Appendix V

Alternatives Noise Calculations

Alternatives Noise Calculations

AES
ACOUSTICAL ENGINEERING SERVICES

Project: 1360 Vine Project - OFFICE OPTION

Off-Site Haul Trucks - Alternatives Analysis 50% Reduction

	Maximum Number of Truck One Way Trips (delivery/haul)		Worker Trips		Project Noise Levels		Ambient		Ambient+Project	
Phase	Per Day	Per Hour (10-hr day)	Daily Trips	Trips during Pk Hr.	Vine St.	Sunset Blvd.	Vine St.	Sunset Blvd.	Vine St.	Sunset Blvd.
1. Grading/Excavation (Project)	190	32	75	30	65.6	65.6	71.7	71.7	72.7	72.7
2. Grading/Excavation (Alt.)	95	16	75	30	62.8	62.8	71.7	71.7	72.2	72.2
Changes					-2.8	-2.8			-0.5	-0.5

Hauls: 6 hours, applicable to Demolition and Grading phases

Eyestone Environmental 20 October 2021
Sean Bui TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: 1360 Vine Street Project
RUN: Trucks - Grading Phase - Alternatives

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	ft			ft	ft	ft		mph	%		
Haul Route	12.0	point1	1	0.0	0.0	0.00	Signal	0.00	100	Average	
		point2	2	1,000.0	0.0	0.00					

Eyestone Environmental **20 October 2021**
Sean Bui **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **1360 Vine Street Project**
RUN: **Trucks - Grading Phase - Alternatives**

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
Haul Route	point1	1	30	35	0	0	16	35	0	0	0	0
	point2	2										

Eyestone Environmental 20 October 2021
Sean Bui TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 1360 Vine Street Project
RUN: Trucks - Grading Phase - Alternatives

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria: Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Receptor at 45 feet	8	1	500.0	45.0	0.00	4.92	0.00	66	10.0	8.0	Y

Eyestone Environmental
Sean Bui

20 October 2021
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS

PROJECT/CONTRACT: 1360 Vine Street Project
RUN: Trucks - Grading Phase - Alternatives
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Increase over existing Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Noise Reduction Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receptor at 45 feet	8	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Noise Reduction Avg	Noise Reduction 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

AES
ACOUSTICAL ENGINEERING SERVICES

Project: 1360 Vine Project - OFFICE OPTION

Construction Phase: ***Demolition***
Alternatives Analysis - 50% Reduction

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Concrete Saw	1	90	20%	60	0
Excavator		81	40%		
Rubber Tired Loader	1	79	40%	80	0
Tractor/Loader/Backhoe		79	40%		
Air Compressor	1	78	40%	100	0
Water Truck		76	40%		

3

Receptor: ***R1***

Results:

1-hour Leq: 82.0

Source for Ref. Noise Levels: FHWA RCNM, 2006

AES
ACOUSTICAL ENGINEERING SERVICES

Project: 1360 Vine Project - OFFICE OPTION

Construction Phase: ***Demolition***
Alternatives Analysis - Single Equipment

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Excavator	1	81	40%	60	0
	1				

Receptor: ***R1***

Results:

1-hour Leq: **75.4**

Source for Ref. Noise Levels: FHWA RCNM, 2006

AES
ACOUSTICAL ENGINEERING SERVICES

Project: 1360 Vine Project - OFFICE OPTION

Construction Phase: ***Demolition***
Alternatives Analysis - 50% Reduction

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Concrete Saw	1	90	20%	10	0
Excavator		81	40%		
Rubber Tired Loader	1	79	40%	30	0
Tractor/Loader/Backhoe		79	40%		
Air Compressor	1	78	40%	55	0
Water Truck		76	40%		
	3				

Receptor: ***R2***

Results:

1-hour Leq: 97.1

Source for Ref. Noise Levels: FHWA RCNM, 2006

AES
ACOUSTICAL ENGINEERING SERVICES

Project: 1360 Vine Project - OFFICE OPTION

Construction Phase: ***Demolition***
Alternatives Analysis - Single Equipment

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Excavator	1	81	40%	10	0
	1				

Receptor: ***R2***

Results:

1-hour Leq: **91.0**

Source for Ref. Noise Levels: FHWA RCNM, 2006

AES
ACOUSTICAL ENGINEERING SERVICES

Project: 1360 Vine Project - OFFICE OPTION

Construction Phase: ***Demolition***
Alternatives Analysis - 50% Reduction

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Concrete Saw	1	90	20%	65	0
Excavator		81	40%		
Rubber Tired Loader	1	79	40%	85	0
Tractor/Loader/Backhoe		79	40%		
Air Compressor	1	78	40%	105	0
Water Truck		76	40%		

3

Receptor: ***R3***

Results:

1-hour Leq: **81.3**

Source for Ref. Noise Levels: FHWA RCNM, 2006

AES
ACOUSTICAL ENGINEERING SERVICES

Project: 1360 Vine Project - OFFICE OPTION

Construction Phase: ***Demolition***
Alternatives Analysis - Single Equipment

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Excavator	1	81	40%	65	0
	1				

Receptor: ***R3***

Results:

1-hour Leq: **74.7**

Source for Ref. Noise Levels: FHWA RCNM, 2006

AES
ACOUSTICAL ENGINEERING SERVICES

Project: 1360 Vine Project - OFFICE OPTION

Construction Phase: ***Demolition***
Alternatives Analysis - 50% Reduction

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Concrete Saw	1	90	20%	265	0
Excavator		81	40%		
Rubber Tired Loader	1	79	40%	285	0
Tractor/Loader/Backhoe		79	40%		
Air Compressor	1	78	40%	305	0
Water Truck		76	40%		

3

Receptor: ***R4***

Results:

1-hour Leq: **69.4**

Source for Ref. Noise Levels: FHWA RCNM, 2006

AES
ACOUSTICAL ENGINEERING SERVICES

Project: 1360 Vine Project - OFFICE OPTION

Construction Phase: ***Demolition***
Alternatives Analysis - Single Equipment

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Excavator	1	81	40%	265	0
	1				

Receptor: ***R4***

Results:

1-hour Leq: **62.5**

Source for Ref. Noise Levels: FHWA RCNM, 2006

AES
ACOUSTICAL ENGINEERING SERVICES

Project: 1360 Vine Project - OFFICE OPTION

Construction Phase: ***Demolition***
Alternatives Analysis - 50% Reduction

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Concrete Saw	1	90	20%	445	0
Excavator		81	40%		
Rubber Tired Loader	1	79	40%	465	0
Tractor/Loader/Backhoe		79	40%		
Air Compressor	1	78	40%	485	0
Water Truck		76	40%		
	3				

Receptor: ***R5***

Results:

1-hour Leq: 65.0

Source for Ref. Noise Levels: FHWA RCNM, 2006

AES
ACOUSTICAL ENGINEERING SERVICES

Project: 1360 Vine Project - OFFICE OPTION

Construction Phase: ***Demolition***
Alternatives Analysis - Single Equipment

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Excavator	1	81	40%	445	0
	1				

Receptor: ***R5***

Results:

1-hour Leq: **58.0**

Source for Ref. Noise Levels: FHWA RCNM, 2006

AES
ACOUSTICAL ENGINEERING SERVICES

1360 Vine Project

Off-Site Traffic - Alternatives Analysis (Office Option)

Afton Place (between Vine St. and El Centro Ave.)

Driveway Scenario 3

PROJECT LEVEL

Description	Project	Alt. 2	Alt. 3	Alt. 4
Existing, ADT	520			
Existing SPL, dBA CNEL	57.4			
Existing With Project, ADT	1770			
EWP SPL, dBA CNEL	62.7			
% Increased	240.4%			
Noise increase, dBA	5.3			
Project Total Trips, ADT	2979	2210	847	1688
Project Trip along Roadway, ADT	1250			
% to roadway	42.0%	42.0%	42.0%	42.0%
Project Alt, ADT (roadway)		927	355	708
Existing With Project Alt, ADT		1447	875	708
% Increased		*178.3%*	*68.3%*	*36.2%*
Noise increase, dBA		*4.4*	*2.3*	*1.3*
Increased Relative to Project		*-0.9*	*-3.0*	*-4.0*

CUMULATIVE LEVEL

Description	Project	Alt. 2	Alt. 3	Alt. 4
Existing, ADT	520			
Existing SPL, dBA CNEL	57.4			
Future With Project, ADT	1790			
FWP SPL, dBA CNEL	62.8			
% Increased	244.2%			
Noise increase, dBA	5.4			
Project Total Trips, ADT	2979	2210	847	1688
Project Trip along Roadway, ADT	1270			
% to roadway	42.6%	42.6%	42.6%	42.6%
Project Alt, ADT (roadway)		942	361	720
Existing With Project Alt, ADT		1462	881	720
% Increased		*181.2%*	*69.4%*	*38.4%*
Noise increase, dBA		*4.5*	*2.3*	*1.4*
Increased Relative to Project		*-0.9*	*-3.1*	*-4.0*