

Date: 10/29/2020

South Mountain Freeway: Promontory Community

Promontory Noise Levels

- Noise measurements are taken using a Class1 Larson Davis SoundTrack LxT1 Sound Level Meter (SLM).
- Frequency Weighting relates to a correction that can be applied for measurements that involve humans. The human hearing system does not have a flat frequency response, instead it is most sensitive at mid frequencies where speech generally sits, and not so sensitive at the low or high frequencies. A sound level meter does not hear like a human, and so applying a weighting allows us to account for this. A – Weighting is used for traffic noise sound levels.
- The Time Weighting or response speed of the detector is how the noise is measured. The SLM is set to Fast to record rapidly changing sound levels. The noise levels are recorded every 1/8 second which is every 125 milliseconds (ms).
- For each site, three 15-minute noise measurements are taken. The sound is recorded every 1/8 second. There are 60,000 ms in a minute so the sound is recorded 480 times per minute and 7,200 times per 15-minute recording.
- L_{eq} descriptor accounts for noise fluctuations from moment to moment by averaging the louder and quieter moments, it is the total sound energy measured over a period of time. This is the average sound pressure level over the 15-minute period in which the noise varies.
- L_{max} is the Maximum Sound Level and is the highest sound level measured during the 15-minute noise measurement period.
- L_{min} is the Minimum Sound Level and is the lowest sound level measured during the 15-minute noise measurement period.
- The final decibel reading for each 15-minute measurement period is the L_{eq} column, is time averaged equivalent continuous sound level.

Measurement Data					
Sample	Time		Decibel (dB)		
	Begin	Duration	L_{eq}	L_{max}	L_{min}
1	6:22 am	15:00.4	54.0	64.5	44.9
2	6:38 am	15:00.3	56.8	68.0	48.6
3	6:53 am	15:00.3	56.4	81.7	46.1

In the example above, the first 15-minute noise recording was 54.0 dBA, the second was 56.8 dBA, and the third was 56.4 dBA. The average noise level over a 45-minute period for this site would be 55.7 dBA.

Roadway Noise Level Measurement Data Sheet

Project Number: NEC2020Promontory

Date: 10/15/2020

Project Name: Promontory Community

Site Number: Mon1 - PM

Site Description: 16114 S. 35th Avenue

Coordinates: 33°18'01.88"N 112°08'16.38"W

Posted Speed: 65 MPH

Observed Speed: 70 MPH

SLM: LD LXT

Response: Slow

Weighting: A

Calibrator: CAL200

Begin ±: 0.0

End ±: 0.0

Battery >50%: X

Weather Condition: Sunny

Temperature: 100°F

Humidity: 11%

Wind: W 9 mph

Sample	Measurement Data					Traffic Data									
	Time		Decibel (dB)			Auto		Med Truck		Hvy Truck		Bus		Motorcycle	
	Begin	Duration	L _{eq}	L _{max}	L _{min}	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB
1	4:53 pm	15:00.2	54.0	68.7	46.0										
2	5:08 pm	15:00.0	53.4	65.8	45.4										
3	5:24 pm	22:02.0	52.7	71.5	40.9										

Site Sketch



Notes:

Sample

Background Noise

Unusual Noise Events

1

2

3

Roadway Noise Level Measurement Data Sheet

Project Number: NEC2020Promontory Date: 10/15/2020
 Project Name: Promontory Community Site Number: Mon2 - AM
 Site Description: 3626 W. Hiddenview Dr. Coordinates: 33°18'00.43"N 112°08'19.35"W
 Posted Speed: 65 MPH Observed Speed: 70 MPH

SLM: LD LXT Response: Slow Weighting: A
 Calibrator: CAL200 Begin ±: 0.0 End ±: 0.0 Battery >50%: X

Weather Condition: Sunny
 Temperature: 68°F Humidity: 29% Wind: E 5 mph

Sample	Measurement Data					Traffic Data									
	Time		Decibel (dB)			Auto		Med Truck		Hvy Truck		Bus		Motorcycle	
	Begin	Duration	L _{eq}	L _{max}	L _{min}	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB
1	7:34 am	15:00.1	52.4	73.7	45.4										
2	7:49 am	15:00.0	51.9	61.7	44.7										
3	8:05 am	15:00.4	51.6	62.6	44.8										

Site Sketch



Notes:

Sample	Background Noise	Unusual Noise Events
1		
2		
3		

Roadway Noise Level Measurement Data Sheet

Project Number: NEC2020Promontory

Date: 10/15/2020

Project Name: Promontory Community

Site Number: Mon2 - PM

Site Description: 3626 W. Hiddenview Dr.

Coordinates: 33°18'00.43"N 112°08'19.35"W

Posted Speed: 65 MPH

Observed Speed: 70 MPH

SLM: LD LXT

Response: Slow

Weighting: A

Calibrator: CAL200

Begin ±: 0.0

End ±: 0.0

Battery >50%: X

Weather Condition: Sunny

Temperature: 100°F

Humidity: 11%

Wind: W 9 mph

Sample	Measurement Data					Traffic Data									
	Time		Decibel (dB)			Auto		Med Truck		Hvy Truck		Bus		Motorcycle	
	Begin	Duration	L _{eq}	L _{max}	L _{min}	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB
1	3:59 pm	15:00.4	56.5	70.0	46.9										
2	4:15 pm	15:00.2	56.9	68.4	47.0										
3	4:30 pm	15:00.4	57.5	70.9	48.4										

Site Sketch



Notes:

Sample

Background Noise

Unusual Noise Events

1

2

3

Roadway Noise Level Measurement Data Sheet

Project Number: NEC2020Promontory

Date: 10/15/2020

Project Name: Promontory Community

Site Number: Mon3 - AM

Site Description: 16210 S. 36th Lane

Coordinates: 33°17'58.72"N 112°08'19.45"W

Posted Speed: 65 MPH

Observed Speed: 70 MPH

SLM: LD LXT

Response: Slow

Weighting: A

Calibrator: CAL200

Begin ±: 0.0

End ±: 0.0

Battery >50%: X

Weather Condition: Sunny

Temperature: 72°F

Humidity: 25%

Wind: SE 4 mph

Sample	Measurement Data					Traffic Data									
	Time		Decibel (dB)			Auto		Med Truck		Hvy Truck		Bus		Motorcycle	
	Begin	Duration	L _{eq}	L _{max}	L _{min}	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB
1	8:37 am	15:00.3	53.0	70.2	42.5										
2	8:53 am	15:00.2	50.4	60.8	44.1										
3	9:08 am	15:00.2	50.3	60.9	41.7										

Site Sketch



Notes:

Sample	Background Noise	Unusual Noise Events
1	Aircraft, Heavy construction truck pass-by	
2		
3		

Roadway Noise Level Measurement Data Sheet

Project Number: NEC2020Promontory

Date: 10/15/2020

Project Name: Promontory Community

Site Number: Mon3 - PM

Site Description: 16210 S. 36th Lane

Coordinates: 33°17'58.72"N 112°08'19.45"W

Posted Speed: 65 MPH

Observed Speed: 70 MPH

SLM: LD LXT

Response: Slow

Weighting: A

Calibrator: CAL200

Begin ±: 0.0

End ±: 0.0

Battery >50%: X

Weather Condition: Sunny

Temperature: 99°F

Humidity: 11%

Wind: SW 9 mph

Sample	Measurement Data					Traffic Data									
	Time		Decibel (dB)			Auto		Med Truck		Hvy Truck		Bus		Motorcycle	
	Begin	Duration	L _{eq}	L _{max}	L _{min}	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB
1	3:10 pm	15:00.2	58.2	72.4	49.8										
2	3:25 pm	15:00.5	58.7	68.2	51.0										
3	3:41 pm	15:00.3	57.9	67.2	51.3										

Site Sketch



Notes:

Sample

Background Noise

Unusual Noise Events

1

2

3