

# ***APPENDIX X***

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## ***NOISE LEVEL ESTIMATE DATA SHEETS***

**Ione Band of Miwok Casio Project Traffic Noise Level Estimates 2006**  
**FHWA RD-77-108**

15m= 49 FEET

2006 No Project ROAD SEGMENT	ADT	Peak Hr. # VEHICLES	VEHICLE TYPE %					VEHICLE SPEED			calveno factors			(15 meters from roadway center)	Roadway Center (m.)	Level (dBA) 3 dBA Atten	Level (dBA) 4.5 dBA Atten				
			Auto		Medium Truck		Heavy Truck	Auto	MT	HT	Auto	MT	HT								
			%	Auto	%	MT	%	HT	k/h	k/h	k/h	k/h	k/h					k/h			
SR 49 North of Shenandoah Road	2,780	278	97	270	3	8	0	0	45	72	30	48	30	48	61.8	52.2	14.6	62.2	30	59.2	57.7
SR 49 south of SR16	11,970	1,197	97	1,161	3	36	0	0	40	64	30	48	30	48	66.6	58.5	20.9	67.3	30	64.2	62.7
SR 16 West of Old Sacramento Road	7,500	750	97	728	3	23	0	0	40	64	30	48	30	48	64.6	56.5	18.9	65.2	30	62.2	60.7
SR 124 South of SR16	2,780	278	97	270	3	8	0	0	45	72	30	48	30	48	61.8	52.2	14.6	62.2	30	59.2	57.7
SR88 West of SR124	13,140	1,314	97	1,275	3	39	0	0	45	72	30	48	30	48	68.5	58.9	21.3	69.0	30	66.0	64.4

2006 Plus Alternative A Phase I ROAD SEGMENT	ADT	Peak Hr. # VEHICLES	VEHICLE TYPE %					VEHICLE SPEED			calveno factors			(15 meters from roadway center)	Roadway Center (m.)	Level (dBA) 3 dBA Atten	Level (dBA) 4.5 dBA Atten					
			Auto		Medium Truck		Heavy Truck	Auto	MT	HT	Auto	MT	HT									
			%	Auto	%	MT	%	HT	k/h	k/h	k/h	k/h	k/h					k/h				
SR 49 North of Shenandoah Road	4,333	433	97	420	3	13	0	0	45	72	30	48	30	48	63.7	54.1	16.5	64.1	30	61.1	59.6	1.9
SR 49 south of SR16	12,324	1,232	97	1,195	3	37	0	0	40	64	30	48	30	48	66.8	58.7	21.0	67.4	30	64.4	62.9	0.1
SR 16 West of Old Sacramento Road	10,347	1,035	97	1,004	3	31	0	0	40	64	30	48	30	48	66.0	57.9	20.3	66.6	30	63.6	62.1	1.4
SR 124 South of SR16	5,294	529	97	514	3	16	0	0	45	72	30	48	30	48	64.6	55.0	17.4	65.0	30	62.0	60.5	2.8
SR88 West of SR124	15,542	1,554	97	1,508	3	47	0	0	45	72	30	48	30	48	69.2	59.7	22.0	69.7	30	66.7	65.2	0.7

2006 Plus Alternative B Phase I ROAD SEGMENT	ADT	Peak Hr. # VEHICLES	VEHICLE TYPE %					VEHICLE SPEED			calveno factors			(15 meters from roadway center)	Roadway Center (m.)	Level (dBA) 3 dBA Atten	Level (dBA) 4.5 dBA Atten					
			Auto		Medium Truck		Heavy Truck	Auto	MT	HT	Auto	MT	HT									
			%	Auto	%	MT	%	HT	k/h	k/h	k/h	k/h	k/h					k/h				
SR 49 North of Shenandoah Road	4,085	409	97	396	3	12	0	0	45	72	30	48	30	48	63.4	53.9	16.2	63.9	30	60.9	59.4	1.7
SR 49 south of SR16	12,266	1,227	97	1,190	3	37	0	0	40	64	30	48	30	48	66.7	58.6	21.0	67.4	30	64.4	62.8	0.1
SR 16 West of Old Sacramento Road	9,889	989	97	959	3	30	0	0	40	64	30	48	30	48	65.8	57.7	20.1	66.4	30	63.4	61.9	1.2
SR 124 South of SR16	4,892	489	97	475	3	15	0	0	45	72	30	48	30	48	64.2	54.7	17.0	64.7	30	61.7	60.2	2.5
SR88 West of SR124	15,156	1,516	97	1,470	3	45	0	0	45	72	30	48	30	48	69.1	59.6	21.9	69.6	30	66.6	65.1	0.6

2006 Plus Alternative C ROAD SEGMENT	ADT	Peak Hr. # VEHICLES	VEHICLE TYPE %					VEHICLE SPEED			calveno factors			(15 meters from roadway center)	Roadway Center (m.)	Level (dBA) 3 dBA Atten	Level (dBA) 4.5 dBA Atten					
			Auto		Medium Truck		Heavy Truck	Auto	MT	HT	Auto	MT	HT									
			%	Auto	%	MT	%	HT	k/h	k/h	k/h	k/h	k/h					k/h				
SR 49 North of Shenandoah Road	3,807	381	97	369	3	11	0	0	45	72	30	48	30	48	63.1	53.6	15.9	63.6	30	60.6	59.1	1.4
SR 49 south of SR16	12,203	1,220	97	1,184	3	37	0	0	40	64	30	48	30	48	66.7	58.6	21.0	67.3	30	64.3	62.8	0.1
SR 16 West of Old Sacramento Road	9,380	938	97	910	3	28	0	0	40	64	30	48	30	48	65.6	57.5	19.9	66.2	30	63.2	61.7	1.0
SR 124 South of SR16	4,440	444	97	431	3	13	0	0	45	72	30	48	30	48	63.8	54.2	16.6	64.2	30	61.2	59.7	2.0
SR88 West of SR124	14,726	1,473	97	1,428	3	44	0	0	45	72	30	48	30	48	69.0	59.4	21.8	69.5	30	66.4	64.9	0.5

2006 Plus Alternative C With Buena Vista ROAD SEGMENT	ADT	Peak Hr. # VEHICLES	VEHICLE TYPE %					VEHICLE SPEED			calveno factors			(15 meters from roadway center)	Roadway Center (m.)	Level (dBA) 3 dBA Atten	Level (dBA) 4.5 dBA Atten					
			Auto		Medium Truck		Heavy Truck	Auto	MT	HT	Auto	MT	HT									
			%	Auto	%	MT	%	HT	k/h	k/h	k/h	k/h	k/h					k/h				
SR 49 North of Shenandoah Road	3,807	381	97	369	3	11	0	0	45	72	30	48	30	48	63.1	53.6	15.9	63.6	30	60.6	59.1	1.4
SR 49 south of SR16	12,203	1,220	97	1,184	3	37	0	0	40	64	30	48	30	48	66.7	58.6	21.0	67.3	30	64.3	62.8	0.1
SR 16 West of Old Sacramento Road	9,380	1,138	97	1,104	3	34	0	0	40	64	30	48	30	48	66.4	58.3	20.7	67.0	30	64.0	62.5	1.8
SR 124 South of SR16	4,440	644	97	625	3	19	0	0	45	72	30	48	30	48	65.4	55.8	18.2	65.9	30	62.9	61.3	3.6
SR88 West of SR124	14,726	1,572	97	1,524	3	47	0	0	45	72	30	48	30	48	69.3	59.7	22.1	69.7	30	66.7	65.2	0.8

2006 Plus Alternative D ROAD SEGMENT	ADT	Peak Hr. # VEHICLES	VEHICLE TYPE %					VEHICLE SPEED			calveno factors			(15 meters from roadway center)	Roadway Center (m.)	Level (dBA) 3 dBA Atten	Level (dBA) 4.5 dBA Atten					
			Auto		Medium Truck		Heavy Truck	Auto	MT	HT	Auto	MT	HT									
			%	Auto	%	MT	%	HT	k/h	k/h	k/h	k/h	k/h					k/h				
SR 49 North of Shenandoah Road	3,864	386	97	375	3	12	0	0	45	72	30	48	30	48	63.2	53.6	16.0	63.6	30	60.6	59.1	1.4
SR 49 south of SR16	12,238	1,224	97	1,187	3	37	0	0	40	64	30	48	30	48	66.7	58.6	21.0	67.4	30	64.3	62.8	0.1
SR 16 West of Old Sacramento Road	9,378	938	97	910	3	28	0	0	40	64	30	48	30	48	65.6	57.5	19.8	66.2	30	63.2	61.7	1.0
SR 124 South of SR16	4,406	441	97	427	3	13	0	0	45	72	30	48	30	48	63.8	54.2	16.6	64.2	30	61.2	59.7	2.0
SR88 West of SR124	14,692	1,469	97	1,425	3	44	0	0	45	72	30	48	30	48	69.0	59.4	21.8	69.4	30	66.4	64.9	0.5

2006 Plus Alternative D With Buena Vista ROAD SEGMENT	ADT	Peak Hr. # VEHICLES	VEHICLE TYPE %					VEHICLE SPEED			calveno factors			(15 meters from roadway center)	Roadway Center (m.)	Level (dBA) 3 dBA Atten	Level (dBA) 4.5 dBA Atten					
			Auto		Medium Truck		Heavy Truck	Auto	MT	HT	Auto	MT	HT									
			%	Auto	%	MT	%	HT	k/h	k/h	k/h	k/h	k/h					k/h				
SR 49 North of Shenandoah Road	3,864	386	97	375	3	12	0	0	45	72	30	48	30	48	63.2	53.6	16.0	63.6	30	60.6	59.1	1.4
SR 49 south of SR16	12,238	1,224	97	1,187	3	37	0	0	40	64	30	48	30	48	66.7	58.6	21.0	67.4	30	64.3	62.8	0.1
SR 16 West of Old Sacramento Road	9,378	1,138	97	1,104	3	34	0	0	40	64	30	48	30	48	66.4	58.3	20.7	67.0	30	64.0	62.5	1.8
SR 124 South of SR16	4,406	641	97	621	3	19	0	0	45	72	30	48	30	48	65.4	55.8	18.2	65.8	30	62.8	61.3	3.6
SR88 West of SR124	14,692	1,568	97	1,521	3	47	0	0	45	72	30	48	30	48	69.3	59.7	22.1	69.7	30	66.7	65.2	0.8

ADT to Peak Hr Factor = 0.1

**Traffic Noise Level Estimates 2009  
FHWA RD-77-108**

15m= 49.185 FEET

2009 No Project+ Buena Vista

ROAD SEGMENT	Peak Hr. # VEHICLES		VEHICLE TYPE %						
	ADT	# VEHICLES	Auto		Medium Truck		Heavy Truck		
			%		%	MT	%	HT	
SR 49 North of Shenandoah Road	2,970	297	97	288	3	9	0	0	0
SR 49 south of SR16	12,780	1,278	97	1,240	3	38	0	0	0
SR 16 West of Old Sacramento Road	8,010	1,001	97	971	3	30	0	0	0
SR 124 South of SR16	2,970	497	97	462	3	15	0	0	0
SR88 West of SR124	14,030	1,502	97	1,457	3	45	0	0	0

Auto	VEHICLE SPEED						calveno factors		
	k/h		MT		HT		Auto		
	%		%	HT	%	HT	MI	HT	
45	72	30	48	30	48	62.0	52.5	14.9	
40	64	30	48	30	48	66.9	58.8	21.2	
40	64	30	48	30	48	65.9	57.8	20.1	
45	72	30	48	30	48	64.3	54.7	17.1	
45	72	30	48	30	48	69.1	59.5	21.9	

(15 meters from roadway center)	Roadway Center (m.)	Level (dBA)	Level (dBA)
		3 dBA Alter	4.5 dBA Alter
62.5	30	59.5	58.0
67.5	30	64.5	63.0
66.5	30	63.5	62.0
64.7	30	61.7	60.2
69.5	30	66.5	65.0

2009 Plus Alternative A Phase II

ROAD SEGMENT	Peak Hr. # VEHICLES		VEHICLE TYPE %						
	ADT	# VEHICLES	Auto		Medium Truck		Heavy Truck		
			%		%	MT	%	HT	
SR 49 North of Shenandoah Road	4,677	468	97	454	3	14	0	0	0
SR 49 south of SR16	13,170	1,317	97	1,277	3	40	0	0	0
SR 16 West of Old Sacramento Road	11,121	1,112	97	1,079	3	33	0	0	0
SR 124 South of SR16	5,714	571	97	554	3	17	0	0	0
SR88 West of SR124	16,650	1,665	97	1,615	3	50	0	0	0

Auto	VEHICLE SPEED						calveno factors		
	k/h		MT		HT		Auto		
	%		%	HT	%	HT	MI	HT	
45	72	30	48	30	48	64.0	54.5	16.8	
40	64	30	48	30	48	67.0	59.0	21.3	
40	64	30	48	30	48	66.3	58.2	20.6	
45	72	30	48	30	48	64.9	55.3	17.7	
45	72	30	48	30	48	69.5	60.0	22.3	

(15 meters from roadway center)	Roadway Center (m.)	Level (dBA)	Level (dBA)
		3 dBA Alter	4.5 dBA Alter
64.5	30	61.5	60.0
67.7	30	64.7	63.2
66.9	30	63.9	62.4
65.3	30	62.3	60.8
70.0	30	67.0	65.5

2.0  
0.1  
0.5  
0.6  
0.4

2009 Plus Alternative A Phase II + Buena Vista

ROAD SEGMENT	Peak Hr. # VEHICLES		VEHICLE TYPE %						
	ADT	# VEHICLES	Auto		Medium Truck		Heavy Truck		
			%		%	MT	%	HT	
SR 49 North of Shenandoah Road	4,677	468	97	454	3	14	0	0	0
SR 49 south of SR16	13,170	1,317	97	1,277	3	40	0	0	0
SR 16 West of Old Sacramento Road	11,121	1,312	97	1,273	3	39	0	0	0
SR 124 South of SR16	5,714	771	97	746	3	23	0	0	0
SR88 West of SR124	16,650	1,764	97	1,711	3	53	0	0	0

Auto	VEHICLE SPEED						calveno factors		
	k/h		MT		HT		Auto		
	%		%	HT	%	HT	MI	HT	
45	72	30	48	30	48	64.0	54.5	16.8	
40	64	30	48	30	48	67.0	59.0	21.3	
40	64	30	48	30	48	67.0	58.9	21.3	
45	72	30	48	30	48	66.2	56.6	19.0	
45	72	30	48	30	48	69.8	60.2	22.6	

(15 meters from roadway center)	Roadway Center (m.)	Level (dBA)	Level (dBA)
		3 dBA Alter	4.5 dBA Alter
64.5	30	61.5	60.0
67.7	30	64.7	63.2
67.7	30	64.6	63.1
66.6	30	63.6	62.1
70.2	30	67.2	65.7

2.0  
0.1  
1.2  
1.9  
0.7

2009 Plus Alternative B Phase II

ROAD SEGMENT	Peak Hr. # VEHICLES		VEHICLE TYPE %						
	ADT	# VEHICLES	Auto		Medium Truck		Heavy Truck		
			%		%	MT	%	HT	
SR 49 North of Shenandoah Road	4,427	443	97	429	3	13	0	0	0
SR 49 south of SR16	13,114	1,311	97	1,272	3	39	0	0	0
SR 16 West of Old Sacramento Road	10,665	1,067	97	1,035	3	32	0	0	0
SR 124 South of SR16	5,310	531	97	515	3	16	0	0	0
SR88 West of SR124	16,266	1,627	97	1,578	3	49	0	0	0

Auto	VEHICLE SPEED						calveno factors		
	k/h		MT		HT		Auto		
	%		%	HT	%	HT	MI	HT	
45	72	30	48	30	48	63.8	54.2	16.6	
40	64	30	48	30	48	67.0	58.9	21.3	
40	64	30	48	30	48	66.1	58.0	20.4	
45	72	30	48	30	48	64.6	55.0	17.4	
45	72	30	48	30	48	69.4	59.9	22.2	

(15 meters from roadway center)	Roadway Center (m.)	Level (dBA)	Level (dBA)
		3 dBA Alter	4.5 dBA Alter
64.2	30	61.2	59.7
67.7	30	64.6	63.1
66.8	30	63.7	62.2
65.0	30	62.0	60.5
69.9	30	66.9	65.4

1.7  
0.1  
0.3  
0.3  
0.3

2009 Plus Alternative B Phase II + Buena Vista

ROAD SEGMENT	Peak Hr. # VEHICLES		VEHICLE TYPE %						
	ADT	# VEHICLES	Auto		Medium Truck		Heavy Truck		
			%		%	MT	%	HT	
SR 49 North of Shenandoah Road	4,427	443	97	429	3	13	0	0	0
SR 49 south of SR16	13,114	1,311	97	1,272	3	39	0	0	0
SR 16 West of Old Sacramento Road	10,665	1,267	97	1,226	3	38	0	0	0
SR 124 South of SR16	5,310	731	97	709	3	22	0	0	0
SR88 West of SR124	16,266	1,728	97	1,674	3	52	0	0	0

Auto	VEHICLE SPEED						calveno factors		
	k/h		MT		HT		Auto		
	%		%	HT	%	HT	MI	HT	
45	72	30	48	30	48	63.8	54.2	16.6	
40	64	30	48	30	48	67.0	58.9	21.3	
40	64	30	48	30	48	66.9	58.8	21.2	
45	72	30	48	30	48	66.0	56.4	18.8	
45	72	30	48	30	48	69.7	60.1	22.5	

(15 meters from roadway center)	Roadway Center (m.)	Level (dBA)	Level (dBA)
		3 dBA Alter	4.5 dBA Alter
64.2	30	61.2	59.7
67.7	30	64.6	63.1
67.5	30	64.5	63.0
66.4	30	63.4	61.9
70.1	30	67.1	65.6

1.7  
0.1  
1.0  
1.7  
0.6

2009 Plus Alternative C Phase II + Buena Vista

ROAD SEGMENT	Peak Hr. # VEHICLES		VEHICLE TYPE %						
	ADT	# VEHICLES	Auto		Medium Truck		Heavy Truck		
			%		%	MT	%	HT	
SR 49 North of Shenandoah Road	4,427	419	97	402	3	12	0	0	0
SR 49 south of SR16	13,114	1,303	97	1,266	3	39	0	0	0
SR 16 West of Old Sacramento Road	10,665	1,218	97	1,179	3	36	0	0	0
SR 124 South of SR16	5,310	686	97	665	3	21	0	0	0
SR88 West of SR124	16,266	1,683	97	1,632	3	50	0	0	0

Auto	VEHICLE SPEED						calveno factors		
	k/h		MT		HT		Auto		
	%		%	HT	%	HT	MI	HT	
45	72	30	48	30	48	63.5	53.9	16.3	
40	64	30	48	30	48	67.0	58.9	21.3	
40	64	30	48	30	48	66.7	58.6	21.0	
45	72	30	48	30	48	65.7	56.1	18.5	
45	72	30	48	30	48	69.6	60.0	22.4	

(15 meters from roadway center)	Roadway Center (m.)	Level (dBA)	Level (dBA)
		3 dBA Alter	4.5 dBA Alter
64.0	30	60.9	59.4
67.6	30	64.6	63.1
67.3	30	64.3	62.8
66.1	30	63.1	61.6
70.0	30	67.0	65.5

1.4  
0.1  
0.8  
1.4  
0.5

2009 Plus Alternative D Phase II + Buena Vista

ROAD SEGMENT	Peak Hr. # VEHICLES		VEHICLE TYPE %						
	ADT	# VEHICLES	Auto		Medium Truck		Heavy Truck		
			%		%	MT	%	HT	
SR 49 North of Shenandoah Road	4,427	421	97	408	3	13	0	0	0
SR 49 south of SR16	13,114	1,303	97	1,266	3	39	0	0	0
SR 16 West of Old Sacramento Road	10,665	1,218	97	1,179	3	36	0	0	0
SR 124 South of SR16	5,310	686	97	665	3	21	0	0	0
SR88 West of SR124	16,266	1,683	97	1,632	3	50	0	0	0

Auto	VEHICLE SPEED						calveno factors		
	k/h		MT		HT		Auto		
	%		%	HT	%	HT	MI	HT	
45	72	30	48	30	48	63.6	54.0	16.4	
40	64	30	48	30	48	67.0	58.9	21.3	
40	64	30	48	30	48	66.7	58.6	21.0	
45	72	30	48	30	48	65.7	56.1	18.5	
45	72	30	48	30	48	69.6	60.0	22.4	

(15 meters from roadway center)	Roadway Center (m.)	Level (dBA)	Level (dBA)
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