Appendix F

Noise Worksheets

- Construction Noise Calculations – On-Site Sources
- Construction Noise Calculations – Off-Site Sources
- Operation Noise Calculations – Off-Site Sources

Project: SFVAMC LDRP

AECOM

Construction Phase: ***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%	600	10
Concrete/Industrial Saw	1	90	20%	600	10
Tractor/Loader/Backhoe	2	78	40%	600	10

Receptor: ***Location 1 - 43rd Avenue and Point Lobos Avenue***

Results:

1-hour Leq: 52.9

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Site Preparation***

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Grader	1	85	40%	600	10
Tractor/Loader/Backhoe	1	78	40%	600	10

Receptor: ***Location 1 - 43rd Avenue and Point Lobos Avenue***

Results:

1-hour Leq: 50.2

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Grading***

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%	600	10
Concrete/Industrial Saw	1	90	20%	600	10
Tractor/Loader/Backhoe	2	78	40%	600	10

Receptor: ***Location 1 - 43rd Avenue and Point Lobos Avenue***

Results:

1-hour Leq: 52.9

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Building Construction***

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Crane	1	81	16%	600	10
Forklifts	2	75	50%	600	10
Tractor/Loader/Backhoe	2	78	40%	600	10

Receptor: ***Location 1 - 43rd Avenue and Point Lobos Avenue***

Results:

1-hour Leq: 48.5

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Paving***

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Pavers	1	77	50%	600	10
Cement and Mortar Mixers	4	79	40%	600	10
Rollers	1	80	20%	600	10
Tractor/Loader/Backhoe	1	78	40%	600	10

Receptor: ***Location 1 - 43rd Avenue and Point Lobos Avenue***

Results:

1-hour Leq: 51.4

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***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%	300	0
Concrete/Industrial Saw	1	90	20%	300	0
Tractor/Loader/Backhoe	2	78	40%	300	0

Receptor: ***Location 2 - 42nd Avenue and Clement Street***

Results:

1-hour Leq: 68.9

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Site Preparation***

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Grader	1	85	40%	300	0
Tractor/Loader/Backhoe	1	78	40%	300	0

Receptor: ***Location 2 - 42nd Avenue and Clement Street***

Results:

1-hour Leq: 66.2

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Grading***

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%	300	0
Concrete/Industrial Saw	1	90	20%	300	0
Tractor/Loader/Backhoe	2	78	40%	300	0

Receptor: ***Location 2 - 42nd Avenue and Clement Street***

Results:

1-hour Leq: 68.9

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Building Construction***

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Crane	1	81	16%	300	0
Forklifts	2	75	50%	300	0
Tractor/Loader/Backhoe	2	78	40%	300	0

Receptor: ***Location 2 - 42nd Avenue and Clement Street***

Results:

1-hour Leq: 64.5

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Paving***

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Pavers	1	77	50%	300	0
Cement and Mortar Mixers	4	79	40%	300	0
Rollers	1	80	20%	300	0
Tractor/Loader/Backhoe	1	78	40%	300	0

Receptor: ***Location 2 - 42nd Avenue and Clement Street***

Results:

1-hour Leq: 67.4

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***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%	100	0
Concrete/Industrial Saw	1	90	20%	100	0
Tractor/Loader/Backhoe	2	78	40%	100	0

Receptor: ***Location 3 - Front lawn area southeast of Bldg. 203***

Results:

1-hour Leq: 78.5

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Site Preparation***

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Grader	1	85	40%	100	0
Tractor/Loader/Backhoe	1	78	40%	100	0

Receptor: ***Location 3 - Front lawn area southeast of Bldg. 203***

Results:

1-hour Leq: 75.8

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Grading***

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%	100	0
Concrete/Industrial Saw	1	90	20%	100	0
Tractor/Loader/Backhoe	2	78	40%	100	0

Receptor: ***Location 3 - Front lawn area southeast of Bldg. 203***

Results:

1-hour Leq: 78.5

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Building Construction***

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Crane	1	81	16%	100	0
Forklifts	2	75	50%	100	0
Tractor/Loader/Backhoe	2	78	40%	100	0

Receptor: ***Location 3 - Front lawn area southeast of Bldg. 203***

Results:

1-hour Leq: 74.1

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Paving***

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Pavers	1	77	50%	100	0
Cement and Mortar Mixers	4	79	40%	100	0
Rollers	1	80	20%	100	0
Tractor/Loader/Backhoe	1	78	40%	100	0

Receptor: ***Location 3 - Front lawn area southeast of Bldg. 203***

Results:

1-hour Leq: 76.9

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***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%	50	0
Concrete/Industrial Saw	1	90	20%	50	0
Tractor/Loader/Backhoe	2	78	40%	50	0

Receptor: ***Location 4 - 50 feet from construction area***

Results:

1-hour Leq: 84.5

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Site Preparation***

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Grader	1	85	40%	50	0
Tractor/Loader/Backhoe	1	78	40%	50	0

Receptor: ***Location 4 - 50 feet from construction area***

Results:

1-hour Leq: 81.8

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Grading***

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%	50	0
Concrete/Industrial Saw	1	90	20%	50	0
Tractor/Loader/Backhoe	2	78	40%	50	0

Receptor: ***Location 4 - 50 feet from construction area***

Results:

1-hour Leq: 84.5

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Building Construction***

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Crane	1	81	16%	50	0
Forklifts	2	75	50%	50	0
Tractor/Loader/Backhoe	2	78	40%	50	0

Receptor: ***Location 4 - 50 feet from construction area***

Results:

1-hour Leq: 80.1

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Paving***

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Pavers	1	77	50%	50	0
Cement and Mortar Mixers	4	79	40%	50	0
Rollers	1	80	20%	50	0
Tractor/Loader/Backhoe	1	78	40%	50	0

Receptor: ***Location 4 - 50 feet from construction area***

Results:

1-hour Leq: 83.0

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Building 10 Retrofit***

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Crane	0	81	16%	50	0
Forklifts	1	75	20%	50	0
Tractor/Loader/Backhoe	1	78	40%	50	0

Receptor: ***Child Care Center - Building 32***

Results:

1-hour Leq: 75.0

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Building 10 Retrofit***

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Crane	0	81	16%	100	9
Forklifts	1	75	20%	100	9
Tractor/Loader/Backhoe	1	78	40%	100	9

Receptor: ***Child Care Center - Outdoor Play Area***

Results:

1-hour Leq: 60.0

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Modular Installation (Trailer T-36)***

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Crane	1	81	16%	50	0
Forklifts	1	75	40%	50	0
Tractor/Loader/Backhoe	0	78	30%	50	0

Receptor: ***Nearest off-site residence on Sea Rock Drive***

Results:

1-hour Leq: 75.2

Source for Ref. Noise Levels: FHWA RCNM, 2005

Project: SFVAMC LDRP

AECOM

Construction Phase: ***Patient Welcome Center & Drop-off Area***

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%	175	0
Concrete/Industrial Saw	1	90	20%	175	0
Tractor/Loader/Backhoe	2	78	40%	175	0

Receptor: ***Nearest off-site residene on Clement St. east of 43rd Ave.***

Results:

1-hour Leq: 73.6

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: SFVAMC LDRP

AECOM

Construction Off-Site Traffic

	Daily One-Way Truck Trips	Daily One-Way Worker Trips	Hourly One-Way Truck Trips	Hourly One-Way Worker Trips	Est. Noise Levels, dBA Leq
Alternative 1					
Short-term Projects	72	144	9	72	58.6
Long-term Projects	72	88	9	44	58.1
Alternative 2					
Short-term Projects	72	128	9	64	58.5
Long-term Projects	72	90	9	45	58.2
Alternative 3					
Short-term Projects	72	144	9	72	58.6
Long-Term Projects	n/a	n/a	n/a	n/a	n/a

Estimated Noise Levels are calculated using FHWA TNM computer noise model

AECOM						2014					
SKB					TNM 2.5						
INPUT: ROADWAYS							Average pavement type shall be used unless				
PROJECT/CONTRACT:	SFVAMC LDRP						a State highway agency substantiates the use				
RUN:	Alternative 1, Short-Term Projects						of a different type with the approval of FHWA				
Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Truck Route	12.0	point1	1	0.0	0.0	0.00				Average	
		point2	2	750.0	0.0	0.00					

AECOM				2014								
SKB				TNM 2.5								
INPUT: TRAFFIC FOR LAeq1h Volumes												
PROJECT/CONTRACT:	SFVAMC LDRP											
RUN:	Alternative 1, Short-Term Projects											
Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Truck Route	point1	1	72	30	0	0	9	30	0	0	0	0
	point2	2										

AECOM							2014				
SKB						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	SFVAMC LDRP										
RUN:	Alternative 1, Short-Term Projects										
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active
			X	Y	Z	above	Existing	Impact Criteria		NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Receiver1	1	1	375.0	30.0	0.00	4.92	0.00	66	10.0	8.0	Y

AECOM							2014					
SKB							TNM 2.5					
							Calculated with TNM 2.5					
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		SFVAMC LDRP										
RUN:		Alternative 1, Short-Term Projects										
BARRIER DESIGN:		INPUT HEIGHTS						Average pavement type shall be used unless				
								a State highway agency substantiates the use				
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.				
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver1	1	1	0.0	58.6	66	58.6	10	---	58.6	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

AECOM						2014					
SKB					TNM 2.5						
INPUT: ROADWAYS							Average pavement type shall be used unless				
PROJECT/CONTRACT:	SFVAMC LDRP						a State highway agency substantiates the use				
RUN:	Alternative 1, Long-Term Projects						of a different type with the approval of FHWA				
Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Truck Route	12.0	point1	1	0.0	0.0	0.00				Average	
		point2	2	750.0	0.0	0.00					

AECOM					2014							
SKB				TNM 2.5								
INPUT: TRAFFIC FOR LAeq1h Volumes												
PROJECT/CONTRACT:	SFVAMC LDRP											
RUN:	Alternative 1, Long-Term Projects											
Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Truck Route	point1	1	41	30	0	0	9	30	0	0	0	0
	point2	2										

AECOM 2014
SKB TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: SFVAMC LDRP
RUN: Alternative 1, Long-Term Projects

Receiver											
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active
			X	Y	Z	above	Existing	Impact Criteria		NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Receiver1	1	1	375.0	30.0	0.00	4.92	0.00	66	10.0	8.0	Y

AECOM							2014					
SKB							TNM 2.5					
							Calculated with TNM 2.5					
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		SFVAMC LDRP										
RUN:		Alternative 1, Long-Term Projects										
BARRIER DESIGN:		INPUT HEIGHTS						Average pavement type shall be used unless				
								a State highway agency substantiates the use				
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.				
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver1	1	1	0.0	58.1	66	58.1	10	---	58.1	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

AECOM						2014					
SKB					TNM 2.5						
INPUT: ROADWAYS							Average pavement type shall be used unless				
PROJECT/CONTRACT:	SFVAMC LDRP						a State highway agency substantiates the use				
RUN:	Alternative 2, Short-Term Projects						of a different type with the approval of FHWA				
Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Truck Route	12.0	point1	1	0.0	0.0	0.00				Average	
		point2	2	750.0	0.0	0.00					

AECOM					2014							
SKB				TNM 2.5								
INPUT: TRAFFIC FOR LAeq1h Volumes												
PROJECT/CONTRACT:	SFVAMC LDRP											
RUN:	Alternative 2, Short-Term Projects											
Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Truck Route	point1	1	64	30	0	0	9	30	0	0	0	0
	point2	2										

AECOM 2014
SKB TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: SFVAMC LDRP
RUN: Alternative 2, Short-Term Projects

Receiver											
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active
			X	Y	Z	above	Existing	Impact Criteria		NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Receiver1	1	1	375.0	30.0	0.00	4.92	0.00	66	10.0	8.0	Y

AECOM					2014							
SKB				TNM 2.5								
INPUT: TRAFFIC FOR LAeq1h Volumes												
PROJECT/CONTRACT:	SFVAMC LDRP											
RUN:	Alternative 2, Short-Term Projects											
Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Truck Route	point1	1	64	30	0	0	9	30	0	0	0	0
	point2	2										

AECOM								2014				
SKB							TNM 2.5					
							Calculated with TNM 2.5					
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		SFVAMC LDRP										
RUN:		Alternative 2, Short-Term Projects										
BARRIER DESIGN:		INPUT HEIGHTS						Average pavement type shall be used unless				
								a State highway agency substantiates the use				
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.				
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver1	1	1	0.0	58.5	66	58.5	10	---	58.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

AECOM						2014					
SKB					TNM 2.5						
INPUT: ROADWAYS							Average pavement type shall be used unless				
PROJECT/CONTRACT:	SFVAMC LDRP						a State highway agency substantiates the use				
RUN:	Alternative 2, Short-Term Projects						of a different type with the approval of FHWA				
Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Truck Route	12.0	point1	1	0.0	0.0	0.00				Average	
		point2	2	750.0	0.0	0.00					

AECOM 2014

SKB TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes

PROJECT/CONTRACT: SFVAMC LDRP

RUN: Alternative 2, Short-Term Projects

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Truck Route	point1	1	64	30	0	0	9	30	0	0	0	0
	point2	2										

AECOM 2014
SKB TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: SFVAMC LDRP
RUN: Alternative 2, Short-Term Projects

Receiver											
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active
			X	Y	Z	above	Existing	Impact Criteria		NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Receiver1	1	1	375.0	30.0	0.00	4.92	0.00	66	10.0	8.0	Y

AECOM							2014					
SKB							TNM 2.5					
							Calculated with TNM 2.5					
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		SFVAMC LDRP										
RUN:		Alternative 2, Short-Term Projects										
BARRIER DESIGN:		INPUT HEIGHTS						Average pavement type shall be used unless				
								a State highway agency substantiates the use				
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.				
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver1	1	1	0.0	58.5	66	58.5	10	---	58.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

AECOM						2014					
SKB					TNM 2.5						
INPUT: ROADWAYS							Average pavement type shall be used unless				
PROJECT/CONTRACT:	SFVAMC LDRP						a State highway agency substantiates the use				
RUN:	Alternative 1, Scenario B, Phase 2						of a different type with the approval of FHWA				
Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Truck Route	12.0	point1	1	0.0	0.0	0.00				Average	
		point2	2	750.0	0.0	0.00					

AECOM					2014							
SKB				TNM 2.5								
INPUT: TRAFFIC FOR LAeq1h Volumes												
PROJECT/CONTRACT:	SFVAMC LDRP											
RUN:	Alternative 1, Scenario B, Phase 2											
Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Truck Route	point1	1	45	30	0	0	9	30	0	0	0	0
	point2	2										

AECOM							2014				
SKB						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	SFVAMC LDRP										
RUN:	Alternative 1, Scenario B, Phase 2										
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active
			X	Y	Z	above	Existing	Impact Criteria		NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Receiver1	1	1	375.0	30.0	0.00	4.92	0.00	66	10.0	8.0	Y

AECOM							2014					
SKB							TNM 2.5					
							Calculated with TNM 2.5					
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		SFVAMC LDRP										
RUN:		Alternative 1, Scenario B, Phase 2										
BARRIER DESIGN:		INPUT HEIGHTS						Average pavement type shall be used unless				
								a State highway agency substantiates the use				
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.				
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver1	1	1	0.0	58.2	66	58.2	10	---	58.2	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

AECOM						2014					
SKB					TNM 2.5						
INPUT: ROADWAYS							Average pavement type shall be used unless				
PROJECT/CONTRACT:	SFVAMC LDRP						a State highway agency substantiates the use				
RUN:	Alternative 3, Short-Term Projects						of a different type with the approval of FHWA				
Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment	
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Truck Route	12.0	point1	1	0.0	0.0	0.00				Average	
		point2	2	750.0	0.0	0.00					

AECOM 2014

SKB TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes

PROJECT/CONTRACT: SFVAMC LDRP

RUN: Alternative 3, Short-Term Projects

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Truck Route	point1	1	72	30	0	0	9	30	0	0	0	0
	point2	2										

AECOM 2014
SKB TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: SFVAMC LDRP
RUN: Alternative 3, Short-Term Projects

Receiver											
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active
			X	Y	Z	above	Existing	Impact Criteria		NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Receiver1	1	1	375.0	30.0	0.00	4.92	0.00	66	10.0	8.0	Y

AECOM							2014					
SKB							TNM 2.5					
							Calculated with TNM 2.5					
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		SFVAMC LDRP										
RUN:		Alternative 3, Short-Term Projects										
BARRIER DESIGN:		INPUT HEIGHTS						Average pavement type shall be used unless				
								a State highway agency substantiates the use				
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.				
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver1	1	1	0.0	58.6	66	58.6	10	---	58.6	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	1	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Appendix F

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

AECOM

Project Name : SFVAMC LRDP Final EIS
Project Number : 60208383
Modeling Condition : Existing
Ground Type : Hard
K Factor : 10
Metric (L_{eq}, L_{dn}, CNEL) : Ldn
Traffic Desc. (Peak or ADT) : Peak

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	Clement Street	43 Avenue	42 Avenue	469	30	50	98	1	1	80		20	
2	Clement Street	42 Avenue	34 Avenue	625	30	50	98	1	1	80		20	
3	Clement Street	43 Avenue	48 Avenue	348	30	50	98	1	1	80		20	
4	43 Avenue	Clement Street	Point Lobos Avenue	345	30	50	98	1	1	80		20	
5	42 Avenue	Clement Street	Point Lobos Avenue	168	30	50	98	1	1	80		20	

Appendix F

Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : SFVAMC LRDP Final EIS
Project Number : 60208383
Modeling Condition : Existing
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Clement Street	43 Avenue	42 Avenue	59.7	50.3	57.4	62.0	8	25	79	251	793
2	Clement Street	42 Avenue	34 Avenue	60.9	51.6	58.7	63.3	11	33	106	334	1057
3	Clement Street	43 Avenue	48 Avenue	58.4	49.0	56.1	60.7	6	19	59	186	589
4	43 Avenue	Clement Street	Point Lobos Avenu	58.3	49.0	56.1	60.7	6	18	58	185	583
5	42 Avenue	Clement Street	Point Lobos Avenu	55.2	45.9	53.0	57.5	3	9	28	90	284

Appendix F

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

AECOM

Project Name : SFVAMC LRDP Final EIS

Project Number : 60208383

Modeling Condition : 2020 Short-term Alternatives 1 and 2

Ground Type : Hard **K Factor :** 10

Metric (L_{eq}, L_{dn}, CNEL) : Ldn **Traffic Desc. (Peak or ADT) :** Peak

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	Clement Street	43 Avenue	42 Avenue	509	30	50	98	1	1	80		20	
2	Clement Street	42 Avenue	34 Avenue	675	30	50	98	1	1	80		20	
3	Clement Street	43 Avenue	48 Avenue	370	30	50	98	1	1	80		20	
4	43 Avenue	Clement Street	Point Lobos Avenue	388	30	50	98	1	1	80		20	
5	42 Avenue	Clement Street	Point Lobos Avenue	182	30	50	98	1	1	80		20	

Appendix F
Traffic Noise Prediction Model, (FHWA RD-77-108)
Predicted Noise Levels

Project Name : SFVAMC LRDP Final EIS
Project Number : 60208383
Modeling Condition : 2020 Short-term Alternatives 1 and 2
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Clement Street	43 Avenue	42 Avenue	60.0	50.7	57.8	62.4	9	27	86	272	861
2	Clement Street	42 Avenue	34 Avenue	61.2	51.9	59.0	63.6	11	36	114	361	1142
3	Clement Street	43 Avenue	48 Avenue	58.6	49.3	56.4	61.0	6	20	63	198	626
4	43 Avenue	Clement Street	Point Lobos Avenu	58.8	49.5	56.6	61.2	7	21	66	207	656
5	42 Avenue	Clement Street	Point Lobos Avenu	55.5	46.2	53.3	57.9	3	10	31	97	308

Appendix F

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

AECOM

Project Name : SFVAMC LRDP Final EIS

Project Number : 60208383

Modeling Condition : 2027 Long-term Alternatives 1 and 2

Ground Type : Hard **K Factor :** 10

Metric (L_{eq}, L_{dn}, CNEL) : Ldn **Traffic Desc. (Peak or ADT) :** Peak

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	Clement Street	43 Avenue	42 Avenue	565	30	50	98	1	1	80		20	
2	Clement Street	42 Avenue	34 Avenue	768	30	50	98	1	1	80		20	
3	Clement Street	43 Avenue	48 Avenue	400	30	50	98	1	1	80		20	
4	43 Avenue	Clement Street	Point Lobos Avenue	446	30	50	98	1	1	80		20	
5	42 Avenue	Clement Street	Point Lobos Avenue	258	30	50	98	1	1	80		20	

Appendix F
Traffic Noise Prediction Model, (FHWA RD-77-108)
Predicted Noise Levels

Project Name : SFVAMC LRDP Final EIS
Project Number : 60208383
Modeling Condition : 2027 Long-term Alternatives 1 and 2
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Clement Street	43 Avenue	42 Avenue	60.5	51.1	58.3	62.8	10	30	96	302	955
2	Clement Street	42 Avenue	34 Avenue	61.8	52.5	59.6	64.1	13	41	130	411	1299
3	Clement Street	43 Avenue	48 Avenue	59.0	49.6	56.8	61.3	7	21	68	214	676
4	43 Avenue	Clement Street	Point Lobos Avenu	59.4	50.1	57.2	61.8	8	24	75	239	754
5	42 Avenue	Clement Street	Point Lobos Avenu	57.1	47.7	54.8	59.4	4	14	44	138	436

Appendix F

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

AECOM

Project Name : SFVAMC LRDP Final EIS

Project Number : 60208383

Modeling Condition : 2040 Cumulative Alternatives 1 and 2

Ground Type : Hard **K Factor :** 10

Metric (L_{eq}, L_{dn}, CNEL) : Ldn **Traffic Desc. (Peak or ADT) :** Peak

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	Clement Street	43 Avenue	42 Avenue	599	30	50	98	1	1	80		20	
2	Clement Street	42 Avenue	34 Avenue	813	30	50	98	1	1	80		20	
3	Clement Street	43 Avenue	48 Avenue	426	30	50	98	1	1	80		20	
4	43 Avenue	Clement Street	Point Lobos Avenue	474	30	50	98	1	1	80		20	
5	42 Avenue	Clement Street	Point Lobos Avenue	270	30	50	98	1	1	80		20	

Appendix F
Traffic Noise Prediction Model, (FHWA RD-77-108)
Predicted Noise Levels

Project Name : SFVAMC LRDP Final EIS
Project Number : 60208383
Modeling Condition : 2040 Cumulative Alternatives 1 and 2
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Clement Street	43 Avenue	42 Avenue	60.7	51.4	58.5	63.1	10	32	101	320	1013
2	Clement Street	42 Avenue	34 Avenue	62.0	52.7	59.8	64.4	14	43	137	435	1375
3	Clement Street	43 Avenue	48 Avenue	59.2	49.9	57.0	61.6	7	23	72	228	720
4	43 Avenue	Clement Street	Point Lobos Avenu	59.7	50.4	57.5	62.0	8	25	80	253	802
5	42 Avenue	Clement Street	Point Lobos Avenu	57.3	47.9	55.0	59.6	5	14	46	144	457

Appendix F

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

AECOM

Project Name : SFVAMC LRDP Final EIS

Project Number : 60208383

Modeling Condition : 2040 Cumulative Alternative 3

Ground Type : Hard **K Factor :** 10

Metric (L_{eq}, L_{dn}, CNEL) : Ldn **Traffic Desc. (Peak or ADT) :** Peak

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	Clement Street	43 Avenue	42 Avenue	561	30	50	98	1	1	80		20	
2	Clement Street	42 Avenue	34 Avenue	743	30	50	98	1	1	80		20	
3	Clement Street	43 Avenue	48 Avenue	409	30	50	98	1	1	80		20	
4	43 Avenue	Clement Street	Point Lobos Avenue	425	30	50	98	1	1	80		20	
5	42 Avenue	Clement Street	Point Lobos Avenue	200	30	50	98	1	1	80		20	

Appendix F
Traffic Noise Prediction Model, (FHWA RD-77-108)
Predicted Noise Levels

Project Name : SFVAMC LRDP Final EIS
Project Number : 60208383
Modeling Condition : 2040 Cumulative Alternative 3
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Clement Street	43 Avenue	42 Avenue	60.4	51.1	58.2	62.8	9	30	95	300	949
2	Clement Street	42 Avenue	34 Avenue	61.7	52.3	59.4	64.0	13	40	126	397	1257
3	Clement Street	43 Avenue	48 Avenue	59.1	49.7	56.8	61.4	7	22	69	219	692
4	43 Avenue	Clement Street	Point Lobos Avenu	59.2	49.9	57.0	61.6	7	23	72	227	719
5	42 Avenue	Clement Street	Point Lobos Avenu	56.0	46.6	53.7	58.3	3	11	34	107	338

Appendix F

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

AECOM

Project Name : SFVAMC LRDP Final EIS
Project Number : 60208383
Modeling Condition : 2020 Short-term Alternative 4
Ground Type : Hard **K Factor :** 10
Metric (L_{eq}, L_{dn}, CNEL) : Ldn **Traffic Desc. (Peak or ADT) :** Peak

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	Clement Street	43 Avenue	42 Avenue	491	30	50	98	1	1	80		20	
2	Clement Street	42 Avenue	34 Avenue	655	30	50	98	1	1	80		20	
3	Clement Street	43 Avenue	48 Avenue	364	30	50	98	1	1	80		20	
4	43 Avenue	Clement Street	Point Lobos Avenue	361	30	50	98	1	1	80		20	
5	42 Avenue	Clement Street	Point Lobos Avenue	176	30	50	98	1	1	80		20	

Appendix F
Traffic Noise Prediction Model, (FHWA RD-77-108)
Predicted Noise Levels

Project Name : SFVAMC LRDP Final EIS
Project Number : 60208383
Modeling Condition : 2020 Short-term Alternative 4
Metric (Leq, Ldn, CNEL) : Ldn

		Segment		Noise Levels, dB Ldn				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Clement Street	43 Avenue	42 Avenue	59.9	50.5	57.6	62.2	8	26	83	263	830
2	Clement Street	42 Avenue	34 Avenue	61.1	51.8	58.9	63.5	11	35	111	350	1108
3	Clement Street	43 Avenue	48 Avenue	58.6	49.2	56.3	60.9	6	19	62	195	616
4	43 Avenue	Clement Street	Point Lobos Avenu	58.5	49.2	56.3	60.9	6	19	61	193	610
5	42 Avenue	Clement Street	Point Lobos Avenu	55.4	46.1	53.2	57.7	3	9	30	94	298