

**G. NOISE DATA**



# *Appendices*

---

*This page intentionally left blank*

**OBSERVED VEHICLE COUNTS AND VEHICLE DISTRIBUTION BY TYPE**

CITY OF ANAHEIM OBSERVED VEHICLE COUNTS AND VEHICLE DISTRIBUTION BY TYPE

ALL ROUTES

Reading	Road Typ	N/E Auto	N/E MT	N/E HT	W Autos	S/W MT	S/W HT	total	Autc	Total	MT	Total	HT	Total	Veh
NR-1	A	43	1	0	42	0	0	85	1	0	86				
NR-2	A	82	3	0	87	4	1	169	7	1	177				
NR-3	T	87	5	1	92	3	2	179	8	3	190				
NR-4	A	124	3	0	105	1	0	229	4	0	233				
NR-5	T	131	4	4	174	7	3	305	11	7	323				
NR-6	A	142	2	3	177	0	1	319	2	4	325				
NR-7	T	224	4	1	232	4	0	456	8	1	465				
NR-8	T	393	7	3	243	5	1	636	12	4	652				
NR-9	T	161	4	2	127	7	1	288	11	3	302				
NR-10	A	89	1	0	78	4	0	167	5	0	172				
NR-11	A	129	1	0	102	3	0	231	4	0	235				
NR-12	A	168	5	2	185	6	0	353	11	2	366				
NR-13	A	66	0	0	58	2	0	124	2	0	126				
NR-14	T	213	6	0	206	4	2	419	10	2	431				
NR-15	A	6	0	0	6	0	0	12	0	0	12				
NR-16	T	316	9	0	272	4	0	588	13	0	601				
NR-17	A	163	7	1	157	4	0	320	11	1	332				
NR-18	A	163	7	1	157	4	0	320	11	1	332				
								5200	131	29	5360				

PERCENTAGES 97.01 2.44 0.54

AUTO ROUTES

NR-1	A	43	1	0	42	0	0	85	1	0	86				
NR-2	A	82	3	0	87	4	1	169	7	1	177				
NR-4	A	124	3	0	105	1	0	229	4	0	233				
NR-6	A	142	2	3	177	0	1	319	2	4	325				
NR-10	A	89	1	0	78	4	0	167	5	0	172				
NR-11	A	129	1	0	102	3	0	231	4	0	235				
NR-12	A	168	5	2	185	6	0	353	11	2	366				
NR-13	A	66	0	0	58	2	0	124	2	0	126				
NR-15	A	6	0	0	6	0	0	12	0	0	12				
NR-17	A	163	7	1	157	4	0	320	11	1	332				
NR-18	A	163	7	1	157	4	0	320	11	1	332				
								2329	58	9	2396				

PERCENTAGES 97.20 2.42 0.38

TRUCK ROUTES

NR-3	T	87	5	1	92	3	2	179	8	3	190				
NR-5	T	131	4	4	174	7	3	305	11	7	323				
NR-7	T	224	4	1	232	4	0	456	8	1	465				
NR-8	T	393	7	3	243	5	1	636	12	4	652				
NR-9	T	161	4	2	127	7	1	288	11	3	302				
NR-14	T	213	6	0	206	4	2	419	10	2	431				
NR-16	T	316	9	0	272	4	0	588	13	0	601				
								2871	73	20	2964				

PERCENTAGES 96.86 2.46 0.67

ALL ROUTES

Reading #	Road Type	N/E Autos	N/E MT	N/E HT	S/W Autos	S/W MT	S/W HT
NR-1	A	43	1	0	42	0	0
NR-2	A	82	3	0	87	4	1
NR-3	T	87	5	1	92	3	2
NR-4	A	124	3	0	105	1	0
NR-5	T	131	4	4	174	7	3
NR-6	A	142	2	3	177	0	1
NR-7	T	224	4	1	232	4	0
NR-8	T	393	7	3	243	5	1
NR-9	T	161	4	2	127	7	1
NR-10	A	89	1	0	78	4	0
NR-11	A	129	1	0	102	3	0
NR-12	A	168	5	2	185	6	0
NR-13	A	66	0	0	58	2	0
NR-14	T	213	6	0	206	4	2
NR-15	A	6	0	0	6	0	0
NR-16	T	316	9	0	272	4	0
NR-17	A	163	7	1	157	4	0
NR-18	A	163	7	1	157	4	0

AUTO ROUTES

NR-1	A	43	1	0	42	0	0
NR-2	A	82	3	0	87	4	1
NR-4	A	124	3	0	105	1	0
NR-6	A	142	2	3	177	0	1
NR-10	A	89	1	0	78	4	0
NR-11	A	129	1	0	102	3	0
NR-12	A	168	5	2	185	6	0
NR-13	A	66	0	0	58	2	0
NR-15	A	6	0	0	6	0	0
NR-17	A	163	7	1	157	4	0
NR-18	A	163	7	1	157	4	0

TRUCK ROUTES

NR-3	T	87	5	1	92	3	2
NR-5	T	131	4	4	174	7	3
NR-7	T	224	4	1	232	4	0
NR-8	T	393	7	3	243	5	1
NR-9	T	161	4	2	127	7	1
NR-14	T	213	6	0	206	4	2
NR-16	T	316	9	0	272	4	0

Total Auto:	Total MT	Total HT	Total Veh
85	1	0	86
169	7	1	177
179	8	3	190
229	4	0	233
305	11	7	323
319	2	4	325
456	8	1	465
636	12	4	652
288	11	3	302
167	5	0	172
231	4	0	235
353	11	2	366
124	2	0	126
419	10	2	431
12	0	0	12
588	13	0	601
320	11	1	332
320	11	1	332
5200	131	29	5360

97.01      2.44      0.54

85	1	0	86
169	7	1	177
229	4	0	233
319	2	4	325
167	5	0	172
231	4	0	235
353	11	2	366
124	2	0	126
12	0	0	12
320	11	1	332
320	11	1	332
2329	58	9	2396

97.20      2.42      0.38

179	8	3	190
305	11	7	323
456	8	1	465
636	12	4	652
288	11	3	302
419	10	2	431
588	13	0	601

2871	73	20	2964
96.86	2.46	0.67	

## **SOUND32 NOISE MODEL RESULTS**

ANAHEIM GP, AUTO ROUTES @ 25 MPH  
T-10000 VEHICLES, 1  
9737 , 25 , 205 , 25 , 58 , 25  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, AUTO ROUTES @ 25 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	71.5

ANAHEIM GP, AUTO ROUTES @ 30 MPH  
T-10000 VEHICLES, 1  
9737 , 30 , 205 , 30 , 58 , 30  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
O,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, AUTO ROUTES @ 30 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	73.2

ANAHEIM GP, AUTO ROUTES @ 35 MPH  
T-10000 VEHICLES, 1  
9737 , 35 , 205 , 35 , 58 , 35  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, AUTO ROUTES @ 35 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	74.5

ANAHEIM GP, AUTO ROUTES @ 40 MPH  
T-10000 VEHICLES, 1  
9737 , 40 , 205 , 40 , 58 , 40  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, AUTO ROUTES @ 40 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	75.9

ANAHEIM GP, AUTO ROUTES @ 45 MPH  
T-10000 VEHICLES, 1  
9737 , 45 , 205 , 45 , 58 , 45  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, AUTO ROUTES @ 45 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	77.2

ANAHEIM GP, AUTO ROUTES @ 50 MPH  
T-10000 VEHICLES, 1  
9737 , 50 , 205 , 50 , 58 , 50  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, AUTO ROUTES @ 50 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	78.4

ANAHEIM GP, TRUCK ROUTES @ 25 MPH  
T-10000 VEHICLES, 1  
9678 , 25 , 229 , 25 , 93 , 25  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, TRUCK ROUTES @ 25 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	72.2

ANAHEIM GP, TRUCK ROUTES @ 30 MPH  
T-10000 VEHICLES, 1  
9678 , 30 , 229 , 30 , 93 , 30  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, TRUCK ROUTES @ 30 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	73.8

ANAHEIM GP, TRUCK ROUTES @ 35 MPH  
T-10000 VEHICLES, 1  
9678 , 35 , 229 , 35 , 93 , 35  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, TRUCK ROUTES @ 35 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	74.9

ANAHEIM GP, TRUCK ROUTES @ 40 MPH  
T-10000 VEHICLES, 1  
9678 , 40 , 229 , 40 , 93 , 40  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, TRUCK ROUTES @ 40 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	76.2

ANAHEIM GP, TRUCK ROUTES @ 45 MPH  
T-10000 VEHICLES, 1  
9678 , 45 , 229 , 45 , 93 , 45  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, TRUCK ROUTES @ 45 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	77.5

ANAHEIM GP, TRUCK ROUTES @ 50 MPH  
T-10000 VEHICLES, 1  
9678 , 50 , 229 , 50 , 93 , 50  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
O,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, TRUCK ROUTES @ 50 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	78.6

ANAHEIM GP, IMPERIAL HIGHWAY @ 40 MPH  
T-10000 VEHICLES, 1  
9500 , 40 , 369 , 40 , 131 , 40  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
O,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:

ANAHEIM GP, IMPERIAL HIGHWAY @ 40 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	76.8

ANAHEIM GP, I-5, S/O SR-91 @ 65 MPH  
T-10000 VEHICLES, 1  
9380 , 65 , 329 , 65 , 291 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, I-5, S/O SR-91 @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	82.2

ANAHEIM GP, I-5, N/O LINCOLN @ 65 MPH  
T-10000 VEHICLES, 1  
9040 , 65 , 598 , 65 , 362 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, I-5, N/O LINCOLN @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	82.7

ANAHEIM GP, I-5, S/O LINCOLN @ 65 MPH  
T-10000 VEHICLES, 1  
9050 , 65 , 586 , 65 , 364 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:

ANAHEIM GP, I-5, S/O LINCOLN @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	82.7

ANAHEIM GP, I-5, N/O KATELLA @ 65 MPH  
T-10000 VEHICLES, 1  
9040 , 65 , 594 , 65 , 366 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:

ANAHEIM GP, I-5, N/O KATELLA @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	82.7

ANAHEIM GP, I-5, S/O KATELLA @ 65 MPH  
T-10000 VEHICLES, 1  
9050 , 65 , 599 , 65 , 351 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, I-5, S/O KATELLA @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	82.6

ANAHEIM GP, I-5, N/O CHAPMAN @ 65 MPH  
T-10000 VEHICLES, 1  
9300 , 65 , 384 , 65 , 316 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, I-5, N/O CHAPMAN @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	82.3

ANAHEIM GP, SR-55, S/O SR-91 @ 65 MPH  
T-10000 VEHICLES, 1  
9410 , 5 , 353 , 65 , 237 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, SR-55, S/O SR-91 @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	76.7

ANAHEIM GP, SR-57, N/O SR-91 @ 65 MPH  
T-10000 VEHICLES, 1  
9370 , 65 , 280 , 65 , 350 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, SR-57, N/O SR-91 @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	82.3

ANAHEIM GP, SR-57, S/O SR-91 @ 65 MPH  
T-10000 VEHICLES, 1  
9289 , 65 , 375 , 65 , 336 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, SR-57, S/O SR-91 @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	82.4

ANAHEIM GP, SR-91, E/O I-5 @ 65 MPH  
T-10000 VEHICLES, 1  
9320 , 65 , 376 , 65 , 304 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, SR-91, E/O I-5 @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	82.3

ANAHEIM GP, SR-91, W/O HARBOR @ 65 MPH  
T-10000 VEHICLES, 1  
9390 , 65 , 329 , 65 , 381 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, SR-91, W/O HARBOR @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	82.5

ANAHEIM GP, SR-91, E/O HARBOR @ 65 MPH  
T-10000 VEHICLES, 1  
9320 , 65 , 320 , 65 , 360 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
O,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, SR-91, E/O HARBOR @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	82.4

ANAHEIM GP, SR-91, W/O STATE COLLEGE @ 65 MPH  
T-10000 VEHICLES, 1  
9080 , 65 , 435 , 65 , 485 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, SR-91, W/O STATE COLLEGE @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	82.8

ANAHEIM GP, SR-91, E/O STATE COLLEGE @ 65 MPH  
T-10000 VEHICLES, 1  
9130 , 65 , 409 , 65 , 461 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:

ANAHEIM GP, SR-91, E/O STATE COLLEGE @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	82.7

ANAHEIM GP, SR-91, E/O SR-57 @ 65 MPH  
T-10000 VEHICLES, 1  
9130 , 65 , 299 , 65 , 571 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, SR-91, E/O SR-57 @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	82.9

ANAHEIM GP, SR-91, W/O SR-55 @ 65 MPH  
T-10000 VEHICLES, 1  
9350 , 65 , 378 , 65 , 272 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, SR-91, W/O SR-55 @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	82.2

ANAHEIM GP, SR-91, E/O SR-55 @ 65 MPH  
T-10000 VEHICLES, 1  
9550 , 65 , 243 , 65 , 207 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
O,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, SR-91, E/O SR-55 @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	81.9

ANAHEIM GP, SR-91, W/O SR-90 @ 65 MPH  
T-10000 VEHICLES, 1  
9500 , 65 , 250 , 65 , 250 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, SR-91, W/O SR-90 @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	82.0

ANAHEIM GP, SR-91, E/O SR-90 @ 65 MPH  
T-10000 VEHICLES, 1  
9451 , 65 , 230 , 65 , 319 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:  
ANAHEIM GP, SR-91, E/O SR-90 @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	82.2

ANAHEIM GP, SR-241, S/O SR-91 @ 65 MPH  
T-10000 VEHICLES, 1  
9834 , 65 , 103 , 65 , 63 , 65  
L-, 1  
N,-750.,50,0,  
N,750.,50,0,  
R, 1 , 67 ,1  
0,0,5.,  
D, 4.5  
ALL,ALL  
C,C

SOUND32 - RELEASE 07/30/91

TITLE:

ANAHEIM GP, SR-241, S/O SR-91 @ 65 MPH

BASED ON FHWA-RD-108 AND  
CALIFORNIA REFERENCE ENERGY MEAN EMISSION LEVELS

RECEIVER	LEQ
R-1	81.3

## EXISTING RAILROAD NOISE COMPUTATIONS

### *Metrolink/Amtrak*

This analysis addresses Metrolink/Amtrak operations through three areas through the City. These include the Orange County Line that runs from Oceanside to Los Angeles through Anaheim Station, the Inland Empire/Orange County Line that runs from Oceanside to San Bernardino and passes through Anaheim Canyon Station and the Orangethorpe/Esperanza corridor and the 91 Line that runs between Los Angeles and San Bernardino, sometime passing through the Anaheim and Anaheim Canyon Stations, and always along the Orangethorpe Esperanza corridor. Additionally, the BN&SF shares the Orangethorpe/Esperanza Corridor. Discussion with BN&SF personnel revealed that these operations have a maximum length of 8,200 feet and typically include four engines. For clarity, these are areas addressed as the Anaheim Station, Anaheim Canyon Station and Orangethorpe/Esperanza Corridor.

### **Anaheim Station**

Metrolink and Amtrak schedules show that the Orange County Line, passing through Anaheim Station currently has 45 operations with 10 occurring at night (i.e., between 10:00 p.m. and 7:00 a.m.). The 91 Line adds an additional 10 operations with one at night. As such, 44 operations (or 80 percent) are conducted during the day with 11 (20 percent) at night. Trains are estimated at one engine and five railcars through the project area. Speed is based on the 79 mph maximum speed limitation. Rails are continuous welded. The analysis considers both absence and presence of at-grade crossings. Computations were performed in accordance with the "Wyle" method as included in *The Noise Guidebook* published by the Department of Housing and Urban Development.

Without At-Grade Crossings							
Engine Noise Calculations							
Operation	No. of Locos 2	Avg. Speed Adjustment	Horn (enter 10)	Nighttime Adjustment	No. of Trains	Adjusted No. of Operations	Ldn @ 200 feet
Passenger	0.5	0.38	1	1.19	55	12	60.5
Railcar Noise Calculations							
Operation	No. of Cars 50	Avg. Speed Adjustment	Rail Type	Nighttime Adjustment	No. of Trains	Adjusted No. of Operations	Ldn @ 200 feet
Passenger	0.1	6.94	1	1.19	55	45	54
						Sum	61.5
With At Grade Crossings							
Engine Noise Calculations							
Operation	No. of Locos 2	Avg. Speed Adjustment	Horn (enter 10)	Nighttime Adjustment	No. of Trains	Adjusted No. of Operations	Ldn @ 200 feet
Passenger	0.5	0.38	10	1.19	55	124	70.5
Railcar Noise Calculations							
Operation	No. of Cars 50	Avg. Speed Adjustment	Rail Type	Nighttime Adjustment	No. of Trains	Adjusted No. of Operations	Ldn @ 200 feet
Passenger	0.1	6.94	1	1.19	55	45	54
						Sum	70.5

Calculate distances to 70, 65, and 60, dBA Ldn

*Without At-Grade Crossings*

70 Ldn:

$$61.5 \text{ dBA} - 70 \text{ dBA} = -8.5 \text{ dBA}$$

$$-8.5 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

D = 54 feet

65 Ldn:

$$61.5 \text{ dBA} - 65 \text{ dBA} = -3.5 \text{ dBA}$$

$$-3.5 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

D = 117 feet

60 Ldn:

$$61.5 \text{ dBA} - 60 \text{ dBA} = 1.5 \text{ dBA}$$

$$1.5 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

D = 252 feet

*With At-Grade Crossings*

70 Ldn:

$$70.5 \text{ dBA} - 70 \text{ dBA} = 2.5 \text{ dBA}$$

$$2.5 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

D = 294 feet

65 Ldn:

$$70.5 \text{ dBA} - 65 \text{ dBA} = 5.5 \text{ dBA}$$

$$5.5 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

D = 465 feet

60 Ldn:

$$70.5 \text{ dBA} - 60 \text{ dBA} = 10.5 \text{ dBA}$$

$$10.5 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

D = 1,002 feet

### **Anaheim Canyon Station**

Metrolink and Amtrak schedules show that the Inland Empire/Orange County Line, passing through Anaheim Canyon Station. Additionally, the 91 Line also runs through this area during portions of the day. Including both lines, the Anaheim Canyon Station is currently serviced/passed by 22 operations with four (18 percent) occurring at night. Trains are estimated at one engine and five railcars through the project area. Maximum speed is again 79 mph. Rails are continuous welded. The analysis considers both absence and presence of at-grade crossings.

Without At-Grade Crossings							
Engine Noise Calculations							
Operation	No. of Locomotives	Avg. Speed Adjustment	Horn (enter 10)	Nighttime Adjustment	No. of Trains	Adjusted No. of Operations	Ldn @ 200 feet
Passenger	0.5	0.38	1	1.11	22	5	57.0
Railcar Noise Calculations							
Operation	No. of Cars	Avg. Speed Adjustment	Rail Type	Nighttime Adjustment	No. of Trains	Adjusted No. of Operations	Ldn @ 200 feet
Passenger	0.1	6.94	1	1.11	22	17	50.0
						Sum	58.0
With At Grade Crossings							
Engine Noise Calculations							
Operation	No. of Locomotives	Avg. Speed Adjustment	Horn (enter 10)	Nighttime Adjustment	No. of Trains	Adjusted No. of Operations	Ldn @ 200 feet
Passenger	0.5	0.38	10	1.11	22	46	66.5
Railcar Noise Calculations							
Operation	No. of Cars	Avg. Speed Adjustment	Rail Type	Nighttime Adjustment	No. of Trains	Adjusted No. of Operations	Ldn @ 200 feet
Passenger	0.1	6.94	1	1.11	22	17	50
						Sum	66.5

Calculate distances to 70, 65, and 60, dBA Ldn

*Without At-Grade Crossings*

70 Ldn:

$$58.0 \text{ dBA} - 70 \text{ dBA} = -12.0 \text{ dBA}$$

$$-12.0 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

$$D = 32 \text{ feet}$$

65 Ldn:

$$58.0 \text{ dBA} - 65 \text{ dBA} = -7.0 \text{ dBA}$$

$$-7.0 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

$$D = 68 \text{ feet}$$

60 Ldn:

$$58.0 \text{ dBA} - 60 \text{ dBA} = -2.0 \text{ dBA}$$

$$-2.0 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

$$D = 147 \text{ feet}$$

*With At-Grade Crossings*

70 Ldn:

$$66.5 \text{ dBA} - 70 \text{ dBA} = -3.5 \text{ dBA}$$

$$-3.5 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

$$D = 117 \text{ feet}$$

65 Ldn:

$$66.5 \text{ dBA} - 65 \text{ dBA} = 1.5 \text{ dBA}$$

$$1.5 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

$$D = 252 \text{ feet}$$

60 Ldn:

$$66.5 \text{ dBA} - 60 \text{ dBA} = 6.5 \text{ dBA}$$

$$6.5 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

$$D = 542 \text{ feet}$$

### Orangethorpe/Esperanza Corridor

Metrolink and Amtrak schedules show that the Inland Empire/Orange County Line and 91 Line, pass through the Orangethorpe/Esperanza Corridor with 31 daily operation including eight (26 percent) at night. Trains are again estimated at one engine and five railcars through the project area and maximum speed is again 79 mph. Rails are continuous welded.

The Corridor is also shared with the BN&SF that regularly runs freight operations through this area. The BN&SF currently operate approximately 44 operations through this area. Trains could occur any time during the day or night. These trains typically have four engines and a maximum length of 8,200 feet. Assuming a typical engine at 80 feet and a typical railcar of 62 feet, this equates to approximately 125 railcars. Speeds can reach approximately 55 to 60 mph. The analysis considers both absence and presence of at-grade crossings.

Without At-Grade Crossings							
Engine Noise Calculations							
Operation	No. of Locos 2	Avg. Speed Adjustment	Horn (enter 10)	Nighttime Adjustment	No. of Trains	Adjusted No. of Operations	Ldn @ 200 feet
Passenger	0.5	0.38	1	1.42	31	8	58.5
Freight	2.0	0.5	1	1.00	44	44	66.0
Railcar Noise Calculations							
Operation	No. of Cars 50	Avg. Speed Adjustment	Rail Type	Nighttime Adjustment	No. of Trains	Adjusted No. of Operations	Ldn @ 200 feet
Passenger	0.1	6.94	1	1.11	31	24	51.5
Freight	2.5	4.0	1	1.00	44	440	64.0
						Sum	69.0
With At Grade Crossings							
Engine Noise Calculations							
Operation	No. of Locos 2	Avg. Speed Adjustment	Horn (enter 10)	Nighttime Adjustment	No. of Trains	Adjusted No. of Operations	Ldn @ 200 feet
Passenger	0.5	0.38	10	1.42	31	84	68.5
Freight	2.0	0.5	10	1.00	44	440	76.0
Railcar Noise Calculations							
Operation	No. of Cars 50	Avg. Speed Adjustment	Rail Type	Nighttime Adjustment	No. of Trains	Adjusted No. of Operations	Ldn @ 200 feet
Passenger	0.1	6.94	1	1.11	31	24	51.5
Freight	2.5	4.0	1	1.00	44	440	64.0
						Sum	77.0

Calculate distances to 70, 65, and 60, dBA Ldn

*Without At-Grade Crossings*

70 Ldn:

$$69.0 \text{ dBA} - 70 \text{ dBA} = -1.0 \text{ dBA}$$

$$-1.0 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

$$D = 172 \text{ feet}$$

65 Ldn:

$$69.0 \text{ dBA} - 65 \text{ dBA} = 4.0 \text{ dBA}$$

$$4.0 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

$$D = 370 \text{ feet}$$

60 Ldn:

$$69.0 \text{ dBA} - 60 \text{ dBA} = 9.0 \text{ dBA}$$

$$9.0 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

$$D = 796 \text{ feet}$$

*With At-Grade Crossings*

70 Ldn:

$$77.0 \text{ dBA} - 70 \text{ dBA} = 7.0 \text{ dBA}$$

$$7.0 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

$$D = 586 \text{ feet}$$

65 Ldn:

$$77.0 \text{ dBA} - 65 \text{ dBA} = 12.0 \text{ dBA}$$

$$12.0 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

$$D = 1,262 \text{ feet}$$

60 Ldn:

$$77.0 \text{ dBA} - 60 \text{ dBA} = 17.0 \text{ dBA}$$

$$17.0 \text{ dBA} = 15 \log (\text{New Distance} / \text{Reference Distance})$$

$$D = 2,719 \text{ feet}$$

