
Appendix G:

Noise Supporting Information

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Mobile Construction Activity Noise Calculation

Receptor:	Receiving residential property line	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								
		Reference (dBA) 50 ft	Quantity	Usage factor[1]	Distance to Receptor	Ground Effect[2]	Shielding (dBA)[3]	Calculated (dBA)		Energy
		Lmax						Lmax	Leq	
No.	Equipment Description	Lmax								
1	Grader	85	1	40	130	1	0	76.7	68.6	7196808.512
2	Excavator	85	1	40	180	1	0	73.9	64.3	2711143.399
3	Dozer	85	1	40	180	1	0	73.9	64.3	2711143.399
4	Front End Loader	80	1	40	180	1	0	68.9	59.3	857338.8203
5	Backhoe	80	1	40	180	1	0	68.9	59.3	857338.8203
6										
7										
8										
9										
10										
Notes:							Lmax[4]	77	Leq	72

- [1] Percentage of time activity occurs each hour
[2] Soft ground terrain between project site and receptor.
[3] Shielding due to terrain or structures
[4] Calculated Lmax is the Loudest value.

Equipment operating at Closest Point to Nearest Recptor as Shown Above
Assuming closest equipment operating 180 feet from nearest receptor
Assuming closest equipment operating 230 feet from nearest receptor
Assuming closest equipment operating 280 feet from nearest receptor
Lunch break
Assuming closest equipment operating 330 feet from nearest receptor
Assuming closest equipment operating 380 feet from nearest receptor
Assuming closest equipment operating 430 feet from nearest receptor
Assuming closest equipment operating 480 feet from nearest receptor

8-Hour Average Calculation					
	Time	Hourly Leq	Leq'	0.1*Leq	antiLog
Night	12:00 AM	0.0	10.0	1	10
	1:00 AM	0.0	10.0	1	10
	2:00 AM	0.0	10.0	1	10
	3:00 AM	0.0	10.0	1	10
	4:00 AM	0.0	10.0	1	10
	5:00 AM	0.0	10.0	1	10
	6:00 AM	0.0	10.0	1	10
Day	7:00 AM	0.0	0.0	0	1
	8:00 AM	71.6	71.6	7.156360521	14333772.95
	9:00 AM	68.0	68.0	6.8	6309573.445
	10:00 AM	65.0	65.0	6.5	3162277.66
	11:00 AM	65.0	65.0	6.5	3162277.66
	12:00 PM	0.0	0.0	0	1
	1:00 PM	64.0	64.0	6.4	2511886.432
	2:00 PM	63.0	63.0	6.3	1995262.315
	3:00 PM	62.0	62.0	6.2	1584893.192
	4:00 PM	61.0	61.0	6.1	1258925.412
	5:00 PM	0.0	0.0	0	1
	6:00 PM	0.0	0.0	0	1
	7:00 PM	0.0	5.0	0.5	3.16227766
Evening	8:00 PM	0.0	5.0	0.5	3.16227766
	9:00 PM	0.0	5.0	0.5	3.16227766
	10:00 PM	0.0	10.0	1	10
Night	11:00 PM	0.0	10.0	1	10
Sum					34318972.55
Sum/8					4289871.569
Log10(Sum/8)					6.63244429
10*Log10(Sum/8)					66.3244429
8-Hour Average					66

Residential-Grade Mechanical Equipment

Receptor:	Nearest Residential Receptor property line	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								
		Reference (dBA) 3 ft	Quantity	Usage factor[1]	Distance to Receptor	Ground Effect[2]	Shielding (dBA)[3]	Calculated (dBA)		Energy
No.	Equipment Description	Lmax						Lmax	Leq	
1	Residential grade mechanical ventilation equipment	70	2	80	85	0.5	0	41.0	35.7	3744.34455
2	Residential grade mechanical ventilation equipment	70	2	80	95	0.5	0	40.0	34.5	2835.398506
3	Residential grade mechanical ventilation equipment	70	2	80	100	0.5	0	39.5	34.0	2494.153163
4	Residential grade mechanical ventilation equipment	70	2	80	115	0.5	0	38.3	32.5	1758.646364
5	Residential grade mechanical ventilation equipment	70	2	80	135	0.5	0	36.9	30.7	1177.846507
6										
7										
8										
9										
10										
									Leq	41

Notes:

[1] Percentage of time activity occurs each hour

[2] Soft ground terrain between project site and receptor.

[3] Shielding due to structural/soundwall shielding

Project Number: 49400051

Sheet 1 of 3

Project Name: Aliso Viejo Freedom Lane Project

Test Personnel: Gina Culver, Tsui Li

NOISE MEASUREMENT SURVEY

Site Number: ST-1 Date: 1/22/25 Time: From 11:48 to 12:03

Site Location: Northeast corner of site (33.561812, -117.727661)

Primary Noise Sources: Parking lot sounds, people conversing, occasional cars driving by.

Measurement Results

	dBA
L _{eq}	64.0
L _{max}	68.3
L _{min}	52.7
L _{peak}	102.4
L ₅	68.1
L ₁₀	67.5
L ₅₀	62.7
L ₉₀	58.9
SEL	

Observed Noise Sources/Events

Time	Noise Source/Event	dBA
11:48	fire siren in the distance	
11:54	truck back up sounds	

Comments: Fire engine drove by during visit. Next to road and parking lot.

Equipment:

Settings: A-Weighted ☐ Other ☐

Measured Difference:

Slow ☐ Fast ☐

dBA

Windscreen ☒

Atmospheric Conditions

Maximum Wind Velocity (mph)	Average Wind Velocity (mph)	Temperature (F)	Relative Humidity (%)	
2	2	71	18	
Comments:				

Photos Taken

Photo Number	Location/Description
1	at location facing southeast
2	at location facing east
3	at location facing north
4	at location facing west

Traffic Description

Roadway	# Lanes	Posted Speed	Average Speed	NB/EB Counts	SB/WB Counts
Freedom Ln.	1 (roundabout)				

Diagram/Further Comments

Cars driving by during 15 minutes = 15
delivery+garbage+fire trucks = 3

Project Number: 49400051

Sheet 2 of 3

Project Name: Aliso Viejo Freedom Lane Project

Test Personnel: Gina Culver, Tsui Li

NOISE MEASUREMENT SURVEY

Site Number: ST-2 Date: 1/22/25 Time: From 12:09 to 12:24

Site Location: 5 feet south of northern boundary. 40 feet east of western boundary. Northwest corner of site (33.562408, -117.728947)

Primary Noise Sources: Construction noise from adjacent property to the west. Cars and trucks driving by on Freedom Ln.

Measurement Results

	dBA
L _{eq}	57.2
L _{max}	73.3
L _{min}	41.3
L _{peak}	95.1
L ₅	63.7
L ₁₀	60.6
L ₅₀	48.6
L ₉₀	42.9
SEL	

Observed Noise Sources/Events

Time	Noise Source/Event	dBA
Entire duration	construction from adjacent site	
12:25	garbage truck back up sounds	

Comments: Active construction to west of project site on neighboring site.

Equipment:

Settings: A-Weighted ☐ Other ☐

Measured Difference:

Slow ☐ Fast ☐

dBA

Windscreen ☒

Atmospheric Conditions

Maximum Wind Velocity (mph)	Average Wind Velocity (mph)	Temperature (F)	Relative Humidity (%)	
	5	75	15	
Comments:				

Photos Taken

Photo Number	Location/Description
1	at location facing west
2	at location facing north
3	at location facing east
4	at location facing south

Traffic Description

Roadway	# Lanes	Posted Speed	Average Speed	NB/EB Counts	SB/WB Counts
Freedom Ln.	2				

Diagram/Further Comments

Cars driving by during 15 minutes = 15
Small box truck = 2
fire truck = 1
garbage truck = 1

Project Number: 49400051

Sheet 3 of 3

Project Name: Aliso Viejo Freedom Lane Project

Test Personnel: Gina Culver, Tsui Li

NOISE MEASUREMENT SURVEY

Site Number: ST-3 Date: 1/22/25 Time: From 12:37 to 12:52

Site Location: Southwest corner of project site. 7 feet from construction facing west. 5 feet from downslope/ southern project boundary. (33.561147, -117.729398)

Primary Noise Sources: Construction noise from adjacent property to the west. Car noise from a distance.

Measurement Results

	dBA
L _{eq}	49.2
L _{max}	62.9
L _{min}	43.1
L _{peak}	73.1
L ₅	54.1
L ₁₀	51.8
L ₅₀	47.1
L ₉₀	45.3
SEL	

Observed Noise Sources/Events

Time	Noise Source/Event	dBA
Entire duration	construction from adjacent site	

Comments: Active construction to west of project site on neighboring site.

Equipment:

Measured Difference:

dBA

Settings: A-Weighted ☐ Other ☐

Slow ☐ Fast ☐

Windscreen ☒

Atmospheric Conditions

Maximum Wind Velocity (mph)	Average Wind Velocity (mph)	Temperature (F)	Relative Humidity (%)	
	4	76	14	
Comments:				

Photos Taken

Photo Number	Location/Description
1	at location facing west
2	at location facing south
3	at location facing east
4	at location facing north

Traffic Description

Roadway	# Lanes	Posted Speed	Average Speed	NB/EB Counts	SB/WB Counts
Liberty	2			8	10

Diagram/Further Comments

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