

Appendix J

Noise Modeling Data



Construction Source Noise Prediction Model

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L _{eq} dBA)	Equipment	Reference Emission Noise Levels (L _{max}) at 50 feet ¹	Usage Factor ¹
Threshold	2,536	50.0	Dump Truck	84	1
Residence 1	4,020	#NUM!	Grader	85	1
			Dozer	85	1
			Scraper	85	1
			Scraper	85	1
			Grader	85	1
Ground Type				SOFT	
Source Height				8	
Receiver Height				5	
Ground Factor ²				0.63	
			Predicted Noise Level³	L_{eq} dBA at 50 feet³	
			Dump Truck	84.0	
			Grader	85.0	
			Dozer	85.0	
			Scraper	85.0	
			Scraper	85.0	
			Grader	85.0	
			Combined Predicted Noise Level (L_{eq} dBA at 50 feet)		
					92.6

Sources:

¹ Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

² Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

³ Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$$L_{eq}(\text{equip}) = E.L. + 10 \cdot \log(U.F.) - 20 \cdot \log(D/50) - 10 \cdot G \cdot \log(D/50)$$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.



Construction Source Noise Prediction Model

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L _{eq} dBA)	Equipment	Reference Emission Noise Levels (L _{max}) at 50 feet ¹		Usage Factor ¹
				feet ¹		
Threshold	2,572	50.0	Dozer	85		1
Residence 1	9,650	#NUM!	Dozer	85		1
			Dozer	85		1
			Dozer	85		1
			Scraper	85		1
			Scraper	85		1
			Grader	85		1
			Ground Type	SOFT		
			Source Height	8		
			Receiver Height	5		
			Ground Factor ²	0.63		
			Predicted Noise Level³	L_{eq} dBA at 50 feet³		
			Dozer	85.0		
			Dozer	85.0		
			Dozer	85.0		
			Scraper	85.0		
			Scraper	85.0		
			Grader	85.0		
			Combined Predicted Noise Level (L_{eq} dBA at 50 feet)			
						92.8

Sources:

¹ Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

² Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

³ Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

$$L_{eq}(\text{equip}) = E.L. + 10 \cdot \log(U.F.) - 20 \cdot \log(D/50) - 10 \cdot G \cdot \log(D/50)$$

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