



Appendix D

Noise Worksheets

Cal Fair Oaks Office Building Project

Draft EIR

Noise Worksheets

Provided by PCR Services Corporation

February 2009

- C-1 Construction Noise Calculations
- C-2 Off-Site Traffic Noise Calculations

Appendix C-1

- Construction Noise Calculations

Project: CAL FAIR OAKS OFFICE BUILDING

**Construction Phase: Phase 1
Demolition**

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Rubber Tired Loader	1	79	40%	450	5
Backhoe	1	78	40%	450	5
BobCat	1	78	40%	450	5
Dump/Haul Trucks	1	76	40%	450	5

Receptor: R2

Results: Leq: 56

Source for Ref. Noise Levels: FHWA RCNM, 2005

Project: CAL FAIR OAKS OFFICE BUILDING
**Construction Phase: Phase 2
Site Grading**
Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
BobCat	1	78	40%	450	5
Excavator	1	81	40%	450	5
Backhoe	1	79	40%	450	5
Grader	1	85	40%	450	5
Dump/Haul Trucks	1	76	40%	450	5

Receptor: R2
Results: Leq: 60

Source for Ref. Noise Levels: FHWA RCNM, 2005

Project: CAL FAIR OAKS OFFICE BUILDING
Construction Phase: Phase 3
Building Construction
Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Bore/Drill Rig	1	84	20%	450	5
Crane	1	81	16%	450	5
Forklifts	1	75	50%	450	5
Backhoe	1	79	40%	450	5
Rollers	1	80	20%	450	5

Receptor: R2
Results:
Leq: 57

Source for Ref. Noise Levels: FHWA RCNM, 2005

Project: CAL FAIR OAKS OFFICE BUILDING
**Construction Phase: Phase 1
Demolition**
Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Rubber Tired Loader	1	79	40%	500	10
Backhoe	1	78	40%	500	10
BobCat	1	78	40%	500	10
Dump/Haul Trucks	1	76	40%	500	10

Receptor: R3
Results: Leq: 50

Source for Ref. Noise Levels: FHWA RCNM, 2005

Project: CAL FAIR OAKS OFFICE BUILDING
**Construction Phase: Phase 2
Site Grading**
Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
BobCat	1	78	40%	500	10
Excavator	1	81	40%	500	10
Backhoe	1	79	40%	500	10
Grader	1	85	40%	500	10
Dump/Haul Trucks	1	76	40%	500	10

Receptor: R3
Results: Leq: 54

Source for Ref. Noise Levels: FHWA RCNM, 2005

Project: CAL FAIR OAKS OFFICE BUILDING

Construction Phase: Phase 3
Building Construction

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Bore/Drill Rig	1	84	20%	500	10
Crane	1	81	16%	500	10
Forklifts	1	75	50%	500	10
Backhoe	1	79	40%	500	10
Rollers	1	80	20%	500	10

Receptor: R3

Results:
Leq: 51

Source for Ref. Noise Levels: FHWA RCNM, 2005

Project: CAL FAIR OAKS OFFICE BUILDING
**Construction Phase: Phase 1
Demolition**
Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Rubber Tired Loader	1	79	40%	900	10
Backhoe	1	78	40%	900	10
BobCat	1	78	40%	900	10
Dump/Haul Trucks	1	76	40%	900	10

Receptor: R4
Results: Leq: 45

Source for Ref. Noise Levels: FHWA RCNM, 2005

Project: CAL FAIR OAKS OFFICE BUILDING

**Construction Phase: Phase 2
Site Grading**

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
BobCat	1	78	40%	900	10
Excavator	1	81	40%	900	10
Backhoe	1	79	40%	900	10
Grader	1	85	40%	900	10
Dump/Haul Trucks	1	76	40%	900	10

Receptor: R4

Results: Leq: 49

Source for Ref. Noise Levels: FHWA RCNM, 2005

Project: CAL FAIR OAKS OFFICE BUILDING

Construction Phase: Phase 3
Building Construction

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Bore/Drill Rig	1	84	20%	900	10
Crane	1	81	16%	900	10
Forklifts	1	75	50%	900	10
Backhoe	1	79	40%	900	10
Rollers	1	80	20%	900	10

Receptor: R4

Results:
Leq: 46

Source for Ref. Noise Levels: FHWA RCNM, 2005

Appendix C-2

- Off-Site Traffic Noise Calculations

Roadway Traffic Noise Calculations



Project: CAL-FAIR OAKS OFFICE BUILDING

Existing										
Roadway/Segment	Speed MPH	Traffic Volumes			Leq			CNEL		
		AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
California Blvd. w/o St. John Ave.	25	824	1014	12675	65.9	62.9	61.2	65.8	62.8	61.1
California Blvd. between St. John Ave. and Pasadena Ave.	30	1483	1511	18881	69.2	66.2	64.5	69.1	66.2	64.4
California Blvd. between Pasadena Ave. and Fair Oaks Ave.	30	1736	1925	24056	68.7	66.4	64.9	68.6	66.3	64.9
California Blvd. between Fair Oaks Ave. and Raymond Ave.	30	1428	1653	20656	70.1	66.9	65.0	70.0	66.8	64.9
California Blvd. between Raymond Ave. and Arroyo Pkwy.	30	1493	1682	21025	70.2	66.9	65.1	70.1	66.9	65.0
Future No Project										
Roadway/Segment	Speed MPH	Traffic Volumes			Leq			CNEL		
		AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
California Blvd. w/o St. John Ave.	25	848	1044	13050	66.0	63.1	61.3	65.9	63.0	61.2
California Blvd. between St. John Ave. and Pasadena Ave.	30	1527	1556	19444	69.4	66.4	64.6	69.3	66.3	64.5
California Blvd. between Pasadena Ave. and Fair Oaks Ave.	30	1789	1983	24781	68.8	66.6	65.1	68.7	66.5	65.0
California Blvd. between Fair Oaks Ave. and Raymond Ave.	30	1470	1702	21275	70.2	67.0	65.2	70.1	66.9	65.1
California Blvd. between Raymond Ave. and Arroyo Pkwy.	30	1538	1732	21644	70.3	67.1	65.2	70.2	67.0	65.1
Future With Project										
Roadway/Segment	Speed MPH	Traffic Volumes			Leq			CNEL		
		AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
California Blvd. w/o St. John Ave.	25	848	1044	13050	66.0	63.1	61.3	65.9	63.0	61.2
California Blvd. between St. John Ave. and Pasadena Ave.	30	1540	1556	19444	69.4	66.4	64.6	69.3	66.3	64.5
California Blvd. between Pasadena Ave. and Fair Oaks Ave.	30	1802	1991	24881	68.8	66.6	65.1	68.8	66.5	65.0
California Blvd. between Fair Oaks Ave. and Raymond Ave.	30	1485	1724	21550	70.3	67.1	65.2	70.2	67.0	65.1
California Blvd. between Raymond Ave. and Arroyo Pkwy.	30	1565	1748	21850	70.3	67.1	65.3	70.3	67.0	65.2

CNEL

Summary	25 ft. from ROW		At ROW	
	Project Increment	Cumulative Increment	Project Increment	Cumulative Increment
Roadway/Segment				
California Blvd. w/o St. John Ave.	0.0	0.2	0.0	0.1
California Blvd. between St. John Ave. and Pasadena Ave.	0.0	0.1	0.0	0.2
California Blvd. between Pasadena Ave. and Fair Oaks Ave.	0.0	0.2	0.1	0.2
California Blvd. between Fair Oaks Ave. and Raymond Ave.	0.1	0.2	0.1	0.2
California Blvd. between Raymond Ave. and Arroyo Pkwy.	0.0	0.1	0.1	0.2

Vehicle Type	% of ADT			Sub total
	Day	Eve	Night	
Auto	82.5%	9.7%	4.9%	97.0%
Medium Truck	1.7%	0.2%	0.1%	2.0%
Heavy Truck	0.9%	0.1%	0.1%	1.0%
	85.0%	10.0%	5.0%	100.0%

Roadway Traffic Noise Calculations
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Project: CAL-FAIR OAKS OFFICE BUILDING

Existing										
Roadway/Segment	Speed MPH	Traffic Volumes			Leq			CNEL		
		AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Fair Oaks Ave. n/o Bel Mar Blvd.	35	1584	1844	23050	70.0	67.5	66.0	69.9	67.4	65.9
Fair Oaks Ave. between Del Mar Ave. and California Blvd.	30	1729	2079	25988	69.4	67.0	65.4	69.4	66.9	65.4
Fair Oaks Ave. between California Blvd. and Congress St.	35	2244	2517	31456	73.0	69.8	67.9	72.9	69.7	67.8
Fair Oaks Ave. between Congress St. and Glenarm St.	35	2321	2095	29013	71.0	68.5	67.0	70.9	68.4	66.9
Fair Oaks Ave. s/o Glenarm St.	35	2509	1980	31363	71.3	68.9	67.3	71.2	68.8	67.2
Future No Project										
Roadway/Segment	Speed MPH	Traffic Volumes			Leq			CNEL		
		AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Fair Oaks Ave. n/o Bel Mar Blvd.	35	1771	2023	25288	70.4	67.9	66.4	70.3	67.9	66.3
Fair Oaks Ave. between Del Mar Ave. and California Blvd.	30	1889	2251	28131	69.8	67.3	65.8	69.7	67.3	65.7
Fair Oaks Ave. between California Blvd. and Congress St.	35	2420	2701	33763	73.3	70.1	68.2	73.2	70.0	68.1
Fair Oaks Ave. between Congress St. and Glenarm St.	35	2500	2781	34756	71.8	69.3	67.8	71.7	69.2	67.7
Fair Oaks Ave. s/o Glenarm St.	35	2860	3081	38513	72.2	69.8	68.2	72.1	69.7	68.1
Future With Project										
Roadway/Segment	Speed MPH	Traffic Volumes			Leq			CNEL		
		AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Fair Oaks Ave. n/o Bel Mar Blvd.	35	1778	2027	25338	70.4	67.9	66.4	70.3	67.9	66.3
Fair Oaks Ave. between Del Mar Ave. and California Blvd.	30	1901	2258	28219	69.8	67.4	65.8	69.7	67.3	65.7
Fair Oaks Ave. between California Blvd. and Congress St.	35	2435	2708	33844	73.3	70.1	68.2	73.2	70.0	68.1
Fair Oaks Ave. between Congress St. and Glenarm St.	35	2527	2781	34763	71.8	69.3	67.8	71.7	69.2	67.7
Fair Oaks Ave. s/o Glenarm St.	35	2863	3083	38538	72.2	69.8	68.2	72.1	69.7	68.1

Summary	CNEL			
	25 ft. from ROW		At ROW	
	Project Increment	Cumulative Increment	Project Increment	Cumulative Increment
Roadway/Segment				
Fair Oaks Ave. n/o Bel Mar Blvd.	0.0	0.5	0.0	0.4
Fair Oaks Ave. between Del Mar Ave. and California Blvd.	0.0	0.4	0.0	0.3
Fair Oaks Ave. between California Blvd. and Congress St.	0.0	0.3	0.0	0.3
Fair Oaks Ave. between Congress St. and Glenarm St.	0.0	0.8	0.0	0.8
Fair Oaks Ave. s/o Glenarm St.	0.0	0.9	0.0	0.9

Vehicle Type	% of ADT			Sub total
	Day	Eve	Night	
Auto	82.5%	9.7%	4.9%	97.0%
Medium Truck	1.7%	0.2%	0.1%	2.0%
Heavy Truck	0.9%	0.1%	0.1%	1.0%
	85.0%	10.0%	5.0%	100.0%

Roadway Traffic Noise Calculations
3 of 4



Project: CAL-FAIR OAKS OFFICE BUILDING

Existing										
Roadway/Segment	Speed MPH	Traffic Volumes			Leq			CNEL		
		AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
California Blvd. e/o Arroyo Pkwy.	30	1696	1789	22363	70.4	67.2	65.4	70.4	67.1	65.3
Raymond Ave. n/o California Blvd.	30	485	848	10600	65.5	63.1	61.6	65.5	63.0	61.5
Raymond Ave. between California Blvd. and Pico St.	30	593	936	11700	66.0	63.5	62.0	65.9	63.4	61.9
Raymond Ave. s/o Pico St.	30	752	982	12275	66.2	63.7	62.2	66.1	63.7	62.1
Glenarm St. e/o Fair Oaks Ave.	25	688	1079	13488	65.5	62.9	61.2	65.4	62.8	61.1
Future No Project										
Roadway/Segment	Speed MPH	Traffic Volumes			Leq			CNEL		
		AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
California Blvd. e/o Arroyo Pkwy.	30	1747	1843	23038	68.9	66.5	64.9	68.8	66.4	64.8
Raymond Ave. n/o California Blvd.	30	499	874	10925	65.7	63.2	61.7	65.6	63.1	61.6
Raymond Ave. between California Blvd. and Pico St.	30	610	964	12050	67.8	64.5	62.7	67.7	64.4	62.6
Raymond Ave. s/o Pico St.	30	775	1011	12638	66.3	63.9	62.3	66.2	63.8	62.2
Glenarm St. e/o Fair Oaks Ave.	25	1039	1204	15050	66.0	63.3	61.7	65.9	63.2	61.6
Future With Project										
Roadway/Segment	Speed MPH	Traffic Volumes			Leq			CNEL		
		AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
California Blvd. e/o Arroyo Pkwy.	30	1758	1850	23125	68.9	66.5	64.9	68.8	66.4	64.9
Raymond Ave. n/o California Blvd.	30	516	883	11038	65.7	63.3	61.7	65.6	63.2	61.6
Raymond Ave. between California Blvd. and Pico St.	30	652	980	12250	67.8	64.6	62.8	67.7	64.5	62.7
Raymond Ave. s/o Pico St.	30	793	1037	12963	66.4	64.0	62.4	66.3	63.9	62.3
Glenarm St. e/o Fair Oaks Ave.	25	1055	1212	15150	66.0	63.4	61.7	65.9	63.3	61.6

Summary	CNEL			
	25 ft. from ROW		At ROW	
	Project Increment	Cumulative Increment	Project Increment	Cumulative Increment
Roadway/Segment				
California Blvd. e/o Arroyo Pkwy.	0.0	-0.7	0.0	-1.6
Raymond Ave. n/o California Blvd.	0.1	0.2	0.0	0.1
Raymond Ave. between California Blvd. and Pico St.	0.1	1.1	0.0	1.8
Raymond Ave. s/o Pico St.	0.1	0.2	0.1	0.2
Glenarm St. e/o Fair Oaks Ave.	0.1	0.5	0.0	0.5

Vehicle Type	% of ADT			Sub total
	Day	Even	Night	
Auto	82.5%	9.7%	4.9%	97.0%
Medium Truck	1.7%	0.2%	0.1%	2.0%
Heavy Truck	0.9%	0.1%	0.1%	1.0%
	85.0%	10.0%	5.0%	100.0%

Roadway Traffic Noise Calculations
4 of 4



Project: CAL-FAIR OAKS OFFICE BUILDING

Existing										
Roadway/Segment	Speed MPH	Traffic Volumes			Leq			CNEL		
		AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Del Mar Blvd. w/o Fair Oaks Ave.	35	1563	2036	25450	70.4	68.0	66.4	70.3	67.9	66.3
Del Mar Blvd. e/o Fair Oaks Ave.	35	1610	2094	26175	72.2	69.0	67.1	72.1	68.9	67.0
Arroyo Pkwy. n/o California Blvd.	35	2005	2443	30538	70.5	68.3	66.9	70.4	68.2	66.8
Arroyo Pkwy. s/o California Blvd.	35	2637	2966	37075	71.3	69.2	67.7	71.2	69.1	67.6
Glenarm St. w/o Fair Oaks Ave.	25	483	507	6338	64.9	60.8	58.7	64.8	60.7	58.7
Future No Project										
Roadway/Segment	Speed MPH	Traffic Volumes			Leq			CNEL		
		AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Del Mar Blvd. w/o Fair Oaks Ave.	35	1632	2110	26375	70.6	68.1	66.6	70.5	68.0	66.5
Del Mar Blvd. e/o Fair Oaks Ave.	35	1711	2184	27300	72.4	69.1	67.3	72.3	69.0	67.2
Arroyo Pkwy. n/o California Blvd.	35	2090	2531	31638	70.6	68.5	67.0	70.5	68.4	67.0
Arroyo Pkwy. s/o California Blvd.	35	2741	3071	38388	71.4	69.3	67.9	71.4	69.2	67.8
Glenarm St. w/o Fair Oaks Ave.	25	661	712	8900	66.4	62.3	60.2	66.3	62.2	60.1
Future With Project										
Roadway/Segment	Speed MPH	Traffic Volumes			Leq			CNEL		
		AM	PM	ADT	ROW	25 Feet	50 Feet	ROW	25 Feet	50 Feet
Del Mar Blvd. w/o Fair Oaks Ave.	35	1640	2116	26450	70.6	68.1	66.6	70.5	68.0	66.5
Del Mar Blvd. e/o Fair Oaks Ave.	35	1715	2187	27338	72.4	69.1	67.3	72.3	69.1	67.2
Arroyo Pkwy. n/o California Blvd.	35	2107	2541	31763	70.6	68.5	67.1	70.5	68.4	67.0
Arroyo Pkwy. s/o California Blvd.	35	2741	3071	38388	71.4	69.3	67.9	71.4	69.2	67.8
Glenarm St. w/o Fair Oaks Ave.	25	672	718	8975	66.4	62.3	60.3	66.3	62.2	60.2

Summary	CNEL			
	25 ft. from ROW		At ROW	
	Project Increment	Cumulative Increment	Project Increment	Cumulative Increment
Roadway/Segment				
Del Mar Blvd. w/o Fair Oaks Ave.	0.0	0.1	0.0	0.2
Del Mar Blvd. e/o Fair Oaks Ave.	0.1	0.2	0.0	0.2
Arroyo Pkwy. n/o California Blvd.	0.0	0.2	0.0	0.1
Arroyo Pkwy. s/o California Blvd.	0.0	0.1	0.0	0.2
Glenarm St. w/o Fair Oaks Ave.	0.0	1.5	0.0	1.5

Vehicle Type	% of ADT			Sub total
	Day	Eve	Night	
Auto	82.5%	9.7%	4.9%	97.0%
Medium Truck	1.7%	0.2%	0.1%	2.0%
Heavy Truck	0.9%	0.1%	0.1%	1.0%
	85.0%	10.0%	5.0%	100.0%