Appendix I:
Transportation Supporting Information

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Hexagon Transportation Consultants, Inc.

Draft Memorandum

Date: May 10, 2021

To: Mr. Marshall Torre, Summerhill Homes

From: Jonathan Wong
Ollie Zhou

Subject: Transportation Analysis for the Summerhill Homes Townhome Condo Site Residential Redevelopment at 2740 Jones Road in Walnut Creek, California

Hexagon Transportation Consultants, Inc. has completed a transportation analysis for the proposed Summerhill Homes Townhome Condo Site Residential Development project at 2740 Jones Road in Walnut Creek, California. The project would build 125 residential units on the former private school site. The project site is located between Jones Road and Oak Road (see Figure 1). The site is currently vacant. Access to the site is provided via Jones Road and Oak Road.

Vehicle Miles Travelled (VMT) Analysis

In December 2018, the California Natural Resources Agency certified and adopted the CEQA Guidelines update package, including the Guidelines section implementing Senate Bill 743. The guidelines state that level of service will no longer be considered to be an environmental impact under CEQA and that vehicle miles travelled (VMT) is the most appropriate measure of transportation impact. SB 743 went into effect on July 1, 2020. In accordance with new CEQA guidelines, the County has transitioned from intersection LOS to vehicle miles travelled (VMT) for CEQA transportation analysis.

A project's VMT is compared to the appropriate thresholds of significance based on the project location and type of development. When assessing a residential project, the project's VMT is divided by the number of residents expected to occupy the project to determine the VMT per capita.

To determine whether a project would result on CEQA transportation impacts related to VMT, the City has established thresholds for residential, office, and retail projects. For residential projects, the significant VMT impact threshold is 85% of existing County-wide average VMT per capita, A project may indicate a significant transportation impact.

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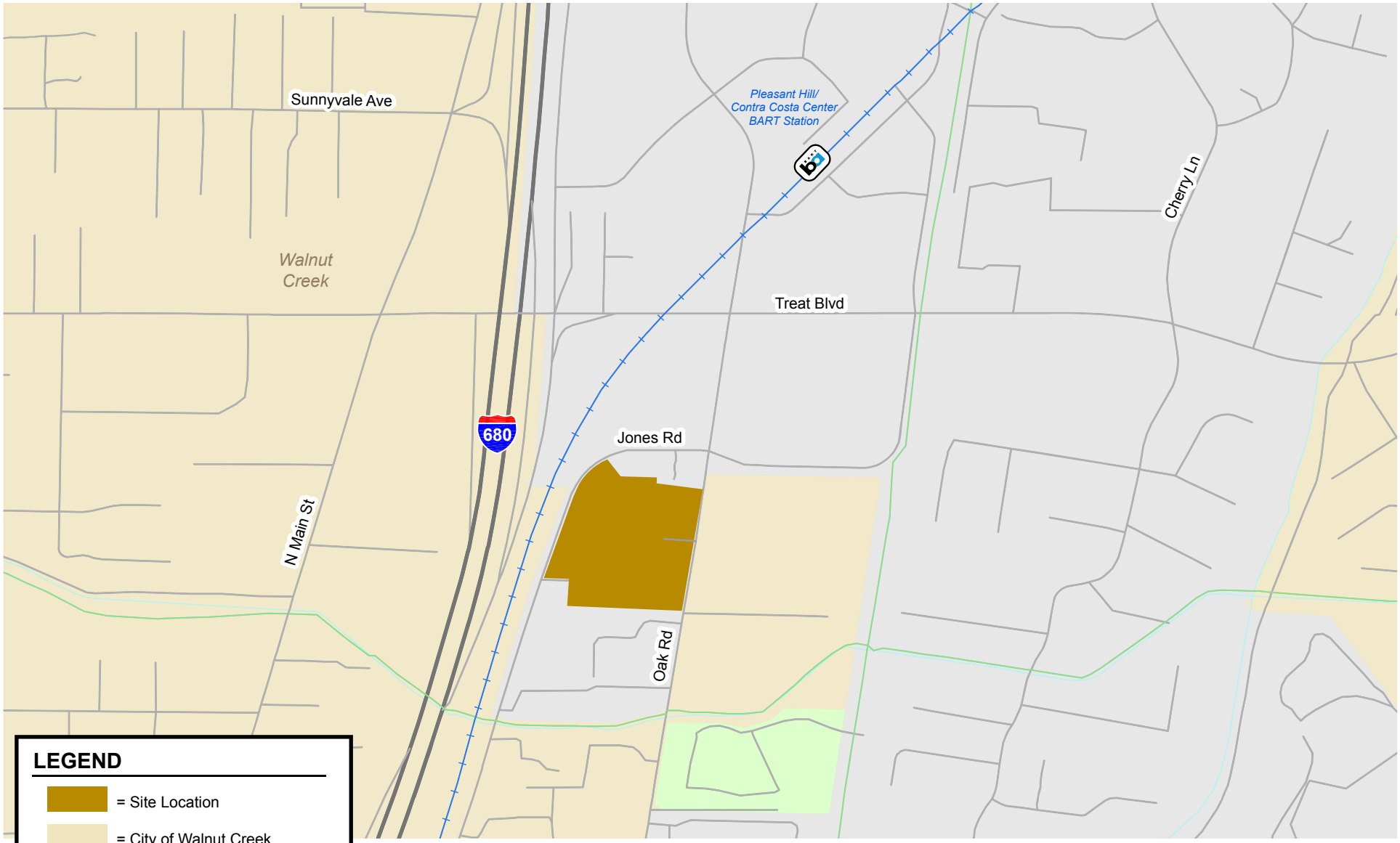


Figure 1
Project Site Location

NORTH
Not to Scale

VMT Screening Criteria

The Contra Costa Transportation Analysis Guidelines also includes screening criteria for projects that are expected to result in less-than-significant VMT impacts. These screening criteria are generally based on project size and location. These include:

- Projects that:
  - Generate or attract fewer than 110 daily vehicle trips; or,
  - Projects of 10,000 square feet or less of non-residential space or 20 residential units or less, or otherwise generating less than 836 VMT per day.
- Residential, retail, office projects, or mixed-use projects proposed within ½ mile of an existing major transit stop or an existing stop along a high quality transit corridor.
- Residential projects (home-based VMT) at 15% or below the baseline County-wide home-based average VMT per capita, or employment projects (employee VMT) at 15% or below the baseline Bay Area average commute VMT per employee in areas with low VMT that incorporate similar VMT reducing features (i.e., density, mix of uses, transit accessibility).
- Public facilities (e.g. emergency services, passive parks (low-intensity recreation, open space), libraries, community centers, public utilities) and government buildings.

Project-level VMT Analysis

According to the Contra Costa County Transportation Analysis Guidelines, a project is expected to result in a less-than-significant VMT impact if the proposed project is located within ½ mile of an existing major transit stop or an existing stop along a high quality transit corridor. The Pleasant Hill BART station, which is an existing major transit stop, is located within ½ mile of the project site. In addition, there are bicycle and pedestrian facilities between the project site and the Pleasant Hill BART station. There are continuous sidewalks along Jones Road and Oak Road that connects to the project site and the Pleasant Hill BART station. At a normal walking pace, it will take approximately 10 minutes to walk from the project site to the Pleasant Hill BART station. The Iron Horse Regional Trail and the Contra Costa Canal Trail are bicycle facilities that connect the project site to the Pleasant Hill BART station. Bicyclists would travel south on Jones Road or Oak Road to connect to the Contra Costa Canal Trail, heading east. Then bicyclists would travel north along the Iron Horse Regional Trail, which would lead to the Pleasant Hill BART station. There are also bike racks and bike lockers at the BART station for bicyclists to park their bicycles. Furthermore, the BART system provides quality regional connection to major employment destinations within the Bay Area (i.e. Oakland, San Francisco), and would soon connect to the San Jose area as well. The Pleasant Hill BART station also connects to local bus routes that are provided by County Connection. These local bus routes include 7, 9, 11, 14, 15, and 311. It is anticipated that this proposed residential project, being located within close proximity to the BART station, would have many residents take advantage of its regional transit connectivity. This would reduce residents' need to drive. As the County's guidelines stated, therefore, the project's VMT impact is considered less than significant.

Transportation Demand Management (TDM) Plan

A Transportation Demand Management Plan is prepared as part of this project. The TDM Plan will include a range of TDM measures designed to reduce single-occupant vehicle trips and encourage residents to walk, bike or use transit services. The TDM measures include the following:

- Designating a Transportation Coordinator
- Online Kiosk/TDM Information Board
- Transportation Information Packets

- Provide access to transit services and transit resources
- Provide Bicycle Parking and Bicycle resources such as maps and bicycle safety tips
- Provide information on Carpool and Vanpool programs

Study intersections and Data Collection

Hexagon conducted AM and PM peak period traffic counts in February 4, 2021 at the following study intersections:

1. Oak Road and Jones Road
2. Oak Road and Treat Boulevard
3. Jones Road and Project Driveway
4. Oak Road and Project Driveway

Note that the traffic volumes collected are adjusted to pre-COVID conditions. The intersection at Oak Road and Treat Boulevard had historic counts in year 2018. A factor was derived by comparing the historic counts to the newly collected (2021) counts. This factor was applied to all other intersections to derive pre-COVID volume estimates. Since the pre-COVID count was dated for year 2018, Hexagon derived an annual growth rate using counts at this intersection collected in 2014. This annual growth rate was then applied to all intersection volumes to bring the 2018 counts/derived volumes to 2021 conditions as if there was no COVID (see Table 1 for calculations of COVID factors, Table 2 for calculations of growth rates and Table 3 for a comparison). This represents a conservative analysis. Further factoring were conducted at the Oak Road and Jones Road intersection to ensure volume balancing on the north leg with the intersection at Oak Road and Treat Boulevard. The existing school driveway traffic volumes were estimated based on the trip rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 10th Edition* (2017) for Private School (K-8). The Oak Road/Project Driveway traffic volumes were taken from the Oak Road/Jones Road intersection. Figure 2 shows the existing traffic volumes at the study intersections.

Table 1
COVID Factors

Oak Road and Treat Boulevard Volumes			
AM COVID Factor Applied to all other intersections		PM COVID Factor Applied to all other intersections	
2018 Counts	5561	2018 Counts	5124
2021 Counts	3473	2021 Counts	3935
Difference	2088	Difference	1189
COVID Factor (A)	60.12%	COVID Factor (B)	30.22%
AM 2018 Estimates (C) = 2021 Counts * (1+A)		PM 2018 Estimates (D) = 2021 Counts * (1+B)	

Table 2
Growth Rates

Oak Road and Treat Boulevard Volumes			
AM Annual Growth Rate		PM Annual Growth Rate	
2018 Counts	5561	2018 Counts	5124
2014 Counts	5014	2014 Counts	5101
Difference	547	Difference	23
Growth Percent Difference	10.91%	Growth Percent Difference	0.45%
Annual Growth Rate (E)	2.73%	Annual Growth Rate (F)	0.11%
AM 2021 Estimates = C * E * 3 years		PM 2021 Estimates = D x F x 3 years	

Table 3
New counts vs. Adjusted counts

Oak Road & Treat Boulevard - Intersection Volume			
Pk Hr	2021 Count [1]	2018 Count [2]	Adjusted 2021 Count [4]
AM	3473	5561	**6016**
PM	3935	5124	**5142**

Oak Road & Jones Road - Intersection Volume		
Pk Hr	2021 Count [1]	Adjusted 2021 Count [3]
AM	759	**2270**
PM	1246	**1977**

Notes:
BOLD indicates volumes used in the analysis.
1 Counts were collected on February 4, 2021, during COVID.
2 2018 Counts were collected from the Del Hombre Apartments Project.
3 The adjusted 2021 counts were derived by comparing 2018 and 2021 counts from Oak Road and Treat Boulevard. A growth rate was also applied to match the current year.
4 A growth rate was applied to bring the 2018 counts to a 2021 condition assuming there was no COVID.

Observations

Hexagon observed existing traffic operations at each of the study intersections. The AM and PM field observations conducted in March 2021 revealed that overall the study intersections operate well with no observed traffic deficiencies. It should be noted these field observations were conducted during the COVID pandemic and may not be indicative of pre-COVID peak-hour intersection performance. It should also be noted that the intersection level-of-service analysis is conducted using counts factored to estimate existing traffic volumes as if there was no pandemic.

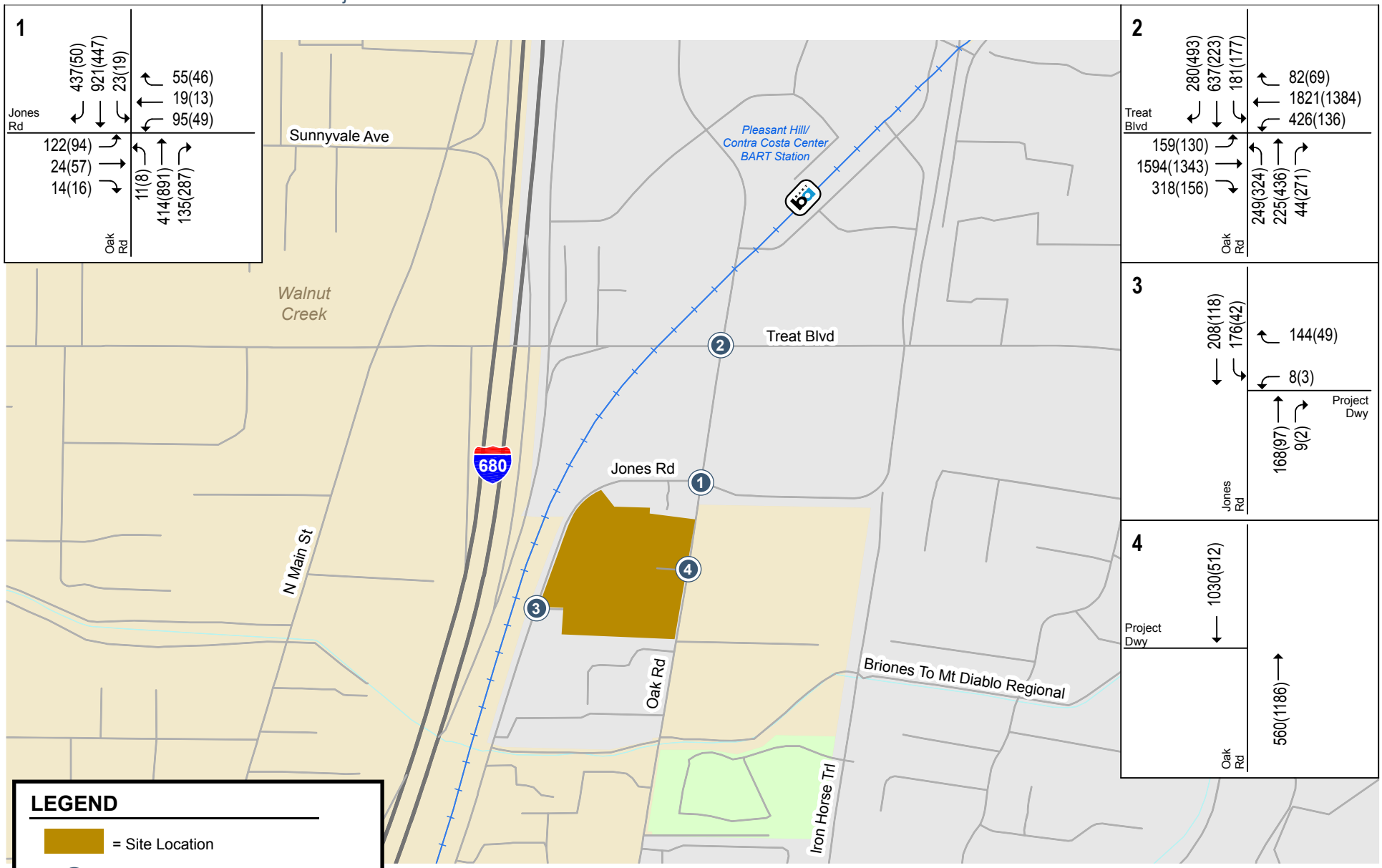


Figure 2
Existing Traffic Volumes

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that would appear are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the site is estimated for the AM and PM peak hours. As part of the project trip distribution, an estimate is made of the directions to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets and intersections. These procedures are described below.

Project Trip Generation

Proposed Project Trip generation

Vehicle trips generated by the proposed residential component of the project were estimated using the trip rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 10th Edition* (2017) for "Single Family Detached Housing" (Land Use 210). Since the proposed units all included at least three bedrooms with their own attached garages, it was determined that the single family detached housing land use would best reflect the trip generation characteristic for the proposed project. It should be noted that the single family rates are also the highest trip generation rates out of all residential trip rates. This analysis thus represents a slightly conservative analysis.

As shown in the Table 4, the project is estimated to generate 1,180 gross daily vehicle trips, with 93 gross trips occurring during the AM peak hour and 124 gross trips during the PM peak hour.

Existing Trip Credits

Trips generated by the existing uses on the site can be credited against the proposed development. At the time of this report, the former private school is permanently closed. However, the school is being credited because this traffic study is analyzed under pre-COVID conditions when the school was open. The existing traffic counts, as discussed earlier, are all factored to pre-COVID conditions.

The private school trip generation estimates are based on ITE rates for Private School (K-8). According to the former school owner, the school had student enrollments ranging between 370 students and 400 students. The school also had after-school activities and was open until 6 PM on school days. For a conservative analysis, the school is credited using the 370 students.

When comparing the PM peak hour rate to other private/charter elementary and middle schools (average of 0.56 trips per student), the ITE rate of 0.26 trips per student for the PM peak hour appeared low. Table 5 provides a PM peak hour trip rate of elementary and middle schools similar to the existing school. Therefore, crediting school's PM trip generation using the ITE trip rates represent a conservative analysis. It is estimated that the private school with 370 students would have generated 1,521 daily trips with 337 trips during the AM peak hour and 96 trips during the PM peak hour.

Net Project Trips

After accounting for the trips generated by the former private school, the proposed residential project is estimated to generate a net decrease of 341 daily trips, with a net decrease of 244 trips in the AM peak hour and a net increase of 28 trips in the peak hour. It should be noted that this analysis represented a conservative analysis. Crediting the project with even the lowest observed PM rates for comparable schools would have resulted in an overall net decrease in trips.

Table 4
Project Trip Generation Estimates

Land Use	ITE Land Use Code		Size	Daily		AM Peak Hour				PM Peak Hour			
							Trip				Trip		
				Rate	Trips	Rate	In	Out	Total	Rate	In	Out	Total
Proposed Land Uses													
Single-Family Detached Housing	**210**	**125**	Dwelling Units	9.44	1,180	0.74	23	70	93	0.99	78	46	124
Total Project Trips					**1,180**		**23**	**70**	**93**		**78**	**46**	**124**
Existing Land Uses													
Private School (K-8)	**534**	**370**	Students	4.11	1,521	0.91	185	152	337	0.26	44	52	96
Total Existing Trips					**1,521**		**185**	**152**	**337**		**44**	**52**	**96**
Net Project Trips					**-341**		**-162**	**-82**	**-244**		**34**	**-6**	**28**

Source: ITE Trip Generation Manual, 10th Edition 2017

Table 5
Comparison PM Peak Hour Trip Rate of Private/Charter Elementary and Middle Schools

School Name	Address	Counted PM Peak Commute Hour Trip Generation Rate (Trips/Student)
The Harker School - Middle School	3800 Blackford Avenue, San Jose, CA 95117	0.7
Downtown College Prep Alum Rock Middle School	2888 Ocala Avenue, San Jose, CA 95148	0.78
Rocketship Si Se Puede Academy	2249 Dobern Avenue, San Jose, CA 95116	0.37
Rocketship Mateo Sheedy Elementary	788 Locust Street, San Jose, CA 95110	0.39
Rocketship Brilliant Minds	2960 Story Road, San Jose, CA 95127	0.68
Rocketship Discovery Prep	370 Wooster Avenue, San Jose, CA 95116	0.44
Rocketship Mosaic Elementary	950 Owsley Avenue, San Jose, CA 95122	0.7
KIPP Heritage Middle School	423 Los Arboles Street, San Jose, CA 95111	0.51
KIPP Heartwood & Prize Middle Schools	1250 S. King Road, San Jose, CA 95122	0.69
ACE Franklin McKinley Middle School	1665 Santee Drive, San Jose, CA 959122	0.41
ACE Empower Academy Middle School	625 S. Sunset Avenue, San Jose, CA 95116	0.34
KIPP Prize Preparatory Academy	1250 S. King Road, Sna Jose, CA 95122	0.69
	Minimum Observed Trip Generation Rate	**0.34**
	Average Observed Trip Generation Rate	**0.56**
	Maximum Observed Trip Generation Rate	**0.78**

Project Trip Distribution and Assignment

The trip distribution pattern for the proposed development was estimated based on existing travel patterns on the surrounding roadway system and the locations of complementary land uses.

The peak-hour trips generated by the existing and proposed uses were assigned to the roadway system based on the directions of approach and departure, the roadway network connections, and the locations of project driveways. The trips generated by the existing uses were subtracted from the roadway network prior to assigning project trips. It should be noted that the school trips were only accessed on one driveway on Jones Road. It is assumed that all residential trips would enter and exit the project site via two driveways each on Jones Road and on Oak Road. Figure 3 shows the trip distribution and assignment of the project.

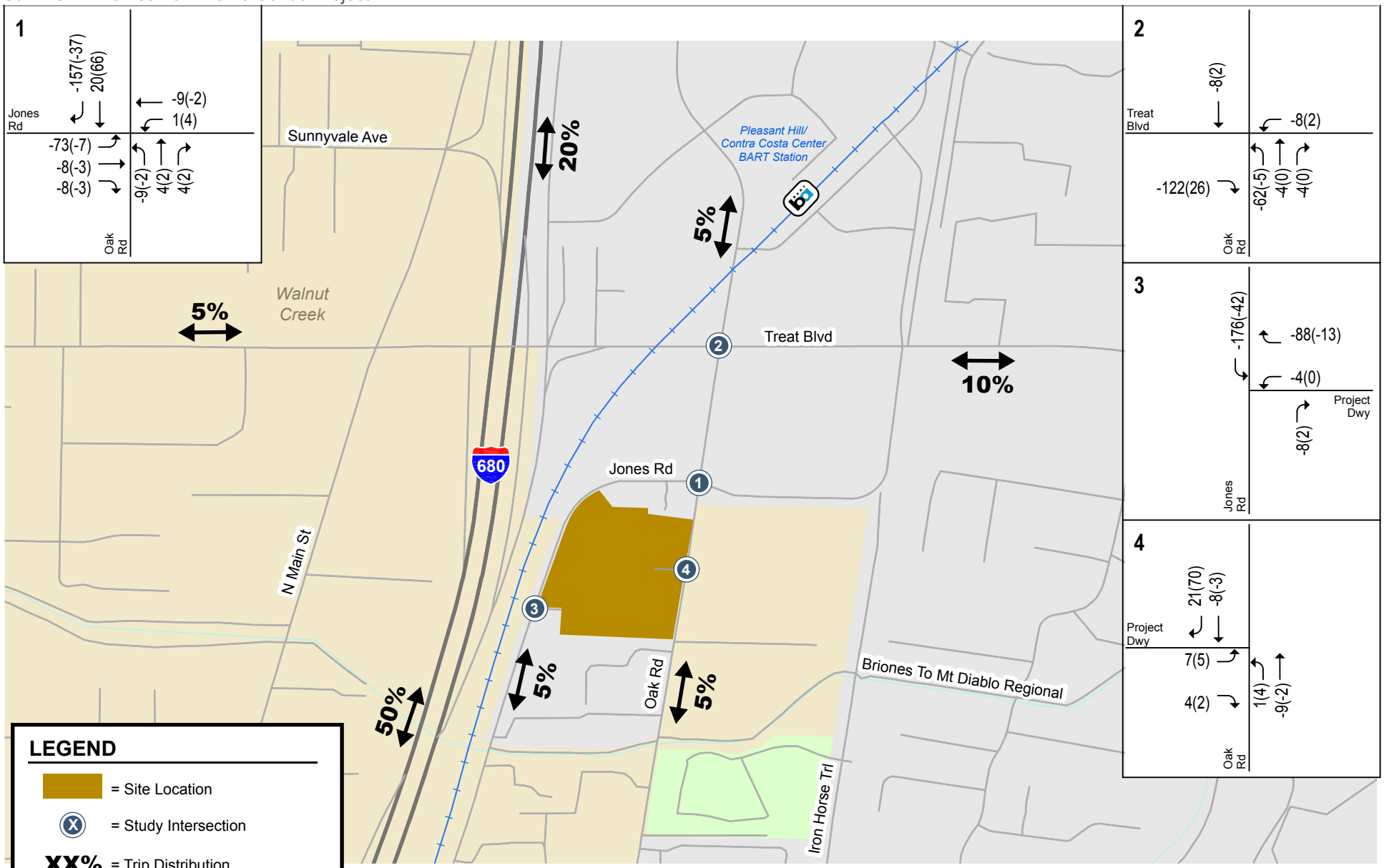


Figure 3
Trip Distribution and Trip Assignment

Intersection Operational Analysis

According to the County of Contra Costa Transportation Analysis Guidelines, although level of service is no longer the impact criteria for CEQA purposes, a level of service analysis is still required for development projects if:

1. The development project generates 100 or more net new peak hour vehicle trips; or
2. The development project adds 50 or more net new peak hour vehicle trips to an intersection; or
3. A project creates safety or operation concerns.

While the project does not meet any of the three requirements, a level of service analysis of existing and existing plus project conditions is performed. As the analysis below shows, the project would generate minimal increase in average delays to study intersections. This is largely because in a pre-COVID environment, the trips generated by the proposed project would be largely offset by the trip credits of the Palmer school. The number of net new trips added to the intersections would be minimal. As a result, the project's effect on intersection operations would also be minimal. It is thus not expected that the project would have any considerable effects on intersection operations under background or cumulative conditions.

County of Contra Costa Intersections

According to County of Contra Costa level of service standard, a development is said to create operational deficiencies on traffic conditions at a studied intersection if:

1. The level of service at the intersection drops below its respective level of service standard (LOS D or better), or
2. The intersection is an unacceptable level of service (LOS E or F) and the addition of project trips cause the average control delay (for signalized and all-way stop-controlled intersections) or worst movement/approach delay (for side-street stop-controlled intersections) at the intersection to increase by more than 5.0 seconds.

Intersection Operations

The study intersections were evaluated for level of service. Level of Service is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The Contra Costa County level of service methodology for signalized intersections is the *Highway Capacity Manual* (HCM) 6th Edition method. This method is applied using the Synchro software. The HCM 6th operations method evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. The HCM 6th operations method evaluates unsignalized intersection operations on the basis of worst approach delay. The Contra Costa County level of service standard for signalized and unsignalized intersections is LOS D or better.

Level of Service Analysis Results

The results of the level of service analysis show that all four study intersections currently operate at an acceptable LOS D or better, and the project would have a minimal effect on the existing intersection operations (see Table 6).

Table 6
Intersection Levels of Service

#	Intersection	Control	Peak Hour	Count Date	Existing Avg. Delay (sec)[1]	Existing LOS	Existing plus Project Avg. Delay (sec)[1]	Existing plus Project LOS	Incr. in Avg. Delay
1	Oak Road & Jones Road	Signal	AM	02/04/21	15.7	B	12.1	B	-3.6
			PM	02/04/21	13.9	B	13.5	B	-0.4
2	Oak Road & Treat Boulevard	Signal	AM	02/04/21	44.9	D	44.1	D	-0.8
			PM	02/04/21	46.4	D	46.4	D	0.0
3	Jones Road & Project Driveway	Side-Street Stop	AM	02/04/21	10.9	B	9.7	A	-1.2
			PM	02/04/21	9.2	A	9.1	A	-0.1
4	Oak Road & Project Driveway	Side-Street Stop	AM	02/04/21	0.0	A	18.7	C	18.7
			PM	02/04/21	0.0	A	15.3	C	15.3

Notes:

* The 2/4/2021 count at these intersections were factored to pre-COVID conditions.

1 Delays based on average delay for signalized intersections and worst approach delay for unsignalized intersections.

Site Circulation and Access

A review of the project site plan was performed to determine whether adequate site access and in-site circulation would be provided, using commonly accepted transportation planning principles and traffic engineering standards. This review was based on the site plan prepared by SDG Architects, Inc. dated January 29, 2021, shown on Figure 4. Hexagon has also reviewed the site plan being prepared for the next round of submittal at the time of this report.

Figure 4
Proposed Site Plan

NORTH
Not to Scale

Site Access

Vehicle site access was evaluated to determine the adequacy of the site driveways. The project generated traffic would access the site via a new driveway connecting to Jones Road. There will also be a proposed driveway that will connect to the project site on Oak Road. The new driveway on Jones Road will be 26 feet wide, which can accommodate two-way traffic. The site plan shows that the Oak Road driveway would be approximately 26 feet. The 26 feet driveway width would be adequate for emergency vehicle access.

Sight Distance

Sight distance was evaluated to determine if a driver will have adequate visibility to enter Jones Road and Oak Road from the driveways. The project access points should be free and clear of any obstructions that would materially and adversely affect sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and other vehicles travelling on adjacent roadways. Landscaping and parking should not conflict with a driver's ability to locate a gap in traffic and see oncoming pedestrians and bicyclists. Adequate corner sight distance (sight distance triangles) should be provided at all site access points in accordance with the County standards. Sight distance requirements vary depending on the roadway speeds. The speed limit on Jones Road and Oak Road is 35 mph. According to the Highway Design Manual (HDM), Chapter 200, 2014, the required minimum stopping sight distance for design speed of 35 mph is 250 feet. The line of sight for vehicles exiting the driveway and vehicles travelling northbound on Jones Road are clear and visible. Vehicles exiting the driveway will be visible to the vehicles travelling southbound on Jones Road and Oak Road. There are existing red curbs on both sides of each driveway to provide adequate visibility for vehicles exiting the project site. The project would not substantially increase hazards due to any design features.

On-site Circulation

On-site circulation was reviewed in accordance with generally accepted traffic engineering standards. The project would provide new streets and alleys within the project site that lead to each unit. Each unit would have its own driveway and a garage. According to the Contra Costa County Municipal Code, the minimum two-way drive aisle width for multifamily uses is 20 feet and 26 feet when portion of the building has human occupancy located more than 30 feet above the access road. The site plan shows the appropriate drive aisle widths within the project site.

The site plan would provide adequate space for garbage trucks, loading trucks and emergency vehicles to circulate throughout the project site.

Bicycle, Pedestrian and Transit Facilities Evaluation

Bicycle Facilities

Currently, there are no existing bike lanes on Jones Road. However, there is a pedestrian/bike trail, Iron Horse Regional Trail, located approximately 1,500 feet east of the project site. The bike trail provides access to the Pleasant Hill BART station. There is also another pedestrian/bike trail, Contra Costa Canal Trail, located approximately 650 feet south of the project site and crossing Jones Road. According to the City of Walnut Creek Bicycle Plan, there are plans to provide a bicycle route on Jones Road between Treat Boulevard and Walden Road. The project would not affect existing and planned bicycle facilities. The project also proposes to include a bike repair space on site.

The Seven Hills School is located within a 3-mile radius of the project site. The Contra Costa Canal Trail provides a good bicycle connectivity to the project site and the Seven Hills School.

Oak Road has planned Class II facilities in the vicinity of the project. The planned Class facilities is located on Oak Road between Treat Boulevard and the Contra Costa Canal Trail. The four on-street parking spaces proposed along Oak Road would not result in a conflict with future construction of this facility.

The Iron Horse Regional Trail, a pedestrian/bike trail, located approximately 1,500 feet east of the project site. The Iron Horse Regional Trail extends from Marsh Drive in Concord to DeMarcus Boulevard in Dublin. The Iron Horse Regional Trail provides access to the Pleasant Hill BART station. There is also another trail, Contra Costa Canal Trail, located approximately 650 feet south of the project site and crossing Jones Road. The Contra Costa Canal Trail extends from Muir Road in Martinez to Willow Pass Road in Concord. The Contra Costa Canal Trail provides access to Walden Park and the Iron Horse Regional Trail. According to the City of Walnut Creek Bicycle Plan, there are plans to provide a bicycle route on Jones Road between Treat Boulevard and Walden Road.

Figure 5 shows the existing bicycle facilities within the project area.

Pedestrian Facilities

There are sidewalks on the east side of Jones Road within the vicinity of the project site. There are also sidewalks on both sides of Oak Road and Treat Boulevard so that residents at the project site can easily walk to the Pleasant Hill BART station. The traffic signal at the Oak Road/Jones Road and Oak Road/Treat Boulevard intersections includes crosswalks with pedestrian signal heads to facilitate crossing the street. The Iron Horse Regional Trail and Contra Costa Canal Trial described above are Class I pedestrian/bicycle facilities within project proximity. There are no pedestrian improvement plans along Jones Road or Oak Road along the project frontage. The project would not affect existing or planned pedestrian facilities.

The Seven Hills School is located within a 1-mile radius of the project site. Although the Contra Costa Canal Trail provides a pedestrian connectivity between the two locations, it is not likely for a pedestrian to walk further than a 1-mile.

Transit Facilities

The site is served by several County Connection bus routes: 7, 9, 11, 14, 15, and 311. The project site is located with ½ mile of a major transit stop, the Pleasant Hill BART station, which is located north of the project site. The closest bus stop to the project site is located at Oak Road and Walden Park, approximately 970 feet south of the project site. There are sidewalks on Oak Road that provide connectivity to the bus stop.

The Pleasant Hill BART station also provides other bus route connections in addition to other County Connection lines. AC Transit, Solano Express, Fairfield and Suisun Transit, and Wheels Express provide connecting transit routes at the Pleasant Hill BART station (see Figure 6 and Table 7 below).

Paratransit services could also be provided to the residents at the project site. County Connection LINK serves Pleasant Hill, Walnut Creek, Concord, Lafayette and other central Contra Costa cities. Paratransit service rides are provided within 1.5 miles of a bus stop or train station.

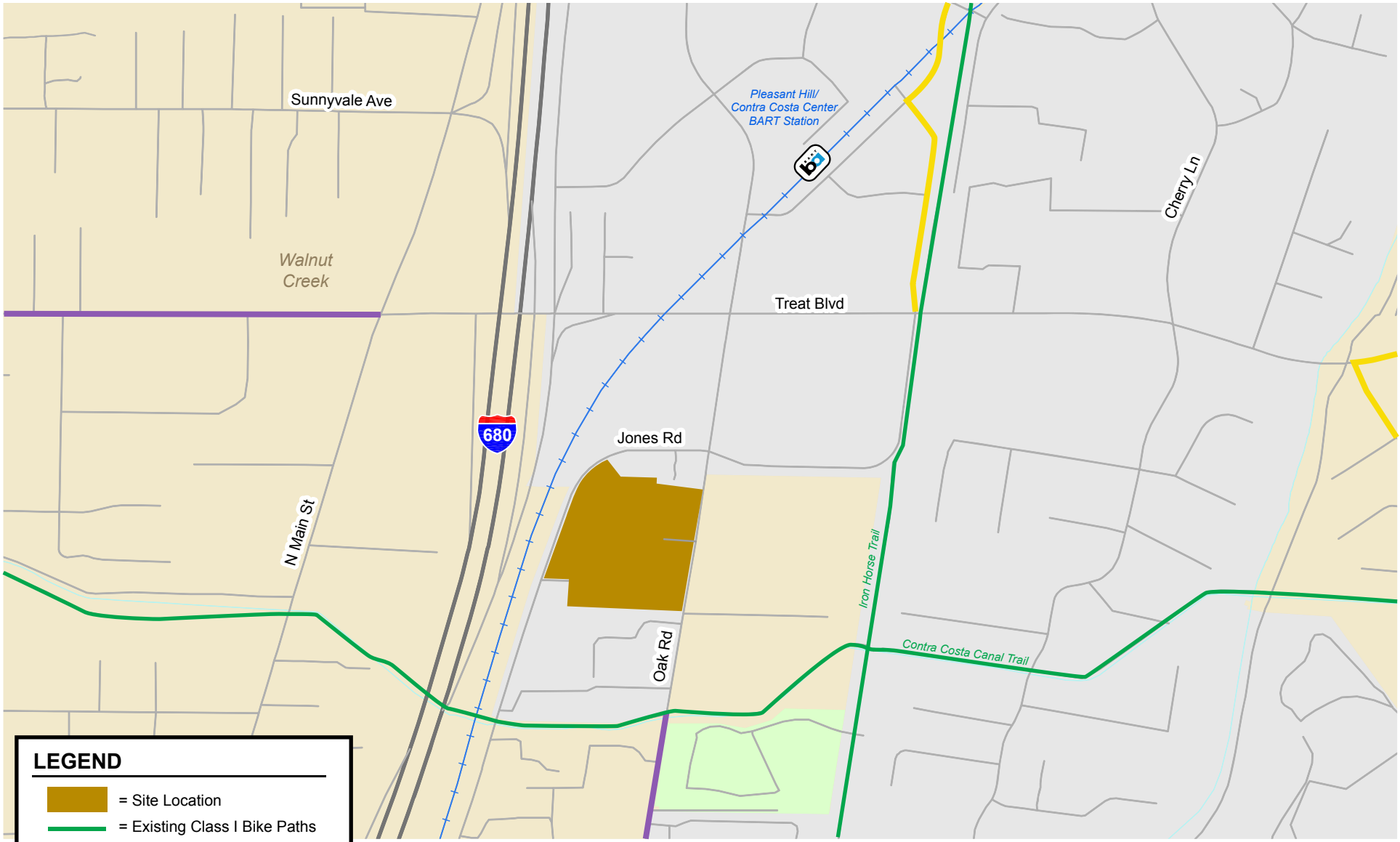


Figure 5
Existing Bicycle Facilities

NORTH
Not to Scale

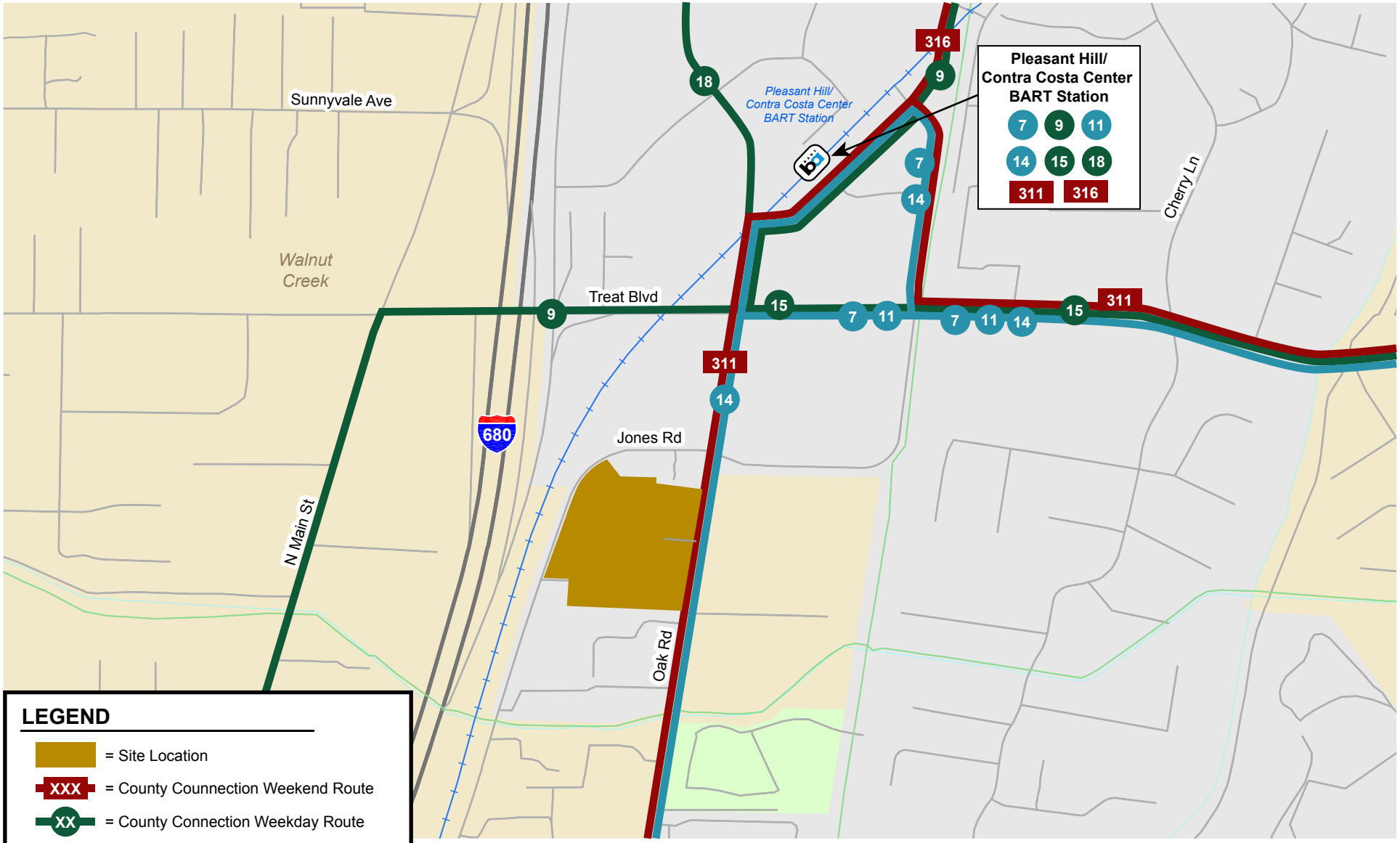


Figure 6
Existing Transit Facilities

NORTH
Not to Scale

Table 7
Existing Transit Services

Bus Route	Route Description	Closest Stop & Distance to Project Site	Weekday Hours of Operation[1]	Headway[1]
County Connection				
Local Bus 7	Shadelands / BART PH	Pleasant Hill BART Station, 0.3 mi	6:30 am - 10:30 am & 3:00 pm - 7:45 pm	20 min
Local Bus 9	DVC / BART Walnut Creek	Pleasant Hill BART Station, 0.3 mi	6:00 am - 9:30 pm	60 min
Local Bus 11	BART Concord / BART Pleasant Hill	Pleasant Hill BART Station, 0.3 mi	6:00 am - 8:00 pm	45 min
Local Bus 14	Monument Boulevard	Oak Road and Walden Park, 0.2 mi	5:30 am - 9:30 pm	30 min
Local Bus 15	Treat Boulevard	Pleasant Hill BART Station, 0.3 mi	6:00 am - 9:00 pm	60 min
Local Bus 18	AMTRAK / BART Pleasant Hill	Oak Road and Walden Park, 0.2 mi	6:00 am - 9:30 pm	80 min
Local Bus 311	BART Concord / BART PH / BART WC	Oak Road and Walden Park, 0.2 mi	8:30 am - 8:30 pm; Weekends Only	60 min
Local Bus 316	Martinez AMTRAK / BART Pleasant Hill	Pleasant Hill BART Station, 0.3 mi	7:00 am - 7:30 pm; Weekends Only	75 min
AC Transit				
702	San Francisco Temporary Transbay Terminal	Pleasant Hill BART Station, 0.3 mi	4:00 am - 5:00 am	One trip
Solano Express				
Blue Line	Fairfield / Sacramento / Vacaville	Pleasant Hill BART Station, 0.3 mi	5:27 am - 7:43 pm	60 min
Wheels Bus				
70X	Dublin / Pleasanton BART	Pleasant Hill BART Station, 0.3 mi	7:04 am - 8:04 am; 4:36 pm - 7:03 pm	30 min (AM); 20-30 min (PM)

Notes:
1. Approximate weekday operation hours and headways during peak commute periods in the project area, as of April 2021.

Parking

Vehicle Parking

Parking provided on the site was evaluated based on the Contra Costa County parking standards. According to the Contra Costa County Municipal Code, the vehicle requirement for a townhouse is 2 covered spaces per unit. In addition, the guest parking requirement is 0.25 spaces per unit. The project proposes to construct 125 units. Therefore, the project is required to provide 250 residential parking spaces and 32 guest parking spaces, which totals 282 parking spaces. The site plan shows that a 2-car garage parking will be provided in each townhome and 28 guest parking spaces within the project site. According to the Contra Costa Municipal Code, for each dwelling unit, a listed

raceway to accommodate a dedicated 208/240-volt branch circuit is required to be installed in each single-family residential unit to accommodate EV charging infrastructure. Therefore, each townhome should provide a dedicated 208/240-volt branch circuit. In addition, the site proposes to add 4 on-street frontage parking spaces along Oak Road. The combination of guest parking onsite and new on-street parking will suffice the requirement for guest parking. The parking standards do not require any loading spaces to be provided.

According to the County Municipal Code, the short-term bicycle parking requirement for townhomes with private garages is five percent of the number of bedrooms, or two spaces, whichever is greater. There is no space requirement for long-term bicycle parking. Each townhouse would have 3 bedrooms. Therefore, the project is required to provide 0.15 short-term bicycle spaces per townhouse, which totals to 19 short-term bicycle parking spaces. The project would provide bicycle racks around the site. The bicycle racks are located between Buildings P and Q, Buildings Q and R, Buildings R and S and Buildings D and E. The bike racks between Buildings R and S would have 9 racks while the other locations would have 4 racks. With each bike rack providing 2 bicycle parking spaces, the project would provide 42 bicycle parking spaces, exceeding the County requirement. The project also proposes to include a bike repair space on site next to the short-term bike racks. The bike repair space will have a free standing unit with tools for residents to work on their bikes. There is also additional secure bicycle parking in the two-car garages provided for each unit.

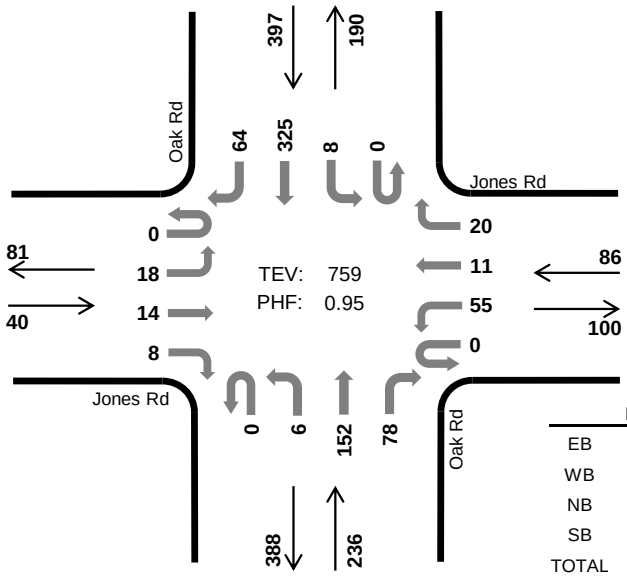
APPENDIX

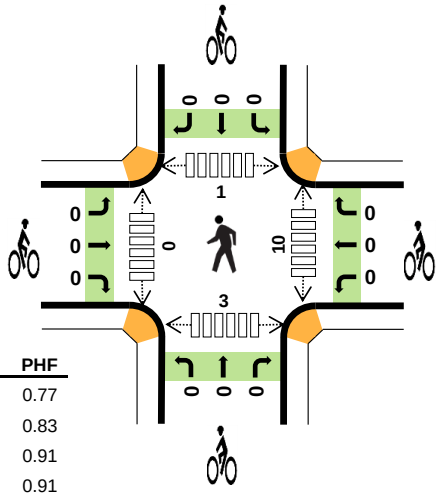
- Intersection Counts
- Synchro LOS Calculation Sheets

Oak Rd
Jones Rd

Date: 02-04-2021
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM

Peak Hour





	HV %:	PHF
EB	7.5%	0.77
WB	1.2%	0.83
NB	2.1%	0.91
SB	1.5%	0.91
TOTAL	2.0%	0.95

Two-Hour Count Summaries

Interval Start		Jones Rd Eastbound				Jones Rd Westbound				Oak Rd Northbound				Oak Rd 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	2	0	2	0	5	3	6	0	0	24	8	0	1	41	14	106	0
7:15 AM		0	1	0	0	0	7	2	2	0	0	28	12	0	3	46	8	109	0
7:30 AM		0	2	2	0	0	8	1	6	0	0	31	11	0	7	59	13	140	0
7:45 AM		0	6	6	2	0	9	2	5	0	0	32	12	0	2	70	22	168	523
8:00 AM		**0**	**5**	**3**	**1**	**0**	**14**	**3**	**5**	**0**	**2**	**39**	**17**	**0**	**3**	**87**	**19**	**198**	615
8:15 AM		**0**	**5**	**5**	**0**	**0**	**15**	**6**	**5**	**0**	**1**	**40**	**24**	**0**	**0**	**77**	**21**	**199**	705
8:30 AM		**0**	**5**	**4**	**4**	**0**	**16**	**0**	**7**	**0**	**1**	**44**	**17**	**0**	**2**	**75**	**11**	**186**	751
8:45 AM		**0**	**3**	**2**	**3**	**0**	**10**	**2**	**3**	**0**	**2**	**29**	**20**	**0**	**3**	**86**	**13**	**176**	**759**
Count Total		0	29	22	12	0	84	19	39	0	6	267	121	0	21	541	121	1,282	0
Peak Hour	**All**	**0**	**18**	**14**	**8**	**0**	**55**	**11**	**20**	**0**	**6**	**152**	**78**	**0**	**8**	**325**	**64**	**759**	**0**
	HV	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**1**	**4**	**0**	**0**	**0**	**5**	**1**	**15**	**0**
	HV%	**-**	**0%**	**0%**	**38%**	**-**	**0%**	**0%**	**5%**	**-**	**17%**	**3%**	**0%**	**-**	**0%**	**2%**	**2%**	**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
7:00 AM	0	1	1	1	*3*	0	0	0	0	*0*	3	1	0	2	*6*
7:15 AM	0	1	2	2	*5*	0	0	0	0	*0*	0	0	0	1	*1*
7:30 AM	0	0	0	8	*8*	0	0	0	0	*0*	2	0	1	0	*3*
7:45 AM	1	0	1	2	*4*	0	0	0	0	*0*	1	0	0	0	*1*
8:00 AM	**0**	**0**	**2**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
8:15 AM	**0**	**0**	**0**	**3**	***3***	**0**	**0**	**0**	**0**	***0***	**3**	**0**	**0**	**1**	*4*
8:30 AM	**2**	**0**	**1**	**2**	***5***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**1**	*3*
8:45 AM	**1**	**1**	**2**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**4**	**0**	**1**	**1**	***6***
Count Total	4	3	9	19	*35*	0	0	0	0	*0*	16	1	2	6	*25*
Peak Hour	**3**	**1**	**5**	**6**	***15***	**0**	**0**	**0**	**0**	***0***	**10**	**0**	**1**	**3**	***14***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Jones Rd Eastbound				Jones Rd Westbound				Oak Rd Northbound				Oak Rd 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	0	0	1	0	0	1	0	0	0	1	0	3	0
7:15 AM	0	0	0	0	0	1	0	0	0	0	2	0	0	2	0	0	5	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3	0	8	0
7:45 AM	0	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	4	20
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**3**	20
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**3**	18
8:30 AM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**5**	15
8:45 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**4**	**15**
Count Total	0	0	0	4	0	1	0	2	0	1	8	0	0	8	10	1	35	0
Peak Hour	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**1**	**4**	**0**	**0**	**0**	**5**	**1**	**15**	**0**

Two-Hour Count Summaries - Bikes

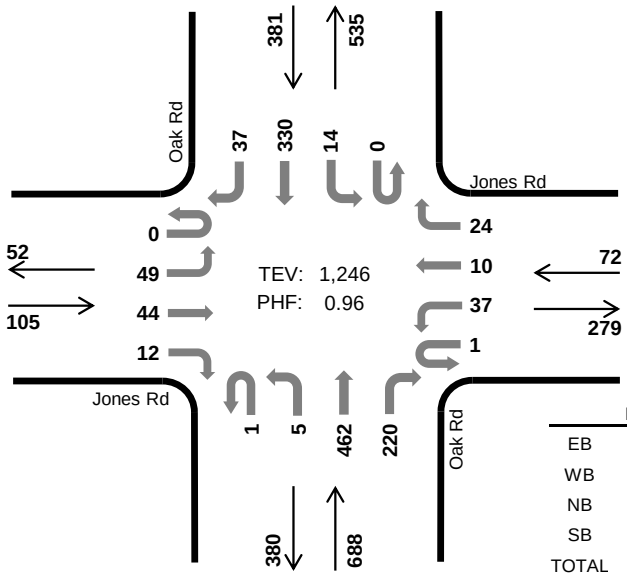
Interval Start	Jones Rd Eastbound			Jones Rd Westbound			Oak Rd Northbound			Oak Rd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	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.

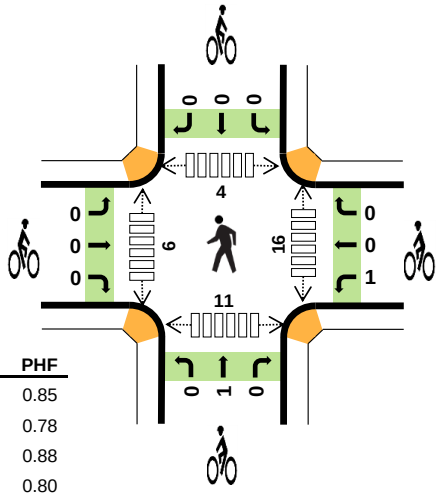
Oak Rd
Jones Rd

Date: 02-04-2021
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

Peak Hour



	HV %:	PHF
EB	1.9%	0.85
WB	2.8%	0.78
NB	0.6%	0.88
SB	0.8%	0.80
TOTAL	0.9%	0.96



Two-Hour Count Summaries

Interval Start		Jones Rd Eastbound				Jones Rd Westbound				Oak Rd Northbound				Oak Rd 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	14	11	6	0	10	1	9	0	1	101	64	0	6	91	14	328	0
4:15 PM		0	17	8	5	0	10	1	9	0	0	113	40	0	0	74	10	287	0
4:30 PM		**0**	**15**	**8**	**2**	**1**	**9**	**3**	**10**	**1**	**4**	**125**	**66**	**0**	**6**	**66**	**7**	**323**	0
4:45 PM		**0**	**11**	**6**	**2**	**0**	**9**	**3**	**6**	**0**	**1**	**112**	**41**	**0**	**1**	**86**	**5**	**283**	1,221
5:00 PM		**0**	**14**	**10**	**6**	**0**	**4**	**4**	**3**	**0**	**0**	**110**	**45**	**0**	**3**	**102**	**14**	**315**	1,208
5:15 PM		**0**	**9**	**20**	**2**	**0**	**15**	**0**	**5**	**0**	**0**	**115**	**68**	**0**	**4**	**76**	**11**	**325**	**1,246**
5:30 PM		0	10	12	1	0	11	5	3	0	1	108	51	0	2	77	17	298	1,221
5:45 PM		0	17	10	2	0	8	2	8	0	2	114	45	0	0	57	13	278	1,216
Count Total		0	107	85	26	1	76	19	53	1	9	898	420	0	22	629	91	2,437	0
Peak Hour	**All**	**0**	**49**	**44**	**12**	**1**	**37**	**10**	**24**	**1**	**5**	**462**	**220**	**0**	**14**	**330**	**37**	**1,246**	**0**
	HV	**0**	**2**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**3**	**0**	**11**	**0**
	HV%	**-**	**4%**	**0%**	**0%**	**0%**	**3%**	**10%**	**0%**	**0%**	**20%**	**1%**	**0%**	**-**	**0%**	**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
4:00 PM	0	0	2	1	*3*	0	0	0	0	*0*	5	0	0	3	*8*
4:15 PM	0	0	1	0	*1*	0	0	0	0	*0*	4	0	0	1	*5*
4:30 PM	**0**	**1**	**2**	**1**	***4***	**0**	**0**	**1**	**0**	***1***	**3**	**1**	**0**	**7**	*11*
4:45 PM	**2**	**0**	**1**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**9**	**4**	**2**	**3**	*18*
5:00 PM	**0**	**1**	**1**	**2**	***4***	**0**	**1**	**0**	**0**	***1***	**1**	**0**	**1**	**0**	*2*
5:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**3**	**1**	**1**	**1**	***6***
5:30 PM	0	0	1	1	*2*	0	0	0	0	*0*	4	2	0	0	*6*
5:45 PM	0	0	1	0	*1*	0	0	1	0	*1*	4	0	0	3	*7*
Count Total	2	2	9	5	*18*	0	1	2	0	*3*	33	8	4	18	*63*
Peak Hour	**2**	**2**	**4**	**3**	***11***	**0**	**1**	**1**	**0**	***2***	**16**	**6**	**4**	**11**	***37***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Jones Rd Eastbound				Jones Rd Westbound				Oak Rd Northbound				Oak Rd 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	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**4**	0
4:45 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	11
5:00 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**4**	12
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**11**
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	9
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	7
Count Total	0	2	0	0	0	1	1	0	0	1	8	0	0	0	5	0	18	0
Peak Hour	**0**	**2**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**3**	**0**	**11**	**0**

Two-Hour Count Summaries - Bikes

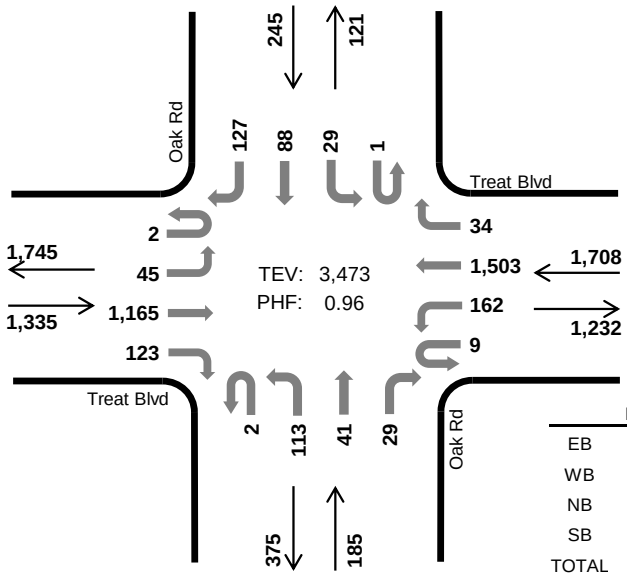
Interval Start	Jones Rd Eastbound			Jones Rd Westbound			Oak Rd Northbound			Oak Rd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**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**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	2
Count Total	0	0	0	1	0	0	0	1	1	0	0	0	3	0
Peak Hour	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**0**

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

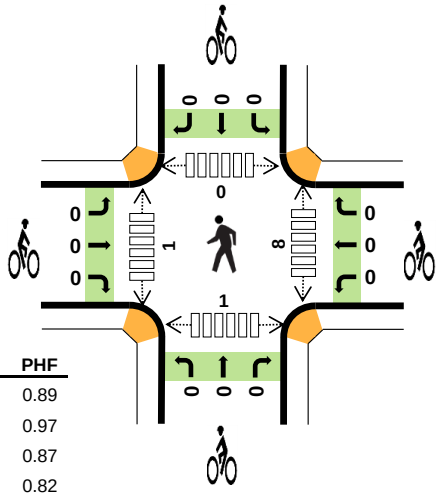
Oak Rd
Treat Blvd

Date: 02-04-2021
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM

Peak Hour



	HV %:	PHF
EB	2.5%	0.89
WB	1.5%	0.97
NB	2.2%	0.87
SB	13.1%	0.82
TOTAL	2.7%	0.96



Two-Hour Count Summaries

Interval Start		Treat Blvd Eastbound				Treat Blvd Westbound				Oak Rd Northbound				Oak Rd 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	9	112	26	1	21	276	7	0	22	8	1	0	5	13	15	516	0
7:15 AM		0	7	168	19	1	27	257	8	0	24	3	2	0	4	15	26	561	0
7:30 AM		**0**	**10**	**271**	**25**	**2**	**38**	**390**	**8**	**0**	**27**	**6**	**6**	**0**	**6**	**12**	**31**	**832**	0
7:45 AM		**1**	**13**	**327**	**33**	**3**	**38**	**361**	**10**	**2**	**30**	**8**	**7**	**0**	**6**	**28**	**34**	**901**	2,810
8:00 AM		**0**	**10**	**323**	**34**	**2**	**44**	**363**	**10**	**0**	**24**	**11**	**11**	**1**	**11**	**27**	**36**	**907**	3,201
8:15 AM		**1**	**12**	**244**	**31**	**2**	**42**	**389**	**6**	**0**	**32**	**16**	**5**	**0**	**6**	**21**	**26**	**833**	**3,473**
8:30 AM		0	10	246	34	1	36	347	13	0	25	14	13	0	9	18	20	786	3,427
8:45 AM		1	9	280	37	0	48	343	11	0	17	11	7	0	15	17	27	823	3,349
Count Total		3	80	1,971	239	12	294	2,726	73	2	201	77	52	1	62	151	215	6,159	0
Peak Hour	**All**	**2**	**45**	**1,165**	**123**	**9**	**162**	**1,503**	**34**	**2**	**113**	**41**	**29**	**1**	**29**	**88**	**127**	**3,473**	**0**
	HV	**0**	**10**	**16**	**7**	**0**	**1**	**19**	**5**	**0**	**1**	**2**	**1**	**0**	**4**	**3**	**25**	**94**	**0**
	HV%	**0%**	**22%**	**1%**	**6%**	**0%**	**1%**	**1%**	**15%**	**0%**	**1%**	**5%**	**3%**	**0%**	**14%**	**3%**	**20%**	**3%**	**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	8	5	2	3	*18*	0	0	0	0	*0*	2	0	1	0	*3*
7:15 AM	8	4	1	0	*13*	0	0	0	0	*0*	4	1	1	1	*7*
7:30 AM	**11**	**3**	**1**	**3**	***18***	**0**	**0**	**0**	**0**	***0***	**3**	**0**	**0**	**1**	*4*
7:45 AM	**12**	**3**	**1**	**8**	***24***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**0**	*2*
8:00 AM	**6**	**8**	**2**	**10**	***26***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	*1*
8:15 AM	**4**	**11**	**0**	**11**	***26***	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**0**	**0**	***3***
8:30 AM	6	9	1	8	*24*	0	0	0	0	*0*	2	1	1	0	*4*
8:45 AM	7	3	0	2	*12*	0	0	0	0	*0*	3	0	2	0	*5*
Count Total	62	46	8	45	*161*	0	0	0	0	*0*	19	3	5	2	*29*
Peak Hour	**33**	**25**	**4**	**32**	***94***	**0**	**0**	**0**	**0**	***0***	**8**	**1**	**0**	**1**	***10***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Treat Blvd Eastbound				Treat Blvd Westbound				Oak Rd Northbound				Oak Rd 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	2	6	0	0	0	4	1	0	1	1	0	0	1	1	1	18	0
7:15 AM	0	0	2	6	0	0	3	1	0	1	0	0	0	0	0	0	13	0
7:30 AM	**0**	**3**	**4**	**4**	**0**	**0**	**1**	**2**	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**18**	0
7:45 AM	**0**	**5**	**6**	**1**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**8**	**24**	73
8:00 AM	**0**	**2**	**3**	**1**	**0**	**0**	**6**	**2**	**0**	**1**	**1**	**0**	**0**	**2**	**1**	**7**	**26**	81
8:15 AM	**0**	**0**	**3**	**1**	**0**	**1**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**9**	**26**	**94**
8:30 AM	0	0	5	1	0	0	6	3	0	0	1	0	0	0	1	7	24	100
8:45 AM	0	0	7	0	0	0	3	0	0	0	0	0	0	0	0	2	12	88
Count Total	0	12	36	14	0	1	35	10	0	3	4	1	0	5	5	35	161	0
Peak Hour	**0**	**10**	**16**	**7**	**0**	**1**	**19**	**5**	**0**	**1**	**2**	**1**	**0**	**4**	**3**	**25**	**94**	**0**

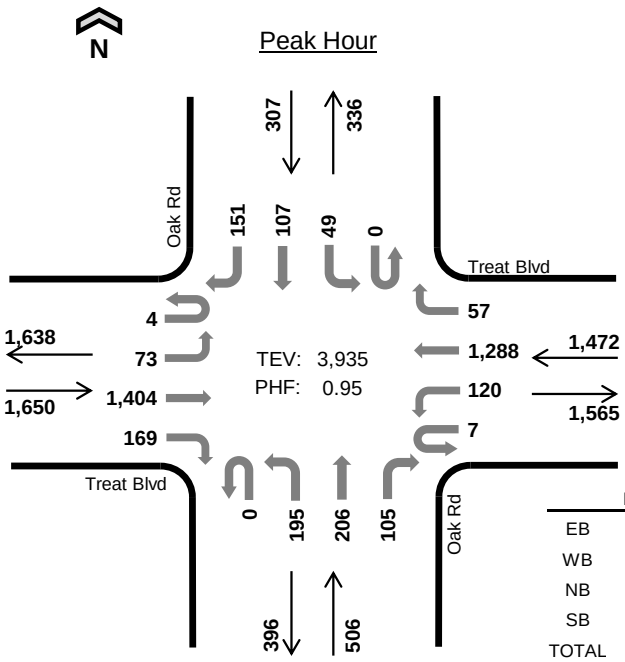
Two-Hour Count Summaries - Bikes

Interval Start	Treat Blvd Eastbound			Treat Blvd Westbound			Oak Rd Northbound			Oak Rd Southbound			15-min Total	Rolling One Hour
	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**

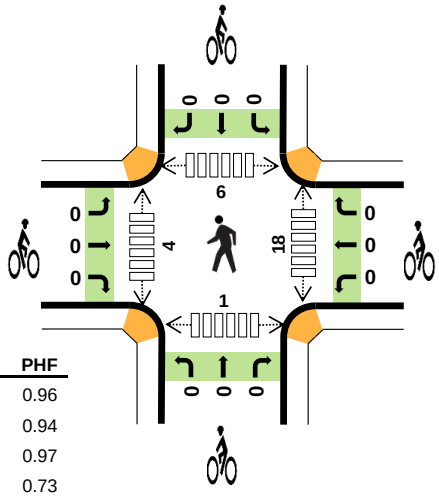
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Oak Rd
Treat Blvd

Date: 02-04-2021
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	0.5%	0.96
WB	0.6%	0.94
NB	0.8%	0.97
SB	3.3%	0.73
TOTAL	0.8%	0.95



Two-Hour Count Summaries

Interval Start		Treat Blvd Eastbound				Treat Blvd Westbound				Oak Rd Northbound				Oak Rd 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	21	351	51	2	31	245	27	2	49	49	27	0	21	24	27	927	0
4:15 PM		1	17	348	35	3	28	339	8	0	56	45	31	0	9	29	20	969	0
4:30 PM		0	10	366	31	3	23	278	14	0	63	58	38	0	16	29	33	962	0
4:45 PM		**1**	**16**	**317**	**46**	**1**	**23**	**297**	**13**	**0**	**48**	**60**	**19**	**0**	**15**	**24**	**35**	**915**	3,773
5:00 PM		**2**	**12**	**372**	**42**	**2**	**35**	**325**	**13**	**0**	**50**	**52**	**29**	**0**	**17**	**34**	**54**	**1,039**	3,885
5:15 PM		**1**	**23**	**347**	**42**	**3**	**32**	**339**	**16**	**0**	**52**	**47**	**24**	**0**	**9**	**20**	**33**	**988**	3,904
5:30 PM		**0**	**22**	**368**	**39**	**1**	**30**	**327**	**15**	**0**	**45**	**47**	**33**	**0**	**8**	**29**	**29**	**993**	**3,935**
5:45 PM		0	16	359	36	0	17	250	17	0	61	52	34	0	10	19	24	895	3,915
Count Total		5	137	2,828	322	15	219	2,400	123	2	424	410	235	0	105	208	255	7,688	0
Peak Hour	**All**	**4**	**73**	**1,404**	**169**	**7**	**120**	**1,288**	**57**	**0**	**195**	**206**	**105**	**0**	**49**	**107**	**151**	**3,935**	**0**
	HV	**0**	**3**	**5**	**0**	**0**	**0**	**6**	**3**	**0**	**0**	**4**	**0**	**0**	**3**	**3**	**4**	**31**	**0**
	HV%	**0%**	**4%**	**0%**	**0%**	**0%**	**0%**	**0%**	**5%**	**-**	**0%**	**2%**	**0%**	**-**	**6%**	**3%**	**3%**	**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	3	2	2	2	*9*	0	0	0	0	*0*	4	0	4	0	*8*
4:15 PM	3	2	1	1	*7*	0	0	0	0	*0*	9	0	5	1	*15*
4:30 PM	1	5	2	7	*15*	0	0	1	0	*1*	2	1	1	2	*6*
4:45 PM	**2**	**1**	**2**	**1**	***6***	**0**	**0**	**0**	**0**	***0***	**7**	**1**	**2**	**0**	*10*
5:00 PM	**2**	**4**	**1**	**5**	***12***	**0**	**0**	**0**	**0**	***0***	**5**	**0**	**1**	**1**	*7*
5:15 PM	**0**	**2**	**0**	**1**	***3***	**0**	**0**	**0**	**0**	***0***	**2**	**2**	**2**	**0**	*6*
5:30 PM	**4**	**2**	**1**	**3**	***10***	**0**	**0**	**0**	**0**	***0***	**4**	**1**	**1**	**0**	***6***
5:45 PM	0	2	1	0	*3*	0	0	0	0	*0*	10	0	2	1	*13*
Count Total	15	20	10	20	*65*	0	0	1	0	*1*	43	5	18	5	*71*
Peak Hour	**8**	**9**	**4**	**10**	***31***	**0**	**0**	**0**	**0**	***0***	**18**	**4**	**6**	**1**	***29***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Treat Blvd Eastbound				Treat Blvd Westbound				Oak Rd Northbound				Oak Rd 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	1	2	0	0	0	2	0	0	1	1	0	0	1	1	0	9	0
4:15 PM	0	1	2	0	0	0	1	1	0	1	0	0	0	0	0	1	7	0
4:30 PM	0	0	1	0	0	0	4	1	0	0	2	0	0	1	1	5	15	0
4:45 PM	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**6**	37
5:00 PM	**0**	**1**	**1**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**2**	**1**	**12**	40
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	36
5:30 PM	**0**	**1**	**3**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**2**	**10**	**31**
5:45 PM	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	3	28
Count Total	0	5	10	0	0	0	14	6	0	2	7	1	0	5	5	10	65	0
Peak Hour	**0**	**3**	**5**	**0**	**0**	**0**	**6**	**3**	**0**	**0**	**4**	**0**	**0**	**3**	**3**	**4**	**31**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Treat Blvd Eastbound			Treat Blvd Westbound			Oak Rd Northbound			Oak Rd Southbound			15-min Total	Rolling One Hour
	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	1	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	0	1	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

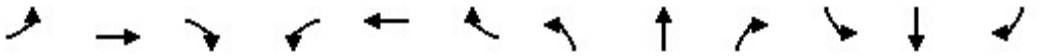
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Location: Jones Rd, At Project Driveway
Date Range: 2/4/2021 - 2/10/2021
Site Code: 01

	Thursday			Friday			Saturday			Sunday			Monday			Tuesday			Wednesday			Mid-Week Average		
	2/4/2021			2/5/2021			2/6/2021			2/7/2021			2/8/2021			2/9/2021			2/10/2021					
Time	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	4	6	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	6	10
1:00 AM	2	8	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	8	10
2:00 AM	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3
3:00 AM	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	3
4:00 AM	4	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	1	5
5:00 AM	4	5	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	9
6:00 AM	26	14	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	14	40
7:00 AM	42	18	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	18	60
8:00 AM	42	**36**	78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	**36**	78
9:00 AM	28	25	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	25	53
10:00 AM	34	34	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	34	68
11:00 AM	**53**	34	**87**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**53**	34	**87**
12:00 PM	47	42	89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47	42	89
1:00 PM	55	49	104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	49	104
2:00 PM	52	70	122	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52	70	122
3:00 PM	**61**	87	148	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**61**	87	148
4:00 PM	43	78	121	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43	78	121
5:00 PM	**61**	**88**	**149**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**61**	**88**	**149**
6:00 PM	51	61	112	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	51	61	112
7:00 PM	42	22	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	22	64
8:00 PM	15	21	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	21	36
9:00 PM	13	16	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	16	29
10:00 PM	11	9	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	9	20
11:00 PM	3	6	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	6	9
Total	697	732	1,429	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	697	732	1,429
Percent	49%	51%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	49%	51%	-
AM Peak	11:00	08:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11:00	08:00	11:00
Vol.	53	36	87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53	36	87
PM Peak	15:00	17:00	17:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15:00	17:00	17:00
Vol.	61	88	149	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	88	149

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

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



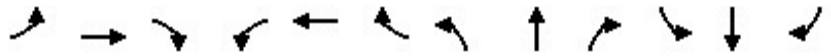
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	24	14	95	19	55	11	414	135	23	921	437
Future Volume (veh/h)	122	24	14	95	19	55	11	414	135	23	921	437
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	133	26	15	103	21	60	12	450	0	25	1001	475
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	182	114	66	156	163	138	26	1942		48	1986	886
Arrive On Green	0.10	0.10	0.10	0.09	0.09	0.09	0.01	0.55	0.00	0.03	0.56	0.56
Sat Flow, veh/h	1781	1113	642	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	133	0	41	103	21	60	12	450	0	25	1001	475
Grp Sat Flow(s),veh/h/ln	1781	0	1755	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.5	0.0	1.6	4.3	0.8	2.7	0.5	5.0	0.0	1.1	13.1	14.3
Cycle Q Clear(g_c), s	5.5	0.0	1.6	4.3	0.8	2.7	0.5	5.0	0.0	1.1	13.1	14.3
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	182	0	179	156	163	138	26	1942		48	1986	886
V/C Ratio(X)	0.73	0.00	0.23	0.66	0.13	0.43	0.46	0.23		0.52	0.50	0.54
Avail Cap(c_a), veh/h	504	0	497	598	628	532	199	1942		199	1986	886
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.1	0.0	31.3	33.6	32.0	32.9	37.1	8.9	0.0	36.5	10.3	10.6
Incr Delay (d2), s/veh	5.6	0.0	0.6	4.7	0.4	2.1	11.9	0.3	0.0	8.4	0.9	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	0.7	2.0	0.4	1.1	0.3	1.8	0.0	0.6	4.7	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.7	0.0	32.0	38.3	32.3	35.0	49.0	9.2	0.0	44.9	11.2	12.9
LnGrp LOS	D	A	C	D	C	C	D	A		D	B	B
Approach Vol, veh/h		174			184			462	A		1501	
Approach Delay, s/veh		37.1			36.6			10.3			12.3	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	46.0		11.1	5.6	46.9		12.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	8.5	41.5		25.5	8.5	41.5		21.5				
Max Q Clear Time (g_c+I1), s	3.1	7.0		6.3	2.5	16.3		7.5				
Green Ext Time (p_c), s	0.0	3.3		0.5	0.0	10.4		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		15.7	
HCM 6th LOS		B	

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	1594	318	426	1821	82	249	225	44	181	637	280
Future Volume (veh/h)	159	1594	318	426	1821	82	249	225	44	181	637	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	173	1733	346	463	1979	0	271	245	48	197	692	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	235	2072	413	519	2372		324	706	315	223	818	
Arrive On Green	0.07	0.38	0.38	0.15	0.46	0.00	0.09	0.20	0.20	0.13	0.23	0.00
Sat Flow, veh/h	3456	5420	1082	3456	5106	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	173	1543	536	463	1979	0	271	245	48	197	692	0
Grp Sat Flow(s),veh/h/ln	1728	1609	1676	1728	1702	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	6.2	36.4	36.5	16.5	42.5	0.0	9.7	7.4	3.1	13.6	23.4	0.0
Cycle Q Clear(g_c), s	6.2	36.4	36.5	16.5	42.5	0.0	9.7	7.4	3.1	13.6	23.4	0.0
Prop In Lane	1.00		0.65	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	235	1844	641	519	2372		324	706	315	223	818	
V/C Ratio(X)	0.74	0.84	0.84	0.89	0.83		0.84	0.35	0.15	0.88	0.85	
Avail Cap(c_a), veh/h	496	1930	670	559	2372		347	706	315	253	818	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	57.4	35.2	35.2	52.3	29.4	0.0	55.9	43.3	41.6	54.0	46.2	0.0
Incr Delay (d2), s/veh	4.5	3.3	8.8	15.8	2.7	0.0	15.4	1.3	1.0	26.3	10.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	14.7	16.3	8.3	17.6	0.0	4.9	3.4	1.3	7.7	11.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.9	38.5	44.0	68.1	32.1	0.0	71.3	44.6	42.6	80.2	56.6	0.0
LnGrp LOS	E	D	D	E	C		E	D	D	F	E	
Approach Vol, veh/h		2252			2442	A		564			889	A
Approach Delay, s/veh		41.6			38.9			57.3			61.9	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.2	29.4	13.0	62.8	16.3	33.4	23.4	52.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	17.8	23.7	18.0	52.5	12.6	28.9	20.3	50.2
Max Q Clear Time (g_c+I1), s	15.6	9.4	8.2	44.5	11.7	25.4	18.5	38.5
Green Ext Time (p_c), s	0.1	1.4	0.4	6.7	0.1	1.5	0.4	9.5

Intersection Summary	
HCM 6th Ctrl Delay	44.9
HCM 6th LOS	D

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	144	168	9	176	208
Future Vol, veh/h	8	144	168	9	176	208
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	157	183	10	191	226

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	796	188	0	0	193	0
Stage 1	188	-	-	-	-	-
Stage 2	608	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	356	854	-	-	1380	-
Stage 1	844	-	-	-	-	-
Stage 2	543	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	300	854	-	-	1380	-
Mov Cap-2 Maneuver	300	-	-	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	457	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	3.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	778	1380	-
HCM Lane V/C Ratio	-	-	0.212	0.139	-
HCM Control Delay (s)	-	-	10.9	8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0.5	-

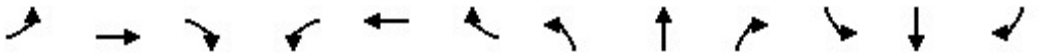
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	560	1030	0
Future Vol, veh/h	0	0	0	560	1030	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	609	1120	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1425	560	-	0	-	0
Stage 1	1120	-	-	-	-	-
Stage 2	305	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	126	472	0	-	-	-
Stage 1	274	-	0	-	-	-
Stage 2	721	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	126	472	-	-	-	-
Mov Cap-2 Maneuver	223	-	-	-	-	-
Stage 1	274	-	-	-	-	-
Stage 2	721	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	57	16	49	13	46	8	891	287	19	447	50
Future Volume (veh/h)	94	57	16	49	13	46	8	891	287	19	447	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	102	62	17	53	14	50	9	968	0	21	486	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	124	34	108	113	96	20	2097		42	2140	955
Arrive On Green	0.09	0.09	0.09	0.06	0.06	0.06	0.01	0.59	0.00	0.02	0.60	0.60
Sat Flow, veh/h	1781	1413	387	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	102	0	79	53	14	50	9	968	0	21	486	54
Grp Sat Flow(s),veh/h/ln	1781	0	1801	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	4.2	0.0	3.2	2.2	0.5	2.3	0.4	11.6	0.0	0.9	4.8	1.1
Cycle Q Clear(g_c), s	4.2	0.0	3.2	2.2	0.5	2.3	0.4	11.6	0.0	0.9	4.8	1.1
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	156	0	158	108	113	96	20	2097		42	2140	955
V/C Ratio(X)	0.65	0.00	0.50	0.49	0.12	0.52	0.44	0.46		0.50	0.23	0.06
Avail Cap(c_a), veh/h	530	0	536	507	532	451	177	2097		224	2140	955
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.4	0.0	32.9	34.4	33.6	34.4	37.1	8.7	0.0	36.4	6.9	6.2
Incr Delay (d2), s/veh	4.6	0.0	2.4	3.4	0.5	4.3	14.4	0.7	0.0	8.9	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	1.5	1.0	0.3	1.0	0.2	4.0	0.0	0.5	1.6	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	0.0	35.3	37.8	34.1	38.8	51.6	9.5	0.0	45.3	7.2	6.3
LnGrp LOS	D	A	D	D	C	D	D	A		D	A	A
Approach Vol, veh/h		181			117			977	A		561	
Approach Delay, s/veh		36.8			37.8			9.8			8.5	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	49.1		9.1	5.4	50.0		11.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.5	43.5		21.5	7.5	45.5		22.5				
Max Q Clear Time (g_c+I1), s	2.9	13.6		4.3	2.4	6.8		6.2				
Green Ext Time (p_c), s	0.0	8.1		0.3	0.0	3.8		0.6				

Intersection Summary			
HCM 6th Ctrl Delay		13.9	
HCM 6th LOS		B	

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	1343	156	136	1384	69	324	436	271	177	223	493
Future Volume (veh/h)	130	1343	156	136	1384	69	324	436	271	177	223	493
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	141	1460	170	148	1504	0	352	474	295	192	242	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	193	1811	211	266	1678		409	1238	552	221	1259	
Arrive On Green	0.06	0.31	0.31	0.08	0.33	0.00	0.12	0.35	0.35	0.12	0.35	0.00
Sat Flow, veh/h	3456	5888	685	3456	5106	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	141	1196	434	148	1504	0	352	474	295	192	242	0
Grp Sat Flow(s),veh/h/ln	1728	1609	1747	1728	1702	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.1	28.7	28.8	5.2	35.3	0.0	12.6	12.6	18.8	13.3	5.9	0.0
Cycle Q Clear(g_c), s	5.1	28.7	28.8	5.2	35.3	0.0	12.6	12.6	18.8	13.3	5.9	0.0
Prop In Lane	1.00		0.39	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	193	1484	537	266	1678		409	1238	552	221	1259	
V/C Ratio(X)	0.73	0.81	0.81	0.56	0.90		0.86	0.38	0.53	0.87	0.19	
Avail Cap(c_a), veh/h	214	1625	588	266	1732		464	1238	552	332	1259	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.5	40.1	40.2	56.1	40.2	0.0	54.5	30.8	32.8	54.1	28.2	0.0
Incr Delay (d2), s/veh	10.8	2.9	7.6	2.6	6.5	0.0	13.8	0.9	3.7	14.6	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	11.7	13.4	2.4	15.6	0.0	6.3	5.6	7.8	6.9	2.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.3	43.0	47.7	58.6	46.7	0.0	68.3	31.7	36.5	68.7	28.5	0.0
LnGrp LOS	E	D	D	E	D		E	C	D	E	C	
Approach Vol, veh/h		1771			1652	A		1121			434	A
Approach Delay, s/veh		46.2			47.8			44.5			46.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.1	48.4	11.5	45.9	19.4	49.1	14.2	43.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	23.5	38.0	7.8	42.7	16.9	44.6	8.1	42.4
Max Q Clear Time (g_c+I1), s	15.3	20.8	7.1	37.3	14.6	7.9	7.2	30.8
Green Ext Time (p_c), s	0.3	4.0	0.0	4.1	0.3	1.7	0.0	7.9

Intersection Summary	
HCM 6th Ctrl Delay	46.4
HCM 6th LOS	D

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	49	97	2	42	118
Future Vol, veh/h	3	49	97	2	42	118
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	53	105	2	46	128

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	326	106	0	0	107	0
Stage 1	106	-	-	-	-	-
Stage 2	220	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	668	948	-	-	1484	-
Stage 1	918	-	-	-	-	-
Stage 2	817	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	646	948	-	-	1484	-
Mov Cap-2 Maneuver	646	-	-	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	790	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	923	1484	-
HCM Lane V/C Ratio	-	-	0.061	0.031	-
HCM Control Delay (s)	-	-	9.2	7.5	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

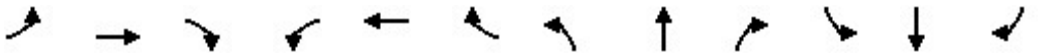
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	1186	512	0
Future Vol, veh/h	0	0	0	1186	512	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	1289	557	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1202	279	-	0	-	0
Stage 1	557	-	-	-	-	-
Stage 2	645	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	177	718	0	-	-	-
Stage 1	537	-	0	-	-	-
Stage 2	484	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	177	718	-	-	-	-
Mov Cap-2 Maneuver	313	-	-	-	-	-
Stage 1	537	-	-	-	-	-
Stage 2	484	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-



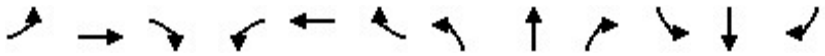
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	16	6	96	10	55	2	418	139	23	941	280
Future Volume (veh/h)	49	16	6	96	10	55	2	418	139	23	941	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	53	17	7	104	11	60	2	454	0	25	1023	304
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	96	68	28	156	164	139	5	2085		48	2172	969
Arrive On Green	0.05	0.05	0.05	0.09	0.09	0.09	0.00	0.59	0.00	0.03	0.61	0.61
Sat Flow, veh/h	1781	1259	518	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	53	0	24	104	11	60	2	454	0	25	1023	304
Grp Sat Flow(s),veh/h/ln	1781	0	1777	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.1	0.0	1.0	4.2	0.4	2.6	0.1	4.5	0.0	1.0	11.6	6.8
Cycle Q Clear(g_c), s	2.1	0.0	1.0	4.2	0.4	2.6	0.1	4.5	0.0	1.0	11.6	6.8
Prop In Lane	1.00		0.29	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	96	0	96	156	164	139	5	2085		48	2172	969
V/C Ratio(X)	0.55	0.00	0.25	0.66	0.07	0.43	0.41	0.22		0.52	0.47	0.31
Avail Cap(c_a), veh/h	472	0	471	665	699	592	121	2085		230	2172	969
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	0.0	33.4	32.5	30.8	31.8	36.7	7.2	0.0	35.3	7.8	6.9
Incr Delay (d2), s/veh	4.9	0.0	1.4	4.8	0.2	2.1	47.7	0.2	0.0	8.3	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.4	1.9	0.2	1.1	0.1	1.5	0.0	0.5	3.9	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.9	0.0	34.8	37.3	31.0	33.9	84.4	7.5	0.0	43.6	8.6	7.7
LnGrp LOS	D	A	C	D	C	C	F	A		D	A	A
Approach Vol, veh/h		77			175			456	A		1352	
Approach Delay, s/veh		37.6			35.8			7.8			9.0	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	47.7		11.0	4.7	49.5		8.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.5	40.5		27.5	5.0	45.0		19.5				
Max Q Clear Time (g_c+I1), s	3.0	6.5		6.2	2.1	13.6		4.1				
Green Ext Time (p_c), s	0.0	3.3		0.5	0.0	10.4		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		12.1	
HCM 6th LOS		B	

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	159	1594	196	418	1821	82	187	221	40	181	629	280
Future Volume (veh/h)	159	1594	196	418	1821	82	187	221	40	181	629	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	173	1733	213	454	1979	0	203	240	43	197	684	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	229	2031	250	554	2254		259	779	348	226	964	
Arrive On Green	0.07	0.35	0.35	0.16	0.44	0.00	0.08	0.22	0.22	0.13	0.27	0.00
Sat Flow, veh/h	3456	5848	719	3456	5106	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	173	1430	516	454	1979	0	203	240	43	197	684	0
Grp Sat Flow(s),veh/h/ln	1728	1609	1741	1728	1702	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	6.1	33.9	33.9	15.7	43.6	0.0	7.1	7.0	2.7	13.4	21.4	0.0
Cycle Q Clear(g_c), s	6.1	33.9	33.9	15.7	43.6	0.0	7.1	7.0	2.7	13.4	21.4	0.0
Prop In Lane	1.00		0.41	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	229	1676	605	554	2254		259	779	348	226	964	
V/C Ratio(X)	0.76	0.85	0.85	0.82	0.88		0.78	0.31	0.12	0.87	0.71	
Avail Cap(c_a), veh/h	294	1740	628	630	2337		322	779	348	333	964	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	56.7	37.4	37.4	50.1	31.4	0.0	56.1	40.3	38.7	52.9	40.6	0.0
Incr Delay (d2), s/veh	8.1	4.2	10.7	7.6	4.1	0.0	9.6	1.0	0.7	15.1	4.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	13.9	16.1	7.4	18.4	0.0	3.5	3.2	1.1	6.9	9.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.7	41.6	48.1	57.7	35.5	0.0	65.7	41.4	39.4	68.0	45.0	0.0
LnGrp LOS	E	D	D	E	D		E	D	D	E	D	
Approach Vol, veh/h		2119			2433	A		486			881	A
Approach Delay, s/veh		45.1			39.6			51.3			50.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.2	31.6	12.7	59.0	13.8	38.0	24.3	47.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	23.1	21.9	10.5	56.5	11.5	33.5	22.5	44.5
Max Q Clear Time (g_c+I1), s	15.4	9.0	8.1	45.6	9.1	23.4	17.7	35.9
Green Ext Time (p_c), s	0.3	1.3	0.1	8.9	0.1	3.3	0.8	6.9

Intersection Summary	
HCM 6th Ctrl Delay	44.1
HCM 6th LOS	D

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	56	168	1	0	208
Future Vol, veh/h	4	56	168	1	0	208
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	61	183	1	0	226

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	410	184	0	0	-	-
Stage 1	184	-	-	-	-	-
Stage 2	226	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	598	858	-	-	0	-
Stage 1	848	-	-	-	0	-
Stage 2	812	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	598	858	-	-	-	-
Mov Cap-2 Maneuver	598	-	-	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	812	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	834	-
HCM Lane V/C Ratio	-	-	0.078	-
HCM Control Delay (s)	-	-	9.7	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.3	-

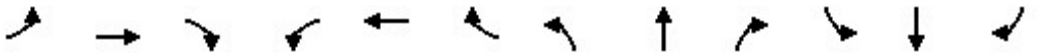
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	4	1	551	1022	21
Future Vol, veh/h	7	4	1	551	1022	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	4	1	599	1111	23

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1425	567	1134	0	-	0
Stage 1	1123	-	-	-	-	-
Stage 2	302	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	126	467	612	-	-	-
Stage 1	273	-	-	-	-	-
Stage 2	724	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	126	467	612	-	-	-
Mov Cap-2 Maneuver	222	-	-	-	-	-
Stage 1	272	-	-	-	-	-
Stage 2	724	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.7	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	612	-	274	-	-
HCM Lane V/C Ratio	0.002	-	0.044	-	-
HCM Control Delay (s)	10.9	-	18.7	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	54	13	53	11	46	6	893	289	19	513	13
Future Volume (veh/h)	87	54	13	53	11	46	6	893	289	19	513	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	95	59	14	58	12	50	7	971	0	21	558	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	121	29	109	114	97	16	2105		42	2156	962
Arrive On Green	0.08	0.08	0.08	0.06	0.06	0.06	0.01	0.59	0.00	0.02	0.61	0.61
Sat Flow, veh/h	1781	1461	347	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	95	0	73	58	12	50	7	971	0	21	558	14
Grp Sat Flow(s),veh/h/ln	1781	0	1808	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	3.9	0.0	2.9	2.4	0.5	2.3	0.3	11.5	0.0	0.9	5.5	0.3
Cycle Q Clear(g_c), s	3.9	0.0	2.9	2.4	0.5	2.3	0.3	11.5	0.0	0.9	5.5	0.3
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	0	150	109	114	97	16	2105		42	2156	962
V/C Ratio(X)	0.64	0.00	0.49	0.53	0.10	0.52	0.43	0.46		0.50	0.26	0.01
Avail Cap(c_a), veh/h	535	0	543	511	536	454	178	2105		226	2156	962
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.3	0.0	32.9	34.2	33.3	34.1	37.0	8.6	0.0	36.2	6.9	5.8
Incr Delay (d2), s/veh	4.6	0.0	2.4	4.0	0.4	4.2	17.4	0.7	0.0	8.9	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	1.3	1.1	0.2	1.0	0.2	3.9	0.0	0.5	1.8	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	0.0	35.3	38.1	33.7	38.3	54.3	9.3	0.0	45.0	7.2	5.9
LnGrp LOS	D	A	D	D	C	D	D	A		D	A	A
Approach Vol, veh/h		168			120			978	A		593	
Approach Delay, s/veh		36.8			37.8			9.6			8.5	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.3	48.9		9.1	5.2	50.0		10.7				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.5	43.5		21.5	7.5	45.5		22.5				
Max Q Clear Time (g_c+I1), s	2.9	13.5		4.4	2.3	7.5		5.9				
Green Ext Time (p_c), s	0.0	8.2		0.3	0.0	4.3		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		13.5
HCM 6th LOS		B

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	1343	182	138	1384	69	319	436	271	177	225	493
Future Volume (veh/h)	130	1343	182	138	1384	69	319	436	271	177	225	493
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	141	1460	198	150	1504	0	347	474	295	192	245	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	193	1796	243	258	1684		403	1234	551	221	1261	
Arrive On Green	0.06	0.31	0.31	0.07	0.33	0.00	0.12	0.35	0.35	0.12	0.35	0.00
Sat Flow, veh/h	3456	5773	782	3456	5106	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	141	1220	438	150	1504	0	347	474	295	192	245	0
Grp Sat Flow(s),veh/h/ln	1728	1609	1730	1728	1702	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.1	29.4	29.4	5.3	35.3	0.0	12.4	12.7	18.8	13.3	6.0	0.0
Cycle Q Clear(g_c), s	5.1	29.4	29.4	5.3	35.3	0.0	12.4	12.7	18.8	13.3	6.0	0.0
Prop In Lane	1.00		0.45	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	193	1501	538	258	1684		403	1234	551	221	1261	
V/C Ratio(X)	0.73	0.81	0.81	0.58	0.89		0.86	0.38	0.54	0.87	0.19	
Avail Cap(c_a), veh/h	214	1628	583	258	1742		453	1234	551	332	1261	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	58.6	40.0	40.0	56.4	40.1	0.0	54.6	31.0	33.0	54.2	28.2	0.0
Incr Delay (d2), s/veh	10.8	3.1	8.1	3.3	6.2	0.0	14.2	0.9	3.7	14.6	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	12.0	13.7	2.4	15.6	0.0	6.2	5.6	7.8	6.9	2.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.4	43.1	48.2	59.7	46.3	0.0	68.9	31.9	36.7	68.8	28.5	0.0
LnGrp LOS	E	D	D	E	D		E	C	D	E	C	
Approach Vol, veh/h		1799			1654	A		1116			437	A
Approach Delay, s/veh		46.4			47.5			44.7			46.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.1	48.3	11.5	46.1	19.2	49.2	13.9	43.7
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	23.5	37.7	7.8	43.0	16.5	44.7	8.3	42.5
Max Q Clear Time (g_c+I1), s	15.3	20.8	7.1	37.3	14.4	8.0	7.3	31.4
Green Ext Time (p_c), s	0.3	3.9	0.0	4.3	0.3	1.7	0.0	7.8

Intersection Summary	
HCM 6th Ctrl Delay	46.4
HCM 6th LOS	D

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	36	97	4	0	118
Future Vol, veh/h	3	36	97	4	0	118
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	39	105	4	0	128

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	235	107	0	0	-	-
Stage 1	107	-	-	-	-	-
Stage 2	128	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	753	947	-	-	0	-
Stage 1	917	-	-	-	0	-
Stage 2	898	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	753	947	-	-	-	-
Mov Cap-2 Maneuver	753	-	-	-	-	-
Stage 1	917	-	-	-	-	-
Stage 2	898	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	929	-
HCM Lane V/C Ratio	-	-	0.046	-
HCM Control Delay (s)	-	-	9.1	-
HCM Lane LOS	-	-	A	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	2	4	1184	509	70
Future Vol, veh/h	5	2	4	1184	509	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	2	4	1287	553	76

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1243	315	629	0	-	0
Stage 1	591	-	-	-	-	-
Stage 2	652	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	167	681	949	-	-	-
Stage 1	516	-	-	-	-	-
Stage 2	480	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	164	681	949	-	-	-
Mov Cap-2 Maneuver	300	-	-	-	-	-
Stage 1	508	-	-	-	-	-
Stage 2	480	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	949	-	357	-	-
HCM Lane V/C Ratio	0.005	-	0.021	-	-
HCM Control Delay (s)	8.8	-	15.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-