



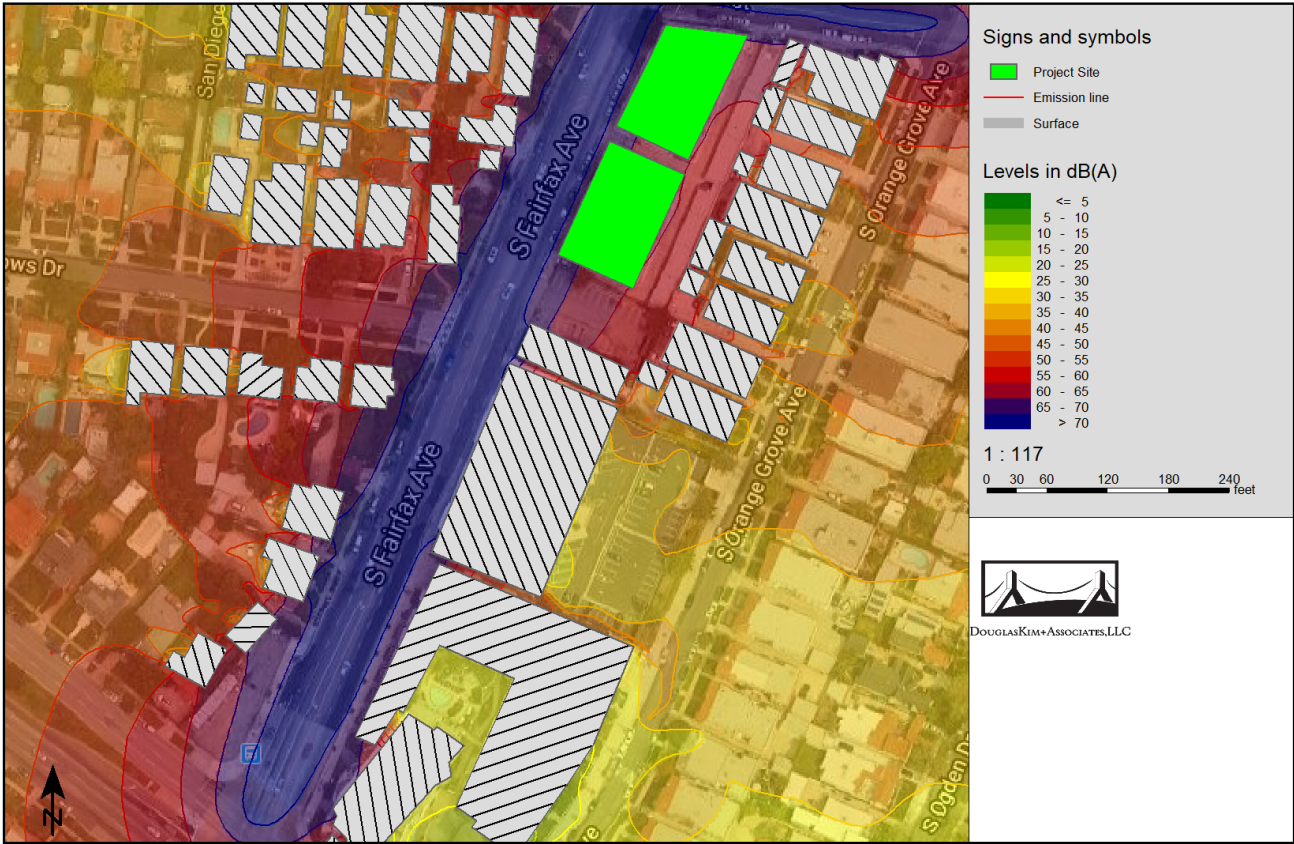
DOUGLASKIM+ASSOCIATES,LLC

## AMBIENT NOISE MODELING

## Noise emissions of road traffic

Station km	ADT Veh/24h	Vehicles type	Traffic values Vehicle name	day Veh/h	Speed km/h	Control device	Const Speed km/h	Affect veh. %	Road surface	Gradient Min / Max %
Fairfax Avenue										
Traffic direction: In entry direction										
0+000	47544	Total	-	1981	-	Traffic lig	56.0	-	Average (of DGAC and	-0.7
		Automobiles	-	1880	56					
		Medium trucks	-	59	56					
		Heavy trucks	-	31	56					
		Buses	-	12	56					
		Motorcycles	-	-	-					
		Auxiliary vehicle	-	-	-					
0+272	-					-	-	-	-	-
West 8th Avenue										
Traffic direction: In entry direction										
0+000	18504	Total	-	771	-	Traffic lig	56.0	-	Average (of DGAC and	0.4
		Automobiles	-	732	56					
		Medium trucks	-	23	56					
		Heavy trucks	-	12	56					
		Buses	-	5	56					
		Motorcycles	-	-	-					
		Auxiliary vehicle	-	-	-					
0+097	-					-	-	-	-	-

Noise levels estimated from TNM 2.5 model were validated with ambient noise measurements from CEQA documentation for Friedman/Shalhevet School





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## CONSTRUCTION NOISE CALCULATIONS

## Noise emissions of industry sources

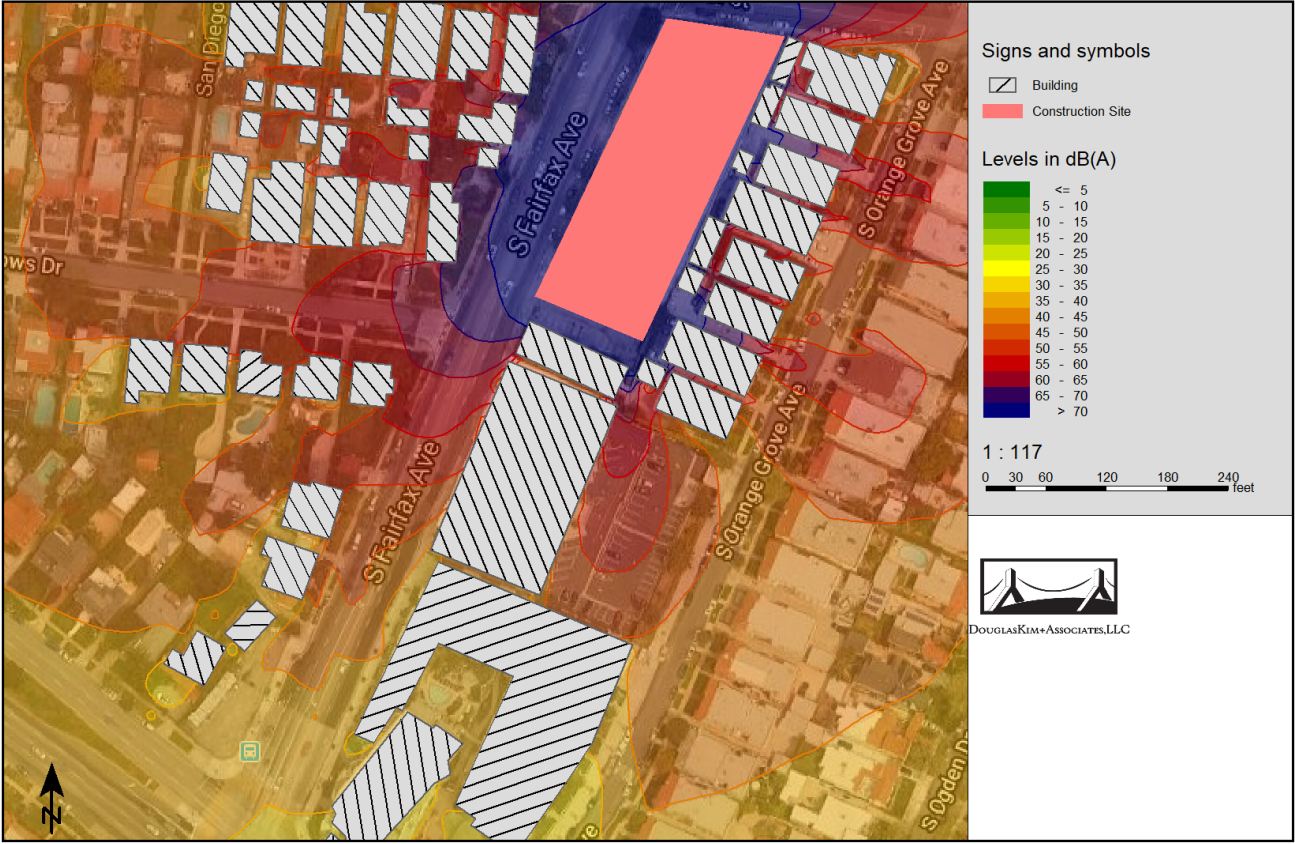
Source name	Reference	Level L(Aeq1h) dB(A)	Corrections		
			Cwall dB	CI dB	CT dB
Construction Site	Lw/	73.6	-	-	-
Construction Site	Lw/	79.8	-	-	-

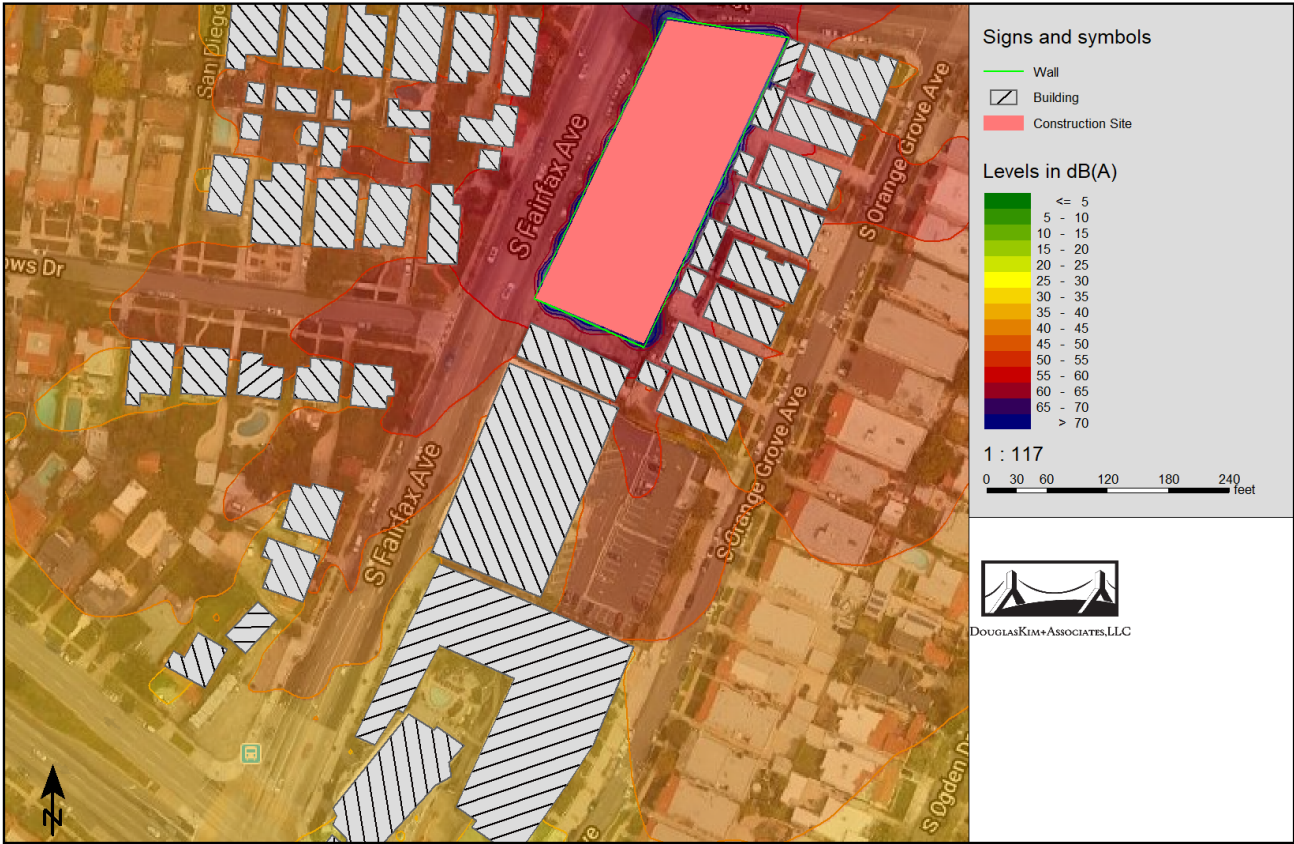
## Contribution levels of the receivers

Source name				Level w/o NP L(Aeq1h) dB(A)	Level w NP L(Aeq1h) dB(A)
800 Block of Fairfax Avenue	GF	69.8	56.6		
Construction Site				69.8	56.6
Construction Site				27.2	17.0
800 block of Orange Grove Avenue	GF	75.3	59.6		
Construction Site				75.3	59.6
Construction Site				29.4	18.1
Friedman/Shalhevet High School	GF	46.2	47.5		
Construction Site				46.2	47.5
Construction Site				3.8	5.4
Vinz on Fairfax	GF	37.9	38.8		
Construction Site				37.9	38.8
Construction Site				-4.0	-1.2

## Receiver list

No.	Receiver name	Building side	Floor	Limit L(Aeq1h) dB(A)	Level w/o NP L(Aeq1h) dB(A)	Level w NP L(Aeq1h) dB(A)	Difference L(Aeq1h) dB	Conflict L(Aeq1h) dB
1	800 Block of Fairfax Avenue	East	GF	-	69.8	56.6	-13.2	-
2	800 block of Orange Grove Avenue	North west	GF	-	75.3	59.6	-15.7	-
3	Friedman/Shalhevet High School	North east	GF	-	46.2	47.5	1.2	-
4	Vinz on Fairfax	North east	GF	-	37.9	38.8	0.9	-





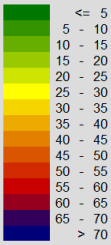


800 South Fairfax Avenue

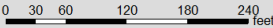
Signs and symbols

Construction Site

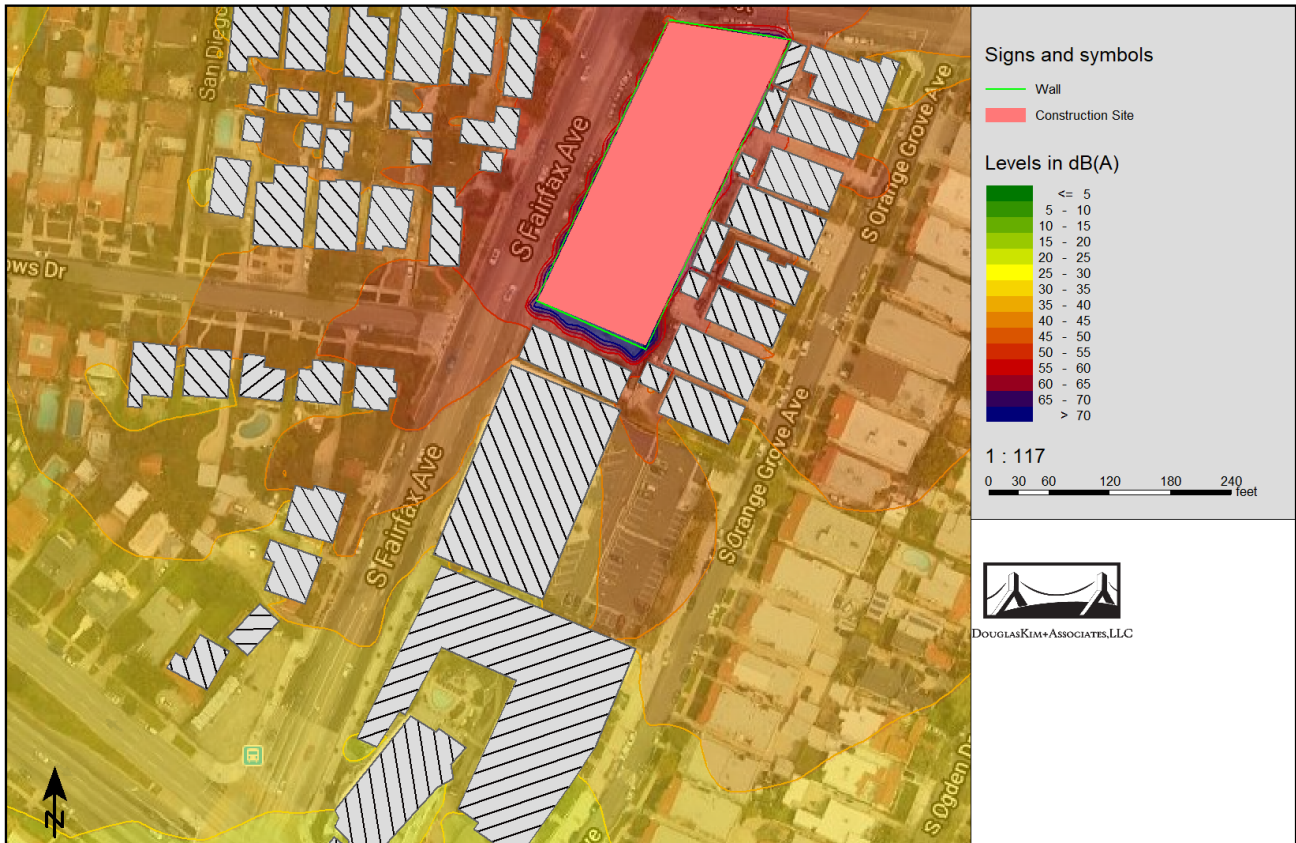
Levels in dB(A)

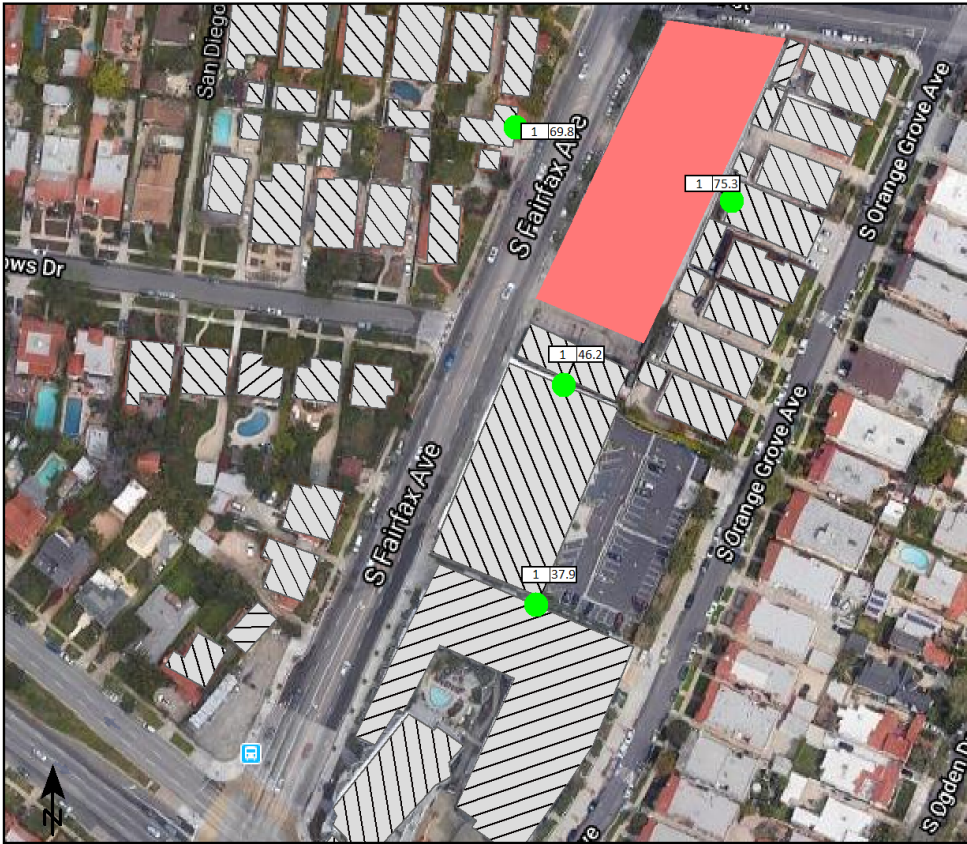


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


DOUGLAS KIM + ASSOCIATES, LLC





800 South Fairfax Avenue

Signs and symbols

-  Building
-  Sensitive Receptor
-  Construction Site

1 : 117

0 30 60 120 180 240 feet



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## OPERATIONS NOISE CALCULATIONS

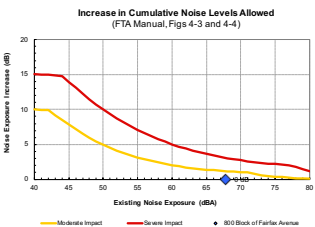
Noise Source Parameters	
Number of Noise Sources:	4

[illegible]

Existing Ldn:	68 dBA
Total Project Ldn:	40 dBA
Total Noise Exposure:	68 dBA
Increase:	0 dB
Impact?:	None

Dist to Mod. Impact Contour (Source 1):	12 ft
Dist to Sev. Impact Contour (Source 1):	7 ft

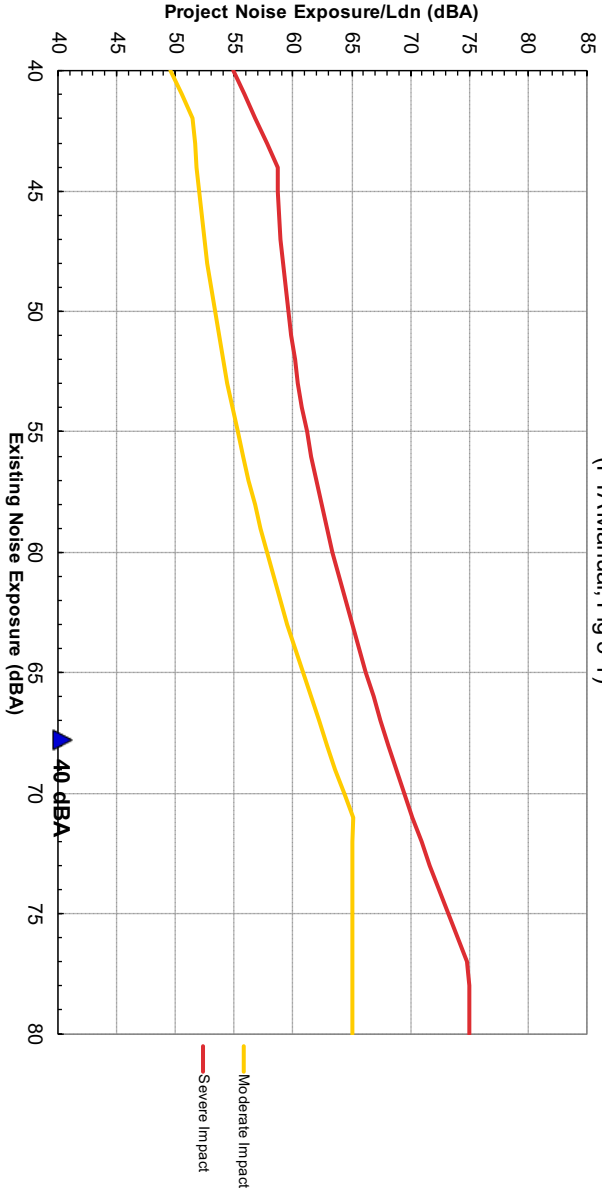
Leq(day): 37.3 dBA  
Leq(night): 33.0 dBA  
Ldn: 40.4 dBA



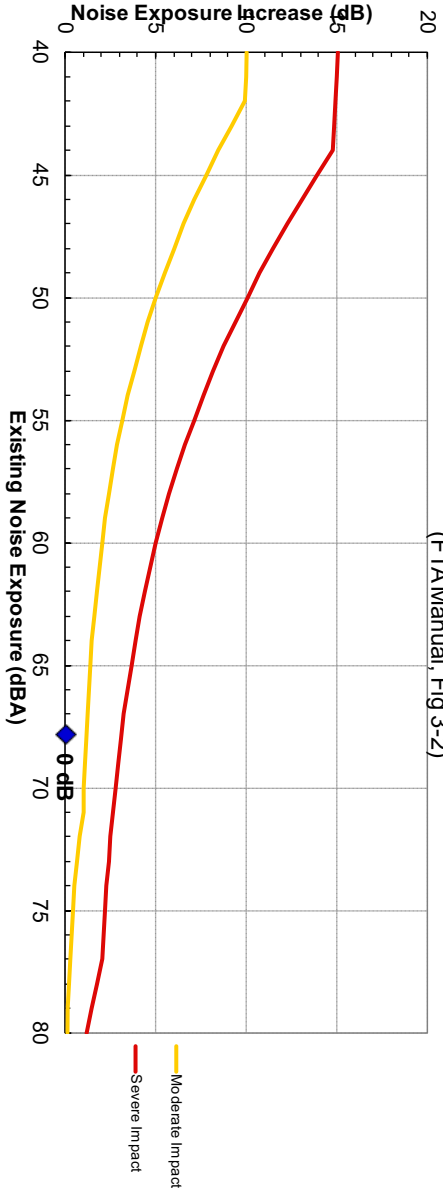
**Project:** 800 South Fairfax Avenue  
**Receiver:** 800 Block of Fairfax Avenue

Source	Distance	Project Ldn	Existing Ldn	Noise Criteria			Impact?
				Mod. Impact	Sev. Impact		
1 Parking Garage	90 ft	40.4 dBA	68 dBA	62 dBA	67 dBA		None
2 --	90 ft		68 dBA	62 dBA	67 dBA		
3 --	50 ft		68 dBA	62 dBA	67 dBA		
4 --	70 ft		68 dBA	62 dBA	67 dBA		
5 --	ft		68 dBA	62 dBA	67 dBA		
6 --	ft		68 dBA	62 dBA	67 dBA		
Combined Sources		40 dBA	68 dBA	62 dBA	67 dBA		None

**Noise Impact Criteria**  
(FTA Manual, Fig 3-1)



**Increase in Cumulative Noise Levels Allowed**  
(FTA Manual, Fig 3-2)



## Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use

Source: ITE *Trip Generation Manual* , 10th Edition

Land Use Code	221					
Setting	Multifamily Housing (Mid-Rise)					
Time Period	General Urban/Suburban		Dense Multi-Use Urban		Center City Core	
Trip Type	Weekday		Weekday		Weekday	
# Data Sites	Vehicle		Vehicle		Vehicle	
	8		4		3	
	% of 24-Hour Traffic		% of 24-Hour Traffic		% of 24-Hour Traffic	
Time	Entering	Exiting	Entering	Exiting	Entering	Exiting
12-1 AM	0.7	0.3	0.8	0.2	2.6	0
1-2 AM	0.3	0.2	1.3	0.1	0.4	0
2-3 AM	0.2	0.2	0.8	0.3	0.9	0.9
3-4 AM	0.4	0.3	0.6	0.3	0.4	0
4-5 AM	0.3	0.8	0.6	0.0	0.4	1.8
5-6 AM	0.6	2.7	2.3	1.6	0.4	3.1
6-7 AM	1.5	6.5	4.1	4.1	1.8	8.0
7-8 AM	2.8	12.1	4.2	17.7	5.3	12.0
8-9 AM	3.5	8.8	5.1	9.2	4.8	10.2
9-10 AM	2.9	5.7	2.5	5.6	5.7	4.9
10-11 AM	2.7	4.7	4.4	3.8	2.2	4.9
11-12 PM	4.5	4.5	3.1	5.7	3.9	2.7
12-1 PM	4.8	4.6	4.7	5.2	4.4	2.7
1-2 PM	4.1	4.8	5.3	3.7	3.9	6.7
2-3 PM	5.8	5.0	5.9	3.3	3.9	4.9
3-4 PM	6.7	4.9	6.2	4.4	6.1	4.0
4-5 PM	10.6	6.2	10.0	4.7	4.8	5.8
5-6 PM	12.6	7.7	8.7	4.1	8.3	7.6
6-7 PM	9.3	6.6	6.7	8.6	8.8	4.0
7-8 PM	7.8	4.8	6.7	4.4	7.9	4.4
8-9 PM	7.0	3.3	5.1	4.3	7.0	2.2
9-10 PM	5.5	2.2	4.6	3.1	5.3	4.9
10-11 PM	3.6	1.9	4.4	2.8	7.0	3.1
11-12 AM	2.0	1.1	1.9	2.8	3.5	1.3

Hourly Trips				Average Daytime	Average Nighttime
12-1 AM	1.0	0.5	4		4
1-2 AM	0.5	0.25	2		2
2-3 AM	0.4	0.2	2		2
3-4 AM	0.7	0.35	3		3
4-5 AM	1.1	0.55	5		5
5-6 AM	3.3	1.65	15		15
6-7 AM	8.0	4	36		36
7-8 AM	14.9	7.45	66	66	
8-9 AM	12.3	6.15	55	55	
9-10 AM	8.6	4.3	38	38	
10-11 AM	7.4	3.7	33	33	
11-12 PM	9.0	4.5	40	40	
12-1 PM	9.4	4.7	42	42	
1-2 PM	8.9	4.45	40	40	
2-3 PM	10.8	5.4	48	48	
3-4 PM	11.6	5.8	52	52	
4-5 PM	16.8	8.4	75	75	
5-6 PM	20.3	10.15	90	90	
6-7 PM	15.9	7.95	71	71	
7-8 PM	12.6	6.3	56		56
8-9 PM	10.3	5.15	46		46
9-10 PM	7.7	3.85	34		34
10-11 PM	5.5	2.75	24		24
11-12 AM	3.1	1.55	14		14
ADT			890	54	20



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## CONSTRUCTION VIBRATION CALCULATIONS

**Construction Vibration: UNMITIGATED**



DOUGLAS KIM + ASSOCIATES, LLC

Receptor: 800 Block of South Orange Grove Avenue  
Equipment: Large Bulldozer, Auger Drill Rig

Source PPV (in/sec)	0.089
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	10
Unmitigated Vibration Level (in/sec)	<b>0.223</b>

Receptor: Tom Bergin Restaurant  
Equipment: Large Bulldozer, Auger Drill Rig

Source PPV (in/sec)	0.089
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	35.5
Unmitigated Vibration Level (in/sec)	<b>0.063</b>

Receptor: Friedman Shalhevet School  
Equipment: Large Bulldozer, Auger Drill Rig

Source PPV (in/sec)	0.089
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	75
Unmitigated Vibration Level (in/sec)	<b>0.030</b>

Receptor: 800 Block of South Orange Grove Avenue  
Equipment: Small Dozer-Type Equipment

Source PPV (in/sec)	0.003
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	10
Unmitigated Vibration Level (in/sec)	<b>0.008</b>

Receptor: Tom Bergin Restaurant  
Equipment: Small Dozer-Type Equipment

Source PPV (in/sec)	0.003
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	35.5
Unmitigated Vibration Level (in/sec)	<b>0.002</b>

Receptor: Friedman Shalhevet School  
Equipment: Small Dozer-Type Equipment

Source PPV (in/sec)	0.003
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	75
Unmitigated Vibration Level (in/sec)	<b>0.001</b>

Sources

California Department of Transportation (Caltrans), *Transportation and Construction Vibration Guidance Manual*, September 2013.  
Federal Transit Administration (FTA), *Transit Noise and Vibration Impact Assessment*, May 2006

**Construction Vibration: MITIGATED**

DOUGLAS KIM + ASSOCIATES, LLC

Receptor: 800 Block of South Orange Grove Avenue  
 Equipment: Large Bulldozer, Auger Drill Rig

Source PPV (in/sec)	0.089
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	12
Unmitigated Vibration Level (in/sec)	<b>0.185</b>

Receptor: Tom Bergin Restaurant  
 Equipment: Large Bulldozer, Auger Drill Rig

Source PPV (in/sec)	0.089
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	35.5
Unmitigated Vibration Level (in/sec)	<b>0.063</b>

Receptor: Friedman Shalhevet School  
 Equipment: Large Bulldozer, Auger Drill Rig

Source PPV (in/sec)	0.089
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	75
Unmitigated Vibration Level (in/sec)	<b>0.030</b>

Receptor: 800 Block of South Orange Grove Avenue  
 Equipment: Small Dozer-Type Equipment

Source PPV (in/sec)	0.003
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	12
Unmitigated Vibration Level (in/sec)	<b>0.006</b>

Receptor: Tom Bergin Restaurant  
 Equipment: Small Dozer-Type Equipment

Source PPV (in/sec)	0.003
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	35.5
Unmitigated Vibration Level (in/sec)	<b>0.002</b>

Receptor: Friedman Shalhevet School  
 Equipment: Small Dozer-Type Equipment

Source PPV (in/sec)	0.003
Reference Distance (ft)	25
Ground Factor (N)	1
Distance (ft)	75
Unmitigated Vibration Level (in/sec)	<b>0.001</b>

**Sources**

California Department of Transportation (Caltrans), *Transportation and Construction Vibration Guidance Manual* ,  
 Federal Transit Administration (FTA), *Transit Noise and Vibration Impact Assessment* , May 2006