

APPENDIX F

Traffic Noise Measurements and Construction Noise Calculations

FHWA MODEL OUTPUT - EXISTING CONDITIONS (YEAR 2005)

TRAFFIC DISTRIBUTION PERCENTAGES

DAY EVENING NIGHT

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AUTOS

68.70 11.21 8.50

M-TRUCKS

7.30 1.19 0.90

H-TRUCKS

1.71 0.28 0.21

RUN NAME: SR 70 (BETW YUBA CO LINE AND FEATHER RIVER BLVD)
RUN DATE: 090206

ADT: 16300 SPEED: 55 ACTIVE HALF WIDTH (FT): 24
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 72.46
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

104.8 221.1 473.9 1019.9

RUN NAME: SR 70 (BETW FEATHER RIVER BLVD AND MC GOWAN RD)
RUN DATE: 090206

ADT: 13300 SPEED: 55 ACTIVE HALF WIDTH (FT): 24
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 71.57
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

92.3 193.4 414.0 890.6

RUN NAME: SR 70 (BETW MC GOWAN RD AND JCT RT 65)
RUN DATE: 090206

ADT: 23800 SPEED: 55 ACTIVE HALF WIDTH (FT): 24
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 74.10
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

133.5 283.8 609.7 1312.4

RUN NAME: SR 70 (BETW JCT RT 65 AND OLIVEHURST AVE)
RUN DATE: 090206

ADT: 39500 SPEED: 55 ACTIVE HALF WIDTH (FT): 24
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 76.30
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

185.6 397.2 854.3 1839.6

RUN NAME: SR 70 (BETW OLIVEHURST AVE AND ERLE RD)
RUN DATE: 090206

ADT: 45000 SPEED: 55 ACTIVE HALF WIDTH (FT): 24
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 76.87
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

202.2 433.1 931.8 2006.6

RUN NAME: SR 70 (BETW ERLE RD AND FEATHER RIVER BLVD)
RUN DATE: 090206

ADT: 45500 SPEED: 55 ACTIVE HALF WIDTH (FT): 24
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 76.91
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

203.7 436.3 938.7 2021.4

RUN NAME: SR 70 (BETW FEATHER RIVER BLVD AND N BEALE RD)
RUN DATE: 090206

ADT: 60000 SPEED: 55 ACTIVE HALF WIDTH (FT): 24
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 78.11
** DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL **
70 CNEL 65 CNEL 60 CNEL 55 CNEL

244.4 524.4 1128.7 2430.7

Feather River		
Levee Strengthening/Alternative 1		
Projected Construction Noise Level at 50 feet	Without Noise Control	With Feasible Noise Control
excavator	88	80
excavator	88	80
dozer	80	75
dozer	80	75
grader	85	75
roller	74	74
roller	74	74
truck	91	75
truck	91	75
truck	91	75
truck	91	75
truck	91	75
truck	91	75
loader	85	75
crane	83	75
TOTAL	99.96	87.77
NOISE DROP OFF CALCULATION		
(feet)	(dB)	
50	99.96	87.77
180	88.83	76.64
1988	67.97	55.78
6536	57.63	45.44
Assumptions: Equipment usage information from GEI Consultants. Source: FTA 1995; U.S. EPA 1971		
Slurry Wall		
Projected Construction Noise Level at 50 feet	Without Noise Control	With Feasible Noise Control
excavator	88	80
excavator	88	80
excavator	88	80
dozer	80	75
dozer	80	75
dozer	80	75
excavator	88	80
excavator	88	80
excavator	88	80
truck/tool carrier	91	75
truck/tool carrier	91	75
truck/tool carrier	91	75
TOTAL	98.59	88.39
NOISE DROP OFF CALCULATION		
(feet)	(dB)	
50	98.59	88.39
180	87.47	77.26
200	86.55	76.35
500	78.59	68.39
1988	66.60	56.40
6536	56.27	46.06
Levee Strengthening/Slurry Wall		
Projected Construction Noise Level at 50 feet	Without Noise Control	With Feasible Noise Control
levee strengthening	99.96	87.77
slurry wall	98.59	88.39
TOTAL	102.34	91.10
NOISE DROP OFF CALCULATION		
(feet)	(dB)	
50	102.34	91.10
180	91.21	79.97
200	90.30	79.06
500	82.34	71.10
1988	70.35	59.11
6536	60.01	48.77

Levee Setback/Alternatives 2 and 3			
Projected Construction Noise Level at 50 feet		Without Noise Control	With Feasible Noise Control
excavator		88	80
excavator		88	80
scraper		88	80
scraper		88	80
scraper		88	80
scraper		88	80
scraper		88	80
scraper		88	80
scraper		88	80
scraper		88	80
scraper		88	80
scraper		88	80
scraper		88	80
scraper		88	80
dozer		80	75
dozer		80	75
dozer		80	75
dozer		80	75
grader		85	75
grader		85	75
grader		85	75
grader		85	75
roller		74	74
roller		74	74
roller		74	74
roller		74	74
truck		91	75
truck		91	75
truck		91	75
truck		91	75
truck		91	75
truck		91	75
loader		91	75
crane		91	75
TOTAL		102.88	92.57
NOISE DROP OFF CALCULATION			
	(feet)	(dB)	
	50	102.88	92.57
	180	91.75	81.44
	1988	70.89	60.58
	6536	60.55	50.24
Assumptions: Equipment usage information from GEI Consultants. Source: FTA 1995; U.S. EPA 1971			
Slurry Wall			
Projected Construction Noise Level at 50 feet		Without Noise Control	With Feasible Noise Control
excavator		88	80
excavator		88	80
dozer		80	75
dozer		80	75
excavator		88	80
excavator		88	80
truck/tool carrier		91	75
truck/tool carrier		91	75
TOTAL		97.19	87.21
NOISE DROP OFF CALCULATION			
	(feet)	(dB)	
	50	97.19	87.21
	180	86.07	76.09
	200	85.15	75.17
	500	77.19	67.21
	1988	65.21	55.22
	6536	54.87	44.89

Levee Setback/Slurry Wall		
Projected Construction Noise Level at 50 feet	Without Noise Control	With Feasible Noise Control
levee setback	102.88	92.57
slurry wall	97.19	87.21
TOTAL	103.92	93.68
NOISE DROP OFF CALCULATION		
(feet)	(dB)	
50	103.92	93.68
180	92.79	82.55
200	91.88	81.64
500	83.92	73.68
1988	71.93	61.69
6536	61.59	51.35

PROJECTED AVERAGE DAILY NOISE LEVELS

Need to add penalty into evening/nighttime hours. Penalty is not included in the formula

1	50	65	50	50	50	50
2	50	65	50	50	50	50
3	50	65	50	50	50	50
4	50	65	50	50	50	50
5	50	65	50	50	50	50
6	50	65	50	50	50	
7	77	55	73	71	70	
8	77	55	73	71	70	
9	77	55	73	71	70	_____
10	77	55	73	71	70	
11	77	55	73	71	70	
12	77	55	73	71	70	
13	77	55	73	71	70	
14	77	55	73	71	70	
15	77	55	73	71	70	
16	77	55	73	71	70	
17	77	55	50	50	50	
18	77	55	50	50	50	
19	77	55	50	50	50	
20	55	55	50	50	50	
21	55	55	50	50	50	
22	50	65	50	50	50	
23	50	65	50	50	50	
24	50	65	50	50	50	
	74.35	61.41	69.23	67.25	66.26	

Petaluma Substation

	<u>OCTAVE CENTER FREQUENCY</u>		<u>CONVERSION TO A-WEIGHTED SCALE</u>
Band 1	31.5	55	16
Band 2	63	57	31
Band 3	125	63	47
Band 4	250	63	54
Band 5	500	49	46
Band 6	1000	53	53
Band 7	2000	48	49
Band 8	4000	43	44
Band 9	8000	25	24
<u>TOTAL:</u>		<u>67.14</u>	<u>58.11 dBA</u>

NOISE DROP OFF CALCULATION

(feet)	(dB)
3	67.14
75	39.18
200	30.66
320	26.57
375	25.20
475	23.14
700	19.78