

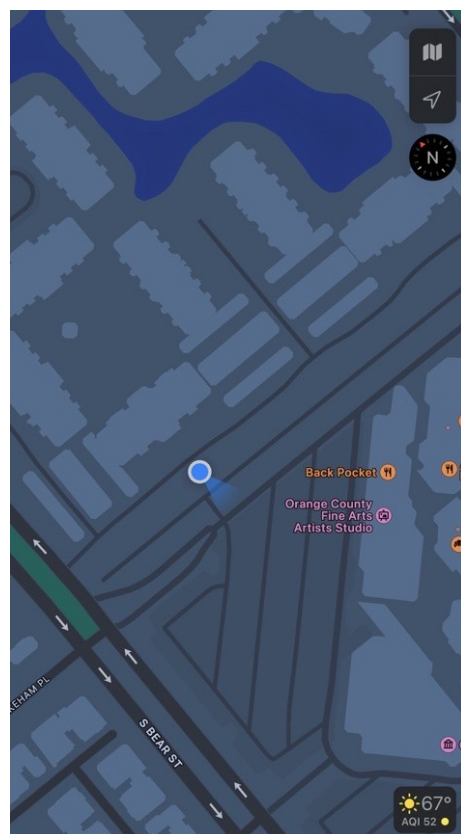
Appendix G

Noise Measurements and Calculations

Site Number: NM-1			
Recorded By: Darshan Shivaiah, Tina Yuan			
Job Number: 192887			
Date: 12/07/22			
Time: 10:44 a.m.			
Location: On the sidewalk adjacent to 3411 Meadow Bridge residence.			
Source of Ambient Noise: Traffic noise from Bear Street and Sunflower Avenue.			
Source of Peak Noise: NA			
Noise Data			
Leq (dB)	Lmax(dB)	Lmin (dB)	Peak (dB)
59.4	79.4	44.2	95.9

Equipment						
Category	Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	Brüel & Kjær	2250	3011133	03/10/2022	
	Microphone	Brüel & Kjær	4189	3086765	03/10/2022	
	Preamp	Brüel & Kjær	ZC 0032	25380	03/10/2022	
	Calibrator	Brüel & Kjær	4231	2545667	03/10/2022	
Weather Data						
Est.	Duration: 10 minutes			Sky: Clear		
	Note: dBA Offset = -0.01			Sensor Height (ft): 5 ft		
	Wind Ave Speed (mph / m/s)		Temperature (degrees Fahrenheit)		Barometer Pressure (inches)	
	3 mph		58		30.21	

Photo of Measurement Location



2250

Instrument:		2250
Application:		BZ7225 Version 4.7.6
Start Time:		12/07/2022 10:27:41
End Time:		12/07/2022 10:37:41
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.18

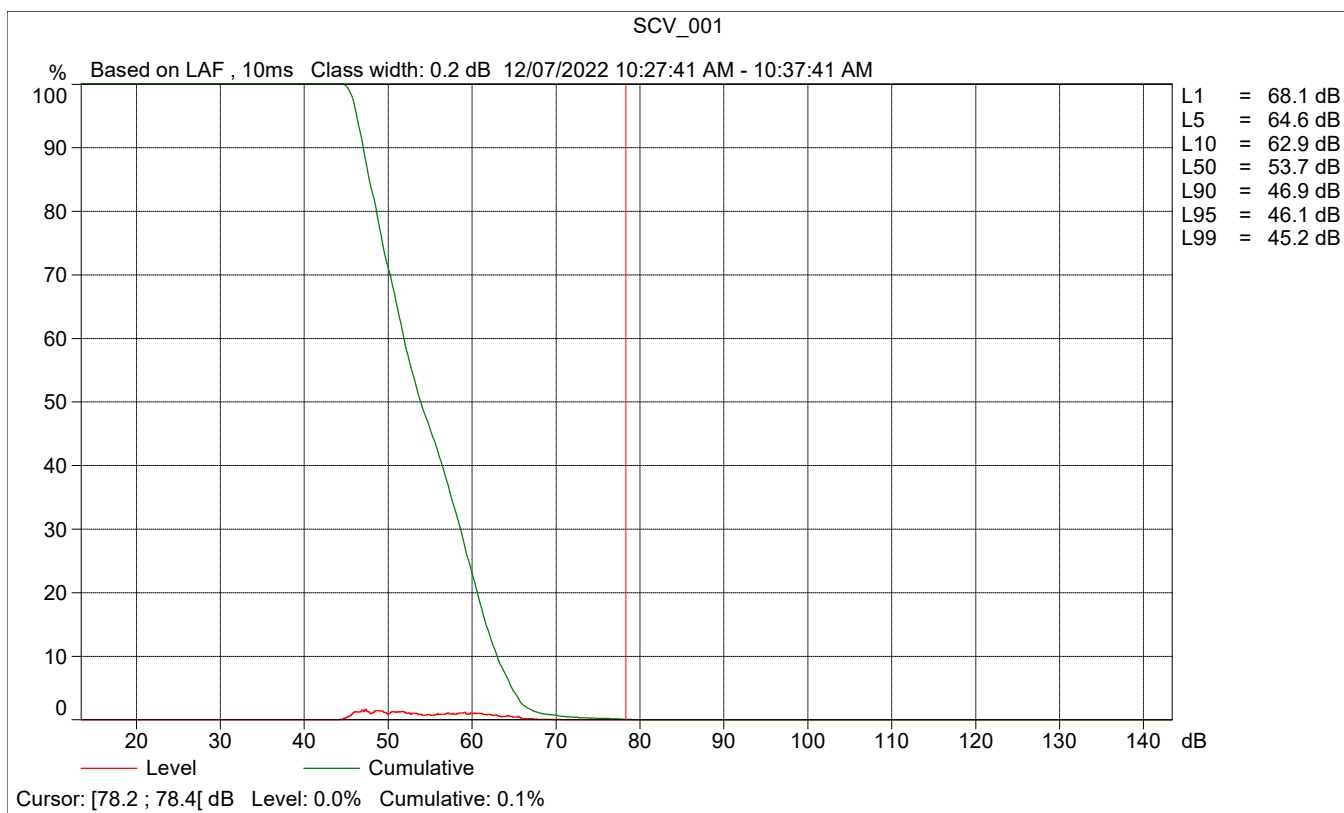
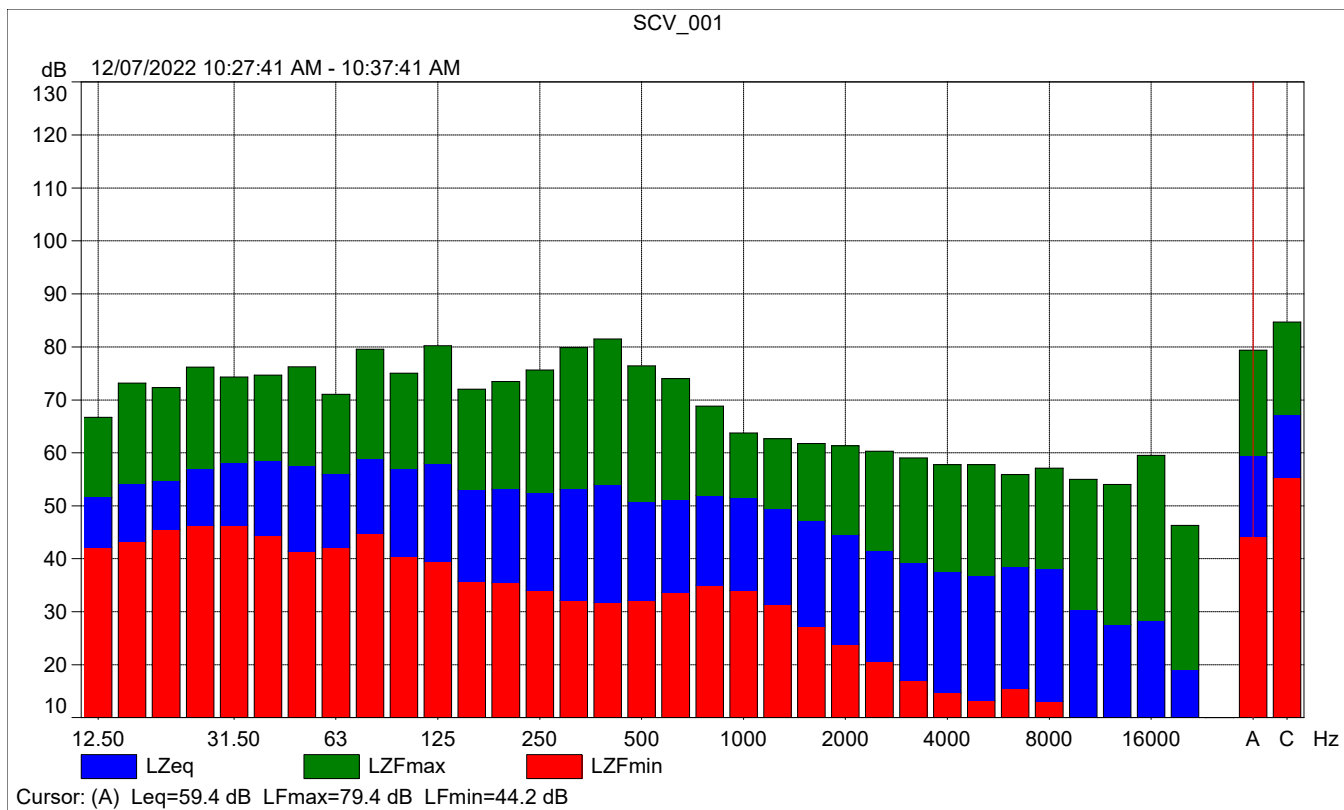
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

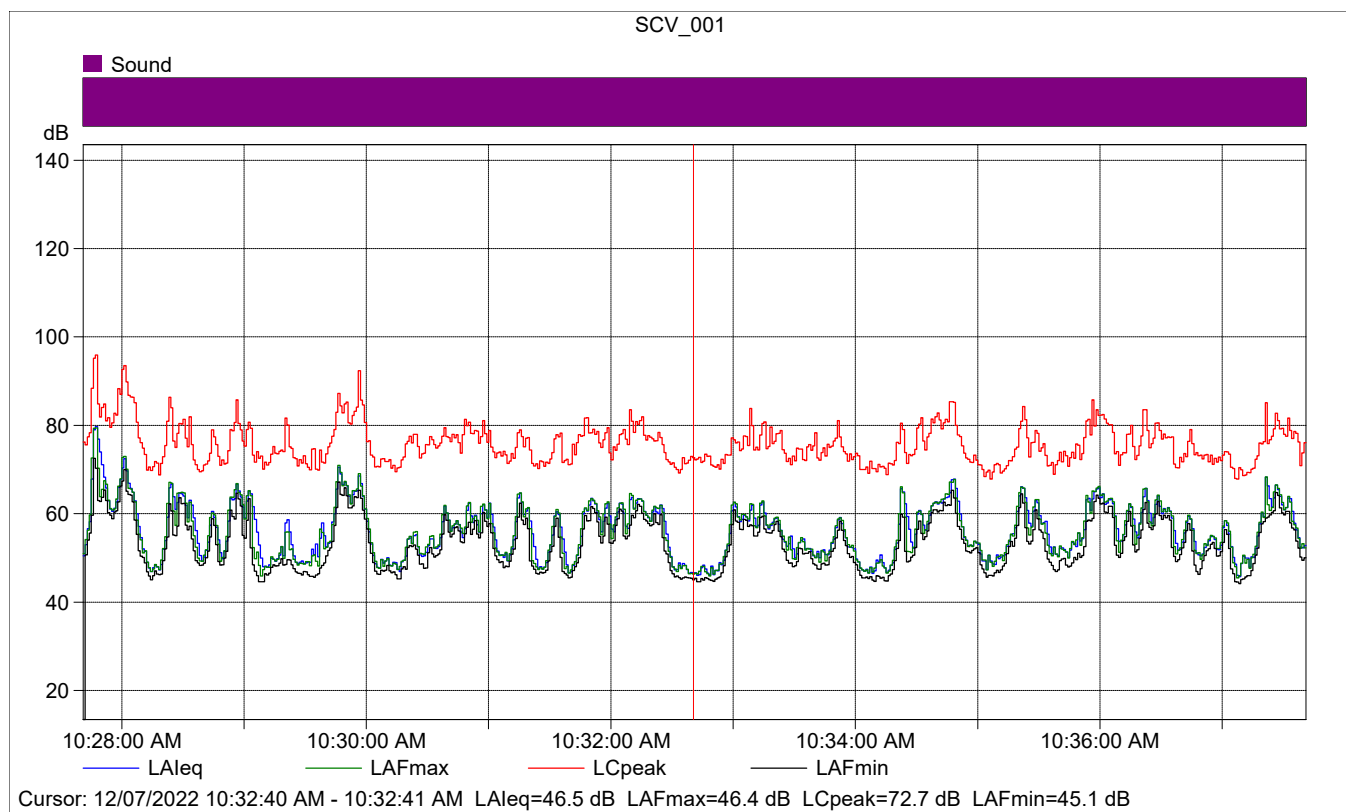
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

Calibration Time:		12/07/2022 09:47:27
Calibration Type:		External reference
Sensitivity:		43.3331243693829 mV/Pa

SCV_001

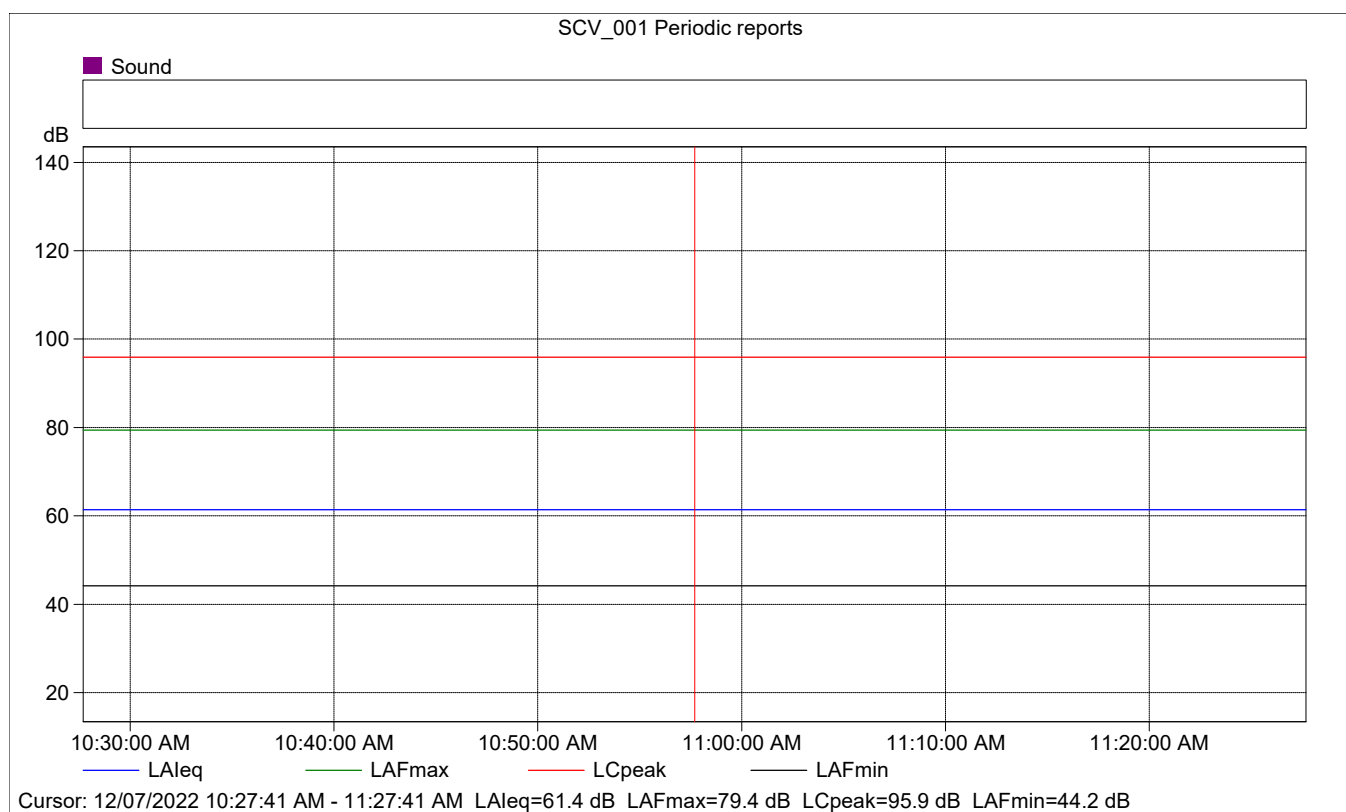
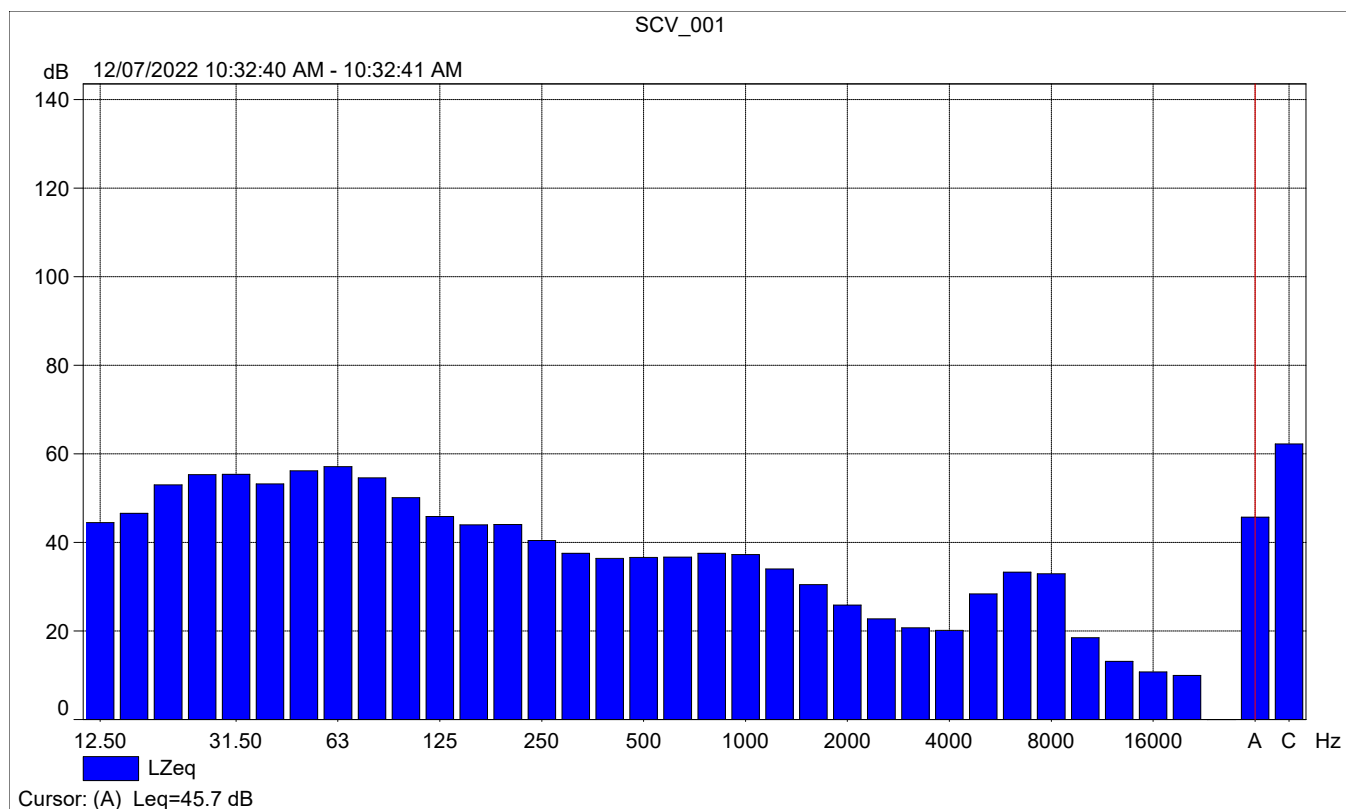
	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	59.4	79.4	44.2
Time	10:27:41 AM	10:37:41 AM	0:10:00				
Date	12/07/2022	12/07/2022					





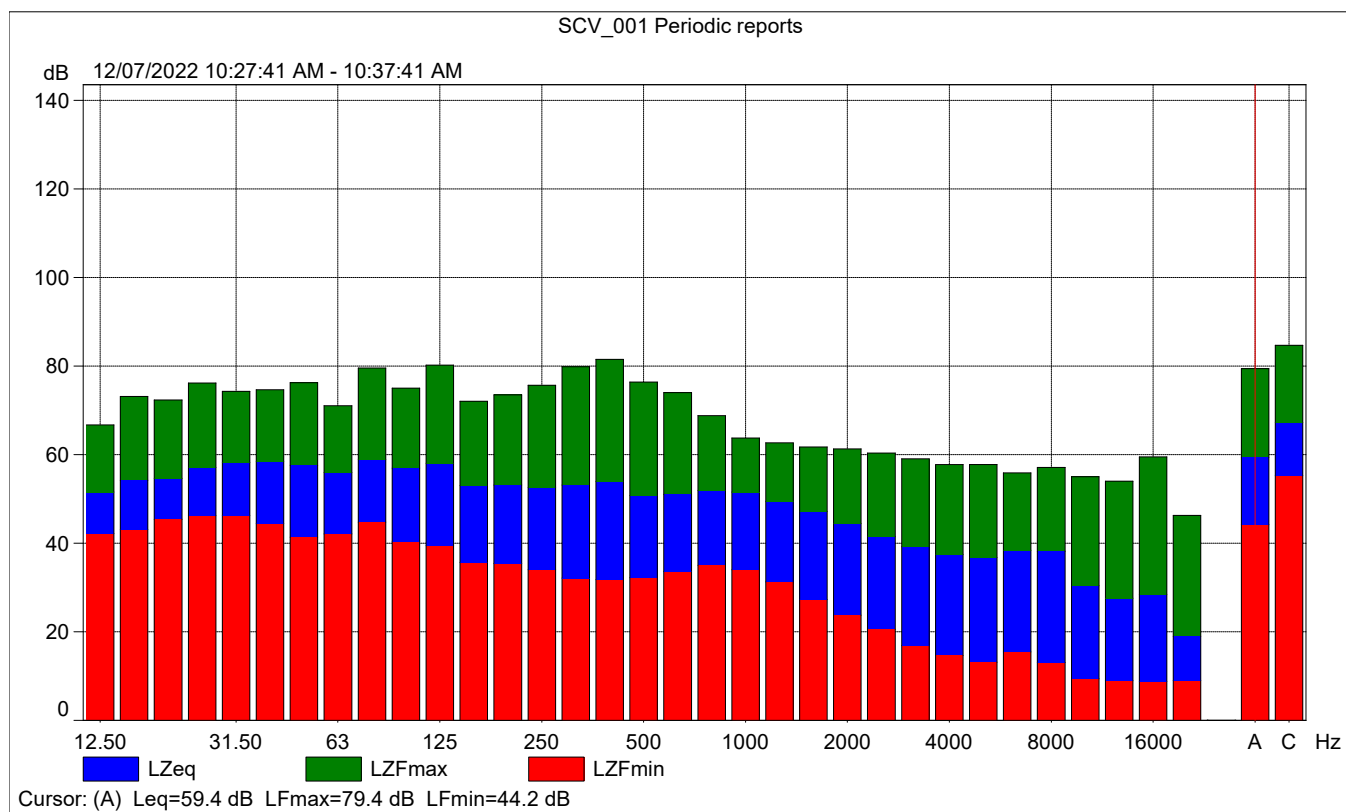
SCV_001

	Start time	Elapsed time	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			46.5	46.4	45.1
Time	10:32:40 AM	0:00:01			
Date	12/07/2022				

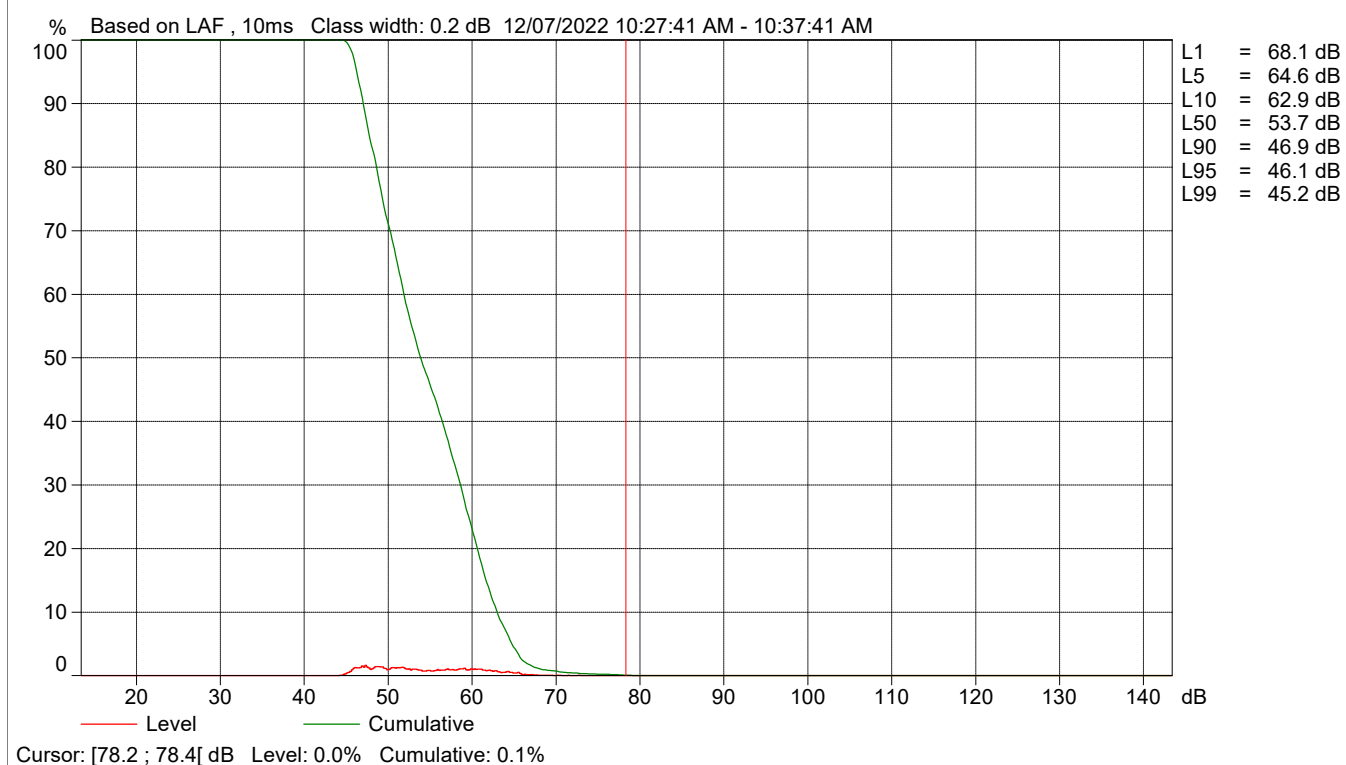


SCV_001 Periodic reports

	Start time	Elapsed time	Overload [%]	LAFeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	61.4	79.4	44.2
Time	10:27:41 AM	0:10:00				
Date	12/07/2022					



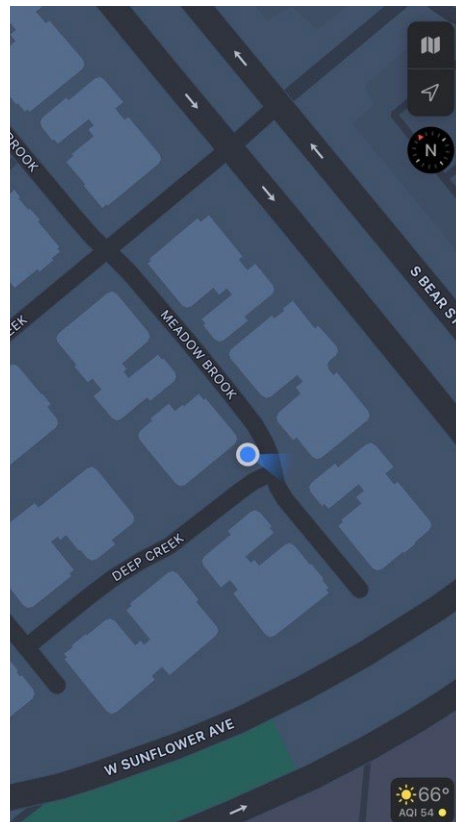
SCV_001 Periodic reports



Site Number: NM-2			
Recorded By: Darshan Shivaiah, Tina Yuan			
Job Number: 192887			
Date: 12/07/22			
Time: 10:28 a.m.			
Location: On the sidewalk of Wakeham Place, adjacent to 3770 Bear Street residential use.			
Source of Ambient Noise: Traffic noise from Bear Street and Wakeham Place.			
Source of Peak Noise: NA			
Noise Data			
Leq (dB)	Lmax(dB)	Lmin (dB)	Peak (dB)
50.9	62.3	44.2	85.2

Equipment						
Category	Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	Brüel & Kjær	2250	3011133	03/10/2022	
	Microphone	Brüel & Kjær	4189	3086765	03/10/2022	
	Preamplifier	Brüel & Kjær	ZC 0032	25380	03/10/2022	
	Calibrator	Brüel & Kjær	4231	2545667	03/10/2022	
Weather Data						
Est.	Duration: 10 minutes			Sky: Clear		
	Note: dBA Offset = -0.01			Sensor Height (ft): 5 ft		
	Wind Ave Speed (mph / m/s)		Temperature (degrees Fahrenheit)		Barometer Pressure (inches)	
	3 mph		58		30.21	

Photo of Measurement Location



2250

Instrument:		2250
Application:		BZ7225 Version 4.7.6
Start Time:		12/07/2022 10:43:44
End Time:		12/07/2022 10:53:44
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.18

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

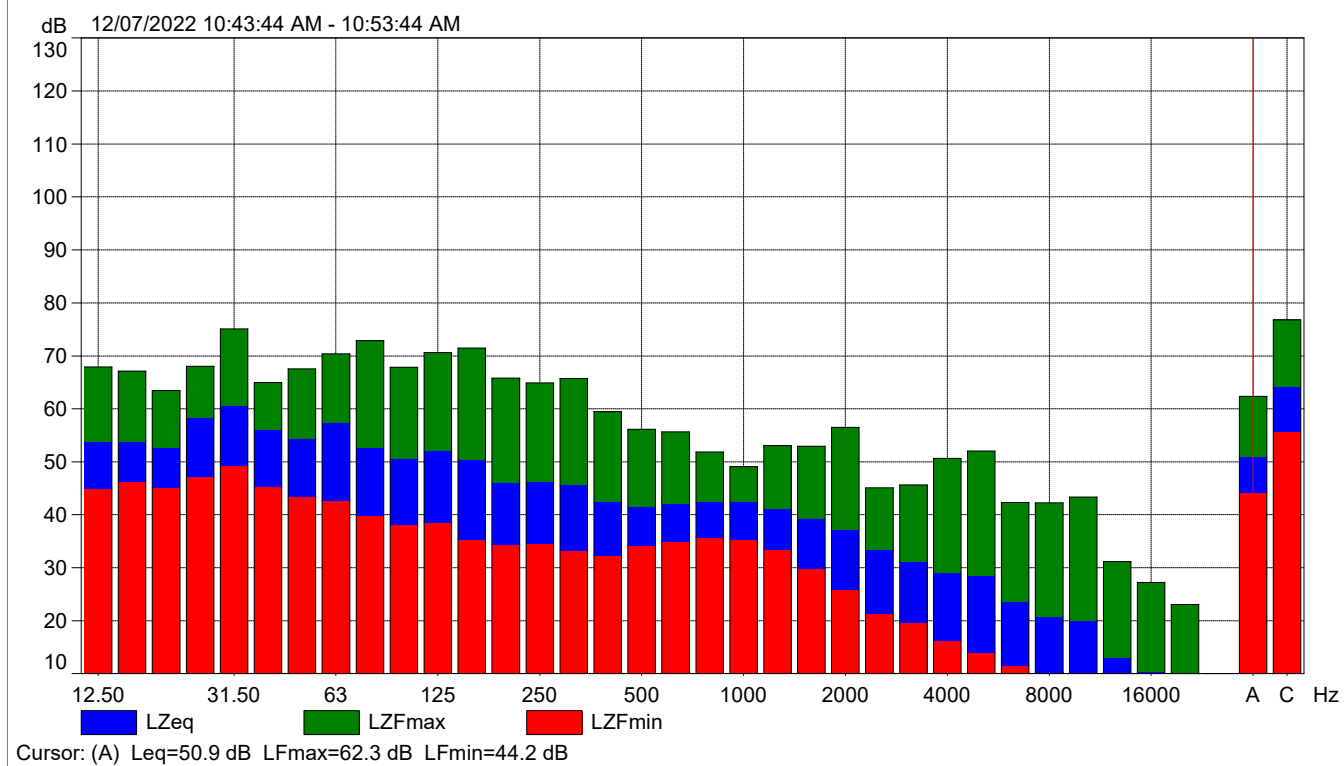
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

Calibration Time:		12/07/2022 09:47:27
Calibration Type:		External reference
Sensitivity:		43.3331243693829 mV/Pa

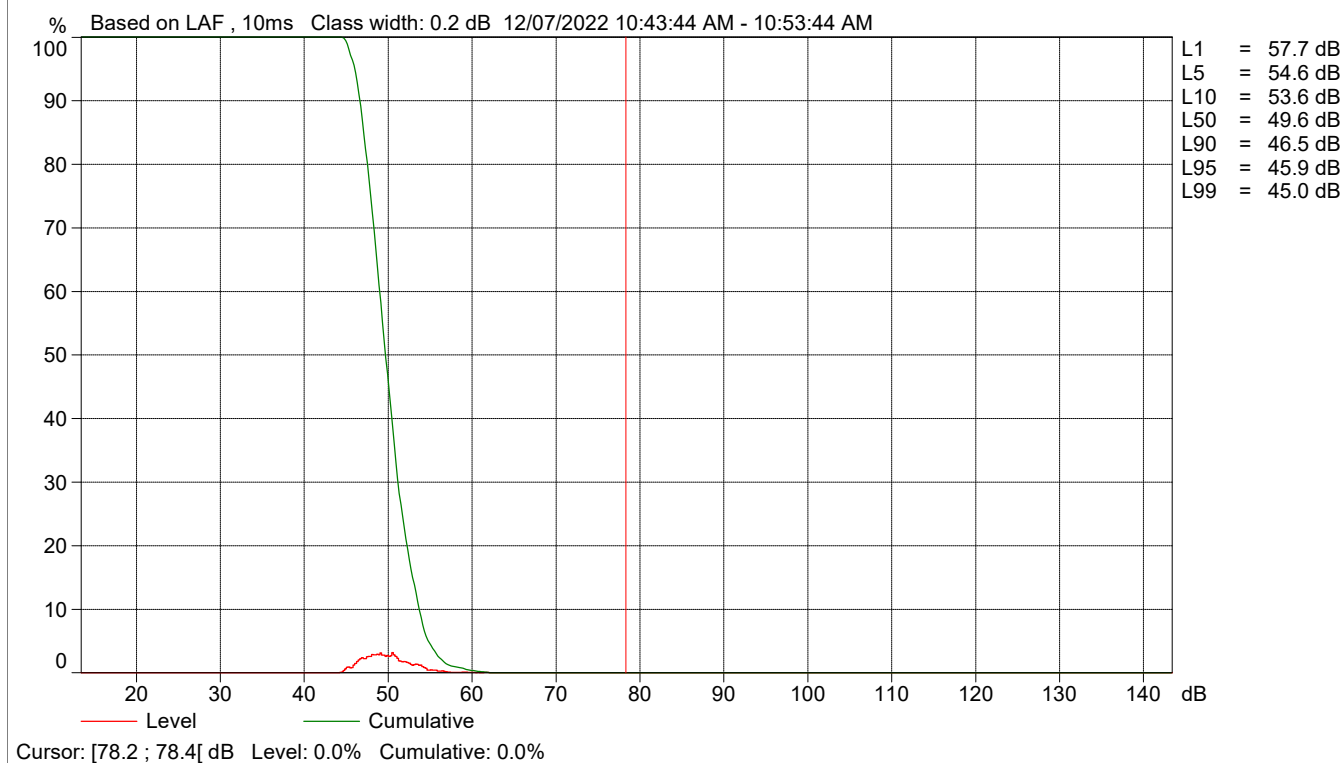
SCV_002

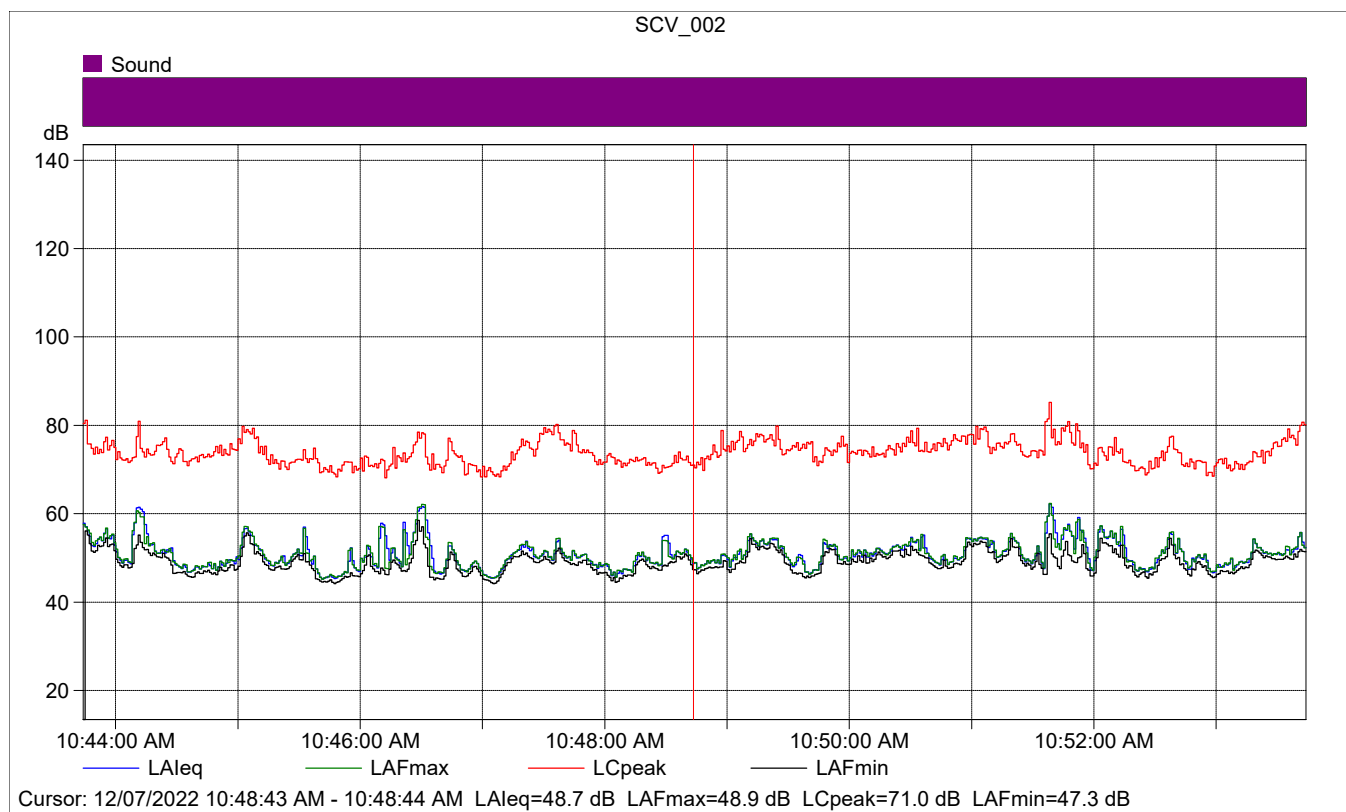
	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	50.9	62.3	44.2
Time	10:43:44 AM	10:53:44 AM	0:10:00				
Date	12/07/2022	12/07/2022					

SCV_002



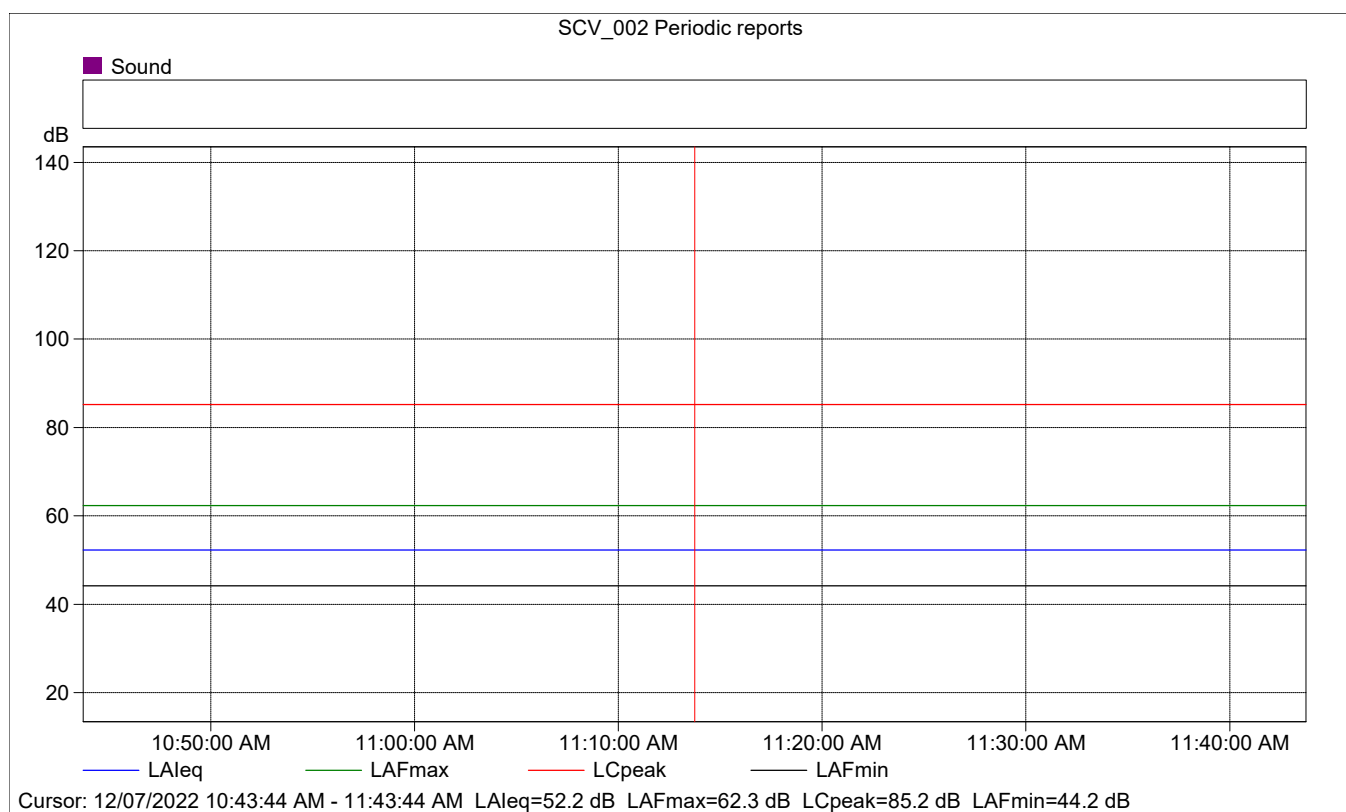
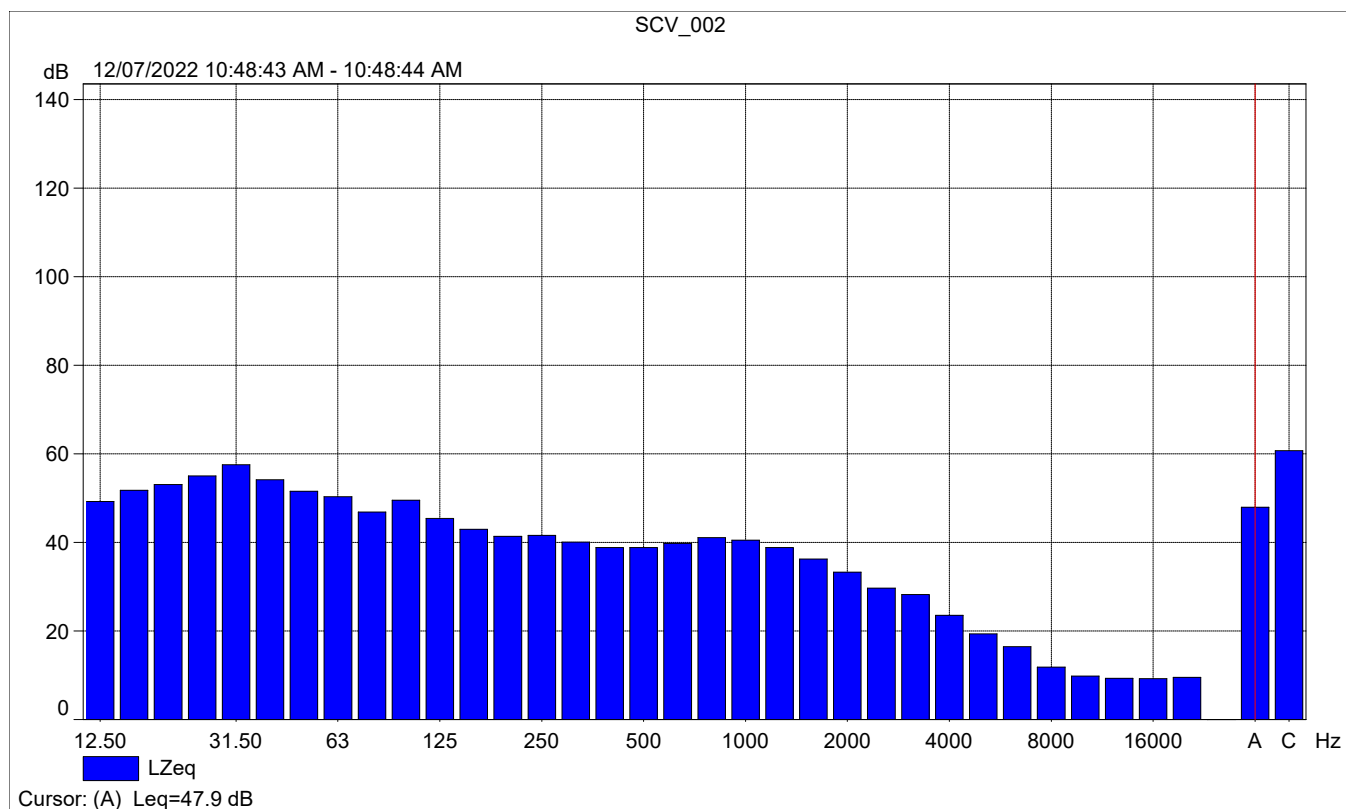
SCV_002





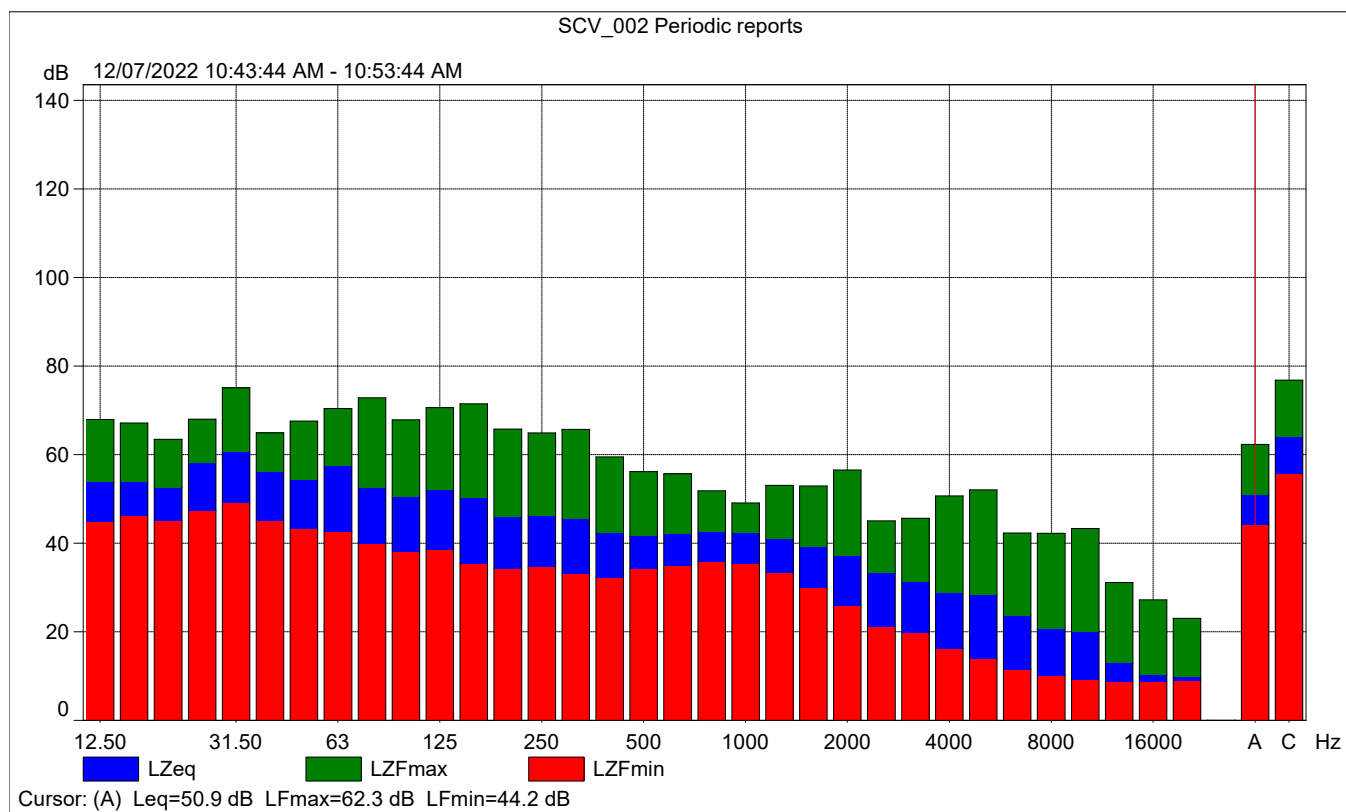
SCV_002

	Start time	Elapsed time	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			48.7	48.9	47.3
Time	10:48:43 AM	0:00:01			
Date	12/07/2022				

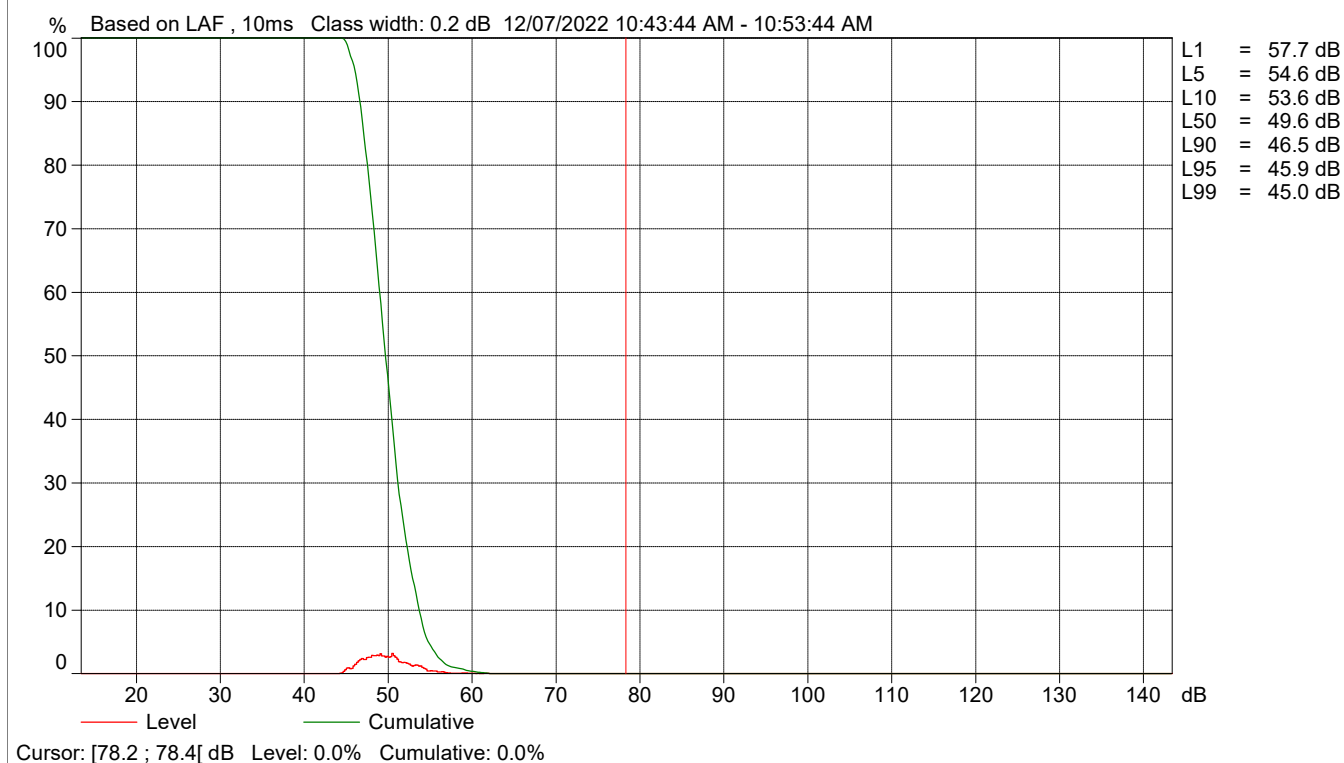


SCV_002 Periodic reports

	Start time	Elapsed time	Overload [%]	LAFeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	52.2	62.3	44.2
Time	10:43:44 AM	0:10:00				
Date	12/07/2022					



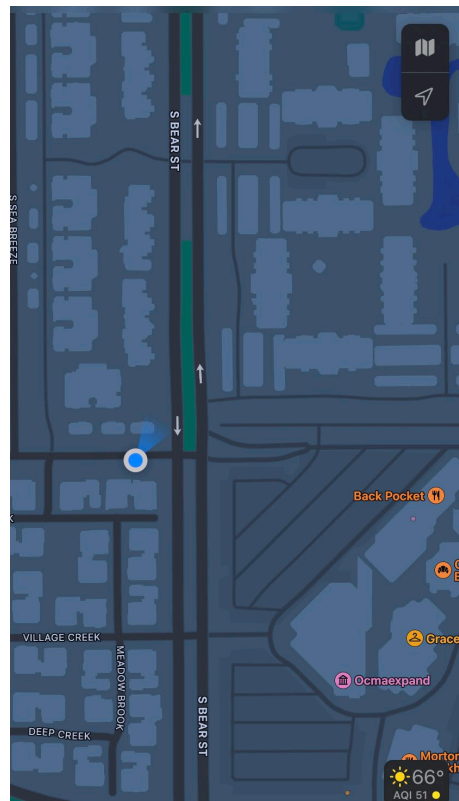
SCV_002 Periodic reports



Site Number: NM-3			
Recorded By: Darshan Shivaiah, Tina Yuan			
Job Number: 192887			
Date: 12/07/22			
Time: 11:02 a.m.			
Location: Along the northern property line of the project site			
Source of Ambient Noise: Traffic noise from Bear Street and parking lot noise.			
Source of Peak Noise: NA			
Noise Data			
Leq (dB)	Lmax(dB)	Lmin (dB)	Peak (dB)
54.1	71.7	46.9	93.5

Equipment						
Category	Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	Brüel & Kjær	2250	3011133	03/10/2022	
	Microphone	Brüel & Kjær	4189	3086765	03/10/2022	
	Preamp	Brüel & Kjær	ZC 0032	25380	03/10/2022	
	Calibrator	Brüel & Kjær	4231	2545667	03/10/2022	
Weather Data						
Est.	Duration: 10 minutes			Sky: Clear		
	Note: dBA Offset = -0.01			Sensor Height (ft): 5 ft		
	Wind Ave Speed (mph / m/s)		Temperature (degrees Fahrenheit)		Barometer Pressure (inches)	
	3 mph		58		30.21	

Photo of Measurement Location



2250

Instrument:		2250
Application:		BZ7225 Version 4.7.6
Start Time:		12/07/2022 11:01:48
End Time:		12/07/2022 11:11:48
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		142.18

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

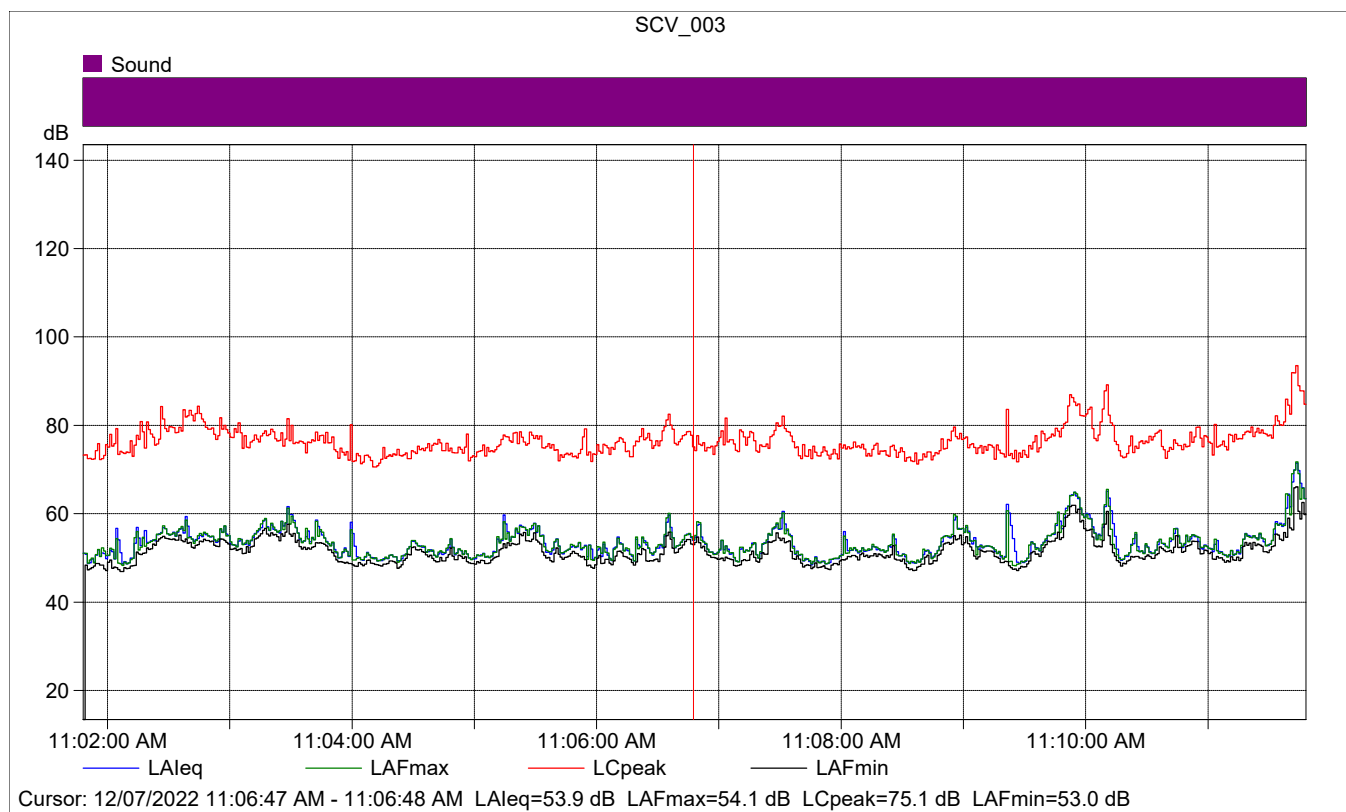
Instrument Serial Number:		3011133
Microphone Serial Number:		3086765
Input:		Top Socket
Windscreen Correction:		UA-1650
Sound Field Correction:		Free-field

Calibration Time:		12/07/2022 09:47:27
Calibration Type:		External reference
Sensitivity:		43.3331243693829 mV/Pa

SCV_003

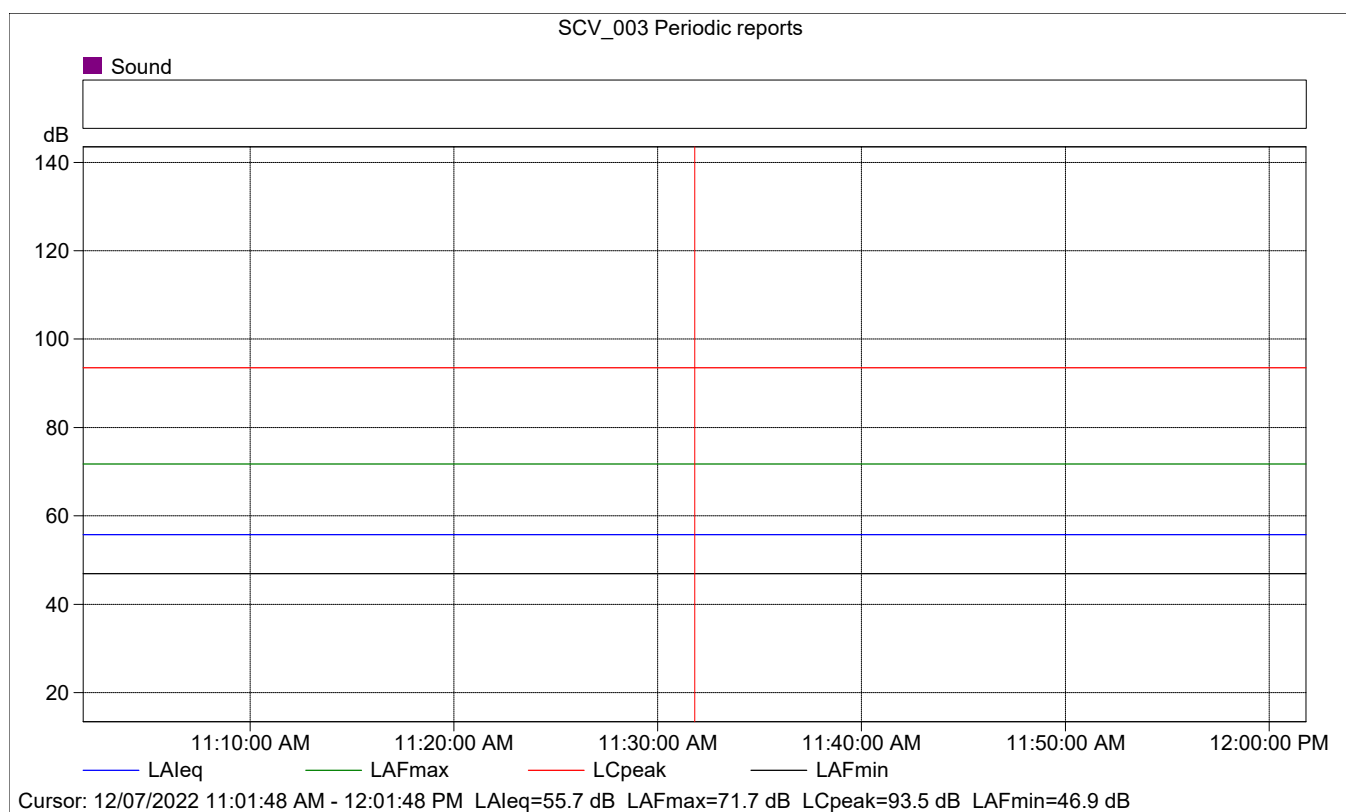
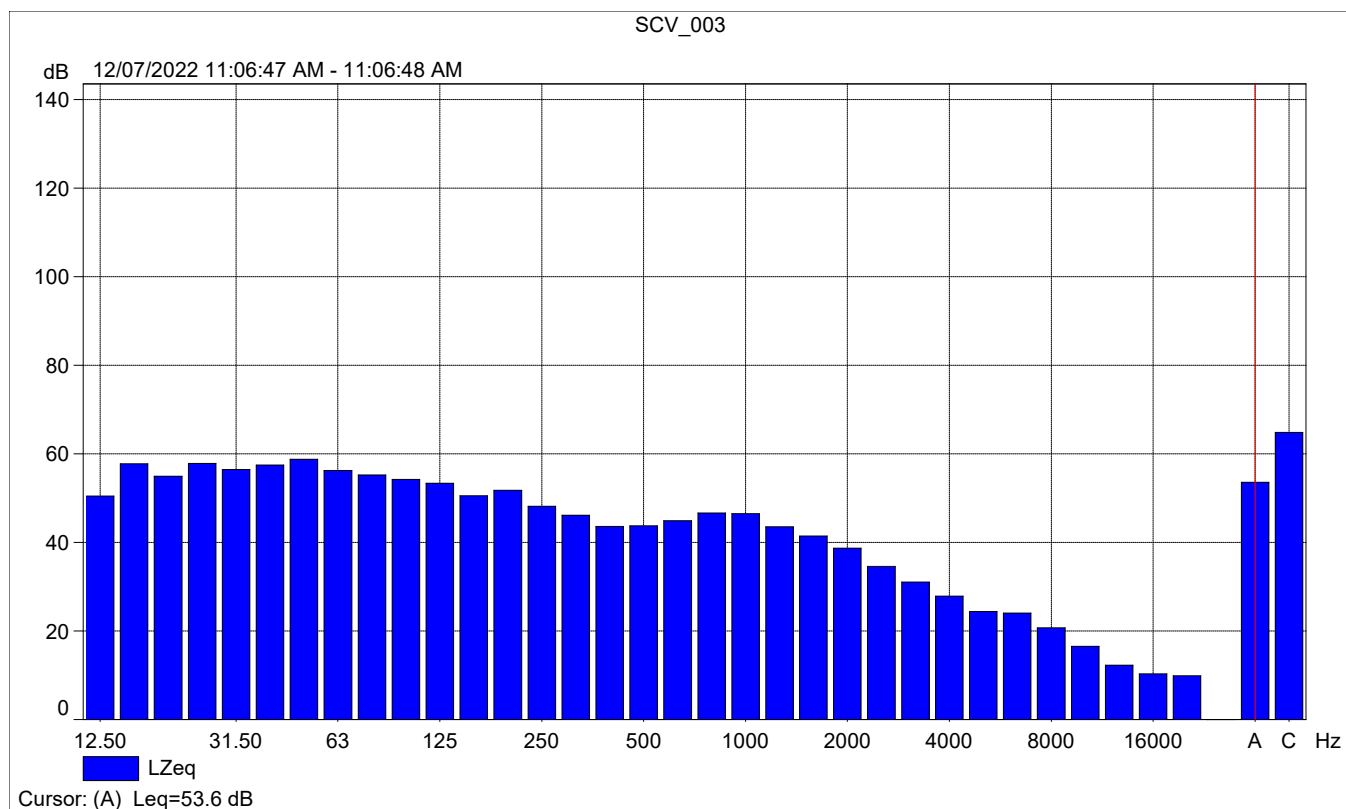
	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	54.1	71.7	46.9
Time	11:01:48 AM	11:11:48 AM	0:10:00				
Date	12/07/2022	12/07/2022					

Cursor: [78.2 ; 78.4[dB Level: 0.0% Cumulative: 0.0%



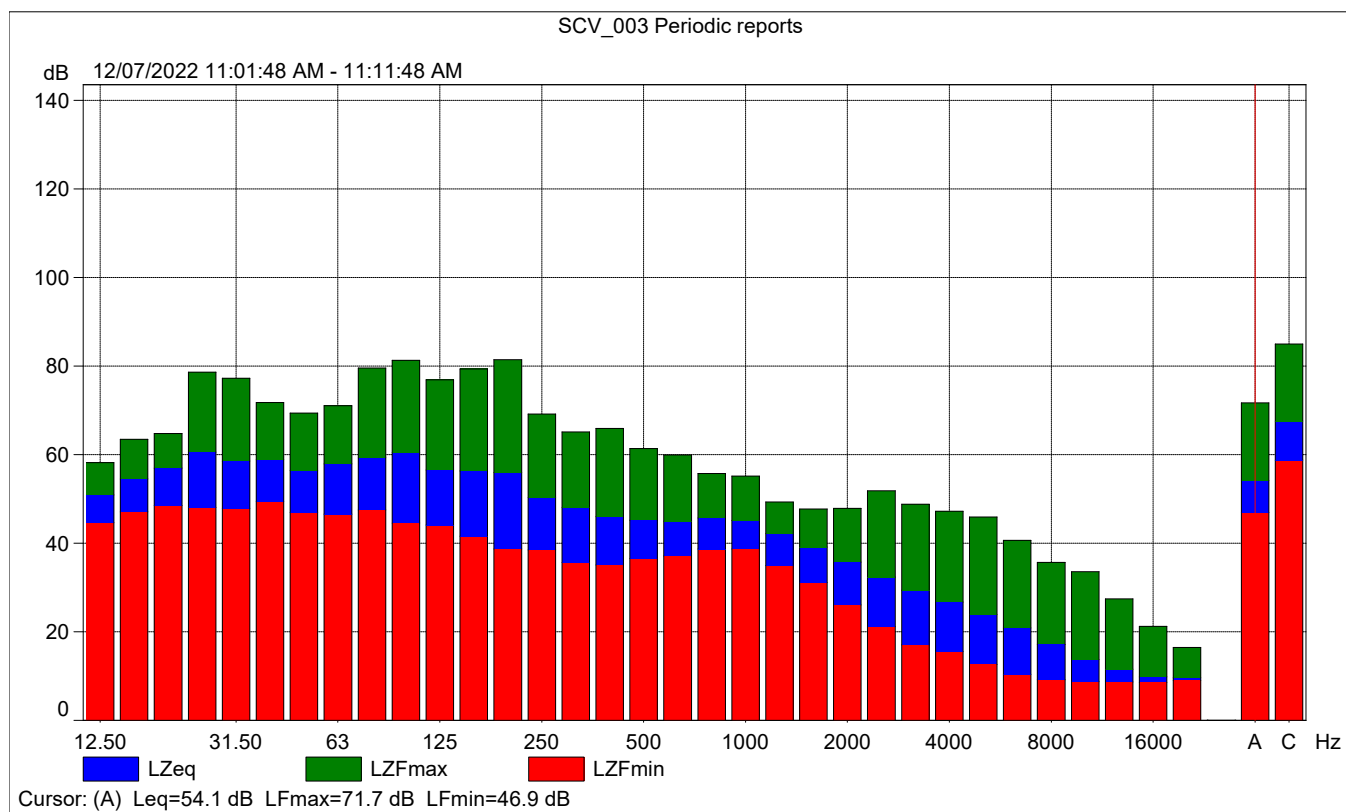
SCV_003

	Start time	Elapsed time	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			53.9	54.1	53.0
Time	11:06:47 AM	0:00:01			
Date	12/07/2022				

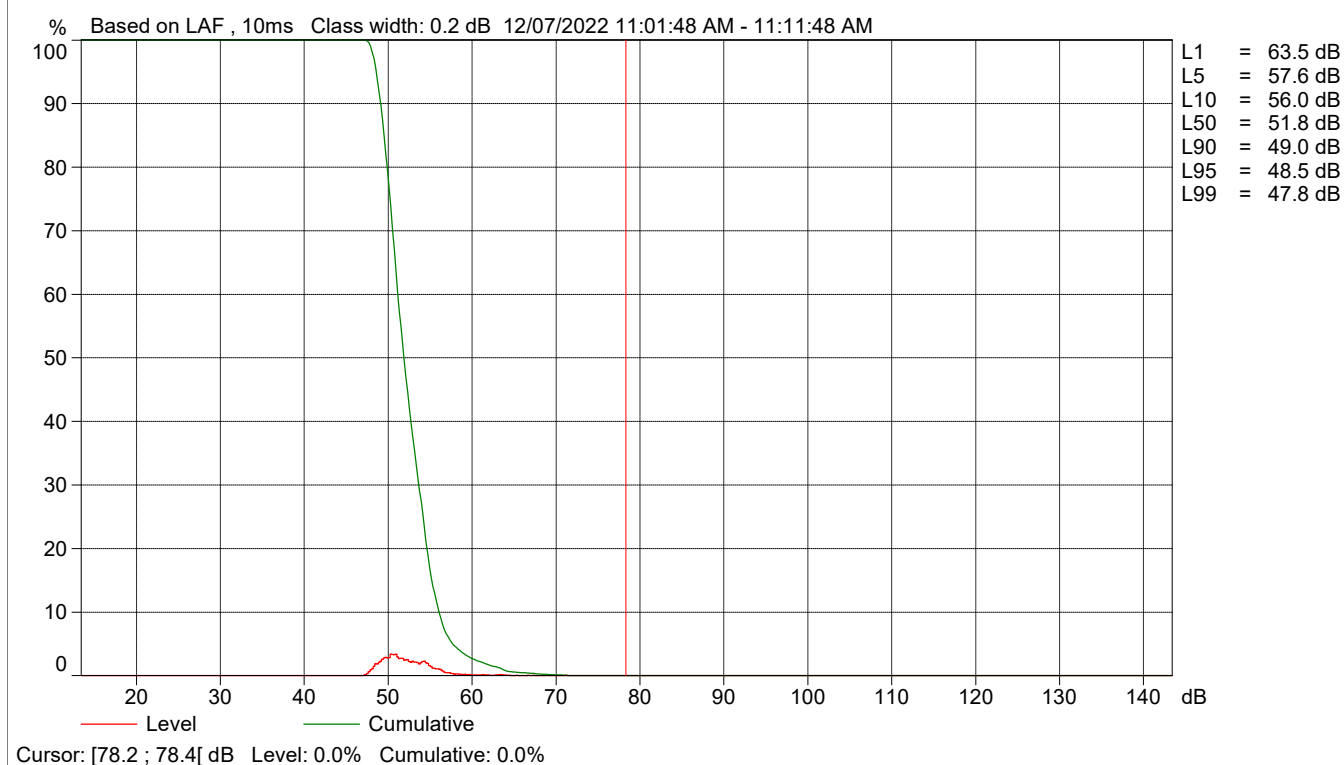


SCV_003 Periodic reports

	Start time	Elapsed time	Overload [%]	LAFeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	55.7	71.7	46.9
Time	11:01:48 AM	0:10:00				
Date	12/07/2022					



SCV_003 Periodic reports



Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 8/23/2024
Case Description: VSA Phase 1

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Demolition: Northern Re	Residential	80	80	80

Description	Impact Device	Usage(%)	Equipment			
			Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Dozer	No	40		81.7	730	0
Dozer	No	40		81.7	730	0
Excavator	No	40		80.7	730	0
Excavator	No	40		80.7	730	0
Excavator	No	40		80.7	730	0
Concrete Saw	No	20		89.6	730	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Dozer	58.4	54.4
Dozer	58.4	54.4
Excavator	57.4	53.4
Excavator	57.4	53.4
Excavator	57.4	53.4
Concrete Saw	66.3	59.3
Total	66.3	63.2

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Demolition: Western Rec	Residential	80	80	80

Description	Impact Device	Usage(%)	Equipment			
			Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Dozer	No	40		81.7	400	0
Dozer	No	40		81.7	400	0
Excavator	No	40		80.7	400	0
Excavator	No	40		80.7	400	0
Excavator	No	40		80.7	400	0
Concrete Saw	No	20		89.6	400	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Dozer	63.6	59.6
Dozer	63.6	59.6
Excavator	62.6	58.7
Excavator	62.6	58.7
Excavator	62.6	58.7
Concrete Saw	71.5	64.5
Total	71.5	68.4

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 8/23/2024
Case Description: VSA Phase 1

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)			Receptor Distance (feet)	Estimated Shielding (dBA)
		Daytime	Evening	Night		
Demolition: Northern Re	Residential	80	80	80		
Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Grader	No	40	85		730	0
Excavator	No	40		80.7	730	0
Tractor	No	40	84		730	0
Tractor	No	40	84		730	0
Tractor	No	40	84		730	0
Dozer	No	40		81.7	730	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Grader	61.7	57.7
Excavator	57.4	53.4
Tractor	60.7	56.7
Tractor	60.7	56.7
Tractor	60.7	56.7
Dozer	58.4	54.4
Total	61.7	64

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)			Receptor Distance (feet)	Estimated Shielding (dBA)	
		Daytime	Evening	Night			
Demolition: Western Rec	Residential	80	80	80			
Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)	
			Spec Lmax (dBA)	Actual Lmax (dBA)			
Grader	No	40		85	400	0	
Excavator	No	40			80.7	400	0
Tractor	No	40		84		400	0
Tractor	No	40		84		400	0
Tractor	No	40		84		400	0
Dozer	No	40			81.7	400	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Grader	66.9	63
Excavator	62.6	58.7
Tractor	65.9	62
Tractor	65.9	62
Tractor	65.9	62
Dozer	63.6	59.6
Total	66.9	69.2

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/23/2024
Case Description: VSA Phase 1

		---- Receptor #1 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Building Const: Northern Residential		80	80	80			
		Equipment					
		Impact	Spec	Actual	Receptor	Estimated	
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Pickup Truck		No	40		75	730	0
Pickup Truck		No	40		75	730	0
Pickup Truck		No	40		75	730	0
Generator		No	50		80.6	730	0
Crane		No	16		80.6	730	0
Welder / Torch		No	40		74	730	0
Tractor		No	40	84		730	0
Tractor		No	40	84		730	0
Tractor		No	40	84		730	0

		Results	
		Calculated (dBA)	
Equipment		*Lmax	Leq
Pickup Truck		51.7	47.7
Pickup Truck		51.7	47.7
Pickup Truck		51.7	47.7
Generator		57.3	54.3
Crane		57.3	49.3
Welder / Torch		50.7	46.7
Tractor		60.7	56.7
Tractor		60.7	56.7
Tractor		60.7	56.7
Total		60.7	63

*Calculated Lmax is the Loudest value.

		---- Receptor #2 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Building Const: Western	Residential	80	80	80			
		Equipment					
		Impact	Spec	Actual	Receptor	Estimated	
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Pickup Truck		No	40		75	400	0
Pickup Truck		No	40		75	400	0
Pickup Truck		No	40		75	400	0
Generator		No	50		80.6	400	0
Crane		No	16		80.6	400	0
Welder / Torch		No	40		74	400	0
Tractor		No	40	84		400	0
Tractor		No	40	84		400	0
Tractor		No	40	84		400	0

		Results	
		Calculated (dBA)	
Equipment		*Lmax	Leq
Pickup Truck		56.9	53
Pickup Truck		56.9	53
Pickup Truck		56.9	53
Generator		62.6	59.6
Crane		62.5	54.5
Welder / Torch		55.9	52
Tractor		65.9	62
Tractor		65.9	62
Tractor		65.9	62
Total		65.9	68.2

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 8/23/2024
Case Description: VSA Phase 1

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)			Receptor Distance (feet)	Estimated Shielding (dBA)
		Daytime	Evening	Night		
Paving: Northern Recept	Residential	80	80	80		
Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Paver	No	50		77.2	730	0
Paver	No	50		77.2	730	0
Roller	No	20		80	730	0
Roller	No	20		80	730	0
Roller	No	20		80	730	0
Roller	No	20		80	730	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Paver	53.9	50.9
Paver	53.9	50.9
Roller	56.7	49.7
Roller	56.7	49.7
Roller	56.7	49.7
Roller	56.7	49.7
Total	56.7	57.9

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Paving: Western Receptc	Residential	80	80	80			
		Equipment					
			Spec	Actual	Receptor	Estimated	
	Impact		Lmax	Lmax	Distance	Shielding	
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)	
Paver	No	50		77.2	400	0	
Paver	No	50		77.2	400	0	
Roller	No	20		80	400	0	
Roller	No	20		80	400	0	
Roller	No	20		80	400	0	
Roller	No	20		80	400	0	

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Paver	59.2	56.1
Paver	59.2	56.1
Roller	61.9	54.9
Roller	61.9	54.9
Roller	61.9	54.9
Roller	61.9	54.9
Total	61.9	63.2

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/23/2024

Case Description: VSA Phase 1

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)					
		Daytime	Evening	Night			
Architec Coat: Northern I	Residential	80	80	80			
Description				Equipment Spec	Actual	Receptor	Estimated
		Impact Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Compressor (air)		No	40		77.7	730	0

Results

Calculated (dBA)

Equipment		*Lmax	Leq
Compressor (air)		53.9	50.9
	Total	53.9	50.9

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)					
		Daytime	Evening	Night			
Architec Coat: Western F	Residential	80	80	80			
Description				Equipment Spec	Actual	Receptor	Estimated
		Impact Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Compressor (air)		No	40		77.7	400	0

Results

Calculated (dBA)

Equipment		*Lmax	Leq
Compressor (air)		59.6	55.6
	Total	59.6	55.6

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 8/23/2024
Case Description: VSA Phase 2

---- Receptor #1 ----

		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Grading: Northern Recep Residential		80	80	80			
		Equipment					
				Spec	Actual	Receptor	Estimated
	Impact			Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)	
Grader	No	40	85		244	0	
Excavator	No	40		80.7	244	0	
Tractor	No	40	84		244	0	
Tractor	No	40	84		244	0	
Tractor	No	40	84		244	0	
Dozer	No	40		81.7	244	0	

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Grader	71.2	67.3
Excavator	66.9	63
Tractor	70.2	66.3
Tractor	70.2	66.3
Tractor	70.2	66.3
Dozer	67.9	63.9
Total	71.2	73.5

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)			Receptor Distance (feet)	Estimated Shielding (dBA)
		Daytime	Evening	Night		
Grading: Western Reception	Residential	80	80	80		
Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Grader	No	40	85		355	0
Excavator	No	40		80.7	355	0
Tractor	No	40	84		355	0
Tractor	No	40	84		355	0
Tractor	No	40	84		355	0
Dozer	No	40		81.7	355	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Grader	68	64
Excavator	63.7	59.7
Tractor	67	63
Tractor	67	63
Tractor	67	63
Dozer	64.6	60.7
Total	68	70.2

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/23/2024
Case Description: VSA Phase 2

		---- Receptor #1 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Building Const: Northern Residential		80	80	80			
		Equipment					
		Impact	Spec	Actual	Receptor	Estimated	
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Pickup Truck		No	40		75	244	0
Pickup Truck		No	40		75	244	0
Pickup Truck		No	40		75	244	0
Generator		No	50		80.6	244	0
Crane		No	16		80.6	244	0
Welder / Torch		No	40		74	244	0
Tractor		No	40	84		244	0
Tractor		No	40	84		244	0
Tractor		No	40	84		244	0

		Results	
		Calculated (dBA)	
Equipment		*Lmax	Leq
Pickup Truck		61.2	57.3
Pickup Truck		61.2	57.3
Pickup Truck		61.2	57.3
Generator		66.9	63.9
Crane		66.8	58.8
Welder / Torch		60.2	56.3
Tractor		70.2	66.3
Tractor		70.2	66.3
Tractor		70.2	66.3
Total		70.2	72.5
*Calculated Lmax is the Loudest value.			

		---- Receptor #2 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Building Const: Western	Residential	80	80	80			
		Equipment					
		Impact	Spec	Actual	Receptor	Estimated	
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Pickup Truck		No	40		75	355	0
Pickup Truck		No	40		75	355	0
Pickup Truck		No	40		75	355	0
Generator		No	50		80.6	355	0
Crane		No	16		80.6	355	0
Welder / Torch		No	40		74	355	0
Tractor		No	40	84		355	0
Tractor		No	40	84		355	0
Tractor		No	40	84		355	0

		Results	
		Calculated (dBA)	
Equipment		*Lmax	Leq
Pickup Truck		58	54
Pickup Truck		58	54
Pickup Truck		58	54
Generator		63.6	60.6
Crane		63.5	55.6
Welder / Torch		57	53
Tractor		67	63
Tractor		67	63
Tractor		67	63
Total		67	69.3
*Calculated Lmax is the Loudest value.			

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/23/2024

Case Description: VSA Phase 2

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Arch Coat: Northern Rec	Residential	80	80	80

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Compressor (air)	No	40		77.7	244	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Compressor (air)	61.2	57.3
Total	70.2	72.5

*Calculated Lmax is the Loudest value.

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Arch Coat: Western Rece	Residential	80	80	80

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Compressor (air)	No	40		77.7	355	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Compressor (air)	60.6	56.7
Total	60.6	56.7

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/23/2024
Case Description: VSA Phase 3

---- Receptor #1 ----

Description Land Use
Grading: Northern Recep Residential

Baselines (dBA)
Daytime Evening Night
80 80 80

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Grader	No	40	85		244	0
Tractor	No	40	84		244	0
Tractor	No	40	84		244	0
Dozer	No	40		81.7	244	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Grader	71.2	67.3
Tractor	70.2	66.3
Tractor	70.2	66.3
Dozer	67.9	63.9
Total	71.2	72.1

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description Land Use
Grading: Western Recep Residential

Baselines (dBA)
Daytime Evening Night
80 80 80

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Grader	No	40	85		850	0
Tractor	No	40	84		850	0
Tractor	No	40	84		850	0
Dozer	No	40		81.7	850	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Grader	60.4	56.4
Tractor	59.4	55.4
Tractor	59.4	55.4
Dozer	57.1	53.1
Total	60.4	61.3

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/23/2024
Case Description: VSA Phase 3

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)					
		Daytime	Evening	Night			
Building Const: Northern Residential		80	80	80			
Description	Land Use			Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
		Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)		
Pickup Truck		No	40		75	244	0
Generator		No	50		80.6	244	0
Crane		No	16		80.6	244	0
Welder / Torch		No	40		74	244	0
Welder / Torch		No	40		74	244	0
Tractor		No	40	84		244	0

Results

Calculated (dBA)			
Equipment	*Lmax	Leq	
Pickup Truck	61.2	57.3	
Generator	66.9	63.9	
Crane	66.8	58.8	
Welder / Torch	60.2	56.3	
Welder / Torch	60.2	56.3	
Tractor	70.2	66.3	
Total	70.2	69.4	
*Calculated Lmax is the Loudest value.			

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)					
		Daytime	Evening	Night			
Building Const: Western Residential		80	80	80			
Description	Land Use			Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
		Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)		
Pickup Truck		No	40		75	850	0
Generator		No	50		80.6	850	0
Crane		No	16		80.6	850	0
Welder / Torch		No	40		74	850	0
Welder / Torch		No	40		74	850	0
Tractor		No	40	84		850	0

Results

Calculated (dBA)			
Equipment	*Lmax	Leq	
Pickup Truck	50.4	46.4	
Generator	56	53	
Crane	55.9	48	
Welder / Torch	49.4	45.4	
Welder / Torch	49.4	45.4	
Tractor	59.4	55.4	
Total	59.4	58.6	
*Calculated Lmax is the Loudest value.			

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/23/2024
Case Description: VSA Phase 4

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)					
		Daytime	Evening	Night			
Grader: Northern Recept	Residential	80	80	80			
Description	Land Use			Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
		Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)		
Grader		No	40	85		600	0
Excavator		No	40		80.7	600	0
Tractor		No	40	84		600	0
Tractor		No	40	84		600	0
Tractor		No	40	84		600	0
Dozer		No	40		81.7	600	0

Results

Calculated (dBA)			
Equipment	*Lmax	Leq	
Grader	63.4	59.4	
Excavator	59.1	55.1	
Tractor	62.4	58.4	
Tractor	62.4	58.4	
Tractor	62.4	58.4	
Dozer	60.1	56.1	
Total	63.4	65.7	
*Calculated Lmax is the Loudest value.			

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)					
		Daytime	Evening	Night			
Grader: Western Recept	Residential	80	80	80			
Description	Land Use			Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
		Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)		
Grader		No	40	85		940	0
Excavator		No	40		80.7	940	0
Tractor		No	40	84		940	0
Tractor		No	40	84		940	0
Tractor		No	40	84		940	0
Dozer		No	40		81.7	940	0

Results

Calculated (dBA)			
Equipment	*Lmax	Leq	
Grader	59.5	55.5	
Excavator	55.2	51.2	
Tractor	58.5	54.5	
Tractor	58.5	54.5	
Tractor	58.5	54.5	
Dozer	56.2	52.2	
Total	59.5	61.8	
*Calculated Lmax is the Loudest value.			

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/23/2024
Case Description: VSA Phase 4

		---- Receptor #1 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Building Const: Northern Residential		80	80	80			
		Equipment					
		Impact	Spec	Actual	Receptor	Estimated	
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Pickup Truck		No	40		75	600	0
Pickup Truck		No	40		75	600	0
Pickup Truck		No	40		75	600	0
Generator		No	50		80.6	600	0
Crane		No	16		80.6	600	0
Welder / Torch		No	40		74	600	0
Tractor		No	40	84		600	0
Tractor		No	40	84		600	0
Tractor		No	40	84		600	0

		Results	
		Calculated (dBA)	
Equipment		*Lmax	Leq
Pickup Truck		53.4	49.4
Pickup Truck		53.4	49.4
Pickup Truck		53.4	49.4
Generator		59	56
Crane		59	51
Welder / Torch		52.4	48.4
Tractor		62.4	58.4
Tractor		62.4	58.4
Tractor		62.4	58.4
Total		62.4	64.7

*Calculated Lmax is the Loudest value.

		---- Receptor #2 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Building Const: Western	Residential	80	80	80			
		Equipment					
		Impact	Spec	Actual	Receptor	Estimated	
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Pickup Truck		No	40		75	940	0
Pickup Truck		No	40		75	940	0
Pickup Truck		No	40		75	940	0
Generator		No	50		80.6	940	0
Crane		No	16		80.6	940	0
Welder / Torch		No	40		74	940	0
Tractor		No	40	84		940	0
Tractor		No	40	84		940	0
Tractor		No	40	84		940	0

		Results	
		Calculated (dBA)	
Equipment		*Lmax	Leq
Pickup Truck		49.5	45.5
Pickup Truck		49.5	45.5
Pickup Truck		49.5	45.5
Generator		55.1	52.1
Crane		55.1	47.1
Welder / Torch		48.5	44.5
Tractor		58.5	54.5
Tractor		58.5	54.5
Tractor		58.5	54.5
Total		58.5	60.8

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 8/23/2024
Case Description: VSA Phase 4

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Paving: Northern Recept	Residential	80	80	80

Description	Impact Device	Usage(%)	Equipment			
			Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver	No	50		77.2	600	0
Roller	No	20		80	600	0
Roller	No	20		80	600	0
Roller	No	20		80	600	0
Roller	No	20		80	600	0
Concrete Mixer Truck	No	40		78.8	600	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Paver	55.6	52.6
Roller	58.4	51.4
Roller	58.4	51.4
Roller	58.4	51.4
Roller	58.4	51.4
Concrete Mixer Truck	57.2	53.2
Total	58.4	59.8

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Paving: Western Receptc	Residential	80	80	80

Description	Impact Device	Usage(%)	Equipment			
			Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver	No	50		77.2	940	0
Roller	No	20		80	940	0
Roller	No	20		80	940	0
Roller	No	20		80	940	0
Roller	No	20		80	940	0
Concrete Mixer Truck	No	40		78.8	940	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Paver	51.7	48.7
Roller	54.5	47.5
Roller	54.5	47.5
Roller	54.5	47.5
Roller	54.5	47.5
Concrete Mixer Truck	53.3	49.3
Total	54.5	55.9

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/23/2024

Case Description: VSA Phase 4

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Paving: Northern Recept	Residential	80	80	80

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Compressor (air)	No	40		77.7	600	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Compressor (air)	56.1	52.1
Total	56.1	52.1

*Calculated Lmax is the Loudest value.

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Paving: Western Receptc	Residential	80	80	80

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Compressor (air)	No	40		77.7	940	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Compressor (air)	52.2	48.2
Total	52.2	48.2

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/23/2024

Case Description: VSA Phase 4

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Grading: Northern Recep	Residential	80	80	80

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Grader	No	40		85	450	0
Tractor	No	40		84	450	0
Tractor	No	40		84	450	0
Dozer	No	40		81.7	450	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Grader	65.9	61.9
Tractor	64.9	60.9
Tractor	64.9	60.9
Dozer	62.6	58.6
Total	65.9	66.8

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Grading: Western Recep	Residential	80	80	80

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Grader	No	40		85	500	0
Tractor	No	40		84	500	0
Tractor	No	40		84	500	0
Dozer	No	40		81.7	500	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Grader	65	61
Tractor	64	60
Tractor	64	60
Dozer	61.7	57.7
Total	65	65.9

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/23/2024
Case Description: VSA Phase 5

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)					
		Daytime	Evening	Night			
Building Constr: Northern Residential		80	80	80			
Description	Impact Device	Land Use	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)	
			Usage(%)	Spec Lmax (dBA)			
Pickup Truck	No		40		75	450	0
Generator	No		50		80.6	450	0
Crane	No		16		80.6	450	0
Welder / Torch	No		40		74	450	0
Welder / Torch	No		40		74	450	0
Welder / Torch	No		40		74	450	0
Tractor	No		40	84	600	0	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Pickup Truck	55.9	51.9
Generator	61.5	58.5
Crane	61.5	53.5
Welder / Torch	54.9	50.9
Welder / Torch	54.9	50.9
Welder / Torch	54.9	50.9
Tractor	62.4	58.4
Total	62.4	63.4

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)					
		Daytime	Evening	Night			
Building Constr: Western Residential		80	80	80			
Description	Impact Device	Land Use	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)	
			Usage(%)	Spec Lmax (dBA)			
Pickup Truck	No		40		75	500	0
Generator	No		50		80.6	500	0
Crane	No		16		80.6	500	0
Welder / Torch	No		40		74	500	0
Welder / Torch	No		40		74	500	0
Welder / Torch	No		40		74	500	0
Tractor	No		40	84	940	0	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Pickup Truck	55	51
Generator	60.6	57.6
Crane	60.6	52.6
Welder / Torch	54	50
Welder / Torch	54	50
Welder / Torch	54	50
Tractor	58.5	54.5
Total	60.6	61.7

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/23/2024

Case Description: VSA Phase 5

---- Receptor #1 ----

		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Paving: Northern Recept	Residential	80	80	80			
				Equipment			
		Impact		Spec	Actual	Receptor	Estimated
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver		No	50		77.2	450	0
Roller		No	20		80	450	0
Roller		No	20		80	450	0
Tractor		No	40	84		450	0
Concrete Mixer Truck		No	40		78.8	450	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Paver	55.9	51.9
Roller	61.5	58.5
Roller	61.5	53.5
Tractor	54.9	50.9
Concrete Mixer Truck	54.9	50.9
Total	62.4	63.4

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Paving: Western Receptc	Residential	80	80	80			
				Equipment			
	Impact		Spec	Actual	Receptor	Estimated	
Description	Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)	
Paver	No	50		77.2	500	0	
Roller	No	20		80	500	0	
Roller	No	20		80	500	0	
Tractor	No	40	84		500	0	
Concrete Mixer Truck	No	40		78.8	500	0	

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Paver	57.2	54.2
Roller	60	53
Roller	60	53
Tractor	64	60
Concrete Mixer Truck	58.8	54.8
Total	64	62.9

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/23/2024

Case Description: VSA Phase 5

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Arch Coating: Northern R	Residential	80	80	80

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Compressor (air)	No	40		77.7	450	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Compressor (air)	58.6	54.6
Total	58.6	54.6

*Calculated Lmax is the Loudest value.

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Architect Coating: Weste	Residential	80	80	80

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Compressor (air)	No	40		77.7	500	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Compressor (air)	57.7	53.7
Total	57.7	53.7

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 3/25/2025

Case Desc: Concrete Pours_Phase 1

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Northern R Residential		80	80	80

Description	Impact Device	Usage(%)	Equipment Spec		Receptor Distance (feet)	Estimated Shielding (dBA)
			Lmax (dBA)	Actual Lmax (dBA)		
Pumps	No	50		80.9	730	0
Pumps	No	50		80.9	730	0
Compactor (ground)	No	20		83.2	730	0
Man Lift	No	20		74.7	730	0
Front End Loader	No	40		79.1	730	0
Tractor	No	40	84		730	0
Tractor	No	40	84		730	0
Slurry Trenching Machi No		50		80.4	730	0
Slurry Trenching Machi No		50		80.4	730	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Pumps	57.7	54.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	57.7	54.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	59.9	53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	51.4	44.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	55.8	51.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	60.7	56.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	60.7	56.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	57.1	54.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	57.1	54.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	60.7	63.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Western R Residential		80	80	80

Description	Impact Device	Usage(%)	Equipment Spec		Receptor Distance (feet)	Estimated Shielding (dBA)
			Lmax (dBA)	Actual Lmax (dBA)		
Pumps	No	50		80.9	400	0
Pumps	No	50		80.9	400	0
Compactor (ground)	No	20		83.2	400	0
Man Lift	No	20		74.7	400	0
Front End Loader	No	40		79.1	400	0
Tractor	No	40	84		400	0
Tractor	No	40	84		400	0
Slurry Trenching Machi No		50		80.4	400	0
Slurry Trenching Machi No		50		80.4	400	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Pumps	62.9	59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	62.9	59.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	65.2	58.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	56.6	49.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	61	57.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	65.9	62	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	65.9	62	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	62.3	59.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	62.3	59.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	65.9	69.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 3/25/2025

Case Desc: Concrete Pours_Phase 2

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Northern R Residential		80	80	80

Description	Impact Device	Usage(%)	Equipment Spec		Receptor Distance (feet)	Estimated Shielding (dBA)
			Lmax (dBA)	Actual Lmax (dBA)		
Pumps	No	50		80.9	244	0
Pumps	No	50		80.9	244	0
Compactor (ground)	No	20		83.2	244	0
Man Lift	No	20		74.7	244	0
Front End Loader	No	40		79.1	244	0
Tractor	No	40	84		244	0
Tractor	No	40	84		244	0
Slurry Trenching Machi No		50		80.4	244	0
Slurry Trenching Machi No		50		80.4	244	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Pumps	67.2	64.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	67.2	64.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	69.5	62.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	60.9	53.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	65.3	61.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	70.2	66.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	70.2	66.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	66.6	63.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	66.6	63.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	70.2	73.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Western R Residential		80	80	80

Description	Impact Device	Usage(%)	Equipment Spec		Receptor Distance (feet)	Estimated Shielding (dBA)
			Lmax (dBA)	Actual Lmax (dBA)		
Pumps	No	50		80.9	355	0
Pumps	No	50		80.9	355	0
Compactor (ground)	No	20		83.2	355	0
Man Lift	No	20		74.7	355	0
Front End Loader	No	40		79.1	355	0
Tractor	No	40	84		355	0
Tractor	No	40	84		355	0
Slurry Trenching Machi No		50		80.4	355	0
Slurry Trenching Machi No		50		80.4	355	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Pumps	63.9	60.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	63.9	60.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	66.2	59.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	57.7	50.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	62.1	58.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	67	63	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	67	63	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	63.3	60.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	63.3	60.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	67	70.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 3/25/2025

Case Desc: Concrete Pours_Phase 2

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Northern R Residential		80	80	80

Description	Impact Device	Usage(%)	Equipment Spec		Receptor Distance (feet)	Estimated Shielding (dBA)
			Lmax (dBA)	Actual Lmax (dBA)		
Pumps	No	50		80.9	244	0
Pumps	No	50		80.9	244	0
Compactor (ground)	No	20		83.2	244	0
Man Lift	No	20		74.7	244	0
Front End Loader	No	40		79.1	244	0
Tractor	No	40	84		244	0
Tractor	No	40	84		244	0
Slurry Trenching Machi No		50		80.4	244	0
Slurry Trenching Machi No		50		80.4	244	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Pumps	67.2	64.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	67.2	64.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	69.5	62.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	60.9	53.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	65.3	61.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	70.2	66.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	70.2	66.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	66.6	63.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	66.6	63.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	70.2	73.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Western R Residential		80	80	80

Description	Impact Device	Usage(%)	Equipment Spec		Receptor Distance (feet)	Estimated Shielding (dBA)
			Lmax (dBA)	Actual Lmax (dBA)		
Pumps	No	50		80.9	850	0
Pumps	No	50		80.9	850	0
Compactor (ground)	No	20		83.2	850	0
Man Lift	No	20		74.7	850	0
Front End Loader	No	40		79.1	850	0
Tractor	No	40	84		850	0
Tractor	No	40	84		850	0
Slurry Trenching Machi No		50		80.4	850	0
Slurry Trenching Machi No		50		80.4	850	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Pumps	56.3	53.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	56.3	53.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	58.6	51.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	50.1	43.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	54.5	50.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	59.4	55.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	59.4	55.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	55.8	52.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	55.8	52.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	59.4	62.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 3/25/2025

Case Desc: Concrete Pours_Phase 4

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Northern R Residential		80	80	80

Description	Impact Device	Usage(%)	Equipment Spec		Receptor Distance (feet)	Estimated Shielding (dBA)
			Lmax (dBA)	Actual Lmax (dBA)		
Pumps	No	50		80.9	600	0
Pumps	No	50		80.9	600	0
Compactor (ground)	No	20		83.2	600	0
Man Lift	No	20		74.7	600	0
Front End Loader	No	40		79.1	600	0
Tractor	No	40	84		600	0
Tractor	No	40	84		600	0
Slurry Trenching Machi No		50		80.4	600	0
Slurry Trenching Machi No		50		80.4	600	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Pumps	59.4	56.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	59.4	56.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	61.6	54.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	53.1	46.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	57.5	53.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	62.4	58.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	62.4	58.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	58.8	55.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	58.8	55.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	62.4	65.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Western R Residential		80	80	80

Description	Impact Device	Usage(%)	Equipment Spec		Receptor Distance (feet)	Estimated Shielding (dBA)
			Lmax (dBA)	Actual Lmax (dBA)		
Pumps	No	50		80.9	940	0
Pumps	No	50		80.9	940	0
Compactor (ground)	No	20		83.2	940	0
Man Lift	No	20		74.7	940	0
Front End Loader	No	40		79.1	940	0
Tractor	No	40	84		940	0
Tractor	No	40	84		940	0
Slurry Trenching Machi No		50		80.4	940	0
Slurry Trenching Machi No		50		80.4	940	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)							
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Pumps	55.5	52.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	55.5	52.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	57.7	50.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	49.2	42.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	53.6	49.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	58.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	58.5	54.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	54.9	51.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	54.9	51.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	58.5	61.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 3/25/2025

Case Desc: Concrete Pours_Phase 5

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Northern R Residential		80	80	80

Description	Impact Device	Usage(%)	Equipment Spec		Receptor Distance (feet)	Estimated Shielding (dBA)
			Lmax (dBA)	Actual Lmax (dBA)		
Pumps	No	50		80.9	450	0
Pumps	No	50		80.9	450	0
Compactor (ground)	No	20		83.2	450	0
Man Lift	No	20		74.7	450	0
Front End Loader	No	40		79.1	450	0
Tractor	No	40	84		450	0
Tractor	No	40	84		450	0
Slurry Trenching Machi No		50		80.4	450	0
Slurry Trenching Machi No		50		80.4	450	0

Results

Equipment	Calculated (dBA)			Noise Limits (dBA)				Noise Limit Exceedance (dBA)						
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Pumps	61.9	58.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	61.9	58.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	64.1	57.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	55.6	48.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	60	56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	64.9	60.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	64.9	60.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	61.3	58.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	61.3	58.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	64.9	68	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Western R Residential		80	80	80

Description	Impact Device	Usage(%)	Equipment Spec		Receptor Distance (feet)	Estimated Shielding (dBA)
			Lmax (dBA)	Actual Lmax (dBA)		
Pumps	No	50		80.9	500	0
Pumps	No	50		80.9	500	0
Compactor (ground)	No	20		83.2	500	0
Man Lift	No	20		74.7	500	0
Front End Loader	No	40		79.1	500	0
Tractor	No	40	84		500	0
Tractor	No	40	84		500	0
Slurry Trenching Machi No		50		80.4	500	0
Slurry Trenching Machi No		50		80.4	500	0

Results

Equipment	Calculated (dBA)			Noise Limits (dBA)				Noise Limit Exceedance (dBA)						
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Pumps	60.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pumps	60.9	57.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	63.2	56.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	54.7	47.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	59.1	55.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	64	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	64	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	60.4	57.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slurry Trenching Machi	60.4	57.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	64	67.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 192887
 Project Name: The Village at Santa Ana
 Scenario: Existing

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
 Source of Traffic Volumes: Michael Baker International
 Community Noise Descriptor: L_{dn}: CNEL: X

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.50%	12.90%	9.60%
Medium-Duty Trucks	84.80%	4.90%	10.30%
Heavy-Duty Trucks	86.50%	2.70%	10.80%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix		Distance from Centerline of Roadway				
						Medium Trucks	Heavy Trucks	CNEL at 100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
Fairview Street, between Segerstrom Avenue and MacArthur Boulevard (Santa Ana)	6	6	57,258	45	0.5	1.8%	0.7%	69.3	90	194	418	900
Fairview Street, between MacArthur Boulevard and Sunflower Avenue (Santa Ana)	6	6	54,295	45	0.5	1.8%	0.7%	69.1	87	187	403	869
Fairview Street, between Sunflower Avenue and South Coast Drive (Costa Mesa)	6	25	48,327	45	0.5	1.8%	0.7%	68.9	84	181	389	838
Fairview Street, between S. Coast Drive and I-405 NB Ramps (Costa Mesa)	5	0	58,522	40	0.5	1.8%	0.7%	68.0	74	159	343	738
Fairview Street, between I-405 NB Ramps and I-405 SB Ramps (Costa Mesa/Caltrans)	4	0	43,989	40	0.5	1.8%	0.7%	66.7	60	130	280	602
Fairview Street, between I-405 SB Ramps and Baker Street (Costa Mesa)	4	10	48,632	40	0.5	1.8%	0.7%	67.2	65	140	302	651
Bear Street, between Segerstrom Avenue and MacArthur Boulevard (Santa Ana)	4	13	17,093	40	0.5	1.8%	0.7%	62.7	-	70	151	326
Bear Street, between MacArthur Boulevard and Sunflower Avenue (Santa Ana/Costa Mesa)	6	15	18,079	40	0.5	1.8%	0.7%	63.2	-	76	164	353
Bear Street, between Sunflower Avenue and S. Coast Drive (Costa Mesa)	6	5	29,280	40	0.5	1.8%	0.7%	65.2	-	103	222	478
Bear Street, between S. Coast Drive and Paularino Avenue (Costa Mesa)	5	11	30,550	40	0.5	1.8%	0.7%	65.3	-	105	226	486
Bear Street, between Paularino Avenue and Baker Street (Costa Mesa)	6	1	38,458	40	0.5	1.8%	0.7%	66.3	57	123	264	569
S. Plaza Drive, between MacArthur Boulevard and Callen's Common (Santa Ana)	4	5	5,335	25	0.5	1.8%	0.7%	53.8	-	-	-	83
S. Plaza Drive, between Callen's Common and Sunflower Avenue (Santa Ana)	4	5	4,867	25	0.5	1.8%	0.7%	53.4	-	-	-	78
Bristol Street, between Segerstrom Avenue and MacArthur Boulevard (Santa Ana)	6	11	44,514	40	0.5	1.8%	0.7%	67.1	64	138	297	639
Bristol Street, between MacArthur Boulevard and Callen's Common (Santa Ana)	6	11	46,376	40	0.5	1.8%	0.7%	67.3	66	141	305	657
Bristol Street, between Callen's Common and Sunflower Avenue (Santa Ana)	7	5	44,992	40	0.5	1.8%	0.7%	67.2	65	140	303	652
Bristol Street, between Sunflower Avenue and Anton Boulevard (Costa Mesa)	6	3	49,520	40	0.5	1.8%	0.7%	67.4	68	146	314	676
Bristol Street, between Anton Boulevard and I-405 NB Ramps (Costa Mesa)	11	3	56,842	40	0.5	1.8%	0.7%	69.3	89	192	414	892
Bristol Street, between I-405 NB Ramps and I-405 SB Ramps (Costa Mesa/Caltrans)	8	6	58,550	40	0.5	1.8%	0.7%	68.6	80	173	373	803
Bristol Street, between I-405 SB Ramps and Paularino Avenue (Costa Mesa)	6	2	39,465	40	0.5	1.8%	0.7%	66.5	58	125	269	580
Bristol Street, between Paularino Avenue and Baker Street (Costa Mesa)	6	2	40,865	40	0.5	1.8%	0.7%	66.6	59	128	275	594
Flower Street, between Dyer Road and MacArthur Boulevard (Santa Ana)	4	11	15,226	40	0.5	1.8%	0.7%	62.2	-	65	140	301
Flower Street, between MacArthur Boulevard and Sunflower Avenue (Santa Ana)	4	11	9,385	40	0.5	1.8%	0.7%	60.1	-	-	101	218
Main Street, between Dyer Road and MacArthur Boulevard (Santa Ana)	6	11	30,841	45	0.5	1.8%	0.7%	66.7	-	130	279	602
Main Street, between MacArthur Boulevard and Sunflower Avenue (Santa Ana)	6	11	24,049	45	0.5	1.8%	0.7%	65.6	-	110	237	510
Main Street, between Sunflower Avenue and Red Hill Avenue (Santa Ana/Irvine)	6	11	23,756	45	0.5	1.8%	0.7%	65.6	-	109	235	506
Segerstrom Avenue, between Fairview Street and Bear Street (Santa Ana)	4	15	21,359	40	0.5	1.8%	0.7%	63.7	-	82	176	379
Segerstrom Avenue, between Bear Street and Bristol Street (Santa Ana)	4	15	28,687	40	0.5	1.8%	0.7%	65.0	-	99	214	461
Segerstrom Avenue, between Bristol Street and Flower Street (Santa Ana)	4	15	23,305	40	0.5	1.8%	0.7%	64.1	-	86	186	401
Dyer Road, between Flower Street and Main Street (Santa Ana)	4	15	29,321	40	0.5	1.8%	0.7%	65.0	-	101	217	468
MacArthur Boulevard, between Fairview Street and Bear Street (Santa Ana)	6	15	31,231	40	0.5	1.8%	0.7%	65.6	-	110	236	509
MacArthur Boulevard, between Bear Street and S. Plaza Drive (Santa Ana)	6	15	38,149	40	0.5	1.8%	0.7%	66.5	-	125	270	581
MacArthur Boulevard, between S. Plaza Drive and Bristol Street (Santa Ana)	6	15	34,795	40	0.5	1.8%	0.7%	66.1	-	118	254	547
MacArthur Boulevard, between Bristol Street and Flower Street (Santa Ana)	6	15	38,024	40	0.5	1.8%	0.7%	66.5	-	125	269	580
MacArthur Boulevard, between Flower Street and Main Street (Santa Ana)	6	15	38,517	40	0.5	1.8%	0.7%	66.5	-	126	272	585
MacArthur Boulevard, between Main Street and SR-55 SB Ramps (Santa Ana)	6	18	49,168	40	0.5	1.8%	0.7%	67.6	69	149	322	693
MacArthur Boulevard, between SR-55 SB Ramps and NB Ramps (Santa Ana/Irvine)	8	15	50,728	40	0.5	1.8%	0.7%	68.1	-	162	348	750
Sunflower Avenue, between Fairview Street and Bear Street (Santa Ana/Costa Mesa)	4	11	16,151	40	0.5	1.8%	0.7%	62.4	-	67	145	313
Sunflower Avenue, between Bear Street and S. Plaza Drive (Santa Ana/Costa Mesa)	4	11	28,671	40	0.5	1.8%	0.7%	64.9	-	99	213	458
Sunflower Avenue, between S. Plaza Drive and Bristol Street (Santa Ana/Costa Mesa)	4	11	27,753	40	0.5	1.8%	0.7%	64.8	-	97	208	449
Sunflower Avenue, between Bristol Street and Flower Street (Santa Ana/Costa Mesa)	4	11	21,679	40	0.5	1.8%	0.7%	63.7	-	82	177	380
Sunflower Avenue, between Bristol Street and Flower Street (Santa Ana/Costa Mesa)	4	11	17,867	40	0.5	1.8%	0.7%	62.9	-	72	155	334
Bristol Street, south of Baker Street (Santa Ana)	6	11	27,895	40	0.5	1.8%	0.7%	65.1	-	101	217	468

"-" = contour is located within the roadway right-of-way.

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 192887
 Project Name: The Village at Santa Ana
 Scenario: Existing+Project

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
 Source of Traffic Volumes: Michael Baker International
 Community Noise Descriptor: L_{dn}: CNEL: X

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.50%	12.90%	9.60%
Medium-Duty Trucks	84.80%	4.90%	10.30%
Heavy-Duty Trucks	86.50%	2.70%	10.80%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix		Distance from Centerline of Roadway				
						Medium Trucks	Heavy Trucks	CNEL at 100 Feet	70 CNEL	Distance to Contour 65 CNEL	60 CNEL	55 CNEL
Fairview Street, between Segerstrom Avenue and MacArthur Boulevard (Santa Ana)	6	6	57,283	45	0.5	1.8%	0.7%	69.3	90	194	418	900
Fairview Street, between MacArthur Boulevard and Sunflower Avenue (Santa Ana)	6	6	54,320	45	0.5	1.8%	0.7%	69.1	87	187	403	869
Fairview Street, between Sunflower Avenue and South Coast Drive (Costa Mesa)	6	25	48,356	45	0.5	1.8%	0.7%	68.9	84	181	389	839
Fairview Street, between S. Coast Drive and I-405 NB Ramps (Costa Mesa)	5	0	58,562	40	0.5	1.8%	0.7%	68.0	74	159	343	739
Fairview Street, between I-405 NB Ramps and I-405 SB Ramps (Costa Mesa/Caltrans)	4	0	44,029	40	0.5	1.8%	0.7%	66.7	60	130	280	603
Fairview Street, between I-405 SB Ramps and Baker Street (Costa Mesa)	4	10	48,672	40	0.5	1.8%	0.7%	67.2	65	140	302	651
Bear Street, between Segerstrom Avenue and MacArthur Boulevard (Santa Ana)	4	13	17,280	40	0.5	1.8%	0.7%	62.7	-	71	152	328
Bear Street, between MacArthur Boulevard and Sunflower Avenue (Santa Ana/Costa Mesa)	6	15	18,628	40	0.5	1.8%	0.7%	63.4	-	78	167	361
Bear Street, between Sunflower Avenue and S. Coast Drive (Costa Mesa)	6	5	29,602	40	0.5	1.8%	0.7%	65.2	-	104	223	481
Bear Street, between S. Coast Drive and Paularino Avenue (Costa Mesa)	5	11	30,864	40	0.5	1.8%	0.7%	65.3	-	106	227	490
Bear Street, between Paularino Avenue and Baker Street (Costa Mesa)	6	1	38,620	40	0.5	1.8%	0.7%	66.3	57	123	265	571
S. Plaza Drive, between MacArthur Boulevard and Callen's Common (Santa Ana)	4	5	5,798	25	0.5	1.8%	0.7%	54.1	-	-	-	87
S. Plaza Drive, between Callen's Common and Sunflower Avenue (Santa Ana)	4	5	5,532	25	0.5	1.8%	0.7%	53.9	-	-	-	85
Bristol Street, between Segerstrom Avenue and MacArthur Boulevard (Santa Ana)	6	11	44,784	40	0.5	1.8%	0.7%	67.1	64	138	298	642
Bristol Street, between MacArthur Boulevard and Callen's Common (Santa Ana)	6	11	46,675	40	0.5	1.8%	0.7%	67.3	66	142	306	660
Bristol Street, between Callen's Common and Sunflower Avenue (Santa Ana)	7	5	45,291	40	0.5	1.8%	0.7%	67.2	65	141	304	655
Bristol Street, between Sunflower Avenue and Anton Boulevard (Costa Mesa)	6	3	50,773	40	0.5	1.8%	0.7%	67.6	69	148	319	687
Bristol Street, between Anton Boulevard and I-405 NB Ramps (Costa Mesa)	11	3	58,095	40	0.5	1.8%	0.7%	69.4	91	195	420	905
Bristol Street, between I-405 NB Ramps and I-405 SB Ramps (Costa Mesa/Caltrans)	8	6	59,529	40	0.5	1.8%	0.7%	68.6	81	175	377	812
Bristol Street, between I-405 SB Ramps and Paularino Avenue (Costa Mesa)	6	2	39,615	40	0.5	1.8%	0.7%	66.5	58	125	270	581
Bristol Street, between Paularino Avenue and Baker Street (Costa Mesa)	6	2	41,015	40	0.5	1.8%	0.7%	66.6	59	128	276	595
Flower Street, between Dyer Road and MacArthur Boulevard (Santa Ana)	4	11	15,276	40	0.5	1.8%	0.7%	62.2	-	65	140	301
Flower Street, between MacArthur Boulevard and Sunflower Avenue (Santa Ana)	4	11	9,410	40	0.5	1.8%	0.7%	60.1	-	-	101	218
Main Street, between Dyer Road and MacArthur Boulevard (Santa Ana)	6	11	30,866	45	0.5	1.8%	0.7%	66.7	-	130	279	602
Main Street, between MacArthur Boulevard and Sunflower Avenue (Santa Ana)	6	11	24,074	45	0.5	1.8%	0.7%	65.6	-	110	237	510
Main Street, between Sunflower Avenue and Red Hill Avenue (Santa Ana/Irvine)	6	11	23,906	45	0.5	1.8%	0.7%	65.6	-	109	236	508
Segerstrom Avenue, between Fairview Street and Bear Street (Santa Ana)	4	15	21,462	40	0.5	1.8%	0.7%	63.7	-	82	176	380
Segerstrom Avenue, between Bear Street and Bristol Street (Santa Ana)	4	15	28,770	40	0.5	1.8%	0.7%	65.0	-	99	214	462
Segerstrom Avenue, between Bristol Street and Flower Street (Santa Ana)	4	15	23,355	40	0.5	1.8%	0.7%	64.1	-	87	187	402
Dyer Road, between Flower Street and Main Street (Santa Ana)	4	15	29,371	40	0.5	1.8%	0.7%	65.1	-	101	217	468
MacArthur Boulevard, between Fairview Street and Bear Street (Santa Ana)	6	15	31,283	40	0.5	1.8%	0.7%	65.6	-	110	236	509
MacArthur Boulevard, between Bear Street and S. Plaza Drive (Santa Ana)	6	15	38,174	40	0.5	1.8%	0.7%	66.5	-	125	270	582
MacArthur Boulevard, between S. Plaza Drive and Bristol Street (Santa Ana)	6	15	35,519	40	0.5	1.8%	0.7%	66.2	-	119	257	554
MacArthur Boulevard, between Bristol Street and Flower Street (Santa Ana)	6	15	38,778	40	0.5	1.8%	0.7%	66.5	-	127	273	588
MacArthur Boulevard, between Flower Street and Main Street (Santa Ana)	6	15	39,220	40	0.5	1.8%	0.7%	66.6	-	128	275	592
MacArthur Boulevard, between Main Street and SR-55 SB Ramps (Santa Ana)	6	18	49,871	40	0.5	1.8%	0.7%	67.7	70	151	325	700
MacArthur Boulevard, between SR-55 SB Ramps and NB Ramps (Santa Ana/Irvine)	8	15	51,155	40	0.5	1.8%	0.7%	68.2	-	163	350	754
Sunflower Avenue, between Fairview Street and Bear Street (Santa Ana/Costa Mesa)	4	11	16,180	40	0.5	1.8%	0.7%	62.4	-	67	145	313
Sunflower Avenue, between Bear Street and S. Plaza Drive (Santa Ana/Costa Mesa)	4	11	28,892	40	0.5	1.8%	0.7%	65.0	-	99	214	461
Sunflower Avenue, between S. Plaza Drive and Bristol Street (Santa Ana/Costa Mesa)	4	11	29,457	40	0.5	1.8%	0.7%	65.0	-	101	217	467
Sunflower Avenue, between Bristol Street and Flower Street (Santa Ana/Costa Mesa)	4	11	21,829	40	0.5	1.8%	0.7%	63.7	-	82	177	382
Sunflower Avenue, between Bristol Street and Flower Street (Santa Ana/Costa Mesa)	4	11	18,017	40	0.5	1.8%	0.7%	62.9	-	72	156	336
Bristol Street, south of Baker Street (Santa Ana)	6	11	28,045	40	0.5	1.8%	0.7%	65.1	-	101	218	470

"-" = contour is located within the roadway right-of-way.

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 192887
Project Name: The Village at Santa Ana
Scenario: Future 2045

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Michael Baker International
Community Noise Descriptor: L_{dn}: CNEL: X

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.50%	12.90%	9.60%
Medium-Duty Trucks	84.80%	4.90%	10.30%
Heavy-Duty Trucks	86.50%	2.70%	10.80%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix		Distance from Centerline of Roadway				
						Medium Trucks	Heavy Trucks	CNEL at 100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
Fairview Street, between Segerstrom Avenue and MacArthur Boulevard (Santa Ana)	6	6	69,408	45	0.5	1.8%	0.7%	70.1	102	220	475	1,023
Fairview Street, between MacArthur Boulevard and Sunflower Avenue (Santa Ana)	6	6	66,196	45	0.5	1.8%	0.7%	69.9	99	214	460	991
Fairview Street, between Sunflower Avenue and South Coast Drive (Costa Mesa)	6	25	58,085	45	0.5	1.8%	0.7%	69.6	95	204	440	948
Fairview Street, between S. Coast Drive and I-405 NB Ramps (Costa Mesa)	5	0	72,127	40	0.5	1.8%	0.7%	68.9	85	183	394	849
Fairview Street, between I-405 NB Ramps and I-405 SB Ramps (Costa Mesa/Caltrans)	4	0	53,231	40	0.5	1.8%	0.7%	67.5	68	147	318	684
Fairview Street, between I-405 SB Ramps and Baker Street (Costa Mesa)	4	10	58,739	40	0.5	1.8%	0.7%	68.0	74	159	343	738
Bear Street, between Segerstrom Avenue and MacArthur Boulevard (Santa Ana)	4	13	20,227	40	0.5	1.8%	0.7%	63.4	-	78	169	364
Bear Street, between MacArthur Boulevard and Sunflower Avenue (Santa Ana/Costa Mesa)	6	15	21,450	40	0.5	1.8%	0.7%	64.0	-	85	184	396
Bear Street, between Sunflower Avenue and S. Coast Drive (Costa Mesa)	6	5	35,223	40	0.5	1.8%	0.7%	66.0	-	116	251	540
Bear Street, between S. Coast Drive and Paularino Avenue (Costa Mesa)	5	11	37,291	40	0.5	1.8%	0.7%	66.2	56	120	258	556
Bear Street, between Paularino Avenue and Baker Street (Costa Mesa)	6	1	46,391	40	0.5	1.8%	0.7%	67.1	64	139	299	645
S. Plaza Drive, between MacArthur Boulevard and Callen's Common (Santa Ana)	4	5	6,780	25	0.5	1.8%	0.7%	54.8	-	-	-	97
S. Plaza Drive, between Callen's Common and Sunflower Avenue (Santa Ana)	4	5	6,298	25	0.5	1.8%	0.7%	54.5	-	-	-	92
Bristol Street, between Segerstrom Avenue and MacArthur Boulevard (Santa Ana)	6	11	56,087	40	0.5	1.8%	0.7%	68.1	75	161	346	745
Bristol Street, between MacArthur Boulevard and Callen's Common (Santa Ana)	6	11	60,146	40	0.5	1.8%	0.7%	68.4	78	168	363	781
Bristol Street, between Callen's Common and Sunflower Avenue (Santa Ana)	7	5	58,200	40	0.5	1.8%	0.7%	68.3	77	167	359	774
Bristol Street, between Sunflower Avenue and Anton Boulevard (Costa Mesa)	6	3	65,009	40	0.5	1.8%	0.7%	68.6	81	175	376	810
Bristol Street, between Anton Boulevard and I-405 NB Ramps (Costa Mesa)	11	3	76,814	40	0.5	1.8%	0.7%	70.6	109	235	506	1,090
Bristol Street, between I-405 NB Ramps and I-405 SB Ramps (Costa Mesa/Caltrans)	8	6	76,130	40	0.5	1.8%	0.7%	69.7	96	206	444	957
Bristol Street, between I-405 SB Ramps and Paularino Avenue (Costa Mesa)	6	2	48,428	40	0.5	1.8%	0.7%	67.3	66	143	309	665
Bristol Street, between Paularino Avenue and Baker Street (Costa Mesa)	6	2	50,089	40	0.5	1.8%	0.7%	67.5	68	146	316	680
Flower Street, between Dyer Road and MacArthur Boulevard (Santa Ana)	4	11	18,439	40	0.5	1.8%	0.7%	63.0	-	74	159	342
Flower Street, between MacArthur Boulevard and Sunflower Avenue (Santa Ana)	4	11	11,449	40	0.5	1.8%	0.7%	60.9	-	54	115	249
Main Street, between Dyer Road and MacArthur Boulevard (Santa Ana)	6	11	37,582	45	0.5	1.8%	0.7%	67.5	69	148	319	686
Main Street, between MacArthur Boulevard and Sunflower Avenue (Santa Ana)	6	11	29,676	45	0.5	1.8%	0.7%	66.5	-	126	272	586
Main Street, between Sunflower Avenue and Red Hill Avenue (Santa Ana/Irvine)	6	11	29,913	45	0.5	1.8%	0.7%	66.6	-	127	274	589
Segerstrom Avenue, between Fairview Street and Bear Street (Santa Ana)	4	15	26,057	40	0.5	1.8%	0.7%	64.5	-	93	201	432
Segerstrom Avenue, between Bear Street and Bristol Street (Santa Ana)	4	15	34,804	40	0.5	1.8%	0.7%	65.8	52	113	243	524
Segerstrom Avenue, between Bristol Street and Flower Street (Santa Ana)	4	15	27,602	40	0.5	1.8%	0.7%	64.8	-	97	209	449
Dyer Road, between Flower Street and Main Street (Santa Ana)	4	15	34,728	40	0.5	1.8%	0.7%	65.8	52	113	243	524
MacArthur Boulevard, between Fairview Street and Bear Street (Santa Ana)	6	15	38,051	40	0.5	1.8%	0.7%	66.5	-	125	269	580
MacArthur Boulevard, between Bear Street and S. Plaza Drive (Santa Ana)	6	15	46,209	40	0.5	1.8%	0.7%	67.3	66	142	307	661
MacArthur Boulevard, between S. Plaza Drive and Bristol Street (Santa Ana)	6	15	42,638	40	0.5	1.8%	0.7%	67.0	-	135	291	626
MacArthur Boulevard, between Bristol Street and Flower Street (Santa Ana)	6	15	48,323	40	0.5	1.8%	0.7%	67.5	68	147	316	681
MacArthur Boulevard, between Flower Street and Main Street (Santa Ana)	6	15	48,702	40	0.5	1.8%	0.7%	67.5	68	147	318	684
MacArthur Boulevard, between Main Street and SR-55 SB Ramps (Santa Ana)	6	18	62,678	40	0.5	1.8%	0.7%	68.7	82	176	378	815
MacArthur Boulevard, between SR-55 SB Ramps and NB Ramps (Santa Ana/Irvine)	8	15	72,440	40	0.5	1.8%	0.7%	69.7	95	205	442	951
Sunflower Avenue, between Fairview Street and Bear Street (Santa Ana/Costa Mesa)	4	11	20,991	40	0.5	1.8%	0.7%	63.6	-	80	173	372
Sunflower Avenue, between Bear Street and S. Plaza Drive (Santa Ana/Costa Mesa)	4	11	36,104	40	0.5	1.8%	0.7%	65.9	53	115	248	534
Sunflower Avenue, between S. Plaza Drive and Bristol Street (Santa Ana/Costa Mesa)	4	11	36,122	40	0.5	1.8%	0.7%	65.9	53	115	248	535
Sunflower Avenue, between Bristol Street and Flower Street (Santa Ana/Costa Mesa)	4	11	28,581	40	0.5	1.8%	0.7%	64.9	-	99	212	457
Sunflower Avenue, between Bristol Street and Flower Street (Santa Ana/Costa Mesa)	4	11	24,823	40	0.5	1.8%	0.7%	64.3	-	90	193	416
Bristol Street, south of Baker Street (Santa Ana)	6	11	34,589	40	0.5	1.8%	0.7%	66.0	-	116	251	540

"-" = contour is located within the roadway right-of-way.

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 192887
 Project Name: The Village at Santa Ana
 Scenario: Future with Project

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
 Source of Traffic Volumes: Michael Baker International
 Community Noise Descriptor: L_{dn}: CNEL: X

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.50%	12.90%	9.60%
Medium-Duty Trucks	84.80%	4.90%	10.30%
Heavy-Duty Trucks	86.50%	2.70%	10.80%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix		Distance from Centerline of Roadway				
						Medium Trucks	Heavy Trucks	CNEL at 100 Feet	70 CNEL	Distance to Contour 65 CNEL	60 CNEL	55 CNEL
Fairview Street, between Segerstrom Avenue and MacArthur Boulevard (Santa Ana)	6	6	69,433	45	0.5	1.8%	0.7%	70.2	102	220	475	1,023
Fairview Street, between MacArthur Boulevard and Sunflower Avenue (Santa Ana)	6	6	66,221	45	0.5	1.8%	0.7%	69.9	99	214	460	992
Fairview Street, between Sunflower Avenue and South Coast Drive (Costa Mesa)	6	25	58,114	45	0.5	1.8%	0.7%	69.7	95	204	440	948
Fairview Street, between S. Coast Drive and I-405 NB Ramps (Costa Mesa)	5	0	72,167	40	0.5	1.8%	0.7%	68.9	85	183	394	849
Fairview Street, between I-405 NB Ramps and I-405 SB Ramps (Costa Mesa/Caltrans)	4	0	53,271	40	0.5	1.8%	0.7%	67.5	68	147	318	685
Fairview Street, between I-405 SB Ramps and Baker Street (Costa Mesa)	4	10	58,779	40	0.5	1.8%	0.7%	68.0	74	159	343	739
Bear Street, between Segerstrom Avenue and MacArthur Boulevard (Santa Ana)	4	13	20,414	40	0.5	1.8%	0.7%	63.5	-	79	170	366
Bear Street, between MacArthur Boulevard and Sunflower Avenue (Santa Ana/Costa Mesa)	6	15	21,999	40	0.5	1.8%	0.7%	64.1	-	87	187	403
Bear Street, between Sunflower Avenue and S. Coast Drive (Costa Mesa)	6	5	35,545	40	0.5	1.8%	0.7%	66.0	-	117	252	544
Bear Street, between S. Coast Drive and Paularino Avenue (Costa Mesa)	5	11	37,605	40	0.5	1.8%	0.7%	66.2	56	120	259	559
Bear Street, between Paularino Avenue and Baker Street (Costa Mesa)	6	1	46,553	40	0.5	1.8%	0.7%	67.2	65	139	300	646
S. Plaza Drive, between MacArthur Boulevard and Callen's Common (Santa Ana)	4	5	7,243	25	0.5	1.8%	0.7%	55.1	-	-	47	101
S. Plaza Drive, between Callen's Common and Sunflower Avenue (Santa Ana)	4	5	6,963	25	0.5	1.8%	0.7%	54.9	-	-	-	99
Bristol Street, between Segerstrom Avenue and MacArthur Boulevard (Santa Ana)	6	11	56,357	40	0.5	1.8%	0.7%	68.1	75	161	347	748
Bristol Street, between MacArthur Boulevard and Callen's Common (Santa Ana)	6	11	60,445	40	0.5	1.8%	0.7%	68.4	78	169	364	784
Bristol Street, between Callen's Common and Sunflower Avenue (Santa Ana)	7	5	58,499	40	0.5	1.8%	0.7%	68.4	78	167	360	777
Bristol Street, between Sunflower Avenue and Anton Boulevard (Costa Mesa)	6	3	66,262	40	0.5	1.8%	0.7%	68.7	82	177	381	821
Bristol Street, between Anton Boulevard and I-405 NB Ramps (Costa Mesa)	11	3	78,067	40	0.5	1.8%	0.7%	70.6	110	237	512	1,102
Bristol Street, between I-405 NB Ramps and I-405 SB Ramps (Costa Mesa/Caltrans)	8	6	77,109	40	0.5	1.8%	0.7%	69.8	96	208	448	965
Bristol Street, between I-405 SB Ramps and Paularino Avenue (Costa Mesa)	6	2	48,578	40	0.5	1.8%	0.7%	67.4	67	143	309	666
Bristol Street, between Paularino Avenue and Baker Street (Costa Mesa)	6	2	50,239	40	0.5	1.8%	0.7%	67.5	68	147	316	681
Flower Street, between Dyer Road and MacArthur Boulevard (Santa Ana)	4	11	18,489	40	0.5	1.8%	0.7%	63.0	-	74	159	342
Flower Street, between MacArthur Boulevard and Sunflower Avenue (Santa Ana)	4	11	11,474	40	0.5	1.8%	0.7%	60.9	-	54	116	249
Main Street, between Dyer Road and MacArthur Boulevard (Santa Ana)	6	11	37,607	45	0.5	1.8%	0.7%	67.6	69	148	319	687
Main Street, between MacArthur Boulevard and Sunflower Avenue (Santa Ana)	6	11	29,701	45	0.5	1.8%	0.7%	66.5	-	126	272	587
Main Street, between Sunflower Avenue and Red Hill Avenue (Santa Ana/Irvine)	6	11	30,063	45	0.5	1.8%	0.7%	66.6	-	127	275	591
Segerstrom Avenue, between Fairview Street and Bear Street (Santa Ana)	4	15	26,160	40	0.5	1.8%	0.7%	64.6	-	93	201	433
Segerstrom Avenue, between Bear Street and Bristol Street (Santa Ana)	4	15	34,887	40	0.5	1.8%	0.7%	65.8	53	113	244	525
Segerstrom Avenue, between Bristol Street and Flower Street (Santa Ana)	4	15	27,652	40	0.5	1.8%	0.7%	64.8	-	97	209	450
Dyer Road, between Flower Street and Main Street (Santa Ana)	4	15	34,778	40	0.5	1.8%	0.7%	65.8	52	113	243	524
MacArthur Boulevard, between Fairview Street and Bear Street (Santa Ana)	6	15	38,103	40	0.5	1.8%	0.7%	66.5	-	125	270	581
MacArthur Boulevard, between Bear Street and S. Plaza Drive (Santa Ana)	6	15	46,234	40	0.5	1.8%	0.7%	67.3	66	142	307	661
MacArthur Boulevard, between S. Plaza Drive and Bristol Street (Santa Ana)	6	15	43,362	40	0.5	1.8%	0.7%	67.0	-	136	294	633
MacArthur Boulevard, between Bristol Street and Flower Street (Santa Ana)	6	15	49,077	40	0.5	1.8%	0.7%	67.6	69	148	319	688
MacArthur Boulevard, between Flower Street and Main Street (Santa Ana)	6	15	49,405	40	0.5	1.8%	0.7%	67.6	69	149	321	691
MacArthur Boulevard, between Main Street and SR-55 SB Ramps (Santa Ana)	6	18	63,381	40	0.5	1.8%	0.7%	68.7	82	177	381	821
MacArthur Boulevard, between SR-55 SB Ramps and NB Ramps (Santa Ana/Irvine)	8	15	72,867	40	0.5	1.8%	0.7%	69.7	96	206	443	955
Sunflower Avenue, between Fairview Street and Bear Street (Santa Ana/Costa Mesa)	4	11	21,020	40	0.5	1.8%	0.7%	63.6	-	80	173	373
Sunflower Avenue, between Bear Street and S. Plaza Drive (Santa Ana/Costa Mesa)	4	11	36,325	40	0.5	1.8%	0.7%	65.9	54	116	249	537
Sunflower Avenue, between S. Plaza Drive and Bristol Street (Santa Ana/Costa Mesa)	4	11	37,826	40	0.5	1.8%	0.7%	66.1	55	119	256	551
Sunflower Avenue, between Bristol Street and Flower Street (Santa Ana/Costa Mesa)	4	11	28,731	40	0.5	1.8%	0.7%	64.9	-	99	213	459
Sunflower Avenue, between Bristol Street and Flower Street (Santa Ana/Costa Mesa)	4	11	24,973	40	0.5	1.8%	0.7%	64.3	-	90	194	418
Bristol Street, south of Baker Street (Santa Ana)	6	11	34,739	40	0.5	1.8%	0.7%	66.0	-	117	251	542

"-" = contour is located within the roadway right-of-way.

VSA Operational Noise Calculation

Noise Sources	Reference (Leq)		Projected (Leq)	
	dBA1	d1	d2	dBA2
HVAC	66	3	75	38
Outdoor Gathering Area	62	3.28	72	35
Outdoor Gathering Area	62	3.28	100	32

Notes:

$$dBA2 = dBA1 + 10\log_{10} (d1/d2)^2$$

where:

dBA 2 = Estimated Operational Noise Level;

dBA1 = Reference noise level;

d1 = Reference distance in feet;

d2 = Approximate Receptor Location Distance

VSA Operational Noise Calculation

Equipment	Type	PPV at 25 feet (in/sec)	Calculated distance (feet)
			75
Pile Driver (impact)	typical	0.644	0.1239
Vibratory Roller		0.21	0.0404
Large bulldozer		0.089	0.0171
Loaded trucks		0.076	0.0146
Jackhammer		0.035	0.0067
Small bulldozer		0.003	0.0006

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Guidelines*, May 2006. Table 12-2.