

Appendix M

Noise and Vibration Modeling

Vibration Source Levels for Construction Equipment Greenbark 30 BESS Project

Project Number: XXXXXX

Model Approach and Cite: FTA, 2018: Table 7-4 and Eq. 7-2, 7-3.
 Caltrans, 2020 = "Distinctly Perceptible" over 0.24 in/sec

Vibration Assessment, Individual Source

	Reference Source (at 25 ft):	PPV	0.644 in/sec , Pile Driver (impact, typical)						
	Reference Source (at 25 ft):	Lv	104 VdB, Pile Driver (impact, typical)						
				Damage	FTA, 2018		Human	Human Annoyance	
				Criterion	(over 0.2 in/sec)		Perceptibility	(over 80 VdB)	
				(over 0.5 in/sec)			(over 65 Vdb)		
	D (ft) =	ppv(eq) =				Lv(D) =			
(ref)	25	0.644 in/sec	Yes	Yes		104.0 VdB	Yes	Yes	
At 50 feet	50	0.228 in/sec	No	Yes		95.0 VdB	Yes	Yes	
At 100 feet	100	0.081 in/sec	No	No		85.9 VdB	Yes	Yes	
At 160 feet	160	0.040 in/sec	No	No		79.8 VdB	Yes	No	
At 200 feet	200	0.028 in/sec	No	No		76.9 VdB	Yes	No	
At 600 feet	600	0.005 in/sec	No	No		62.6 VdB	No	No	

Vibration Assessment, Individual Source

	Reference Source (at 25 ft):	PPV	0.210 in/sec , Vibratory Roller (compactor)						
	Reference Source (at 25 ft):	Lv	94 VdB, Vibratory Roller (compactor)						
				Damage	FTA, 2018		Human	Human Annoyance	
				Criterion	(over 0.2 in/sec)		Perceptibility	(over 80 VdB)	
				(over 0.5 in/sec)			(over 65 Vdb)		
	D (ft) =	ppv(eq) =				Lv(D) =			
(ref)	25	0.210 in/sec	No	Yes		94.0 VdB	Yes	Yes	
At 50 feet	50	0.074 in/sec	No	No		85.0 VdB	Yes	Yes	
At 100 feet	100	0.026 in/sec	No	No		75.9 VdB	Yes	No	
At 200 feet	200	0.009 in/sec	No	No		66.9 VdB	Yes	No	
At 600 feet	600	0.002 in/sec	No	No		52.6 VdB	No	No	

Vibration Assessment, Individual Source

Reference Source (at 25 ft): PPV 0.089 in/sec , Large Bulldozer
 Reference Source (at 25 ft): Lv 87 VdB, Large Bulldozer

	D (ft) =	ppv(eq) =	Damage Criterion (over 0.5 in/sec)	FTA, 2018 (over 0.2 in/sec)	Lv(D) =	Human Perceptibility (over 65 Vdb)	Human Annoyance (over 80 VdB)
(ref)	25	0.089 in/sec	No	No	87.0 VdB	Yes	Yes
At 50 feet	50	0.031 in/sec	No	No	78.0 VdB	Yes	No
At 100 feet	100	0.011 in/sec	No	No	68.9 VdB	Yes	No
At 200 feet	200	0.004 in/sec	No	No	59.9 VdB	No	No
At 600 feet	600	0.001 in/sec	No	No	45.6 VdB	No	No

Vibration Assessment, Individual Source

Reference Source (at 25 ft): PPV 0.076 in/sec , Loaded Trucks
 Reference Source (at 25 ft): Lv 86 VdB, Loaded Trucks

	D (ft) =	ppv(eq) =	Damage Criterion (over 0.5 in/sec)	FTA, 2018 (over 0.2 in/sec)	Lv(D) =	Human Perceptibility (over 65 Vdb)	Human Annoyance (over 80 VdB)
(ref)	25	0.076 in/sec	No	No	86.0 VdB	Yes	Yes
At 50 feet	50	0.027 in/sec	No	No	77.0 VdB	Yes	No
At 100 feet	100	0.010 in/sec	No	No	67.9 VdB	Yes	No
At 200 feet	200	0.003 in/sec	No	No	58.9 VdB	No	No
At 600 feet	600	0.001 in/sec	No	No	44.6 VdB	No	No