

# Appendix F

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Noise Modeling Results

Traffic Noise Spreadsheet Calculator  
Existing Conditions



Project: West Broadway SP

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

Segment Description and Location				Input										Output						
Number	Name	From	To	ADT	Speed (mph)	Distance to Directional Centerline, (feet) <sub>4</sub>		Traffic Distribution Characteristics					CNEL, (dBA) <sub>5,6,7</sub>	Distance to Contour, (feet) <sub>3</sub>						
						Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve		% Night	70 dBA	65 dBA	60 dBA	55 dBA		
#####																				
1	3rd street	V Street	W Street	7,080	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	61.9	7	24	75	236		
2	3rd street	W Street	X Street	7,180	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	62.0	8	24	76	240		
3	3rd street	X Street	Broadway	4,100	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	59.6	4	14	43	137		
4	W Street	3rd street	5th street	500	35	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	52.1	1	2	8	25		
5	W Street	5th street	11th street	18,430	35	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	67.8	29	91	287	908		
6	W Street	11th street	12th street	13,780	35	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	66.5	21	68	215	679		
7	X Street	I-5	3rd Street	1,970	35	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	58.1	3	10	31	97		
8	X Street	3rd Street	5th street	5,690	35	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	62.7	9	28	89	280		
9	X Street	5th street	Riverside Bou	13,900	35	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	66.6	22	68	217	685		
10	X Street	Riverside Boulevard	13th street	15,210	35	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	67.0	24	75	237	749		
11	5th street	V Street	W Street	1,390	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	54.9	1	5	15	46		
12	5th street	W Street	X Street	25,190	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	67.5	27	84	266	841		
13	5th street	X Street	Broadway	6,410	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	61.5	7	21	68	214		
14	5th street	Broadway	1st Avenue	5,630	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	61.0	6	19	59	188		
15	5th street	1st Avenue	Mcclatchy Wa	5,580	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	59.2	4	13	40	127		
16	5th street	Mcclatchy Way	Vallejo Way	3,660	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	57.4	3	8	26	83		
17	5th street	Vallejo Way	4th Avenue	510	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	48.8		1	4	12		
18	8th street	X Street	Broadway	1,700	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	55.8	2	6	18	57		
19	9th street	X Street	Broadway	5,060	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	60.5	5	17	53	169		
20	11th street	V street	W Street	4,990	15	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	56.9	2	7	23	73		
21	11th street	W Street	X Street	7,150	15	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	58.4	3	10	33	105		
22	11th street	X Street	Broadway	8,080	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	62.5	9	27	85	270		
23	Riverside Boulevard	Broadway	Vallejo Way	12,570	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	64.4	13	42	133	420		
24	Riverside Boulevard	Vallejo Way	3rd Avenue	11,280	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	64.0	12	38	119	376		
25	Vallejo Way	River Beard Circle	5th Street	980	15	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	49.8		1	5	14		
26	Vallejo Way	5th Street	Muir Way	2,540	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	55.8	2	6	18	58		
27	Vallejo Way	Muir Way	Riverside Bou	1,680	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	54.0	1	4	12	38		
28	Vallejo Way	Riverside Boulevard	3rd Avenue	1,480	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	53.5	1	3	11	34		
29	Muir Way	Broadway	Vallejo Way	4,590	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	60.1	5	15	48	153		
30	Muir Way	Vallejo Way	3rd Avenue	2,630	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	57.6	3	9	28	88		
31	Broadway	American River	Front Street	1,350	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	53.1	1	3	10	31		
32	Broadway	Front Street	I-5	3,730	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	57.5	3	8	27	85		
33	Broadway	I-5	3rd Street	6,170	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	61.4	7	21	65	206		
34	Broadway	3rd Street	5th Street	8,910	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	62.9	9	30	94	297		
35	Broadway	5th Street	8th street	11,150	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	63.9	12	37	118	372		
36	Broadway	8th street	9th Street	14,080	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	64.9	15	47	149	470		
37	Broadway	9th Street	Riverside Bou	18,320	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	66.1	19	61	193	611		
38	Broadway	Riverside Boulevard	13th street	13,140	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	64.6	14	44	139	439		
39	Mcclatchy Way	I-5	5th Street	1,050	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	52.0	1	2	8	24		
40	1st Avenue	3rd street	5th street	400	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	47.8		1	3	9		
41	1st Avenue	5th street	East	110	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	42.2			1	2		

Traffic Noise Spreadsheet Calculator  
Existing Plus Project Conditions



Project: West Broadway Specific Plan

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

Segment Description and Location				Input										Output					
Number	Name	From	To	ADT	Speed (mph)	Distance to Directional Centerline, (feet) <sub>4</sub>		% Auto	Traffic Distribution Characteristics			% Day	% Eve	% Night	CNEL, (dBA) <sub>5,6,7</sub>	Distance to Contour, (feet) <sub>3</sub>			
						Near	Far		% Medium	% Heavy	70 dBA					65 dBA	60 dBA	55 dBA	
#####																			
1	3rd street	V Street	W Street	7,800	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	62.4	8	26	82	260	
2	3rd street	W Street	X Street	7,800	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	62.4	8	26	82	260	
3	3rd street	X Street	Broadway	7,700	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	62.3	8	26	81	257	
4	W Street	3rd street	5th street	600	35	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	52.9	1	3	9	30	
5	W Street	5th street	11th street	18,450	35	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	67.8	29	91	287	909	
6	W Street	11th street	12th street	16,500	35	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	67.3	26	81	257	813	
7	X Street	I-5	3rd Street	2,500	35	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	59.1	4	12	39	123	
8	X Street	3rd Street	5th street	8,400	35	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	64.4	13	41	131	414	
9	X Street	5th street	Riverside Bou	15,600	35	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	67.1	24	77	243	768	
10	X Street	Riverside Boulevard	13th street	16,300	35	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	67.3	25	80	254	803	
11	5th street	V Street	W Street	1,650	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	55.6	2	6	17	55	
12	5th street	W Street	X Street	28,050	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	67.9	30	94	296	936	
13	5th street	X Street	Broadway	10,350	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	63.6	11	35	109	345	
14	5th street	Broadway	1st Avenue	7,750	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	62.3	8	26	82	259	
15	5th street	1st Avenue	Mcclatchy Wa	6,800	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	60.1	5	15	49	154	
16	5th street	Mcclatchy Way	Vallejo Way	4,400	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	58.2	3	10	32	100	
17	5th street	Vallejo Way	4th Avenue	650	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	49.9		1	5	15	
18	8th street	X Street	Broadway	5,500	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	60.9	6	18	58	184	
19	9th street	X Street	Broadway	6,550	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	61.6	7	22	69	219	
20	11th street	V street	W Street	5,400	15	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	57.2	3	8	25	79	
21	11th street	W Street	X Street	7,300	15	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	58.5	3	11	34	107	
22	11th street	X Street	Broadway	9,000	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	63.0	9	30	95	300	
23	Riverside Boulevard	Broadway	Vallejo Way	12,500	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	64.4	13	42	132	417	
24	Riverside Boulevard	Vallejo Way	3rd Avenue	11,850	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	64.2	13	40	125	396	
25	Vallejo Way	River Beard Circle	5th Street	1,500	15	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	51.6	1	2	7	22	
26	Vallejo Way	5th Street	Muir Way	2,200	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	55.2	2	5	16	50	
27	Vallejo Way	Muir Way	Riverside Bou	1,950	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	54.7	1	4	14	44	
28	Vallejo Way	Riverside Boulevard	3rd Avenue	2,250	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	55.3	2	5	16	51	
29	Muir Way	Broadway	Vallejo Way	6,300	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	61.4	7	21	66	210	
30	Muir Way	Vallejo Way	3rd Avenue	2,650	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	57.7	3	9	28	88	
31	Broadway	American River	Front Street	1,450	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	53.4	1	3	10	33	
32	Broadway	Front Street	I-5	14,000	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	63.2	10	32	100	318	
33	Broadway	I-5	3rd Street	17,900	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	66.0	19	60	189	597	
34	Broadway	3rd Street	5th Street	16,400	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	65.6	17	55	173	547	
35	Broadway	5th Street	8th street	15,600	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	65.4	16	52	165	521	
36	Broadway	8th street	9th Street	20,150	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	66.5	21	67	213	673	
37	Broadway	9th Street	Riverside Bou	20,700	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	66.6	22	69	218	691	
38	Broadway	Riverside Boulevard	13th street	16,400	30	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	65.6	17	55	173	547	
39	Mcclatchy Way	I-5	5th Street	1,200	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	52.6	1	3	9	27	
40	1st Avenue	3rd street	5th street	2,500	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	55.8	2	6	18	57	
41	1st Avenue	5th street	East	1,250	25	35	65	97.5%	1.5%	1.0%	85.0%	7.5%	7.5%	52.7	1	3	9	28	

#	Segment	<u>Increase in Noise</u>		Exist	Plus Project	Change
		From	To			
1	3rd street	V Street	W Street	61.9	62.4	0.4
2	3rd street	W Street	X Street	62.0	62.4	0.4
3	3rd street	X Street	Broadway	59.6	62.3	2.7
4	W Street	3rd street	5th street	52.1	52.9	0.8
5	W Street	5th street	11th street	67.8	67.8	0.0
6	W Street	11th street	12th street	66.5	67.3	0.8
7	X Street	I-5	3rd Street	58.1	59.1	1.0
8	X Street	3rd Street	5th street	62.7	64.4	1.7
9	X Street	5th street	riverside Boulevar	66.6	67.1	0.5
10	X Street	Riverside Boulevard	13th street	67.0	67.3	0.3
11	5th street	V Street	W Street	54.9	55.6	0.7
12	5th street	W Street	X Street	67.5	67.9	0.5
13	5th street	X Street	Broadway	61.5	63.6	2.1
14	5th street	Broadway	1st Avenue	61.0	62.3	1.4
15	5th street	1st Avenue	Mcclatchy Way	59.2	60.1	0.9
16	5th street	Mcclatchy Way	Vallejo Way	57.4	58.2	0.8
17	5th street	Vallejo Way	4th Avenue	48.8	49.9	1.1
18	8th street	X Street	Broadway	55.8	60.9	5.1
19	9th street	X Street	Broadway	60.5	61.6	1.1
20	11th street	V street	W Street	56.9	57.2	0.3
21	11th street	W Street	X Street	58.4	58.5	0.1
22	11th street	X Street	Broadway	62.5	63.0	0.5
23	riverside Boulevard	Broadway	Vallejo Way	64.4	64.4	0.0
24	riverside Boulevard	Vallejo Way	3rd Avenue	64.0	64.2	0.2
25	Vallejo Way	River Beard Circle	5th Street	49.8	51.6	1.8
26	Vallejo Way	5th Street	Muir Way	55.8	55.2	-0.6
27	Vallejo Way	Muir Way	riverside Boulevar	54.0	54.7	0.6
28	Vallejo Way	Riverside Boulevard	3rd Avenue	53.5	55.3	1.8
29	Muir Way	Broadway	Vallejo Way	60.1	61.4	1.4
30	Muir Way	Vallejo Way	3rd Avenue	57.6	57.7	0.0
31	Broadway	American River	Front Street	53.1	53.4	0.3
32	Broadway	Front Street	I-5	57.5	63.2	5.7
33	Broadway	I-5	3rd Street	61.4	66.0	4.6
34	Broadway	3rd Street	5th Street	62.9	65.6	2.6
35	Broadway	5th Street	8th street	63.9	65.4	1.5
36	Broadway	8th street	9th Street	64.9	66.5	1.6
37	Broadway	9th Street	riverside Boulevar	66.1	66.6	0.5
38	Broadway	Riverside Boulevard	13th street	64.6	65.6	1.0
39	Mcclatchy Way	I-5	5th Street	52.0	52.6	0.6
40	1st Avenue	3rd street	5th street	47.8	55.8	8.0
41	1st Avenue	5th street	East	42.2	52.7	10.6

Raw Traffic Data

	Street	From	to	speed limit	Existing		+ Project	
					PM Peak	ADT	PM Peak	ADT
1	3rd street	V Street	W Street	30	708	7,080	780	7,800
2	3rd street	W Street	X Street	30	718	7,180	780	7,800
3	3rd street	X Street	Broadway	30	410	4,100	770	7,700
4	W Street	3rd street	5th street	35	50	500	60	600
5	W Street	5th street	11th street	35	1843	18,430	1845	18,450
6	W Street	11th street	12th street	35	1378	13,780	1650	16,500
7	X Street	I-5	3rd Street	35	197	1,970	250	2,500
8	X Street	3rd Street	5th street	35	569	5,690	840	8,400
9	X Street	5th street	Riverside Boulev	35	1390	13,900	1560	15,600
10	X Street	Riverside Boulevard	13th street	35	1521	15,210	1630	16,300
11	5th street	V Street	W Street	30	139	1,390	165	1,650
12	5th street	W Street	X Street	30	2519	25,190	2805	28,050
13	5th street	X Street	Broadway	30	641	6,410	1035	10,350
14	5th street	Broadway	1st Avenue	30	563	5,630	775	7,750
15	5th street	1st Avenue	Mcclatchy Way	25	558	5,580	680	6,800
16	5th street	Mcclatchy Way	Vallejo Way	25	366	3,660	440	4,400
17	5th street	Vallejo Way	4th Avenue	25	51	510	65	650
18	8th street	X Street	Broadway	30	170	1,700	550	5,500
19	9th street	X Street	Broadway	30	506	5,060	655	6,550
20	11th street	V street	W Street	15	499	4,990	540	5,400
21	11th street	W Street	X Street	15	715	7,150	730	7,300
22	11th street	X Street	Broadway	30	808	8,080	900	9,000
23	Riverside Boulevar	Broadway	Vallejo Way	30	1257	12,570	1250	12,500
24	Riverside Boulevar	Vallejo Way	3rd Avenue	30	1128	11,280	1185	11,850
25	Vallejo Way	River Beard Circle	5th Street	15	98	980	150	1,500
26	Vallejo Way	5th Street	Muir Way	25	254	2,540	220	2,200
27	Vallejo Way	Muir Way	Riverside Boulev	25	168	1,680	195	1,950
28	Vallejo Way	Riverside Boulevard	3rd Avenue	25	148	1,480	225	2,250
29	Muir Way	Broadway	Vallejo Way	30	459	4,590	630	6,300
30	Muir Way	Vallejo Way	3rd Avenue	30	263	2,630	265	2,650
31	Broadway	American River	Front Street	25	135	1,350	145	1,450
32	Broadway	Front Street	I-5	25	373	3,730	1400	14,000
33	Broadway	I-5	3rd Street	30	617	6,170	1790	17,900
34	Broadway	3rd Street	5th Street	30	891	8,910	1640	16,400
35	Broadway	5th Street	8th street	30	1115	11,150	1560	15,600
36	Broadway	8th street	9th Street	30	1408	14,080	2015	20,150
37	Broadway	9th Street	Riverside Boulev	30	1832	18,320	2070	20,700
38	Broadway	Riverside Boulevard	13th street	30	1314	13,140	1640	16,400
39	Mcclatchy Way	I-5	5th Street	25	105	1,050	120	1,200
40	1st Avenue	3rd street	5th street	25	40	400	250	2,500
41	1st Avenue	5th street	East	25	11	110	125	1,250

Notes

1. Segments and PM peak hour volumes derived from Figures 4A, 4B, 11A, and 11B in the Traffic Impact Study prepared by Fehr and Peers (2019)
2. ADT volumes were derived by applying a k-factor of 10 to the peak hour volumes.

Citation # Citations

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| 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.      |
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| 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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