

Appendix D  
Construction Noise and Vibration Estimates

---

*This page deliberately left blank.*

696 Blossom Hill Road Retail Project  
 696 Blossom Hill Road, San Jose, CA  
 Appendix: Construction Noise and Vibration Estimates  
 Prepared by MIG, Inc. June 2021

Sheet 1: Construction Noise Estimates

Table 1: Construction Noise Estimates

Equipment	Reference Noise Level (Lmax)	Usage Factor (%)	Distance From Equipment (Feet) and Estimated Noise Level (Leq dBA)								
			25	50	75	100	125	135	150	200	250
Backhoe	80	0.4	82	76	72	70	68	67	66	64	62
Bulldozer	85	0.4	87	81	77	75	73	72	71	69	67
Compact roller	80	0.2	79	73	69	67	65	64	63	61	59
Compressor	80	0.4	82	76	72	70	68	67	66	64	62
Concrete Mixer	85	0.4	87	81	77	75	73	72	71	69	67
Crane	85	0.16	83	77	74	71	69	68	67	65	63
Delivery Truck	85	0.4	87	81	77	75	73	72	71	69	67
Excavator	85	0.4	87	81	77	75	73	72	71	69	67
Generator	82	0.5	85	79	75	73	71	70	69	67	65
Gradall	85	0.4	87	81	77	75	73	72	71	69	67
Grader	85	0.4	87	81	77	75	73	72	71	69	67
Man lift	85	0.2	84	78	74	72	70	69	68	66	64
Paver	85	0.5	88	82	78	76	74	73	72	70	68
Pneumatic tools	85	0.5	88	82	78	76	74	73	72	70	68
Scraper	85	0.4	87	81	77	75	73	72	71	69	67
Tractor	84	0.4	86	80	76	74	72	71	70	68	66
Vac-truck	85	0.4	87	81	77	75	73	72	71	69	67
Welder/Torch	74	0.4	76	70	66	64	62	61	60	58	56

Reference noise levels from FHWA 2010 and reflect higher of spec or actual Lmax equipment noise level.

Usage factor refers to the amount of time the equipment produces noise over the time period.

Estimate does not account for any atmospheric or ground attenuation factors. Calculated noise levels based on Caltrans 2013:  $L_{eq} \text{ (hourly)} = L_{max} \text{ at } 50 \text{ feet} - 20\log(D/50) + 10\log(UF)$ , where:  $L_{max}$  = reference  $L_{max}$  from manufacturer or other source; D = distance of interest; UF = usage fraction or fraction of time period of interest equipment is in use

696 Blossom Hill Road Retail Project  
 696 Blossom Hill Road, San Jose, CA  
**Appendix: Construction Noise and Vibration Estimates**  
 Prepared by MIG, Inc. June 2021

**Sheet 2: Vibration Estimates**

**Table 1: Receptor Distances**

Receptor	Distance	From
Commercial - Worst-Case	25	Construction Equip
Commercial - Typical	90	Construction Equip

**Table 2: Vibration Levels at 25 Feet**

Equipment	Reference PPV at 25 ft	Reference LV at 25 Ft	Estimated PPV at 25ft	Estimated Lv at 25 ft
Large Bulldozer	0.089	87	0.089	87.0
Small Bulldozer	0.03	58	0.030	58.0
Loaded Truck	0.076	86	0.076	86.0
Jackhammer	0.035	79	0.035	79.0

**Table 3: Vibration Levels at 90 Feet**

Equipment	Reference PPV at 25 ft	Reference LV at 25 Ft	Estimated PPV at 90ft	Estimated Lv at 90 ft
Large Bulldozer	0.089	87	0.017	70.3
Small Bulldozer	0.03	58	0.006	41.3
Loaded Truck	0.076	86	0.014	69.3
Jackhammer	0.035	79	0.007	62.3