FEHR PEERS

Memorandum

Date: July 10, 2025

To: Stephen Siri, The Martin Group

From: Sam Tabibnia and Henry Helmuth, Fehr & Peers

Subject: 2433 Mariner Square Drive Project – Transportation Impact Analysis

OK24-2433

This memorandum summarizes the off-site transportation impact analysis conducted by Fehr & Peers for the proposed development, consisting of a 356-unit multifamily residential building at 2433 Mariner Square Drive in the City of Alameda.

Based on our evaluation:

1. The Project would generate approximately 1,245 daily, 88 AM, and 85 PM net new peak hour automobile trips.
2. The Project is presumed to have a less than significant impact on vehicle miles traveled (VMT) because it would satisfy two VMT screening criteria (*Project Located in Low-VMT Areas and Near Transit Stations*).
3. Consider implementing the following off-site modifications to improve access and circulation around the Project site:
    a. Limit the existing Caltrans driveway and the proposed garage driveway on Mariner Square Loop to right-in/right-out only through installation of a physical median barrier (such as a narrow, raised median with soft-hit posts) along Mariner Square Loop, extending about 100 feet east of the intersection with Mitchell Avenue.
    b. At the Mariner Square Drive/Mariner Square Loop/Marina Village Parkway intersection:
        i. Remove the southbound right-turn lane and the adjacent porkchop island.
        ii. Either provide fair-share contribution to convert the intersection from all-way stop-controlled to a roundabout or modify the eastbound intersection approach to allow eastbound vehicles to make U-turns at the intersection.

c. At the Mariner Square Loop/Mitchell Avenue intersection, stripe an advanced stop line on the northbound left-turn lane 10 feet south of the crosswalk marking.

4. The Project, including the off-site modifications listed above, would not substantially affect intersection level of service (LOS) at the two adjacent intersections (Mariner Square Drive/Mariner Square Loop/Marina Village Parkway and Mariner Square Loop/Mitchell Avenue).

The remainder of this memorandum provides more detail on our analysis assumptions, methodology, and findings.

1. Project Description

The Project would construct a 356-unit multifamily residential building at 2433 Mariner Square Drive in the City of Alameda. The Project site is bound by Mariner Square Drive to the east, Mariner Square Loop to the south, and a surface parking lot owned by Caltrans to the northwest. The Project would provide 414 vehicular parking spaces in the following two facilities:

- 283 parking spaces in a garage occupying the bottom three levels of the apartment building accessed through one driveway on Mariner Square Loop about 70 feet east of Mitchell Avenue.
- 131 parking spaces leased in the adjacent Caltrans surface parking lot accessed through two driveways, one on Mariner Square Loop just east of Mitchell Avenue and one on Mariner Square Drive just north of the proposed Project building.

The Project site is currently occupied by four office buildings with about 37,400 square feet of space that the Project would demolish. **Attachment A** shows the Project site plan.

The existing Caltrans driveway and the proposed garage driveway on Mariner Square Loop would be within 70 feet of the intersection with Mitchell Avenue. The proximity of the two driveways to each other and to the adjacent signalized intersection could result in vehicles waiting to turn left from eastbound Mariner Square Loop into the driveways to queue on eastbound Mariner Square Loop and spill back into the intersection. In addition, vehicles turning left out of either driveway may have limited sight distance to eastbound Mariner Square Loop. Therefore, it is recommended that both driveways on Mariner Square Loop be limited to right-in/right-out only through installation of a physical barrier, such as a narrow, raised median with soft-hit posts, on Mariner Square Loop extending for about 100 feet east of the signalized intersection. Thus, this transportation assessment assumes that both the Caltrans driveway and proposed garage driveway on Mariner Square Loop would be restricted to right-in/right-out access only.

2. Project Trip Generation, Distribution, and Assignment

Trip Generation

Trip generation is an estimate of the number of vehicles that would access the Project on a typical day. Fehr & Peers estimated the daily and AM and PM peak hour automobile trip generation for the Project using the methodology and data published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual (11th Edition)*. The trip generation also accounts for the existing office uses that the Project would demolish. **Table 1** summarizes the trip generation for the Project. The Project is estimated to generate about 1,245 daily, 88 AM, and 85 PM net new automobile peak hour trips.

Table 1: Automobile Trip Generation

Use	Size[1]	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
Proposed Use								
Multifamily Residential[2]	356 DU	1,640	33	112	145	85	54	139
Existing Use to be Demolished								
General Office[3]	-37.4 KSF	-405	-50	-7	-57	-9	-45	-54
Net New Project Trips		**1,245**	**-17**	**105**	**88**	**76**	**9**	**85**

Notes:
1. KSF = 1,000 square feet; DU = dwelling units
2. *ITE Trip Generation Manual (11th Edition)* land use category 221 (Multifamily Housing (Mid-Rise), General Urban/Suburban setting, Not Close to Rail Transit):
   Daily: T = 4.77 * X – 46.46
   AM Peak Hour: T = 0.44 * X – 11.61
   PM Peak Hour: T = 0.39 * X + 0.34
3. *ITE Trip Generation Manual (11th Edition)* land use category 710 (General Office Building, General Urban/Suburban setting):
   Daily: T = 10.84 * X
   AM Peak Hour: T = 1.52 * X
   PM Peak Hour: T = 1.44 * X

Source: Fehr & Peers, 2024.

Trip Distribution and Assignment

The trip distribution and assignment process is used to estimate how the trips generated by the Project would be distributed across the roadway network. Based on existing travel patterns and locations of complementary land uses, we determined directions of approach to and departure from the Project site. **Figure 1** shows the resulting peak hour trip distribution and Project trip assignment.

This analysis evaluates conditions at the following two study intersections because they are adjacent to the site and most likely to be affected by the Project, and consistent with City of Alameda staff comments:

1. Mariner Square Drive/Mariner Square Loop/Marina Village Parkway
2. Mariner Square Loop/Mitchell Avenue

3. Vehicle Miles Traveled

This section presents the effects of the Project on VMT. Since City of Alameda has not developed their screening criteria or thresholds of significance, this analysis uses the screening criteria and thresholds of significance recommended by the State Office of Planning and Research's (OPR) guidelines.

VMT Screening

According to the OPR's *Technical Advisory on Evaluating Transportation Impacts in CEQA,* screening thresholds can be used to quickly identify projects that can be expected to cause a less than significant impact without conducting a detailed study.

VMT impacts would be less than significant for a project if any of the identified screening criteria outlined below are met:

1. ***Small Projects:*** The project generates fewer than 100 vehicle trips per day
2. ***Low-VMT Areas:*** The project meets map-based screening criteria by being located in an area that exhibits below-threshold VMT, or 15 percent or more below the regional average
3. ***Near Transit Stations:*** The project is located in a Transit Priority Area or within a one-half mile of a Major Transit Corridor or Stop,[1] or an existing stop along a high-quality transit corridor,[2] and satisfies the following:
    - Has a Floor Area Ratio (FAR) of more than 0.75,
    - does not include more parking for use by residents, customers, or employees of the project than other typical nearby uses, or more than required by the City (if parking minimums pertain to the site) or allowed without a conditional use permit (if minimums and/or maximums pertain to the site),

[1] "Major transit stop" is defined in CEQA Section 21064.3 as a rail transit station, a ferry terminal served by either bus or rail transit service, or the intersection of two of more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

[2] "High-quality transit corridor" is defined in *Public Resource Code* Section 21155 as a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

- and does not replace affordable residential units with a smaller number of moderate- or high-income residential units,

VMT Impact Analysis

The Project satisfies the Low-VMT Area (#2) and Near Transit Stations screening criteria, as described below.

Criterion #1: Small Projects

As shown in Table 1, the Project would generate more than 100 vehicle trips per day and therefore does not meet Criterion #1.

Criterion #2: Low-VMT Area

Table 2 shows the home-based VMT per capita for the Project TAZ[3], as well as the applicable VMT threshold of 15 percent below the Bay Area regional average. As shown in Table 2, the 2020 and 2040 estimated daily home-based VMT per capita for the Project TAZ is more than 15 percent below the Regional average. Thus, the Project would satisfy the Low-VMT Area screening criterion because it is located in a TAZ that has existing home-based VMT per capita that is 15 percent or more below the existing Bay Area regional average.

Table 2: Daily Vehicle Miles Traveled Summary

Geography	2020 Home-Based VMT per Capita	2040 Home-Based VMT per Capita
Bay Area Regional Average	19.8	19.1
15% below Bay Area Regional Average	16.8	16.2
TAZ 485[1]	14.6	13.9
Below Threshold?	Yes	Yes

Source: Alameda CTC Model, Fehr & Peers, 2024.

Criterion #3: Near Transit Stations

The Project is located about 0.4 miles walking distance from the nearest AC Transit Line 51A bus stops on both directions of Webster Street just south of the intersection with Willie Stargell Avenue. AC Transit Line 51A operates at 12-minute headways during the weekday peak commute periods and is therefore considered a high-quality transit corridor. The Project would satisfy Criterion #3 because it is located within a one-half mile of an existing stop along a high-quality transit corridor and meets the following conditions:

[3] Transportation analysis zones (TAZ) are developed by planning agencies to represent geographic areas with similar travel characteristics.

- The Project would have an FAR of 4.7, which is greater than 0.75.
- The Project would provide 414 parking spaces for 356 residential units, which corresponds to about 1.2 parking spaces per unit. The *City of Alameda Municipal Code* (Section 30-7.3), which provides off-street automobile parking requirements, sets no minimum parking requirement, but has a maximum parking requirement of 1.5 spaces per unit. According to the U.S. Census data, the current average automobile ownership for renter-occupied households in the City of Alameda is about 1.4 vehicles per household.[4] Thus, the Project would provide fewer parking spaces than required by the City or generated by similar typical uses nearby.
- The Project would not replace existing affordable residential units.

4. Traffic Operations Analysis

Although transportation analysis under CEQA no longer recognizes vehicle delay as an environmental impact, intersection levels of service (LOS) were evaluated to help identify potential transportation system improvements that could be implemented as part of the Project. LOS is a qualitative description of traffic operations from the vehicle driver perspective and consists of the delay experienced by the driver at the intersection. It ranges from LOS A, with no congestion and little delay, to LOS F, with excessive congestion and delays.

For this study, traffic operations during typical weekday AM and PM peak commute hours at the study intersections were evaluated under the following scenarios:

- **Existing Conditions:** Represents existing traffic volumes based on data collected in September 2024, as shown in **Figure 2**. **Attachment A** provides the detailed count data.
- **Existing Plus Project Conditions:** Represents Existing Conditions plus traffic generated by the Project, as shown in **Figure 3**. As previously described, this analysis assumes that the two Project driveways on Mariner Square Loop would be restricted to right-in/right-out only.

Based on the traffic volumes and the intersection configurations for each scenario, Fehr & Peers calculated the LOS at the study intersections using the *Highway Capacity Manual* 6th Edition (HCM6) methodologies as incorporated in the Synchro 11 software. Under Existing and Existing Plus Project Conditions, all intersections would operate at LOS C or better during both the AM and PM peak hours, as summarized in **Table 3**. **Attachment B** provides the detailed LOS calculation sheets.

[4] U.S. Census Bureau, 2017-2021 American Community Survey 5-Year Estimates, Table B25044 for renter-occupied households

Table 3: Intersection Level of Service Summary

#	Intersection	Traffic Control[1]	Peak Hour	Existing Conditions		Existing Plus Project	
				Delay[2] (Seconds)	LOS	Delay[2] (Seconds)	LOS
1	Mariner Square Drive/Mariner Square Loop/Marina Village Parkway	AWSC	AM	9	A	9	A
			PM	10	B	11	B
2	Mariner Square Loop/Mitchell Avenue	Signal	AM	19	B	19	B
			PM	20	C	23	C
3	Mariner Square Loop/Project Driveway[3]	SSSC	AM	-	-	<5 (9, SB)	A (A)
			PM	-	-	<5 (10, SB)	A (A)

Notes:
1. AWSC = All Way Stop-Controlled, SSSC = Side Street Stop-Controlled.
2. Delay calculated using HCM 6th Edition. Average intersection delay is presented for all intersections. The worst approach delay is presented in parentheses for side street stop-controlled intersections.
3. Intersection does not exist under Existing Conditions.

Source: Fehr & Peers, 2024.

5. Automobile Access and Circulation

This section discusses potential off-site modifications and their effects on intersection operations.

Mariner Square Drive/Mariner Square Loop/Marina Village Parkway Intersection

The southbound Mariner Square Drive approach at the intersection currently provides one left-turn lane, one through lane, and one right-turn lane with a pork-chop island between the through and right-turn lanes. Considering the low traffic volumes on this approach and the intersection operations under both Existing and Existing Plus Project conditions, the right-turn lane and the adjacent porkchop island can be eliminated without affecting intersection operations.

As previously discussed, the existing Caltrans and the future residential Project driveways on Mariner Square Loop would be within 70 feet of the intersection with Mitchell Avenue, and provision of a physical barrier along the median of Mariner Square Loop to prohibit left turns in and out of both driveways should be considered.

A potential raised median could result in circuitous routes for vehicles approaching the site from the west on Mitchell Boulevard or the south on Mariner Square Loop. Implementation of one of the following two options would allow vehicles that approach the Project from the west or south, to use eastbound Mariner Square Loop, make a U-turn from eastbound to westbound Mariner Square Loop at the intersection with Mariner Square Drive/Marina Drive Parkway, and then turn right into one of the Project driveways. To allow eastbound U-turns at the Mariner Square Drive/ Mariner Square Loop/Marina Village Parkway intersection, consider one of these options:

- Option 1: Modify the eastbound intersection approach to allow passenger vehicles to make U-turns from eastbound to westbound Mariner Square Loop.
- Option 2: Provide fair-share contribution to convert the intersection to a roundabout which would narrow all intersection approaches to one lane and allow vehicles to make U-turns from all intersection approaches.

Both options would include eliminating the southbound right-turn lane and removing the porkchop island at the northwest corner of the intersection.

Table 4 summarizes the operations at the Mariner Square Drive/Mariner Square Loop/Marina Drive Parkway intersection under these two options. The intersection would continue to operate at LOS B or better during both AM and PM peak hours under both options.

Table 4: Intersection Level of Service Summary for Modification Options

#	Intersection	Peak Hour	Existing Conditions		Existing Plus Project and Option 1[1]		Existing Plus Project and Option 2[2]	
			Delay[3] (Seconds)	LOS	Delay[3] (Seconds)	LOS	Delay[3] (Seconds)	LOS
1	Mariner Square Drive/ Mariner Square Loop/ Marina Village Parkway	AM	9	A	9	A	4	A
		PM	10	B	11	B	6	A

Notes:

1. Option 1 consists of modifying the eastbound intersection approach to provide space for vehicles to make U-turns from eastbound to westbound Mariner Square Loop and eliminating the southbound right-turn lane and the adjacent porkchop island.
2. Option 2 consists of Converting the intersection to a roundabout with one-lane approaches on all intersection approaches.
3. Delay calculated using HCM 6th Edition. Average intersection delay is presented for all intersections.

Source: Fehr & Peers, 2024.

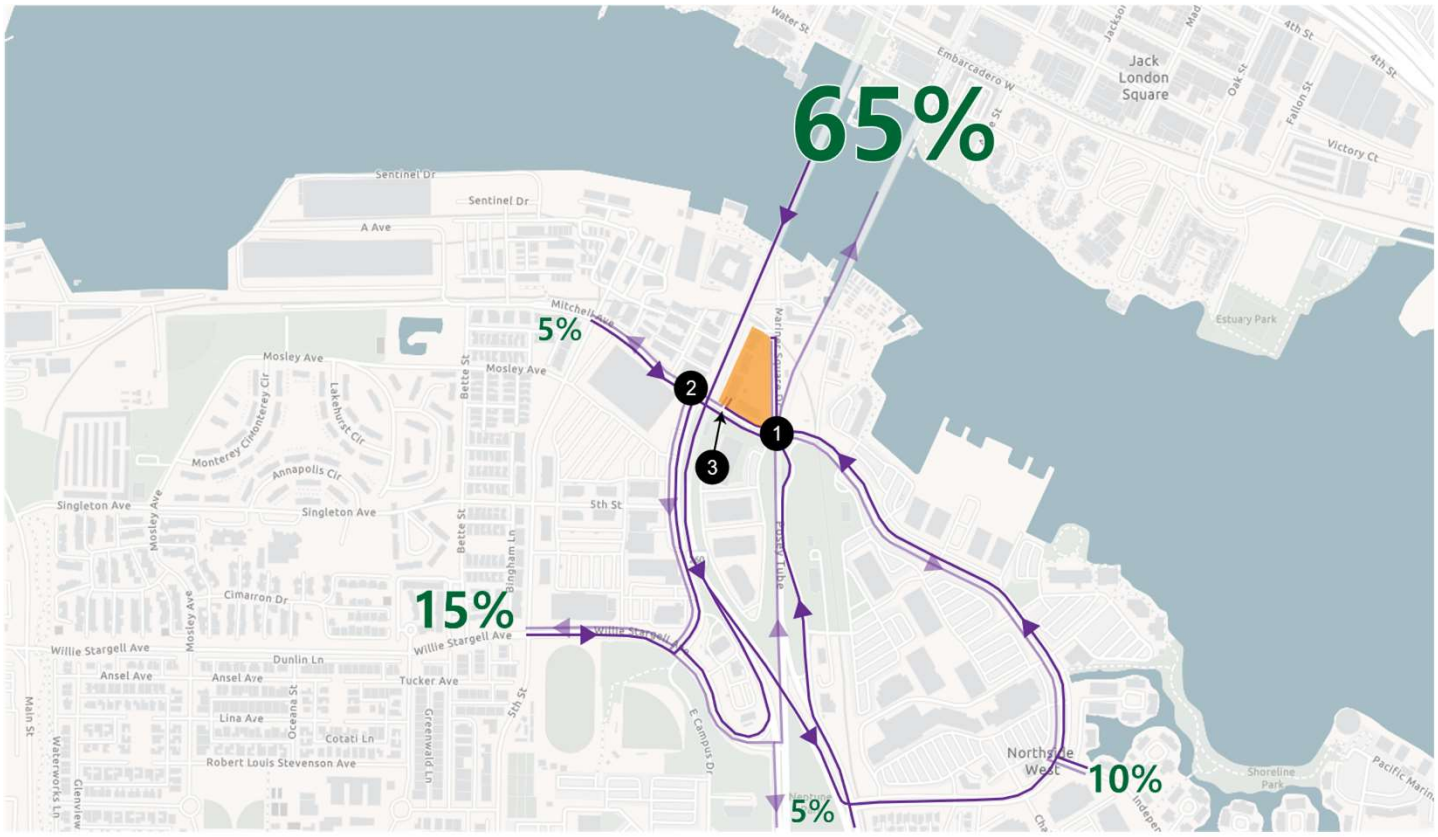
Mariner Square Loop/Mitchell Avenue Intersection

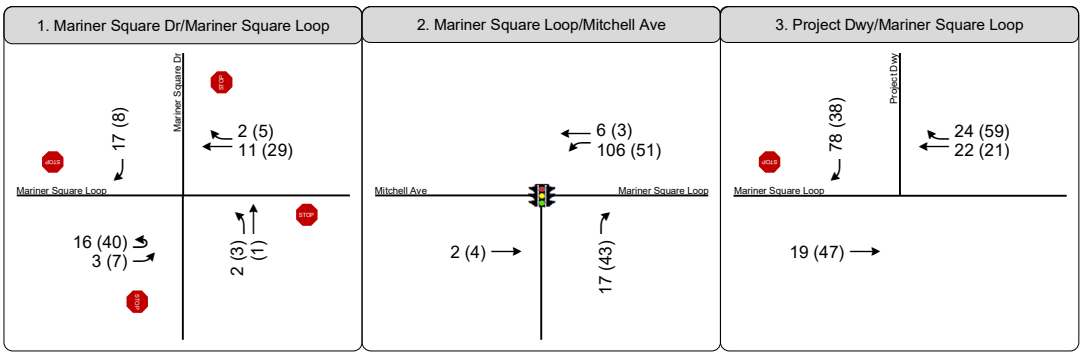
Observations at the intersection show that some vehicles turning left from westbound Mariner Square Loop to southbound Mariner Square Loop cross the double yellow line on the northbound Mariner Square Loop approach, and briefly encroach on the northbound left-turn lane. To minimize this potential conflict between the left-turning westbound vehicles and queued northbound vehicles on Mariner Square Loop, consider striping an advanced stop bar for the northbound left-turn lane 10 feet south of the crosswalk striping to provide adequate space for westbound left-turn vehicles.

Please contact Sam (stabibnia@fehrandpeers.com or 510-835-1943) if you have questions or comments.

Attachments

Figure 1 – Project Trip Distribution and Assignment
Figure 2 – Existing Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls
Figure 3 – Existing Plus Project Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls
Attachment A – Project Site Plan
Attachment B – Intersection Volume Counts
Attachment C – LOS Calculation Sheets



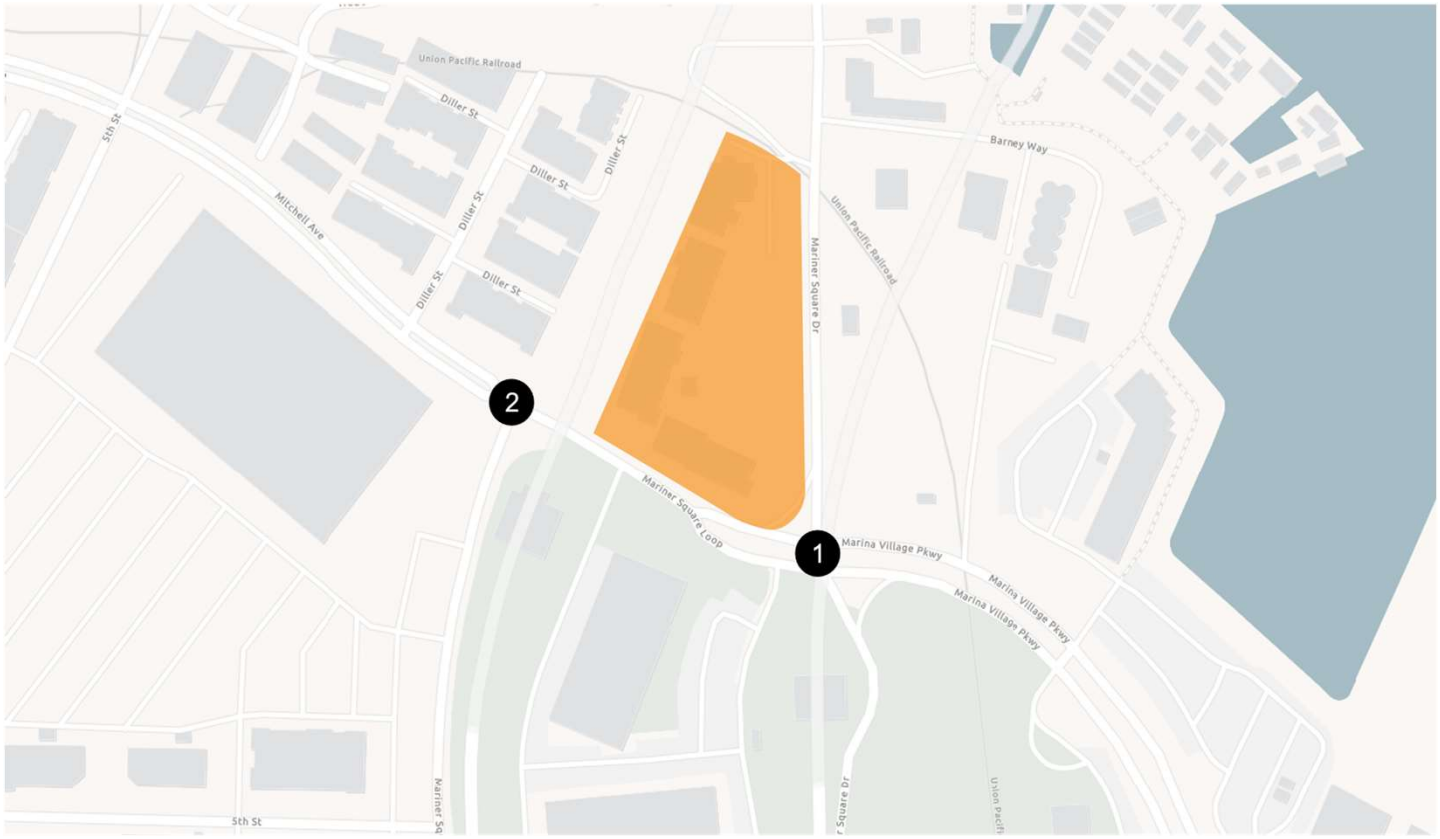


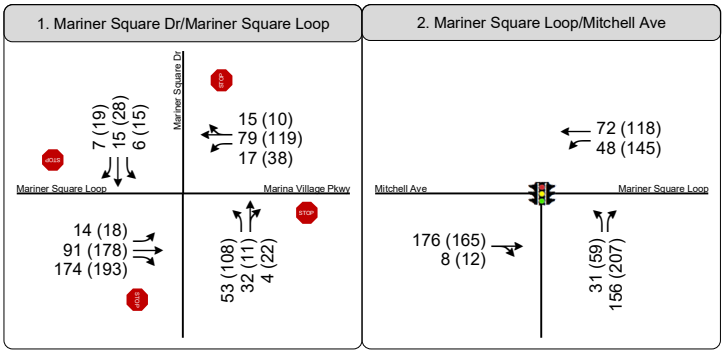
LEGEND

#	Study Intersection
AM (PM)	Peak Hour Traffic Volume
STOP	Stop Sign
	Signalized
	Project Site
XX%	Project Trip Distribution
	Inbound Route
	Outbound Route

Figure 1

Project Trip Distribution and Assignment



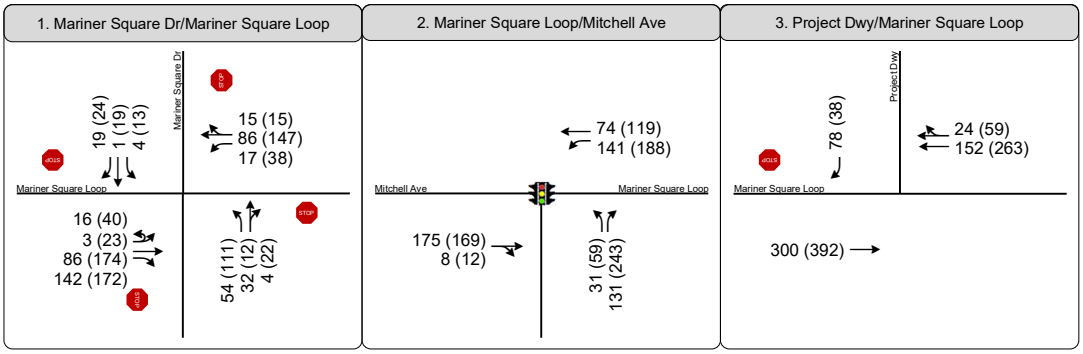


LEGEND

- # — Study Intersection
- AM (PM) — Peak Hour Traffic Volume
- Lane Configuration
- Stop Sign
- Signalized
- Project Site

Figure 2

Existing Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls



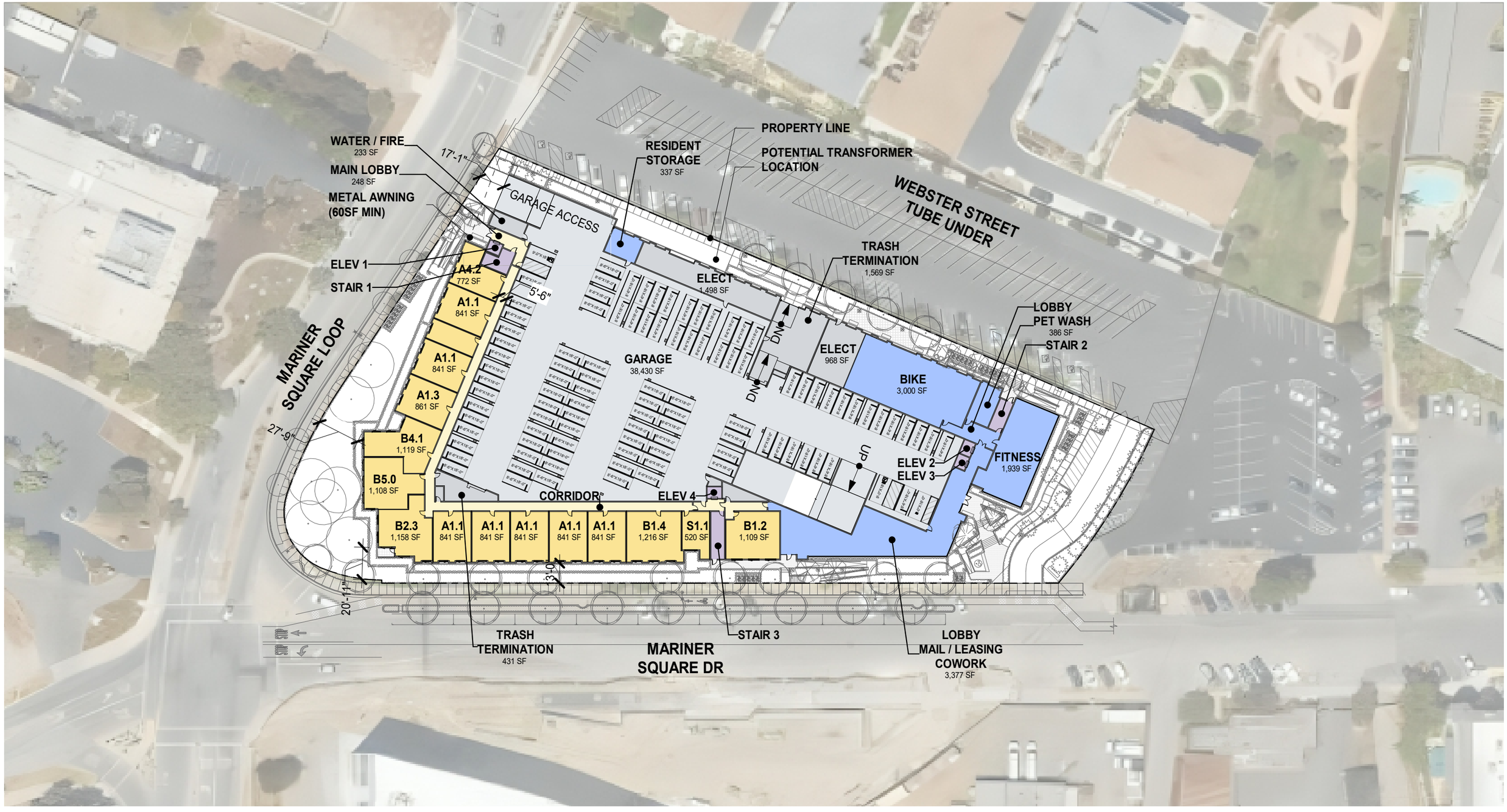
LEGEND

- # — Study Intersection
- AM (PM) — Peak Hour Traffic Volume
- Lane Configuration
- Stop Sign
- Signalized
- Project Site

Figure 3

Existing Plus Project Conditions Peak Hour Intersection Volumes, Lane Configurations and Traffic Controls

Attachment A
Project Site Plan



0' 60' 120'

TRUE NORTH

SITE PLAN - GRADE

1"=60'

AP1.00

BDE ARCHITECTURE

2433 MARINER SQUARE LOOP

JUN 26, 2025

Attachment B
Intersection Volume Counts

National Data & Surveying Services

Intersection Turning Movement Count

Location: Mariner Square Dr/Alameda Center Dwy & Mariner Square Loop/Marina Village Pkwy
City: Alameda
Control: 4-Way Stop

Project ID: 24-080274-001
Date: 9/24/2024

Data - Total

NS/EW Streets:	Mariner Square Dr/Alameda Center Dwy					Mariner Square Dr/Alameda Center Dwy				Mariner Square Loop/Marina Village Pkwy					Mariner Square Loop/Marina Village Pkwy					
AM	NORTHBOUND					SOUTHBOUND				EASTBOUND					WESTBOUND				NORTHBOUND2	
	1	1	1	0	0	1	1	1	0	1	1	1	0	0	1	1	0	0	0	0
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	EL	ET	ER	EU	ER2	WL	WT	WR	WU	N2L2	N2R2	TOTAL
7:00 AM	4	5	2	0	0	2	2	1	0	3	6	20	0	2	6	3	0	0	0	0	56
7:15 AM	6	3	0	0	2	2	3	1	0	2	11	22	0	0	3	6	0	0	0	0	61
7:30 AM	2	5	4	0	0	0	3	0	0	2	11	23	0	4	5	10	3	0	0	0	72
7:45 AM	4	5	2	0	0	0	2	1	0	2	26	29	0	5	4	13	2	0	0	0	95
8:00 AM	4	11	0	0	0	1	3	3	0	6	18	40	0	5	4	13	6	0	0	0	114
8:15 AM	11	6	2	0	0	1	5	2	0	1	20	35	0	4	3	15	2	0	0	0	107
8:30 AM	19	7	1	0	0	2	3	0	0	3	27	43	1	2	3	24	4	1	0	0	140
8:45 AM	18	8	1	1	0	1	4	2	1	3	26	43	0	2	6	27	3	0	0	0	146
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	EL	ET	ER	EU	ER2	WL	WT	WR	WU	N2L2	N2R2	TOTAL
TOTAL VOLUMES :	68	50	12	1	2	9	25	10	1	22	145	255	1	24	34	111	20	1	0	0	791
APPROACH %'s :	51.13%	37.59%	9.02%	0.75%	1.50%	20.00%	55.56%	22.22%	2.22%	4.92%	32.44%	57.05%	0.22%	5.37%	20.48%	66.87%	12.05%	0.60%			
PEAK HR :	08:00 AM - 09:00 AM																				TOTAL
PEAK HR VOL :	52	32	4	1	0	5	15	7	1	13	91	161	1	13	16	79	15	1	0	0	507
PEAK HR FACTOR :	0.684	0.727	0.500	0.250	0.000	0.625	0.750	0.583	0.250	0.542	0.843	0.936	0.250	0.650	0.667	0.731	0.625	0.250	0.000	0.000	0.868
			0.795					0.875				0.918					0.771				

PM	NORTHBOUND					SOUTHBOUND				EASTBOUND					WESTBOUND					
	1	1	1	0	0	1	1	1	0	1	1	1	0	0	1	1	0	0	0	0
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	EL	ET	ER	EU	ER2	WL	WT	WR	WU	N2L2	N2R2	TOTAL
4:00 PM	22	6	4	0	0	9	13	4	0	5	39	55	0	1	4	25	4	0	1	1	193
4:15 PM	18	6	3	0	0	6	3	5	0	1	40	37	0	1	4	30	5	0	0	0	159
4:30 PM	19	3	5	0	0	4	11	6	0	4	47	51	0	0	11	23	3	0	1	0	188
4:45 PM	25	3	3	0	0	5	8	5	0	6	48	40	0	1	3	25	2	0	0	0	174
5:00 PM	28	3	4	0	0	4	8	4	0	3	36	56	0	0	18	34	5	0	0	0	203
5:15 PM	36	2	10	0	0	2	1	4	0	4	47	45	0	0	6	37	0	0	0	0	194
5:30 PM	29	1	1	0	0	3	5	0	0	4	49	44	0	0	10	26	2	0	0	0	174
5:45 PM	14	4	3	0	0	2	4	0	0	4	37	48	0	1	6	28	1	0	0	0	152
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	EL	ET	ER	EU	ER2	WL	WT	WR	WU	N2L2	N2R2	TOTAL
TOTAL VOLUMES :	191	28	33	0	0	35	53	28	0	31	343	376	0	4	62	228	22	0	2	1	1437
APPROACH %'s :	75.79%	11.11%	13.10%	0.00%	0.00%	30.17%	45.69%	24.14%	0.00%	4.11%	45.49%	49.87%	0.00%	0.53%	19.87%	73.08%	7.05%	0.00%	66.67%	33.33%	
PEAK HR :	04:30 PM - 05:30 PM																				TOTAL
PEAK HR VOL :	108	11	22	0	0	15	28	19	0	17	178	192	0	1	38	119	10	0	1	0	759
PEAK HR FACTOR :	0.750	0.917	0.550	0.000	0.000	0.750	0.636	0.792	0.000	0.708	0.927	0.857	0.000	0.250	0.528	0.804	0.500	0.000	0.250	0.000	0.935
			0.734					0.738				0.951					0.732				

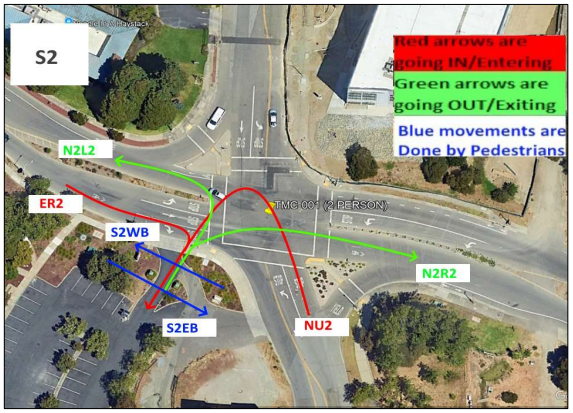
Explanation for extra leg movements

Movements entering the extra leg

NU2	Movements coming from NB on Mariner Square Dr entering into the Extra Leg (Alameda Center Dwy)
ER2	Movements coming from NB on Mariner Square Loop entering into the Extra Leg (Alameda Center Dwy)

Movements exiting the extra leg

N2L2	Movements exiting from Extra Leg (Alameda Center Dwy) entering into Mariner Square Loop WB.
N2R2	Movements exiting from Extra Leg (Alameda Center Dwy) entering into Marina Village Pkwy EB.



National Data & Surveying Services

Intersection Turning Movement Count

Location: Mariner Square Dr/Alameda Center Dwy & Mariner Square Loop/Marina Village Pkwy
City: Alameda
Control: 4-Way Stop

Project ID: 24-080274-001
Date: 9/24/2024

Data - Bikes

NS/EW Streets:	Mariner Square Dr/Alameda Center Dwy					Mariner Square Dr/Alameda Center Dwy				Mariner Square Loop/Marina Village Pkwy					Mariner Square Loop/Marina Village Pkwy						
AM	NORTHBOUND					SOUTHBOUND				EASTBOUND					WESTBOUND				NORTHBOUND2		
	1	1	1	0	0	1	1	1	0	1	1	1	0	0	1	1	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	EL	ET	ER	EU	ER2	WL	WT	WR	WU	N2L2	N2R2	TOTAL
7:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2
7:30 AM	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	3
7:45 AM	0	1	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	5
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0	3
8:30 AM	0	0	0	0	0	0	0	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	2	0	0	0	0	0	0	0	0	2
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	EL	ET	ER	EU	ER2	WL	WT	WR	WU	N2L2	N2R2	TOTAL
TOTAL VOLUMES :	2	1	2	0	0	0	0	0	0	1	4	4	0	0	0	4	0	0	0	0	18
APPROACH %'s :	40.00%	20.00%	40.00%	0.00%	0.00%					11.11%	44.44%	44.44%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%			
PEAK HR :	08:00 AM - 09:00 AM																				TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	2	3	0	0	0	2	0	0	0	0	7
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.375	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.583
												0.625				0.250					

PM	NORTHBOUND					SOUTHBOUND				EASTBOUND					WESTBOUND						
	1	1	1	0	0	1	1	1	0	1	1	1	0	0	1	1	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	EL	ET	ER	EU	ER2	WL	WT	WR	WU	N2L2	N2R2	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	3
5:15 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	4
5:30 PM	1	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	EL	ET	ER	EU	ER2	WL	WT	WR	WU	N2L2	N2R2	TOTAL
TOTAL VOLUMES :	4	0	1	0	0	0	1	0	0	0	4	0	0	0	2	5	0	0	0	2	19
APPROACH %'s :	80.00%	0.00%	20.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	28.57%	71.43%	0.00%	0.00%	0.00%	100.00%	
PEAK HR :	04:30 PM - 05:30 PM																				TOTAL
PEAK HR VOL :	3	0	0	0	0	0	1	0	0	0	1	0	0	0	2	2	0	0	0	1	10
PEAK HR FACTOR :	0.375	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.500	0.000	0.000	0.000	0.250	0.625
			0.375				0.250					0.250				0.500					

National Data & Surveying Services

Intersection Turning Movement Count

Location: Mariner Square Dr/Alameda Center Dwy & Mariner Square Loop/Marina Village Pkwy **Project ID:** 24-080274-001
City: Alameda **Date:** 9/24/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Mariner Square Dr/Alameda Center Dwy		Mariner Square Dr/Alameda Center Dwy		Mariner Square Loop/Marina Village Pkwy		Mariner Square Loop/Marina Village Pkwy			
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		SOUTH LEG 2	
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
7:00 AM	1	0	0	0	0	0	0	0	0	0	1
7:15 AM	1	0	0	0	0	0	0	0	0	0	1
7:30 AM	1	0	0	0	0	1	0	0	0	0	2
7:45 AM	3	0	0	0	0	2	0	0	0	0	5
8:00 AM	0	0	1	1	0	0	0	0	0	1	3
8:15 AM	0	4	0	0	4	0	0	0	0	0	8
8:30 AM	1	0	0	0	0	2	0	0	0	0	3
8:45 AM	1	4	1	1	1	1	0	0	0	0	9
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
TOTAL VOLUMES :	8	8	2	2	5	6	0	0	0	1	32
APPROACH %'s :	50.00%	50.00%	50.00%	50.00%	45.45%	54.55%			0.00%	100.00%	
PEAK HR :	08:00 AM - 09:00 AM										TOTAL
PEAK HR VOL :	2	8	2	2	5	3	0	0	0	1	23
PEAK HR FACTOR :	0.500	0.500	0.500	0.500	0.313	0.375				0.250	0.639
	0.500		0.500		0.500				0.250		

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		SOUTH LEG 2	
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
4:00 PM	0	0	0	2	0	0	0	0	0	1	3
4:15 PM	1	0	0	1	0	1	2	0	0	0	5
4:30 PM	0	0	0	0	2	0	2	0	2	0	6
4:45 PM	3	3	2	2	1	2	2	1	4	0	20
5:00 PM	0	3	2	3	1	0	2	0	2	3	16
5:15 PM	1	5	2	0	2	0	0	1	0	0	11
5:30 PM	1	4	3	3	0	0	0	0	3	3	17
5:45 PM	0	5	0	0	1	0	0	0	0	0	6
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	TOTAL
TOTAL VOLUMES :	6	20	9	11	7	3	8	2	11	7	84
APPROACH %'s :	23.08%	76.92%	45.00%	55.00%	70.00%	30.00%	80.00%	20.00%	61.11%	38.89%	
PEAK HR :	04:30 PM - 05:30 PM										TOTAL
PEAK HR VOL :	4	11	6	5	6	2	6	2	8	3	53
PEAK HR FACTOR :	0.333	0.550	0.750	0.417	0.750	0.250	0.750	0.500	0.500	0.250	0.663
	0.625		0.550		0.667		0.667		0.550		

National Data & Surveying Services

Intersection Turning Movement Count

Location: Mariner Square Loop & Mitchell Ave/Mariner Square Loop
City: Alameda
Control: Signalized

Project ID: 24-080274-002
Date: 9/24/2024

Data - Total

NS/EW Streets:	Mariner Square Loop					Mariner Square Loop				Mitchell Ave/Mariner Square Loop				Mitchell Ave/Mariner Square Loop						
AM	NORTHBOUND					SOUTHBOUND				EASTBOUND				WESTBOUND					NORTHBOUND2	
	1	0	1	0	0	0	1	0	0	0	1	0	0	1	1	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	WL2	N2R2	TOTAL
7:00 AM	7	0	13	0	0	0	0	0	0	0	19	3	0	6	2	0	0	0	0	50
7:15 AM	7	0	11	0	0	0	0	0	0	0	26	1	0	6	5	0	0	1	0	57
7:30 AM	8	0	12	0	0	0	0	0	0	0	31	0	0	7	5	0	0	0	1	64
7:45 AM	4	0	19	0	0	0	0	0	0	0	48	3	0	8	8	0	0	0	0	90
8:00 AM	4	0	31	0	1	0	0	0	0	0	51	2	0	11	8	0	0	0	0	108
8:15 AM	7	0	26	0	0	0	0	0	0	0	42	2	0	6	15	0	0	0	0	98
8:30 AM	10	0	48	0	0	0	0	0	0	0	41	1	0	11	29	0	0	0	0	140
8:45 AM	10	0	50	0	0	0	0	0	0	0	42	3	0	19	20	0	1	0	0	145
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	WL2	N2R2	TOTAL
TOTAL VOLUMES :	57	0	210	0	1	0	0	0	0	0	300	15	0	74	92	0	1	1	1	752
APPROACH %'s :	21.27%	0.00%	78.36%	0.00%	0.37%					0.00%	95.24%	4.76%	0.00%	44.05%	54.76%	0.00%	0.60%	0.60%	100.00%	
PEAK HR :	08:00 AM - 09:00 AM																			TOTAL
PEAK HR VOL :	31	0	155	0	1	0	0	0	0	0	176	8	0	47	72	0	1	0	0	491
PEAK HR FACTOR :	0.775	0.000	0.775	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.863	0.667	0.000	0.618	0.621	0.000	0.250	0.000	0.000	0.847
			0.779								0.868					0.750				

PM	NORTHBOUND					SOUTHBOUND				EASTBOUND				WESTBOUND						
	1	0	1	0	0	0	1	0	0	0	1	0	0	1	1	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	WL2	N2R2	TOTAL
4:00 PM	12	1	49	0	1	1	0	0	0	0	49	3	0	34	23	0	0	0	0	173
4:15 PM	12	0	42	0	0	0	0	0	0	1	38	1	0	30	18	0	0	0	0	142
4:30 PM	8	0	59	0	0	0	1	0	0	0	44	4	0	28	21	0	0	0	0	165
4:45 PM	12	1	53	0	0	2	0	1	0	0	37	2	0	44	13	0	0	0	0	165
5:00 PM	15	0	48	0	0	0	0	1	0	1	44	4	0	30	36	0	0	0	0	179
5:15 PM	19	0	50	0	0	0	0	0	0	0	44	2	0	45	33	0	0	0	0	193
5:30 PM	13	1	56	0	0	1	0	0	0	0	40	4	0	25	36	1	1	0	0	178
5:45 PM	10	0	52	0	0	0	0	0	0	0	33	1	0	26	14	0	0	0	0	136
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	WL2	N2R2	TOTAL
TOTAL VOLUMES :	101	3	409	0	1	4	1	2	0	2	329	21	0	262	194	1	1	0	0	1331
APPROACH %'s :	19.65%	0.58%	79.57%	0.00%	0.19%	57.14%	14.29%	28.57%	0.00%	0.57%	93.47%	5.97%	0.00%	57.21%	42.36%	0.22%	0.22%	0.00%		
PEAK HR :	04:45 PM - 05:45 PM																			TOTAL
PEAK HR VOL :	59	2	207	0	0	3	0	2	0	1	165	12	0	144	118	1	1	0	0	715
PEAK HR FACTOR :	0.776	0.500	0.924	0.000	0.000	0.375	0.000	0.500	0.000	0.250	0.938	0.750	0.000	0.800	0.819	0.250	0.250	0.000	0.000	0.926
			0.957					0.417			0.908					0.846				

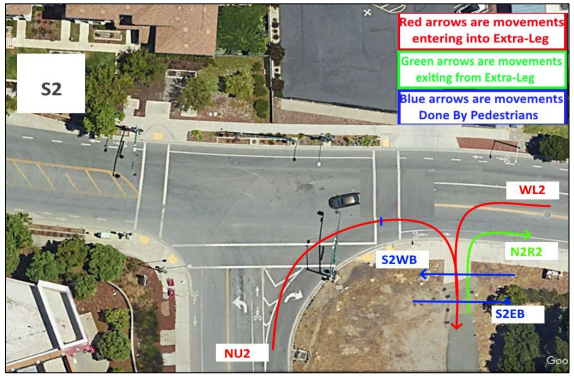
Explanation for extra leg movements

Movements entering the extra leg

NU2	Movements coming from NB on Mariner Square Dr entering into the Extra Leg (2261 Dwy Mariner Square Loop)
WL2	Movements coming from WB on Mariner Square Dr entering into the Extra Leg (2261 Dwy Mariner Square Loop)

Movements exiting the extra leg

N2R2	Movements exiting from Extra Leg (2261 Dwy Mariner Square Loop) entering into Mariner Square Loop EB.



National Data & Surveying Services

Intersection Turning Movement Count

Location: Mariner Square Loop & Mitchell Ave/Mariner Square Loop
City: Alameda
Control: Signalized

Project ID: 24-080274-002
Date: 9/24/2024

Data - Bikes

NS/EW Streets:	Mariner Square Loop					Mariner Square Loop				Mitchell Ave/Mariner Square Loop				Mitchell Ave/Mariner Square Loop						
AM	NORTHBOUND					SOUTHBOUND				EASTBOUND				WESTBOUND					NORTHBOUND2	
	1	0	1	0	0	0	1	0	0	0	1	0	0	1	1	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	WL2	N2R2	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
7:15 AM	0	0	1	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	4
7:30 AM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	4
7:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
8:15 AM	0	0	2	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	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	WL2	N2R2	TOTAL
TOTAL VOLUMES :	0	0	5	0	0	0	0	0	0	0	9	0	0	1	3	0	0	0	0	18
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%					0.00%	100.00%	0.00%	0.00%	25.00%	75.00%	0.00%	0.00%	0.00%		
PEAK HR :	08:00 AM - 09:00 AM																			TOTAL
PEAK HR VOL :	0	0	3	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	7
PEAK HR FACTOR :	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.875
			0.375								0.500									

PM	NORTHBOUND					SOUTHBOUND				EASTBOUND				WESTBOUND						
	1	0	1	0	0	0	1	0	0	0	1	0	0	1	1	0	0	0	0	
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	WL2	N2R2	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
4:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
	NL	NT	NR	NU	NU2	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	WL2	N2R2	TOTAL
TOTAL VOLUMES :	1	0	0	0	0	0	0	0	0	0	3	0	0	3	10	0	0	0	0	17
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%	0.00%					0.00%	100.00%	0.00%	0.00%	23.08%	76.92%	0.00%	0.00%	0.00%		
PEAK HR :	04:45 PM - 05:45 PM																			TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	2	0	0	2	6	0	0	0	0	10
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.750	0.000	0.000	0.000	0.000	0.833
											0.500					0.667				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Mariner Square Loop & Mitchell Ave/Mariner Square Loop
City: Alameda

Project ID: 24-080274-002
Date: 9/24/2024

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Mariner Square Loop		Mariner Square Loop		Mitchell Ave/Mariner Square Loop		Mitchell Ave/Mariner Square Loop						
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		SOUTH LEG 2		SCRAMBLE (NE/SW)		
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	NB	SB	TOTAL
7:00 AM	0	0	0	0	0	0	0	1	0	1	0	0	2
7:15 AM	0	0	0	1	0	0	2	0	0	0	0	0	3
7:30 AM	0	0	1	0	0	0	0	0	1	0	0	0	2
7:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	2
8:00 AM	0	0	1	1	0	0	0	0	1	1	0	0	4
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:30 AM	0	0	2	0	1	0	0	0	0	0	0	0	3
8:45 AM	0	0	1	0	0	0	1	1	1	0	0	0	4
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	6	2	2	0	3	3	3	2	0	0	21
APPROACH %'s :			75.00%	25.00%	100.00%	0.00%	50.00%	50.00%	60.00%	40.00%			
PEAK HR :	08:00 AM - 09:00 AM												TOTAL
PEAK HR VOL :	0	0	4	1	1	0	1	2	2	1	0	0	12
PEAK HR FACTOR :			0.500	0.250	0.250		0.250	0.500	0.500	0.250			0.750
			0.625		0.250		0.375		0.375				

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		SOUTH LEG 2		SCRAMBLE (NE/SW)		
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	NB	SB	TOTAL
4:00 PM	0	0	0	1	0	0	0	0	0	2	0	0	3
4:15 PM	2	0	1	2	0	0	1	1	0	0	0	0	7
4:30 PM	0	2	0	2	0	2	0	1	2	2	0	2	13
4:45 PM	3	3	2	1	0	0	0	2	2	1	0	0	14
5:00 PM	0	2	2	1	0	0	0	1	4	1	0	2	13
5:15 PM	2	6	0	2	0	0	2	3	0	2	0	0	17
5:30 PM	1	3	5	4	0	0	1	2	5	4	0	0	25
5:45 PM	0	5	1	0	0	0	1	1	1	1	1	0	11
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	NB	SB	TOTAL
TOTAL VOLUMES :	8	21	11	13	0	2	5	11	14	13	1	4	103
APPROACH %'s :	27.59%	72.41%	45.83%	54.17%	0.00%	100.00%	31.25%	68.75%	51.85%	48.15%	20.00%	80.00%	
PEAK HR :	04:45 PM - 05:45 PM												TOTAL
PEAK HR VOL :	6	14	9	8	0	0	3	8	11	8	0	2	69
PEAK HR FACTOR :	0.500	0.583	0.450	0.500			0.375	0.667	0.550	0.500		0.250	0.690
	0.625		0.472				0.550		0.528		0.250		

Attachment C
LOS Calculation Sheets

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	91	174	17	79	15	53	32	4	6	15	7
Future Vol, veh/h	14	91	174	17	79	15	53	32	4	6	15	7
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	16	105	200	20	91	17	61	37	5	7	17	8
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	2	3
HCM Control Delay, s/veh	8.8	9.3	9.4	8.8
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	89%	0%	100%	0%	0%	84%	0%	100%	0%
Vol Right, %	0%	11%	0%	0%	100%	0%	16%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	36	14	91	174	17	94	6	15	7
LT Vol	53	0	14	0	0	17	0	6	0	0
Through Vol	0	32	0	91	0	0	79	0	15	0
RT Vol	0	4	0	0	174	0	15	0	0	7
Lane Flow Rate	61	41	16	105	200	20	108	7	17	8
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.106	0.065	0.026	0.153	0.253	0.033	0.163	0.012	0.028	0.012
Departure Headway (Hd)	6.257	5.676	5.75	5.249	4.547	6.048	5.434	6.424	5.921	5.218
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	570	627	621	682	786	589	657	553	600	679
Service Time	4.031	3.45	3.496	2.994	2.293	3.811	3.198	4.208	3.705	3.001
HCM Lane V/C Ratio	0.107	0.065	0.026	0.154	0.254	0.034	0.164	0.013	0.028	0.012
HCM Control Delay, s/veh	9.8	8.8	8.7	8.9	8.8	9	9.3	9.3	8.9	8.1
HCM Lane LOS	A	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.4	0.2	0.1	0.5	1	0.1	0.6	0	0.1	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	176	8	48	72	31	156
Future Volume (veh/h)	176	8	48	72	31	156
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.97	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	207	9	56	85	36	184
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	813	35	365	1354	260	232
Arrive On Green	0.46	0.46	0.21	0.73	0.15	0.15
Sat Flow, veh/h	1763	77	1767	1856	1767	1572
Grp Volume(v), veh/h	0	216	56	85	36	184
Grp Sat Flow(s),veh/h/ln	0	1839	1767	1856	1767	1572
Q Serve(g_s), s	0.0	4.7	1.7	0.8	1.2	7.3
Cycle Q Clear(g_c), s	0.0	4.7	1.7	0.8	1.2	7.3
Prop In Lane		0.04	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	849	365	1354	260	232
V/C Ratio(X)	0.00	0.25	0.15	0.06	0.14	0.79
Avail Cap(c_a), veh/h	0	849	365	1354	462	411
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	10.7	21.1	2.5	24.1	26.8
Incr Delay (d2), s/veh	0.0	0.7	0.2	0.1	0.2	6.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.9	0.7	0.2	0.5	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	11.4	21.3	2.6	24.4	32.9
LnGrp LOS		B	C	A	C	C
Approach Vol, veh/h	216			141	220	
Approach Delay, s/veh	11.4			10.0	31.5	
Approach LOS	B			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	17.4	34.0				51.4	13.6
Change Period (Y+Rc), s	4.0	4.0				4.0	4.0
Max Green Setting (Gmax), s	6.6	30.0				40.0	17.0
Max Q Clear Time (g_c+I1), s	13.7	6.7				2.8	9.3
Green Ext Time (p_c), s	0.0	1.3				0.5	0.4

Intersection Summary	
HCM 6th Ctrl Delay, s/veh	18.7
HCM 6th LOS	B

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	178	193	38	119	10	108	11	22	15	28	19
Future Vol, veh/h	18	178	193	38	119	10	108	11	22	15	28	19
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	19	191	208	41	128	11	116	12	24	16	30	20
Number of Lanes	1	1	1	1	1	0	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	2	3
HCM Control Delay, s/veh	10.4	10.6	11	9.6
HCM LOS	B	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	33%	0%	100%	0%	0%	92%	0%	100%	0%
Vol Right, %	0%	67%	0%	0%	100%	0%	8%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	108	33	18	178	193	38	129	15	28	19
LT Vol	108	0	18	0	0	38	0	15	0	0
Through Vol	0	11	0	178	0	0	119	0	28	0
RT Vol	0	22	0	0	193	0	10	0	0	19
Lane Flow Rate	116	35	19	191	208	41	139	16	30	20
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.223	0.059	0.034	0.308	0.293	0.076	0.236	0.032	0.056	0.034
Departure Headway (Hd)	6.92	5.945	6.289	5.787	5.083	6.689	6.132	7.173	6.668	5.961
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	519	602	570	622	708	536	585	499	537	600
Service Time	4.657	3.682	4.02	3.518	2.814	4.426	3.869	4.916	4.411	3.704
HCM Lane V/C Ratio	0.224	0.058	0.033	0.307	0.294	0.076	0.238	0.032	0.056	0.033
HCM Control Delay, s/veh	11.6	9.1	9.2	11.1	9.9	10	10.8	10.2	9.8	8.9
HCM Lane LOS	B	A	A	B	A	A	B	B	A	A
HCM 95th-tile Q	0.8	0.2	0.1	1.3	1.2	0.2	0.9	0.1	0.2	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	165	12	145	118	59	207
Future Volume (veh/h)	165	12	145	118	59	207
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.96	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	177	13	156	127	63	223
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	733	54	372	1304	307	273
Arrive On Green	0.43	0.43	0.21	0.70	0.17	0.17
Sat Flow, veh/h	1702	125	1767	1856	1767	1572
Grp Volume(v), veh/h	0	190	156	127	63	223
Grp Sat Flow(s),veh/h/ln	0	1827	1767	1856	1767	1572
Q Serve(g_s), s	0.0	4.3	5.0	1.4	2.0	8.9
Cycle Q Clear(g_c), s	0.0	4.3	5.0	1.4	2.0	8.9
Prop In Lane		0.07	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	787	372	1304	307	273
V/C Ratio(X)	0.00	0.24	0.42	0.10	0.20	0.82
Avail Cap(c_a), veh/h	0	787	372	1304	462	411
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	11.8	22.2	3.1	23.0	25.8
Incr Delay (d2), s/veh	0.0	0.7	0.8	0.1	0.3	7.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	2.1	0.4	0.8	3.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	12.5	23.0	3.2	23.3	33.4
LnGrp LOS		B	C	A	C	C
Approach Vol, veh/h	190			283	286	
Approach Delay, s/veh	12.5			14.1	31.2	
Approach LOS	B			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	17.7	32.0				49.7	15.3
Change Period (Y+Rc), s	4.0	4.0				4.0	4.0
Max Green Setting (Gmax), s	8.0	28.0				40.0	17.0
Max Q Clear Time (g_c+I1), s	7.0	6.3				3.4	10.9
Green Ext Time (p_c), s	0.0	1.1				0.8	0.5

Intersection Summary	
HCM 6th Ctrl Delay, s/veh	20.1
HCM 6th LOS	C

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	16	3	86	142	17	86	15	54	32	4	4	1
Future Vol, veh/h	16	3	86	142	17	86	15	54	32	4	4	1
Peak Hour Factor	0.92	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	17	3	99	163	20	99	17	62	37	5	5	1
Number of Lanes	0	1	1	1	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	2	3
HCM Control Delay, s/veh	8.7	9.2	9.3	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	89%	0%	100%	0%	0%	85%	0%	100%	0%
Vol Right, %	0%	11%	0%	0%	100%	0%	15%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	54	36	19	86	142	17	101	4	1	19
LT Vol	54	0	19	0	0	17	0	4	0	0
Through Vol	0	32	0	86	0	0	86	0	1	0
RT Vol	0	4	0	0	142	0	15	0	0	19
Lane Flow Rate	62	41	21	99	163	20	116	5	1	22
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.107	0.064	0.033	0.144	0.206	0.032	0.173	0.008	0.002	0.031
Departure Headway (Hd)	6.185	5.604	5.729	5.245	4.543	5.969	5.363	6.364	5.861	5.158
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	577	636	624	682	788	598	666	559	607	688
Service Time	3.945	3.364	3.471	2.987	2.285	3.723	3.117	4.138	3.635	2.932
HCM Lane V/C Ratio	0.107	0.064	0.034	0.145	0.207	0.033	0.174	0.009	0.002	0.032
HCM Control Delay, s/veh	9.7	8.8	8.7	8.9	8.5	8.9	9.2	9.2	8.6	8.1
HCM Lane LOS	A	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.4	0.2	0.1	0.5	0.8	0.1	0.6	0	0	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	19
Future Vol, veh/h	19
Peak Hour Factor	0.87
Heavy Vehicles, %	3
Mvmt Flow	22
Number of Lanes	1

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay, s/veh	
HCM LOS	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	175	8	141	74	31	131
Future Volume (veh/h)	175	8	141	74	31	131
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.97	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	206	9	166	87	36	154
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	759	33	455	1392	224	200
Arrive On Green	0.43	0.43	0.26	0.75	0.13	0.13
Sat Flow, veh/h	1762	77	1767	1856	1767	1572
Grp Volume(v), veh/h	0	215	166	87	36	154
Grp Sat Flow(s),veh/h/ln	0	1839	1767	1856	1767	1572
Q Serve(g_s), s	0.0	4.9	5.0	0.8	1.2	6.2
Cycle Q Clear(g_c), s	0.0	4.9	5.0	0.8	1.2	6.2
Prop In Lane		0.04	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	792	455	1392	224	200
V/C Ratio(X)	0.00	0.27	0.36	0.06	0.16	0.77
Avail Cap(c_a), veh/h	0	792	455	1392	462	411
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	11.9	19.8	2.1	25.3	27.5
Incr Delay (d2), s/veh	0.0	0.8	0.5	0.1	0.3	6.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.0	2.0	0.2	0.5	2.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	12.8	20.3	2.2	25.6	33.7
LnGrp LOS		B	C	A	C	C
Approach Vol, veh/h	215			253	190	
Approach Delay, s/veh	12.8			14.1	32.1	
Approach LOS	B			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	30.7	32.0				52.7	12.3
Change Period (Y+Rc), s	4.0	4.0				4.0	4.0
Max Green Setting (Gmax), s	8.3	28.0				40.0	17.0
Max Q Clear Time (g_c+I1), s	7.0	6.9				2.8	8.2
Green Ext Time (p_c), s	0.0	1.2				0.5	0.4

Intersection Summary		
HCM 6th Ctrl Delay, s/veh		18.9
HCM 6th LOS		B

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	300	152	24	0	78
Future Vol, veh/h	0	300	152	24	0	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	326	165	26	0	85

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	96
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	-	0	942
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	942
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	942
HCM Lane V/C Ratio	-	-	-	0.09
HCM Control Delay (s/veh)	-	-	-	9.2
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q (veh)	-	-	-	0.3

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	40	23	174	172	38	147	15	111	12	22	13	19
Future Vol, veh/h	40	23	174	172	38	147	15	111	12	22	13	19
Peak Hour Factor	0.92	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	43	25	187	185	41	158	16	119	13	24	14	20
Number of Lanes	0	1	1	1	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	3	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	3	2	3
HCM Control Delay, s/veh	10.4	11.3	11.4	9.7
HCM LOS	B	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	35%	0%	100%	0%	0%	91%	0%	100%	0%
Vol Right, %	0%	65%	0%	0%	100%	0%	9%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	111	34	63	174	172	38	162	13	19	24
LT Vol	111	0	63	0	0	38	0	13	0	0
Through Vol	0	12	0	174	0	0	147	0	19	0
RT Vol	0	22	0	0	172	0	15	0	0	24
Lane Flow Rate	119	37	68	187	185	41	174	14	20	26
Geometry Grp	6	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.235	0.062	0.121	0.306	0.266	0.077	0.299	0.029	0.039	0.044
Departure Headway (Hd)	7.078	6.116	6.374	5.889	5.185	6.756	6.188	7.374	6.868	6.161
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	507	585	563	610	692	530	580	485	520	580
Service Time	4.822	3.86	4.109	3.623	2.919	4.498	3.929	5.127	4.622	3.914
HCM Lane V/C Ratio	0.235	0.063	0.121	0.307	0.267	0.077	0.3	0.029	0.038	0.045
HCM Control Delay, s/veh	12	9.3	10	11.2	9.8	10.1	11.6	10.3	9.9	9.2
HCM Lane LOS	B	A	A	B	A	B	B	B	A	A
HCM 95th-tile Q	0.9	0.2	0.4	1.3	1.1	0.2	1.2	0.1	0.1	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	24
Future Vol, veh/h	24
Peak Hour Factor	0.93
Heavy Vehicles, %	3
Mvmt Flow	26
Number of Lanes	1

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay, s/veh	
HCM LOS	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	169	12	188	119	59	243
Future Volume (veh/h)	169	12	188	119	59	243
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.96	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	182	13	202	128	63	261
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	735	52	331	1261	349	310
Arrive On Green	0.43	0.43	0.19	0.68	0.20	0.20
Sat Flow, veh/h	1706	122	1767	1856	1767	1572
Grp Volume(v), veh/h	0	195	202	128	63	261
Grp Sat Flow(s),veh/h/ln	0	1827	1767	1856	1767	1572
Q Serve(g_s), s	0.0	4.4	6.8	1.5	1.9	10.4
Cycle Q Clear(g_c), s	0.0	4.4	6.8	1.5	1.9	10.4
Prop In Lane		0.07	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	787	331	1261	349	310
V/C Ratio(X)	0.00	0.25	0.61	0.10	0.18	0.84
Avail Cap(c_a), veh/h	0	787	331	1261	462	411
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	11.8	24.2	3.6	21.7	25.1
Incr Delay (d2), s/veh	0.0	0.8	3.3	0.2	0.2	11.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	3.0	0.5	0.8	4.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	0.0	12.5	27.5	3.7	22.0	36.4
LnGrp LOS		B	C	A	C	D
Approach Vol, veh/h	195			330	324	
Approach Delay, s/veh	12.5			18.3	33.6	
Approach LOS	B			B	C	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	16.2	32.0				48.2	16.8
Change Period (Y+Rc), s	4.0	4.0				4.0	4.0
Max Green Setting (Gmax), s	8.0	28.0				40.0	17.0
Max Q Clear Time (g_c+I1), s	8.8	6.4				3.5	12.4
Green Ext Time (p_c), s	0.0	1.1				0.8	0.5

Intersection Summary		
HCM 6th Ctrl Delay, s/veh		22.8
HCM 6th LOS		C

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑↱			↱
Traffic Vol, veh/h	0	392	263	59	0	38
Future Vol, veh/h	0	392	263	59	0	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	426	286	64	0	41

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	175
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	-	0	839
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	839
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	839
HCM Lane V/C Ratio	-	-	-	0.049
HCM Control Delay (s/veh)	-	-	-	9.5
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q (veh)	-	-	-	0.2

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	16	3	86	142	17	86	15	54	32	4	4	1
Future Vol, veh/h	16	3	86	142	17	86	15	54	32	4	4	1
Peak Hour Factor	0.92	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	2	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	17	3	99	163	20	99	17	62	37	5	5	1
Number of Lanes	0	1	1	1	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay, s/veh	8.7	9.2	9.3	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	89%	0%	100%	0%	0%	85%	0%	5%
Vol Right, %	0%	11%	0%	0%	100%	0%	15%	0%	95%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	54	36	19	86	142	17	101	4	20
LT Vol	54	0	19	0	0	17	0	4	0
Through Vol	0	32	0	86	0	0	86	0	1
RT Vol	0	4	0	0	142	0	15	0	19
Lane Flow Rate	62	41	21	99	163	20	116	5	23
Geometry Grp	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.107	0.064	0.033	0.144	0.206	0.032	0.173	0.008	0.033
Departure Headway (Hd)	6.177	5.597	5.739	5.254	4.552	5.986	5.379	6.365	5.195
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	578	637	623	681	785	596	664	559	684
Service Time	3.937	3.357	3.484	2.999	2.296	3.742	3.135	4.138	2.967
HCM Lane V/C Ratio	0.107	0.064	0.034	0.145	0.208	0.034	0.175	0.009	0.034
HCM Control Delay, s/veh	9.7	8.7	8.7	8.9	8.5	8.9	9.3	9.2	8.1
HCM Lane LOS	A	A	A	A	A	A	A	A	A
HCM 95th-tile Q	0.4	0.2	0.1	0.5	0.8	0.1	0.6	0	0.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	19
Future Vol, veh/h	19
Peak Hour Factor	0.87
Heavy Vehicles, %	3
Mvmt Flow	22
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay, s/veh	
HCM LOS	

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Vol, veh/h	40	23	174	172	38	147	15	111	12	22	13	19
Future Vol, veh/h	40	23	174	172	38	147	15	111	12	22	13	19
Peak Hour Factor	0.92	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	43	25	187	185	41	158	16	119	13	24	14	20
Number of Lanes	0	1	1	1	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	3	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	3	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	3
HCM Control Delay, s/veh	10.5	11.4	11.4	9.9
HCM LOS	B	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	100%	0%	100%	0%
Vol Thru, %	0%	35%	0%	100%	0%	0%	91%	0%	44%
Vol Right, %	0%	65%	0%	0%	100%	0%	9%	0%	56%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	111	34	63	174	172	38	162	13	43
LT Vol	111	0	63	0	0	38	0	13	0
Through Vol	0	12	0	174	0	0	147	0	19
RT Vol	0	22	0	0	172	0	15	0	24
Lane Flow Rate	119	37	68	187	185	41	174	14	46
Geometry Grp	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.235	0.062	0.121	0.308	0.268	0.077	0.302	0.029	0.083
Departure Headway (Hd)	7.092	6.131	6.404	5.917	5.211	6.804	6.233	7.383	6.483
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	506	583	560	608	688	526	577	484	551
Service Time	4.839	3.878	4.14	3.653	2.947	4.547	3.976	5.139	4.238
HCM Lane V/C Ratio	0.235	0.063	0.121	0.308	0.269	0.078	0.302	0.029	0.083
HCM Control Delay, s/veh	12	9.3	10	11.3	9.9	10.1	11.7	10.4	9.8
HCM Lane LOS	B	A	A	B	A	B	B	B	A
HCM 95th-tile Q	0.9	0.2	0.4	1.3	1.1	0.2	1.3	0.1	0.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBR
Lane Configurations	
Traffic Vol, veh/h	24
Future Vol, veh/h	24
Peak Hour Factor	0.93
Heavy Vehicles, %	3
Mvmt Flow	26
Number of Lanes	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay, s/veh	
HCM LOS	

Intersection	
Intersection Delay, s/veh	4.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	282	136	104	28
Demand Flow Rate, veh/h	290	141	107	29
Vehicles Circulating, veh/h	27	122	127	204
Vehicles Exiting, veh/h	206	107	190	59
Ped Vol Crossing Leg, #/h	10	18	12	18
Ped Cap Adj	0.999	0.998	0.998	0.998
Approach Delay, s/veh	4.6	4.1	3.7	3.6
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT		LTR
RT Channelized				Yield	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976		4.976
Entry Flow, veh/h	290	141	102	5	29
Cap Entry Lane, veh/h	1342	1218	1212	1237	1121
Entry HV Adj Factor	0.971	0.965	0.970	0.971	0.965
Flow Entry, veh/h	282	136	99	5	28
Cap Entry, veh/h	1302	1173	1173	1199	1078
V/C Ratio	0.216	0.116	0.084	0.004	0.026
Control Delay, s/veh	4.6	4.1	3.8	3.0	3.6
LOS	A	A	A	A	A
95th %tile Queue, veh	1	0	0	0	0

Intersection	
Intersection Delay, s/veh	5.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	440	215	156	60
Demand Flow Rate, veh/h	454	221	161	62
Vehicles Circulating, veh/h	77	206	277	372
Vehicles Exiting, veh/h	357	207	254	55
Ped Vol Crossing Leg, #/h	23	23	19	23
Ped Cap Adj	0.997	0.997	0.997	0.997
Approach Delay, s/veh	6.3	5.1	4.6	4.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Bypass	Left
Designated Moves	LTR	LTR	LT	R	LTR
Assumed Moves	LTR	LTR	LT		LTR
RT Channelized				Yield	
Lane Util	1.000	1.000	1.000		1.000
Follow-Up Headway, s	2.609	2.609	2.609		2.609
Critical Headway, s	4.976	4.976	4.976		4.976
Entry Flow, veh/h	454	221	136	25	62
Cap Entry Lane, veh/h	1276	1118	1040	1117	944
Entry HV Adj Factor	0.970	0.974	0.968	0.971	0.974
Flow Entry, veh/h	441	215	132	24	60
Cap Entry, veh/h	1234	1086	1004	1082	917
V/C Ratio	0.357	0.198	0.131	0.022	0.066
Control Delay, s/veh	6.3	5.1	4.8	3.5	4.5
LOS	A	A	A	A	A
95th %tile Queue, veh	2	1	0	0	0