

Appendix F

Noise and Traffic Background Data

APPENDIX F

Noise

**TABLE F-1
TYPICAL MAXIMUM CONSTRUCTION NOISE LEVELS AT VARIOUS DISTANCES**

Project and Receptor Location	Maximum Noise Source	Reference Hourly Leq in dBA at 50 feet ¹	Distance Between Closest Project & Receptor	Distance Adjustment	Adjusted Leq	Exterior Speech Interference Criterion	Unmitigated Leq Exceeds Criterion?	Exterior Sleep Interference Criterion	Unmitigated Leq Exceeds Criterion?	Reduction Due to Controls ²	Mitigated Leq With Controls	Exterior Speech Interference Criterion	Mitigated Leq Exceeds Criterion?	Exterior Sleep Interference Criterion	Unmitigated Leq Exceeds Criterion?
Typical Construction Noise Levels at Various Distances															
Minimum Setback Distance of 75 feet	Earthmoving Equipment	85	75	-4	81	70	Yes	60 or 50	Yes/Yes	-10	71	70	Yes	60 or 50	Yes/Yes
	Trucks (Lmax)	91	75	-4	87	70	Yes	60 or 50	Yes/Yes	-16	71	70	Yes	60 or 50	Yes/Yes
	Materials Handling	85	75	-4	81	70	Yes	60 or 50	Yes/Yes	-10	71	70	Yes	60 or 50	Yes/Yes
	Drilling/Stationary Equipment	80	75	-4	76	70	Yes	60 or 50	Yes/Yes	-6	70	70	Yes	60 or 50	Yes/Yes
	Impact	87	75	-4	83	70	Yes	60 or 50	Yes/Yes	-6	77	70	Yes	60 or 50	Yes/Yes
	Earthmoving Equipment	85	100	-6	79	70	Yes	60 or 50	Yes/Yes	-10	69	70	No	60 or 50	Yes/Yes
	Trucks (Lmax)	91	100	-6	85	70	Yes	60 or 50	Yes/Yes	-16	69	70	No	60 or 50	Yes/Yes
Minimum Setback Distance of 100 feet	Materials Handling	85	100	-6	79	70	Yes	60 or 50	Yes/Yes	-10	69	70	No	60 or 50	Yes/Yes
	Drilling/Stationary Equipment	80	100	-6	74	70	Yes	60 or 50	Yes/Yes	-6	68	70	No	60 or 50	Yes/Yes
	Impact	87	100	-6	81	70	Yes	60 or 50	Yes/Yes	-6	75	70	Yes	60 or 50	Yes/Yes
	Earthmoving Equipment	85	275	-15	70	70	No	60 or 50	Yes/Yes	-10	60	70	No	60 or 50	No/Yes
	Trucks (Lmax)	91	275	-15	76	70	Yes	60 or 50	Yes/Yes	-16	60	70	No	60 or 50	No/Yes
	Materials Handling	85	275	-15	70	70	No	60 or 50	Yes/Yes	-10	60	70	No	60 or 50	No/Yes
	Drilling/Stationary Equipment	80	275	-15	65	70	No	60 or 50	Yes/Yes	-6	59	70	No	60 or 50	No/Yes
Minimum Setback Distance of 275 feet	Impact	87	275	-15	72	70	No	60 or 50	Yes/Yes	-6	66	70	No	60 or 50	Yes/Yes
	Earthmoving Equipment	85	300	-16	69	70	No	60 or 50	Yes/Yes	-10	59	70	No	60 or 50	No/Yes
	Trucks (Lmax)	91	300	-16	75	70	Yes	60 or 50	Yes/Yes	-16	59	70	No	60 or 50	No/Yes
	Materials Handling	85	300	-16	69	70	No	60 or 50	Yes/Yes	-10	59	70	No	60 or 50	No/Yes
	Drilling/Stationary Equipment	80	300	-16	64	70	No	60 or 50	Yes/Yes	-6	58	70	No	60 or 50	No/Yes
	Impact	87	300	-16	71	70	Yes	60 or 50	Yes/Yes	-6	65	70	No	60 or 50	Yes/Yes
	Equipment														

TABLE F-1 (Continued)
TYPICAL MAXIMUM CONSTRUCTION NOISE LEVELS AT VARIOUS DISTANCES

Project and Receptor Location	Maximum Noise Source	Reference Hourly Leq in dBA at 50 feet ¹	Distance Between Closest Project & Receptor	Distance Adjustment	Adjusted Leq	Exterior Speech Interference Criterion	Unmitigated Leq Exceeds Criterion?	Exterior Sleep Interference Criterion	Unmitigated Leq Exceeds Criterion?	Reduction Due to Controls ²	Mitigated Leq With Controls	Exterior Speech Interference Criterion	Mitigated Leq Exceeds Criterion?	Exterior Sleep Interference Criterion	Unmitigated Leq Exceeds Criterion?
Minimum Setback Distance of 500 feet	Earthmoving Equipment	85	500	-20	65	70	No	60 or 50	Yes/Yes	-10	55	70	No	60 or 50	No/Yes
	Trucks (Lmax)	91	500	-20	71	70	Yes	60 or 50	Yes/Yes	-16	55	70	No	60 or 50	No/Yes
	Materials	85	500	-20	65	70	No	60 or 50	Yes/Yes	-10	55	70	No	60 or 50	No/Yes
	Handling														
	Drilling/Stationary Equipment	80	500	-20	60	70	No	60 or 50	No/Yes	-6	54	70	No	60 or 50	No/Yes
	Impact	87	500	-20	67	70	No	60 or 50	Yes/Yes	-6	61	70	No	60 or 50	Yes/Yes
	Equipment														
Minimum Setback Distance of 850 to 1,700 feet	Earthmoving Equipment	85	850	-25	60	70	No	60 or 50	No/Yes	-10	50	70	No	60 or 50	No/No
	Trucks (Lmax)	91	850	-25	66	70	No	60 or 50	Yes/Yes	-16	50	70	No	60 or 50	No/No
	Materials	85	850	-25	60	70	No	60 or 50	No/Yes	-10	50	70	No	60 or 50	No/No
	Handling														
	Drilling/Stationary Equipment	80	850	-25	55	70	No	60 or 50	No/Yes	-6	49	70	No	60 or 50	No/No
	Impact	87	1,700	-31	56	70	No	60 or 50	No/Yes	-6	50	70	No	60 or 50	No/No
	Equipment														
Minimum Setback Distance of 3,000 feet	Earthmoving Equipment	85	3,000	-36	49	70	No	60 or 50	No/No	-10	39	70	No	60 or 50	No/No
	Trucks (Lmax)	91	3,000	-36	55	70	No	60 or 50	No/Yes	-16	39	70	No	60 or 50	No/No
	Materials	85	3,000	-36	49	70	No	60 or 50	No/No	-10	39	70	No	60 or 50	No/No
	Handling														
	Drilling/Stationary Equipment	80	3,000	-36	44	70	No	60 or 50	No/No	-6	38	70	No	60 or 50	No/No
	Impact	87	3,000	-36	51	70	No	60 or 50	No/Yes	-6	45	70	No	60 or 50	No/No
	Equipment														
Minimum Setback Distance of 3,400 feet	Earthmoving Equipment	85	3,400	-37	48	70	No	60 or 50	No/No	-10	38	70	No	60 or 50	No/No
	Trucks (Lmax)	91	3,400	-37	54	70	No	60 or 50	No/Yes	-16	38	70	No	60 or 50	No/No
	Materials	85	3,400	-37	48	70	No	60 or 50	No/No	-10	38	70	No	60 or 50	No/No
	Handling														
	Drilling/Stationary Equipment	80	3,400	-37	43	70	No	60 or 50	No/No	-6	37	70	No	60 or 50	No/No
	Impact	87	3,400	-37	50	70	No	60 or 50	No/No	-6	44	70	No	60 or 50	No/No
	Equipment														

¹ Reference noise levels represent the highest noise level by equipment type (without controls) listed in Table 4.10-4 at 50 feet. Reference noise level for tunneling activities includes a crane, and is based on noise measurements taken at the Hollywood Hills Tunnel project (entrance shaft), which involved similar tunneling construction techniques.

² Noise control reductions represent the difference between the highest noise levels listed in Table 4.10-4 with controls versus without controls.

**TABLE F-2
ESTIMATED MAXIMUM TRUCK NOISE LEVELS AT NEARBY RECEPTORS IN SUNOL VALLEY REGION**

Project and Receptor Location	Hourly Truck Volume	Hourly Leq in dBA at 50 feet ¹	Distance Between Closest Project & Receptor	Distance Adjustment	Adjusted Leq	Ambient and Sleep Interference Criterion	Unmitigated Leq Exceeds Criterion?
New Irvington Tunnel Project (SV-4)							
Average and Peak Hour Hourly Truck Volume	36	66					
Closest residential receptor is located 200 feet east of Calaveras Road		66	200	-9 Note: Hill could reduce noise by additional 5 dBA	57	46 ambient 50 sleep	Yes Yes
Closest residential receptor is located 1,000 feet south of Access Road		66	1,000	-20	46	46 ambient 50 sleep	No No
Closest residential receptor is located 2,000 feet west of Calaveras Road		66	2,000	-25	41	46 ambient 50 sleep	No No
Calaveras Dam Replacement Project (SV-2)							
Average Hourly Truck Volume (Peak Volumes Lower)	12	61					
Closest residential receptor is located 200 feet east of Calaveras Road		61	200	-9 Note: Hill could reduce noise by additional 5 dBA	52	46 ambient 50 sleep	Yes Yes
Closest residential receptor is located 2,000 feet west of Calaveras Road		61	2,000	-25	36	46 ambient 50 sleep	No No
40-mgd Treated Water Project (SV-3)							
Average and Peak Hour Hourly Truck Volume	8	59					
Closest residential receptor is located 200 feet east of Calaveras Road		59	200	-9 Note: Hill could reduce noise by additional 5 dBA	50	46 ambient 50 sleep	Yes No
Closest residential receptor is located 2,000 feet west of Calaveras Road		59	2,000	-25	34	46 ambient 50 sleep	No No
Treated Water Reservoirs Project (SV-5)							
Average and Peak Hour Hourly Truck Volume	10	60					
Closest residential receptor is located 200 feet east of Calaveras Road		60	200	-9 Note: Hill could reduce noise by additional 5 dBA	51	46 ambient 50 sleep	Yes No
Closest residential receptor is located 2,000 feet west of Calaveras Road		60	2,000	-25	35	46 ambient 50 sleep	No No

TABLE F-2 (Continued)
ESTIMATED MAXIMUM TRUCK NOISE LEVELS AT NEARBY RECEPTORS IN SUNOL VALLEY REGION

Project and Receptor Location	Hourly Truck Volume	Hourly Leq in dBA at 50 feet ¹	Distance Between Closest Project & Receptor	Distance Adjustment	Adjusted Leq	Ambient and Sleep Interference Criterion	Unmitigated Leq Exceeds Criterion?
San Antonio Backup Pipeline Project (SV-6)							
Average and Peak Hour Hourly Truck Volume	10	60					
Closest residential receptor is located 200 feet east of Calaveras Road		60	200	-9 Note: Hill could reduce noise by additional 5 dBA	51	46 ambient 50 sleep	Yes Yes
Closest residential receptor is located 2,000 feet west of Calaveras Road		60	2,000	-25	35	46 ambient 50 sleep	No No
Collective Maximum Truck Noise Level from All Four Projects (SV-2, SV-3, SV-4, SV-5)							
Maximum Hourly Truck Volume	76	69					
Closest residential receptor is located 200 feet east of Calaveras Road		69	200	-9 Note: Hill could reduce noise by additional 5 dBA	59	46 ambient 50 sleep	Yes Yes
Closest residential receptor is located 2,000 feet west of Calaveras Road		69	2,000	-25	43	46 ambient 50 sleep	No No

NOTES: Assumed travel speed is 45 mph and reference Leq is 50 dBA for 1 truck at 50 feet. Truck volume estimates are presented in Table 3.

**TABLE F-3
SFPUC WATER SYSTEM IMPROVEMENT PROGRAM
BACKGROUND DAILY TRAFFIC VOLUMES ON CALAVERAS ROAD – COLLECTIVE CONDITIONS**

Source:	Worker		Trucks		Total				
	In	Out	In	Out	In	Out	Total		
1	SV2	Calaveras Dam	120	120	44	44	164	164	328
2	SV3	Additional 40 mgd	40	40	32	32	72	72	144
3	SV4	Irvington Tunnel	144	144	145	145	289	289	578
4	SV5	Treated Water	40	40	40	40	80	80	160
5	SV6	San Antonio	40	40	40	40	80	80	160
		Total	384	384	301	301	685	685	1,370
AM Peak Hour	SV2	Calaveras Dam	65	18	4	5	69	23	92
	SV3	Additional 40 mgd	40	0	4	4	44	4	48
	SV4	Irvington Tunnel	144	0	18	18	162	18	180
	SV5	Treated Water	40	0	5	5	45	5	50
	SV6	San Antonio	40	0	5	5	45	5	50
		Total	329	18	36	37	365	55	420
PM Peak Hour	SV2	Calaveras Dam	18	65	4	5	22	70	92
	SV3	Additional 40 mgd	0	40	4	4	4	44	48
	SV4	Irvington Tunnel	0	144	18	18	18	162	180
	SV5	Treated Water	0	40	5	5	5	45	50
	SV6	San Antonio	0	40	5	5	5	45	50
		Total	18	329	36	37	54	366	420
Average Hour	SV2	Calaveras Dam	6	6	6	6	12	12	24
	SV3	Additional 40 mgd	0	0	4	4	4	4	8
	SV4	Irvington Tunnel	0	0	18	18	18	18	36
	SV5	Treated Water	0	0	5	5	5	5	10
	SV6	San Antonio	0	0	5	5	5	5	10
		Total	6	6	38	38	44	44	88

NOTE: Traffic estimates are based on preliminary project information (available as of February 22, 2007) and subject to change through the project design process.

Sources

- ¹ Calaveras Dam Transportation Section
- ² Table C-4 for Workers (40 to 80 - used 40), and Table C-5 for trucks (assumed 32 trucks/day is one-way truck trips)
- ³ Irvington Tunnel Alternative Project EIR - 12/18/06
- ⁴ Information not available. Estimated based on SV3
- ⁵ Distribution between worker and truck trips estimated, based on SV3, and information from project team