

Construction Noise Impact Analysis

noah tanski environmental consulting

Front Street Residences: GRADING

Ambient Noise Level:	60.1 dBA Leq
Distance:	220 feet

Equipment Noise Levels

Equipment	Noise Level - 50ft dBA	Usage %	Noise Level - 50ft dBA Leq 1hr
Excavator	80.7	0.4	76.7
Excavator	80.7	0.4	76.7
-	0	1	0.0
-	0	1	0.0
-	0	1	0.0
Combined dBA Leq 1hr:			79.7

Existing Shielding

	Number of Rows	dBA Reduction
Building Row Shielding: between 10% to 35% gaps	0	0
Building Row Shielding: between 35% to 60% gaps	0	0

	Height	Transmission Loss	STC Rating	Possible dBA Reduction
Existing Brick Wall	7	>30	-	5

	Height	Transmission Loss	STC Rating	Possible dBA Reduction
Temporary Noise Barrier	7	20	-	5

	dBA Reduction
Total Shielding	5

Construction Noise Impact

Combined Equipment Noise Level	79.7 dBA Leq 1hr
Total Shielding	5 dBA
Ground Factor	0
Distance - Equipment to Receptor	220 ft
Construction Noise Level	61.9 dBA Leq 1hr
Ambient Noise Level	60.1 dBA
New Noise Level	64.1 dBA Leq 1hr
Noise Increase	4.0 dBA

RESULTS: SOUND LEVELS

Villages at Alhambra

NTEC													1 August 2019	
Noah Tanski													TNM 2.5	
													Calculated with TNM 2.5	
RESULTS: SOUND LEVELS														
PROJECT/CONTRACT:			Villages at Alhambra											
RUN:			Haul Trucks - Fremont Ave											
BARRIER DESIGN:			INPUT HEIGHTS										Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.	
ATMOSPHERICS:			68 deg F, 50% RH											
Receiver														
Name		No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing		With Barrier					
							Calculated	Crit'n	Type Impact	Calculated LAeq1h	Noise Reduction		Calculated minus Goal	
				dB	dB	dB	dB	dB		dB	dB	dB	dB	
40ft from Centerline		1	1	0.0	61.0	66	61.0	10	----	61.0	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								

Vibration Impact Analysis

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Construction Vibration - PPV

Ground Factor (N):	1.5
Equipment:	Large Dozer or Auger Drill
Equipment PPV (in/sec):	0.089
Reference Distance (ft):	25

Unmitigated

Receptor	Distance (ft)	Vibration Level (in/sec PPV)
Front Street Residences	220	0.003
CF Braun & Company Historic District (Building A1)	15	0.191

Date Ave. - Ldn

Street Segment: N of Orange St., 40ft E of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 8

	Peak Hour Leq	Ldn	Increase
Existing:	66.5	67.4	
Existing + Project:	66.7	67.6	0.2 dBA
Future:	67.3	68.2	
Future + Project:	67.4	68.3	0.9 dBA

Street Segment: N of Orange St., 40ft W of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 12

	Peak Hour Leq	Ldn	Increase
Existing:	66.8	67.7	
Existing + Project:	67.1	68.0	0.3 dBA
Future:	67.6	68.5	
Future + Project:	67.7	68.6	0.9 dBA

Street Segment: S of Orange St., 45ft E of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 8

	Peak Hour Leq	Ldn	Increase
Existing:	63.4	64.3	
Existing + Project:	63.8	64.7	0.4 dBA
Future:	64.2	65.1	
Future + Project:	64.5	65.4	1.1 dBA

Street Segment: S of Orange St., 45ft W of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 12

	Peak Hour Leq	Ldn	Increase
Existing:	64.2	65.1	
Existing + Project:	64.5	65.4	0.3 dBA
Future:	64.9	65.8	
Future + Project:	65.2	66.1	1.0 dBA

Street Segment: N of Mission Rd., 40ft E of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 8

	Peak Hour Leq	Ldn	Increase
Existing:	63.5	64.4	
Existing + Project:	64.8	65.7	1.3 dBA
Future:	64.4	65.3	
Future + Project:	65.4	66.3	1.9 dBA

Street Segment: N of Mission Rd., 40ft W of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 12

	Peak Hour Leq	Ldn	Increase
Existing:	64.2	65.1	
Existing + Project:	65.1	66.0	0.9 dBA
Future:	65.0	65.9	
Future + Project:	65.8	66.7	1.6 dBA

Fremont Ave. - Ldn

Street Segment: N of Orange St., 50ft E of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 7

	Peak Hour Leq	Ldn	Increase
Existing:	73.4	74.9	
Existing + Project:	73.5	75.0	0.1 dBA
Future:	73.9	75.4	
Future + Project:	74.0	75.5	0.6 dBA

Street Segment: N of Orange St., 35ft W of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 7

	Peak Hour Leq	Ldn	Increase
Existing:	74.0	75.5	
Existing + Project:	74.1	75.6	0.1 dBA
Future:	74.5	76.0	
Future + Project:	74.6	76.1	0.6 dBA

Street Segment: S of Orange St., 40ft E of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 7

	Peak Hour Leq	Ldn	Increase
Existing:	74.2	75.7	
Existing + Project:	74.3	75.8	0.1 dBA
Future:	74.7	76.2	
Future + Project:	74.8	76.3	0.6 dBA

Street Segment: S of Orange St., 55ft W of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 7

	Peak Hour Leq	Ldn	<u>Increase</u>
Existing:	72.0	73.5	
Existing + Project:	72.1	73.6	0.1 dBA
Future:	72.5	74.0	
Future + Project:	72.6	74.1	0.6 dBA

Street Segment: S of Mission Rd., 45ft E of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 7

	Peak Hour Leq	Ldn	<u>Increase</u>
Existing:	74.4	75.9	
Existing + Project:	74.7	76.2	0.3 dBA
Future:	74.9	76.4	
Future + Project:	75.1	76.6	0.7 dBA

Street Segment: S of Mission Rd., 55ft W of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 7

	Peak Hour Leq	Ldn	<u>Increase</u>
Existing:	73.2	74.7	
Existing + Project:	73.5	75.0	0.3 dBA
Future:	73.7	75.2	
Future + Project:	73.9	75.4	0.7 dBA

Mission Rd. - Ldn

Street Segment: E of Date Ave., 40ft N of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 11

	Peak Hour Leq	Ldn	Increase
Existing:	71.1	70.6	
Existing + Project:	71.4	70.9	0.3 dBA
Future:	71.6	71.1	
Future + Project:	71.9	71.4	0.8 dBA

Street Segment: E of Date Ave., 40ft S of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 11

	Peak Hour Leq	Ldn	Increase
Existing:	71.6	71.1	
Existing + Project:	71.9	71.4	0.3 dBA
Future:	72.2	71.7	
Future + Project:	72.3	71.8	0.7 dBA

Street Segment: W of Date Ave., 40ft N of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 11

	Peak Hour Leq	Ldn	Increase
Existing:	71.1	70.6	
Existing + Project:	71.5	71.0	0.4 dBA
Future:	71.7	71.2	
Future + Project:	72.0	71.5	0.9 dBA

Street Segment: W of Date Ave., 40ft S of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 11

	Peak Hour Leq	Ldn	<u>Increase</u>
Existing:	71.4	70.9	
Existing + Project:	71.8	71.3	0.4 dBA
Future:	71.9	71.4	
Future + Project:	72.2	71.7	0.8 dBA

Street Segment: W of Fremont Ave., 50ft N of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 11

	Peak Hour Leq	Ldn	<u>Increase</u>
Existing:	70.3	69.8	
Existing + Project:	70.3	69.8	0.0 dBA
Future:	70.8	70.3	
Future + Project:	70.9	70.4	0.6 dBA

Street Segment: W of Fremont Ave., 50ft S of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 11

	Peak Hour Leq	Ldn	<u>Increase</u>
Existing:	70.9	70.4	
Existing + Project:	71.0	70.5	0.1 dBA
Future:	71.4	70.9	
Future + Project:	71.5	71.0	0.6 dBA

Orange St. - Ldn

Street Segment: E of Fremont Ave., 60ft N of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 11

	Peak Hour Leq	Ldn	<u>Increase</u>
Existing:	62.5	62.0	
Existing + Project:	63.1	62.6	0.6 dBA
Future:	63.0	62.5	
Future + Project:	63.6	63.1	1.1 dBA

Street Segment: E of Fremont Ave., 60ft S of Centerline

Daytime Fraction of ADT: 0.85

Nighttime Fraction of ADT: 0.15

Peak Hour % of ADT: 11

	Peak Hour Leq	Ldn	<u>Increase</u>
Existing:	62.2	61.7	
Existing + Project:	62.9	62.4	0.7 dBA
Future:	62.8	62.3	
Future + Project:	63.4	62.9	1.2 dBA