APPENDIX NOI-1: NOISE MODELING OUTPUTS

Attenuation Calculations for Stationary Noise Sources

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

STEP 1: Identify the noise source and enter the reference noise level (dBA and distance).

STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.

STEP 3: Select the distance to the receiver.

Noise Source/ID	Reference Noise Level			Attenuation Characteristics				Attenuated Noise Level at Receptor		
	noise level (dBA)	@	distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor	noise level (dBA)	@	distance (ft)
HVAC Leq - 60 dB Threshold	70.0	@	3	hard	6	5	0.00	59.5	@	10
HVAC Leq - 55 dB Threshold	70.0	@	3	hard	6	5	0.00	54.9	@	17

Notes:

Estimates of attenuated noise levels do not account for reductions from intervening barriers, including walls, trees, vegetation, or structures of any type.

Computation of the attenuated noise level is based on the equation presented on pg. 176 and 177 of FTA 2018.

Computation of the ground factor is based on the equation presentd in Table 4-26 on pg. 86 of FTA 2018, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

Sources:

Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment. Washington, D.C. Available: <http://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf>Accessed: March 5, 2020.

Equipment Description	Acoustical Usage Factor (%)	Spec 721.560 Lmax @ 50ft (dBA slow)	Actual Measured Lmax @ 50ft (dBA slow)	No. of Actual Data Samples (count)	Spec 721.560 LmaxCalc	Spec 721.560 Leq	Distance	Actual Measured LmaxCalc	Actual Measured Leq
Auger Drill Rig	20	85	84	36	79.0	72.0	100	78.0	71.0
Backhoe	40	80	78	372	74.0	70.0	100	72.0	68.0
Bar Bender	20	80	na	0	74.0	67.0	100		
Blasting	na	94	na	0	88.0		100		
Boring Jack Power Unit	50	80	83	1	74.0	71.0	100	77.0	74.0
Chain Saw	20	85	84	46	79.0	72.0	100	78.0	71.0
Clam Shovel (dropping)	20	93	87	4	87.0	80.0	100	81.0	74.0
Compactor (ground)	20	80	83	57	74.0	67.0	100	77.0	70.0
Compressor (air)	40	80	78	18	74.0	70.0	100	72.0	68.0
Concrete Batch Plant	15	83	na	0	77.0	68.7	100		
Concrete Mixer Truck	40	85	79	40	79.0	75.0	100	73.0	69.0
Concrete Pump Truck	20	82	81	30	76.0	69.0	100	75.0	68.0
Concrete Saw	20	90	90	55	84.0	77.0	100	84.0	77.0
Crane	16	85	81	405	79.0	71.0	100	75.0	67.0
Dozer	40	85	82	55	79.0	75.0	100	76.0	72.0
Drill Rig Truck	20	84	79	22	78.0	71.0	100	73.0	66.0
Drum Mixer	50	80	80	1	74.0	71.0	100	74.0	71.0
Dump Truck	40	84	76	31	78.0	74.0	100	70.0	66.0
Excavator	40	85	81	170	79.0	75.0	100	75.0	71.0
Flat Bed Truck	40	84	74	4	78.0	74.0	100	68.0	64.0
Front End Loader	40	80	79	96	74.0	70.0	100	73.0	69.0
Generator	50	82	81	19	76.0	73.0	100	75.0	72.0
Generator (<25KVA, VMS signs)	50	70	73	74	64.0	61.0	100	67.0	64.0
Gradall	40	85	83	70	79.0	75.0	100	77.0	73.0
Grader	40	85	na	0	79.0	75.0	100		
Grapple (on Backhoe)	40	85	87	1	79.0	75.0	100	81.0	77.0
Horizontal Boring Hydr. Jack	25	80	82	6	74.0	68.0	100	76.0	70.0
Hydra Break Ram	10	90	na	0	84.0	74.0	100		
Impact Pile Driver	20	95	101	11	89.0	82.0	100	95.0	88.0
Jackhammer	20	85	89	133	79.0	72.0	100	83.0	76.0
Man Lift	20	85	75	23	79.0	72.0	100	69.0	62.0
Mounted Impact Hammer (hoe ram)	20	90	90	212	84.0	77.0	100	84.0	77.0
Pavement Scarafier	20	85	90	2	79.0	72.0	100	84.0	77.0
Paver	50	85	77	9	79.0	76.0	100	71.0	68.0
Pickup Truck	40	55	75	1	49.0	45.0	100	69.0	65.0
Pneumatic Tools	50	85	85	90	79.0	76.0	100	79.0	76.0
Pumps	50	77	81	17	71.0	68.0	100	75.0	72.0
Refrigerator Unit	100	82	73	3	76.0	76.0	100	67.0	67.0
Rivit Buster/chipping gun	20	85	79	19	79.0	72.0	100	73.0	66.0
Rock Drill	20	85	81	3	79.0	72.0	100	75.0	68.0
Roller	20	85	80	16	79.0	72.0	100	74.0	67.0
Sand Blasting (Single Nozzle)	20	85	96	9	79.0	72.0	100	90.0	83.0
Scraper	40	85	84	12	79.0	75.0	100	78.0	74.0
Shears (on backhoe)	40	85	96	5	79.0	75.0	100	90.0	86.0
Slurry Plant	100	78	78	1	72.0	72.0	100	72.0	72.0
Slurry Trenching Machine	50	82	80	75	76.0	73.0	100	74.0	71.0
Soil Mix Drill Rig	50	80	na	0	74.0	71.0	100		
Tractor	40	84	na	0	78.0	74.0	100		
Vacuum Excavator (Vac-truck)	40	85	85	149	79.0	75.0	100	79.0	75.0
Vacuum Street Sweeper	10	80	82	19	74.0	64.0	100	76.0	66.0
Ventilation Fan	100	85	79	13	79.0	79.0	100	73.0	73.0
Vibrating Hopper	50	85	87	1	79.0	76.0	100	81.0	78.0
Vibratory Concrete Mixer	20	80	80	1	74.0	67.0	100	74.0	67.0
Vibratory Pile Driver	20	95	101	44	89.0	82.0	100	95.0	88.0
Warning Horn	5	85	83	12	79.0	66.0	100	77.0	64.0
Welder / Torch	40	73	74	5	67.0	63.0	100	68.0	64.0
chipper		75							

Source:
FHWA Roadway Construction Noise Model, January 2006. Table 9.1
U.S. Department of Transportation
CA/T Construction Spec. 721.560

Site Grading (Leq)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Residential Threshold	1,378	55.0
FTA Threshold	25	90.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Grader	85	0.4
Dozer	82	0.4
Excavator	81	0.4

Ground Type	hard
Source Height	8
Receiver Height	5
Ground Factor[2]	0.00

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Grader	81.0
Dozer	78.0
Excavator	77.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
83.8

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).

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

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.

Grading (Lmax)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Residential Threshold	2,396	55.0
FTA Threshold	43	90.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Grader	85	1
Dozer	82	1
Excavator	84	1

Ground Type	hard
Source Height	8
Receiver Height	5
Ground Factor[2]	0.00

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Grader	85.0
Dozer	82.0
Excavator	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
88.6

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).

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

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.

Building Construction (Leq)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Residential Threshold	4,501	55.0
FTA Threshold	80	90.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Impact Pile Driver	101	0.2
Front End Loader	79	0.4
Pickup Truck	75	0.4

Ground Type	hard
Source Height	8
Receiver Height	5
Ground Factor[2]	0.00

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Impact Pile Driver	94.0
Front End Loader	75.0
Pickup Truck	71.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
94.1

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).

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

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.

Nighttime Construction (Lmax)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Residential Nighttime Threshold	3,378	50.0
FTA Nighttime Threshold	107	80.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Concrete Mixer Truck	79	1
Concrete Pump Truck	81	1
Tractor	84	1

Ground Type	hard
Source Height	8
Receiver Height	5
Ground Factor[2]	0.00

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Concrete Mixer Truck	79.0
Concrete Pump Truck	81.0
Tractor	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
86.6

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).

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

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.

Building Construction (Lmax)

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Residential Threshold	1,500	55.0
FTA Threshold	15	111.5

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Impact Pile Driver	101	1
Front End Loader	79	1
Backhoe	78	1

Ground Type	hard
Source Height	8
Receiver Height	5
Ground Factor[2]	0.00

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Impact Pile Driver	101.0
Front End Loader	79.0
Backhoe	78.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
101.0

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).

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

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.

Nighttime Construction Leq

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Residential Nighttime Threshold	1,984	50.0
FTA Nighttime Threshold	63	80.0

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Concrete Mixer Truck	79	0.4
Concrete Pump Truck	81	0.2
Tractor	84	0.4

Ground Type	hard
Source Height	8
Receiver Height	5
Ground Factor[2]	0.00

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Concrete Mixer Truck	75.0
Concrete Pump Truck	74.0
Tractor	80.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
82.0

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).

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

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.

Citation #	Citations	
1	Caltrans Technical Noise Supplement. 2009 (November). Table (5-11), Pg 5-60.	Caltrans Technical Noise Supplement. 2013 (September). Table (4-2), Pg 4-17.
2	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-26), Pg 5-60.	Caltrans Technical Noise Supplement. 2013 (September). Equation (4-5), Pg 4-17.
3	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-16), Pg 2-32.	FHWA 2004 TNM Version 2.5
4	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-11), Pg 5-47, 48.	FHWA 2004 TNM Version 2.5
5	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-26), Pg 2-55, 56.	Caltrans Technical Noise Supplement. 2013 (September). Equation (2-23), Pg 2-51, 52.
6	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-27), Pg 2-57.	Caltrans Technical Noise Supplement. 2013 (September). Equation (2-24), Pg 2-53.
7	Caltrans Technical Noise Supplement. 2009 (November). Pg 2-53.	Caltrans Technical Noise Supplement. 2013 (September). Pg 2-57.
8	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-7), Pg 5-45.	FHWA 2004 TNM Version 2.5
9	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-8), Pg 5-45.	FHWA 2004 TNM Version 2.5
10	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-9), Pg 5-45.	FHWA 2004 TNM Version 2.5
11	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-13), Pg 5-49.	FHWA 2004 TNM Version 2.5
12	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-14), Pg 5-49.	FHWA 2004 TNM Version 2.5
13	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (16), Pg 67	
14	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (20), Pg 69	
15	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (18), Pg 69	

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California Department of Transportation (Caltrans). 2009 (November). Technical Noise Supplement. Available: http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf. Accessed August 17, 2017.

California Department of Transportation (Caltrans). 2013 (September). Technical Noise Supplement. Available: http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013A.pdf. Accessed August 17, 2017.

Federal Highway Administration. 2004. Traffic Noise Model Version 2.5. Available: https://www.fhwa.dot.gov/environment/noise/traffic_noise_model/tnm_v25/. Accessed August 17, 2017.

Traffic Noise Spreadsheet Calculator

Project: Sacramento County RHNA Rezone Project

Number	Name	Segment Description and Location From	To	Existing Conditions	Existing + Project Conditions	Δ Existing – Existing + Project	Cumulative Conditions	Cumulative +Project Conditions	Δ Cumulative – Cumulative + Project
Summary of Net Changes									
1	Antelope North Road	Antelope Road	PFE Road	59.5	59.4	-0.1	60.1	60.1	0.0
2	Antelope Road	Walerga Road	Elverta Road/Antelope Road	61.5	61.7	0.1	61.8	61.9	0.1
3	Antelope Road	Elverta Road/Antelope Road	Don Julio Blvd	65.2	65.5	0.3	67.1	67.3	0.2
4	Beech Avenue	Central Ave.	Greenback Lane	49.6	49.7	0.1	50.3	50.3	0.0
5	Chestnut Avenue	Central Ave.	Greenback Lane	56.2	56.4	0.2	56.8	56.7	-0.1
6	Curved Bridge Rd	Oak Lane	Dry Creek Road	51.2	51.8	0.6	53.6	54.1	0.5
7	Dry Creek Road	Elkhorn Boulevard	Vinci Avenue	58.9	59.0	0.1	61.5	61.6	0.1
8	Edison Avenue	Bell Street	Fullton Avenue	33.5	32.3	-1.2	35.3	36.0	0.7
9	Elk Grove Florin Road	Florin Road	Gerber Road	66.1	66.1	0.0	69.6	69.6	0.1
10	Elk Grove Florin Road	Gerber Road	Calvine Road	67.4	67.4	0.0	69.3	69.3	0.0
11	Elkhorn Blvd	2nd Street	Rio Linda Blvd	65.1	65.1	0.0	68.8	68.8	0.0
12	Elsie Avenue	Stockton Blvd	Iona Way	66.1	66.3	0.3	66.6	66.7	0.1
13	Elverta Road	Cherry Brook Drive	28th Street	68.3	68.3	0.0	71.3	71.3	0.0
14	Fair Oaks Boulevard	Jacob Lane	Arden Way	67.3	67.3	0.0	67.7	67.7	0.0
15	Fair Oaks Boulevard[1]	California Avenue	Marhsall Avenue	69.2	69.2	0.0	69.7	69.8	0.0
16	Fair Oaks Boulevard	Marshall Avenue	Hollister Avenue	69.5	69.5	0.0	69.9	70.0	0.0
17	Florin Road[2]	Franklin Blvd	SR 99	69.7	69.7	0.0	70.3	70.3	0.0
18	Florin Road[2]	Power Inn Road	Florin Perkins Road/French Road	65.1	65.1	0.0	67.2	67.3	0.1
19	Folsom Boulevard	Mayhew Road	Bradshaw Road	67.7	67.8	0.1	68.4	68.4	0.0
20	Franklin Boulevard	Fruitridge Road	47th Avenue	66.4	66.4	0.1	66.1	66.1	0.0
21	Franklin Boulevard	47th Avenue	Florin Road	69.1	69.1	0.0	69.3	69.3	0.0
22	Franklin Boulevard	Florin Road	Mack Road	68.2	68.2	0.0	68.2	68.3	0.0
23	Fruitridge Road	44th Street	Dewey Blvd	66.6	66.7	0.1	67.2	67.2	0.0
24	Garfield Avenue	El Camino Ave	Fair Oaks Blvd	54.4	54.5	0.2	54.6	54.7	0.2
25	Garfield Avenue	Greenback Lane	Auburn Blvd	69.3	69.5	0.1	69.5	69.6	0.0
26	Greenback Lane	I-80 interchange	Auburn Blvd	73.5	73.7	0.2	73.9	73.9	0.0
27	Greenback Lane	Kenneth Avenue	Hazel Avenue	68.5	68.6	0.0	68.9	68.9	0.0
28	Hemlock St	Madison Avenue	Myrtle Avenue	58.8	58.7	0.0	58.9	58.9	0.0
29	Madison Avenue	Harrison Street	Hillsdale Blvd	68.6	68.6	0.1	69.3	69.3	0.1
30	Manzanita Avenue	Madison Avenue	Winding Way	67.3	67.2	0.0	67.7	67.8	0.0
31	Oak Lane	Front Street	Curved Bridge Road	52.9	53.2	0.3	53.7	54.2	0.4
32	Pasadena Avenue	Norris Avenue	Creek Road	59.5	59.6	0.1	60.0	60.0	0.0
33	Power Inn Road[2]	Elder Creek Road/Glen Elder Roac	Florin Road	67.6	67.8	0.2	68.0	68.1	0.1
34	Power Inn Road[2]	Florin Road	Gerber Road	68.4	68.5	0.1	68.7	68.8	0.1
35	Power Inn Road	Elsie Ave/Mack Road	Meadowhaven Drive	67.1	67.1	0.0	68.1	68.3	0.2
36	Roseville Road	Antelope Road	Outlook Drive	67.9	67.9	0.0	68.9	68.9	0.0
37	Stockton Blvd	Fruitridge Road	Elder Creek Road	65.0	64.9	0.0	64.5	64.5	0.0
38	Stockton Blvd	Elder Creek Road	Florin Road	68.3	68.3	0.0	68.5	68.6	0.1
39	Stockton Blvd	Florin Road	Gerber Road	68.7	68.8	0.1	69.1	69.2	0.1
40	Stockton Blvd	Gerber Road	Mack Rd/Elise Ave	68.6	68.6	0.1	69.2	69.2	0.1
41	Stockton Blvd	٨d/Elise Ave. south along SR 99 frontage		54.1	54.0	-0.1	55.4	55.7	0.2
42	Sunrise Avenue	Sunset Avenue	Winding Way	72.1	72.2	0.0	72.4	72.4	0.0
43	Walerga Road	Elverta Road	Antelope Road	68.4	68.6	0.1	69.4	69.5	0.0
44	Walerga Road	Antelope Road	Elkhorn Boulevard	70.5	70.6	0.1	71.3	71.3	0.0
45	Walerga Road	Elkhorn Boulevard	Don Julio Blvd	68.8	69.0	0.2	70.2	70.3	0.0
46	Walerga Road	Don Julio Blvd	Roseville Road	64.4	64.7	0.2	66.3	66.4	0.1
47	Watt Avenue[3]	Antelope Road	Elkhorn Boulevard	66.6	66.6	0.0	69.1	69.2	0.0
48	Watt Avenue[3]	Elkhorn Boulevard	Don Julio Blvd	66.0	66.1	0.1	67.8	67.8	0.0

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Notes: [1] Roadway segment in the Fair Oaks Boulevard Corridor Plan Area

[2] Roadway segment in the Old Florin Town SPA area

[3] Roadway segment in the North Watt Corridor Plan area

Existing Traffic Noise Spreadsheet Calculator

Project: Sacramento County RHNA Rezone Project

Noise Level Descriptor: Ldn
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

Number	Name	Segment Description and Location From	To	ADT	Speed (mph)	Distance to Directional Centerline, (feet)$_4$ Near	Far	Traffic Distribution Characteristics % Auto	% Medium	% Heavy	% Day	% Eve	% Night	Ldn, (dBA)$_{5,6,7}$	Distance to Contour, (feet)$_3$ 75 dBA	70 dBA	65 dBA	60 dBA
				Input										Output				
Existing Conditions																		
1	Antelope North Road	Antelope Road	PFE Road	10,730	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	59.5	3	9	28	88
2	Antelope Road	Walerga Road	Elverta Road/Antelope Road	11,750	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	61.5	4	14	45	142
3	Antelope Road	Elverta Road/Antelope Road	Don Julio Blvd	27,500	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	65.2	11	33	105	332
4	Beech Avenue	Central Ave.	Greenback Lane	2,200	20	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	49.6		1	3	9
5	Chestnut Avenue	Central Ave.	Greenback Lane	7,420	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	56.2	1	4	13	42
6	Curved Bridge Rd	Oak Lane	Dry Creek Road	1,600	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	51.2		1	4	13
7	Dry Creek Road	Elkhorn Boulevard	Vinci Avenue	6,430	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.9	2	8	25	78
8	Edison Avenue	Bell Street	Fullton Avenue	40	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	33.5				
9	Elk Grove Florin Road	Florin Road	Gerber Road	23,200	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.1	13	40	128	403
10	Elk Grove Florin Road	Gerber Road	Calvine Road	31,740	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.4	17	55	174	552
11	Elkhorn Blvd	2nd Street	Rio Linda Blvd	13,340	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	65.1	10	32	103	325
12	Elsie Avenue	Stockton Blvd	Iona Way	33,400	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.1	13	40	128	404
13	Elverta Road	Cherry Brook Drive	28th Street	15,310	55	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.3	21	67	213	674
14	Fair Oaks Boulevard	Jacob Lane	Arden Way	30,920	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.3	17	54	170	537
15	Fair Oaks Boulevard	California Avenue	Marhsall Avenue	34,430	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.2	26	84	265	838
16	Fair Oaks Boulevard	Marshall Avenue	Hollister Avenue	36,680	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.5	28	89	282	892
17	Florin Road	Franklin Blvd	SR 99	53,960	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.7	30	94	297	938
18	Florin Road	Power Inn Road	Iorin Perkins Road/French Roa	26,510	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	65.1	10	32	101	320
19	Folsom Boulevard	Mayhew Road	Bradshaw Road	33,880	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.7	19	59	186	589
20	Franklin Boulevard	Fruitridge Road	47th Avenue	25,090	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.4	14	44	138	436
21	Franklin Boulevard	47th Avenue	Florin Road	46,720	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.1	26	81	257	812
22	Franklin Boulevard	Florin Road	Mack Road	38,330	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.2	21	67	211	666
23	Fruitridge Road	44th Street	Dewey Blvd	26,350	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.6	14	46	145	458
24	Garfield Avenue	El Camino Ave	Fair Oaks Blvd	6,560	20	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	54.4	1	3	9	27
25	Garfield Avenue	Greenback Lane	Auburn Blvd	35,270	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.3	27	86	271	858
26	Greenback Lane	I-80 interchange	Auburn Blvd	92,580	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	73.5	71	225	712	2252
27	Greenback Lane	Kenneth Avenue	Hazel Avenue	41,150	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.5	23	72	226	715
28	Hemlock St	Madison Avenue	Myrtle Avenue	13,370	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.8	2	8	24	75
29	Madison Avenue	Harrison Street	Hillsdale Blvd	29,470	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.6	23	72	227	717
30	Manzanita Avenue	Madison Avenue	Winding Way	30,600	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.3	17	53	168	532
31	Oak Lane	Front Street	Curved Bridge Road	2,350	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	52.9	1	2	6	19
32	Pasadena Avenue	Norris Avenue	Creek Road	15,650	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	59.5	3	9	28	88
33	Power Inn Road	Elder Creek Road/Glen Elder Road	Florin Road	33,060	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.6	18	57	182	575
34	Power Inn Road	Florin Road	Gerber Road	39,800	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.4	22	69	219	692
35	Power Inn Road	Elsie Ave/Mack Road	Meadowhaven Drive	29,640	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.1	16	52	163	515
36	Roseville Road	Antelope Road	Outlook Drive	18,560	50	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.9	19	62	195	615
37	Stockton Blvd	Fruitridge Road	Elder Creek Road	25,880	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	65.0	10	31	99	313
38	Stockton Blvd	Elder Creek Road	Florin Road	38,890	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.3	21	68	214	676
39	Stockton Blvd	Florin Road	Gerber Road	43,020	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.7	24	75	236	748
40	Stockton Blvd	Gerber Road	Mack Rd/Elise Ave	41,310	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.6	23	72	227	718
41	Stockton Blvd	Rd/Elise Ave. south along SR 99 frontage		2,120	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	54.1	1	3	8	26
42	Sunrise Avenue	Sunset Avenue	Winding Way	67,330	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	72.1	52	164	518	1638
43	Walerga Road	Elverta Road	Antelope Road	40,110	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.4	22	70	220	697
44	Walerga Road	Antelope Road	Elkhorn Boulevard	46,220	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.5	36	112	356	1125
45	Walerga Road	Elkhorn Boulevard	Don Julio Blvd	31,050	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.8	24	76	239	755
46	Walerga Road	Don Julio Blvd	Roseville Road	33,820	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	64.4	9	28	88	278
47	Watt Avenue	Antelope Road	Elkhorn Boulevard	26,310	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.6	14	46	145	457
48	Watt Avenue	Elkhorn Boulevard	Don Julio Blvd	32,760	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.0	13	40	125	396

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Existing Traffic Noise Spreadsheet Calculator

Project: Sacramento County RHNA Rezone Project

Noise Level Descriptor: Ldn
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

	Segment Description and Location			Input										Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics							Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	Ldn, (dBA)[5,6,7]	75 dBA	70 dBA	65 dBA	60 dBA
Existing Conditions																		
1	Antelope North Road	Antelope Road	PFE Road	10,520	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	59.4	3	9	27	87
2	Antelope Road	Walerga Road	Elverta Road/Antelope Road	12,160	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	61.7	5	15	46	147
3	Antelope Road	Elverta Road/Antelope Road	Don Julio Blvd	29,330	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	65.5	11	35	112	354
4	Beech Avenue	Central Ave.	Greenback Lane	2,250	20	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	49.7		1	3	9
5	Chestnut Avenue	Central Ave.	Greenback Lane	7,710	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	56.4	1	4	14	43
6	Curved Bridge Rd	Oak Lane	Dry Creek Road	1,850	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	51.8		2	5	15
7	Dry Creek Road	Elkhorn Boulevard	Vinci Avenue	6,640	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	59.0	3	8	25	80
8	Edison Avenue	Bell Street	Fullton Avenue	30	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	32.3				
9	Elk Grove Florin Road	Florin Road	Gerber Road	23,380	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.1	13	41	129	406
10	Elk Grove Florin Road	Gerber Road	Calvine Road	31,690	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.4	17	55	174	551
11	Elkhorn Blvd	2nd Street	Rio Linda Blvd	13,250	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	65.1	10	32	102	322
12	Elsie Avenue	Stockton Blvd	Iona Way	35,510	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.3	14	43	136	429
13	Elverta Road	Cherry Brook Drive	28th Street	15,350	55	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.3	21	68	214	676
14	Fair Oaks Boulevard	Jacob Lane	Arden Way	30,580	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.3	17	53	168	532
15	Fair Oaks Boulevard	California Avenue	Marhsall Avenue	34,200	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.2	26	83	263	832
16	Fair Oaks Boulevard	Marshall Avenue	Hollister Avenue	36,480	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.5	28	89	281	888
17	Florin Road	Franklin Blvd	SR 99	54,180	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.7	30	94	298	942
18	Florin Road	Power Inn Road	Iorin Perkins Road/French Roa	26,800	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	65.1	10	32	102	324
19	Folsom Boulevard	Mayhew Road	Bradshaw Road	34,440	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.8	19	60	189	599
20	Franklin Boulevard	Fruitridge Road	47th Avenue	25,400	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.4	14	44	140	442
21	Franklin Boulevard	47th Avenue	Florin Road	46,830	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.1	26	81	257	814
22	Franklin Boulevard	Florin Road	Mack Road	38,360	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.2	21	67	211	667
23	Fruitridge Road	44th Street	Dewey Blvd	26,910	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.7	15	47	148	468
24	Garfield Avenue	El Camino Ave	Fair Oaks Blvd	6,830	20	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	54.5	1	3	9	28
25	Garfield Avenue	Greenback Lane	Auburn Blvd	36,350	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.5	28	88	280	884
26	Greenback Lane	I-80 interchange	Auburn Blvd	96,760	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	73.7	74	235	744	2354
27	Greenback Lane	Kenneth Avenue	Hazel Avenue	41,310	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.6	23	72	227	718
28	Hemlock St	Madison Avenue	Myrtle Avenue	13,270	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.7	2	7	24	75
29	Madison Avenue	Harrison Street	Hillsdale Blvd	29,830	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.6	23	73	230	726
30	Manzanita Avenue	Madison Avenue	Winding Way	30,450	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.2	17	53	167	529
31	Oak Lane	Front Street	Curved Bridge Road	2,530	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	53.2	1	2	7	21
32	Pasadena Avenue	Norris Avenue	Creek Road	16,170	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	59.6	3	9	29	91
33	Power Inn Road	Elder Creek Road/Glen Elder Road	Florin Road	34,490	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.8	19	60	190	600
34	Power Inn Road	Florin Road	Gerber Road	40,470	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.5	22	70	222	703
35	Power Inn Road	Elsie Ave/Mack Road	Meadowhaven Drive	29,470	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.1	16	51	162	512
36	Roseville Road	Antelope Road	Outlook Drive	18,520	50	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.9	19	61	194	614
37	Stockton Blvd	Fruitridge Road	Elder Creek Road	25,710	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	64.9	10	31	98	311
38	Stockton Blvd	Elder Creek Road	Florin Road	38,890	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.3	21	68	214	676
39	Stockton Blvd	Florin Road	Gerber Road	43,550	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.8	24	76	239	757
40	Stockton Blvd	Gerber Road	Mack Rd/Elise Ave	41,930	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.6	23	73	230	729
41	Stockton Blvd	Rd/Elise Ave. south along SR 99 frontage		2,080	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	54.0	1	3	8	25
42	Sunrise Avenue	Sunset Avenue	Winding Way	67,570	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	72.2	52	164	520	1644
43	Walerga Road	Elverta Road	Antelope Road	41,390	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.6	23	72	228	719
44	Walerga Road	Antelope Road	Elkhorn Boulevard	47,280	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.6	36	115	364	1150
45	Walerga Road	Elkhorn Boulevard	Don Julio Blvd	32,440	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.0	25	79	250	789
46	Walerga Road	Don Julio Blvd	Roseville Road	35,820	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	64.7	9	29	93	295
47	Watt Avenue	Antelope Road	Elkhorn Boulevard	26,490	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.6	15	46	146	460
48	Watt Avenue	Elkhorn Boulevard	Don Julio Blvd	33,760	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.1	13	41	129	408

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Existing Traffic Noise Spreadsheet Calculator

Project: Sacramento County RHNA Rezone Project

Noise Level Descriptor: Ldn
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

		Segment Description and Location			Input										Output				
							Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics						Ldn,	Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	(dBA)[5,6,7]	75 dBA	70 dBA	65 dBA	60 dBA
Existing Conditions																		
1	Antelope North Road	Antelope Road	PFE Road	12,390	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	60.1	3	10	32	102
2	Antelope Road	Walerga Road	Elverta Road/Antelope Road	12,540	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	61.8	5	15	48	152
3	Antelope Road	Elverta Road/Antelope Road	Don Julio Blvd	42,080	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.1	16	51	161	509
4	Beech Avenue	Central Ave.	Greenback Lane	2,560	20	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	50.3		1	3	11
5	Chestnut Avenue	Central Ave.	Greenback Lane	8,430	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	56.8	2	5	15	48
6	Curved Bridge Rd	Oak Lane	Dry Creek Road	2,800	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	53.6	1	2	7	23
7	Dry Creek Road	Elkhorn Boulevard	Vinci Avenue	11,600	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	61.5	4	14	44	140
8	Edison Avenue	Bell Street	Fullton Avenue	60	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	35.3				
9	Elk Grove Florin Road	Florin Road	Gerber Road	51,890	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.6	29	90	285	902
10	Elk Grove Florin Road	Gerber Road	Calvine Road	48,480	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.3	27	84	266	843
11	Elkhorn Blvd	2nd Street	Rio Linda Blvd	30,830	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.8	24	75	237	750
12	Elsie Avenue	Stockton Blvd	Iona Way	38,120	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.6	15	46	146	461
13	Elverta Road	Cherry Brook Drive	28th Street	30,560	55	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	71.3	43	135	426	1346
14	Fair Oaks Boulevard	Jacob Lane	Arden Way	33,940	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.7	19	59	187	590
15	Fair Oaks Boulevard	California Avenue	Marhsall Avenue	38,740	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.7	30	94	298	943
16	Fair Oaks Boulevard	Marshall Avenue	Hollister Avenue	40,530	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.9	31	99	312	986
17	Florin Road	Franklin Blvd	SR 99	61,940	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.3	34	108	340	1077
18	Florin Road	Power Inn Road	Iorin Perkins Road/French Roa	43,800	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.2	17	53	167	529
19	Folsom Boulevard	Mayhew Road	Bradshaw Road	39,690	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.4	22	69	218	690
20	Franklin Boulevard	Fruitridge Road	47th Avenue	23,510	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.1	13	41	129	409
21	Franklin Boulevard	47th Avenue	Florin Road	48,860	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.3	27	85	269	849
22	Franklin Boulevard	Florin Road	Mack Road	38,400	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.2	21	67	211	667
23	Fruitridge Road	44th Street	Dewey Blvd	30,080	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.2	17	52	165	523
24	Garfield Avenue	El Camino Ave	Fair Oaks Blvd	6,890	20	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	54.6	1	3	9	29
25	Garfield Avenue	Greenback Lane	Auburn Blvd	36,670	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.5	28	89	282	892
26	Greenback Lane	I-80 interchange	Auburn Blvd	101,340	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	73.9	78	247	780	2466
27	Greenback Lane	Kenneth Avenue	Hazel Avenue	44,540	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.9	24	77	245	774
28	Hemlock St	Madison Avenue	Myrtle Avenue	13,730	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.9	2	8	24	77
29	Madison Avenue	Harrison Street	Hillsdale Blvd	34,650	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.3	27	84	267	843
30	Manzanita Avenue	Madison Avenue	Winding Way	34,250	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.7	19	60	188	595
31	Oak Lane	Front Street	Curved Bridge Road	2,880	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	53.7	1	2	7	24
32	Pasadena Avenue	Norris Avenue	Creek Road	17,540	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	60.0	3	10	31	99
33	Power Inn Road	Elder Creek Road/Glen Elder Road	Florin Road	36,190	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.0	20	63	199	629
34	Power Inn Road	Florin Road	Gerber Road	42,770	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.7	24	74	235	743
35	Power Inn Road	Elsie Ave/Mack Road	Meadowhaven Drive	37,140	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.1	20	65	204	646
36	Roseville Road	Antelope Road	Outlook Drive	23,430	50	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.9	25	78	246	777
37	Stockton Blvd	Fruitridge Road	Elder Creek Road	23,250	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	64.5	9	28	89	281
38	Stockton Blvd	Elder Creek Road	Florin Road	40,910	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.5	22	71	225	711
39	Stockton Blvd	Florin Road	Gerber Road	46,910	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.1	26	82	258	815
40	Stockton Blvd	Gerber Road	Mack Rd/Elise Ave	47,560	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.2	26	83	261	827
41	Stockton Blvd	Rd/Elise Ave. south along SR 99 frontage		2,900	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	55.4	1	4	11	35
42	Sunrise Avenue	Sunset Avenue	Winding Way	71,260	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	72.4	55	173	548	1734
43	Walerga Road	Elverta Road	Antelope Road	50,240	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.4	28	87	276	873
44	Walerga Road	Antelope Road	Elkhorn Boulevard	55,110	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	71.3	42	134	424	1341
45	Walerga Road	Elkhorn Boulevard	Don Julio Blvd	43,420	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.2	33	106	334	1056
46	Walerga Road	Don Julio Blvd	Roseville Road	51,600	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.3	13	42	134	425
47	Watt Avenue	Antelope Road	Elkhorn Boulevard	47,050	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.1	26	82	259	818
48	Watt Avenue	Elkhorn Boulevard	Don Julio Blvd	50,020	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.8	19	60	191	604

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Existing Traffic Noise Spreadsheet Calculator

Project: Sacramento County RHNA Rezone Project

Noise Level Descriptor: Ldn
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

		Segment Description and Location		Input										Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics							Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	Ldn, (dBA)[5,6,7]	75 dBA	70 dBA	65 dBA	60 dBA
Existing Conditions																		
1	Antelope North Road	Antelope Road	PFE Road	12,520	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	60.1	3	10	33	103
2	Antelope Road	Walerga Road	Elverta Road/Antelope Road	12,950	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	61.9	5	16	49	156
3	Antelope Road	Elverta Road/Antelope Road	Don Julio Blvd	44,030	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.3	17	53	168	532
4	Beech Avenue	Central Ave.	Greenback Lane	2,570	20	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	50.3		1	3	11
5	Chestnut Avenue	Central Ave.	Greenback Lane	8,320	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	56.7	1	5	15	47
6	Curved Bridge Rd	Oak Lane	Dry Creek Road	3,120	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	54.1	1	3	8	26
7	Dry Creek Road	Elkhorn Boulevard	Vinci Avenue	11,990	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	61.6	5	14	46	145
8	Edison Avenue	Bell Street	Fullton Avenue	70	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	36.0				
9	Elk Grove Florin Road	Florin Road	Gerber Road	52,500	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.6	29	91	289	913
10	Elk Grove Florin Road	Gerber Road	Calvine Road	48,940	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.3	27	85	269	851
11	Elkhorn Blvd	2nd Street	Rio Linda Blvd	31,160	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.8	24	76	240	758
12	Elsie Avenue	Stockton Blvd	Iona Way	38,670	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.7	15	47	148	467
13	Elverta Road	Cherry Brook Drive	28th Street	30,870	55	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	71.3	43	136	430	1359
14	Fair Oaks Boulevard	Jacob Lane	Arden Way	34,130	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.7	19	59	188	593
15	Fair Oaks Boulevard	California Avenue	Marhsall Avenue	39,030	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.8	30	95	300	950
16	Fair Oaks Boulevard	Marshall Avenue	Hollister Avenue	40,810	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.0	31	99	314	993
17	Florin Road	Franklin Blvd	SR 99	62,220	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.3	34	108	342	1082
18	Florin Road	Power Inn Road	Iorin Perkins Road/French Roa	44,530	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.3	17	54	170	538
19	Folsom Boulevard	Mayhew Road	Bradshaw Road	40,090	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.4	22	70	220	697
20	Franklin Boulevard	Fruitridge Road	47th Avenue	23,690	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.1	13	41	130	412
21	Franklin Boulevard	47th Avenue	Florin Road	49,220	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.3	27	86	271	856
22	Franklin Boulevard	Florin Road	Mack Road	38,520	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.3	21	67	212	670
23	Fruitridge Road	44th Street	Dewey Blvd	30,320	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.2	17	53	167	527
24	Garfield Avenue	El Camino Ave	Fair Oaks Blvd	7,170	20	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	54.7	1	3	9	30
25	Garfield Avenue	Greenback Lane	Auburn Blvd	37,070	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.6	29	90	285	902
26	Greenback Lane	I-80 interchange	Auburn Blvd	101,890	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	73.9	78	248	784	2479
27	Greenback Lane	Kenneth Avenue	Hazel Avenue	44,640	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.9	25	78	245	776
28	Hemlock St	Madison Avenue	Myrtle Avenue	13,850	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.9	2	8	25	78
29	Madison Avenue	Harrison Street	Hillsdale Blvd	35,070	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.3	27	85	270	853
30	Manzanita Avenue	Madison Avenue	Winding Way	34,400	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.8	19	60	189	598
31	Oak Lane	Front Street	Curved Bridge Road	3,190	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	54.2	1	3	8	26
32	Pasadena Avenue	Norris Avenue	Creek Road	17,650	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	60.0	3	10	31	100
33	Power Inn Road	Elder Creek Road/Glen Elder Road	Florin Road	36,850	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.1	20	64	203	641
34	Power Inn Road	Florin Road	Gerber Road	43,390	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.8	24	75	239	754
35	Power Inn Road	Elsie Ave/Mack Road	Meadowhaven Drive	38,450	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.3	21	67	211	668
36	Roseville Road	Antelope Road	Outlook Drive	23,660	50	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.9	25	78	248	784
37	Stockton Blvd	Fruitridge Road	Elder Creek Road	23,320	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	64.5	9	28	89	282
38	Stockton Blvd	Elder Creek Road	Florin Road	41,400	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.6	23	72	228	720
39	Stockton Blvd	Florin Road	Gerber Road	47,620	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.2	26	83	262	828
40	Stockton Blvd	Gerber Road	Mack Rd/Elise Ave	48,130	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.2	26	84	265	837
41	Stockton Blvd	Rd/Elise Ave. south along SR 99 frontage		3,070	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	55.7	1	4	12	37
42	Sunrise Avenue	Sunset Avenue	Winding Way	71,070	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	72.4	55	173	547	1729
43	Walerga Road	Elverta Road	Antelope Road	50,810	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.5	28	88	279	883
44	Walerga Road	Antelope Road	Elkhorn Boulevard	55,370	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	71.3	43	135	426	1347
45	Walerga Road	Elkhorn Boulevard	Don Julio Blvd	43,860	45	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.3	34	107	337	1067
46	Walerga Road	Don Julio Blvd	Roseville Road	52,510	30	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.4	14	43	137	432
47	Watt Avenue	Antelope Road	Elkhorn Boulevard	47,520	40	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.2	26	83	261	826
48	Watt Avenue	Elkhorn Boulevard	Don Julio Blvd	50,380	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.8	19	61	193	609

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

	End Nodes						Base Year (2016)		Super-Cumulative	
Community	A	B	Roadway Name	From	To	Speed	Base (Existing ADT)	Package 1 (Existing + Project ADT)	Cumulative (Existing ADT)	Package 1 (Cumulative + Project ADT)
	2660	2923	Antelope North Road	Antelope Road	PFE Road	30	10,730	10,520	12,390	12,520
	2921	15653	Antelope Road	Walerga Road	Elverta Road/Antelope Road	35	11,750	12,160	12,540	12,950
	2922	6619	Antelope Road	Elverta Road/Antelope Road	Don Julio Blvd	35	27,500	29,330	42,080	44,030
	459	2279	Beech Avenue	Central Ave.	Greenback Lane	20	2,200	2,250	2,560	2,570
	3086	8215	Chestnut Avenue	Central Ave.	Greenback Lane	25	7,420	7,710	8,430	8,320
	2955	2956	Curved Bridge Rd	Oak Lane	Dry Creek Road	30	1,600	1,850	2,800	3,120
	4484	5912	Dry Creek Road	Elkhorn Boulevard	Vinci Avenue	35	6,430	6,640	11,600	11,990
	3171	8245	Edison Avenue	Bell Street	Fullton Avenue	25	40	30	60	70
	3808	3865	Elk Grove Florin Road	Florin Road	Gerber Road	40	23,200	23,380	51,890	52,500
	3864	6659	Elk Grove Florin Road	Gerber Road	Calvine Road	40	31,740	31,690	48,480	48,940
	2965	2966	Elkhorn Blvd	2nd Street	Rio Linda Blvd	45	13,340	13,250	30,830	31,160
	3815	8083	Elsie Avenue	Stockton Blvd	Iona Way	35	33,400	35,510	38,120	38,670
	2911	4639	Elverta Road	Cherry Brook Drive	28th Street	55	15,310	15,350	30,560	30,870
	3279	8057	Fair Oaks Boulevard	Jacob Lane	Arden Way	40	30,920	30,580	33,940	34,130
Fair Oaks Blvd.	3289	4421	Fair Oaks Boulevard	California Avenue	Marhsall Avenue	45	34,430	34,200	38,740	39,030
	3290	4421	Fair Oaks Boulevard	Marshall Avenue	Hollister Avenue	45	36,680	36,480	40,530	40,810
Old Florin	3775	8347	Florin Road	Franklin Blvd	SR 99	40	53,960	54,180	61,940	62,220
Old Florin	3781	3892	Florin Road	Power Inn Road	Florin Perkins Road/French Road	35	26,510	26,800	43,800	44,530
	3537	3552	Folsom Boulevard	Mayhew Road	Bradshaw Road	40	33,880	34,440	39,690	40,090
	3728	4085	Franklin Boulevard	Fruitridge Road	47th Avenue	40	25,090	25,400	23,510	23,690
	4499	8346	Franklin Boulevard	47th Avenue	Florin Road	40	46,720	46,830	48,860	49,220
	3846	4396	Franklin Boulevard	Florin Road	Mack Road	40	38,330	38,360	38,400	38,520
	3884	8352	Fruitridge Road	44th Street	Dewey Blvd	40	26,350	26,910	30,080	30,320
	392	3218	Garfield Avenue	El Camino Ave	Fair Oaks Blvd	20	6,560	6,830	6,890	7,170
	3345	4407	Garfield Avenue	Greenback Lane	Auburn Blvd	45	35,270	36,350	36,670	37,070
	4407	5518	Greenback Lane	I-80 interchange	Auburn Blvd	45	92,580	96,760	101,340	101,890
	2279	3084	Greenback Lane	Kenneth Avenue	Hazel Avenue	40	41,150	41,310	44,540	44,640
	2277	8203	Hemlock St	Madison Avenue	Myrtle Avenue	25	13,370	13,270	13,730	13,850
	3036	3100	Madison Avenue	Harrison Street	Hillsdale Blvd	45	29,470	29,830	34,650	35,070
	3104	4319	Manzanita Avenue	Madison Avenue	Winding Way	40	30,600	30,450	34,250	34,400
	2954	2955	Oak Lane	Front Street	Curved Bridge Road	30	2,350	2,530	2,880	3,190
	3119	3162	Pasadena Avenue	Norris Avenue	Creek Road	25	15,650	16,170	17,540	17,650
Old Florin	3763	3856	Power Inn Road	Elder Creek Road/Glen Elder Road	Florin Road	40	33,060	34,490	36,190	36,850
Old Florin	3780	3891	Power Inn Road	Florin Road	Gerber Road	40	39,800	40,470	42,770	43,390
	3815	4239	Power Inn Road	Elsie Ave/Mack Road	Meadowhaven Drive	40	29,640	29,470	37,140	38,450
	2925	3025	Roseville Road	Antelope Road	Outlook Drive	50	18,560	18,520	23,430	23,660
	3732	3895	Stockton Blvd	Fruitridge Road	Elder Creek Road	35	25,880	25,710	23,250	23,320
	3852	3893	Stockton Blvd	Elder Creek Road	Florin Road	40	38,890	38,890	40,910	41,400
	3850	3851	Stockton Blvd	Florin Road	Gerber Road	40	43,020	43,550	46,910	47,620
	3814	4078	Stockton Blvd	Gerber Road	Mack Rd/Elise Ave	40	41,310	41,930	47,560	48,130
	11852	11877	Stockton Blvd	Mack Rd/Elise Ave. south along SR 99 frontage		35	2,120	2,080	2,900	3,070
	3133	3153	Sunrise Avenue	Sunset Avenue	Winding Way	45	67,330	67,570	71,260	71,070
	2294	2921	Walerga Road	Elverta Road	Antelope Road	40	40,110	41,390	50,240	50,810
	2921	3342	Walerga Road	Antelope Road	Elkhorn Boulevard	45	46,220	47,280	55,110	55,370
	2974	3341	Walerga Road	Elkhorn Boulevard	Don Julio Blvd	45	31,050	32,440	43,420	43,860
	3022	3340	Walerga Road	Don Julio Blvd	Roseville Road	30	33,820	35,820	51,600	52,510
North Watt Ave	2920	13630	Watt Avenue	Antelope Road	Elkhorn Boulevard	40	26,310	26,490	47,050	47,520
North Watt Ave	3335	3336	Watt Avenue	Elkhorn Boulevard	Don Julio Blvd	35	32,760	33,760	50,020	50,380

Notes: Data provided by DKS Associates

Distance Propagation Calculations for Stationary Sources of Ground Vibration

KEY: Orange cells are for input.

Grey cells are intermediate calculations performed by the model.

Green cells are data to present in a written analysis (output).

STEP 1: Determine units in which to perform calculation.

— If vibration decibels (VdB), then use Table A and proceed to Steps 2A and 3A.

— If peak particle velocity (PPV), then use Table B and proceed to Steps 2B and 3B.

STEP 2A: Identify the vibration source and enter the reference vibration level (VdB) and distance.

STEP 3A: Select the distance to the receiver.

Table A. Propagation of vibration decibels (VdB) with distance

Noise Source/ID	Reference Noise Level			Attenuated Noise Level at Receptor		
	vibration level (VdB)	@	distance (ft)	vibration level (VdB)	@	distance (ft)
Impact pile driver	112	@	25	71.9	@	541
Vibratory Roller	94	@	25	71.9	@	136
Large bulldozer	87.0	@	25	71.8	@	80

The Lv metric (VdB) is used to assess the likelihood for vibration to result in human annoyance.

STEP 2B: Identify the vibration source and enter the reference peak particle velocity (PPV) and distance.

STEP 3B: Select the distance to the receiver.

Table B. Propagation of peak particle velocity (PPV) with distance

Noise Source/ID	Reference Noise Level			Attenuated Noise Level at Receptor		
	vibration level (PPV)	@	distance (ft)	vibration level (PPV)	@	distance (ft)
Impact pile driver	1.518	@	25	0.199	@	97
Vibratory Roller	0.210	@	25	0.198	@	26
Large bulldozer	0.089	@	25	0.191	@	15

The PPV metric (in/sec) is used for assessing the likelihood for the potential of structural damage.

Notes:

Computation of propagated vibration levels is based on the equations presented on pg. 185 of FTA 2018. Estimates of attenuated vibration levels do not account for reductions from intervening underground barriers or other underground structures of any type, or changes in soil type.

Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment Manual. FTA Report No. 0123. Washington, D.C. Accessed: December 20, 2020.

https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-asse