FOCUSED TRAFFIC IMPACT STUDY

Crystal Cove Multifamily Residential Homes

At SWC of Alessandro Blvd and Lasselle St

Moreno Valley

Date: October 12, 2022

Prepared For:

Empire Construction Management

2280 Wardlow Circle, Suite 250

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Prepared By:

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Focused Traffic Impact Study

For Crystal Cove Multifamily Residential Homes

At SWC of Alessandro Blvd and Lasselle St, Moreno Valley

Prepared under the supervision of

Jende Kay Hsu, P.E., T. E.

Lic. # T2285

EXECUTIVE SUMMARY

This is a focused traffic impact study for the residential development located on an unimproved land at the southwest corner of Alessandro Boulevard and Lasselle Street in the City of Moreno Valley. The proposed development includes 200-unit multifamily residential homes. The project is expected to generate 19 inbound and 61 outbound trips in the AM peak hour, 64 inbound and 38 outbound trips in the PM peak hour, and 1,348 daily trips.

The project will include the following off-site improvements:

- Widen Alessandro Boulevard at the project frontage to the ultimate width on the south half (67 feet from centerline to ROW) and provide curb-and-gutter, sidewalk, and two eastbound lanes.
- Widen Copper Cove Lane at the project frontage to the ultimate width on the north half (30 feet from centerline to ROW) and provide curb-and-gutter, sidewalk, and one westbound lane.
- Construct raised median islands along Alessandro Boulevard between Chervil Court and Lasselle Street.

According to the approved scoping agreement, this study collected traffic count data and conducted level of service analysis for adjacent intersections and project driveways. With the roadway improvements that would be implemented as part of the project, all studied intersections will maintain level of service "D" or better for both AM and PM peak hours in each of the study scenarios, meeting the level of service standards set forth in Moreno Valley General Plan. The project will have no or less than significant traffic impact at the study intersections. Mitigation measure is therefore not required.

The study examined the 95th percentile queue for left-turn pockets at the project-adjacent intersection of Lasselle Street and Alessandro Boulevard in the AM and PM peak hours. Generally, the excess demand of left turns will be addressed in the ultimate

lane configuration with the addition of dual turn lanes and enhanced signal phasing. As an interim solution to accommodate left-turn queuing, the following improvements are recommended:

- Provide 200 feet of storage length for westbound left-turn lane on Alessandro Boulevard at Lasselle Street.
- Provide 260 feet of storage length for northbound left-turn lane on Lasselle Street at Alessandro Boulevard.

The study examined signal warrant for the following stop-controlled intersection:

- The intersection of Alessandro Boulevard at Chervil Court does NOT meet the traffic signal warrant after completion of the project.
- The intersection of Lasselle Street at Copper Cove Lane does NOT meet the traffic signal warrant after completion of the project.

Site access is provided two access driveways: North Driveway on Alessandro Boulevard and South Driveway on Copper Cove Lane. North Driveway allows right-in-right-out access only with a proposed raised median on Alessandro Boulevard. The project will install two speed limit signs with radar speed display on Copper Cove Lane to promote traffic calming.

INTRODUCTION

The purpose of this study is to evaluate traffic impact of the proposed residential development located at the southwest corner of Alessandro Boulevard and Lasselle Street in the City of Moreno Valley. Vicinity map is shown in **Exhibit 1**.

Project site is currently unimproved and vacant. The proposed development includes 200-unit multifamily residential homes. The proposed site plan is shown in **Exhibit 2**.

The project will include the following off-site improvements:

- Widen Alessandro Boulevard at the project frontage to the ultimate width on the south half (67 feet from centerline to ROW) to provide curb-and-gutter, sidewalk, and two eastbound lanes.
- Widen Copper Cove Lane at the project frontage to the ultimate width on the north half (30 feet from centerline to ROW) and provide curb-and-gutter, sidewalk, and one westbound lane.
- Construct raised median islands along Alessandro Boulevard between Chervil Court and Lasselle Street.

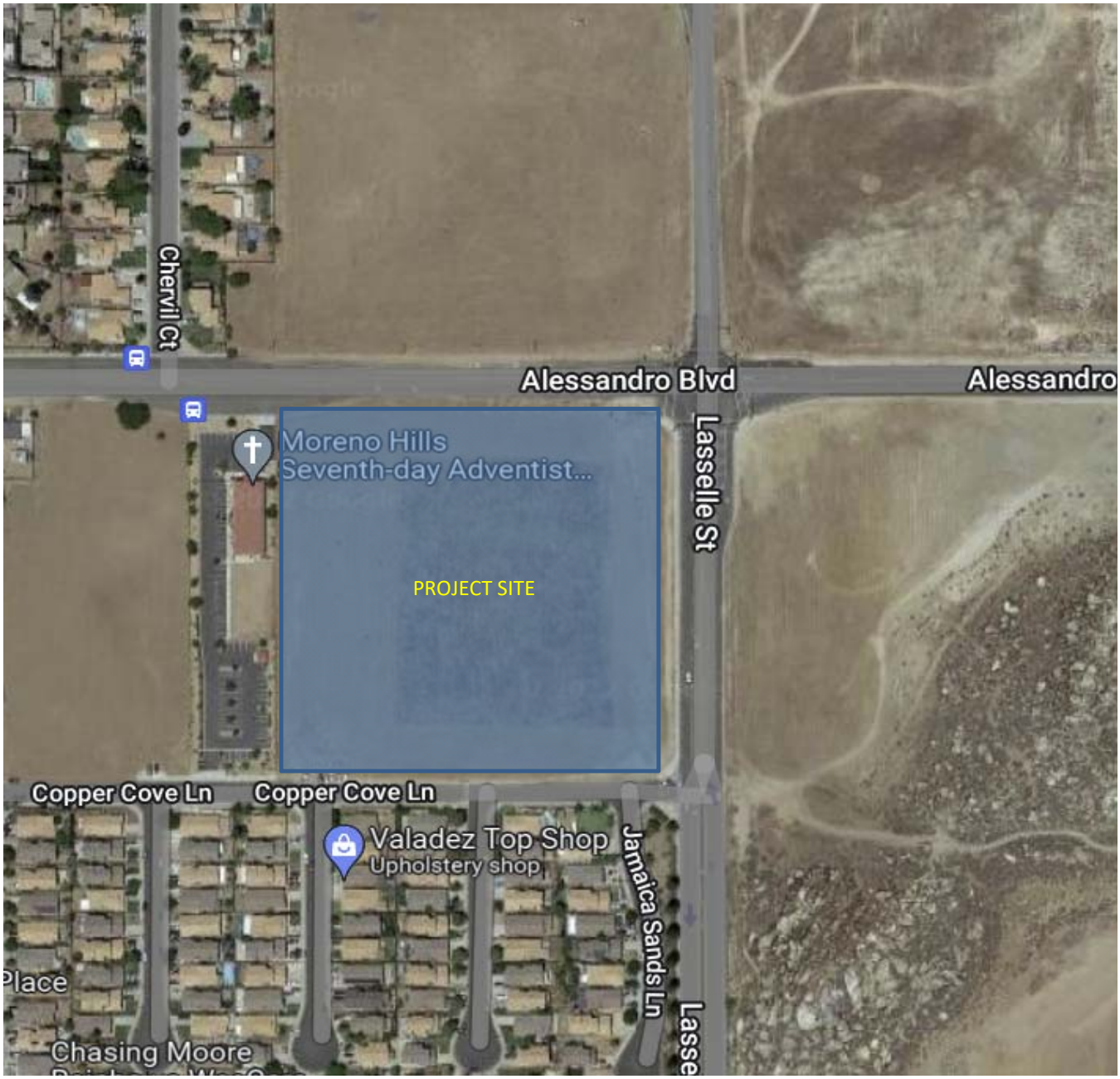
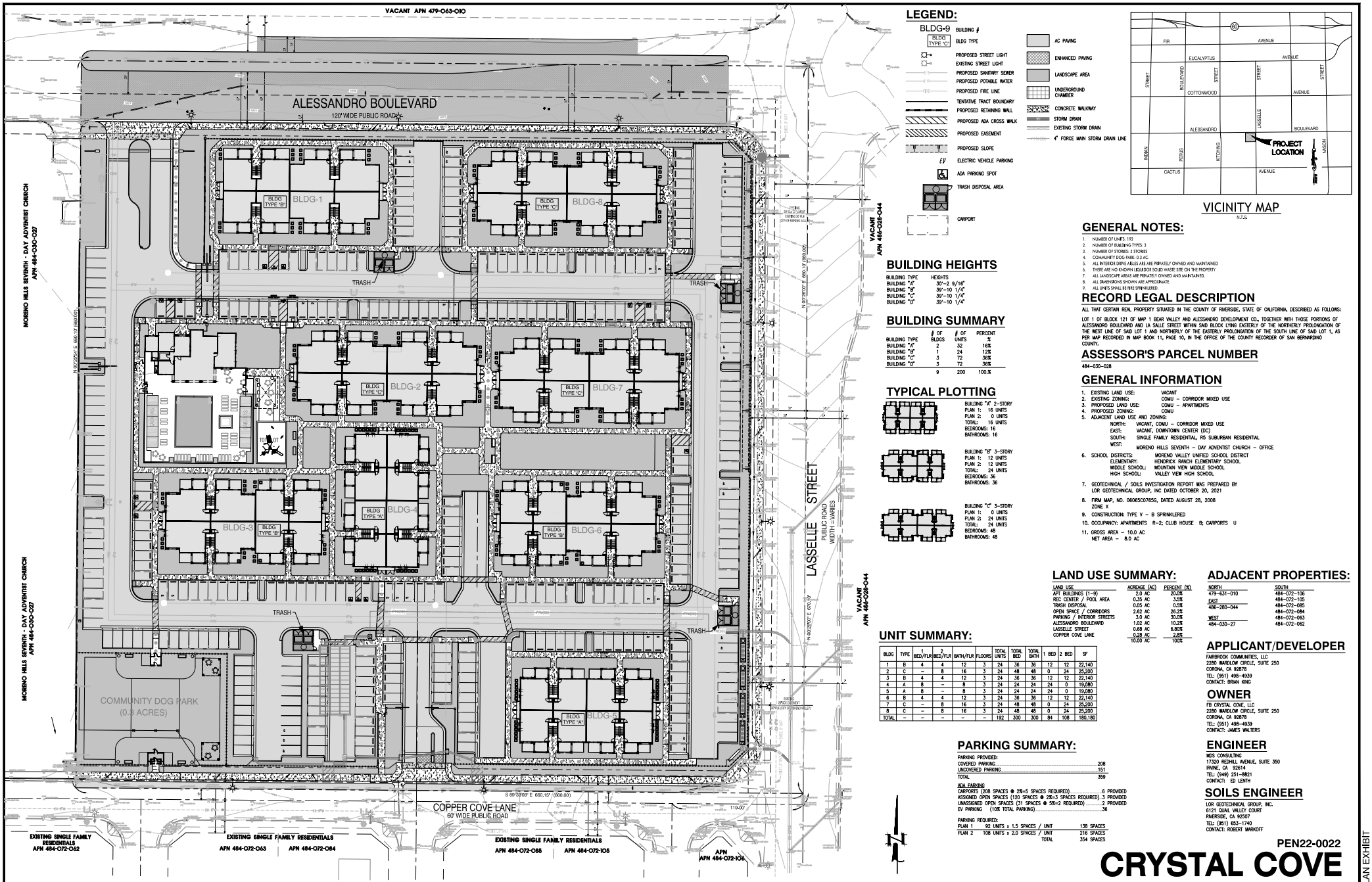


EXHIBIT 1. VICINITY MAP
NOT TO SCALE



LEGEND:

BLDG-9 BUILDING #
BLDG TYPE "C" BLDG TYPE
PROPOSED STREET LIGHT
EXISTING STREET LIGHT
PROPOSED SANITARY SEWER
PROPOSED POTABLE WATER
PROPOSED FIRE LINE
TENTATIVE TRACT BOUNDARY
PROPOSED RETAINING WALL
PROPOSED ADA CROSS WALK
PROPOSED EASEMENT
PROPOSED SLOPE
EV ELECTRIC VEHICLE PARKING
ADA PARKING SPOT
TRASH DISPOSAL AREA
CARPORT

AC PAVING
ENHANCED PAVING
LANDSCAPE AREA
UNDERGROUND CHAMBER
CONCRETE WALKWAY
STORM DRAIN
EXISTING STORM DRAIN
4" FORCE MAIN STORM DRAIN LINE

VICINITY MAP
N.T.S.

BUILDING HEIGHTS

BUILDING TYPE	HEIGHTS
BUILDING "A"	30'-2 9/16"
BUILDING "B"	39'-10 1/4"
BUILDING "C"	39'-10 1/4"
BUILDING "D"	39'-10 1/4"

BUILDING SUMMARY

BUILDING TYPE	# OF BLDGS	# OF UNITS	PERCENT %
BUILDING "A"	2	32	16%
BUILDING "B"	1	24	12%
BUILDING "C"	3	72	36%
BUILDING "D"	3	72	36%
	9	200	100.%

TYPICAL PLOTTING

BUILDING "A" 2-STORY
PLAN 1: 16 UNITS
PLAN 2: 0 UNITS
TOTAL: 16 UNITS
BEDROOMS: 16
BATHROOMS: 16

BUILDING "B" 3-STORY
PLAN 1: 12 UNITS
PLAN 2: 12 UNITS
TOTAL: 24 UNITS
BEDROOMS: 36
BATHROOMS: 36

BUILDING "C" 3-STORY
PLAN 1: 0 UNITS
PLAN 2: 24 UNITS
TOTAL: 24 UNITS
BEDROOMS: 48
BATHROOMS: 48

GENERAL NOTES:

1. NUMBER OF UNITS: 192
2. NUMBER OF BUILDING TYPES: 3
3. NUMBER OF STORIES: 3 STORIES
4. COMMUNITY DOG PARK: 0.3 AC.
5. ALL INTERIOR DRIVE AISLES ARE ARE PRIVATELY OWNED AND MAINTAINED
6. THERE ARE NO KNOWN LIQUADOR SOLID WASTE SITE ON THE PROPERTY
7. ALL LANDSCAPE AREAS ARE PRIVATELY OWNED AND MAINTAINED.
8. ALL DIMENSIONS SHOWN ARE APPROXIMATE.
9. ALL UNITS SHALL BE FIRE SPRINKLERED.

RECORD LEGAL DESCRIPTION

ALL THAT CERTAIN REAL PROPERTY SITUATED IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

LOT 1 OF BLOCK 121 OF MAP 1 BEAR VALLEY AND ALESSANDRO DEVELOPMENT CO., TOGETHER WITH THOSE PORTIONS OF ALESSANDRO BOULEVARD AND LA SALLE STREET WITHIN SAID BLOCK LYING EASTERLY OF THE NORTHERLY PROLONGATION OF THE WEST LINE OF SAID LOT 1 AND NORTHERLY OF THE EASTERLY PROLONGATION OF THE SOUTH LINE OF SAID LOT 1, AS PER MAP RECORDED IN MAP BOOK 11, PAGE 10, IN THE OFFICE OF THE COUNTY RECORDER OF SAN BERNARDINO COUNTY.

ASSESSOR'S PARCEL NUMBER

484-030-028

GENERAL INFORMATION

1. EXISTING LAND USE: VACANT
2. EXISTING ZONING: COMU – CORRIDOR MIXED USE
3. PROPOSED LAND USE: COMU – APARTMENTS
4. PROPOSED ZONING: COMU
5. ADJACENT LAND USE AND ZONING:
   - NORTH: VACANT, COMU – CORRIDOR MIXED USE
   - EAST: VACANT, DOWNTOWN CENTER (DC)
   - SOUTH: SINGLE FAMILY RESIDENTIAL, R5 SUBURBAN RESIDENTIAL
   - WEST: MORENO HILLS SEVENTH – DAY ADVENTIST CHURCH – OFFICE
6. SCHOOL DISTRICTS: MORENO VALLEY UNIFIED SCHOOL DISTRICT
   - ELEMENTARY: HENDRICK RANCH ELEMENTARY SCHOOL
   - MIDDLE SCHOOL: MOUNTAIN VIEW MIDDLE SCHOOL
   - HIGH SCHOOL: VALLEY VIEW HIGH SCHOOL
7. GEOTECHNICAL / SOILS INVESTIGATION REPORT WAS PREPARED BY LOR GEOTECHNICAL GROUP, INC DATED OCTOBER 20, 2021
8. FIRM MAP, NO. 06065C0765G, DATED AUGUST 28, 2008 ZONE X
9. CONSTRUCTION: TYPE V – B SPRINKLERED
10. OCCUPANCY: APARTMENTS R-2; CLUB HOUSE B; CARPORTS U
11. GROSS AREA – 10.0 AC
    NET AREA – 8.0 AC

LAND USE SUMMARY:

LAND USE	ACREAGE (AC)	PERCENT (%)
APT BUILDINGS (1-9)	2.0 AC	20.0%
REC CENTER / POOL AREA	0.35 AC	3.5%
TRASH DISPOSAL	0.05 AC	0.5%
OPEN SPACE / CORRIDORS	2.62 AC	26.2%
PARKING / INTERIOR STREETS	3.0 AC	30.0%
ALESSANDRO BOULEVARD	1.02 AC	10.2%
LASSELLE STREET	0.68 AC	6.80%
COPPER COVE LANE	0.28 AC	2.8%
	10.00 AC	100%

UNIT SUMMARY:

BLDG	TYPE	1 BED/FLR	2 BED/FLR	BATH/FLR	FLOORS	TOTAL UNITS	TOTAL BED	TOTAL BATH	1 BED	2 BED	SF
1	B	4	4	12	3	24	36	36	12	12	22,140
2	C	–	8	16	3	24	48	48	0	24	25,200
3	B	4	4	12	3	24	36	36	12	12	22,140
4	A	8	–	8	3	24	24	24	24	0	19,080
5	A	8	–	8	3	24	24	24	24	0	19,080
6	B	4	4	12	3	24	36	36	12	12	22,140
7	C	–	8	16	3	24	48	48	0	24	25,200
8	C	–	8	16	3	24	48	48	0	24	25,200
TOTAL	–	–	–	–	–	192	300	300	84	108	180,180

PARKING SUMMARY:

PARKING PROVIDED:
COVERED PARKING 208
UNCOVERED PARKING 151
TOTAL 359

ADA PARKING
CARPORTS (208 SPACES @ 2%=5 SPACES REQUIRED) ..... 6 PROVIDED
ASSIGNED OPEN SPACES (120 SPACES @ 2%=3 SPACES REQUIRED) ..... 3 PROVIDED
UNASSIGNED OPEN SPACES (31 SPACES @ 5%=2 REQUIRED) ..... 2 PROVIDED
EV PARKING (10% TOTAL PARKING) 36

PARKING REQUIRED:

PLAN 1	92 UNITS x 1.5 SPACES / UNIT	138 SPACES
PLAN 2	108 UNITS x 2.0 SPACES / UNIT	216 SPACES
	TOTAL	354 SPACES

ADJACENT PROPERTIES:

NORTH: 479-631-010
EAST: 486-280-044
WEST: 484-030-27
SOUTH: 484-072-106, 484-072-105, 484-072-085, 484-072-084, 484-072-063, 484-072-062

APPLICANT/DEVELOPER

FAIRBROOK COMMUNITIES, LLC
2280 WARDLOW CIRCLE, SUITE 250
CORONA, CA 92878
TEL: (951) 498-4939
CONTACT: BRIAN KING

OWNER

FB CRYSTAL COVE, LLC
2280 WARDLOW CIRCLE, SUITE 250
CORONA, CA 92878
TEL: (951) 498-4939
CONTACT: JAMES WALTERS

ENGINEER

MDS CONSULTING
17320 REDHILL AVENUE, SUITE 350
IRVINE, CA 92614
TEL: (949) 251-8821
CONTACT: ED LENTH

SOILS ENGINEER

LOR GEOTECHNICAL GROUP, INC.
6121 QUAIL VALLEY COURT
RIVERSIDE, CA 92507
TEL: (951) 653-1740
CONTACT: ROBERT MARKOFF

PREPARED BY:

MDS MORSE SCHULTZ
17320 Redhill Avenue Suite 350 Irvine, CA 92614 Voice: 949-251-8821
PLANNERS ENGINEERS SURVEYORS

EDWARD J. LENTH RCE 052496
EXP. DATE: DECEMBER 31, 2022
10/07/22

PREPARED FOR:

Empire CONSTRUCTION MANAGEMENT
FAIRBROOK COMMUNITIES LLC

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

Date	By	REVISIONS	App'd

PEN22-0022

CRYSTAL COVE
SITE PLAN

DATE PREPARED: OCTOBER 07, 2022

CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

SHEET 1 OF 1

SITE PLAN, SITE PLAN EXHIBIT

STUDY SCENARIOS

Based on the scoping agreement approved by the City of Moreno Valley, this study includes the following study scenarios:

i. Existing Conditions

ii. Existing Conditions plus Project

iii. Pre-Project Completion: Year 2024

iv. Post-Project Completion: Year 2024 plus Project

v. Post-Project Completion: Year 2024 plus Project with Mitigation, if necessary

This proposed development is consistent with the General Plan of the City of Moreno Valley. Long term scenarios at Horizon Year has been addressed by the regional planning agencies of the City of Moreno Valley and Riverside County, and therefore not discussed in this study.

According to the approved scoping agreement, shown in **Appendix A**, the following intersections were included in this study:

1. Alessandro Boulevard at Chervil Court
2. Alessandro Boulevard at Lasselle Street
3. Lasselle St at Copper Cove Lane
4. South Driveway at Copper Cove Lane
5. North Driveway Alessandro Boulevard

EXISTING CONDITIONS

Project site is an unimproved and vacant lot situated at the southwest corner of Alessandro Boulevard at Lasselle Street. Alessandro Boulevard is designated as a six-lane Divided Arterial in the east-west directions per City Standard Plan. At the project frontage, Alessandro Boulevard is currently undivided with one lane in each direction with a left turn lane. The posted speed limit is 45 mph.

Lasselle Street is classified as an Arterial in the north-south directions per City Standard Plan. At the project frontage, Lasselle Street is currently undivided with one lane in each direction with a left turn lane at the intersection. The posted speed limit is 40 mph north of Alessandro Boulevard and 45 mph south of Alessandro Boulevard.

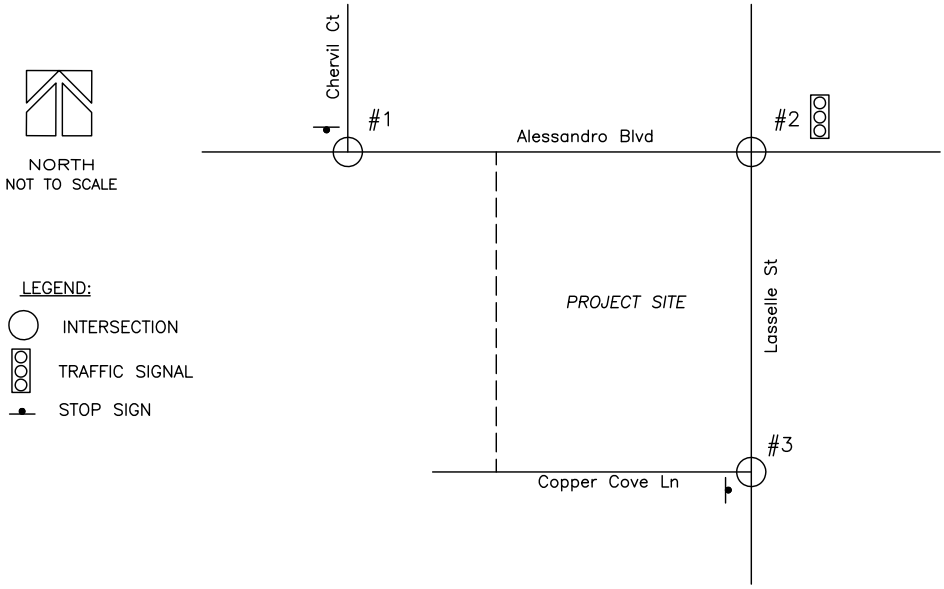
Copper Cove Lane is a local residential street. The intersection of Copper Cove Lane and Lasselle Street is controlled by a stop sign on Copper Cove Lane. The posted speed limit is 25 mph.

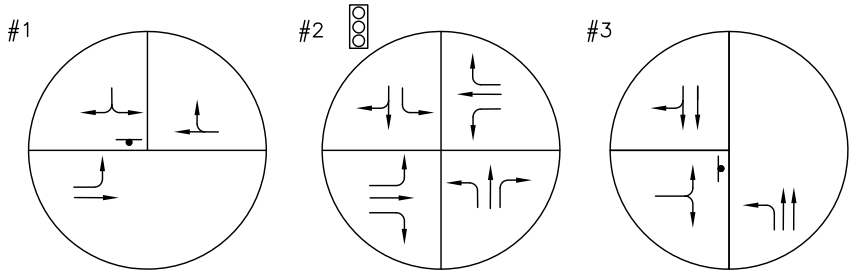
Traffic counts of AM and PM peak hour turning movements were collected on Wednesday, June 8, 2022. Lane configurations and traffic volumes at the study intersections are shown in **Exhibit 3**. Complete traffic data can be found in **Appendix B**.

The study intersections currently operate at LOS "D" or better for both AM and PM peak hours as shown in **Table 1**.The analysis worksheets can be found in **Appendix C**.

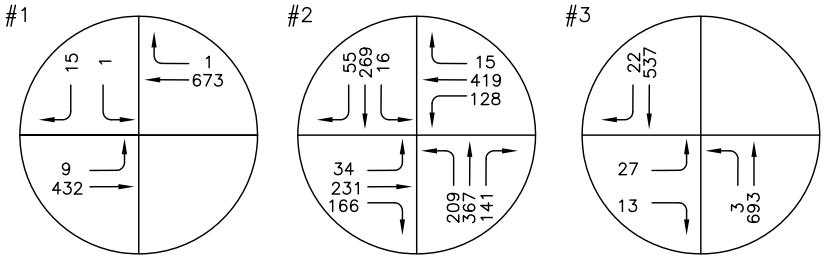
Table 1. Existing Conditions

No.	Intersection	Control Type	AM Peak		PM Peak	
			LOS	Delay	LOS	Delay
1	Alessandro Blvd at Chervil Ct	Stop Sign (on Chervil Ct)	B	14.6	B	13.6
2	Alessandro Blvd at Lasselle St	Traffic Signal	D	38.1	C	30.5
3	Lasselle St at Copper Cove Ln	Stop Sign (on Copper Cove Ln)	C	18.4	C	18.5

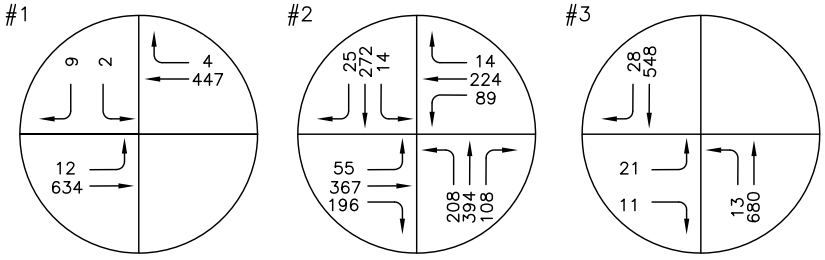




AM PEAK



PM PEAK



EXISTING LANE CONFIGURATION & TRAFFIC VOLUMES

CRYSTAL COVE APARTMENTS, MORENO VALLEY

K2 TRAFFIC ENGINEERING

EXHIBIT 3

TRIP GENERATION

Passenger vehicle trips are estimated using the rates and methodologies outlined in *"Trip Generation"*, 11th Edition, published by the Institute of Transportation Engineers (ITE). Applicable trip generation rates are shown in **Table 2**.

Table 2. Trip Generation Rate

LAND USE (ITE CODE)	UNIT	DAILY	AM PEAK HOUR			PM PEAK HOUR		
			Rate	IN	OUT	Rate	IN	OUT
Multifamily Housing (Low-Rise) (220)	Dwelling unit	6.74	0.40	24%	76%	0.51	63%	37%

The project is expected to generate 19 inbound and 61outbound trips in the AM peak hour, 64 inbound and 38 outbound trips in the PM peak hour, and 1,348 daily trips. The projected trips associated with the project are provided in **Table 3**.

Table 3. Project Trip Generation

Land Use	Unit	Quantity	AM Peak Hour			PM Peak Hour			Daily
			Total	In	Out	Total	In	Out	
Multifamily Housing (Low-Rise) (220)	Dwelling unit	200	80	19	61	102	64	38	1,348

TRIP DISTRIBUTION

Trip distribution represents the directional orientation of traffic to and from the proposed project. Directional orientation is largely influenced by the geographical location of the site, among many other factors. The trip distribution pattern for the project is illustrated on **Exhibit 4**.

TRAFFIC ASSIGNMENT

The traffic assignment to and from the site has been based upon the results of trip generation, trip distribution, and access layouts. **Exhibit 5** illustrates the traffic assignment of the proposed project for the AM and PM peak hours.

EXHIBIT 4. TRIP DISTRIBUTION

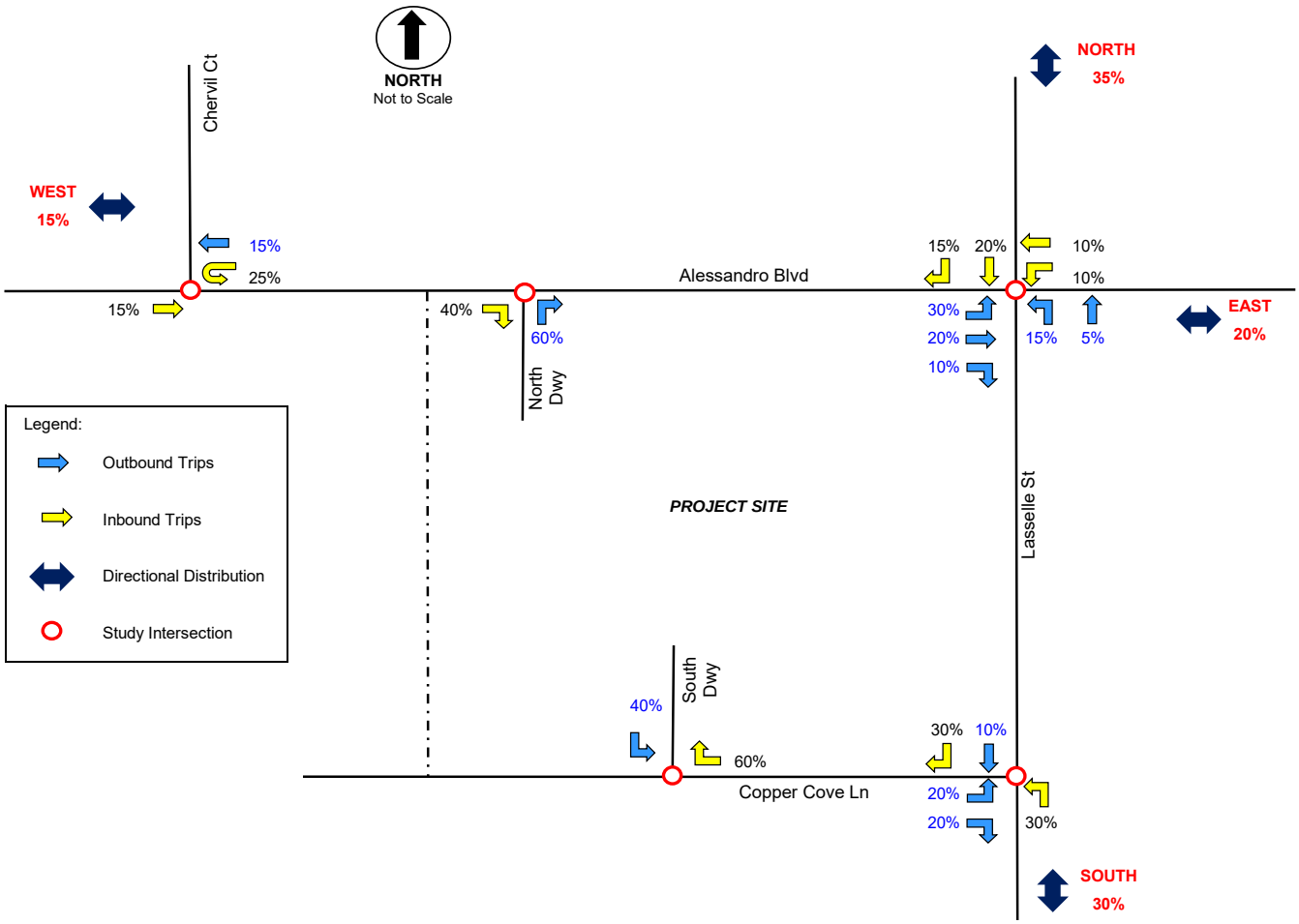
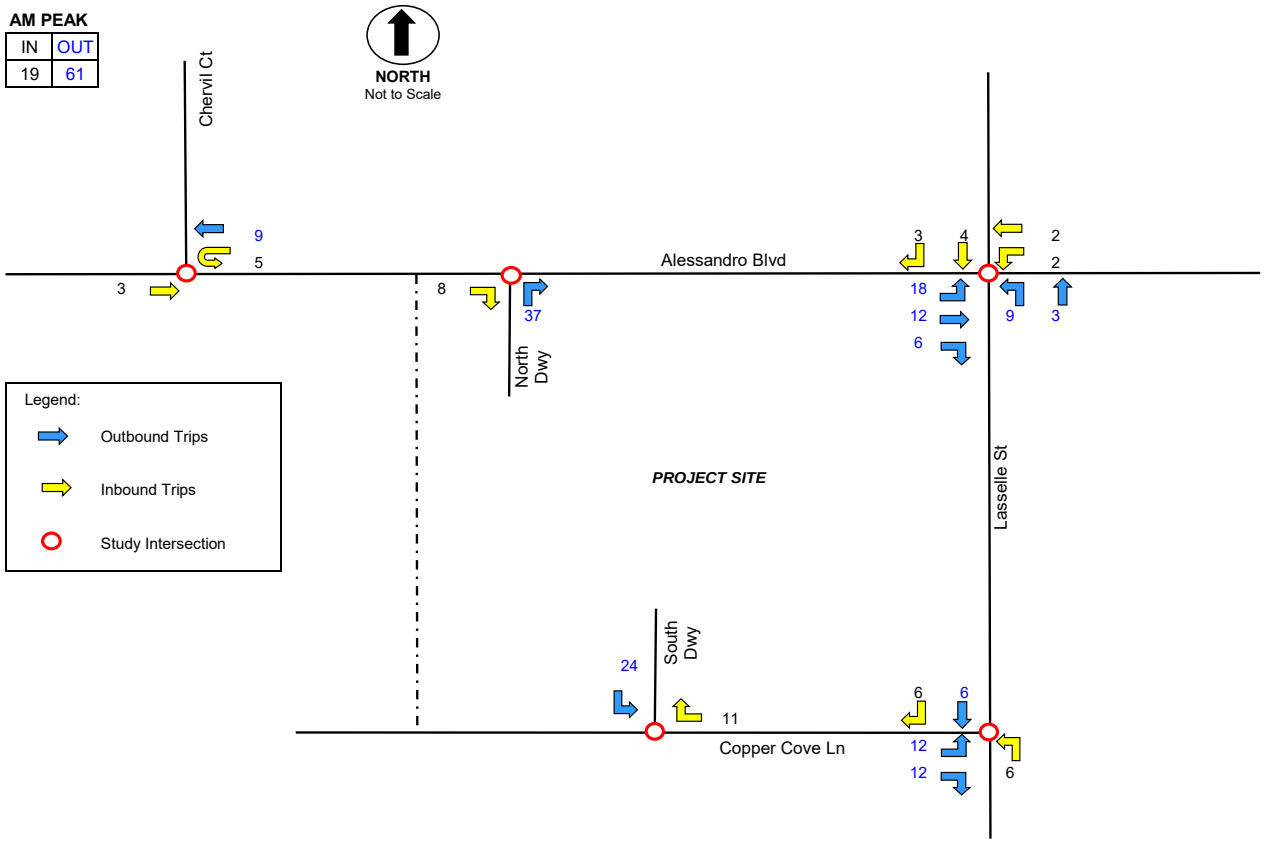


EXHIBIT 5. TRAFFIC ASSIGNMENT

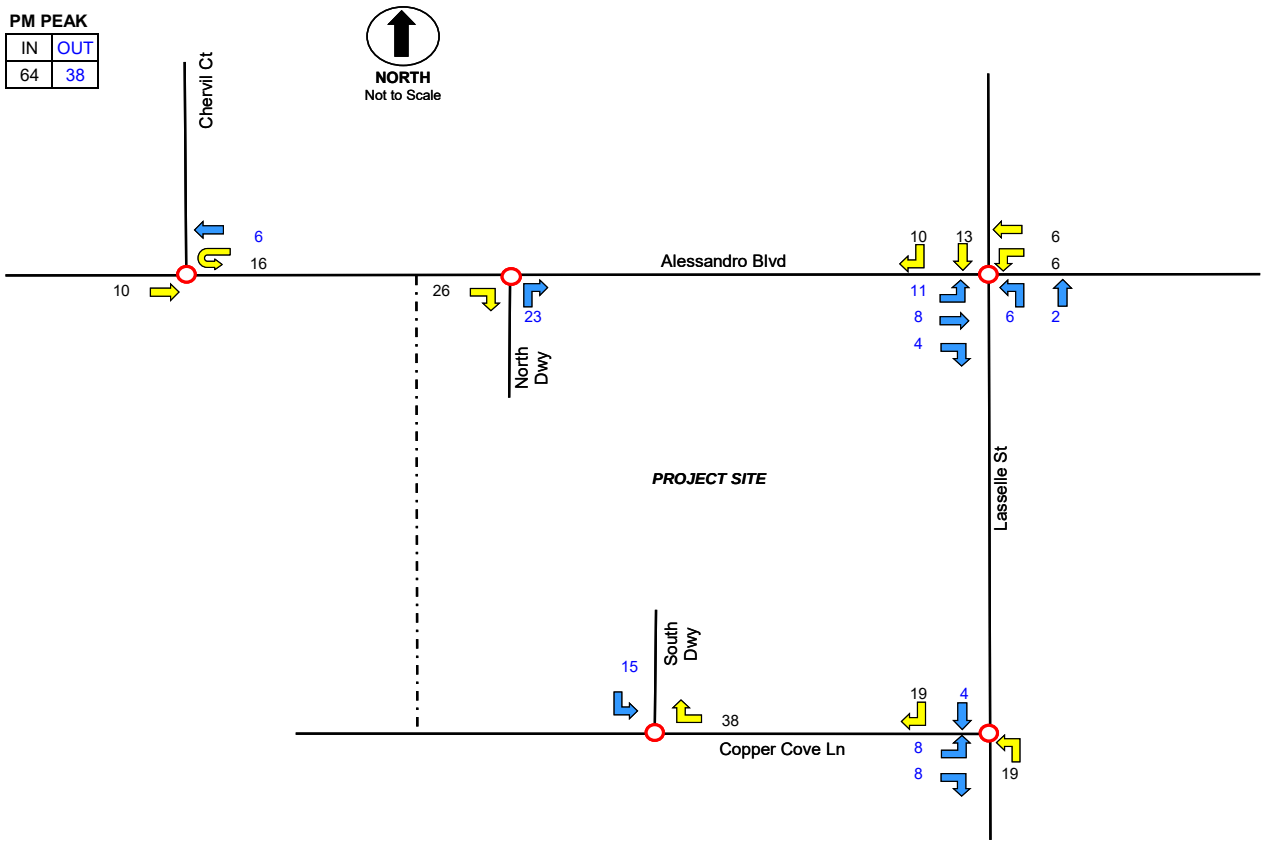
AM PEAK

IN	OUT
19	61



PM PEAK

IN	OUT
64	38

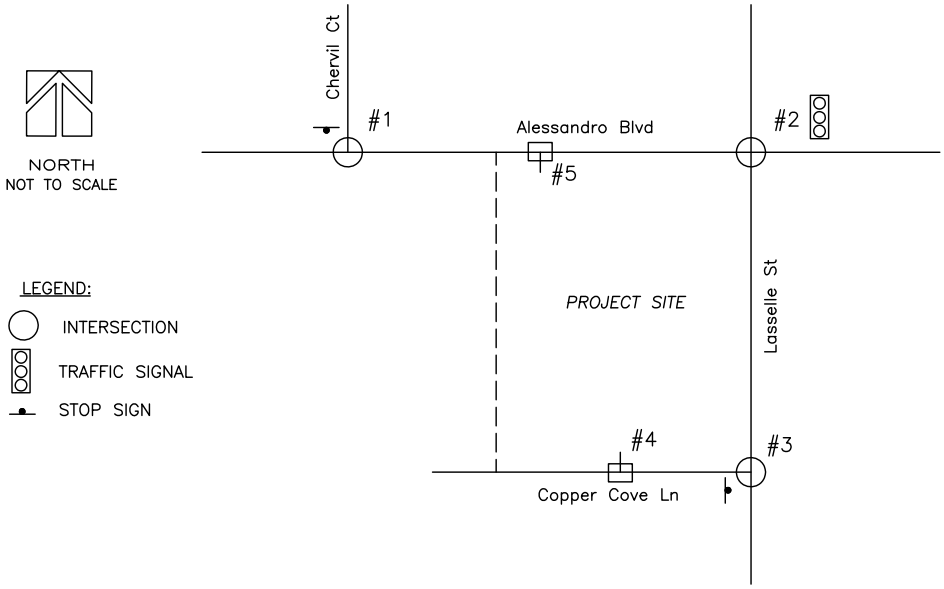


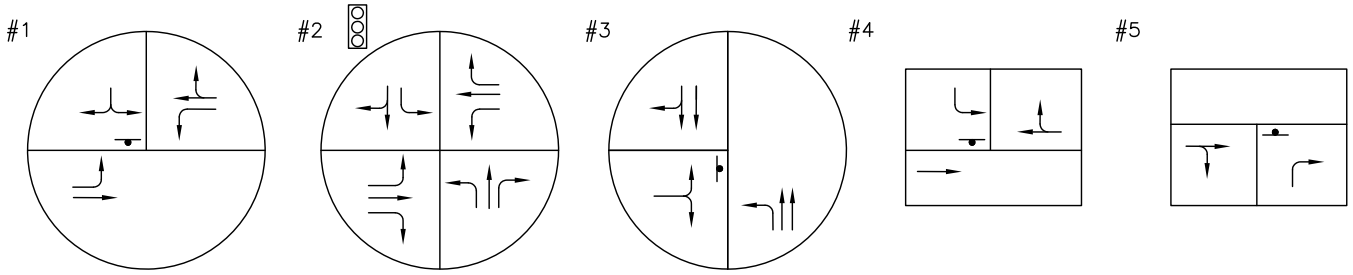
EXISTING CONDITIONS PLUS PROJECT

Traffic volumes at the study intersections for existing conditions plus project are shown in **Exhibit 6**. The level of service and delays are shown in **Table 4**. All study intersections will remain operating at LOS D or better for the AM and PM peak hours in this scenario. The analysis worksheets can be found in **Appendix C**.

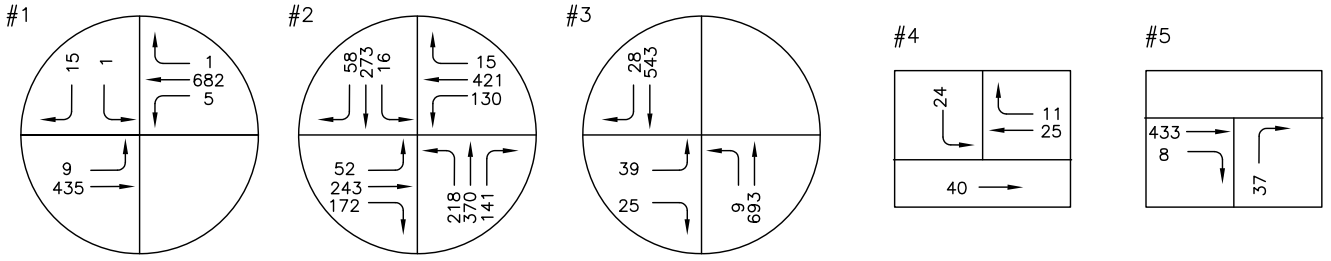
Table 4. Existing Conditions Plus Project

No.	Intersection	AM Peak		PM Peak	
		LOS	Delay	LOS	Delay
1	Alessandro Blvd at Chervil Ct	B	14.7	B	13.9
2	Alessandro Blvd at Lasselle St	D	38.4	C	31.9
3	Lasselle St at Copper Cove Ln	C	19.5	C	20.3
4	South Driveway at Copper Cove Ln	A	9.0	A	9.1
5	North Driveway at Alessandro Blvd	B	11.6	B	13.8

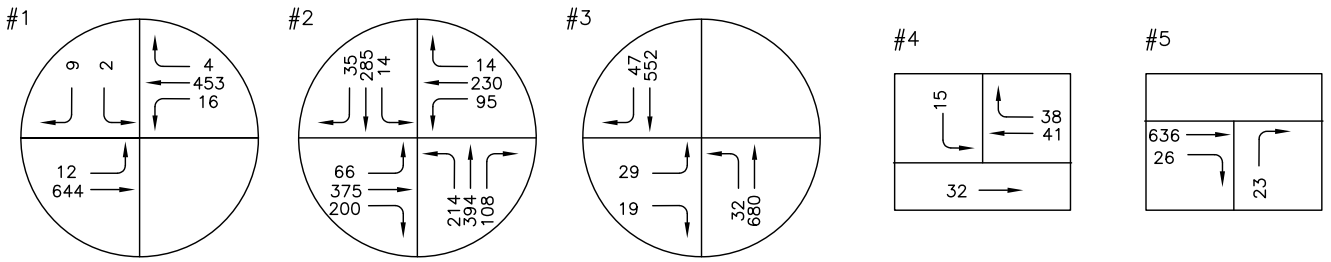




AM PEAK



PM PEAK



EXISTING (2018) PLUS PROJECT TRAFFIC

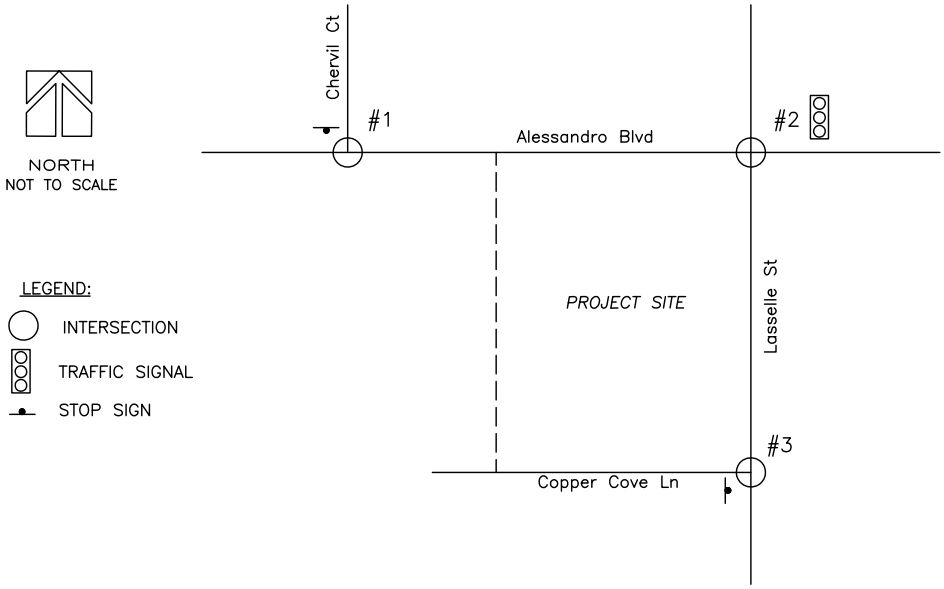
CRYSTAL COVE APARTMENTS, MORENO VALLEY

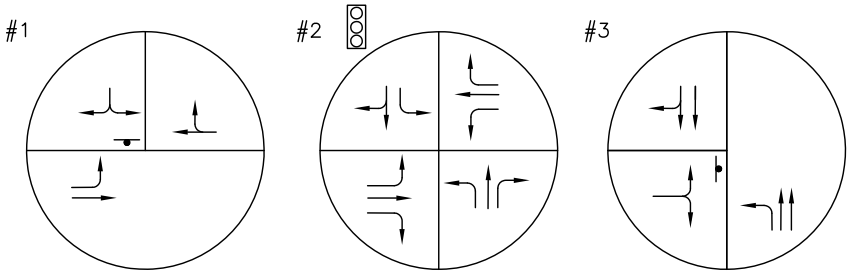
PRE-PROJECT COMPLETION

Traffic conditions prior to completion of the proposed development is estimated by applying an annual growth rate of two percent (2%) over existing traffic counts for year 2024 conditions. Traffic volumes for the pre-project completion are illustrated in **Exhibit 7**.The level of services and intersection delays are shown in **Table 5.** The analysis worksheets can be found in **Appendix C**. All studied intersections will maintain level of service "D" or better.

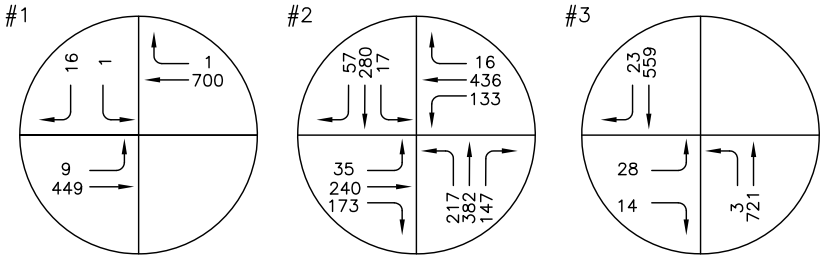
Table 5. Pre-Project Completion(2024) Level of Service

No.	Intersection	AM Peak		PM Peak	
		LOS	Delay	LOS	Delay
1	Alessandro Blvd at Chervil Ct	C	15.0	B	13.9
2	Alessandro Blvd at Lasselle St	D	38.6	C	31.7
3	Lasselle St at Copper Cove Ln	C	19.8	C	19.6

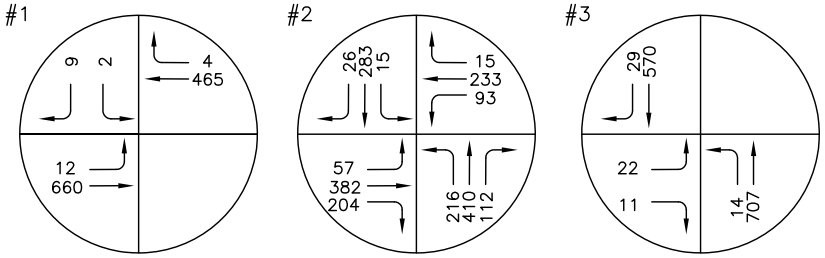




AM PEAK



PM PEAK



PROJECT OPENING YEAR TRAFFIC VOLUMES

CRYSTAL COVE APARTMENTS, MORENO VALLEY

K2 TRAFFIC ENGINEERING

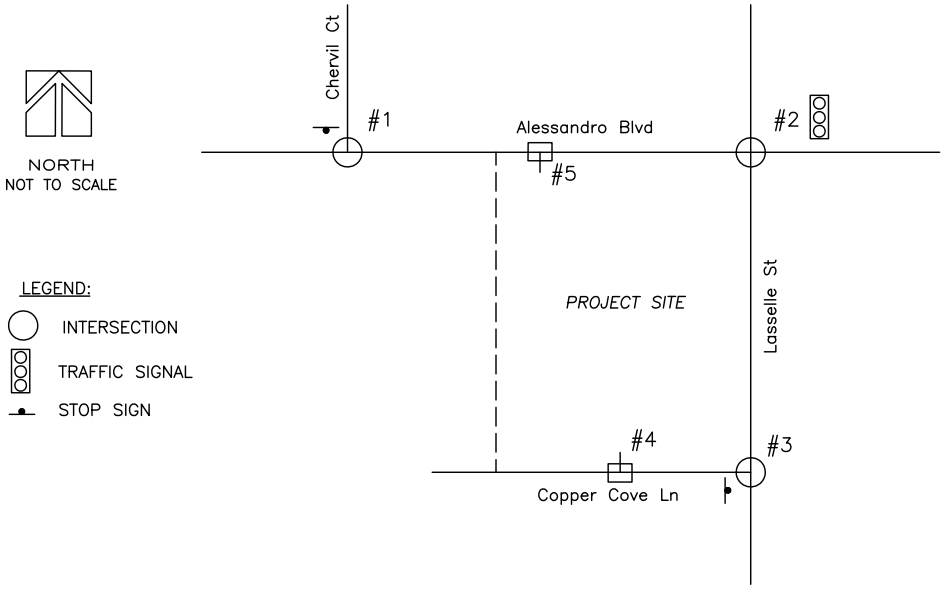
EXHIBIT 7

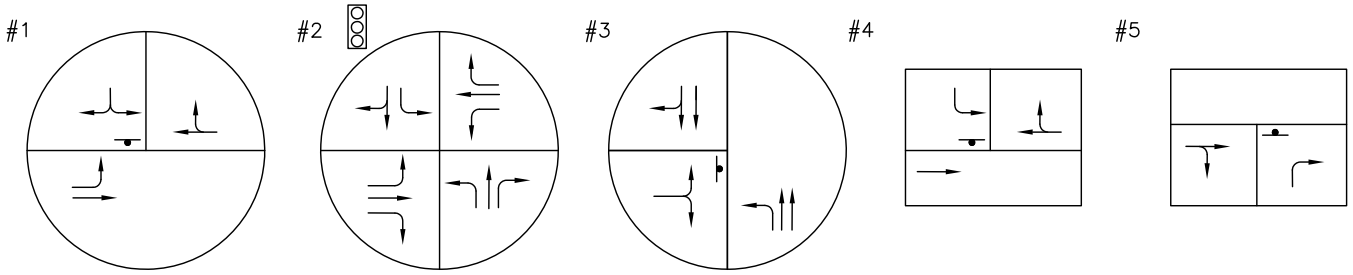
POST-PROJECT COMPLETION

Traffic volumes for year 2025 after project completion (existing plus ambient growth plus cumulative plus project) are illustrated in **Exhibit 8**.The level of services and intersection delays are shown in **Table 6**. Analysis worksheets are provided in **Appendix C**.

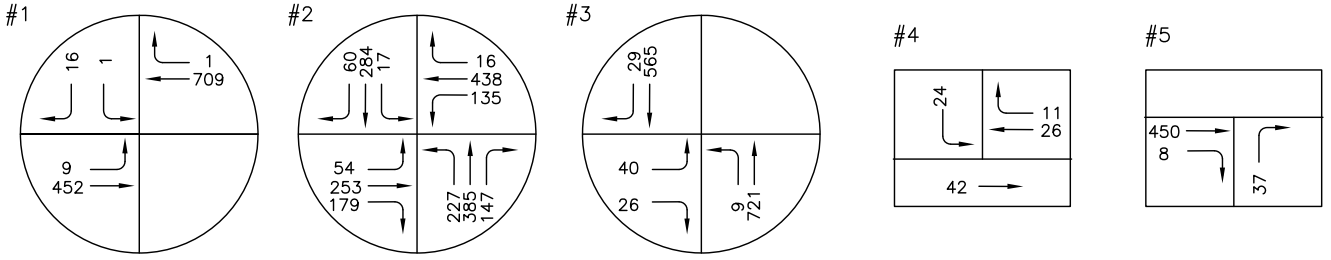
Table 6. Post-Project Completion (2024) Level of Service

No.	Intersection	AM Peak		PM Peak	
		LOS	Delay	LOS	Delay
1	Alessandro Blvd at Chervil Ct	C	15.2	B	14.3
2	Alessandro Blvd at Lasselle St	D	39.3	C	33.5
3	Lasselle St at Copper Cove Ln	C	20.5	C	21.3
4	South Driveway at Copper Cove Ln	A	9.0	A	9.1
5	North Driveway at Alessandro Blvd	B	11.7	B	14.1

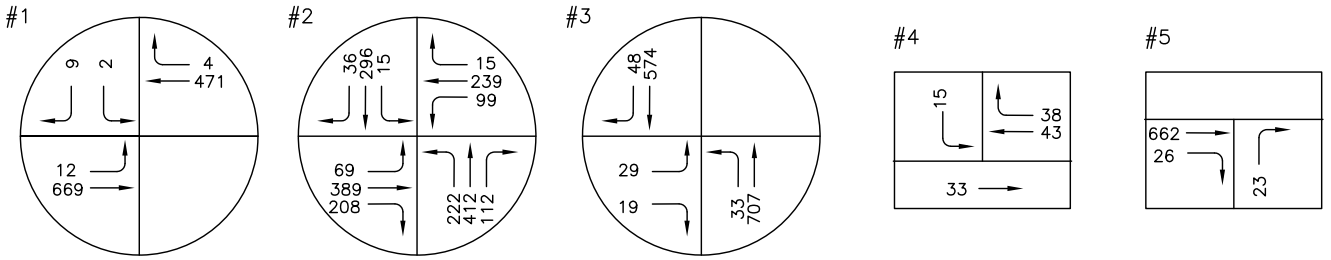




AM PEAK



PM PEAK



PROJECT OPENING YEAR PLUS PROJECT TRAFFIC VOLUMES

CRYSTAL COVE APARTMENTS, MORENO VALLEY

SIGNIFICANT IMPACT ANALYSIS

The City's Level of Service Standards, as published in the City of Moreno Valley General Plan are shown in **Exhibit 9** The operational goal and intersection requirements are LOS D along Alessandro Boulevard and LOS C for all other study intersections.

To determine whether the addition of project-generated trips will result in a significant impact, the following criteria are used when identifying operational deficiency for signalized intersections:

- Any signalized study intersection operating at acceptable LOS without project traffic in which the addition of project traffic causes the intersection to degrade to unacceptable LOS.
- Any signalized study intersection that is operating at unacceptable LOS without project traffic where the project increases delay by 5.0 or more seconds

The following criteria are used when identifying operational deficiency for unsignalized intersections:

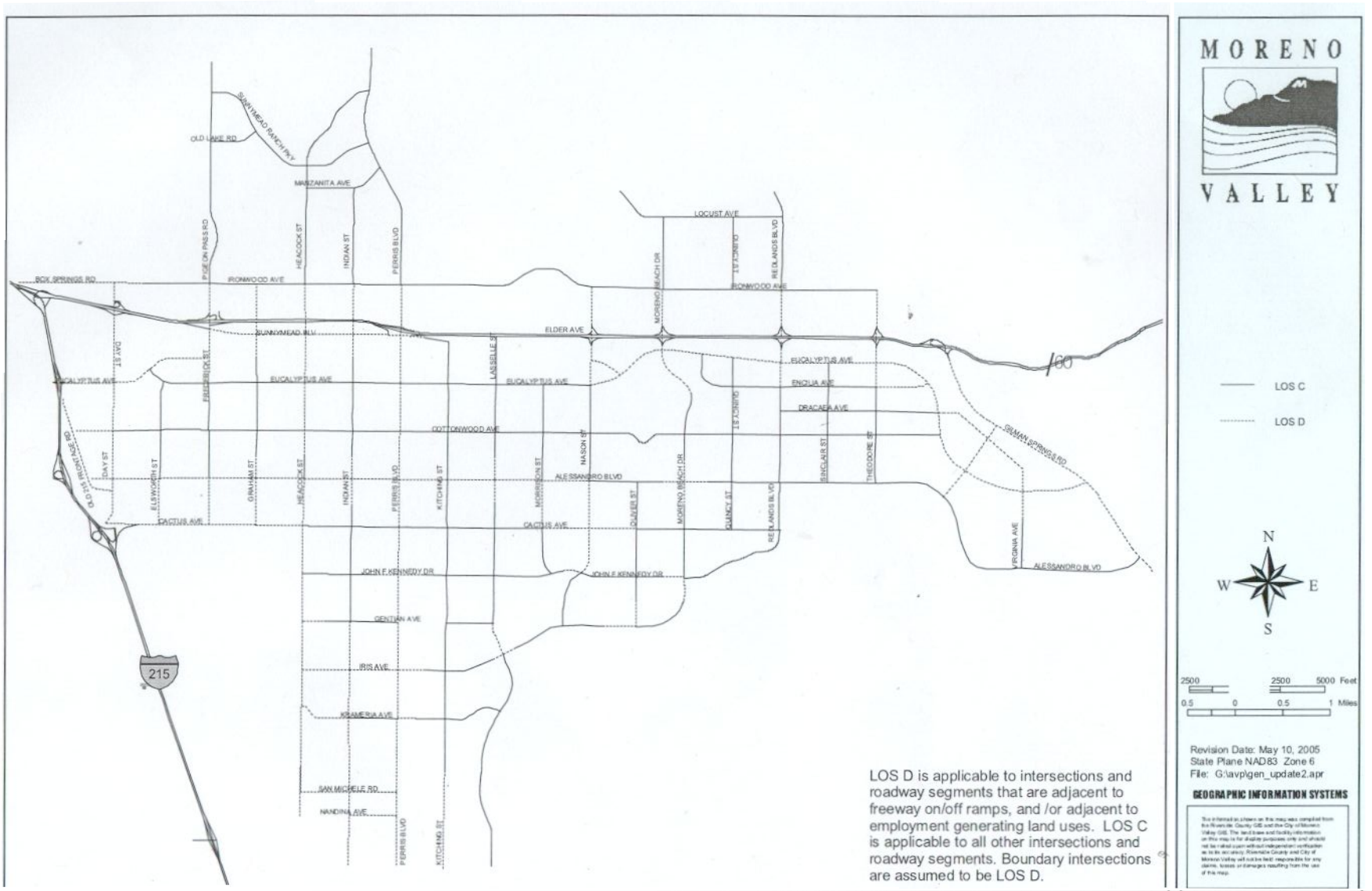
a) The addition of project related traffic causes the intersection to degrade from an acceptable LOS to unacceptable LOS.

OR

b) The project adds 5,0 seconds or more of delay to an intersection that is already projected to operate without project traffic at unacceptable LOS,

AND

c) The intersection meets the peak hour traffic signal warrant after the addition of project traffic.



Source: Urban Crossroads, June 2004.

Figure 5.2-7
LOS Standards

EXHIBIT 9. MORENO VALLEY LOS STANDARDS

At the project opening year (2024), the project will have no or less than significant traffic impact at the study intersections, as shown in **Table 7**. Mitigation measure is therefore not required.

Table 7. Project Impact Analysis

Intersection	Control Type	Pre-Project Conditions		Post Project Conditions			LOS Degrade	Significant Impact
		LOS	Delay	LOS	Delay	Target LOS		
AM PEAK								
1.Alessandro Blvd at Chervil Ct	TWSC	C	15.0	C	15.2	D	No	No
2. Alessandro Blvd at Lasselle St	TS	D	38.6	D	39.3	D	No	No
3. Lasselle St at Copper Cove Ln	TWSC	C	19.8	C	20.5	D	No	No
PM PEAK								
1.Alessandro Blvd at Chervil Ct	TWSC	B	13.9	B	14.3	D	No	No
2. Alessandro Blvd at Lasselle St	TS	C	31.7	C	33.5	D	No	No
3. Lasselle St at Copper Cove Ln	TWSC	C	19.6	C	21.3	D	No	No

QUEUE ANALYSIS

The study examined the 95th percentile queue for left-turn pockets at the project-adjacent intersection of Lasselle Street and Alessandro Boulevard in the AM and PM peak hours. The queuing conditions are shown in **Table 8**. Queue analysis outputs can be found in **Appendix D.**

Table 8. Queue Analysis - After Project Completion

Intersection #2	Turn Movement	95th Percentile Queue (ft) AM Peak	95th Percentile Queue (ft) PM Peak	Existing Turn Bay Length (ft)	Exceeds Capacity
Alessandro Blvd at Lasselle St	EBL	80	74	180	No
	WBL	**166**	131	160	**Yes**
	NBL	**257**	**234**	200	**Yes**
	SBL	33	25	150	No

Generally, the excess demand of left turns will be addressed in the ultimate lane configuration with the addition of dual turn lanes and enhanced signal phasing. As an interim solution to accommodate left-turn queuing, the following improvements are recommended:

- Provide 200 feet of storage length for westbound left-turn lane on Alessandro Boulevard at Lasselle Street.
- Provide 260 feet of storage length for northbound left-turn lane on Lasselle Street at Alessandro Boulevard.

PEAK-HOUR SIGNAL WARRANT

According to the approved scoping agreement, this study examined peak-hour signal warrant for the following stop-controlled intersection:

#1. Alessandro Boulevard at Chervil Court

#3. Lasselle Street at Copper Cove Lane

The worksheets of peak-hour signal warrant (Warrant 3) are shown in **Appendix E**. The results indicate that these stop-controlled intersections will **NOT** satisfy the traffic signal warrant after completion of the project.

PEDESTRIAN, BICYCLE, PUBLIC TRANSIT

Sidewalks will be constructed at the project frontage along Alessandro Boulevard and Copper Cove Lane. Lasselle Street along the project frontage has already been built to its ultimate width with a sidewalk and bicycle lane in place. The intersection of Alessandro Boulevard and Lasselle Street will provide pedestrian crosswalk for each approach with ADA-compliant accessible ramp at each corner along with pedestrian push buttons to activate pedestrian crossing phases. Lasselle Street provides Class 2 Bike Lanes south of Alessandro Boulevard. Public transportation is provided currently on Alessandro Boulevard operated by Riverside Transit Agency (RTA) Bus Route 20.

SITE ACCESS

Site access is provided two access driveways: North Driveway on Alessandro Boulevard and South Driveway on Copper Cove Lane. North Driveway allows right-in-right-out access only with a proposed raised median on Alessandro Boulevard. The project will install two speed limit signs with radar speed display on Copper Cove Lane to promote traffic calming.

APPENDIX A

APPROVED SCOPING AGREEMENT

6/3/22

Prepared On: 04/26/2022

EXHIBIT A

Project Scoping Form

This scoping form shall be submitted to the Lead Agency to assist in identifying infrastructure improvements that may be required to support traffic from the proposed project.

Project Identification:

Case Number:	PEN22-0022
Related Cases:	
SP No.	
EIR No.	~~PEN22-0022~~
GPA No.	
CZ No.	
Project Name:	Crystal Cove Apartments
Project Address:	Southwest Corner of Alessandro Blvd at Laselle St, Moreno Valley (APN: 848-030-028)
Project Opening Year:	2024
Project Description:	Proposed 200-unit multifamily apartment, including 32 units in two-story buildings and 168 units in three-story buildings.

	Consultant:	Developer:
Name:	K2 Traffic Engineering, Inc. (by Kay Hsu, PE, TE)	Fairbrook Community, LLC (by James Walter)
Address:	1442 Irvine Blvd, Suite 210	151 Kalmus Drive, Suite A202
	Tustin, CA 92780	Costa Mesa, CA 92626
Telephone:	714-832-2116	949-274-3526
Email:	khsu@k2traffic.com	jwalters@fairbrookcommunities.com

Trip Generation Information:

Trip Generation Data Source: ITE Trip Generation Manual, 11th Edition

The City reserves the right to use, share, and reproduce the information including, but not limited to traffic counts, exhibits, and surveys provided in all submitted traffic studies and VMT assessments.

Current General Plan Land Use: Multi-Family

Proposed General Plan Land Use: Multi-Family

Current Zoning: R-30

Proposed Zoning: R-30

	Existing Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips	-	-	-	19	61	80
PM Trips	-	-	-	64	38	102

SEE EXHIBIT 2 FOR TRIP GENERATION

Trip Internalization: ☐ Yes ☑ No (_____% Trip Discount)

Pass-By Allowance: ☐ Yes ☑ No (_____% Trip Discount)

Potential Screening Checks

Is your project screened from specific analyses (see Page 3 of the guidelines related to LOS assessment and Pages 22-23 for VMT screening criteria).

Is the project screened from LOS assessment? ☐ Yes ☑ No

LOS screening justification (see Page 3 of the guidelines): Not applicable.

Is the project screened from VMT assessment? ☑ Yes ☐ No

VMT screening justification (see Pages 22-23 of the guidelines):
1. Within a low VMT generating TAZ based on Total VMT
2. Within a low VMT generating TAZ based on Residential Home-Based VMT
3. Within a low VMT generating TAZ based on Home-Based Work VMT

SEE EXHIBIT 3

Level of Service Scoping

- Proposed Trip Distribution (Attach Graphic for Detailed Distribution):

North	South	East	West
35%	30%	20 %	15%

SEE EXHIBIT 4 FOR TRIP DISTRIBUTION

Link level of service and data collection:

____ will be required

✓ will not be required

- Attach list of study intersections (and roadway segments if applicable)
- Attach site plan **SEE EXHIBIT 1**
- Other specific items to be addressed:
  - ✓ Site access
  - ✓ On-site circulation
  - ~~o Parking~~
  - ✓ Consistency with Plans supporting Bikes/Peds/Transit
  - ✓ Other **SEE EXHIBIT 5 FOR ADDITIONAL STUDY INFORMATION**
- Date of Traffic Counts New counts will be collected.
- Attach proposed analysis scenarios (years plus proposed forecasting approach)
- Attach proposed phasing approach (if the project is phased) N/A

VMT Scoping

For projects that are not screened, identify the following: **(N/A)**

- Travel Demand Forecasting Model Used _____
- Attach WRCOG Screening VMT Assessment output or describe why it is not appropriate for use
- Attach proposed Model Land Use Inputs and Assumed Conversion Factors (attach)

EXHIBIT 1. PROPOSED SITE PLAN

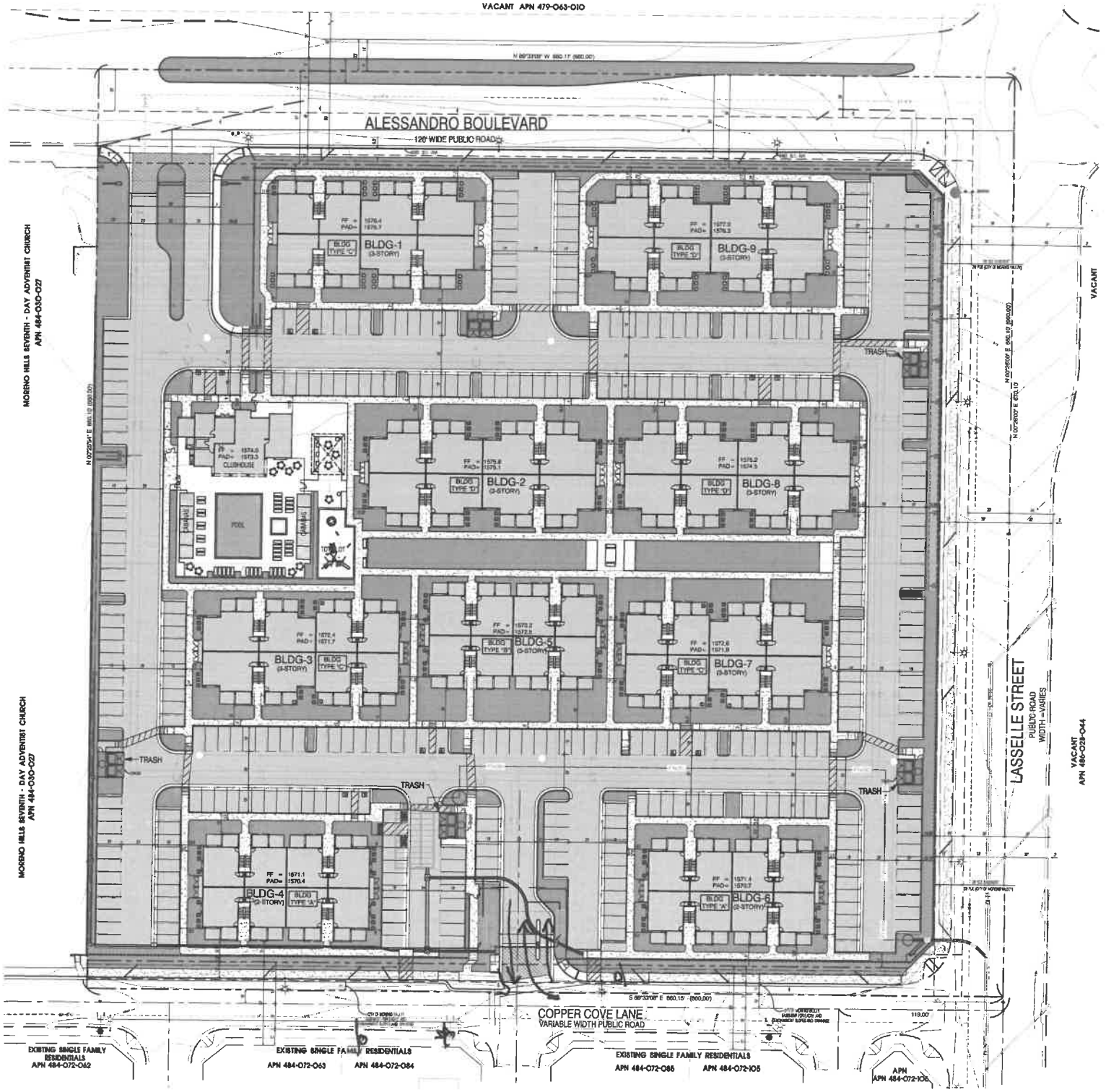


EXHIBIT 2. TRIP GENERATION

TABLE 1. TRIP GENERATION RATE (ITE)

Land Use	Unit	Daily	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Multifamily Housing (Low-Rise) (220)	Dwelling Unit	6.74	0.40	24%	76%	0.51	63%	37%

Source: ITE Trip Generation Manual, 11th Edition

TABLE 2. NET TRIP GENERATION

LAND USE	UNIT	Quantity	AM Peak			PM Peak			Daily
			Total	In	Out	Total	In	Out	
Multifamily Housing (Low-Rise)[1] (220)	Dwelling Unit	200	80	19	61	102	64	38	1348

EXHIBIT 3. WRCOG VMT SCREENING TOOL OUTPUT

APN:484030028; TAZ:3,828

Within a Transit Priority Area (TPA)?

No (Fail)

Within a low VMT generating TAZ based on Total VMT?

Yes (Pass)

Jurisdictional average 2012 daily total VMT per service population = 24.49

Project TAZ 2012 daily total VMT per service population =17.48

Within a low generating TAZ based on Residential Home-Based VMT?

Yes (Pass)

Jurisdictional average 2012 daily residential home-based VMT per capita = 12.79

Project TAZ 2012 daily residential home-based VMT per capita= 11.09

Within a low VMT generating TAZ based on Home-Based WorkVMT?

Yes (Pass)

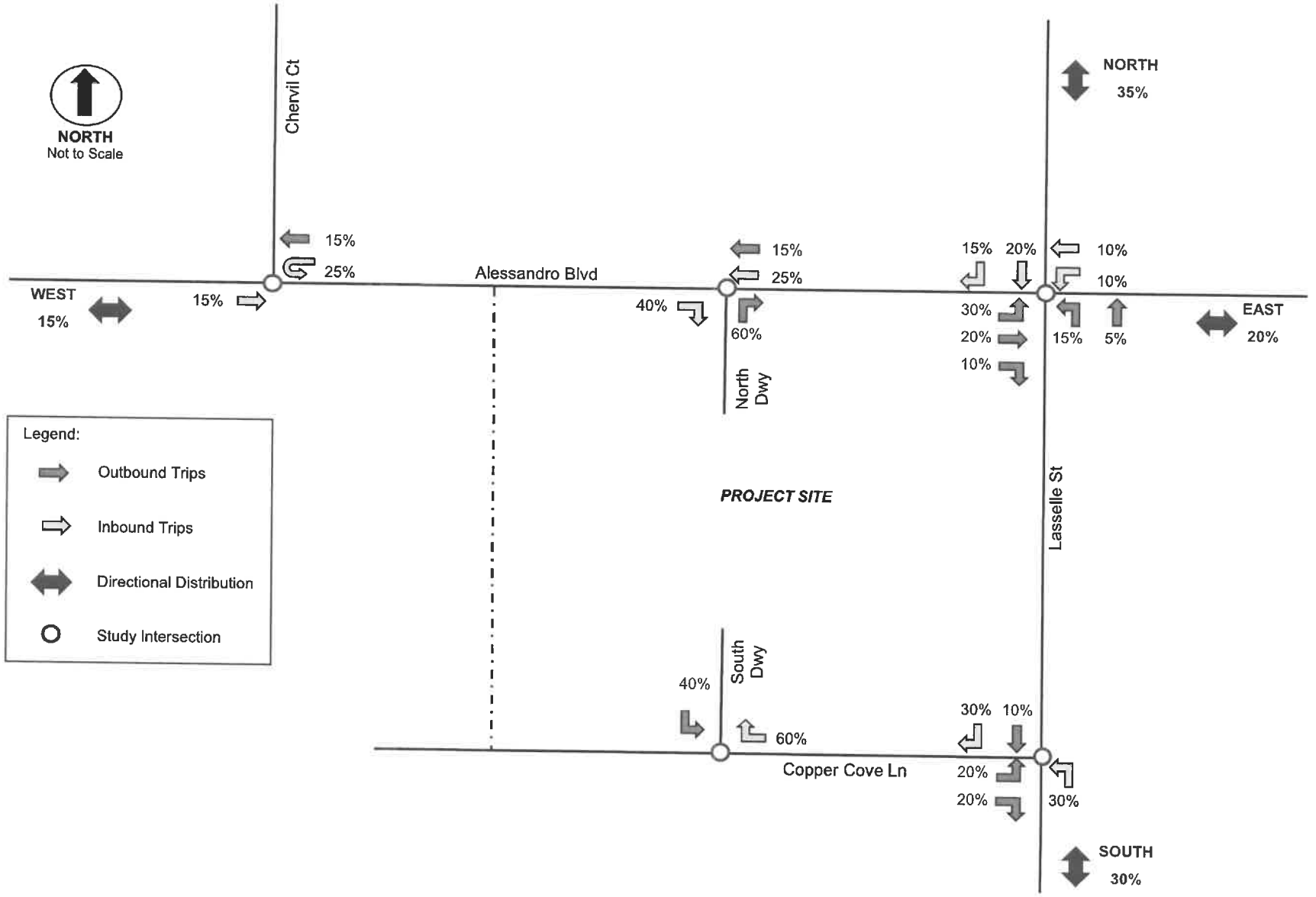
Jurisdictional average 2012 daily home-based work VMT per worker = 11.01

Project TAZ 2012 daily home-based work VMT per worker = 6.11

Notes:

- TPA designation is based on October 2018 conditions.
- Screening results are based on location of parcel centroids. If results are desired considering the full parcel, please refer to the associated map layers to visually review parcel and TAZ boundary relationship.
- If VMT screening is desired for current baseline conditions, contact WRCOG for 2012 and 2040 VMT data. Interpolated VMT results can be obtained using the complete data set.
- VMT results do not account for full length of trips that occur beyond the SCAG region.

EXHIBIT 4. TRIP DISTRIBUTION



K2 Traffic Engineering, Inc.

EXHIBIT 5. ADDITIONAL STUDY INFORMATION

A. Study Intersections:

1) Copper Cove Lane at Laselle Street
2) Alessandro Boulevard at Laselle Street
3) Alessandro Boulevard at Chervil Court
4) Alessandro Boulevard at North Driveway
5) Copper Cove Lane at South Driveway

B. Annual Ambient Growth Rate: 2%

C. List of Anlysis Scenarios:

1) Existing: Year 2022
2) Existing: Year 2022 + Project Condition
3) Pre-Project Conditions: Year 2024 (Existing + Growth + Cumulative)
4) Post-Project Conditions: Year 2024 (Pre-Project Conditions + Project)
5) Post-Project Conditions: Year 2024 with Mitigation Measure, if necessary

D. NOTES:

1) Project will be constructed in one phase
2) Analyze and provide recommendation for traffic calming features on Copper Cove Lane
3) Include queue analysis for signalized study intersection(s)
4) Include peak hour signal warrant for stop-controlled study intersection(s)

APPENDIX B

TURNING MOVEMENT COUNT DATA

INTERSECTION TURNING MOVEMENT COUNTS

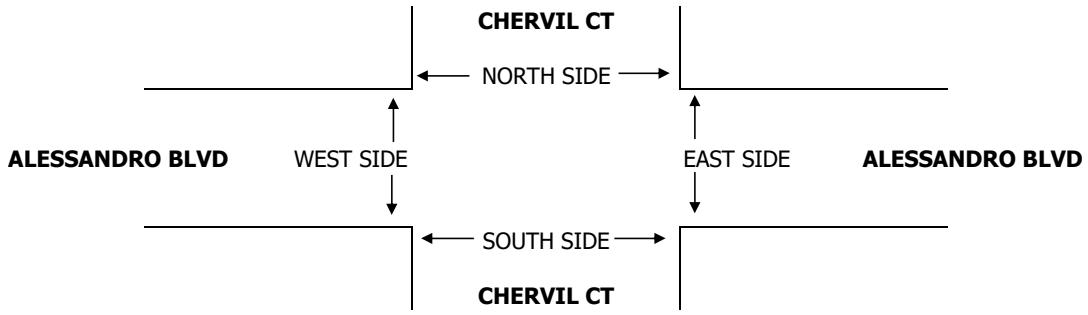
PREPARED BY: FCE TRAFFIC

DATE:	LOCATION:	MORENO VALLEY	PROJECT #:	
6/8/22	NORTH & SOUTH:	CHERVIL CT	LOCATION #:	1
WEDNESDAY	EAST & WEST:	ALESSANDRO BLVD	CONTROL:	1-WAY STOP: SB

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND CHERVIL CT			SOUTHBOUND CHERVIL CT			EASTBOUND ALESSANDRO BLVD			WESTBOUND ALESSANDRO BLVD			
	LANES:	NL X	NT X	NR X	SL 0	ST 1	SR 0	EL 1	ET 1	ER X	WL X	WT 1	WR 0	TOTAL
AM	7:00 AM				0		1	2	72			91	2	168
	7:15 AM				0		2	0	97			157	0	256
	7:30 AM				1		5	3	93			164	0	266
	7:45 AM				0		6	3	135			186	1	331
	8:00 AM				0		2	3	107			166	0	278
	8:15 AM				0		1	0	87			121	1	210
	8:30 AM				0		2	0	64			119	1	186
	8:45 AM				1		2	0	79			144	0	226
	VOLUMES	0	0	0	2	0	21	11	734	0	0	1,148	5	1,921
	APPROACH %	0%	0%	0%	9%	0%	91%	1%	99%	0%	0%	100%	0%	
	APP/DEPART	0	/	16	23	/	0	745	/	736	1,153	/	1,169	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	0	0	0	1	0	15	9	432	0	0	673	1	1,131
	APPROACH %	0%	0%	0%	6%	0%	94%	2%	98%	0%	0%	100%	0%	
	PEAK HR FACTOR		0.000			0.667			0.799			0.901		0.854
	APP/DEPART	0	/	10	16	/	0	441	/	433	674	/	688	0
PM	4:00 PM				0		0	2	134			116	0	252
	4:15 PM				0		1	2	151			91	1	246
	4:30 PM				0		2	6	160			89	0	257
	4:45 PM				0		2	2	156			111	0	271
	5:00 PM				1		2	4	149			117	0	273
	5:15 PM				0		4	4	162			113	1	284
	5:30 PM				1		1	2	167			106	3	280
	5:45 PM				0		4	3	123			100	1	231
	VOLUMES	0	0	0	2	0	16	25	1,202	0	0	843	6	2,094
	APPROACH %	0%	0%	0%	11%	0%	89%	2%	98%	0%	0%	99%	1%	
	APP/DEPART	0	/	31	18	/	0	1,227	/	1,204	849	/	859	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	0	0	0	2	0	9	12	634	0	0	447	4	1,108
	APPROACH %	0%	0%	0%	18%	0%	82%	2%	98%	0%	0%	99%	1%	
	PEAK HR FACTOR		0.000			0.688			0.956			0.964		0.975
	APP/DEPART	0	/	16	11	/	0	646	/	636	451	/	456	0



INTERSECTION TURNING MOVEMENT COUNTS

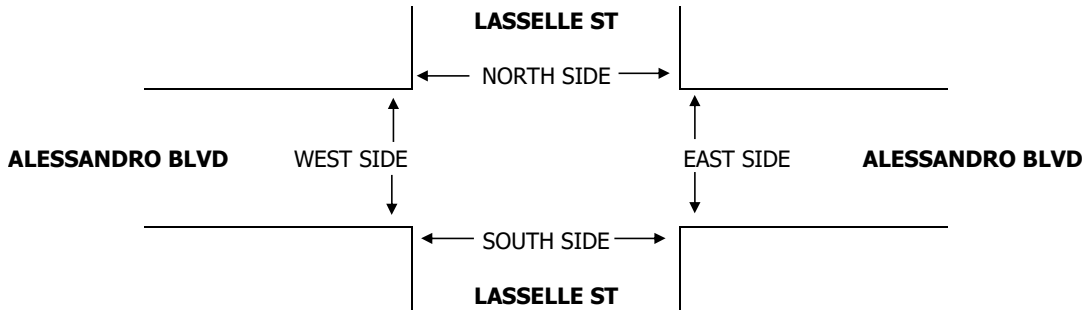
PREPARED BY: FCE TRAFFIC

DATE:	LOCATION:	MORENO VALLEY	PROJECT #:	
6/8/22	NORTH & SOUTH:	LASSELLE ST	LOCATION #:	2
WEDNESDAY	EAST & WEST:	ALESSANDRO BLVD	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND LASSELLE ST			SOUTHBOUND LASSELLE ST			EASTBOUND ALESSANDRO BLVD			WESTBOUND ALESSANDRO BLVD			
	LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 1	ET 1	ER 1	WL 1	WT 1	WR 1	TOTAL
AM	7:00 AM	31	75	24	3	43	11	9	42	28	6	50	3	325
	7:15 AM	55	86	27	5	50	8	3	50	34	28	91	4	441
	7:30 AM	55	90	41	4	57	10	15	58	42	18	100	5	495
	7:45 AM	62	119	32	2	84	20	5	62	43	50	121	3	603
	8:00 AM	37	72	41	5	78	17	11	61	47	32	107	3	511
	8:15 AM	39	75	23	3	55	5	8	62	20	19	79	6	394
	8:30 AM	45	64	16	3	40	5	6	44	16	15	70	4	328
	8:45 AM	39	61	18	3	38	9	4	51	21	12	101	2	359
	VOLUMES	363	642	222	28	445	85	61	430	251	180	719	30	3,456
	APPROACH %	30%	52%	18%	5%	80%	15%	8%	58%	34%	19%	77%	3%	
	APP/DEPART	1,227	/	733	558	/	876	742	/	680	929	/	1,167	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	209	367	141	16	269	55	34	231	166	128	419	15	2,050
	APPROACH %	29%	51%	20%	5%	79%	16%	8%	54%	39%	23%	75%	3%	
	PEAK HR FACTOR		0.842			0.802			0.905			0.807		0.850
	APP/DEPART	717	/	416	340	/	563	431	/	388	562	/	683	0
PM	4:00 PM	39	75	12	7	77	1	8	96	31	23	76	7	452
	4:15 PM	45	79	14	1	82	9	14	94	40	13	51	2	444
	4:30 PM	28	76	20	1	68	6	8	92	40	15	56	4	414
	4:45 PM	42	64	21	4	71	4	12	109	40	18	63	6	454
	5:00 PM	60	78	21	4	66	5	7	82	60	28	54	1	466
	5:15 PM	50	95	30	1	63	7	16	113	48	25	67	3	518
	5:30 PM	54	122	38	4	77	8	15	87	47	19	54	3	528
	5:45 PM	44	99	19	5	66	5	17	85	41	17	49	7	454
	VOLUMES	362	688	175	27	570	45	97	758	347	158	470	33	3,730
	APPROACH %	30%	56%	14%	4%	89%	7%	8%	63%	29%	24%	71%	5%	
	APP/DEPART	1,225	/	818	642	/	1,075	1,202	/	960	661	/	877	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	208	394	108	14	272	25	55	367	196	89	224	14	1,966
	APPROACH %	29%	55%	15%	5%	87%	8%	9%	59%	32%	27%	69%	4%	
	PEAK HR FACTOR		0.829			0.874			0.873			0.861		0.931
	APP/DEPART	710	/	463	311	/	557	618	/	489	327	/	457	0



INTERSECTION TURNING MOVEMENT COUNTS

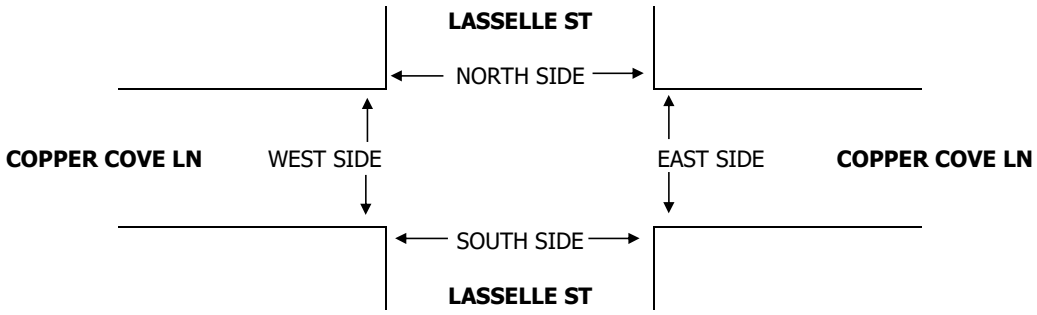
PREPARED BY: FCE TRAFFIC

DATE:	LOCATION:	MORENO VALLEY	PROJECT #:	
6/8/22	NORTH & SOUTH:	LASSELLE ST	LOCATION #:	3
WEDNESDAY	EAST & WEST:	COPPER COVE LN	CONTROL:	1-WAY STOP: EB

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND LASSELLE ST			SOUTHBOUND LASSELLE ST			EASTBOUND COPPER COVE LN			WESTBOUND COPPER COVE LN			
	LANES:	NL 1	NT 2	NR X	SL X	ST 2	SR 0	EL 0	ET 1	ER 0	WL X	WT X	WR X	TOTAL
AM	7:00 AM	4	132			82	1	9		3				231
	7:15 AM	0	148			99	4	6		1				258
	7:30 AM	1	183			116	3	6		8				317
	7:45 AM	0	201			163	6	5		1				376
	8:00 AM	2	161			159	9	10		3				344
	8:15 AM	0	123			91	2	3		3				222
	8:30 AM	4	120			73	2	7		2				208
	8:45 AM	2	118			71	4	4		4				203
	VOLUMES	13	1,186	0	0	854	31	50	0	25	0	0	0	2,159
	APPROACH %	1%	99%	0%	0%	96%	4%	67%	0%	33%	0%	0%	0%	
	APP/DEPART	1,199	/	1,236	885	/	879	75	/	0	0	/	44	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	3	693	0	0	537	22	27	0	13	0	0	0	1,295
	APPROACH %	0%	100%	0%	0%	96%	4%	68%	0%	33%	0%	0%	0%	
	PEAK HR FACTOR		0.866			0.827			0.714			0.000		0.861
	APP/DEPART	696	/	720	559	/	550	40	/	0	0	/	25	0
PM	4:00 PM	2	117			121	6	6		2				254
	4:15 PM	2	129			136	8	6		0				281
	4:30 PM	2	114			103	9	4		2				234
	4:45 PM	3	133			118	9	6		4				273
	5:00 PM	3	145			152	7	6		2				315
	5:15 PM	2	159			117	11	5		4				298
	5:30 PM	3	205			150	6	7		2				373
	5:45 PM	5	171			129	4	3		3				315
	VOLUMES	22	1,173	0	0	1,026	60	43	0	19	0	0	0	2,343
	APPROACH %	2%	98%	0%	0%	94%	6%	69%	0%	31%	0%	0%	0%	
	APP/DEPART	1,195	/	1,216	1,086	/	1,045	62	/	0	0	/	82	0
	BEGIN PEAK HR		5:00 PM											
	VOLUMES	13	680	0	0	548	28	21	0	11	0	0	0	1,301
	APPROACH %	2%	98%	0%	0%	95%	5%	66%	0%	34%	0%	0%	0%	
	PEAK HR FACTOR		0.833			0.906			0.889			0.000		0.872
	APP/DEPART	693	/	701	576	/	559	32	/	0	0	/	41	0



APPENDIX C
LEVEL OF SERVICE ANALYSIS

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	432	673	1	1	15
Future Vol, veh/h	9	432	673	1	1	15
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	-	-	-	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	10	470	732	1	1	16

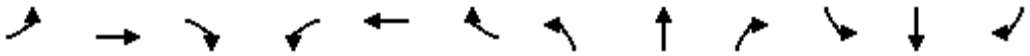
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	733	0	-	0	1223	733
Stage 1	-	-	-	-	733	-
Stage 2	-	-	-	-	490	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	872	-	-	-	198	421
Stage 1	-	-	-	-	475	-
Stage 2	-	-	-	-	616	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	872	-	-	-	196	421
Mov Cap-2 Maneuver	-	-	-	-	196	-
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	616	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	872	-	-	-	393
HCM Lane V/C Ratio	0.011	-	-	-	0.044
HCM Control Delay (s)	9.2	-	-	-	14.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

HCM 6th Signalized Intersection Summary
2: Lasselle St & Alessandro Blvd

08/31/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	231	166	128	419	15	209	367	141	16	269	55
Future Volume (veh/h)	34	231	166	128	419	15	209	367	141	16	269	55
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	40	269	193	149	487	17	243	427	164	19	313	64
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	86	422	331	209	550	440	425	512	619	367	363	74
Arrive On Green	0.05	0.23	0.21	0.12	0.29	0.28	0.24	0.27	0.27	0.21	0.24	0.22
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1507	308
Grp Volume(v), veh/h	40	269	193	149	487	17	243	427	164	19	0	377
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	0	1815
Q Serve(g_s), s	2.0	11.7	5.6	7.3	22.4	0.4	10.8	19.3	2.6	0.8	0.0	17.9
Cycle Q Clear(g_c), s	2.0	11.7	5.6	7.3	22.4	0.4	10.8	19.3	2.6	0.8	0.0	17.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	86	422	331	209	550	440	425	512	619	367	0	438
V/C Ratio(X)	0.47	0.64	0.58	0.71	0.88	0.04	0.57	0.83	0.26	0.05	0.00	0.86
Avail Cap(c_a), veh/h	119	495	393	218	599	481	425	690	770	367	0	468
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.7	31.5	10.2	38.3	30.3	7.7	30.2	30.8	6.0	28.7	0.0	32.8
Incr Delay (d2), s/veh	3.9	2.1	1.6	10.1	14.0	0.0	1.8	14.8	1.0	0.1	0.0	19.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	5.2	3.5	3.6	11.4	0.3	4.6	10.2	1.2	0.3	0.0	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	33.6	11.9	48.4	44.3	7.7	32.1	45.6	7.0	28.7	0.0	52.3
LnGrp LOS	D	C	B	D	D	A	C	D	A	C	A	D
Approach Vol, veh/h		502			653			834			396	
Approach Delay, s/veh		26.2			44.3			34.1			51.2	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.6	28.6	14.5	24.3	25.5	25.7	8.3	30.5
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	4.5	31.7	9.5	22.3	14.5	21.7	4.5	27.3
Max Q Clear Time (g_c+I1), s	2.8	21.3	9.3	13.7	12.8	19.9	4.0	24.4
Green Ext Time (p_c), s	0.0	1.8	0.0	1.2	0.1	0.3	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	38.1
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	27	13	3	693	537	22
Future Vol, veh/h	27	13	3	693	537	22
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	-	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	29	14	3	753	584	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	979	304	608	0	-	0
Stage 1	596	-	-	-	-	-
Stage 2	383	-	-	-	-	-
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	247	692	966	-	-	-
Stage 1	513	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	246	692	966	-	-	-
Mov Cap-2 Maneuver	246	-	-	-	-	-
Stage 1	511	-	-	-	-	-
Stage 2	659	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	966	-	311	-	-
HCM Lane V/C Ratio	0.003	-	0.14	-	-
HCM Control Delay (s)	8.7	-	18.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	435	0	5	682	1	0	0	0	1	0	15
Future Vol, veh/h	9	435	0	5	682	1	0	0	0	1	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	473	0	5	741	1	0	0	0	1	0	16

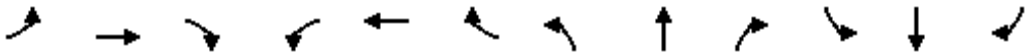
Major/Minor	Major1			Major2				Minor2		
Conflicting Flow All	742	0	-	473	0	0		1245	-	742
Stage 1	-	-	-	-	-	-		752	-	-
Stage 2	-	-	-	-	-	-		493	-	-
Critical Hdwy	4.12	-	-	4.12	-	-		6.42	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-		5.42	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.42	-	-
Follow-up Hdwy	2.218	-	-	2.218	-	-		3.518	-	3.318
Pot Cap-1 Maneuver	865	-	0	1089	-	-		192	0	416
Stage 1	-	-	0	-	-	-		466	0	-
Stage 2	-	-	0	-	-	-		614	0	-
Platoon blocked, %		-			-	-				
Mov Cap-1 Maneuver	865	-	-	1089	-	-		189	0	416
Mov Cap-2 Maneuver	-	-	-	-	-	-		189	0	-
Stage 1	-	-	-	-	-	-		458	0	-
Stage 2	-	-	-	-	-	-		614	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.1	14.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	865	-	1089	-	-	387
HCM Lane V/C Ratio	0.011	-	0.005	-	-	0.045
HCM Control Delay (s)	9.2	-	8.3	-	-	14.7
HCM Lane LOS	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	-	0	-	-	0.1

HCM 6th Signalized Intersection Summary
2: Lasselle St & Alessandro Blvd

08/31/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	243	172	130	421	15	218	370	141	16	273	58
Future Volume (veh/h)	52	243	172	130	421	15	218	370	141	16	273	58
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	60	283	200	151	490	17	253	430	164	19	317	67
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	443	349	211	553	442	396	514	623	342	366	77
Arrive On Green	0.06	0.24	0.22	0.12	0.30	0.28	0.22	0.28	0.28	0.19	0.24	0.23
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1497	316
Grp Volume(v), veh/h	60	283	200	151	490	17	253	430	164	19	0	384
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	0	1813
Q Serve(g_s), s	3.0	12.2	5.9	7.4	22.5	0.4	11.6	19.5	2.7	0.8	0.0	18.3
Cycle Q Clear(g_c), s	3.0	12.2	5.9	7.4	22.5	0.4	11.6	19.5	2.7	0.8	0.0	18.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	106	443	349	211	553	442	396	514	623	342	0	444
V/C Ratio(X)	0.57	0.64	0.57	0.72	0.89	0.04	0.64	0.84	0.26	0.06	0.00	0.87
Avail Cap(c_a), veh/h	119	495	393	218	599	481	396	690	772	342	0	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.2	30.9	10.5	38.2	30.2	8.2	31.7	30.7	5.9	29.7	0.0	32.7
Incr Delay (d2), s/veh	4.9	2.3	1.6	10.4	14.2	0.0	3.4	14.8	1.0	0.1	0.0	19.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	5.5	3.6	3.7	11.5	0.3	5.0	10.3	1.2	0.3	0.0	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.1	33.2	12.1	48.6	44.4	8.2	35.1	45.6	7.0	29.8	0.0	52.4
LnGrp LOS	D	C	B	D	D	A	D	D	A	C	A	D
Approach Vol, veh/h		543			658			847			403	
Approach Delay, s/veh		26.9			44.5			35.0			51.4	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.3	28.8	14.6	25.3	24.0	26.0	9.3	30.6
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	4.5	31.7	9.5	22.3	14.5	21.7	4.5	27.3
Max Q Clear Time (g_c+I1), s	2.8	21.5	9.4	14.2	13.6	20.3	5.0	24.5
Green Ext Time (p_c), s	0.0	1.8	0.0	1.2	0.1	0.2	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	38.4
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	39	25	9	693	543	28
Future Vol, veh/h	39	25	9	693	543	28
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	-	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	42	27	10	753	590	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1002	310	620	0	-	0
Stage 1	605	-	-	-	-	-
Stage 2	397	-	-	-	-	-
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	239	686	956	-	-	-
Stage 1	508	-	-	-	-	-
Stage 2	648	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	237	686	956	-	-	-
Mov Cap-2 Maneuver	237	-	-	-	-	-
Stage 1	503	-	-	-	-	-
Stage 2	648	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.5	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	956	-	318	-	-
HCM Lane V/C Ratio	0.01	-	0.219	-	-
HCM Control Delay (s)	8.8	-	19.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.8	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	
Traffic Vol, veh/h	0	40	25	11	24	0
Future Vol, veh/h	0	40	25	11	24	0
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	43	27	12	26	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	76	-
Stage 1	-	-	-	-	33	-
Stage 2	-	-	-	-	43	-
Critical Hdwy	-	-	-	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	-
Pot Cap-1 Maneuver	0	-	-	-	927	0
Stage 1	0	-	-	-	989	0
Stage 2	0	-	-	-	979	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	927	-
Mov Cap-2 Maneuver	-	-	-	-	927	-
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	979	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	927
HCM Lane V/C Ratio	-	-	-	0.028
HCM Control Delay (s)	-	-	-	9
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↱
Traffic Vol, veh/h	433	8	0	0	0	37
Future Vol, veh/h	433	8	0	0	0	37
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	471	9	0	0	0	40

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	476
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	589
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	589
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	589	-	-	-
HCM Lane V/C Ratio	0.068	-	-	-
HCM Control Delay (s)	11.6	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	449	700	1	1	16
Future Vol, veh/h	9	449	700	1	1	16
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	-	-	-	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	10	488	761	1	1	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	762	0	-	0	1270	762
Stage 1	-	-	-	-	762	-
Stage 2	-	-	-	-	508	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	850	-	-	-	186	405
Stage 1	-	-	-	-	461	-
Stage 2	-	-	-	-	604	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	850	-	-	-	184	405
Mov Cap-2 Maneuver	-	-	-	-	184	-
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	604	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	15
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	850	-	-	-	378
HCM Lane V/C Ratio	0.012	-	-	-	0.049
HCM Control Delay (s)	9.3	-	-	-	15
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

HCM 6th Signalized Intersection Summary
2: Lasselle St & Alessandro Blvd

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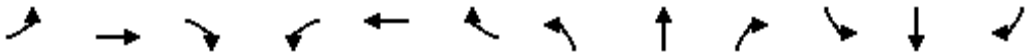

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	240	173	133	436	16	217	382	147	17	280	57
Future Volume (veh/h)	35	240	173	133	436	16	217	382	147	17	280	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	41	279	201	155	507	19	252	444	171	20	326	66
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	87	433	340	215	567	454	396	528	638	335	375	76
Arrive On Green	0.05	0.23	0.21	0.12	0.30	0.29	0.22	0.28	0.28	0.19	0.25	0.23
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1510	306
Grp Volume(v), veh/h	41	279	201	155	507	19	252	444	171	20	0	392
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	0	1815
Q Serve(g_s), s	2.0	12.1	6.0	7.5	23.3	0.5	11.5	20.1	2.8	0.8	0.0	18.6
Cycle Q Clear(g_c), s	2.0	12.1	6.0	7.5	23.3	0.5	11.5	20.1	2.8	0.8	0.0	18.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	87	433	340	215	567	454	396	528	638	335	0	450
V/C Ratio(X)	0.47	0.64	0.59	0.72	0.89	0.04	0.64	0.84	0.27	0.06	0.00	0.87
Avail Cap(c_a), veh/h	119	495	393	218	599	481	396	690	776	335	0	468
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.7	31.2	10.8	38.1	30.0	8.0	31.7	30.4	5.7	30.0	0.0	32.6
Incr Delay (d2), s/veh	3.9	2.4	1.8	11.0	15.4	0.0	3.4	14.9	1.0	0.1	0.0	20.0
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	0.9	5.4	3.6	3.8	12.1	0.3	5.0	10.6	1.3	0.3	0.0	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	33.6	12.6	49.1	45.3	8.1	35.1	45.3	6.8	30.1	0.0	52.5
LnGrp LOS	D	C	B	D	D	A	D	D	A	C	A	D
Approach Vol, veh/h		521			681			867			412	
Approach Delay, s/veh		26.4			45.2			34.7			51.5	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.9	29.4	14.8	24.8	24.0	26.3	8.4	31.3
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	4.5	31.7	9.5	22.3	14.5	21.7	4.5	27.3
Max Q Clear Time (g_c+I1), s	2.8	22.1	9.5	14.1	13.5	20.6	4.0	25.3
Green Ext Time (p_c), s	0.0	1.8	0.0	1.2	0.1	0.2	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	38.6
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	39	25	3	721	559	23
Future Vol, veh/h	39	25	3	721	559	23
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	-	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	42	27	3	784	608	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1019	317	633	0	-	0
Stage 1	621	-	-	-	-	-
Stage 2	398	-	-	-	-	-
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	233	679	946	-	-	-
Stage 1	498	-	-	-	-	-
Stage 2	647	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	232	679	946	-	-	-
Mov Cap-2 Maneuver	232	-	-	-	-	-
Stage 1	497	-	-	-	-	-
Stage 2	647	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	946	-	312	-	-
HCM Lane V/C Ratio	0.003	-	0.223	-	-
HCM Control Delay (s)	8.8	-	19.8	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.8	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	452	0	5	709	1	0	0	0	1	0	16
Future Vol, veh/h	9	452	0	5	709	1	0	0	0	1	0	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	491	0	5	771	1	0	0	0	1	0	17

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	772	0	-	491	0	0			1293	-	772
Stage 1	-	-	-	-	-	-			782	-	-
Stage 2	-	-	-	-	-	-			511	-	-
Critical Hdwy	4.12	-	-	4.12	-	-			6.42	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	-	-
Follow-up Hdwy	2.218	-	-	2.218	-	-			3.518	-	3.318
Pot Cap-1 Maneuver	843	-	0	1072	-	-			180	0	400
Stage 1	-	-	0	-	-	-			451	0	-
Stage 2	-	-	0	-	-	-			602	0	-
Platoon blocked, %		-			-	-					
Mov Cap-1 Maneuver	843	-	-	1072	-	-			177	0	400
Mov Cap-2 Maneuver	-	-	-	-	-	-			177	0	-
Stage 1	-	-	-	-	-	-			443	0	-
Stage 2	-	-	-	-	-	-			602	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.1	15.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	843	-	1072	-	-	372
HCM Lane V/C Ratio	0.012	-	0.005	-	-	0.05
HCM Control Delay (s)	9.3	-	8.4	-	-	15.2
HCM Lane LOS	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0	-	0	-	-	0.2

HCM 6th Signalized Intersection Summary
2: Lasselle St & Alessandro Blvd

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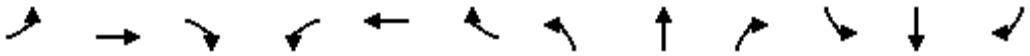

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	253	179	135	438	16	227	385	147	17	284	60
Future Volume (veh/h)	54	253	179	135	438	16	227	385	147	17	284	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	63	294	208	157	509	19	264	448	171	20	330	70
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	456	360	217	569	456	364	532	643	307	377	80
Arrive On Green	0.06	0.24	0.23	0.12	0.30	0.29	0.20	0.28	0.28	0.17	0.25	0.24
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1496	317
Grp Volume(v), veh/h	63	294	208	157	509	19	264	448	171	20	0	400
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	0	1813
Q Serve(g_s), s	3.1	12.7	6.3	7.6	23.4	0.5	12.5	20.3	3.0	0.8	0.0	19.1
Cycle Q Clear(g_c), s	3.1	12.7	6.3	7.6	23.4	0.5	12.5	20.3	3.0	0.8	0.0	19.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	110	456	360	217	569	456	364	532	643	307	0	457
V/C Ratio(X)	0.57	0.64	0.58	0.72	0.89	0.04	0.72	0.84	0.27	0.07	0.00	0.88
Avail Cap(c_a), veh/h	119	495	393	218	599	481	364	690	778	307	0	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.1	30.5	11.1	38.1	29.9	8.6	33.4	30.3	5.7	31.2	0.0	32.4
Incr Delay (d2), s/veh	5.7	2.6	1.8	11.3	15.5	0.0	7.0	15.0	1.0	0.1	0.0	20.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	5.7	3.7	3.8	12.1	0.3	5.8	10.7	1.3	0.4	0.0	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.8	33.1	12.9	49.3	45.5	8.6	40.4	45.3	6.8	31.3	0.0	52.7
LnGrp LOS	D	C	B	D	D	A	D	D	A	C	A	D
Approach Vol, veh/h		565			685			883			420	
Approach Delay, s/veh		27.2			45.3			36.4			51.7	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.5	29.6	15.0	26.0	22.4	26.7	9.5	31.4
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	4.5	31.7	9.5	22.3	14.5	21.7	4.5	27.3
Max Q Clear Time (g_c+I1), s	2.8	22.3	9.6	14.7	14.5	21.1	5.1	25.4
Green Ext Time (p_c), s	0.0	1.8	0.0	1.2	0.0	0.1	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	39.3
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	26	9	721	565	29
Future Vol, veh/h	40	26	9	721	565	29
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	-	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	43	28	10	784	614	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1042	323	646	0	-	0
Stage 1	630	-	-	-	-	-
Stage 2	412	-	-	-	-	-
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	225	673	935	-	-	-
Stage 1	493	-	-	-	-	-
Stage 2	637	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	223	673	935	-	-	-
Mov Cap-2 Maneuver	223	-	-	-	-	-
Stage 1	488	-	-	-	-	-
Stage 2	637	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.5	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	935	-	303	-	-
HCM Lane V/C Ratio	0.01	-	0.237	-	-
HCM Control Delay (s)	8.9	-	20.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.9	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	
Traffic Vol, veh/h	0	42	26	11	24	0
Future Vol, veh/h	0	42	26	11	24	0
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	46	28	12	26	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	80	-
Stage 1	-	-	-	-	34	-
Stage 2	-	-	-	-	46	-
Critical Hdwy	-	-	-	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	-
Pot Cap-1 Maneuver	0	-	-	-	922	0
Stage 1	0	-	-	-	988	0
Stage 2	0	-	-	-	976	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	922	-
Mov Cap-2 Maneuver	-	-	-	-	922	-
Stage 1	-	-	-	-	988	-
Stage 2	-	-	-	-	976	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	922
HCM Lane V/C Ratio	-	-	-	0.028
HCM Control Delay (s)	-	-	-	9
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↱
Traffic Vol, veh/h	450	8	0	0	0	37
Future Vol, veh/h	450	8	0	0	0	37
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	489	9	0	0	0	40

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	494
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	575
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	575
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	575	-	-	-
HCM Lane V/C Ratio	0.07	-	-	-
HCM Control Delay (s)	11.7	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	634	447	4	2	9
Future Vol, veh/h	12	634	447	4	2	9
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	-	-	-	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	13	689	486	4	2	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	490	0	-	0	1203	488
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	715	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1073	-	-	-	204	580
Stage 1	-	-	-	-	617	-
Stage 2	-	-	-	-	485	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1073	-	-	-	202	580
Mov Cap-2 Maneuver	-	-	-	-	202	-
Stage 1	-	-	-	-	610	-
Stage 2	-	-	-	-	485	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1073	-	-	-	433
HCM Lane V/C Ratio	0.012	-	-	-	0.028
HCM Control Delay (s)	8.4	-	-	-	13.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

HCM 6th Signalized Intersection Summary
2: Lasselle St & Alessandro Blvd

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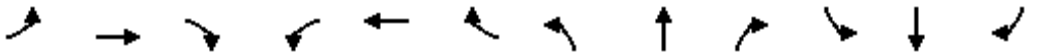

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	367	196	89	224	14	208	394	108	14	272	25
Future Volume (veh/h)	55	367	196	89	224	14	208	394	108	14	272	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	64	427	228	103	260	16	242	458	126	16	316	29
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	116	502	394	143	530	417	371	750	763	66	388	36
Arrive On Green	0.07	0.27	0.25	0.08	0.28	0.26	0.21	0.40	0.40	0.04	0.23	0.21
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1688	155
Grp Volume(v), veh/h	64	427	228	103	260	16	242	458	126	16	0	345
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	0	1842
Q Serve(g_s), s	2.6	16.2	9.5	4.2	8.7	0.6	9.3	14.6	0.5	0.7	0.0	13.3
Cycle Q Clear(g_c), s	2.6	16.2	9.5	4.2	8.7	0.6	9.3	14.6	0.5	0.7	0.0	13.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	116	502	394	143	530	417	371	750	763	66	0	423
V/C Ratio(X)	0.55	0.85	0.58	0.72	0.49	0.04	0.65	0.61	0.17	0.24	0.00	0.82
Avail Cap(c_a), veh/h	166	524	412	143	530	417	371	750	763	143	0	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.0	26.0	24.7	33.7	22.4	20.6	27.2	17.8	3.9	35.1	0.0	27.4
Incr Delay (d2), s/veh	4.0	12.2	1.9	16.5	0.7	0.0	4.0	3.7	0.5	1.9	0.0	15.8
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	1.2	8.2	3.4	2.4	3.5	0.2	4.0	6.2	0.5	0.3	0.0	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.0	38.2	26.6	50.1	23.1	20.6	31.2	21.5	4.4	37.0	0.0	43.2
LnGrp LOS	D	D	C	D	C	C	C	C	A	D	A	D
Approach Vol, veh/h		719			379			826			361	
Approach Delay, s/veh		34.5			30.3			21.7			42.9	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	34.1	10.0	24.1	19.6	21.2	8.9	25.2
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	4.5	24.5	4.5	19.5	10.5	18.5	5.5	18.5
Max Q Clear Time (g_c+I1), s	2.7	16.6	6.2	18.2	11.3	15.3	4.6	10.7
Green Ext Time (p_c), s	0.0	1.5	0.0	0.4	0.0	0.4	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	11	13	680	548	28
Future Vol, veh/h	21	11	13	680	548	28
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	-	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	23	12	14	739	596	30

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1009	313	626	0	-	0
Stage 1	611	-	-	-	-	-
Stage 2	398	-	-	-	-	-
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	237	683	952	-	-	-
Stage 1	504	-	-	-	-	-
Stage 2	647	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	233	683	952	-	-	-
Mov Cap-2 Maneuver	233	-	-	-	-	-
Stage 1	496	-	-	-	-	-
Stage 2	647	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.5	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	952	-	301	-	-
HCM Lane V/C Ratio	0.015	-	0.116	-	-
HCM Control Delay (s)	8.8	-	18.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	644	0	16	453	4	0	0	0	2	0	9
Future Vol, veh/h	12	644	0	16	453	4	0	0	0	2	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	700	0	17	492	4	0	0	0	2	0	10

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	496	0	-	700	0	0			1254	-	494
Stage 1	-	-	-	-	-	-			528	-	-
Stage 2	-	-	-	-	-	-			726	-	-
Critical Hdwy	4.12	-	-	4.12	-	-			6.42	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	-	-
Follow-up Hdwy	2.218	-	-	2.218	-	-			3.518	-	3.318
Pot Cap-1 Maneuver	1068	-	0	897	-	-			190	0	575
Stage 1	-	-	0	-	-	-			592	0	-
Stage 2	-	-	0	-	-	-			479	0	-
Platoon blocked, %		-			-	-					
Mov Cap-1 Maneuver	1068	-	-	897	-	-			184	0	575
Mov Cap-2 Maneuver	-	-	-	-	-	-			184	0	-
Stage 1	-	-	-	-	-	-			574	0	-
Stage 2	-	-	-	-	-	-			479	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0.3	13.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1068	-	897	-	-	415
HCM Lane V/C Ratio	0.012	-	0.019	-	-	0.029
HCM Control Delay (s)	8.4	-	9.1	-	-	13.9
HCM Lane LOS	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	-	0.1	-	-	0.1

HCM 6th Signalized Intersection Summary
2: Lasselle St & Alessandro Blvd

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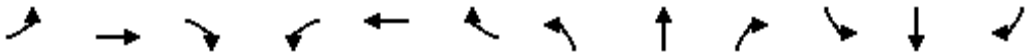

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	375	200	95	230	14	214	396	108	14	285	35
Future Volume (veh/h)	66	375	200	95	230	14	214	396	108	14	285	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	77	436	233	110	267	16	249	460	126	16	331	41
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	133	509	399	143	519	408	341	744	757	66	397	49
Arrive On Green	0.07	0.27	0.25	0.08	0.28	0.26	0.19	0.40	0.40	0.04	0.24	0.22
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1632	202
Grp Volume(v), veh/h	77	436	233	110	267	16	249	460	126	16	0	372
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	0	1834
Q Serve(g_s), s	3.1	16.6	9.7	4.5	9.0	0.6	9.9	14.7	0.5	0.7	0.0	14.4
Cycle Q Clear(g_c), s	3.1	16.6	9.7	4.5	9.0	0.6	9.9	14.7	0.5	0.7	0.0	14.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	133	509	399	143	519	408	341	744	757	66	0	447
V/C Ratio(X)	0.58	0.86	0.58	0.77	0.51	0.04	0.73	0.62	0.17	0.24	0.00	0.83
Avail Cap(c_a), veh/h	166	524	412	143	519	408	341	744	757	143	0	489
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.6	25.9	24.6	33.8	22.9	20.9	28.5	18.0	4.0	35.1	0.0	27.0
Incr Delay (d2), s/veh	3.9	13.0	2.0	22.5	0.9	0.0	7.8	3.8	0.5	1.9	0.0	16.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	8.4	3.5	2.7	3.7	0.2	4.6	6.3	0.5	0.3	0.0	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	38.9	26.6	56.3	23.7	20.9	36.3	21.9	4.5	37.0	0.0	43.5
LnGrp LOS	D	D	C	E	C	C	D	C	A	D	A	D
Approach Vol, veh/h		746			393			835			388	
Approach Delay, s/veh		34.9			32.7			23.6			43.2	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	33.8	10.0	24.4	18.3	22.3	9.6	24.8
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	4.5	24.5	4.5	19.5	10.5	18.5	5.5	18.5
Max Q Clear Time (g_c+I1), s	2.7	16.7	6.5	18.6	11.9	16.4	5.1	11.0
Green Ext Time (p_c), s	0.0	1.5	0.0	0.3	0.0	0.3	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	31.9
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	19	32	680	552	47
Future Vol, veh/h	29	19	32	680	552	47
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	-	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	32	21	35	739	600	51

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1066	326	651	0	-	0
Stage 1	626	-	-	-	-	-
Stage 2	440	-	-	-	-	-
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	217	670	931	-	-	-
Stage 1	495	-	-	-	-	-
Stage 2	616	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	209	670	931	-	-	-
Mov Cap-2 Maneuver	209	-	-	-	-	-
Stage 1	476	-	-	-	-	-
Stage 2	616	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.3	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	931	-	287	-	-
HCM Lane V/C Ratio	0.037	-	0.182	-	-
HCM Control Delay (s)	9	-	20.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	
Traffic Vol, veh/h	0	32	41	38	15	0
Future Vol, veh/h	0	32	41	38	15	0
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	35	45	41	16	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	101	-
Stage 1	-	-	-	-	66	-
Stage 2	-	-	-	-	35	-
Critical Hdwy	-	-	-	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	-
Pot Cap-1 Maneuver	0	-	-	-	898	0
Stage 1	0	-	-	-	957	0
Stage 2	0	-	-	-	987	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	898	-
Mov Cap-2 Maneuver	-	-	-	-	898	-
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	987	-

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	898
HCM Lane V/C Ratio	-	-	-	0.018
HCM Control Delay (s)	-	-	-	9.1
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↱
Traffic Vol, veh/h	636	26	0	0	0	23
Future Vol, veh/h	636	26	0	0	0	23
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	691	28	0	0	0	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	705
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	436
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	436
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	436	-	-	-
HCM Lane V/C Ratio	0.057	-	-	-
HCM Control Delay (s)	13.8	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	660	465	4	2	9
Future Vol, veh/h	12	660	465	4	2	9
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	-	-	-	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	13	717	505	4	2	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	509	0	-	0	1250	507
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	743	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1056	-	-	-	191	566
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	470	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1056	-	-	-	189	566
Mov Cap-2 Maneuver	-	-	-	-	189	-
Stage 1	-	-	-	-	598	-
Stage 2	-	-	-	-	470	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1056	-	-	-	415
HCM Lane V/C Ratio	0.012	-	-	-	0.029
HCM Control Delay (s)	8.5	-	-	-	13.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

HCM 6th Signalized Intersection Summary
2: Lasselle St & Alessandro Blvd

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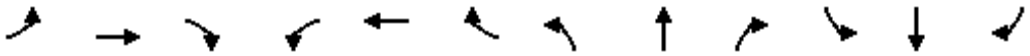

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	382	204	93	233	15	216	410	112	15	283	26
Future Volume (veh/h)	57	382	204	93	233	15	216	410	112	15	283	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	66	444	237	108	271	17	251	477	130	17	329	30
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	514	404	143	539	425	348	736	751	68	399	36
Arrive On Green	0.07	0.28	0.26	0.08	0.29	0.27	0.20	0.39	0.39	0.04	0.24	0.22
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1689	154
Grp Volume(v), veh/h	66	444	237	108	271	17	251	477	130	17	0	359
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	0	1843
Q Serve(g_s), s	2.7	16.9	9.8	4.5	9.0	0.6	9.9	15.6	0.5	0.7	0.0	13.9
Cycle Q Clear(g_c), s	2.7	16.9	9.8	4.5	9.0	0.6	9.9	15.6	0.5	0.7	0.0	13.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	119	514	404	143	539	425	348	736	751	68	0	436
V/C Ratio(X)	0.55	0.86	0.59	0.76	0.50	0.04	0.72	0.65	0.17	0.25	0.00	0.82
Avail Cap(c_a), veh/h	166	524	412	143	539	425	348	736	751	143	0	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.9	25.8	24.5	33.8	22.2	20.3	28.3	18.5	4.1	35.0	0.0	27.2
Incr Delay (d2), s/veh	4.0	13.7	2.1	20.6	0.7	0.0	7.2	4.4	0.5	1.9	0.0	16.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	8.7	3.6	2.6	3.7	0.2	4.6	6.7	0.5	0.3	0.0	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.9	39.6	26.6	54.4	23.0	20.3	35.4	22.9	4.6	37.0	0.0	43.3
LnGrp LOS	D	D	C	D	C	C	D	C	A	D	A	D
Approach Vol, veh/h		747			396			858			376	
Approach Delay, s/veh		35.3			31.4			23.8			43.0	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	33.5	10.0	24.6	18.6	21.7	9.0	25.6
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	4.5	24.5	4.5	19.5	10.5	18.5	5.5	18.5
Max Q Clear Time (g_c+I1), s	2.7	17.6	6.5	18.9	11.9	15.9	4.7	11.0
Green Ext Time (p_c), s	0.0	1.5	0.0	0.2	0.0	0.4	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	31.7
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	22	11	14	707	570	29
Future Vol, veh/h	22	11	14	707	570	29
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	-	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	24	12	15	768	620	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1050	326	652	0	-	0
Stage 1	636	-	-	-	-	-
Stage 2	414	-	-	-	-	-
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	223	670	930	-	-	-
Stage 1	489	-	-	-	-	-
Stage 2	635	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	219	670	930	-	-	-
Mov Cap-2 Maneuver	219	-	-	-	-	-
Stage 1	481	-	-	-	-	-
Stage 2	635	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.6	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	930	-	282	-	-
HCM Lane V/C Ratio	0.016	-	0.127	-	-
HCM Control Delay (s)	8.9	-	19.6	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	669	0	16	471	4	0	0	0	2	0	9
Future Vol, veh/h	12	669	0	16	471	4	0	0	0	2	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	727	0	17	512	4	0	0	0	2	0	10

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	516	0	-	727	0	0			1301	-	514
Stage 1	-	-	-	-	-	-			548	-	-
Stage 2	-	-	-	-	-	-			753	-	-
Critical Hdwy	4.12	-	-	4.12	-	-			6.42	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	-	-
Follow-up Hdwy	2.218	-	-	2.218	-	-			3.518	-	3.318
Pot Cap-1 Maneuver	1050	-	0	876	-	-			178	0	560
Stage 1	-	-	0	-	-	-			579	0	-
Stage 2	-	-	0	-	-	-			465	0	-
Platoon blocked, %		-			-	-					
Mov Cap-1 Maneuver	1050	-	-	876	-	-			172	0	560
Mov Cap-2 Maneuver	-	-	-	-	-	-			172	0	-
Stage 1	-	-	-	-	-	-			561	0	-
Stage 2	-	-	-	-	-	-			465	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.3	14.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1050	-	876	-	-	397
HCM Lane V/C Ratio	0.012	-	0.02	-	-	0.03
HCM Control Delay (s)	8.5	-	9.2	-	-	14.3
HCM Lane LOS	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	-	0.1	-	-	0.1

HCM 6th Signalized Intersection Summary
2: Lasselle St & Alessandro Blvd

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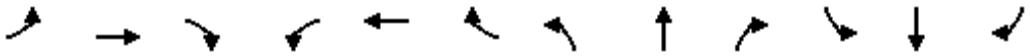


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	389	208	99	239	15	222	412	112	15	296	36
Future Volume (veh/h)	69	389	208	99	239	15	222	412	112	15	296	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	80	452	242	115	278	17	258	479	130	17	344	42
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	137	520	409	143	526	414	318	731	746	68	409	50
Arrive On Green	0.08	0.28	0.26	0.08	0.28	0.26	0.18	0.39	0.39	0.04	0.25	0.23
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1635	200
Grp Volume(v), veh/h	80	452	242	115	278	17	258	479	130	17	0	386
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	0	1834
Q Serve(g_s), s	3.3	17.3	10.0	4.8	9.4	0.6	10.4	15.7	0.5	0.7	0.0	15.0
Cycle Q Clear(g_c), s	3.3	17.3	10.0	4.8	9.4	0.6	10.4	15.7	0.5	0.7	0.0	15.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	137	520	409	143	526	414	318	731	746	68	0	459
V/C Ratio(X)	0.58	0.87	0.59	0.81	0.53	0.04	0.81	0.66	0.17	0.25	0.00	0.84
Avail Cap(c_a), veh/h	166	524	412	143	526	414	318	731	746	143	0	489
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.5	25.8	24.4	33.9	22.8	20.7	29.6	18.7	4.2	35.0	0.0	26.8
Incr Delay (d2), s/veh	3.9	14.5	2.2	27.9	1.0	0.0	14.5	4.5	0.5	1.9	0.0	16.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	8.9	3.7	3.0	3.9	0.2	5.4	6.8	0.5	0.3	0.0	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.4	40.3	26.6	61.8	23.8	20.7	44.1	23.3	4.7	37.0	0.0	43.7
LnGrp LOS	D	D	C	E	C	C	D	C	A	D	A	D
Approach Vol, veh/h		774			410			867			403	
Approach Delay, s/veh		35.7			34.3			26.7			43.4	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	33.3	10.0	24.8	17.4	22.7	9.8	25.1
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	4.5	24.5	4.5	19.5	10.5	18.5	5.5	18.5
Max Q Clear Time (g_c+I1), s	2.7	17.7	6.8	19.3	12.4	17.0	5.3	11.4
Green Ext Time (p_c), s	0.0	1.5	0.0	0.1	0.0	0.2	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	33.5
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	29	19	33	707	574	48
Future Vol, veh/h	29	19	33	707	574	48
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	-	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	32	21	36	768	624	52

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1106	338	676	0	-	0
Stage 1	650	-	-	-	-	-
Stage 2	456	-	-	-	-	-
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	205	658	911	-	-	-
Stage 1	481	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	197	658	911	-	-	-
Mov Cap-2 Maneuver	197	-	-	-	-	-
Stage 1	462	-	-	-	-	-
Stage 2	605	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.3	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	911	-	273	-	-
HCM Lane V/C Ratio	0.039	-	0.191	-	-
HCM Control Delay (s)	9.1	-	21.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	
Traffic Vol, veh/h	0	33	43	38	15	0
Future Vol, veh/h	0	33	43	38	15	0
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	36	47	41	16	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	104	-
Stage 1	-	-	-	-	68	-
Stage 2	-	-	-	-	36	-
Critical Hdwy	-	-	-	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	-
Pot Cap-1 Maneuver	0	-	-	-	894	0
Stage 1	0	-	-	-	955	0
Stage 2	0	-	-	-	986	0
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	894	-
Mov Cap-2 Maneuver	-	-	-	-	894	-
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	986	-

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	894
HCM Lane V/C Ratio	-	-	-	0.018
HCM Control Delay (s)	-	-	-	9.1
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑		↱
Traffic Vol, veh/h	662	26	0	0	0	23
Future Vol, veh/h	662	26	0	0	0	23
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	720	28	0	0	0	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	734
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	420
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	420
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	420	-	-	-
HCM Lane V/C Ratio	0.06	-	-	-
HCM Control Delay (s)	14.1	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

APPENDIX D
QUEUE ANALYSIS

Queues
2: Lasselle St & Alessandro Blvd

09/01/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	63	294	208	157	509	19	264	448	171	20	400
v/c Ratio	0.52	0.65	0.39	0.74	0.86	0.03	0.85	0.53	0.17	0.14	0.77
Control Delay	56.5	37.5	5.3	59.9	44.8	0.1	62.0	22.7	1.6	41.4	41.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.5	37.5	5.3	59.9	44.8	0.1	62.0	22.7	1.6	41.4	41.4
Queue Length 50th (ft)	35	146	0	87	269	0	147	167	0	11	210
Queue Length 95th (ft)	#80	217	35	#166	#409	0	#257	292	18	33	#337
Internal Link Dist (ft)		537			1119			591			819
Turn Bay Length (ft)	180		60	160		30	200		120	150	
Base Capacity (vph)	122	492	565	216	596	640	314	855	1023	141	522
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.60	0.37	0.73	0.85	0.03	0.84	0.52	0.17	0.14	0.77

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
2: Lasselle St & Alessandro Blvd

09/01/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	80	452	242	115	278	17	258	479	130	17	386
v/c Ratio	0.48	0.88	0.40	0.74	0.50	0.03	0.87	0.57	0.13	0.12	0.81
Control Delay	42.9	47.5	4.3	64.6	26.8	0.1	62.5	19.8	0.7	34.1	40.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	47.5	4.3	64.6	26.8	0.1	62.5	19.8	0.7	34.1	40.5
Queue Length 50th (ft)	36	199	0	54	111	0	120	148	0	8	162
Queue Length 95th (ft)	74	#332	31	#131	175	0	#234	282	5	25	#272
Internal Link Dist (ft)		537			1119			591			819
Turn Bay Length (ft)	180		60	160		30	200		120	150	
Base Capacity (vph)	165	521	615	155	555	639	295	840	1002	146	494
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.87	0.39	0.74	0.50	0.03	0.87	0.57	0.13	0.12	0.78

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX E

PEAK-HOUR SIGNAL WARRANT

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

DIST	CO	RTE	PM

COUNT DATE 6/8/22
CALC jc DATE 9/1/22
CHK kh DATE 9/1/22

Major St: Alessandro Blvd — Critical Approach Speed 45 mph
Minor St: Chervil Ct — Critical Approach Speed 25 mph

Speed limit or critical speed on major street traffic > 40 mph..... [X]
or
In built up area of isolated community of < 10,000 population..... [ ] **RURAL (R)**

[ ] **URBAN (U)**

INTERSECTION #1

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☒**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☒**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐ No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐ No ☒

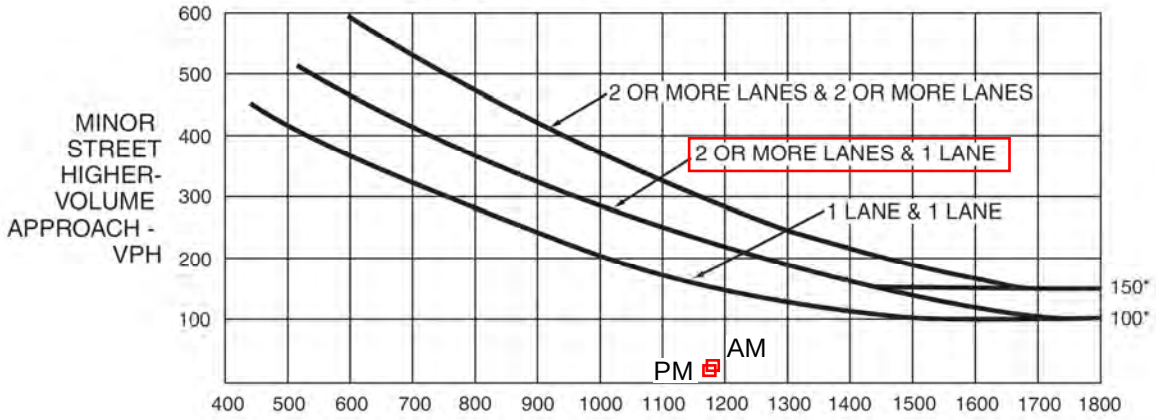
PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	AM One	AM 2 or More	PM Hour
Both Approaches - Major Street		1177	1173
Higher Approach - Minor Street	17		11

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐ No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐ No ☒

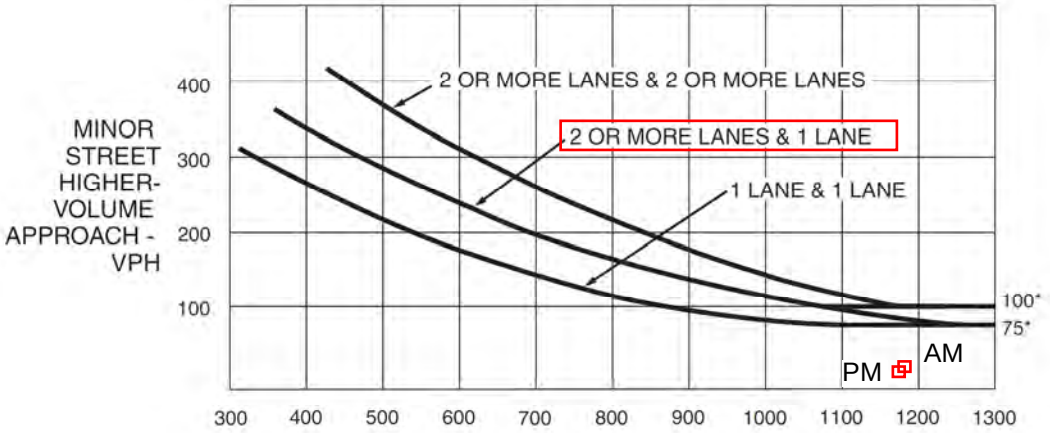
The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

INTERSECTION #1
MAJOR ST: Alessandro Blvd
MINOR ST: Chervil Ct
Warrant 3: Peak Hour- NOT SATISFIED
Warrant 3: Peak Hour (70%)- NOT SATISFIED

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

DIST	CO	RTE	PM

COUNT DATE 6/8/22
CALC jc DATE 9/1/22
CHK kh DATE 9/1/22

Major St: Lasselle St — Critical Approach Speed 45 mph
Minor St: Copper Cove Ln — Critical Approach Speed 25 mph

Speed limit or critical speed on major street traffic > 40 mph..... [X]
or
In built up area of isolated community of < 10,000 population..... [ ] **RURAL (R)**

[ ] **URBAN (U)**

INTERSECTION #3

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☒**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☒**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐ No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐ No ☒

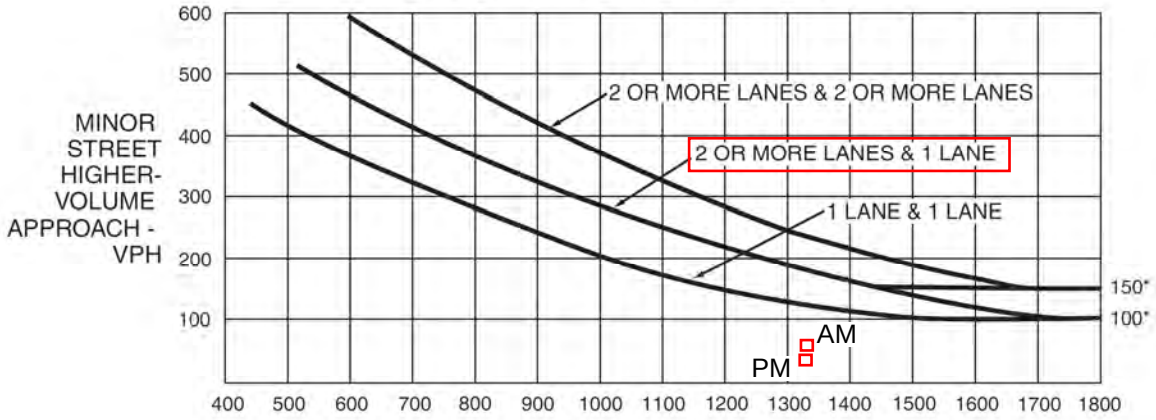
PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	AM One	AM 2 or More	PM Hour
Both Approaches - Major Street		1323	1362
Higher Approach - Minor Street	66		48

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐ No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐ No ☒

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

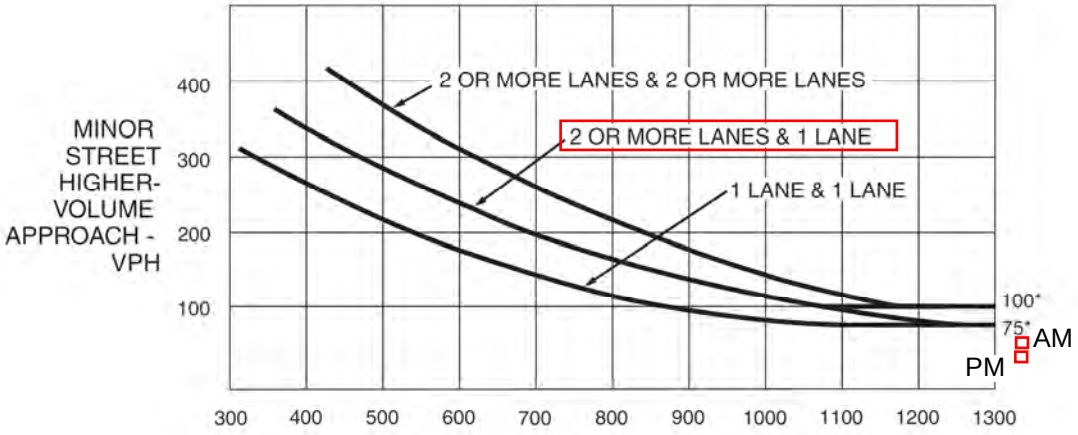
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

INTERSECTION #3
MAJOR ST: Lasselle St
MINOR ST: Copper Cove Ln
Warrant 3: Peak Hour- NOT SATISFIED
Warrant 3: Peak Hour (70%)- NOT SATISFIED