [ft]	29.76	15.24	37.11	36.54
Approach Delay [s/veh]	9.98	9.71	10.52	10.69
Approach LOS	A	A	B	B
Intersection Delay [s/veh]	10.32			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 81: Live Oak Ave/El Lago Dr

Control Type:	Two-way stop	Delay (sec / veh):	11.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.028

Intersection Setup

Name	Live Oak Ave		Live Oak Ave		El lago Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Live Oak Ave		Live Oak Ave		El lago Dr	
Base Volume Input [veh/h]	88	28	32	83	12	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	1.00	1.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	92	0	0	51	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	180	28	32	134	12	13
Peak Hour Factor	0.8400	0.8400	0.8500	0.8500	0.7800	0.7800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	8	9	39	4	4
Total Analysis Volume [veh/h]	214	33	38	158	15	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.03	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	7.80	0.00	11.92	9.70
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.09	0.09	0.15	0.15
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.21	2.21	3.82	3.82
d_A, Approach Delay [s/veh]	0.00		1.51		10.74	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.35					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 82: Oakley Rd/Project Access

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	Project Access		Oakley Rd		Oakley Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	15.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project Access		Oakley Rd		Oakley Rd	
Base Volume Input [veh/h]	0	0	227	0	0	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	98	0	0	48
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	325	0	0	208
Peak Hour Factor	0.2500	0.2500	0.9000	0.2500	0.2500	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	90	0	0	58
Total Analysis Volume [veh/h]	0	0	361	0	0	234
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.65	10.23	0.00	0.00	7.99	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.44		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Background Conditions_PM.pdf

Scenario 6 6 6 Background Conditions PM
5/1/2019

Turning Movement Volume: Summary

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	Live Oak Rd/Main St	42	34	1707	103	22	1026	2934

ID	Intersection Name	Eastbound			Northeastbound			Southwestbound			Northwestbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14	Empire Ave/Oakley Rd	100	38	153	104	422	12	71	430	93	68	32	54	1577

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
22	Neroly Rd/Oakley Rd	27	89	7	123	205	12	6	59	35	12	44	60	679

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
23	Neroly Rd/Live Oak Ave	73	116	40	94	84	8	8	57	88	37	84	194	883

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	14	45	109	42	39	5	3	154	46	67	107	22	653

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
81	Live Oak Ave/El Lago Dr	180	28	32	134	12	13	399

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
82	Oakley Rd/Project Access	0	0	325	0	0	208	533

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Background Conditions_PM.pdf

Scenario 6 6 6 Background Conditions PM
5/1/2019

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	Live Oak Rd/Main St	Final Base	38	34	1074	98	22	652	1918
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	4	0	633	5	0	374	1016
		Other	0	0	0	0	0	0	0
		Future Total	**42**	**34**	**1707**	**103**	**22**	**1026**	**2934**

ID	Intersection Name	Volume Type	Eastbound			Northeastbound			Southwestbound			Northwestbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14	Empire Ave/Oakley Rd	Final Base	64	38	90	88	334	12	71	363	60	68	32	54	1274
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	36	0	63	16	88	0	0	67	33	0	0	0	303
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**100**	**38**	**153**	**104**	**422**	**12**	**71**	**430**	**93**	**68**	**32**	**54**	**1577**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
22	Neroly Rd/Oakley Rd	Final Base	27	53	0	95	139	12	6	59	35	7	44	44	521
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	36	7	28	66	0	0	0	0	5	0	16	158
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**27**	**89**	**7**	**123**	**205**	**12**	**6**	**59**	**35**	**12**	**44**	**60**	**679**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
23	Neroly Rd/Live Oak Ave	Final Base	68	81	40	71	52	4	2	2	78	37	51	128	614
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	5	35	0	23	32	4	6	55	10	0	33	66	269
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**73**	**116**	**40**	**94**	**84**	**8**	**8**	**57**	**88**	**37**	**84**	**194**	**883**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	Final Base	10	44	46	37	39	5	3	124	41	40	89	19	497
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	1	63	5	0	0	0	30	5	27	18	3	156
		Other	0	0	0	0	0	0	0	0	0	0	0	0	0
		Future Total	**14**	**45**	**109**	**42**	**39**	**5**	**3**	**154**	**46**	**67**	**107**	**22**	**653**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
81	Live Oak Ave/El Lago Dr	Final Base	88	28	32	83	12	13	256
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	92	0	0	51	0	0	143
		Other	0	0	0	0	0	0	0
		Future Total	**180**	**28**	**32**	**134**	**12**	**13**	**399**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
82	Oakley Rd/Project Access	Final Base	0	0	227	0	0	160	387
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	98	0	0	48	146
		Other	0	0	0	0	0	0	0
		Future Total	**0**	**0**	**325**	**0**	**0**	**208**	**533**

Appendix E

Background plus Project Conditions LOS Analysis

Table of Contents

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Background plus Project Conditions_AM.pdf
Scenario 8 8 Background plus Project Conditions AM
5/3/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Live Oak Rd/Main St	Signalized	HCM 6th Edition	WB Left	0.676	19.7	B
14	Empire Ave/Oakley Rd	Signalized	HCM 6th Edition	SWB Left	0.388	24.6	C
22	Neroly Rd/Oakley Rd	All-way stop	HCM 6th Edition	NB Thru	0.390	11.5	B
23	Neroly Rd/Live Oak Ave	All-way stop	HCM 6th Edition	SB Thru	0.679	17.1	C
24	Live Oak Ave/Oakley Rd	All-way stop	HCM 6th Edition	EB Left	0.900	38.8	E
81	Live Oak Ave/El Iago Dr	Two-way stop	HCM 6th Edition	WB Left	0.111	16.3	C
82	Oakley Rd/Project Access	Two-way stop	HCM 6th Edition	NB Left	0.154	14.4	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Live Oak Rd/Main St

Control Type:	Signalized	Delay (sec / veh):	19.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.676

Intersection Setup

Name	Live Oak Avenue		Main St		Main St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	1	1	1	0
Pocket Length [ft]	100.00	260.00	100.00	160.00	255.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	Live Oak Avenue		Main St		Main St	
Base Volume Input [veh/h]	217	85	483	145	37	820
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.30	4.30	4.30	4.30	4.30	4.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	187	2	0	570
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	18	0	0	6	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	241	85	670	153	37	1390
Peak Hour Factor	0.6800	0.6800	0.7900	0.7900	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	89	31	212	48	11	414
Total Analysis Volume [veh/h]	354	125	848	194	44	1655
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LagFO
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	8	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	8	0	10	0	6	10
Maximum Green [s]	47	0	44	0	11	61
Amber [s]	4.7	0.0	5.0	0.0	5.0	5.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	53	0	50	0	17	67
Vehicle Extension [s]	3.0	0.0	4.0	0.0	3.0	4.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	26	0	0	0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	3.7	0.0	4.0	0.0	4.0	4.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.70	5.70	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.70	3.70	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	27	27	71	71	5	81
g / C, Green / Cycle	0.22	0.22	0.59	0.59	0.04	0.68
(v / s)_i Volume / Saturation Flow Rate	0.20	0.08	0.24	0.12	0.03	0.47
s, saturation flow rate [veh/h]	1748	1560	3495	1560	1748	3495
c, Capacity [veh/h]	391	349	2059	919	69	2371
d1, Uniform Delay [s]	45.31	39.28	13.37	11.56	56.80	11.78
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.92	0.62	0.61	0.52	9.53	1.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.36	0.41	0.21	0.64	0.70
d, Delay for Lane Group [s/veh]	53.23	39.90	13.98	12.08	66.33	13.51
Lane Group LOS	D	D	B	B	E	B
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	10.97	3.15	5.83	2.37	1.47	11.80
50th-Percentile Queue Length [ft/ln]	274.18	78.84	145.78	59.30	36.67	294.88
95th-Percentile Queue Length [veh/ln]	16.40	5.68	9.79	4.27	2.64	17.43
95th-Percentile Queue Length [ft/ln]	409.96	141.91	244.78	106.74	66.01	435.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.23	39.90	13.98	12.08	66.33	13.51
Movement LOS	D	D	B	B	E	B
d_A, Approach Delay [s/veh]	49.75		13.62		14.88	
Approach LOS	D		B		B	
d_I, Intersection Delay [s/veh]	19.66					
Intersection LOS	B					
Intersection V/C	0.676					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.226	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	4.132	4.992	5.534
Bicycle LOS	D	E	F

Sequence

Ring 1	1	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 14: Empire Ave/Oakley Rd

Control Type:	Signalized	Delay (sec / veh):	24.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.388

Intersection Setup

Name	Oakley Rd			Empire Ave			Empire Ave			Driveway		
Approach	Eastbound			Northeastbound			Southwestbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	315.00	100.00	100.00	110.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			40.00			40.00			15.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oakley Rd			Empire Ave			Empire Ave			Driveway		
Base Volume Input [veh/h]	48	5	59	103	296	12	25	336	81	16	13	32
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	22	0	37	21	76	0	0	66	25	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	8	0	2	1	0	0	0	0	2	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	5	98	125	372	12	25	402	108	16	13	32
Peak Hour Factor	0.7700	0.7700	0.7700	0.8200	0.8200	0.8200	0.7300	0.7300	0.7300	0.7700	0.7700	0.7700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	2	32	38	113	4	9	138	37	5	4	10
Total Analysis Volume [veh/h]	101	6	127	152	454	15	34	551	148	21	17	42
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	1			1			1			0		
v_di, Inbound Pedestrian Volume crossing m	1			1			0			1		
v_co, Outbound Pedestrian Volume crossing	0			1			0			2		
v_ci, Inbound Pedestrian Volume crossing mi	0			2			0			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			0			0			1		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	1.0
Offset Reference	LagFO
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split
Signal group	0	4	0	5	2	0	1	6	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	4	0	4	4	0	4	4	0	0	4	0
Maximum Green [s]	0	11	0	15	38	0	12	35	0	0	30	0
Amber [s]	0.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	0.0	1.0	0.0
Split [s]	0	16	0	19	44	0	16	41	0	0	34	0
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	4	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	23	0	0	26	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0	0.0	2.0	0.0
Minimum Recall		No		No	No		No	No			No	
Maximum Recall		No		No	Yes		No	Yes			No	
Pedestrian Recall		No		No	No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.10	5.10	5.10	4.00	6.40	6.40	4.00	6.40	6.40	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	3.10	2.00	4.40	4.40	2.00	4.40	4.40	2.00	2.00
g_i, Effective Green Time [s]	11	11	11	11	72	72	3	63	63	5	5
g / C, Green / Cycle	0.10	0.10	0.10	0.10	0.65	0.65	0.02	0.58	0.58	0.04	0.04
(v / s)_i Volume / Saturation Flow Rate	0.03	0.03	0.08	0.09	0.13	0.13	0.02	0.19	0.19	0.02	0.03
s, saturation flow rate [veh/h]	1781	1790	1557	1781	1870	1849	1781	1870	1736	1820	1552
c, Capacity [veh/h]	176	177	154	181	1223	1209	43	1079	1001	82	70
d1, Uniform Delay [s]	46.02	46.02	48.52	48.54	7.54	7.54	53.37	12.22	12.23	51.20	51.49
k, delay calibration	0.04	0.04	0.17	0.09	0.50	0.50	0.04	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.35	0.35	15.07	8.28	0.35	0.36	10.81	0.84	0.91	1.49	2.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.30	0.82	0.84	0.19	0.19	0.78	0.34	0.34	0.46	0.60
d, Delay for Lane Group [s/veh]	46.38	46.37	63.59	56.82	7.89	7.89	64.18	13.06	13.14	52.68	54.48
Lane Group LOS	D	D	E	E	A	A	E	B	B	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	No	Yes
50th-Percentile Queue Length [veh/ln]	1.36	1.37	4.02	4.42	2.07	2.05	1.05	4.55	4.26	1.08	1.22
50th-Percentile Queue Length [ft/ln]	34.04	34.17	100.41	110.60	51.65	51.19	26.20	113.74	106.60	27.02	30.55
95th-Percentile Queue Length [veh/ln]	2.45	2.46	7.23	7.87	3.72	3.69	1.89	8.05	7.65	1.95	2.20
95th-Percentile Queue Length [ft/ln]	61.26	61.50	180.74	196.83	92.97	92.15	47.17	201.19	191.26	48.64	55.00

Movement, Approach, & Intersection Results

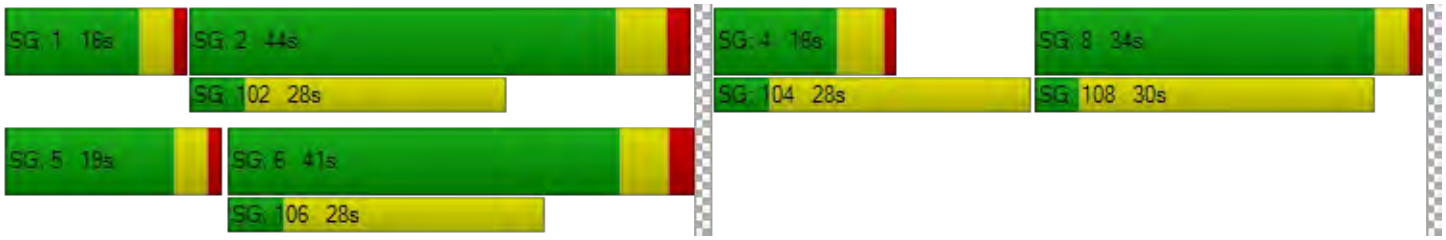
d_M, Delay for Movement [s/veh]	46.37	46.37	63.59	56.82	7.89	7.89	64.18	13.09	13.14	52.68	52.68	54.48
Movement LOS	D	D	E	E	A	A	E	B	B	D	D	D
d_A, Approach Delay [s/veh]	55.72			19.87			15.47			53.63		
Approach LOS	E			B			B			D		
d_I, Intersection Delay [s/veh]	24.58											
Intersection LOS	C											
Intersection V/C	0.388											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	8.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	3517.60	6851.82	2585.79
d_p, Pedestrian Delay [s]	46.37	46.37	47.29	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.299	2.654	2.753	1.973
Crosswalk LOS	B	B	C	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	198	684	629	545
d_b, Bicycle Delay [s]	44.66	23.83	25.84	29.11
l_b,int, Bicycle LOS Score for Intersection	1.946	2.072	2.164	1.692
Bicycle LOS	A	B	B	A

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 22: Neroly Rd/Oakley Rd

Control Type:	All-way stop	Delay (sec / veh):	11.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.390

Intersection Setup

Name	Neroly Rd			Neroly Rd			Oakley Rd			Oakley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Neroly Rd			Neroly Rd			Oakley Rd			Oakley Rd		
Base Volume Input [veh/h]	46	84	6	59	88	8	4	87	46	3	65	64
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	55	3	9	16	0	0	0	0	5	0	26
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	1	0
Total Hourly Volume [veh/h]	46	139	9	68	104	8	4	87	46	8	66	90
Peak Hour Factor	0.7700	0.7700	0.7700	0.7600	0.7600	0.7600	0.5900	0.5900	0.5900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	45	3	22	34	3	2	37	19	2	19	25
Total Analysis Volume [veh/h]	60	181	12	89	137	11	7	147	78	9	74	101
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	649	643	659	662
Degree of Utilization, x	0.39	0.37	0.35	0.28

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.85	1.69	1.58	1.13
95th-Percentile Queue Length [ft]	46.16	42.36	39.58	28.30
Approach Delay [s/veh]	12.04	11.83	11.40	10.51
Approach LOS	B	B	B	B
Intersection Delay [s/veh]	11.51			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 23: Neroly Rd/Live Oak Ave

Control Type:	All-way stop	Delay (sec / veh):	17.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.679

Intersection Setup

Name	Live Oak Ave			Live Oak Ave			Neroly Rd			Neroly Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00	100.00	155.00	100.00	100.00
Speed [mph]	50.00			40.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Live Oak Ave			Live Oak Ave			Neroly Rd			Neroly Rd		
Base Volume Input [veh/h]	74	64	93	116	120	1	2	46	110	19	40	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	34	0	21	39	5	1	21	2	0	45	38
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	5	0	0	0	0	0	0	0	2
Total Hourly Volume [veh/h]	81	98	93	142	159	6	3	67	112	19	85	122
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	0.7900	0.7900	0.7900	0.7200	0.7200	0.7200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	29	27	42	47	2	1	21	35	7	30	42
Total Analysis Volume [veh/h]	95	115	109	167	187	7	4	85	142	26	118	169
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	541	532	442	473	523	450	481	534
Degree of Utilization, x	0.59	0.68	0.01	0.18	0.27	0.06	0.24	0.32

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	3.80	5.11	0.03	0.65	1.09	0.18	0.95	1.35
95th-Percentile Queue Length [ft]	94.96	127.80	0.68	16.22	27.32	4.58	23.83	33.71
Approach Delay [s/veh]	18.80	22.87	12.05			12.43		
Approach LOS	C	C	B			B		
Intersection Delay [s/veh]	17.10							
Intersection LOS	C							

Intersection Level Of Service Report
Intersection 24: Live Oak Ave/Oakley Rd

Control Type:	All-way stop	Delay (sec / veh):	38.8
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.900

Intersection Setup

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Base Volume Input [veh/h]	18	158	25	30	76	22	103	54	17	40	89	89
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	46	2	0	0	0	11	2	15	26	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	2	7	0	0	0	0	0	5	1	19
Total Hourly Volume [veh/h]	20	159	73	39	76	22	103	65	19	60	116	113
Peak Hour Factor	0.6100	0.6100	0.6100	0.6200	0.6200	0.6200	0.4500	0.4500	0.4500	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	65	30	16	31	9	57	36	11	18	35	34
Total Analysis Volume [veh/h]	33	261	120	63	123	35	229	144	42	71	138	135
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	470	420	462	459
Degree of Utilization, x	0.88	0.53	0.90	0.75

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	9.44	2.97	9.92	6.24
95th-Percentile Queue Length [ft]	236.05	74.28	247.90	156.10
Approach Delay [s/veh]	45.13	20.67	48.83	30.72
Approach LOS	E	C	E	D
Intersection Delay [s/veh]	38.80			
Intersection LOS	E			

Intersection Level Of Service Report
Intersection 81: Live Oak Ave/El lago Dr

Control Type:	Two-way stop	Delay (sec / veh):	16.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.111

Intersection Setup

Name	Live Oak Ave		Live Oak Ave		El Lago Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Live Oak Ave		Live Oak Ave		El Lago Dr	
Base Volume Input [veh/h]	150	7	20	121	23	39
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.00	1.00	1.00	1.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	73	0	0	50	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	2	0	0	5	0	0
Total Hourly Volume [veh/h]	225	7	20	176	23	39
Peak Hour Factor	0.5400	0.5400	0.7300	0.7300	0.5300	0.5300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	104	3	7	60	11	18
Total Analysis Volume [veh/h]	417	13	27	241	43	74
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.11	0.12
d_M, Delay for Movement [s/veh]	0.00	0.00	8.25	0.00	16.34	12.72
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.07	0.07	0.87	0.87
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.83	1.83	21.71	21.71
d_A, Approach Delay [s/veh]	0.00		0.83		14.05	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.29					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 82: Oakley Rd/Project Access

Control Type:	Two-way stop	Delay (sec / veh):	14.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.154

Intersection Setup

Name	Project Access		Oakley Rd		Oakley Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	15.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project Access		Oakley Rd		Oakley Rd	
Base Volume Input [veh/h]	0	0	108	0	0	208
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	1.00	1.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	58	0	0	46
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	25	10	0	9	3	0
Total Hourly Volume [veh/h]	25	10	166	9	3	254
Peak Hour Factor	0.3500	0.3500	0.7500	0.7500	0.6800	0.6800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	7	55	3	1	93
Total Analysis Volume [veh/h]	71	29	221	12	4	374
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.04	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.42	11.00	0.00	0.00	7.69	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.69	0.69	0.00	0.00	0.01	0.01
95th-Percentile Queue Length [ft/ln]	17.35	17.35	0.00	0.00	0.22	0.22
d_A, Approach Delay [s/veh]	13.43		0.00		0.08	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.93					
Intersection LOS	B					

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Background plus Project Conditions_AM.pdf
Scenario 8 8 Background plus Project Conditions AM
5/3/2019

Turning Movement Volume: Summary

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	Live Oak Rd/Main St	241	85	670	153	37	1390	2576

ID	Intersection Name	Eastbound			Northeastbound			Southwestbound			Northwestbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14	Empire Ave/Oakley Rd	78	5	98	125	372	12	25	402	108	16	13	32	1286

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
22	Neroly Rd/Oakley Rd	46	139	9	68	104	8	4	87	46	8	66	90	675

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
23	Neroly Rd/Live Oak Ave	81	98	93	142	159	6	3	67	112	19	85	122	987

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	20	159	73	39	76	22	103	65	19	60	116	113	865

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
81	Live Oak Ave/El Iago Dr	225	7	20	176	23	39	490

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
82	Oakley Rd/Project Access	25	10	166	9	3	254	467

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Background plus Project Conditions_AM.pdf
Scenario 8 8 Background plus Project Conditions AM
5/3/2019

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	Live Oak Rd/Main St	Final Base	217	85	483	145	37	820	1787
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	6	0	187	2	0	570	765
		Other	18	0	0	6	0	0	24
		Future Total	**241**	**85**	**670**	**153**	**37**	**1390**	**2576**

ID	Intersection Name	Volume Type	Eastbound			Northeastbound			Southwestbound			Northwestbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14	Empire Ave/Oakley Rd	Final Base	48	5	59	103	296	12	25	336	81	16	13	32	1026
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	22	0	37	21	76	0	0	66	25	0	0	0	247
		Other	8	0	2	1	0	0	0	0	2	0	0	0	13
		Future Total	**78**	**5**	**98**	**125**	**372**	**12**	**25**	**402**	**108**	**16**	**13**	**32**	**1286**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
22	Neroly Rd/Oakley Rd	Final Base	46	84	6	59	88	8	4	87	46	3	65	64	560
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	55	3	9	16	0	0	0	0	5	0	26	114
		Other	0	0	0	0	0	0	0	0	0	0	1	0	1
		Future Total	**46**	**139**	**9**	**68**	**104**	**8**	**4**	**87**	**46**	**8**	**66**	**90**	**675**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
23	Neroly Rd/Live Oak Ave	Final Base	74	64	93	116	120	1	2	46	110	19	40	82	767
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	7	34	0	21	39	5	1	21	2	0	45	38	213
		Other	0	0	0	5	0	0	0	0	0	0	0	2	7
		Future Total	**81**	**98**	**93**	**142**	**159**	**6**	**3**	**67**	**112**	**19**	**85**	**122**	**987**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	Final Base	18	158	25	30	76	22	103	54	17	40	89	89	721
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	2	1	46	2	0	0	0	11	2	15	26	5	110
		Other	0	0	2	7	0	0	0	0	0	5	1	19	34
		Future Total	**20**	**159**	**73**	**39**	**76**	**22**	**103**	**65**	**19**	**60**	**116**	**113**	**865**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
81	Live Oak Ave/El Iago Dr	Final Base	150	7	20	121	23	39	360
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	73	0	0	50	0	0	123
		Other	2	0	0	5	0	0	7
		Future Total	**225**	**7**	**20**	**176**	**23**	**39**	**490**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
82	Oakley Rd/Project Access	Final Base	0	0	108	0	0	208	316
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	58	0	0	46	104
		Other	25	10	0	9	3	0	47
		Future Total	**25**	**10**	**166**	**9**	**3**	**254**	**467**

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The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Background plus Project Conditions_PM.pdf
Scenario 9 9 Background plus Project Conditions PM
5/3/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Live Oak Rd/Main St	Signalized	HCM 6th Edition	WB Left	0.574	8.5	A
14	Empire Ave/Oakley Rd	Signalized	HCM 6th Edition	EB Right	0.404	34.0	C
22	Neroly Rd/Oakley Rd	All-way stop	HCM 6th Edition	SB Thru	0.558	11.8	B
23	Neroly Rd/Live Oak Ave	All-way stop	HCM 6th Edition	NB Thru	0.488	12.9	B
24	Live Oak Ave/Oakley Rd	All-way stop	HCM 6th Edition	WB Thru	0.363	10.7	B
81	Live Oak Ave/El Lago Dr	Two-way stop	HCM 6th Edition	WB Left	0.028	12.0	B
82	Oakley Rd/Project Access	Two-way stop	HCM 6th Edition	NB Left	0.077	14.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Live Oak Rd/Main St

Control Type:	Signalized	Delay (sec / veh):	8.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.574

Intersection Setup

Name	Live Oak Avenue		Main St		Main St	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	1	1	1	0
Pocket Length [ft]	100.00	260.00	100.00	160.00	255.00	100.00
Speed [mph]	35.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	Live Oak Avenue		Main St		Main St	
Base Volume Input [veh/h]	38	34	1074	98	22	652
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.30	4.30	4.30	4.30	4.30	4.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	633	5	0	374
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	11	0	0	20	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	53	34	1707	123	22	1026
Peak Hour Factor	0.8600	0.8600	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	10	459	33	6	276
Total Analysis Volume [veh/h]	62	40	1835	132	24	1103
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	61.0
Offset Reference	LagFO
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	8	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	8	0	10	0	6	10
Maximum Green [s]	47	0	44	0	11	61
Amber [s]	4.7	0.0	5.0	0.0	5.0	5.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	53	0	50	0	17	67
Vehicle Extension [s]	4.0	0.0	4.0	0.0	3.0	4.0
Walk [s]	0	0	7	0	0	0
Pedestrian Clearance [s]	0	0	26	0	0	0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	3.7	0.0	4.0	0.0	4.0	4.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	5.70	5.70	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.70	3.70	4.00	4.00	4.00	4.00
g_i, Effective Green Time [s]	8	8	91	91	3	100
g / C, Green / Cycle	0.07	0.07	0.76	0.76	0.03	0.84
(v / s)_i Volume / Saturation Flow Rate	0.04	0.03	0.53	0.09	0.01	0.32
s, saturation flow rate [veh/h]	1748	1560	3495	1528	1748	3495
c, Capacity [veh/h]	115	103	2652	1160	49	2924
d1, Uniform Delay [s]	54.30	53.75	7.34	3.81	57.50	2.34
k, delay calibration	0.15	0.15	0.50	0.50	0.11	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.51	3.42	1.51	0.20	7.57	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.54	0.39	0.69	0.11	0.49	0.38
d, Delay for Lane Group [s/veh]	59.81	57.17	8.84	4.01	65.07	2.71
Lane Group LOS	E	E	A	A	E	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.98	1.25	9.14	0.70	0.80	1.65
50th-Percentile Queue Length [ft/ln]	49.48	31.22	228.46	17.62	20.10	41.14
95th-Percentile Queue Length [veh/ln]	3.56	2.25	14.10	1.27	1.45	2.96
95th-Percentile Queue Length [ft/ln]	89.06	56.20	352.40	31.72	36.18	74.04

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	59.81	57.17	8.84	4.01	65.07	2.71
Movement LOS	E	E	A	A	E	A
d_A, Approach Delay [s/veh]	58.77		8.52		4.04	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	8.54					
Intersection LOS	A					
Intersection V/C	0.574					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.50	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.052	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	60.00	60.00	60.00
l_b,int, Bicycle LOS Score for Intersection	4.132	5.755	5.062
Bicycle LOS	D	F	F

Sequence

Ring 1	1	2	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 14: Empire Ave/Oakley Rd

Control Type:	Signalized	Delay (sec / veh):	34.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.404

Intersection Setup

Name	Oakley Rd			Empire Ave			Empire Ave			Driveway		
Approach	Eastbound			Northeastbound			Southwestbound			Northwestbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	0	0	0
Pocket Length [ft]	315.00	100.00	100.00	110.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00			40.00			40.00			15.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Oakley Rd			Empire Ave			Empire Ave			Driveway		
Base Volume Input [veh/h]	64	38	90	88	334	12	71	363	60	68	32	54
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	36	0	63	16	88	0	0	67	33	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	7	0	2	3	0	0	0	0	9	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	107	38	155	107	422	12	71	430	102	68	32	54
Peak Hour Factor	0.8500	0.8500	0.8500	0.9200	0.9200	0.9200	0.9300	0.9300	0.9300	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	11	46	29	115	3	19	116	27	19	9	15
Total Analysis Volume [veh/h]	126	45	182	116	459	13	76	462	110	76	36	61
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	1			2			2			1		
v_di, Inbound Pedestrian Volume crossing m	2			1			1			2		
v_co, Outbound Pedestrian Volume crossing	0			1			0			1		
v_ci, Inbound Pedestrian Volume crossing mi	0			1			0			1		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	2			0			1			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	1.0
Offset Reference	LagFO
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split
Signal group	0	4	0	5	2	0	1	6	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	4	0	4	4	0	4	4	0	0	4	0
Maximum Green [s]	0	13	0	13	38	0	10	35	0	0	30	0
Amber [s]	0.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	0.0	1.0	0.0
Split [s]	0	18	0	17	43	0	14	40	0	0	35	0
Vehicle Extension [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	4	0
Pedestrian Clearance [s]	0	23	0	0	23	0	0	23	0	0	26	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0	0.0	2.0	0.0
Minimum Recall		No		No	No		No	No			No	
Maximum Recall		No		No	Yes		No	Yes			No	
Pedestrian Recall		No		No	No		No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	C	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	5.10	5.10	5.10	4.00	6.40	6.40	4.00	6.40	6.40	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	3.10	3.10	3.10	2.00	4.40	4.40	2.00	4.40	4.40	2.00	2.00
g_i, Effective Green Time [s]	13	13	13	9	62	62	6	59	59	10	10
g / C, Green / Cycle	0.12	0.12	0.12	0.08	0.56	0.56	0.05	0.54	0.54	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.05	0.05	0.12	0.07	0.13	0.13	0.04	0.16	0.16	0.06	0.04
s, saturation flow rate [veh/h]	1781	1826	1553	1781	1870	1852	1781	1870	1732	1809	1573
c, Capacity [veh/h]	209	214	182	143	1050	1039	98	1002	928	162	141
d1, Uniform Delay [s]	44.99	44.99	48.40	49.75	12.12	12.13	51.33	14.08	14.12	48.62	47.43
k, delay calibration	0.04	0.04	0.32	0.04	0.50	0.50	0.04	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.47	0.46	53.01	4.10	0.50	0.51	4.97	0.75	0.83	1.98	0.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.40	1.00	0.81	0.23	0.23	0.78	0.29	0.30	0.69	0.43
d, Delay for Lane Group [s/veh]	45.46	45.44	101.41	53.86	12.62	12.63	56.30	14.83	14.95	50.60	48.21
Lane Group LOS	D	D	F	D	B	B	E	B	B	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.14	2.19	7.59	3.24	2.87	2.85	2.16	4.00	3.79	3.15	1.66
50th-Percentile Queue Length [ft/ln]	53.60	54.84	189.63	80.90	71.81	71.28	54.07	99.90	94.76	78.73	41.41
95th-Percentile Queue Length [veh/ln]	3.86	3.95	12.10	5.83	5.17	5.13	3.89	7.19	6.82	5.67	2.98
95th-Percentile Queue Length [ft/ln]	96.49	98.72	302.55	145.63	129.26	128.30	97.33	179.83	170.57	141.72	74.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.46	45.44	101.41	53.86	12.63	12.63	56.30	14.87	14.95	50.60	50.60	48.21
Movement LOS	D	D	F	D	B	B	E	B	B	D	D	D
d_A, Approach Delay [s/veh]	74.30			20.76			19.74			49.76		
Approach LOS	E			C			B			D		
d_I, Intersection Delay [s/veh]	33.96											
Intersection LOS	C											
Intersection V/C	0.404											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	8.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	2188.84	2244.07	3947.00
d_p, Pedestrian Delay [s]	46.37	46.37	47.29	46.37
l_p,int, Pedestrian LOS Score for Intersection	2.317	2.651	2.745	2.001
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	235	665	611	564
d_b, Bicycle Delay [s]	42.90	24.49	26.54	28.37
l_b,int, Bicycle LOS Score for Intersection	2.142	2.045	2.094	1.845
Bicycle LOS	B	B	B	A

Sequence

Ring 1	1	2	4	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Neroly Rd/Oakley Rd

Control Type:	All-way stop	Delay (sec / veh):	11.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.558

Intersection Setup

Name	Neroly Rd			Neroly Rd			Oakley Rd			Oakley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Neroly Rd			Neroly Rd			Oakley Rd			Oakley Rd		
Base Volume Input [veh/h]	27	53	0	95	139	12	6	59	35	7	44	44
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	36	7	28	66	0	0	0	0	5	0	16
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	1	0	0	0	0
Total Hourly Volume [veh/h]	27	89	7	123	205	12	6	60	35	12	44	60
Peak Hour Factor	0.8300	0.8300	0.8300	0.8300	0.8300	0.8300	0.8100	0.8100	0.8100	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	27	2	37	62	4	2	19	11	3	12	17
Total Analysis Volume [veh/h]	33	107	8	148	247	14	7	74	43	13	49	67
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	689	733	667	680
Degree of Utilization, x	0.21	0.56	0.19	0.19

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.81	3.49	0.68	0.70
95th-Percentile Queue Length [ft]	20.28	87.26	16.96	17.40
Approach Delay [s/veh]	9.65	13.94	9.63	9.53
Approach LOS	A	B	A	A
Intersection Delay [s/veh]	11.80			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 23: Neroly Rd/Live Oak Ave

Control Type:	All-way stop	Delay (sec / veh):	12.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.488

Intersection Setup

Name	Live Oak Ave			Live Oak Ave			Neroly Rd			Neroly Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	150.00	100.00	100.00	155.00	100.00	100.00
Speed [mph]	50.00			40.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name	Live Oak Ave			Live Oak Ave			Neroly Rd			Neroly Rd		
Base Volume Input [veh/h]	68	81	40	71	52	4	2	2	78	37	51	128
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	35	0	23	32	4	6	55	10	0	33	66
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	3	0	0	0	0	0	0	0	6
Total Hourly Volume [veh/h]	73	116	40	97	84	8	8	57	88	37	84	200
Peak Hour Factor	0.8300	0.8300	0.8300	0.8800	0.8800	0.8800	0.7100	0.7100	0.7100	0.7800	0.7800	0.7800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	35	12	28	24	2	3	20	31	12	27	64
Total Analysis Volume [veh/h]	88	140	48	110	95	9	11	80	124	47	108	256
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	566	546	485	521	583	506	546	612
Degree of Utilization, x	0.49	0.39	0.02	0.15	0.21	0.09	0.20	0.42

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	2.66	1.85	0.07	0.54	0.80	0.31	0.73	2.06
95th-Percentile Queue Length [ft]	66.59	46.31	1.74	13.45	20.00	7.64	18.28	51.53
Approach Delay [s/veh]	15.28	13.79	10.64			12.01		
Approach LOS	C	B	B			B		
Intersection Delay [s/veh]	12.90							
Intersection LOS	B							

Intersection Level Of Service Report
Intersection 24: Live Oak Ave/Oakley Rd

Control Type:	All-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.363

Intersection Setup

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Base Volume Input [veh/h]	10	44	46	37	39	5	3	124	41	40	89	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	1	63	5	0	0	0	30	5	27	18	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	6	20	0	0	0	1	0	3	0	11
Total Hourly Volume [veh/h]	14	45	115	62	39	5	3	155	46	70	107	33
Peak Hour Factor	0.8100	0.8100	0.8100	0.7800	0.7800	0.7800	0.8400	0.8400	0.8400	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	14	35	20	13	2	1	46	14	21	32	10
Total Analysis Volume [veh/h]	17	56	142	79	50	6	4	185	55	83	127	39
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	706	632	698	686
Degree of Utilization, x	0.30	0.21	0.35	0.36

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	1.29	0.80	1.57	1.66
95th-Percentile Queue Length [ft]	32.22	20.12	39.23	41.49
Approach Delay [s/veh]	10.33	10.24	10.91	11.21
Approach LOS	B	B	B	B
Intersection Delay [s/veh]	10.74			
Intersection LOS	B			

Intersection Level Of Service Report
Intersection 81: Live Oak Ave/El Lago Dr

Control Type:	Two-way stop	Delay (sec / veh):	12.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.028

Intersection Setup

Name	Live Oak Ave		Live Oak Ave		El lago Dr	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Live Oak Ave		Live Oak Ave		El lago Dr	
Base Volume Input [veh/h]	88	28	32	83	12	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.00	3.00	1.00	1.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	92	0	0	51	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	6	0	0	3	0	0
Total Hourly Volume [veh/h]	186	28	32	137	12	13
Peak Hour Factor	0.8400	0.8400	0.8500	0.8500	0.7800	0.7800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	8	9	40	4	4
Total Analysis Volume [veh/h]	221	33	38	161	15	17
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.03	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	7.81	0.00	12.02	9.75
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.09	0.09	0.15	0.15
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.23	2.23	3.87	3.87
d_A, Approach Delay [s/veh]	0.00		1.49		10.81	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.33					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 82: Oakley Rd/Project Access

Control Type:	Two-way stop	Delay (sec / veh):	14.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.077

Intersection Setup

Name	Project Access		Oakley Rd		Oakley Rd	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	15.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project Access		Oakley Rd		Oakley Rd	
Base Volume Input [veh/h]	0	0	227	0	0	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	1.00	1.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	98	0	0	48
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	14	9	0	27	12	0
Total Hourly Volume [veh/h]	14	9	325	27	12	208
Peak Hour Factor	0.4100	0.4100	0.9000	0.9000	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	5	90	8	3	58
Total Analysis Volume [veh/h]	34	22	361	30	13	234
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.03	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	14.06	11.21	0.00	0.00	8.10	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.37	0.37	0.00	0.00	0.03	0.03
95th-Percentile Queue Length [ft/ln]	9.21	9.21	0.00	0.00	0.84	0.84
d_A, Approach Delay [s/veh]	12.94		0.00		0.43	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.20					
Intersection LOS	B					

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Background plus Project Conditions_PM.pdf
Scenario 9 9 Background plus Project Conditions PM
5/3/2019

Turning Movement Volume: Summary

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
2	Live Oak Rd/Main St	53	34	1707	123	22	1026	2965

ID	Intersection Name	Eastbound			Northeastbound			Southwestbound			Northwestbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14	Empire Ave/Oakley Rd	107	38	155	107	422	12	71	430	102	68	32	54	1598

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
22	Neroly Rd/Oakley Rd	27	89	7	123	205	12	6	60	35	12	44	60	680

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
23	Neroly Rd/Live Oak Ave	73	116	40	97	84	8	8	57	88	37	84	200	892

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	14	45	115	62	39	5	3	155	46	70	107	33	694

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Left	Thru	Left	Right	
81	Live Oak Ave/El Lago Dr	186	28	32	137	12	13	408

ID	Intersection Name	Northbound		Eastbound		Westbound		Total Volume
		Left	Right	Thru	Right	Left	Thru	
82	Oakley Rd/Project Access	14	9	325	27	12	208	595

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro
Report File: J:\...\Background plus Project Conditions_PM.pdf
Scenario 9 9 Background plus Project Conditions PM
5/3/2019

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
2	Live Oak Rd/Main St	Final Base	38	34	1074	98	22	652	1918
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	4	0	633	5	0	374	1016
		Other	11	0	0	20	0	0	31
		Future Total	**53**	**34**	**1707**	**123**	**22**	**1026**	**2965**

ID	Intersection Name	Volume Type	Eastbound			Northeastbound			Southwestbound			Northwestbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14	Empire Ave/Oakley Rd	Final Base	64	38	90	88	334	12	71	363	60	68	32	54	1274
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	36	0	63	16	88	0	0	67	33	0	0	0	303
		Other	7	0	2	3	0	0	0	0	9	0	0	0	21
		Future Total	**107**	**38**	**155**	**107**	**422**	**12**	**71**	**430**	**102**	**68**	**32**	**54**	**1598**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
22	Neroly Rd/Oakley Rd	Final Base	27	53	0	95	139	12	6	59	35	7	44	44	521
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	0	36	7	28	66	0	0	0	0	5	0	16	158
		Other	0	0	0	0	0	0	0	1	0	0	0	0	1
		Future Total	**27**	**89**	**7**	**123**	**205**	**12**	**6**	**60**	**35**	**12**	**44**	**60**	**680**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
23	Neroly Rd/Live Oak Ave	Final Base	68	81	40	71	52	4	2	2	78	37	51	128	614
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	5	35	0	23	32	4	6	55	10	0	33	66	269
		Other	0	0	0	3	0	0	0	0	0	0	0	6	9
		Future Total	**73**	**116**	**40**	**97**	**84**	**8**	**8**	**57**	**88**	**37**	**84**	**200**	**892**

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	Final Base	10	44	46	37	39	5	3	124	41	40	89	19	497
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	4	1	63	5	0	0	0	30	5	27	18	3	156
		Other	0	0	6	20	0	0	0	1	0	3	0	11	41
		Future Total	**14**	**45**	**115**	**62**	**39**	**5**	**3**	**155**	**46**	**70**	**107**	**33**	**694**

ID	Intersection Name	Volume Type	Northbound		Southbound		Westbound		Total Volume
			Thru	Right	Left	Thru	Left	Right	
81	Live Oak Ave/El Lago Dr	Final Base	88	28	32	83	12	13	256
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	92	0	0	51	0	0	143
		Other	6	0	0	3	0	0	9
		Future Total	**186**	**28**	**32**	**137**	**12**	**13**	**408**

ID	Intersection Name	Volume Type	Northbound		Eastbound		Westbound		Total Volume
			Left	Right	Thru	Right	Left	Thru	
82	Oakley Rd/Project Access	Final Base	0	0	227	0	0	160	387
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0
		Net New Trips	0	0	98	0	0	48	146
		Other	14	9	0	27	12	0	62
		Future Total	**14**	**9**	**325**	**27**	**12**	**208**	**595**

Appendix F

Background plus Project Mitigated LOS Analysis

Table of Contents

The Vines at Oakley TIS

Vistro File: J:\...\Oakley Citywide Model_Vines.vistro

Scenario 10 10 10 Background plus Project Conditions AM_Mitigated

Report File: J:\...\Background plus Project Conditions_AM_Mitigated.pdf

5/3/2019

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
24	Live Oak Ave/Oakley Rd	Signalized	HCM 6th Edition	NB Thru	0.597	11.4	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 24: Live Oak Ave/Oakley Rd

Control Type:	Signalized	Delay (sec / veh):	11.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.597

Intersection Setup

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			45.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Live Oak Ave			Live Oak Ave			Oakley Rd			Oakley Rd		
Base Volume Input [veh/h]	18	158	25	30	76	22	103	54	17	40	89	89
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90	1.90
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	46	2	0	0	0	11	2	15	26	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	2	7	0	0	0	0	0	5	1	19
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	159	73	39	76	22	103	65	19	60	116	113
Peak Hour Factor	0.6100	0.6100	0.6100	0.6200	0.6200	0.6200	0.4500	0.4500	0.4500	0.8400	0.8400	0.8400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	65	30	16	31	9	57	36	11	18	35	34
Total Analysis Volume [veh/h]	33	261	120	63	123	35	229	144	42	71	138	135
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	10	0	0	7	0
Maximum Green [s]	0	30	0	0	30	0	0	30	0	0	30	0
Amber [s]	0.0	4.4	0.0	0.0	4.4	0.0	0.0	4.8	0.0	0.0	4.1	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Clearance [s]	0	0	0	0	0	0	0	0	0	0	0	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	3.4	0.0	0.0	3.4	0.0	0.0	3.8	0.0	0.0	3.1	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	C	C
C, Cycle Length [s]	38	38	38	38
L, Total Lost Time per Cycle [s]	5.40	5.40	5.80	5.10
l1_p, Permitted Start-Up Lost Time [s]	2.00	2.00	2.00	2.00
l2, Clearance Lost Time [s]	3.40	3.40	3.80	0.00
g_i, Effective Green Time [s]	12	12	14	15
g / C, Green / Cycle	0.32	0.32	0.38	0.40
(v / s)_i Volume / Saturation Flow Rate	0.26	0.15	0.33	0.22
s, saturation flow rate [veh/h]	1572	1455	1245	1541
c, Capacity [veh/h]	605	588	626	652
d1, Uniform Delay [s]	11.79	10.09	10.52	8.61
k, delay calibration	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.38	0.40	1.22	0.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.68	0.38	0.66	0.53
d, Delay for Lane Group [s/veh]	13.17	10.49	11.74	9.28
Lane Group LOS	B	B	B	A
Critical Lane Group	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.34	1.03	1.94	1.50
50th-Percentile Queue Length [ft/ln]	58.40	25.70	48.62	37.55
95th-Percentile Queue Length [veh/ln]	4.20	1.85	3.50	2.70
95th-Percentile Queue Length [ft/ln]	105.11	46.26	87.51	67.59

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	13.17	13.17	13.17	10.49	10.49	10.49	11.74	11.74	11.74	9.28	9.28	9.28
Movement LOS	B	B	B	B	B	B	B	B	B	A	A	A
d_A, Approach Delay [s/veh]	13.17			10.49			11.74			9.28		
Approach LOS	B			B			B			A		
d_I, Intersection Delay [s/veh]	11.36											
Intersection LOS	B											
Intersection V/C	0.597											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	667	667	667	667
d_b, Bicycle Delay [s]	20.00	20.00	20.00	20.00
l_b,int, Bicycle LOS Score for Intersection	2.243	1.924	2.244	2.127
Bicycle LOS	B	A	B	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

The Vines at Oakley TIS

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Scenario 10 10 10 Background plus Project Conditions AM_Mitigated

Report File: J:\...\Background plus Project Conditions_AM_Mitigated.pdf

5/3/2019

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	20	159	73	39	76	22	103	65	19	60	116	113	865

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5/3/2019

Turning Movement Volume: Detail

ID	Intersection Name	Volume Type	Northbound			Southbound			Eastbound			Westbound			Total Volume
			Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
24	Live Oak Ave/Oakley Rd	Final Base	18	158	25	30	76	22	103	54	17	40	89	89	721
		Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	-
		In Process	0	0	0	0	0	0	0	0	0	0	0	0	0
		Net New Trips	2	1	46	2	0	0	0	11	2	15	26	5	110
		Other	0	0	2	7	0	0	0	0	0	5	1	19	34
		Future Total	**20**	**159**	**73**	**39**	**76**	**22**	**103**	**65**	**19**	**60**	**116**	**113**	**865**

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