Appendix G
Noise Data

MASTER CASE NO. 20-073
INITIAL STUDY

Site Number: Monte Vista Homes 1	
Recorded By: Danielle Regimbal	
Job Number: 181745	
Date: 1/14/2021	
Time: 10:05 a.m.	
Location: Athol Street cul-de-sac	
Source of Peak Noise: Wind, Roosters, Car driving by	

Noise Data			
Leq (dB)	**Lmax(dB)**	**Lmin (dB)**	**Peak (dB)**
58.4	77.5	45.2	112.0

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**3011133**	**04/08/2019**	
	Microphone	**Brüel & Kjær**	**4189**	**3086765**	**04/08/2019**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**25380**	**04/08/2019**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**04/08/2019**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** Sunny/Clear
	Note: dBA Offset = -0.01		**Sensor Height (ft):** 5 ft
	Wind Ave Speed (mph / m/s)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (inches)**
	N 15 mph	79	30.2 inHg

Photo of Measurement Location

2250

Instrument:		2250
Application:		BZ7225 Version 4.7.4
Start Time:		01/14/2021 10:05:49
End Time:		01/14/2021 10:26:14
Elapsed Time:		00:20:00
Bandwidth:		1/3-octave
Max Input Level:		142.17

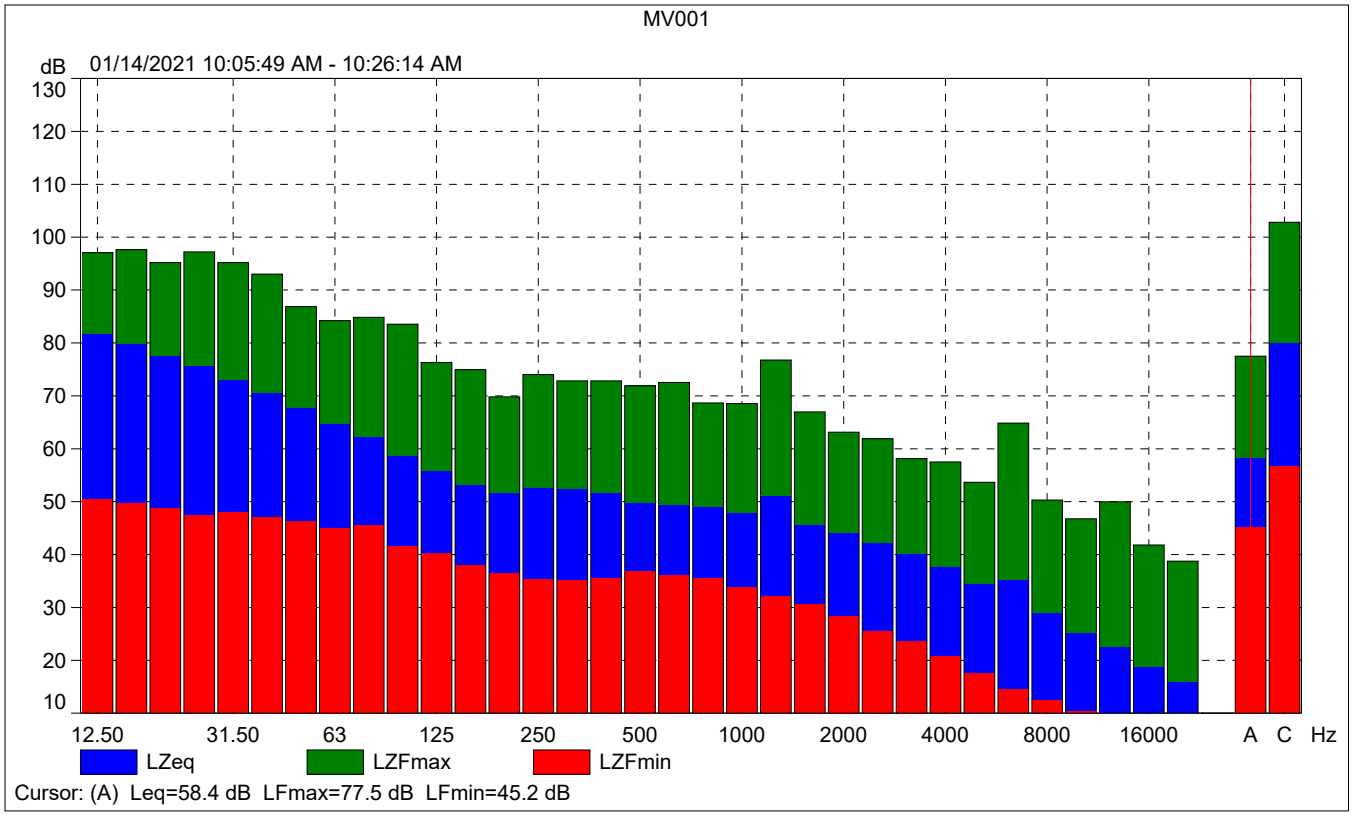
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

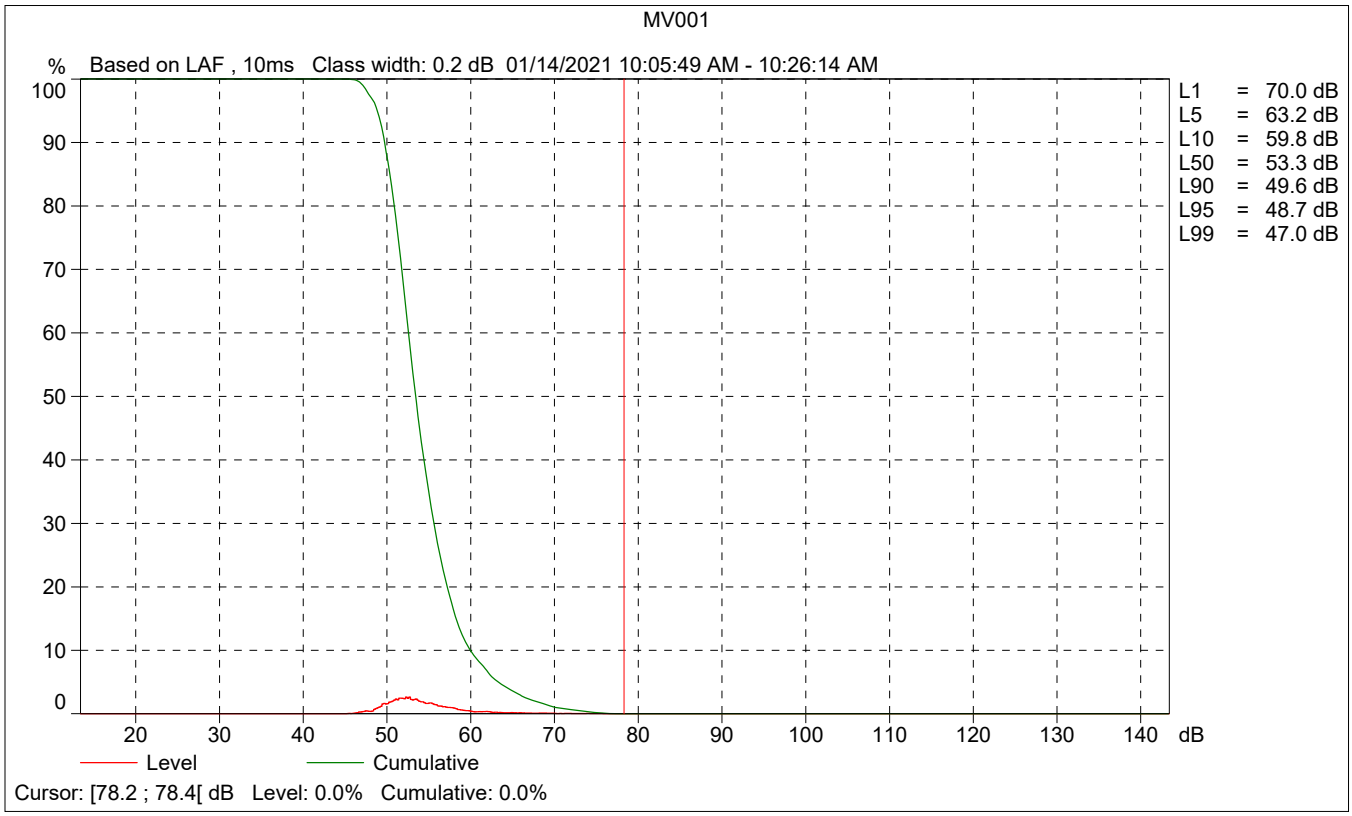
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

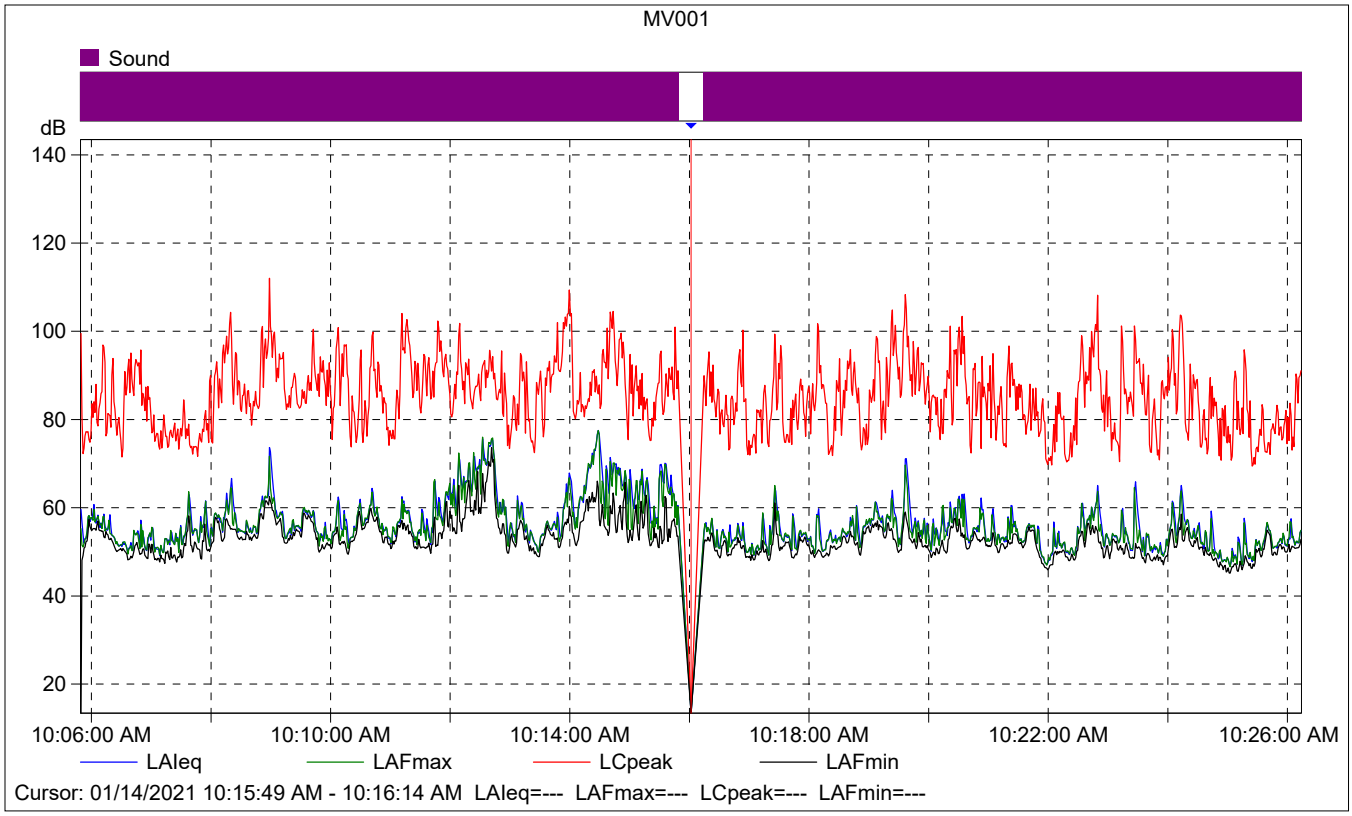
Calibration Time:		01/14/2021 08:34:02
Calibration Type:		External reference
Sensitivity:		43.354082852602 mV/Pa

MV001

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	58.4	77.5	45.2
Time	10:05:49 AM	10:26:14 AM	0:20:00				
Date	01/14/2021	01/14/2021					

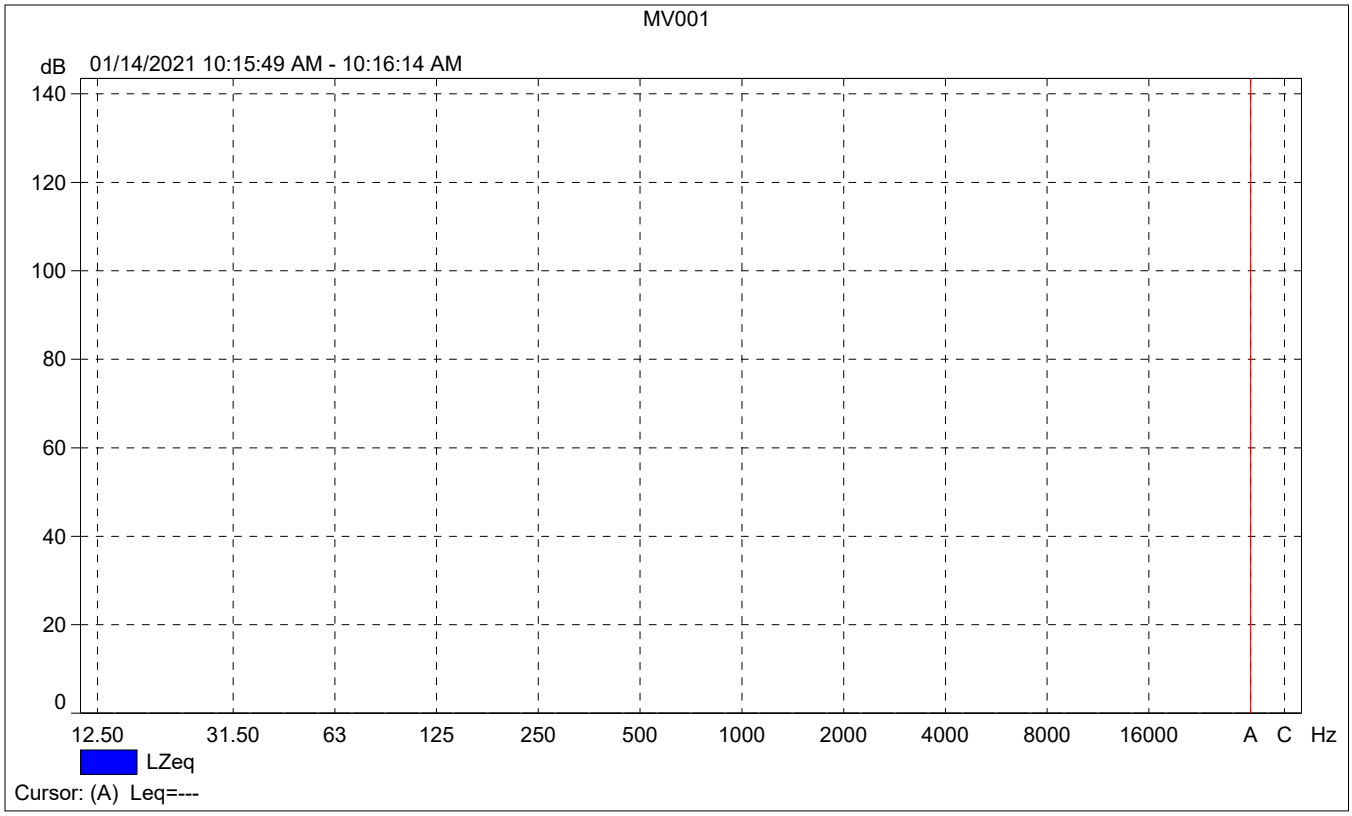

MV001
dB
01/14/2021 10:05:49 AM - 10:26:14 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=58.4 dB LFmax=77.5 dB LFmin=45.2 dB

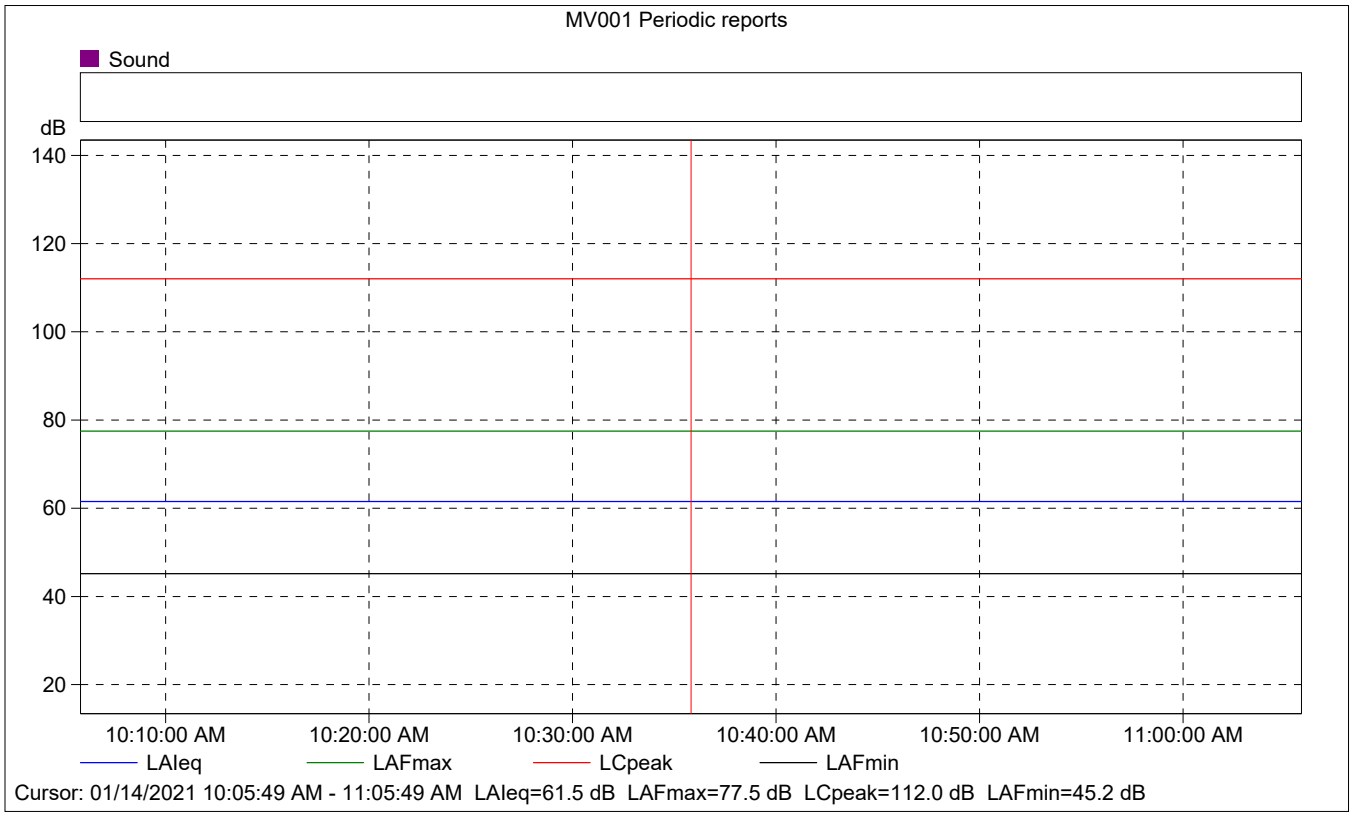

MV001
%
Based on LAF , 10ms Class width: 0.2 dB 01/14/2021 10:05:49 AM - 10:26:14 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 70.0 dB
L5 = 63.2 dB
L10 = 59.8 dB
L50 = 53.3 dB
L90 = 49.6 dB
L95 = 48.7 dB
L99 = 47.0 dB
Level
Cumulative
Cursor: [78.2 ; 78.4[dB Level: 0.0% Cumulative: 0.0%



MV001

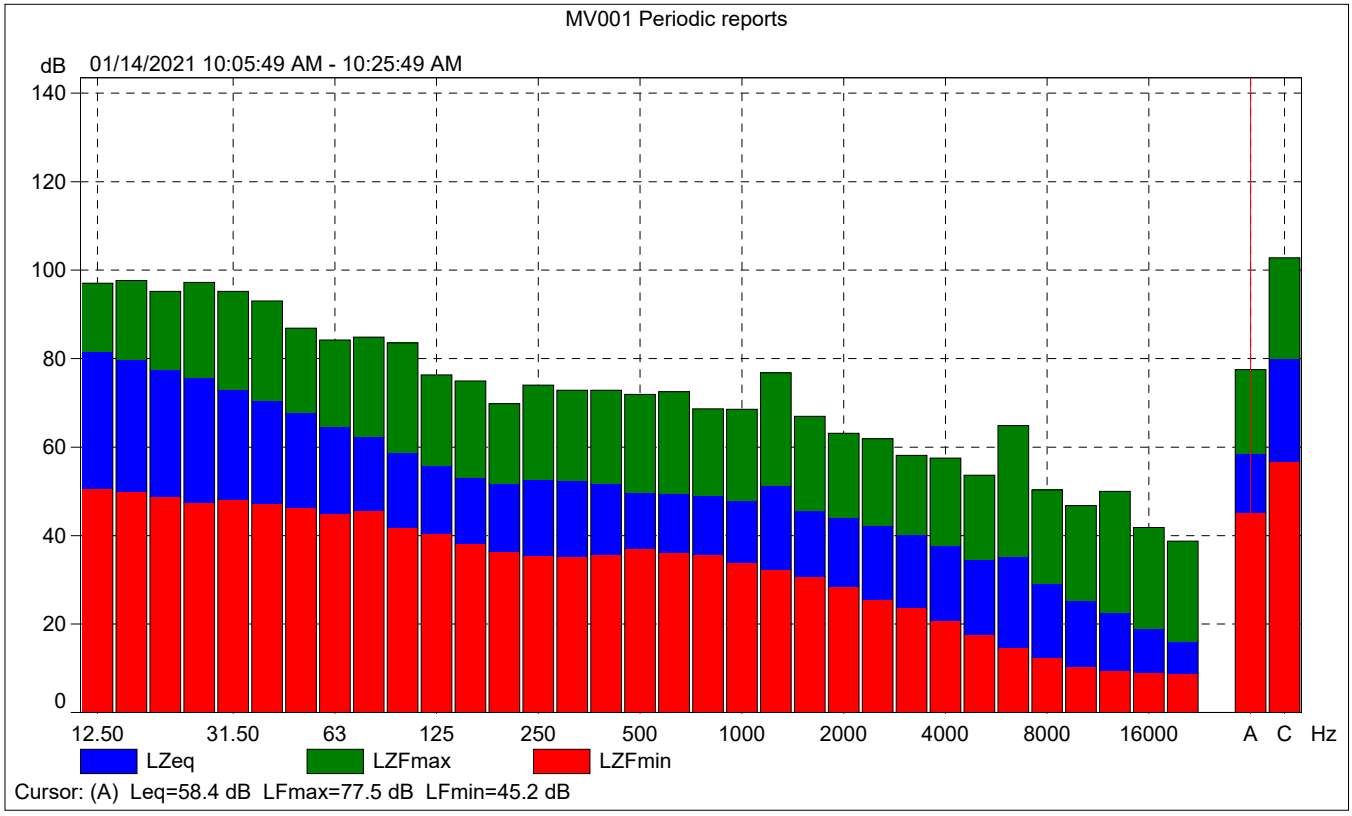
	Start time	Elapsed time	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			---	---	---
Time	10:15:49 AM	0:00:25			
Date	01/14/2021				

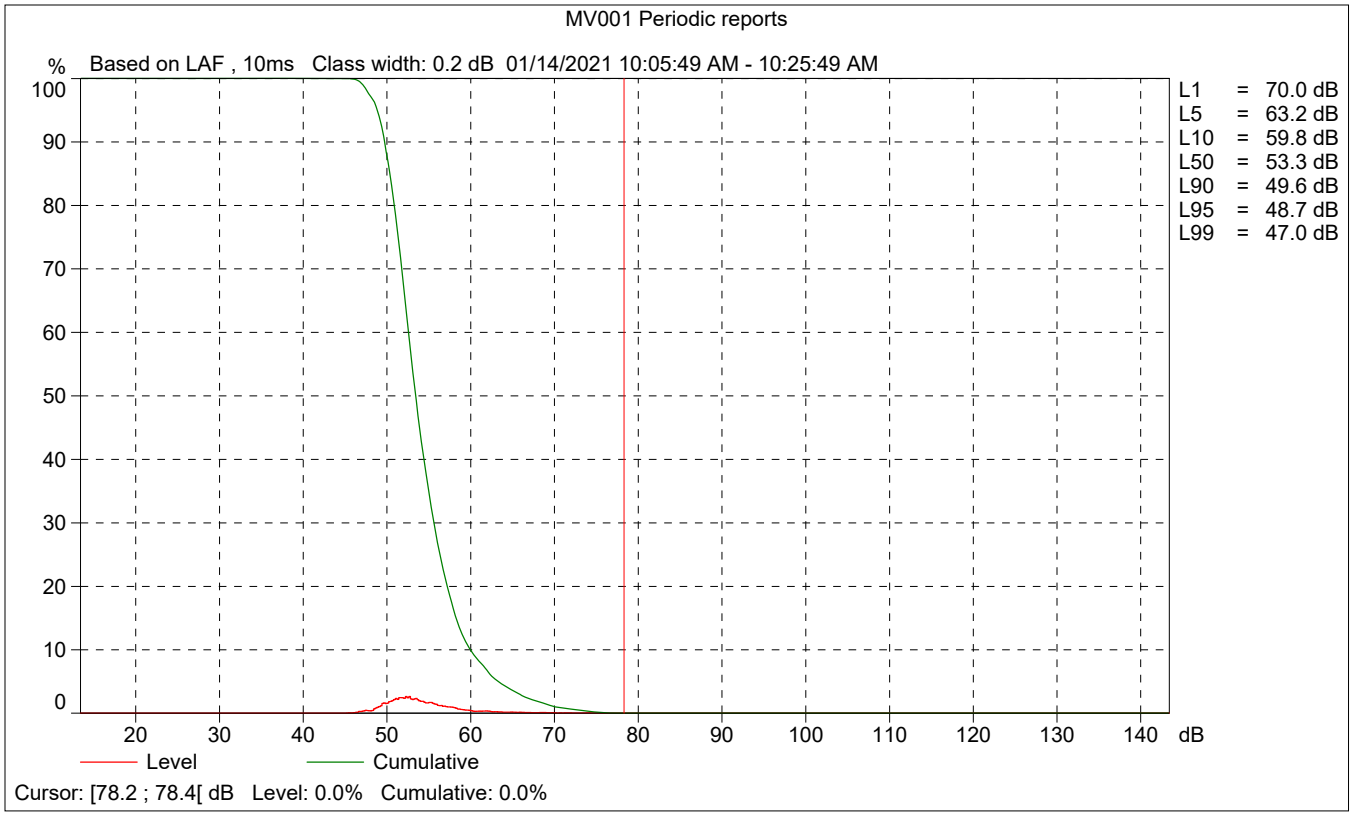

MV001
dB
01/14/2021 10:15:49 AM - 10:16:14 AM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
Cursor: (A) Leq=---


MV001 Periodic reports
Sound
dB
140
120
100
80
60
40
20
10:10:00 AM
10:20:00 AM
10:30:00 AM
10:40:00 AM
10:50:00 AM
11:00:00 AM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 01/14/2021 10:05:49 AM - 11:05:49 AM LAIeq=61.5 dB LAFmax=77.5 dB LCpeak=112.0 dB LAFmin=45.2 dB

MV001 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	61.5	77.5	45.2
Time	10:05:49 AM	0:20:00				
Date	01/14/2021					




MV001 Periodic reports
% Based on LAF , 10ms Class width: 0.2 dB 01/14/2021 10:05:49 AM - 10:25:49 AM
100
90
80
70
60
50
40
30
20
10
0
20 30 40 50 60 70 80 90 100 110 120 130 140 dB
L1 = 70.0 dB
L5 = 63.2 dB
L10 = 59.8 dB
L50 = 53.3 dB
L90 = 49.6 dB
L95 = 48.7 dB
L99 = 47.0 dB
Level
Cumulative
Cursor: [78.2 ; 78.4[dB Level: 0.0% Cumulative: 0.0%

Site Number: Monte Vista Homes 2	
Recorded By: Danielle Regimbal	
Job Number: 181745	
Date: 1/14/2021	
Time: 10:37 a.m.	
Location: Hibiscus Street and Catawba Avenue intersection.	
Source of Peak Noise: Wind and truck driving by.	

Noise Data			
Leq (dB)	**Lmax(dB)**	**Lmin (dB)**	**Peak (dB)**
59.8	82.3	46.2	104.5

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**3011133**	**04/08/2019**	
	Microphone	**Brüel & Kjær**	**4189**	**3086765**	**04/08/2019**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**25380**	**04/08/2019**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**04/08/2019**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** Sunny/Clear
	Note: dBA Offset = -0.01		**Sensor Height (ft):** 5 ft
	Wind Ave Speed (mph / m/s)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (inches)**
	N 15 mph	79	30.2 inHg

Photo of Measurement Location

2250

Instrument:		2250
Application:		BZ7225 Version 4.7.4
Start Time:		01/14/2021 10:37:31
End Time:		01/14/2021 10:47:31
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.17

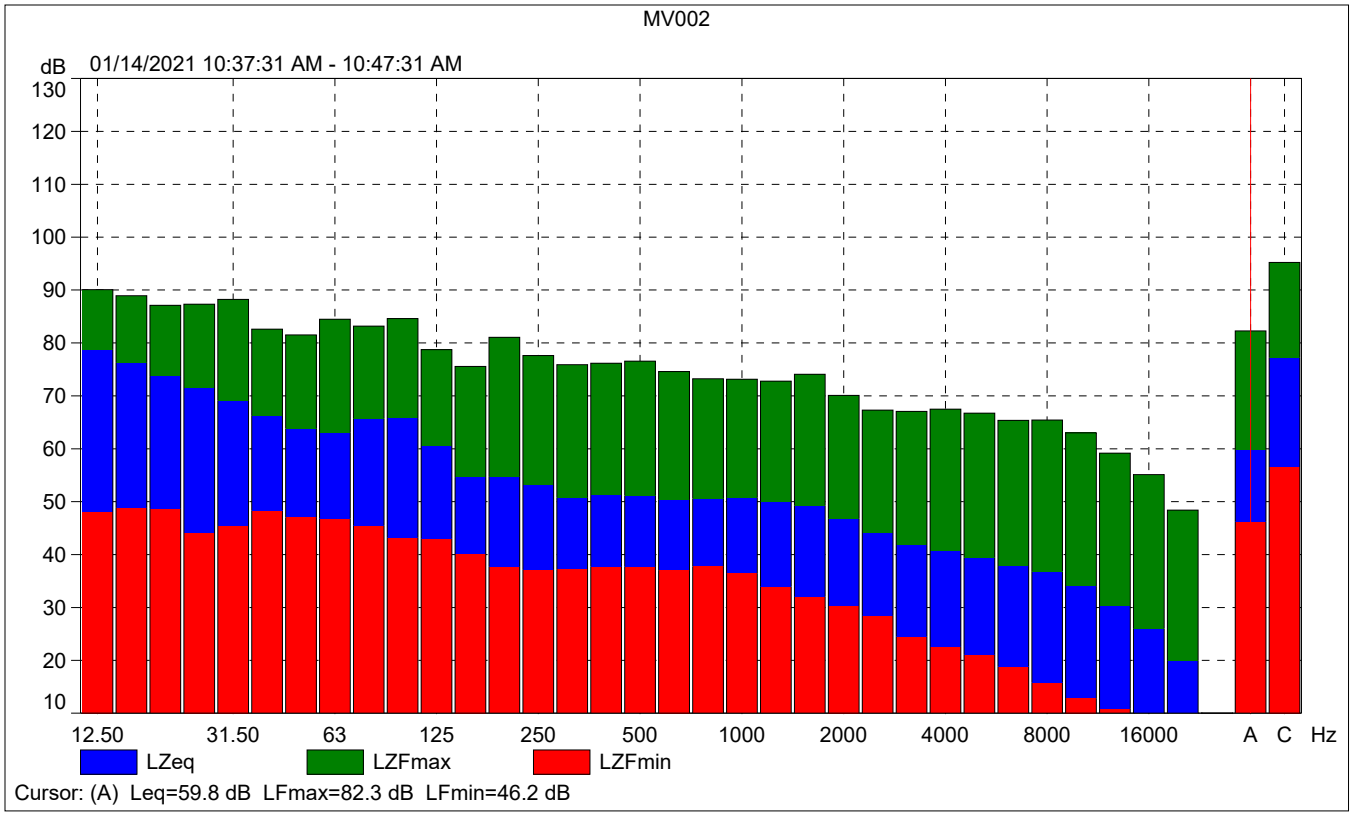
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

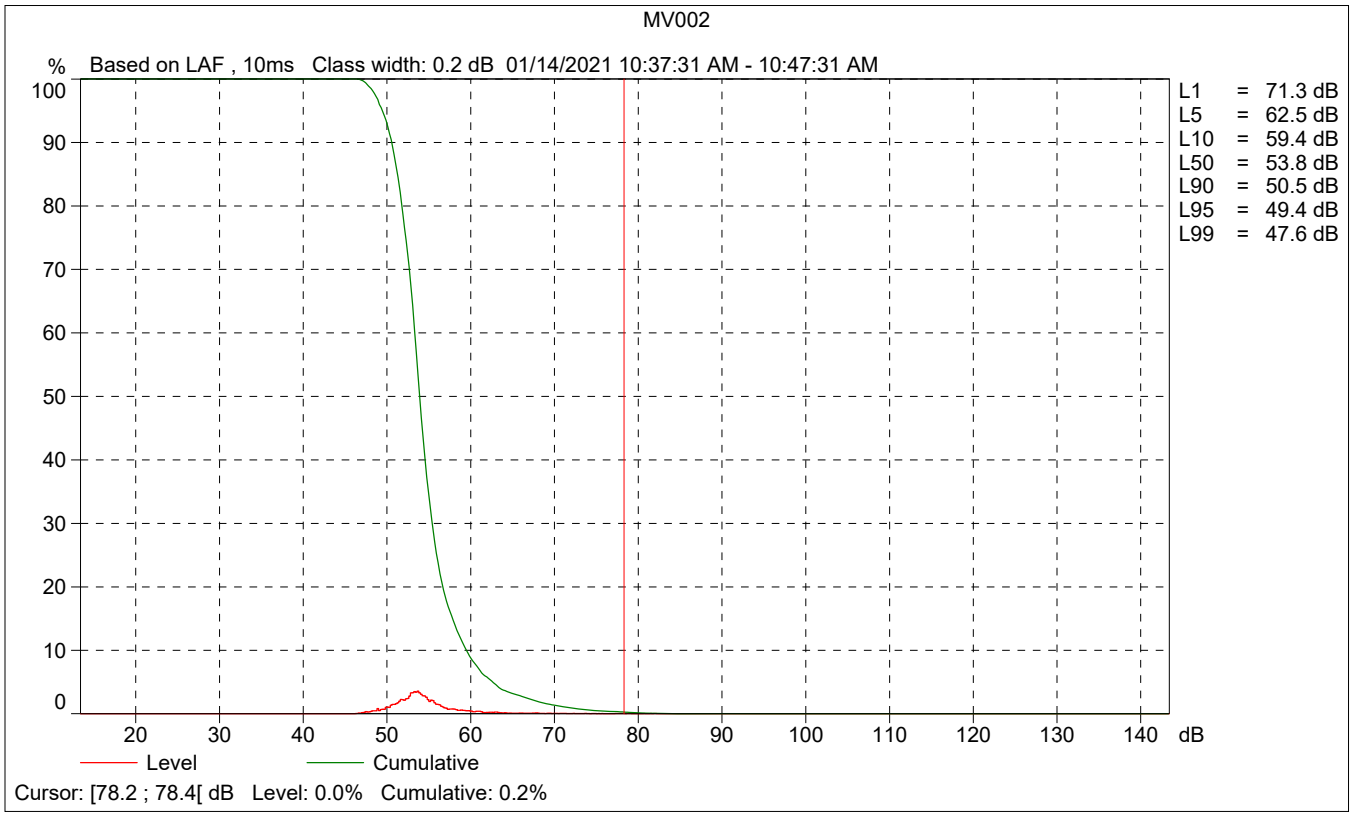
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

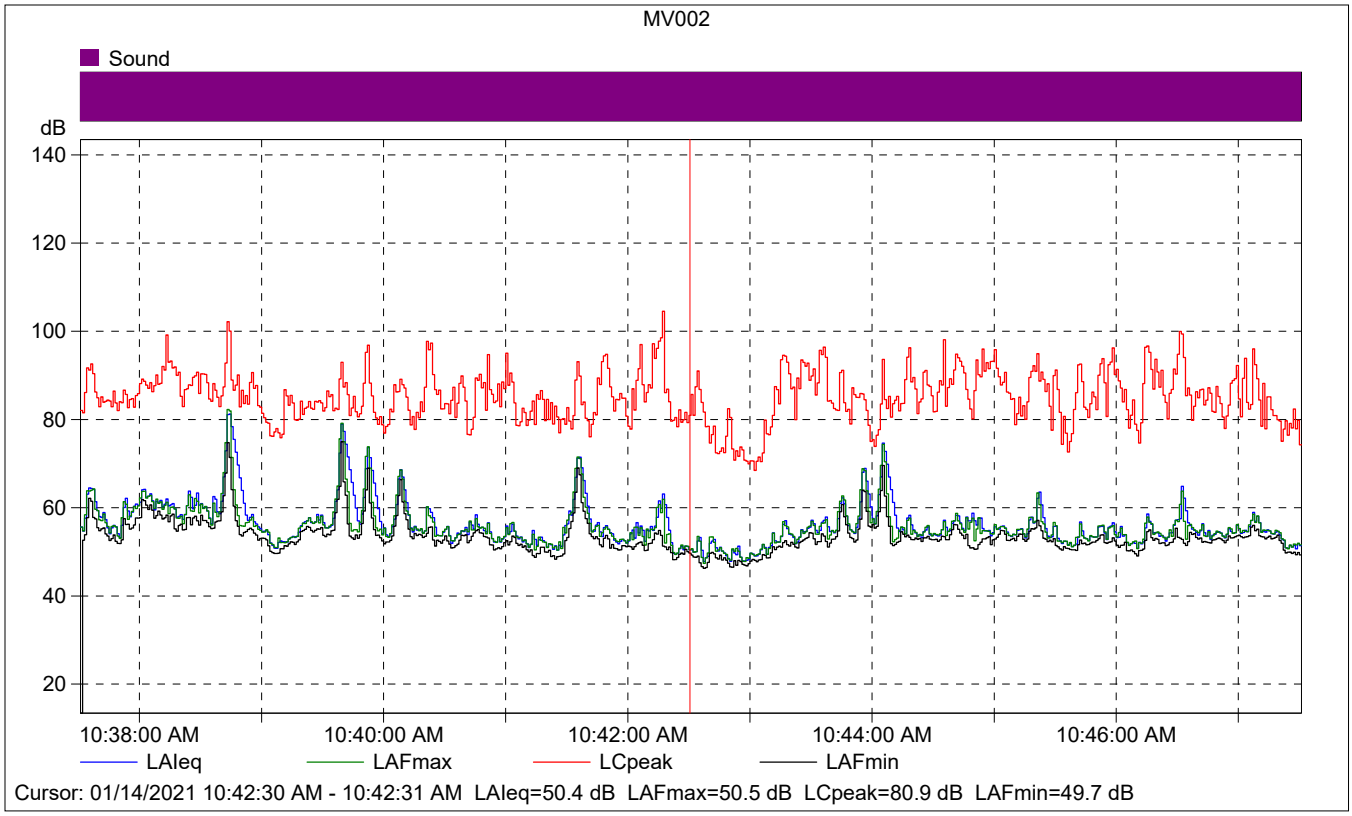
Calibration Time:		01/14/2021 08:34:02
Calibration Type:		External reference
Sensitivity:		43.354082852602 mV/Pa

MV002

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	59.8	82.3	46.2
Time	10:37:31 AM	10:47:31 AM	0:10:00				
Date	01/14/2021	01/14/2021					

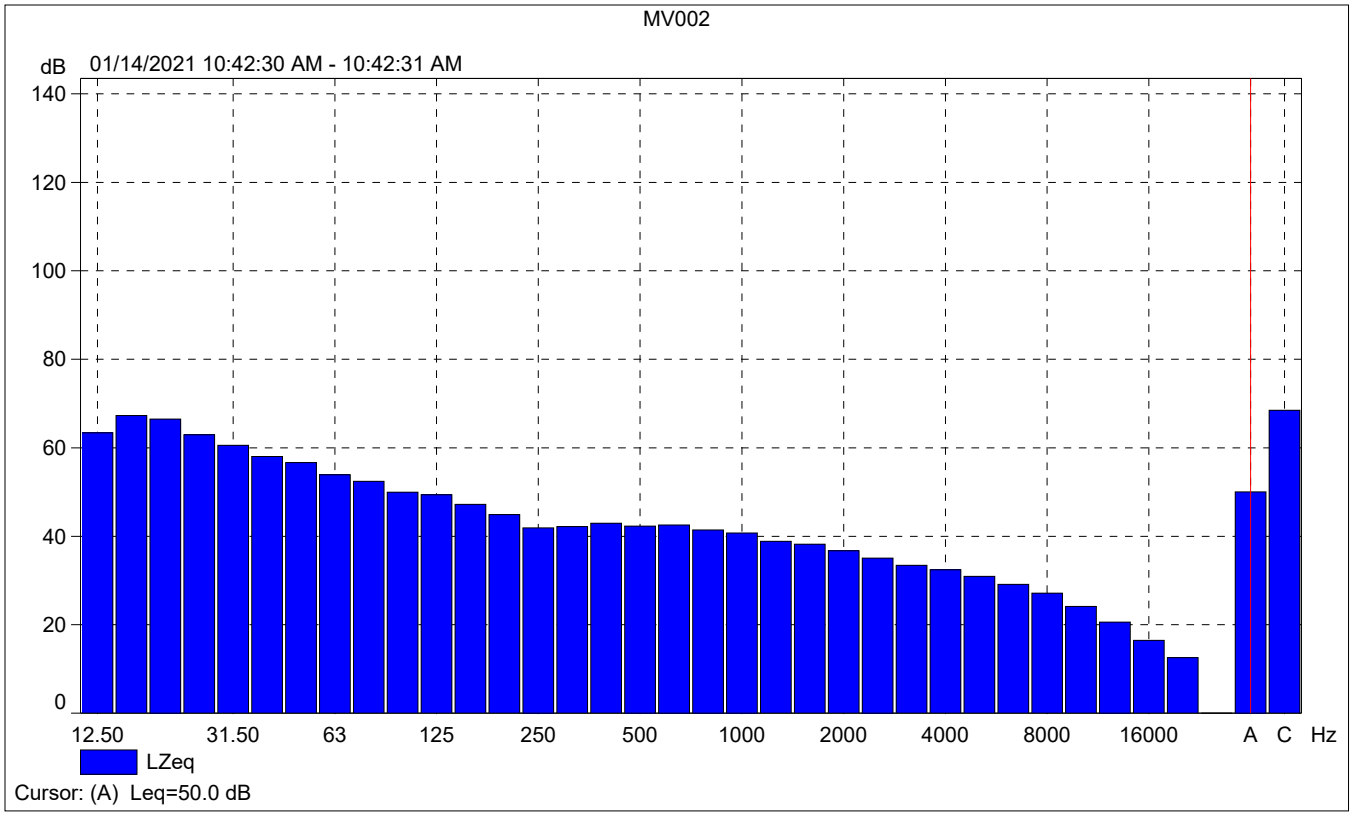

MV002
dB
01/14/2021 10:37:31 AM - 10:47:31 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=59.8 dB LFmax=82.3 dB LFmin=46.2 dB

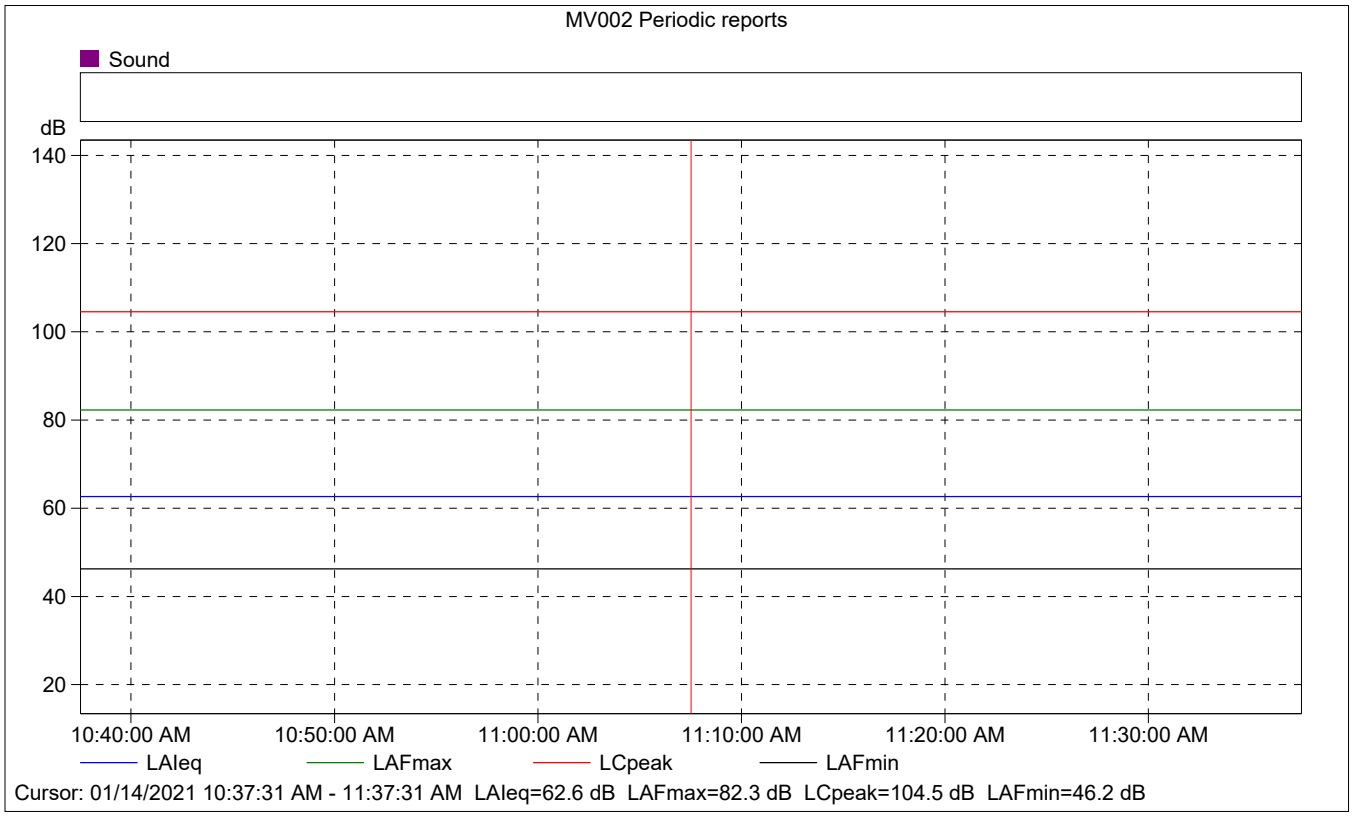

MV002
%
Based on LAF , 10ms Class width: 0.2 dB 01/14/2021 10:37:31 AM - 10:47:31 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 71.3 dB
L5 = 62.5 dB
L10 = 59.4 dB
L50 = 53.8 dB
L90 = 50.5 dB
L95 = 49.4 dB
L99 = 47.6 dB
Level
Cumulative
Cursor: [78.2 ; 78.4[dB Level: 0.0% Cumulative: 0.2%



MV002

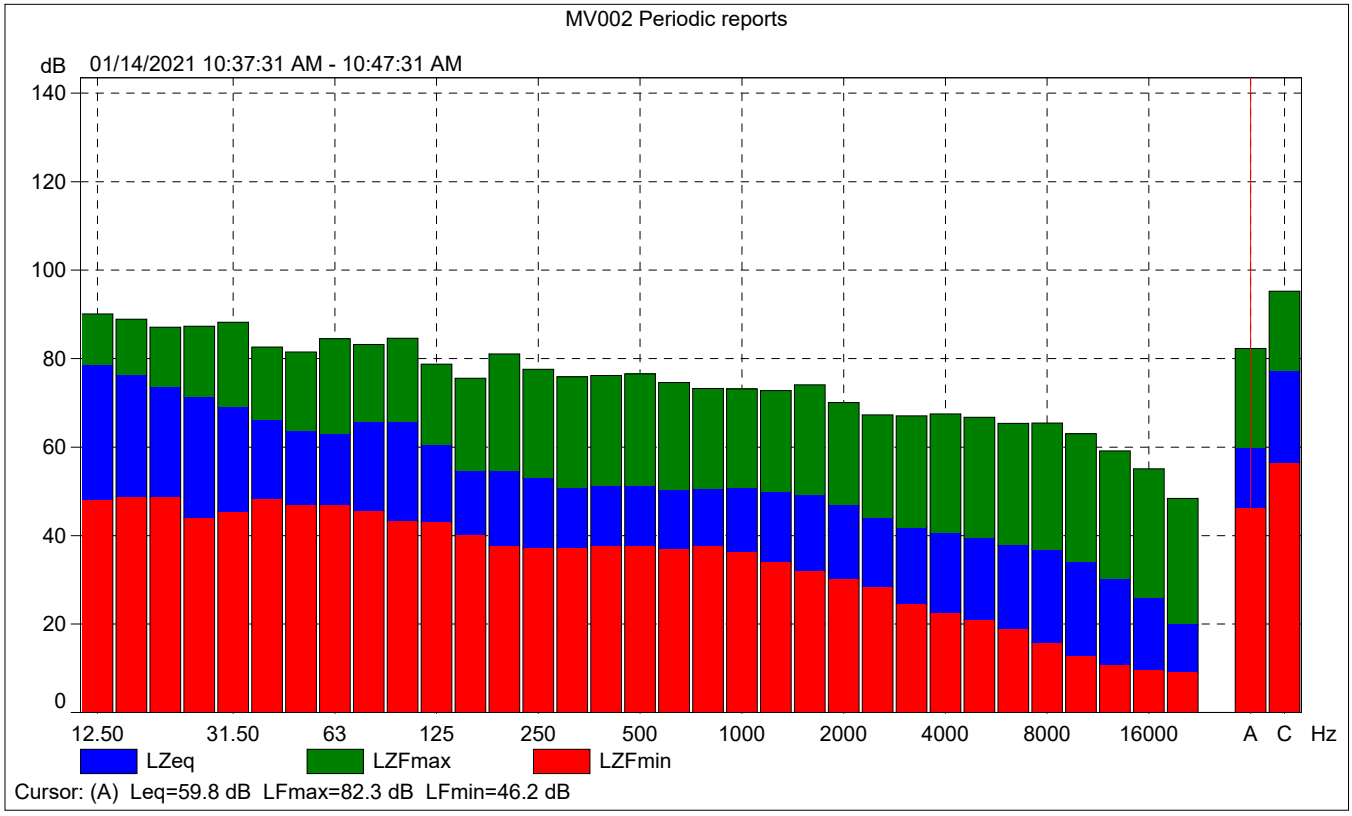
	Start time	Elapsed time	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			50.4	50.5	49.7
Time	10:42:30 AM	0:00:01			
Date	01/14/2021				

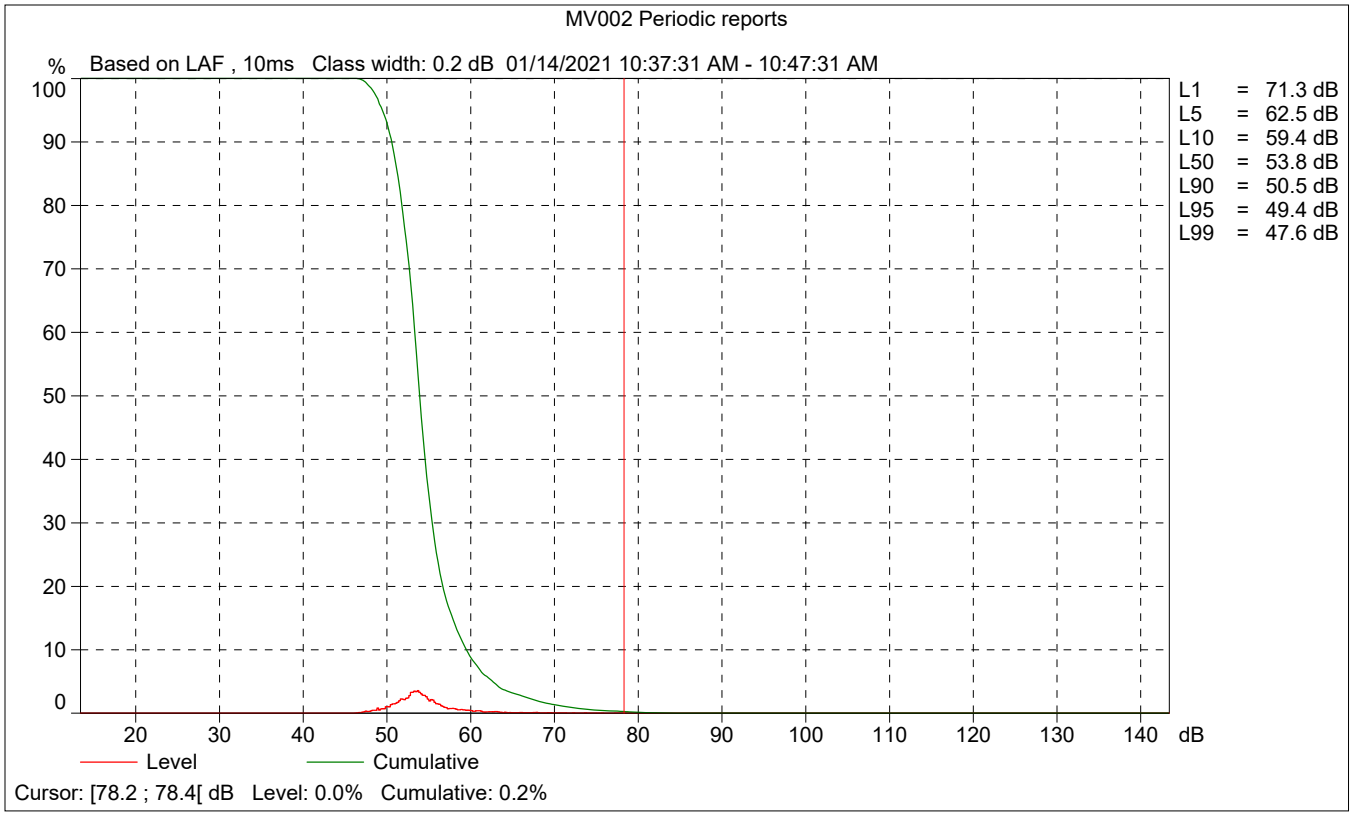

MV002
dB
01/14/2021 10:42:30 AM - 10:42:31 AM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LZeq
Cursor: (A) Leq=50.0 dB


MV002 Periodic reports
Sound
dB
140
120
100
80
60
40
20
10:40:00 AM
10:50:00 AM
11:00:00 AM
11:10:00 AM
11:20:00 AM
11:30:00 AM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 01/14/2021 10:37:31 AM - 11:37:31 AM LAIeq=62.6 dB LAFmax=82.3 dB LCpeak=104.5 dB LAFmin=46.2 dB

MV002 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	62.6	82.3	46.2
Time	10:37:31 AM	0:10:00				
Date	01/14/2021					




MV002 Periodic reports
% Based on LAF , 10ms Class width: 0.2 dB 01/14/2021 10:37:31 AM - 10:47:31 AM
100
90
80
70
60
50
40
30
20
10
0
20 30 40 50 60 70 80 90 100 110 120 130 140 dB
L1 = 71.3 dB
L5 = 62.5 dB
L10 = 59.4 dB
L50 = 53.8 dB
L90 = 50.5 dB
L95 = 49.4 dB
L99 = 47.6 dB
Level
Cumulative
Cursor: [78.2 ; 78.4[dB Level: 0.0% Cumulative: 0.2%

Appendix H
Focused Traffic Study

MASTER CASE NO. 20-073
INITIAL STUDY

June 19, 2023

TJW ENGINEERING, INC.
TRAFFIC ENGINEERING &
TRANSPORTATION PLANNING
CONSULTANTS

Mr. RJ Hernandez
MONTE VISTA HOMES
11175 Azusa Ct., Suite 110
Rancho Cucamonga, CA 91730

SUBJECT: Fontana 53 Focused Traffic Study, City of Fontana

Dear Mr. Hernandez,

TJW Engineering, Inc. (TJW) is pleased to submit this Focused Traffic Study for the Fontana 53 site ("Project") located southeast of Poplar Avenue and Orchid Avenue in the City of Fontana. This traffic study has been prepared to meet the traffic study requirements for the City of Fontana and assesses the forecast traffic operations associated with the proposed project and its impact on the local street network.

Project Description

The Project is located southeast of Poplar Avenue and Orchid Avenue in the City of Fontana. The Project consists of demolishing a single-family home and constructing 53 new single-family homes for a net total of 52 single-family homes. The Project is expected to be operational by 2024. Access will be provided via the intersections of Poplar Avenue/Orchid Avenue and Catawba Avenue/Hibiscus Street. The attached site plan illustrates the Project land use layout and the driveway locations.

Project Trip Generation

The Project trip generation was determined using trip generation rates from the latest edition of the Institute of Transportation Engineers Trip Generation Manual (11th Edition). The Project is projected to generate 491 net daily trips, 36 net AM peak hour trips, and 49 net PM peak hour trips. The trip generation calculations are attached for reference.

Project Trip Distribution

Projecting trip distribution involves the process of identifying probable destinations and traffic routes that will be utilized by the proposed project's traffic. The potential interaction between the proposed land use and surrounding regional access routes are considered to identify the probable routes onto which project traffic would distribute. The projected trip distribution for the proposed project is based on anticipated

travel patterns to and from the project site. The Project trip distribution and trip assignments are attached for reference.

Study Area

Level of service (LOS) has been assessed for the following intersections:

1. Poplar Avenue / Orchid Avenue
2. Catawba Avenue / Hibiscus Street

To establish baseline conditions, new traffic counts were conducted at the study area intersections on Thursday May 25, 2023. The count worksheets are attached for reference. Cumulative projects have not been provided by City of Fontana staff at this time; therefore, to establish Opening Year conditions, an annual ambient growth rate of 2% per year for one year has been applied to baseline volumes.

Intersection Evaluation Methodology

The City of Fontana traffic study guidelines require unsignalized intersection operations be analyzed utilizing the HCM 7th Edition methodology. Intersection operation for unsignalized intersections is based on the weighted average control delay expressed in seconds per vehicle.

At a two-way or side-street stop-controlled intersections, LOS is calculated for each stop-controlled minor street movement, for the left-turn movement(s) from the major street, and for the intersection as a whole. For approaches consisting of a single lane, the delay is calculated as the average of all movements in that lane. For all-way stop-controlled intersection, LOS is computed for the intersection as a whole.

The following table describes the general characteristics of traffic flow and accompanying delay ranges at unsignalized intersections.

HCM – LOS & Delay Ranges – Unsignalized Intersections

Level Of Service	Description	Delay (in seconds)
A	Little or no delays.	0 – 10.00
B	Short traffic delays.	10.01 – 15.00
C	Average traffic delays.	15.01 – 25.00
D	Long traffic delays. Multiple vehicles in queue.	25.01 – 35.00
E	Very long delays. Demand approaching capacity of intersection	35.01 – 50.00
F	Very constrained flow with extreme delays and intersection capacity exceeded.	> 50.01

Source: Transportation Research Board, *Highway Capacity Manual*, HCM7 Edition (Washington D.C., 2022).

This analysis utilizes *PTV Vistro 2022* analysis software for all intersections. Vistro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis specified in Chapter 16 of the HCM. Per City of Fontana Traffic Impact Analysis Guidelines, a base saturation flow rate of 1900 cars per hour per lane has been utilized.

Intersection Evaluation Results

The City of Fontana has established LOS "C" as the threshold for acceptable intersection operations. LOS analysis worksheets and Opening Year With Project volumes are attached for reference.

Level Of Service Analysis Results (Existing)

Intersection	Existing AM Delay	Existing AM LOS	Existing PM Delay	Existing PM LOS
Poplar Avenue / Orchid Avenue	11.4	B	9.7	A
Catawba Avenue / Hibiscus Street	9.9	A	9.6	A

Level Of Service Analysis Results (Opening Year With Project)

Intersection	Opening Year With Project AM Delay	Opening Year With Project AM LOS	Opening Year With Project PM Delay	Opening Year With Project PM LOS
Poplar Avenue / Orchid Avenue	11.7	B	9.9	A
Catawba Avenue / Hibiscus Street	10.4	B	10.1	B

As shown above, the study area intersections operate at an acceptable LOS during both peak hours in Opening Year With Project conditions. As such, no improvements are required for the study area intersections.

Vehicle Miles Traveled (VMT) Screening

Based on the City of Fontana "Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment" (October 2020), screening criteria can be utilized to effectively screen projects from project-level VMT assessment. The guidelines identify that projects which generate less than 500 net average daily trips would not cause a substantial increase in the total citywide or regional VMT and are therefore presumed to have a less than significant impact on VMT. Because the Project generates 491 net average daily trips, the Project is presumed to have a less than significant impact on VMT and further VMT analysis is not required.

Conclusion

The study area intersections are projected to operate at an acceptable LOS during both peak hours in Opening Year With Project conditions. As such, no improvements are required for the study area intersections.

Based on City of Fontana VMT guidelines, projects which generate less than 500 net average daily trips would not cause a substantial increase in the total citywide or regional VMT and are therefore presumed to have a less than significant impact on VMT. Because the Project is expected to generate 491 net average daily trips, further VMT analysis is not required.

Please contact us at (949) 878-3509 if you have any questions regarding this analysis.

Sincerely,

Gene Kim, PE, TE
Principal Engineer

Registered Civil Engineer *#83175*
Registered Traffic Engineer *#2684*

David Chew, PTP
Transportation Planner

Brandon Alvarado, EIT
Transportation Planner

PROJECT SITE PLAN

FONTANA 53 -TRACT 20358 - 53 HOMES

OWNER/ CONSULTANTS

OWNER: MONTE VISTA ASSETS, INC.
8628 HILLSIDE ROAD
ALTA LOMA , CA. 91701
(951) 204-1742

BUILDING DESIGNER: KVH DESIGN GROUP
165 E. 24th ST ,
UPLAND , CA. 91784
(909) 985-2552
(909) 985-2782 FAX
CONTACT-Kurt von Hatten

PROJECT INFORMATION/ SITE DATA

ZONING: R2, MEDIUM DENSITY RESIDENTIAL (5.1-12 du/ac)
UP TO 7.6 du/ac FOR SINGLE-FAMILY DETACHED

BUILDING TYPE: V-B

FIRE SPRINKLERS: YES

NUMBER OR STORIES: TWO

CONSTRUCTION TYPE: VB, SPRINKLERED

OCCUPANCY: R-3

OCCUPANCY OF GARAGE : U

APN: 0233-122-60, 63, 28 & 29

TOTAL SITE AREA: 9.24 GROSS ACRES +/-
8.81 NET ACRES +/-

LEGAL DESCRIPTION: BEING A SUBDIVISION OF A PORTION OF LOT 783, ACCORDING TO MAP SHOWING SUBDIVISION OF LANDS BELONGING TO THE SEMI-TROPIC LAND AND WATER COMPANY, IN THE CITY OF FONTANA, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 11 PAGE 12 OF MAPS, IN THE OFFICE OF THE RECORDER OF SAID COUNTY.

CODE: CBC 2019, CRC 2019, CMC 2019, CPC 2019, CEC 2019, CGBC 2019, CGBSC 2019, CFC 2019

SCOPE OF WORK

NEW RESIDENTIAL TRACT CONSISTING OF 3 DIFFERENT FLOOR PLANS WITH 3 ELEVATION STYLES PER PLAN FOR A TOTAL OF 53 HOMES.

TOTAL UNITS: 53 UNITS

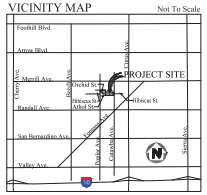
UNIT BREAKDOWN:
PLAN 1 = ———— 20 UNITS
1,903 SQ. FT. - 3 BEDRM, GARAGE
PLAN 2 = ———— 14 UNITS
2,186 SQ. FT. - 4 BEDRM, GARAGE
PLAN 3 = ———— 19 UNITS
2,368 SQ. FT. - 4 BEDRM, GARAGE

PROJECT DENSITY: 5.4 UNITS/NET/GROSS ACRE +/-

SETBACKS:
FRONT, GARAGE 22'-0"
FRONT, LIVING 15'-0"
FRONT, VARIATION 4'-0"
SIDE 5'-0"
10'-0" BUILDING SEPARATION
REAR 10'-0"
HEIGHT 35'-0"

VICINITY MAP

Not To Scale



SHEET INDEX

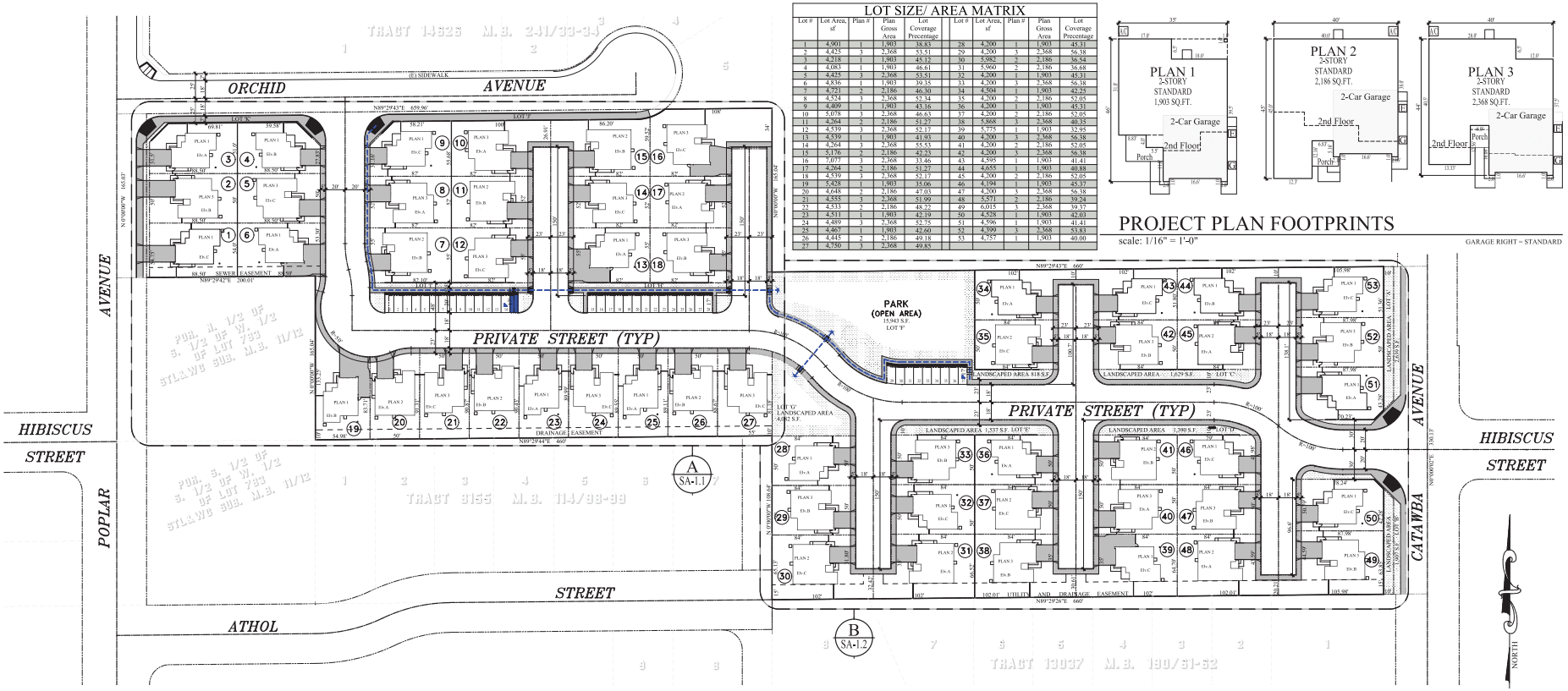
LOT SIZE/ AREA MATRIX

Lot #	Lot Area, sf	Plan #	Plan Gross Area	Lot Coverage Precentage	Lot #	Lot Area, sf	Plan #	Plan Gross Area	Lot Coverage Precentage
1	4,901	1	1,903	38.83	28	4,200	1	1,903	45.31
2	4,425	3	2,368	53.51	29	4,200	3	2,368	56.38
3	4,218	1	1,903	45.12	30	5,982	2	2,186	36.54
4	4,083	1	1,903	46.61	31	5,960	2	2,186	36.68
5	4,425	3	2,368	53.51	32	4,200	1	1,903	45.31
6	4,836	1	1,903	39.35	33	4,200	3	2,368	56.38
7	4,721	2	2,186	46.30	34	4,504	1	1,903	42.25
8	4,524	3	2,368	52.34	35	4,200	2	2,186	52.05
9	4,409	1	1,903	43.16	36	4,200	1	1,903	45.31
10	5,078	3	2,368	46.63	37	4,200	2	2,186	52.05
11	4,264	2	2,186	51.27	38	5,868	3	2,368	40.35
12	4,539	3	2,368	52.17	39	5,775	1	1,903	32.95
13	4,539	1	1,903	41.93	40	4,200	3	2,368	56.38
14	4,264	3	2,368	55.53	41	4,200	2	2,186	52.05
15	5,176	2	2,186	42.23	42	4,200	3	2,368	56.38
16	7,077	3	2,368	33.46	43	4,595	1	1,903	41.41
17	4,264	2	2,186	51.27	44	4,655	1	1,903	40.88
18	4,539	3	2,368	52.17	45	4,200	2	2,186	52.05
19	5,428	1	1,903	35.06	46	4,194	1	1,903	45.37
20	4,648	2	2,186	47.03	47	4,200	3	2,368	56.38
21	4,555	3	2,368	51.99	48	5,571	2	2,186	39.24
22	4,533	2	2,186	48.22	49	6,015	3	2,368	39.37
23	4,511	1	1,903	42.19	50	4,528	1	1,903	42.03
24	4,489	3	2,368	52.75	51	4,596	1	1,903	41.41
25	4,467	1	1,903	42.60	52	4,399	3	2,368	53.83
26	4,445	2	2,186	49.18	53	4,757	1	1,903	40.00
27	4,750	3	2,368	49.85					

PROJECT PLAN FOOTPRINTS

scale: 1/16" = 1'-0"

GARAGE RIGHT = STANDARD



SITE PLAN: KEY PLAN

scale: 1" = 50'-0"

DESIGNED BY:
KVH DESIGN GROUP
165 E. 24th ST. #D
UPLAND, CA. 91784
(909) 985-2552

FOR:
MONTE VISTA ASSETS, INC.
8628 HILLSIDE ROAD
ALTA LOMA, CA. 91701
(951) 240-1742

PROJECT TITLE:
FONTANA 53
TRACT 20358 - 53 LOT
SINGLE FAMILY SUBDIVISION
POPLAR AVENUE
FONTANA, CA.

SHEET TITLE
COVER SHEET, PROJECT INFORMATION & SITE PLAN

FONTANA

Bldg.Dept.Number:

DATE
12/08/2022

JOB
A20-006

REVISIONS

SHEET
SA-1.0

TRIP GENERATION

Table 1

Project Trip Generation

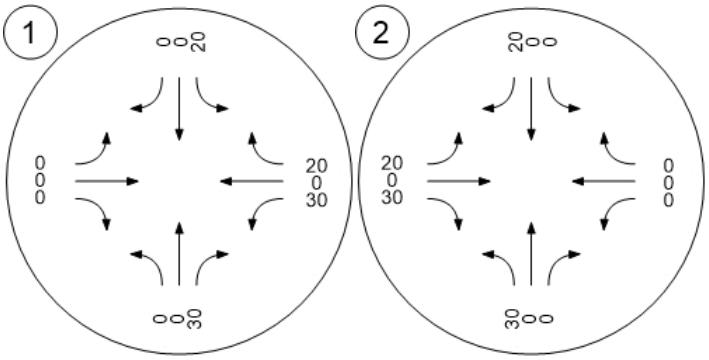
Proposed Land Use[1]	ITE Code	Qty	Unit[2]	Daily		AM Peak Hour					PM Peak Hour				
				Rate	Volume	Rate	In:Out Split	Volume			Rate	In:Out Split	Volume		
								In	Out	Total			In	Out	Total
Single-Family Detached Housing	210	53	DU	9.43	500	0.7	26:74	10	27	37	0.94	63:37	32	18	50
Existing Single-Family Detached Housing	*210*	*-1*	*DU*	*9.43*	*-9*	*0.7*	*26:74*	*0*	*-1*	*-1*	*0.94*	*63:37*	*-1*	*0*	*-1*
Net Total		**52**	**DU**		**491**			**10**	**26**	**36**			**31**	**18**	**49**

1: Trip generation rates from ITE Trip Generation (11th Edition, 2021).

2: DU = Dwelling Units.

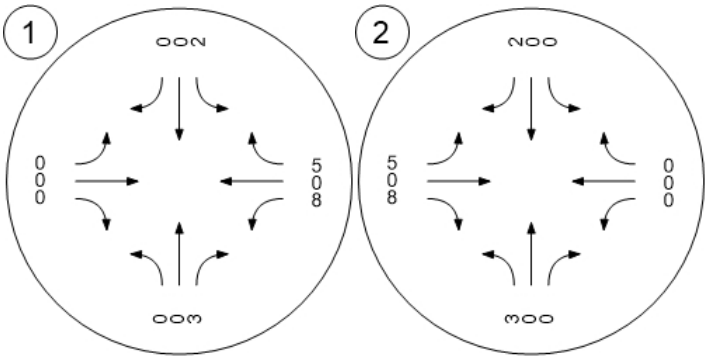
PROJECT TRIP DISTRIBUTION

Traffic Volume - Net New Site Trips

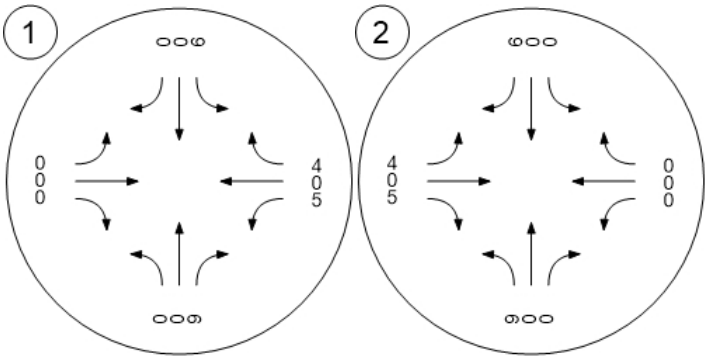


PROJECT VOLUMES

Traffic Volume - Net New Site Trips



Traffic Volume - Net New Site Trips



TRAFFIC COUNT SURVEYS

INTERSECTION TURNING MOVEMENT COUNTS

T218

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Thu, May 25, 23

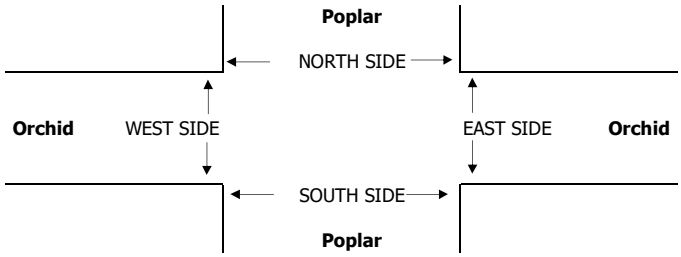
LOCATION: Fontana
NORTH & SOUTH: Poplar
EAST & WEST: Orchid

PROJECT #: SC4060
LOCATION #: 1
CONTROL: STOP W

NOTES:

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

		NORTHBOUND (Poplar)			SOUTHBOUND (Poplar)			EASTBOUND (Orchid)			WESTBOUND (Orchid)				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	5	1	0	17	0	0	0	0	0	0	0	23	0	0	0	0	0
	7:15 AM	0	24	0	0	30	0	0	0	0	0	0	0	54	0	0	0	0	0
	7:30 AM	0	35	0	0	63	0	0	0	0	1	0	0	99	0	0	0	0	0
	7:45 AM	0	42	2	0	30	1	0	0	0	1	0	0	76	0	0	0	0	0
	8:00 AM	0	14	0	0	22	0	0	0	0	0	0	0	36	0	0	0	0	0
	8:15 AM	0	11	0	0	16	0	0	0	1	0	0	0	28	0	0	0	0	0
	8:30 AM	1	13	0	0	15	0	0	0	0	0	0	0	29	0	0	0	0	0
	8:45 AM	0	12	0	0	9	0	0	0	0	0	0	0	21	0	0	0	0	0
	VOLUMES	1	156	3	0	202	1	0	0	1	2	0	0	366	0	0	0	0	0
	APPROACH %	1%	98%	2%	0%	100%	0%	0%	0%	100%	100%	0%	0%						
	APP/DEPART	160	/	156	203	/	205	1	/	3	2	/	2	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	115	2	0	145	1	0	0	0	2	0	0	265					
	APPROACH %	0%	98%	2%	0%	99%	1%	0%	0%	0%	100%	0%	0%						
	PEAK HR FACTOR		0.665			0.579			0.000			0.500		0.669					
	APP/DEPART	117	/	115	146	/	147	0	/	2	2	/	1	0					
PM	4:00 PM	0	20	0	0	14	0	0	0	0	0	0	0	34	0	0	0	0	0
	4:15 PM	0	17	0	0	12	0	0	0	0	0	0	0	29	0	0	0	0	0
	4:30 PM	0	25	0	1	16	0	0	0	0	0	0	0	42	0	0	0	0	0
	4:45 PM	0	27	1	1	16	0	1	0	0	0	0	2	48	0	0	0	0	0
	5:00 PM	0	21	1	1	13	1	0	0	1	0	0	1	39	0	0	0	0	0
	5:15 PM	1	24	0	1	17	0	0	0	0	0	0	0	43	1	0	0	0	1
	5:30 PM	0	26	0	0	15	0	1	0	0	0	0	1	43	0	0	1	0	1
	5:45 PM	1	23	0	0	18	0	0	0	1	0	0	0	43	1	0	0	0	1
	VOLUMES	2	183	2	4	121	1	2	0	2	0	0	4	321	2	0	1	0	3
	APPROACH %	1%	98%	1%	3%	96%	1%	50%	0%	50%	0%	0%	100%						
	APP/DEPART	187	/	188	126	/	125	4	/	6	4	/	2	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	1	98	2	3	61	1	2	0	1	0	0	4	173					
	APPROACH %	1%	97%	2%	5%	94%	2%	67%	0%	33%	0%	0%	100%						
	PEAK HR FACTOR		0.902			0.903			0.750			0.500		0.901					
	APP/DEPART	101	/	103	65	/	63	3	/	5	4	/	2	0					



INTERSECTION TURNING MOVEMENT COUNTS

T218

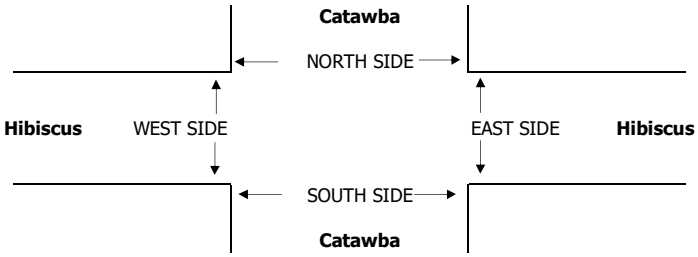
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:	LOCATION:	Fontana	PROJECT #:	SC4060
Thu, May 25, 23	NORTH & SOUTH:	Catawba	LOCATION #:	2
	EAST & WEST:	Hibiscus	CONTROL:	STOP W

NOTES:

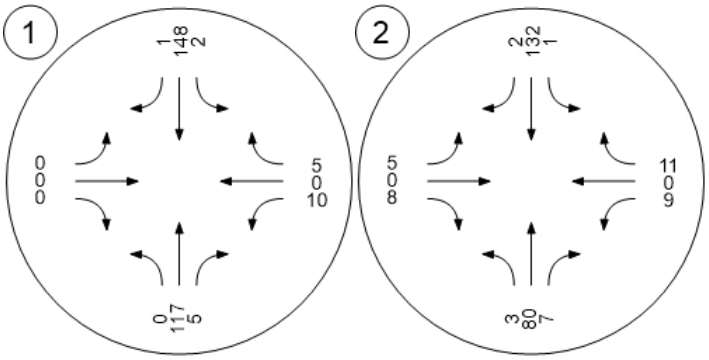
AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

		NORTHBOUND (Catawba)			SOUTHBOUND (Catawba)			EASTBOUND (Hibiscus)			WESTBOUND (Hibiscus)				U-TURNS				
	LANES:	NL X	NT 1	NR 0	SL 0	ST 1	SR X	EL X	ET X	ER X	WL 0	WT X	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	9	1	0	16	0	0	0	0	3	0	2	31	0	0	0	0	0
	7:15 AM	0	11	0	1	33	0	0	0	0	5	0	3	53	0	0	0	0	0
	7:30 AM	0	20	0	0	35	0	0	0	0	2	0	2	59	0	0	0	0	0
	7:45 AM	0	18	3	0	31	0	0	0	0	2	0	2	56	0	0	0	0	0
	8:00 AM	0	29	4	0	30	0	0	0	0	0	0	4	67	0	0	0	0	0
	8:15 AM	0	18	3	1	16	0	0	0	0	3	0	1	42	0	0	0	0	0
	8:30 AM	0	17	1	0	18	0	0	0	0	3	0	0	39	0	0	0	0	0
	8:45 AM	0	13	1	1	7	0	0	0	0	5	0	1	28	0	0	0	0	0
	VOLUMES	0	135	13	3	186	0	0	0	0	23	0	15	375	0	0	0	0	0
	APPROACH %	0%	91%	9%	2%	98%	0%	0%	0%	0%	61%	0%	39%						
	APP/DEPART	148	/	150	189	/	209	0	/	16	38	/	0	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	0	78	7	1	129	0	0	0	0	9	0	11	235					
	APPROACH %	0%	92%	8%	1%	99%	0%	0%	0%	0%	45%	0%	55%						
	PEAK HR FACTOR		0.644			0.929			0.000			0.625		0.877					
	APP/DEPART	85	/	89	130	/	138	0	/	8	20	/	0	0					
PM	4:00 PM	0	19	4	3	16	0	0	0	0	2	0	2	46	0	0	0	0	0
	4:15 PM	0	18	2	1	12	0	0	0	0	2	0	1	36	0	0	0	0	0
	4:30 PM	0	18	2	0	19	0	0	0	0	1	0	1	41	0	0	0	0	0
	4:45 PM	0	20	3	1	11	0	0	0	0	3	0	0	38	0	0	0	0	0
	5:00 PM	0	24	3	1	14	0	0	0	0	1	0	1	44	0	0	0	0	0
	5:15 PM	0	28	3	3	14	0	0	0	0	2	0	1	51	0	1	0	0	1
	5:30 PM	0	14	2	1	16	0	0	0	0	1	0	2	36	0	0	0	0	0
	5:45 PM	0	19	2	1	24	0	0	0	0	0	0	2	48	0	0	0	0	0
	VOLUMES	0	160	21	11	126	0	0	0	0	12	0	10	340	0	1	0	0	1
	APPROACH %	0%	88%	12%	8%	92%	0%	0%	0%	0%	55%	0%	45%						
	APP/DEPART	181	/	171	137	/	138	0	/	31	22	/	0	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	0	85	10	6	68	0	0	0	0	4	0	6	179					
	APPROACH %	0%	89%	11%	8%	92%	0%	0%	0%	0%	40%	0%	60%						
	PEAK HR FACTOR		0.766			0.740			0.000			0.833		0.877					
	APP/DEPART	95	/	92	74	/	72	0	/	15	10	/	0	0					

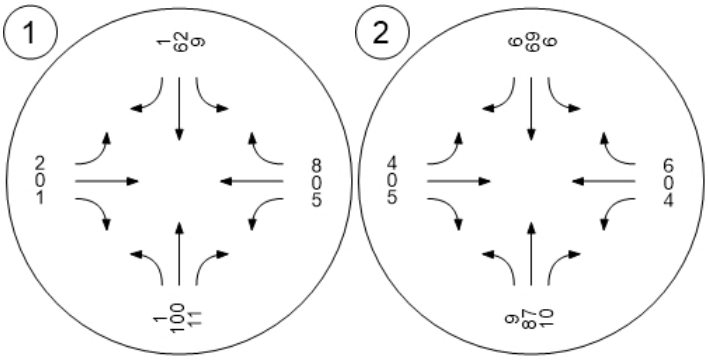


OPENING YEAR WITH PROJECT VOLUMES

Traffic Volume - Future Total Volume



Traffic Volume - Future Total Volume



EXISTING ANALYSIS WORKSHEETS

Fontana 53

Vistro File: C:\...\MVH23001 Vistro.vistro
Report File: C:\...\E AM.pdf

Scenario 1 Existing AM
6/19/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Poplar Ave / Orchid Ave	Two-way stop	HCM 7th Edition	WB Left	0.005	11.4	B
2	Catawba Avenue / Hibiscus Street	Two-way stop	HCM 7th Edition	WB Left	0.013	9.9	A

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

Intersection Level Of Service Report
Intersection 1: Poplar Ave / Orchid Ave

Control Type:	Two-way stop	Delay (sec / veh):	11.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	115	2	0	145	1	0	0	0	2	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	115	2	0	145	1	0	0	0	2	0	0
Peak Hour Factor	0.6690	0.6690	0.6690	0.6690	0.6690	0.6690	0.6690	0.6690	0.6690	0.6690	0.6690	0.6690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	43	1	0	54	0	0	0	0	1	0	0
Total Analysis Volume [veh/h]	0	172	3	0	217	1	0	0	0	3	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	7.66	0.00	0.00	7.57	0.00	0.00	11.34	11.62	9.38	11.37	11.65	9.17
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.40	0.40
d_A, Approach Delay [s/veh]	0.00			0.00			10.78			11.37		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.09											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 2: Catawba Avenue / Hibiscus Street

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	78	7	1	129	9	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	7	1	129	9	11
Peak Hour Factor	0.8770	0.8770	0.8770	0.8770	0.8770	0.8770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	2	0	37	3	3
Total Analysis Volume [veh/h]	89	8	1	147	10	13
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.41	0.00	9.94	8.85
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.08	0.08
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.04	0.04	2.07	2.07
d_A, Approach Delay [s/veh]	0.00		0.05		9.33	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.83					
Intersection LOS	A					

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Vistro File: C:\...\MVH23001 Vistro.vistro
Report File: C:\...\E PM.pdf

Scenario 2 Existing PM
6/19/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Poplar Ave / Orchid Ave	Two-way stop	HCM 7th Edition	EB Left	0.003	9.7	A
2	Catawba Avenue / Hibiscus Street	Two-way stop	HCM 7th Edition	WB Left	0.006	9.6	A

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

Intersection Level Of Service Report
Intersection 1: Poplar Ave / Orchid Ave

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	1	98	2	3	61	1	2	0	1	0	0	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	98	2	3	61	1	2	0	1	0	0	4
Peak Hour Factor	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	27	1	1	17	0	1	0	0	0	0	1
Total Analysis Volume [veh/h]	1	109	2	3	68	1	2	0	1	0	0	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.35	0.00	0.00	7.44	0.00	0.00	9.71	10.12	8.64	9.69	10.12	8.83
Movement LOS	A	A	A	A	A	A	A	B	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.04	0.04	0.04	0.13	0.13	0.13	0.27	0.27	0.27	0.32	0.32	0.32
d_A, Approach Delay [s/veh]	0.07			0.31			9.35			8.83		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.49											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 2: Catawba Avenue / Hibiscus Street

Control Type:	Two-way stop	Delay (sec / veh):	9.6
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.006

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	85	10	6	68	4	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	10	6	68	4	6
Peak Hour Factor	0.8770	0.8770	0.8770	0.8770	0.8770	0.8770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	3	2	19	1	2
Total Analysis Volume [veh/h]	97	11	7	78	5	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	7.44	0.00	9.61	8.84
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.01	0.01	0.04	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.29	0.29	1.04	1.04
d_A, Approach Delay [s/veh]	0.00		0.61		9.16	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.79					
Intersection LOS	A					

OPENING YEAR WITH PROJECT ANALYSIS WORKSHEETS

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Vistro File: C:\...\MVH23001 Vistro.vistro
Report File: C:\...\OYP AM.pdf

Scenario 5 Opening Year With Project AM
6/19/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Poplar Ave / Orchid Ave	Two-way stop	HCM 7th Edition	WB Left	0.027	11.7	B
2	Catawba Avenue / Hibiscus Street	Two-way stop	HCM 7th Edition	WB Left	0.015	10.4	B

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

Intersection Level Of Service Report
Intersection 1: Poplar Ave / Orchid Ave

Control Type:	Two-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.027

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	115	2	0	145	1	0	0	0	2	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	3	2	0	0	0	0	0	8	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	117	5	2	148	1	0	0	0	10	0	5
Peak Hour Factor	0.6690	0.6690	0.6690	0.6690	0.6690	0.6690	0.6690	0.6690	0.6690	0.6690	0.6690	0.6690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	44	2	1	55	0	0	0	0	4	0	2
Total Analysis Volume [veh/h]	0	175	7	3	221	1	0	0	0	15	0	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.01
d_M, Delay for Movement [s/veh]	7.67	0.00	0.00	7.59	0.00	0.00	11.59	11.79	9.40	11.71	11.97	9.37
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.11	0.11	0.11
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.13	0.13	0.13	0.00	0.00	0.00	2.73	2.73	2.73
d_A, Approach Delay [s/veh]	0.00			0.10			10.92			10.97		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.62											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 2: Catawba Avenue / Hibiscus Street

Control Type:	Two-way stop	Delay (sec / veh):	10.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	78	7	1	129	0	0	0	0	9	0	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	0	0	2	5	0	8	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	80	7	1	132	2	5	0	8	9	0	11
Peak Hour Factor	0.8770	0.8770	0.8770	0.8770	0.8770	0.8770	0.8770	0.8770	0.8770	0.8770	0.8770	0.8770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	23	2	0	38	1	1	0	2	3	0	3
Total Analysis Volume [veh/h]	3	91	8	1	151	2	6	0	9	10	0	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.01
d_M, Delay for Movement [s/veh]	7.53	0.00	0.00	7.41	0.00	0.00	10.38	10.68	9.11	10.39	10.70	8.87
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.01	0.00	0.00	0.00	0.06	0.06	0.06	0.09	0.09	0.09
95th-Percentile Queue Length [ft/ln]	0.13	0.13	0.13	0.04	0.04	0.04	1.44	1.44	1.44	2.17	2.17	2.17
d_A, Approach Delay [s/veh]	0.22			0.05			9.62			9.53		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.34											
Intersection LOS	B											

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Report File: C:\...\OYP PM.pdf

Scenario 6 Opening Year With Project PM
6/19/2023

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Poplar Ave / Orchid Ave	Two-way stop	HCM 7th Edition	EB Left	0.003	9.9	A
2	Catawba Avenue / Hibiscus Street	Two-way stop	HCM 7th Edition	EB Left	0.007	10.1	B

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

Intersection Level Of Service Report
Intersection 1: Poplar Ave / Orchid Ave

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	1	98	2	3	61	1	2	0	1	0	0	4
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	9	6	0	0	0	0	0	5	0	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	100	11	9	62	1	2	0	1	5	0	8
Peak Hour Factor	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	28	3	2	17	0	1	0	0	1	0	2
Total Analysis Volume [veh/h]	1	111	12	10	69	1	2	0	1	6	0	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
d_M, Delay for Movement [s/veh]	7.35	0.00	0.00	7.47	0.00	0.00	9.94	10.33	8.64	9.93	10.35	8.93
Movement LOS	A	A	A	A	A	A	A	B	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.02	0.02	0.02	0.01	0.01	0.01	0.05	0.05	0.05
95th-Percentile Queue Length [ft/ln]	0.04	0.04	0.04	0.42	0.42	0.42	0.28	0.28	0.28	1.35	1.35	1.35
d_A, Approach Delay [s/veh]	0.06			0.93			9.51			9.33		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.13											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 2: Catawba Avenue / Hibiscus Street

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	85	10	6	68	0	0	0	0	4	0	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200	1.0200
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	0	0	0	0	6	4	0	5	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	87	10	6	69	6	4	0	5	4	0	6
Peak Hour Factor	0.8770	0.8770	0.8770	0.8770	0.8770	0.8770	0.8770	0.8770	0.8770	0.8770	0.8770	0.8770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	25	3	2	20	2	1	0	1	1	0	2
Total Analysis Volume [veh/h]	10	99	11	7	79	7	5	0	6	5	0	7
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.01
d_M, Delay for Movement [s/veh]	7.40	0.00	0.00	7.44	0.00	0.00	10.08	10.47	8.74	10.07	10.46	8.85
Movement LOS	A	A	A	A	A	A	B	B	A	B	B	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.01	0.01	0.01	0.04	0.04	0.04	0.04	0.04	0.04
95th-Percentile Queue Length [ft/ln]	0.43	0.43	0.43	0.30	0.30	0.30	1.00	1.00	1.00	1.09	1.09	1.09
d_A, Approach Delay [s/veh]	0.62			0.56			9.35			9.36		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.45											
Intersection LOS	B											