

APPENDIX 4.9

Noise Modeling Output

Project Name
CNEL at Off-Site Noise-Sensitive Land Uses
Existing Conditions

ROADWAY NAME Segment	Noise-Sensitive Land Use	Total No. of Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha (1) Factor	Barrier Attn. dBA)	Vehicle Mix		dB(A) CNEL	Traffic Volumes												Ref. Energy Levels			Dist Ld		
									Medium Trucks	Heavy Trucks		Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	HTn	A	MT	HT	Adj	A	MT	HT	Total
Carlos Bee Boulevard/Mission Blvd to Hayward Blvd. SFR/MFR		4	12	14115	35	60	0.5	0	1.8%	0.7%	65.6	10,967	1,793	1,355	222	88	13	3	19	8	65.1	74.8	80.0	-0.7	63.1	56.0	57.2	64.1	
Carlos Bee Boulevard/Driveway and Hayward Blvd to West Loop Road sport field		4	0	10815	35	100	0.5	0	1.8%	0.7%	60.6	8,403	1,374	1,038	170	67	10	2	15	6	65.1	74.8	80.0	-4.5	58.2	51.1	52.3	59.3	
West Loop Road/ Carlos Bee Boulevard to Harder Road school uses		2	0	7020	35	70	0	0	1.8%	0.7%	61.8	5,455	892	674	110	44	6	1	10	4	65.1	74.8	80.0	-1.5	59.3	52.2	53.4	60.5	
East Loop Road/Carlos Bee Boulevard to Harder Road school uses		2	0	5300	35	70	0	0	1.8%	0.7%	60.5	4,118	673	509	83	33	5	1	7	3	65.1	74.8	80.0	-1.5	58.1	51.0	52.2	59.1	
Harder Road/West Loop Road to Mission Boulevard SFR/MFR		4	14	9850	45	60	0	0	1.8%	0.7%	67.0	7,653	1,251	946	155	61	9	2	13	6	69.3	77.6	82.1	-0.4	65.0	56.4	56.9	66.1	
Hayward Boulevard/Carlos Bee Boulevard to Campus Drive SFR/MFR		4	12	13810	45	60	0	0	1.8%	0.7%	68.5	10,730	1,754	1,326	217	86	13	3	19	8	69.3	77.6	82.1	-0.5	66.4	57.9	58.4	67.1	
Hayward Boulevard/ East of Campus Drive SFR/MFR		4	12	10745	30	60	0.5	0	1.8%	0.7%	63.1	8,349	1,365	1,032	169	67	10	2	15	6	62.5	73.1	80.3	-0.7	60.0	53.8	56.9	62.1	
Campus Drive/ Hayward Boulevard to 2nd Street SFR		2	0	6400	30	45	0.5	0	1.8%	0.7%	62.2	4,973	813	614	101	40	6	1	9	4	62.5	73.1	80.3	0.6	59.1	52.9	56.0	61.1	
2nd Street/West of Campus Drive SFR		2	0	2720	45	45	0.5	0	1.8%	0.7%	62.5	2,113	345	261	43	17	2	1	4	2	69.3	77.6	82.1	0.6	60.5	51.9	52.4	61.1	
Harder Road/ Mission Boulevard to Jackson Street and Santa Clara Street ?		4	14	25015	45	60	0	0	1.8%	0.7%	71.1	19,437	3,177	2,401	394	156	23	5	34	14	69.3	77.6	82.1	-0.4	69.0	60.5	61.0	70.1	
Foothill Boulevard/Grove Way to A Street ?		6	12	47050	45	70	0	0	1.8%	0.7%	73.4	36,558	5,975	4,517	740	293	43	9	64	27	69.3	77.6	82.1	-0.9	71.4	62.8	63.3	72.1	
Foothill Boulevard/A Street to D Street ?		6	12	51345	45	70	0	0	1.8%	0.7%	73.8	39,895	6,521	4,929	808	320	47	10	70	29	69.3	77.6	82.1	-0.9	71.7	63.2	63.7	72.1	
Foothill Boulevard/D Street to Mission Boulevard and Jackson Street and E Street ?		6	12	40895	45	70	0	0	1.8%	0.7%	72.8	31,775	5,194	3,926	644	255	37	8	55	23	69.3	77.6	82.1	-0.9	70.7	62.2	62.7	71.1	
Mission Boulevard/Foothill Boulevard and Jackson Street and E Street to Highland Boulevard ?		4	16	39175	45	70	0	0	1.8%	0.7%	72.3	30,439	4,975	3,761	617	244	36	8	53	22	69.3	77.6	82.1	-1.2	70.2	61.7	62.2	71.1	
Mission Boulevard/Highland Boulevard to Carlos Bee Boulevard and Orchard Avenue ?		4	16	37905	45	70	0	0	1.8%	0.7%	72.1	29,452	4,814	3,639	597	236	34	8	51	21	69.3	77.6	82.1	-1.2	70.1	61.5	62.0	71.1	
Mission Boulevard/Carlos Bee Boulevard and Orchard Avenue to Harder Road ?		4	16	33580	45	70	0	0	1.8%	0.7%	71.6	26,092	4,265	3,224	528	209	31	7	45	19	69.3	77.6	82.1	-1.2	69.5	61.0	61.5	70.1	
Mission Boulevard/Harder Road to Tennyson Road ?		4	16	38860	45	70	0	0	1.8%	0.7%	72.2	30,194	4,935	3,731	612	242	35	8	53	22	69.3	77.6	82.1	-1.2	70.2	61.6	62.1	71.1	

Notes:
(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site, such as asphalt. An alpha factor of 0.5 indicates that the site is an acoustically "soft" site such, as heavily vegetated ground cover.

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night	Total
Total ADT Volumes	77.70%	12.70%	9.60%	100.00%
Medium-Duty Trucks	87.43%	5.05%	7.52%	100.00%
Heavy-Duty Trucks	89.10%	2.84%	8.06%	100.00%

Notes to Modeler: The 24-hour traffic distribution and vehicle mix percentages are defaults. For project-specific numbers, obtain the 24-hour traffic distribution, vehicle mix percentages, and traffic volumes from the traffic engineer. For state and federal highways, obtain this information from the Caltrans website. Column G under Notes: should total 100%. Some jurisdictions have different distributions by roadway type, so check with that jurisdiction. An example is Riverside County.

Project Name
CNEL at Off-Site Noise-Sensitive Land Uses
Existing Conditions

ROADWAY NAME Segment	Noise-Sensitive Land Use	Total No. of Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha (1) Factor	Barrier Attn. dB(A)	Vehicle Mix		dB(A) CNEL	Traffic Volumes								Ref. Energy Levels			Dist			Ld	Lu	
									Medium Trucks	Heavy Trucks		Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	A	MT	HT	Adj	A			MT
Carlos Bee Boulevard/Mission Blvd to Hayward Blvd.		4	12	4875	35	60	0.5	0	1.8%	0.7%	61.0	3,788	619	468	77	30	4	1	7	3	65.1	74.8	80.0	-0.7	58.5	51.4	52.6	60.1
Carlos Bee Boulevard/Driveway and Hayward Blvd to West Loop Road		4	0	3075	35	100	0.5	0	1.8%	0.7%	55.2	2,389	391	295	48	19	3	1	4	2	65.1	74.8	80.0	-4.5	52.7	45.6	46.8	54.3
West Loop Road/ Carlos Bee Boulevard to Harder Road		2	0	3855	35	70	0	0	1.8%	0.7%	59.2	2,995	490	370	61	24	4	1	5	2	65.1	74.8	80.0	-1.5	56.7	49.6	50.8	58.3
East Loop Road (Driveway)/Carlos Bee Boulevard to Harder Road		2	0	6690	35	70	0	0	1.8%	0.7%	61.5	5,198	850	642	105	42	6	1	9	4	65.1	74.8	80.0	-1.5	59.1	52.0	53.2	60.7
Harder Road/West Loop Road to Mission Boulevard		4	14	12820	45	60	0	0	1.8%	0.7%	68.2	9,961	1,628	1,231	202	80	12	3	17	7	69.3	77.6	82.1	-0.4	66.1	57.6	58.1	67.3
Hayward Boulevard/Carlos Bee Boulevard to Campus Drive		4	12	2110	45	60	0	0	1.8%	0.7%	60.3	1,639	268	203	33	13	2	0	3	1	69.3	77.6	82.1	-0.5	58.2	49.7	50.2	59.4
Hayward Boulevard/ East of Campus Drive		4	12	1210	30	60	0.5	0	1.8%	0.7%	53.6	940	154	116	19	8	1	0	2	1	62.5	73.1	80.3	-0.7	50.5	44.3	47.4	52.9
Campus Drive/ Hayward Boulevard to 2nd Street		2	0	1935	30	45	0.5	0	1.8%	0.7%	57.0	1,503	246	186	30	12	2	0	3	1	62.5	73.1	80.3	0.6	53.9	47.7	50.8	56.3
2nd Street/West of Campus Drive		2	0	1855	45	45	0.5	0	1.8%	0.7%	60.9	1,441	236	178	29	12	2	0	3	1	69.3	77.6	82.1	0.6	58.8	50.3	50.8	59.9

Notes:
(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site, such as asphalt. An alpha factor of 0.5 indicates that the site is an acoustically "so

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night	Total
Total ADT Volumes	77.70%	12.70%	9.60%	100.00%
Medium-Duty Trucks	87.43%	5.05%	7.52%	100.00%
Heavy-Duty Trucks	89.10%	2.84%	8.06%	100.00%

Notes to Modeler: The 24-hour traffic distribution and vehicle mix percentages are defaults. For project-specific numbers, obtain the 24-hour traffic distribution, vehicle mix percentages, and traffic volumes from the traffic engineer. For state and fe

Project Name
CNEL at Off-Site Noise-Sensitive Land Uses
Existing Conditions

ROADWAY NAME Segment	Noise-Sensitive Land Use	Total No. of Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha (1) Factor	Barrier Attn. dB(A)	Vehicle Mix		dB(A) CNEL	Traffic Volumes								Ref. Energy Levels			Dist Ld			Ld Total A		
									Medium Trucks	Heavy Trucks		Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	A	MT	HT	Adj	A		MT	HT
Carlos Bee Boulevard/Mission Blvd to Hayward Blvd.		4	12	5715	35	60	0.5	0	1.8%	0.7%	61.7	4,441	726	549	90	36	5	1	8	3	65.1	74.8	80.0	-0.7	59.2	52.1	53.3	60.8
Carlos Bee Boulevard/Driveway and Hayward Blvd to West Loop Road		4	0	5790	35	100	0.5	0	1.8%	0.7%	57.9	4,499	735	556	91	36	5	1	8	3	65.1	74.8	80.0	-4.5	55.5	48.4	49.6	57.1
West Loop Road/ Carlos Bee Boulevard to Harder Road		2	0	4165	35	70	0	0	1.8%	0.7%	59.5	3,236	529	400	66	26	4	1	6	2	65.1	74.8	80.0	-1.5	57.0	49.9	51.1	58.6
East Loop Road (Driveway)/Carlos Bee Boulevard to Harder Road		2	0	7260	35	70	0	0	1.8%	0.7%	61.9	5,641	922	697	114	45	7	1	10	4	65.1	74.8	80.0	-1.5	59.4	52.3	53.5	61.1
Harder Road/West Loop Road to Mission Boulevard		4	14	9820	45	60	0	0	1.8%	0.7%	67.0	7,630	1,247	943	155	61	9	2	13	6	69.3	77.6	82.1	-0.4	65.0	56.4	56.9	66.1
Hayward Boulevard/Carlos Bee Boulevard to Campus Drive		4	12	4160	45	60	0	0	1.8%	0.7%	63.3	3,232	528	399	65	26	4	1	6	2	69.3	77.6	82.1	-0.5	61.2	52.7	53.2	62.3
Hayward Boulevard/ East of Campus Drive		4	12	1345	30	60	0.5	0	1.8%	0.7%	54.1	1,045	171	129	21	8	1	0	2	1	62.5	73.1	80.3	-0.7	51.0	44.8	47.9	53.4
Campus Drive/ Hayward Boulevard to 2nd Street		2	0	1935	30	45	0.5	0	1.8%	0.7%	57.0	1,503	246	186	30	12	2	0	3	1	62.5	73.1	80.3	0.6	53.9	47.7	50.8	56.3
2nd Street/West of Campus Drive		2	0	1860	45	45	0.5	0	1.8%	0.7%	60.9	1,445	236	179	29	12	2	0	3	1	69.3	77.6	82.1	0.6	58.8	50.3	50.8	60.0

Notes:
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Assumed 24-Hour Traffic Distribution:

	Day	Evening	Night	Total
Total ADT Volumes	77.70%	12.70%	9.60%	100.00%
Medium-Duty Trucks	87.43%	5.05%	7.52%	100.00%
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									Medium Trucks	Heavy Trucks		Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	A		MT	HT	Adj	A	MT	HT
Carlos Bee Boulevard/Mission Blvd to Hayward Blvd.	SFR/MFR	4	12	18990	35	60	0.5	0	1.8%	0.7%	66.9	14,755	2,412	1,823	299	118	17	4	26	11	65.1	74.8	80.0	-0.7	64.4	57.3	58.5	66.0
Carlos Bee Boulevard/Driveway and Hayward Blvd to West Loop Road	sport field	4	0	13890	35	100	0.5	0	1.8%	0.7%	61.7	10,793	1,764	1,333	219	87	13	3	19	8	65.1	74.8	80.0	-4.5	59.3	52.2	53.4	60.9
West Loop Road/ Carlos Bee Boulevard to Harder Road	school uses	2	0	10875	35	70	0	0	1.8%	0.7%	63.7	8,450	1,381	1,044	171	68	10	2	15	6	65.1	74.8	80.0	-1.5	61.2	54.1	55.3	62.8
East Loop Road (Driveway)/Carlos Bee Boulevard to Harder Road	school uses	2	0	11990	35	70	0	0	1.8%	0.7%	64.1	9,316	1,523	1,151	189	75	11	2	16	7	65.1	74.8	80.0	-1.5	61.6	54.5	55.7	63.2
Harder Road/West Loop Road to Mission Boulevard	SFR/MFR	4	14	22670	45	60	0	0	1.8%	0.7%	70.7	17,615	2,879	2,176	357	141	21	5	31	13	69.3	77.6	82.1	-0.4	68.6	60.1	60.6	69.7
Hayward Boulevard/Carlos Bee Boulevard to Campus Drive	SFR/MFR?	4	12	15920	45	60	0	0	1.8%	0.7%	69.1	12,370	2,022	1,528	251	99	14	3	22	9	69.3	77.6	82.1	-0.5	67.0	58.5	59.0	68.2
Hayward Boulevard/ East of Campus Drive	SFR/MFR	4	12	11955	30	60	0.5	0	1.8%	0.7%	63.6	9,289	1,518	1,148	188	75	11	2	16	7	62.5	73.1	80.3	-0.7	60.5	54.3	57.4	62.9
Campus Drive/ Hayward Boulevard to 2nd Street	SFR	2	0	8335	30	45	0.5	0	1.8%	0.7%	63.4	6,476	1,059	800	131	52	8	2	11	5	62.5	73.1	80.3	0.6	60.3	54.1	57.2	62.7
2nd Street/West of Campus Drive	SFR	2	0	4575	45	45	0.5	0	1.8%	0.7%	64.8	3,555	581	439	72	29	4	1	6	3	69.3	77.6	82.1	0.6	62.7	54.2	54.7	63.9

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Medium-Duty Trucks	87.43%	5.05%	7.52%	100.00%
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									Medium Trucks	Heavy Trucks		Day	Even	Night	MTd	HTd	MTe	HTe	MTn	HTn	A	MT	HT	Adj	A	MT	HT		
Carlos Bee Boulevard/Mission Blvd to Hayward Blvd.	SFR/MFR	4	12	19830	35	60	0.5	0	1.8%	0.7%	67.1	15,408	2,518	1,904	312	124	18	4	27	11	65.1	74.8	80.0	-0.7	64.6	57.5	58.7	66.2	
Carlos Bee Boulevard/Driveway and Hayward Blvd to West Loop Road	sport field	4	0	16605	35	100	0.5	0	1.8%	0.7%	62.5	12,902	2,109	1,594	261	104	15	3	22	9	65.1	74.8	80.0	-4.5	60.0	52.9	54.1	61.7	
West Loop Road/ Carlos Bee Boulevard to Harder Road	school uses	2	0	11185	35	70	0	0	1.8%	0.7%	63.8	8,691	1,420	1,074	176	70	10	2	15	6	65.1	74.8	80.0	-1.5	61.3	54.2	55.4	62.9	
East Loop Road (Driveway)/Carlos Bee Boulevard to Harder Road	school uses	2	0	12560	35	70	0	0	1.8%	0.7%	64.3	9,759	1,595	1,206	198	78	11	2	17	7	65.1	74.8	80.0	-1.5	61.8	54.7	55.9	63.4	
Harder Road/West Loop Road to Mission Boulevard	SFR/MFR	4	14	19670	45	60	0	0	1.8%	0.7%	70.0	15,284	2,498	1,888	310	123	18	4	27	11	69.3	77.6	82.1	-0.4	68.0	59.4	59.9	69.1	
Hayward Boulevard/Carlos Bee Boulevard to Campus Drive	SFR/MFR?	4	12	17970	45	60	0	0	1.8%	0.7%	69.6	13,963	2,282	1,725	283	112	16	4	24	10	69.3	77.6	82.1	-0.5	67.6	59.0	59.5	68.7	
Hayward Boulevard/ East of Campus Drive	SFR/MFR	4	12	12090	30	60	0.5	0	1.8%	0.7%	63.6	9,394	1,535	1,161	190	75	11	2	16	7	62.5	73.1	80.3	-0.7	60.5	54.3	57.4	62.9	
Campus Drive/ Hayward Boulevard to 2nd Street	SFR	2	0	8335	30	45	0.5	0	1.8%	0.7%	63.4	6,476	1,059	800	131	52	8	2	11	5	62.5	73.1	80.3	0.6	60.3	54.1	57.2	62.7	
2nd Street/West of Campus Drive	SFR	2	0	4580	45	45	0.5	0	1.8%	0.7%	64.8	3,559	582	440	72	29	4	1	6	3	69.3	77.6	82.1	0.6	62.7	54.2	54.7	63.9	

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									Medium Trucks	Heavy Trucks		Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	A	MT	HT	Adj	A	MT	HT	Total			A
Carlos Bee Boulevard/Mission Blvd to Hayward Blvd.		4	12	21610	35	60	0.5	0	1.8%	0.7%	67.4	16,791	2,744	2,075	340	135	20	4	29	12	65.1	74.8	80.0	-0.7	65.0	57.9	59.1	66.6			
Carlos Bee Boulevard/Hayward Blvd to West Loop Road		4	0	14445	35	100	0.5	0	1.8%	0.7%	61.9	11,224	1,835	1,387	227	90	13	3	20	8	65.1	74.8	80.0	-4.5	59.4	52.3	53.5	61.1			
West Loop Road/ Carlos Bee Boulevard to Harder Road		2	0	7565	35	70	0	0	1.8%	0.7%	62.1	5,878	961	726	119	47	7	2	10	4	65.1	74.8	80.0	-1.5	59.6	52.5	53.7	61.2			
East Loop Road/Carlos Bee Boulevard to Harder Road		2	0	10645	35	70	0	0	1.8%	0.7%	63.6	8,271	1,352	1,022	168	66	10	2	14	6	65.1	74.8	80.0	-1.5	61.1	54.0	55.2	62.7			
Harder Road/West Loop Road to Mission Boulevard		4	14	14900	45	60	0	0	1.8%	0.7%	68.8	11,577	1,892	1,430	234	93	14	3	20	8	69.3	77.6	82.1	-0.4	66.8	58.2	58.7	67.9			
Hayward Boulevard/Carlos Bee Boulevard to Campus Drive		4	12	28445	45	60	0	0	1.8%	0.7%	71.6	22,102	3,613	2,731	448	177	26	6	39	16	69.3	77.6	82.1	-0.5	69.5	61.0	61.5	70.7			
Hayward Boulevard/ East of Campus Drive		4	12	16185	30	60	0.5	0	1.8%	0.7%	64.9	12,576	2,055	1,554	255	101	15	3	22	9	62.5	73.1	80.3	-0.7	61.8	55.6	58.7	64.2			
Campus Drive/ Hayward Boulevard to 2nd Street		2	0	9560	30	45	0.5	0	1.8%	0.7%	64.0	7,428	1,214	918	150	60	9	2	13	5	62.5	73.1	80.3	0.6	60.9	54.7	57.8	63.2			
2nd Street/West of Campus Drive		2	0	6910	45	45	0.5	0	1.8%	0.7%	66.6	5,369	878	663	109	43	6	1	9	4	69.3	77.6	82.1	0.6	64.5	56.0	56.5	65.7			

Notes:				
(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site, such as asphalt. An alpha factor of 0.5 indicates that the site is an acoustically "so				
Assumed 24-Hour Traffic Distribution:				
Total ADT Volumes	77.70%	12.70%	9.60%	100.00%
Medium-Duty Trucks	87.43%	5.05%	7.52%	100.00%
Heavy-Duty Trucks	89.10%	2.84%	8.06%	100.00%

Project Name
CNEL at Off-Site Noise-Sensitive Land Uses
Existing Conditions

ROADWAY NAME Segment	Noise-Sensitive Land Use	Total No. of Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha (1) Factor	Barrier Attn. dB(A)	Vehicle Mix		dB(A) CNEL	Traffic Volumes											Ref. Energy Levels			Dist			Ld	L _a		
									Medium Trucks	Heavy Trucks		Day	Even	Night	MTd	HTd	MTe	HTe	MTn	HTn	HTn	A	MT	HT	Adj	A	MT	HT			Total	A
Carlos Bee Boulevard/Mission Blvd to Hayward Blvd.		4	12	26485	35	60	0.5	0	1.8%	0.7%	68.3	20,579	3,364	2,543	417	165	24	5	36	15	65.1	74.8	80.0	-0.7	65.9	58.8	60.0	67.5				
Carlos Bee Boulevard/Driveway and Hayward Blvd to West Loop Road		4	0	17520	35	100	0.5	0	1.8%	0.7%	62.7	13,613	2,225	1,682	276	109	16	3	24	10	65.1	74.8	80.0	-4.5	60.3	53.2	54.4	61.9				
West Loop Road/ Carlos Bee Boulevard to Harder Road		2	0	11420	35	70	0	0	1.8%	0.7%	63.9	8,873	1,450	1,096	180	71	10	2	15	6	65.1	74.8	80.0	-1.5	61.4	54.3	55.5	63.0				
East Loop Road (Driveway)/Carlos Bee Boulevard to Harder Road		2	0	17335	35	70	0	0	1.8%	0.7%	65.7	13,469	2,202	1,664	273	108	16	3	23	10	65.1	74.8	80.0	-1.5	63.2	56.1	57.3	64.8				
Harder Road/West Loop Road to Mission Boulevard		4	14	27720	45	60	0	0	1.8%	0.7%	71.5	21,538	3,520	2,661	436	173	25	6	38	16	69.3	77.6	82.1	-0.4	69.5	60.9	61.4	70.6				
Hayward Boulevard/Carlos Bee Boulevard to Campus Drive		4	12	30555	45	60	0	0	1.8%	0.7%	71.9	23,741	3,880	2,933	481	191	28	6	41	17	69.3	77.6	82.1	-0.5	69.9	61.3	61.8	71.0				
Hayward Boulevard/ East of Campus Drive		4	12	17395	30	60	0.5	0	1.8%	0.7%	65.2	13,516	2,209	1,670	274	108	16	3	24	10	62.5	73.1	80.3	-0.7	62.1	55.9	59.0	64.5				
Campus Drive/ Hayward Boulevard to 2nd Street		2	0	11495	30	45	0.5	0	1.8%	0.7%	64.8	8,932	1,460	1,104	181	72	10	2	16	6	62.5	73.1	80.3	0.6	61.7	55.5	58.6	64.0				
2nd Street/West of Campus Drive		2	0	8765	45	45	0.5	0	1.8%	0.7%	67.6	6,810	1,113	841	138	55	8	2	12	5	69.3	77.6	82.1	0.6	65.6	57.0	57.5	66.7				

Notes:				
(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site, such as asphalt. An alpha factor of 0.5 indicates that the site is an acoustically "so				
Assumed 24-Hour Traffic Distribution:				
Total ADT Volumes	77.70%	12.70%	9.60%	100.00%
Medium-Duty Trucks	87.43%	5.05%	7.52%	100.00%
Heavy-Duty Trucks	89.10%	2.84%	8.06%	100.00%

Project Name
CNEL at Off-Site Noise-Sensitive Land Uses
Existing Conditions

ROADWAY NAME Segment	Noise-Sensitive Land Use	Total No. of Lanes	Median Width	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor	Alpha (1) Factor	Barrier Attn. dB(A)	Vehicle Mix		dB(A) CNEL	Traffic Volumes								Ref. Energy Levels			Dist			Ld	Ld	
									Medium Trucks	Heavy Trucks		Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn	A	MT	HT	Adj	A			MT
Carlos Bee Boulevard/Mission Blvd to Hayward Blvd.		4	12	27325	35	60	0.5	0	1.8%	0.7%	68.4	21,232	3,470	2,623	430	170	25	5	37	15	65.1	74.8	80.0	-0.7	66.0	58.9	60.1	67.6
Carlos Bee Boulevard/Driveway and Hayward Blvd to West Loop Road		4	0	20235	35	100	0.5	0	1.8%	0.7%	63.4	15,723	2,570	1,943	318	126	18	4	27	11	65.1	74.8	80.0	-4.5	60.9	53.8	55.0	62.5
West Loop Road/ Carlos Bee Boulevard to Harder Road		2	0	11790	35	70	0	0	1.8%	0.7%	64.0	9,114	1,490	1,126	185	73	11	2	16	7	65.1	74.8	80.0	-1.5	61.5	54.4	55.6	63.1
East Loop Road (Driveway)/Carlos Bee Boulevard to Harder Road		2	0	17905	35	70	0	0	1.8%	0.7%	65.8	13,912	2,274	1,719	282	112	16	4	24	10	65.1	74.8	80.0	-1.5	63.4	56.3	57.5	65.0
Harder Road/West Loop Road to Mission Boulevard		4	14	24720	45	60	0	0	1.8%	0.7%	71.0	19,207	3,139	2,373	389	154	22	5	33	14	69.3	77.6	82.1	-0.4	69.0	60.4	60.9	70.1
Hayward Boulevard/Carlos Bee Boulevard to Campus Drive		4	12	32605	45	60	0	0	1.8%	0.7%	72.2	25,334	4,141	3,130	513	203	30	6	44	18	69.3	77.6	82.1	-0.5	70.1	61.6	62.1	71.3
Hayward Boulevard/ East of Campus Drive		4	12	17590	30	60	0.5	0	1.8%	0.7%	65.2	13,621	2,226	1,683	276	109	16	3	24	10	62.5	73.1	80.3	-0.7	62.1	55.9	59.0	64.5
Campus Drive/ Hayward Boulevard to 2nd Street		2	0	11495	30	45	0.5	0	1.8%	0.7%	64.8	8,932	1,460	1,104	181	72	10	2	16	6	62.5	73.1	80.3	0.6	61.7	55.5	58.6	64.0
2nd Street/West of Campus Drive		2	0	8770	45	45	0.5	0	1.8%	0.7%	67.6	6,814	1,114	842	138	55	8	2	12	5	69.3	77.6	82.1	0.6	65.6	57.0	57.5	66.7

Notes:
(1) Alpha Factor: Coefficient of absorption relating to the effects of the ground surface. An alpha factor of 0 indicates that the site is an acoustically "hard" site, such as asphalt. An alpha factor of 0.5 indicates that the site is an acoustically "so

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night	Total
Total ADT Volumes	77.70%	12.70%	9.60%	100.00%
Medium-Duty Trucks	87.43%	5.05%	7.52%	100.00%

Road Segment	Existing	Increase of future plus project over existing										Increase over Future no Build			
		Project with Hayward Boulevard Connection	Project without Hayward Boulevard Connection	Existing plus Project with Hayward	Existing Plus Project without Hayward	Future without Project	Future plus Project with Hayward	Future plus Project without Hayward	Project increase over existing conditions (with Hayward Connection)	Project increase over existing conditions (wo Hayward Connection)	Project without Hayward	Project with Hayward	Future plus Project with Hayward	Future plus Project without Hayward	
Carlos Bee Boulevard/Mission Blvd to Hayward Blvd.	65.6	61.0	61.7	66.9	67.1	67.4	68.3	68.4	2.7	2.9	1.5	0.9	1.0	1.3	1.5
Carlos Bee Boulevard/Driveway and Hayward Blvd to West Loop Road	60.6	55.2	57.9	61.7	62.5	61.9	62.7	63.4	2.1	2.7	1.9	0.8	1.5	1.1	1.9
Carlos Bee Boulevard to Harder Road	61.8	59.2	59.5	63.7	63.8	62.1	63.9	64.0	2.1	2.2	2.0	1.8	1.9	1.9	2.0
East Loop Road (Driveway)/Carlos Bee Boulevard to Harder Road	60.5	61.5	61.9	64.1	64.3	63.6	65.7	65.8	5.1	5.3	3.7	2.1	2.3	3.5	3.7
Harder Road/West Loop Road to Mission Boulevard	67.0	68.2	67.0	70.7	70.0	68.8	71.5	71.0	4.5	4.0	3.0	2.7	2.2	3.6	3.0
Hayward Boulevard/Carlos Bee Boulevard to Campus Drive	68.5	60.3	63.3	69.1	69.6	71.6	71.9	72.2	3.4	3.7	1.1	0.3	0.6	0.6	1.1
Hayward Boulevard/ East of Campus Drive	63.1	53.6	54.1	63.6	63.6	64.9	65.2	65.2	2.1	2.1	0.5	0.3	0.3	0.5	0.5
Hayward Boulevard to 2nd Street	62.2	57.0	57.0	63.4	63.4	64.0	64.8	64.8	2.5	2.5	1.1	0.8	0.8	1.1	1.1
2nd Street/West of Campus Drive	62.5	60.9	60.9	64.8	64.8	66.6	67.6	67.6	5.1	5.1	2.3	1.0	1.0	2.3	2.3

Project Name
Ldn/CNEL Conversion of Monitored Leq's
Existing Conditions

Monitoring Location:
Primary Noise Source:

Secondary Noise Source(s):

Monitoring Period	Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments		
			10 dB	5 dB	
Midnight 0 / 24	51	125893	1258925	398107	Leq Morning Peak Hour 7:00-10:00 a.m.
am 1:00	100	52.7	186209	1862087	588844 <input type="text" value="66"/> dBA
2:00	200	47.7	58884	588844	186209
3:00	300	47.7	58884	588844	186209
4:00	400	52.2	165959	1659587	524807 Leq Evening Peak Hour 4:00-8:00 p.m.
5:00	500	58.3	676083	6760830	2137962
6:00	600	61.2	1318257	13182567	4168694 Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
7:00	700	64.8	3019952	30199517	9549926 <input type="text" value="56"/> dBA
8:00	800	66.8	4786301	47863009	15135612
9:00	900	64.9	3090295	30902954	9772372 Leq Daytime 7:00 am-10:00 p.m.
10:00:	1000	62.4	1737801	17378008	5495409 <input type="text" value="64"/> dBA
11:00:	1100	63.3	2137962	21379621	6760830
12:00:	1200	64.3	2691535	26915348	8511380 Leq 24-Hour
pm 1:00	1300	65.1	3235937	32359366	10232930 <input type="text" value="62"/> dBA
2:00	1400	64	2511886	25118864	7943282
3:00	1500	63.5	2238721	22387211	7079458 Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
4:00	1600	64	2511886	25118864	7943282 <input type="text" value="65"/> dBA
5:00	1700	64.9	3090295	30902954	9772372
6:00	1800	63.7	2344229	23442288	7413102 CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
7:00	1900	63.3	2137962	21379621	6760830 <input type="text" value="65"/> dBA
8:00	2000	60.9	1230269	12302688	3890451
9:00	2100	59.4	870964	8709636	2754229
10:00:	2200	57.5	562341	5623413	1778279 Difference between CNEL and Ldn
pm 11:00:	2300	54.3	269153	2691535	851138 <input type="text" value="CNEL - Ldn 0.52143919"/>

Note to modelers: Only input data under "Monitored Leq" (Column D).

Project Name
Ldn/CNEL Conversion of Monitored Leq's
Existing Conditions

Monitoring Location:
Primary Noise Source:

Secondary Noise Source(s):

Monitoring Period	Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments		
			10 dB	5 dB	
Midnight 0 / 24	69.2	8317638	83176377	26302680	Leq Morning Peak Hour 7:00-10:00 a.m.
am 1:00 100	65.7	3715352	37153523	11748976	<input type="text" value="80"/> dBA
2:00 200	66	3981072	39810717	12589254	
3:00 300	64.4	2754229	27542287	8709636	Leq Evening Peak Hour 4:00-8:00 p.m.
4:00 400	67.2	5248075	52480746	16595869	<input type="text" value="81"/> dBA
5:00 500	70.7	11748976	117489755	37153523	
6:00 600	74.3	26915348	269153480	85113804	Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
7:00 700	78.8	75857758	758577575	239883292	<input type="text" value=""/> dBA
8:00 800	79.2	83176377	831763771	263026799	
9:00 900	80.8	120226443	1202264435	380189396	Leq Daytime 7:00 am-10:00 p.m.
10:00: 1000	78.6	72443596	724435960	229086765	<input type="text" value="80"/> dBA
11:00: 1100	80.2	104712855	1047128548	331131121	
12:00: 1200	79.7	93325430	933254301	295120923	Leq 24-Hour
pm 1:00 1300	80.4	109647820	1096478196	346736850	<input type="text" value="78"/> dBA
2:00 1400	80.1	102329299	1023292992	323593657	
3:00 1500	80.5	112201845	1122018454	354813389	Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
4:00 1600	80.4	109647820	1096478196	346736850	<input type="text" value="81"/> dBA
5:00 1700	82	158489319	1584893192	501187234	
6:00 1800	80.9	123026877	1230268771	389045145	CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
7:00 1900	80.2	104712855	1047128548	331131121	<input type="text" value="81"/> dBA
8:00 2000	79.2	83176377	831763771	263026799	
9:00 2100	78.7	74131024	741310241	234422882	
10:00: 2200	76.4	43651583	436515832	138038426	
pm 11:00: 2300	72.8	19054607	190546072	60255959	Difference between CNEL and Ldn <input type="text" value="CNEL - Ldn 0.805281262"/>

Note to modelers: Only input data under "Monitored Leq" (Column D).

Project Name
Ldn/CNEL Conversion of Monitored Leq's
Existing Conditions

Monitoring Location:

Primary Noise Source:

Secondary Noise Source(s):

Monitoring Period	Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments		
			10 dB	5 dB	
Midnight 0 / 24	43.6	22909	229087	72444	Leq Morning Peak Hour 7:00-10:00 a.m.
am 1:00 100	42.4	17378	173780	54954	<input type="text" value="47"/> dBA
2:00 200	46.7	46774	467735	147911	
3:00 300	58	630957	6309573	1995262	Leq Evening Peak Hour 4:00-8:00 p.m.
4:00 400	47.4	54954	549541	173780	<input type="text" value="51"/> dBA
5:00 500	47.3	53703	537032	169824	
6:00 600	50.6	114815	1148154	363078	Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
7:00 700	47.6	57544	575440	181970	<input type="text" value="51"/> dBA
8:00 800	48	63096	630957	199526	
9:00 900	46.4	43652	436516	138038	Leq Daytime 7:00 am-10:00 p.m.
10:00: 1000	44.8	30200	301995	95499	<input type="text" value="48"/> dBA
11:00: 1100	48.3	67608	676083	213796	
12:00: 1200	45.2	33113	331131	104713	Leq 24-Hour
pm 1:00 1300	47.6	57544	575440	181970	<input type="text" value="49"/> dBA
2:00 1400	43.7	23442	234423	74131	
3:00 1500	50.4	109648	1096478	346737	Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
4:00 1600	54.4	275423	2754229	870964	<input type="text" value="57"/> dBA
5:00 1700	52.3	169824	1698244	537032	
6:00 1800	45.2	33113	331131	104713	CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
7:00 1900	45.8	38019	380189	120226	<input type="text" value="57"/> dBA
8:00 2000	44.7	29512	295121	93325	
9:00 2100	42	15849	158489	50119	
10:00: 2200	47	50119	501187	158489	Difference between CNEL and Ldn
pm 11:00: 2300	42.9	19498	194984	61660	<input type="text" value="CNEL - Ldn 0.069608194"/>

Note to modelers: Only input data under "Monitored Leq" (Column D).

Project Name
Ldn/CNEL Conversion of Monitored Leq's
Existing Conditions

Monitoring Location:
Primary Noise Source:

Secondary Noise Source(s):

Monitoring Period	Monitored Leq	Logarithmic Equivalent	Evening/Night Adjustments		
			10 dB	5 dB	
Midnight 0 / 24	57.3	537032	5370318	1698244	Leq Morning Peak Hour 7:00-10:00 a.m.
am 1:00	100	54.7	295121	2951209	63 dBA
2:00	200	52.9	194984	1949845	
3:00	300	51.4	138038	1380384	Leq Evening Peak Hour 4:00-8:00 p.m.
4:00	400	51.9	154882	1548817	62 dBA
5:00	500	58.4	691831	6918310	
6:00	600	63.1	2041738	20417379	Leq Nighttime 10:00 pm-7:00 a.m. (not adjusted)
7:00	700	62.5	1778279	17782794	58 dBA
8:00	800	63.4	2187762	21877616	
9:00	900	63.5	2238721	22387211	Leq Daytime 7:00 am-10:00 p.m.
10:00:	1000	62.8	1905461	19054607	62 dBA
11:00:	1100	62.5	1778279	17782794	
12:00:	1200	61.6	1445440	14454398	Leq 24-Hour
pm 1:00	1300	61.6	1445440	14454398	61 dBA
2:00	1400	61.3	1348963	13489629	
3:00	1500	61	1258925	12589254	Ldn: 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
4:00	1600	61.1	1288250	12882496	65 dBA
5:00	1700	62.4	1737801	17378008	
6:00	1800	62.4	1737801	17378008	CNEL: 5 dB adjustment between 7:00p.m. & 10:00 p.m., & 10 dB adjustment between 10:00 p.m. & 7:00 a.m.
7:00	1900	62.1	1621810	16218101	66 dBA
8:00	2000	61.8	1513561	15135612	
9:00	2100	61.2	1318257	13182567	
10:00:	2200	59.4	870964	8709636	Difference between CNEL and Ldn
pm 11:00:	2300	57.4	549541	5495409	CNEL - Ldn 0.497477116

Note to modelers: Only input data under "Monitored Leq" (Column D).