

# Appendix B

## **Noise and Vibration**

# Traffic Noise Model



## TRAFFIC NOISE ANALYSIS TOOL



Project Name: Santa Clara County Housing Element Update  
 Analysis Scenario: 2022  
 Hextrans

Roadway Segment		Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA Ldn
				Auto	MT	HT	Auto	MT	HT		
Bascom Avenue	between Olive Avenue and Forest Avenue	Hard	50	35	35	35	2,295	72	24	68.9	69
Bascom Avenue	between Maywood Avenue and Lindaire Avenue	Hard	50	35	35	35	1,803	56	19	67.8	68
Camden Avenue	between New Jersey Avenue and Leigh Avenue	Hard	50	40	40	40	3,112	97	32	71.7	72
Capitol Avenue	between I-680 and Hostetter Road	Hard	50	35	35	35	1,888	59	20	68.0	68
Fleming Avenue	between Neves Way and Mahoney Drive	Hard	50	35	35	35	616	19	6	63.2	63
Hostetter Road	between I-680 and Capitol Avenue	Hard	50	40	40	40	2,285	71	24	70.4	71
Hostetter Road	between Capitol Ave and Peachwood Drive	Hard	50	35	35	35	1,648	52	17	67.4	68
Kirk Avenue	between Summit Avenue and Madeline Drive	Hard	50	65	65	65	475	15	5	69.9	70
Kirk Avenue	between Madeline Drive and Hyland Avenue	Hard	50	25	25	25	450	14	5	58.8	59
Leigh Avenue	between Camden Avenue and Weeth Drive	Hard	50	35	35	35	928	29	10	64.9	65
McKee Road	between Challenger Avenue and White Road	Hard	50	40	40	40	2,165	68	23	70.1	70
McKee Road	between La Pala Drive and Delia Street	Hard	50	40	40	40	1,149	36	12	67.4	68
Moorpark Avenue	between SR 17 and Thornton Way	Hard	50	35	35	35	2,286	71	24	68.8	69
Quarry Road	between Campus Dr and El Camino Real	Hard	50	25	25	25	1,260	39	13	63.2	64
San Carlos Street	between Vaughn Avenue and Arleta Avenue	Hard	50	35	35	35	1,799	56	19	67.8	68
San Carlos Street	between Leigh Avenue and Richmond Avenue	Hard	50	35	35	35	1,646	51	17	67.4	68
Stanford Avenue	between Bowdoin Street and El Camino Real	Hard	50	25	25	25	456	14	5	58.8	59
Stevens Creek Blvd	between Bascom Avenue and Bradley Avenue	Hard	50	35	35	35	1,698	53	18	67.6	68
Thornton Way	between Clove Drive and Moorpark Avenue	Hard	50	25	25	25	568	18	6	59.8	60
Toyon Avenue	between Cortese Circle and McKee Road	Hard	50	25	25	25	709	22	7	60.7	61
Tully Road	between White Road and Buckhill Court	Hard	50	35	35	35	1,362	43	14	66.6	67
White Road	between White Court and Westboro Drive	Hard	50	35	35	35	1,974	62	21	68.2	69
White Road	between Florence Court and Rose Avenue	Hard	50	35	35	35	1,730	54	18	67.6	68
White Road	between Kentridge Drive and McKee Road	Hard	50	35	35	35	1,318	41	14	66.5	67
White Road	between Tully Road and Cunningham Lake Avenue	Hard	50	40	40	40	1,673	52	17	69.0	69

**Model Notes:**

The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).

The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.

Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.

Noise propagation greater than 50 feet is based on the following assumptions:

For hard ground, the propagation rate is 3 dB per doubling the distance.

For soft ground, the propagation rate is 4.5 dB per doubling the distance.

Vehicles are assumed to be on a long straight roadway with cruise speed.

Roadway grade is less than 1.5%.

Ldn levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

TRAFFIC NOISE ANALYSIS TOOL



Project Name: Santa Clara County Housing Element Update  
 Analysis Scenario: 2022 + Project  
 Hextrans

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA Ldn	
			Auto	MT	HT	Auto	MT	HT			
Bascom Avenue	between Olive Avenue and Forest Avenue	Hard	50	35	35	35	2,371	74	25	69.0	69
Bascom Avenue	between Maywood Avenue and Lindaire Avenue	Hard	50	35	35	35	1,845	58	19	67.9	68
Camden Avenue	between New Jersey Avenue and Leigh Avenue	Hard	50	40	40	40	3,125	98	33	71.7	72
Capitol Avenue	between I-680 and Hostetter Road	Hard	50	35	35	35	2,074	65	22	68.4	69
Fleming Avenue	between Neves Way and Mahoney Drive	Hard	50	35	35	35	619	19	6	63.2	63
Hostetter Road	between I-680 and Capitol Avenue	Hard	50	40	40	40	2,542	79	26	70.8	71
Hostetter Road	between Capitol Ave and Peachwood Drive	Hard	50	35	35	35	1,648	52	17	67.4	68
Kirk Avenue	between Summit Avenue and Madeline Drive	Hard	50	65	65	65	477	15	5	69.9	70
Kirk Avenue	between Madeline Drive and Hyland Avenue	Hard	50	25	25	25	452	14	5	58.8	59
Leigh Avenue	between Camden Avenue and Weeth Drive	Hard	50	35	35	35	929	29	10	64.9	65
McKee Road	between Challenger Avenue and White Road	Hard	50	40	40	40	2,172	68	23	70.2	70
McKee Road	between La Pala Drive and Delia Street	Hard	50	40	40	40	1,151	36	12	67.4	68
Moorpark Avenue	between SR 17 and Thornton Way	Hard	50	35	35	35	2,322	73	24	68.9	69
Quarry Road	between Campus Dr and El Camino Real	Hard	50	25	25	25	1,325	41	14	63.4	64
San Carlos Street	between Vaughn Avenue and Arleta Avenue	Hard	50	35	35	35	1,827	57	19	67.9	68
San Carlos Street	between Leigh Avenue and Richmond Avenue	Hard	50	35	35	35	1,661	52	17	67.5	68
Stanford Avenue	between Bowdoin Street and El Camino Real	Hard	50	25	25	25	456	14	5	58.8	59
Stevens Creek Blvd	between Bascom Avenue and Bradley Avenue	Hard	50	35	35	35	1,725	54	18	67.6	68
Thornton Way	between Clove Drive and Moorpark Avenue	Hard	50	25	25	25	773	24	8	61.1	61
Toyon Avenue	between Cortese Circle and McKee Road	Hard	50	25	25	25	709	22	7	60.7	61
Tully Road	between White Road and Buckhill Court	Hard	50	35	35	35	1,362	43	14	66.6	67
White Road	between White Court and Westboro Drive	Hard	50	35	35	35	2,172	68	23	68.6	69
White Road	between Florence Court and Rose Avenue	Hard	50	35	35	35	1,922	60	20	68.1	68
White Road	between Kentridge Drive and McKee Road	Hard	50	35	35	35	1,338	42	14	66.5	67
White Road	between Tully Road and Cunningham Lake Avenue	Hard	50	40	40	40	2,550	80	27	70.9	71

Model Notes:

The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).

The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.

Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.

Noise propagation greater than 50 feet is based on the following assumptions:

For hard ground, the propagation rate is 3 dB per doubling the distance.

For soft ground, the propagation rate is 4.5 dB per doubling the distance.

Vehicles are assumed to be on a long straight roadway with cruise speed.

Roadway grade is less than 1.5%.

Ldn levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

TRAFFIC NOISE ANALYSIS TOOL



Project Name: Santa Clara County Housing Element Update  
 Analysis Scenario: 2040 No Project  
 Hextrans

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA Ldn	
			Auto	MT	HT	Auto	MT	HT			
Bascom Avenue	between Olive Avenue and Forest Avenue	Hard	50	35	35	35	2,536	79	26	69.3	70
Bascom Avenue	between Maywood Avenue and Lindaire Avenue	Hard	50	35	35	35	2,730	85	28	69.6	70
Camden Avenue	between New Jersey Avenue and Leigh Avenue	Hard	50	40	40	40	4,128	129	43	73.0	73
Capitol Avenue	between I-680 and Hostetter Road	Hard	50	35	35	35	2,018	63	21	68.3	69
Fleming Avenue	between Neves Way and Mahoney Drive	Hard	50	35	35	35	700	22	7	63.7	64
Hostetter Road	between I-680 and Capitol Avenue	Hard	50	40	40	40	2,285	71	24	70.4	71
Hostetter Road	between Capitol Ave and Peachwood Drive	Hard	50	35	35	35	1,648	52	17	67.4	68
Kirk Avenue	between Summit Avenue and Madeline Drive	Hard	50	65	65	65	483	15	5	69.9	70
Kirk Avenue	between Madeline Drive and Hyland Avenue	Hard	50	25	25	25	458	14	5	58.8	59
Leigh Avenue	between Camden Avenue and Weeth Drive	Hard	50	35	35	35	1,128	35	12	65.8	66
McKee Road	between Challenger Avenue and White Road	Hard	50	40	40	40	2,401	75	25	70.6	71
McKee Road	between La Pala Drive and Delia Street	Hard	50	40	40	40	1,386	43	14	68.2	69
Moorpark Avenue	between SR 17 and Thornton Way	Hard	50	35	35	35	3,579	112	37	70.8	71
Quarry Road	between Campus Dr and El Camino Real	Hard	50	25	25	25	1,260	39	13	63.2	64
San Carlos Street	between Vaughn Avenue and Arleta Avenue	Hard	50	35	35	35	2,471	77	26	69.2	69
San Carlos Street	between Leigh Avenue and Richmond Avenue	Hard	50	35	35	35	2,288	71	24	68.8	69
Stanford Avenue	between Bowdoin Street and El Camino Real	Hard	50	25	25	25	547	17	6	59.6	60
Stevens Creek Blvd	between Bascom Avenue and Bradley Avenue	Hard	50	35	35	35	1,811	57	19	67.8	68
Thornton Way	between Clove Drive and Moorpark Avenue	Hard	50	25	25	25	568	18	6	59.8	60
Toyon Avenue	between Cortese Circle and McKee Road	Hard	50	25	25	25	762	24	8	61.0	61
Tully Road	between White Road and Buckhill Court	Hard	50	35	35	35	1,362	43	14	66.6	67
White Road	between White Court and Westboro Drive	Hard	50	35	35	35	2,371	74	25	69.0	69
White Road	between Florence Court and Rose Avenue	Hard	50	35	35	35	2,091	65	22	68.5	69
White Road	between Kentridge Drive and McKee Road	Hard	50	35	35	35	1,435	45	15	66.8	67
White Road	between Tully Road and Cunningham Lake Avenue	Hard	50	40	40	40	2,001	63	21	69.8	70

Model Notes:

The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).

The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.

Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.

Noise propagation greater than 50 feet is based on the following assumptions:

For hard ground, the propagation rate is 3 dB per doubling the distance.

For soft ground, the propagation rate is 4.5 dB per doubling the distance.

Vehicles are assumed to be on a long straight roadway with cruise speed.

Roadway grade is less than 1.5%.

Ldn levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.

TRAFFIC NOISE ANALYSIS TOOL



Project Name: Santa Clara County Housing Element Update  
 Analysis Scenario: 2040 + Project  
 Hextrans

Roadway Segment	Ground Type	Distance from Roadway to Receiver (feet)	Speed (mph)			Peak Hour Volume			Peak Hour Noise Level (Leq(h) dBA)	Noise Level dBA Ldn	
			Auto	MT	HT	Auto	MT	HT			
Bascom Avenue	between Olive Avenue and Forest Avenue	Hard	50	35	35	35	2,584	81	27	69.4	70
Bascom Avenue	between Maywood Avenue and Lindaire Avenue	Hard	50	35	35	35	2,779	87	29	69.7	70
Camden Avenue	between New Jersey Avenue and Leigh Avenue	Hard	50	40	40	40	4,147	130	43	73.0	73
Capitol Avenue	between I-680 and Hostetter Road	Hard	50	35	35	35	2,214	69	23	68.7	69
Fleming Avenue	between Neves Way and Mahoney Drive	Hard	50	35	35	35	706	22	7	63.7	64
Hostetter Road	between I-680 and Capitol Avenue	Hard	50	40	40	40	2,460	77	26	70.7	71
Hostetter Road	between Capitol Ave and Peachwood Drive	Hard	50	35	35	35	1,648	52	17	67.4	68
Kirk Avenue	between Summit Avenue and Madeline Drive	Hard	50	65	65	65	486	15	5	70.0	70
Kirk Avenue	between Madeline Drive and Hyland Avenue	Hard	50	25	25	25	461	14	5	58.9	59
Leigh Avenue	between Camden Avenue and Weeth Drive	Hard	50	35	35	35	1,125	35	12	65.8	66
McKee Road	between Challenger Avenue and White Road	Hard	50	40	40	40	2,444	76	25	70.7	71
McKee Road	between La Pala Drive and Delia Street	Hard	50	40	40	40	1,412	44	15	68.3	69
Moorpark Avenue	between SR 17 and Thornton Way	Hard	50	35	35	35	3,682	115	38	70.9	71
Quarry Road	between Campus Dr and El Camino Real	Hard	50	25	25	25	1,260	39	13	63.2	64
San Carlos Street	between Vaughn Avenue and Arleta Avenue	Hard	50	35	35	35	2,517	79	26	69.3	70
San Carlos Street	between Leigh Avenue and Richmond Avenue	Hard	50	35	35	35	2,320	73	24	68.9	69
Stanford Avenue	between Bowdoin Street and El Camino Real	Hard	50	25	25	25	615	19	6	60.1	60
Stevens Creek Blvd	between Bascom Avenue and Bradley Avenue	Hard	50	35	35	35	1,838	57	19	67.9	68
Thornton Way	between Clove Drive and Moorpark Avenue	Hard	50	25	25	25	568	18	6	59.8	60
Toyon Avenue	between Cortese Circle and McKee Road	Hard	50	25	25	25	761	24	8	61.0	61
Tully Road	between White Road and Buckhill Court	Hard	50	35	35	35	1,362	43	14	66.6	67
White Road	between White Court and Westboro Drive	Hard	50	35	35	35	2,564	80	27	69.3	70
White Road	between Florence Court and Rose Avenue	Hard	50	35	35	35	2,278	71	24	68.8	69
White Road	between Kentridge Drive and McKee Road	Hard	50	35	35	35	1,463	46	15	66.9	67
White Road	between Tully Road and Cunningham Lake Avenue	Hard	50	40	40	40	2,726	85	28	71.1	71

Model Notes:

The calculation is based on the methodology described in FHWA Traffic Noise Model Technical Manual (1998).

The peak hour noise level at 50 feet was validated with the results from FHWA Traffic Noise Model Version 2.5.

Accuracy of the calculation is within ±0.1 dB when comparing to TNM results.

Noise propagation greater than 50 feet is based on the following assumptions:

For hard ground, the propagation rate is 3 dB per doubling the distance.

For soft ground, the propagation rate is 4.5 dB per doubling the distance.

Vehicles are assumed to be on a long straight roadway with cruise speed.

Roadway grade is less than 1.5%.

Ldn levels were obtained based on Figure 2-19, on page 2-58 Caltran's TeNS 2013.