APPENDIX K

NOISE

- LONG-TERM MEASUREMENT DATA CHARTS
- TRAFFIC NOISE MODELING
- ADDITIONAL DETAILS ON VIBRATION CRITERIA

Appendix K

Noise Analyses Details

This appendix contains the following noise- and vibration-related technical materials:

- Long-Term Measurement Data Charts (24-hour histories in several noise metrics)

- Traffic Noise Modeling
    - Existing conditions on Local Roadways (only)
    - Existing conditions on Pertinent Freeways (only)

    - Existing conditions plus Full Project Build-out on Local Roadways (only)
    - Existing conditions plus Full Project Build-out on Pertinent Freeways (only)

    - Regional Conditions in 2035 WITHOUT Project on Local Roads (only)
    - Regional Conditions in 2035 WITHOUT Project on Pertinent Freeways (only)

    - Regional Conditions in 2035 WITH Full Project Build-out on Local Roads (only)
    - Regional Conditions in 2035 WITH Full Project Build-out on Pertinent Freeways (only)

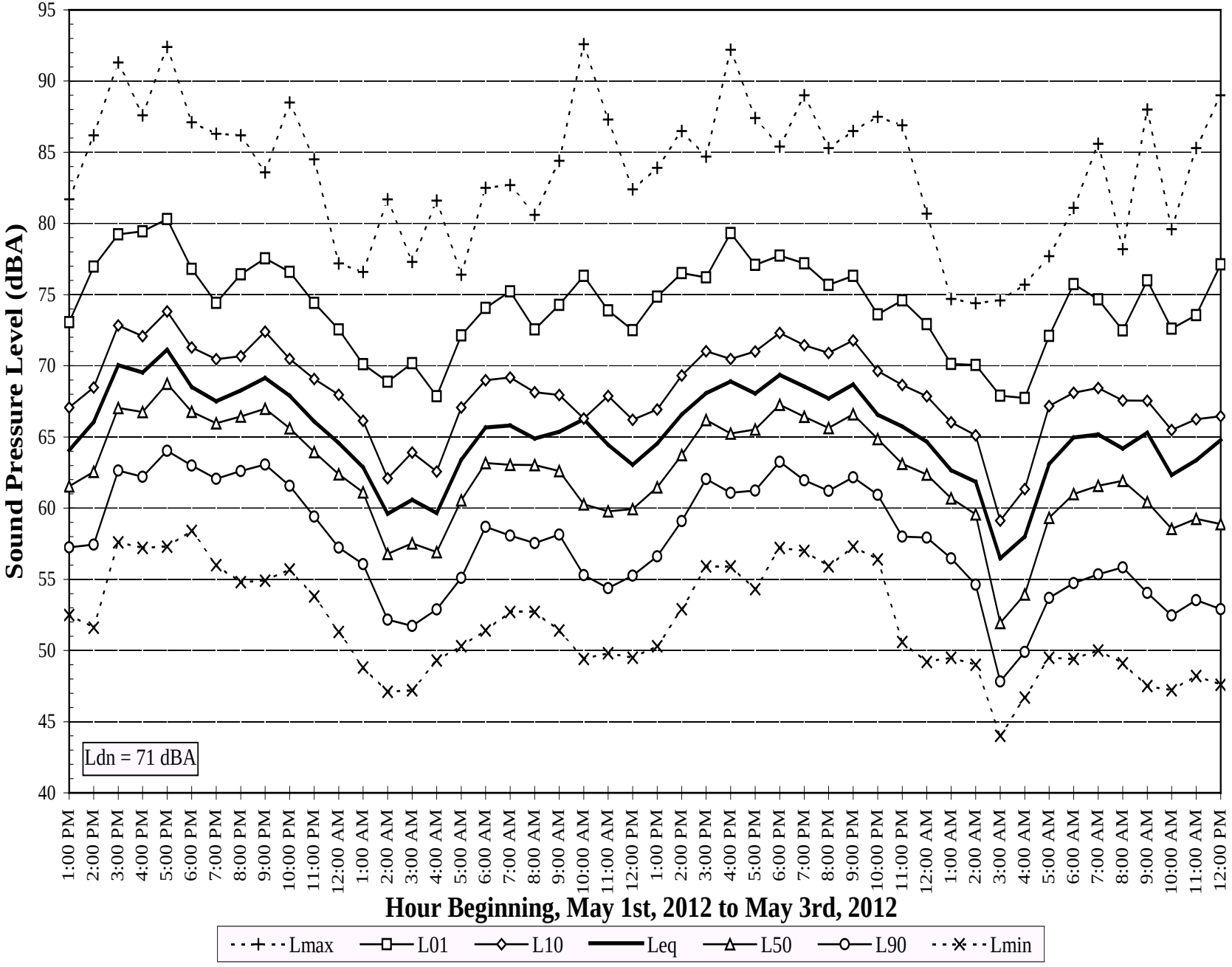
- Additional Details on Vibration Criteria

Long-Term Measurement Data Charts

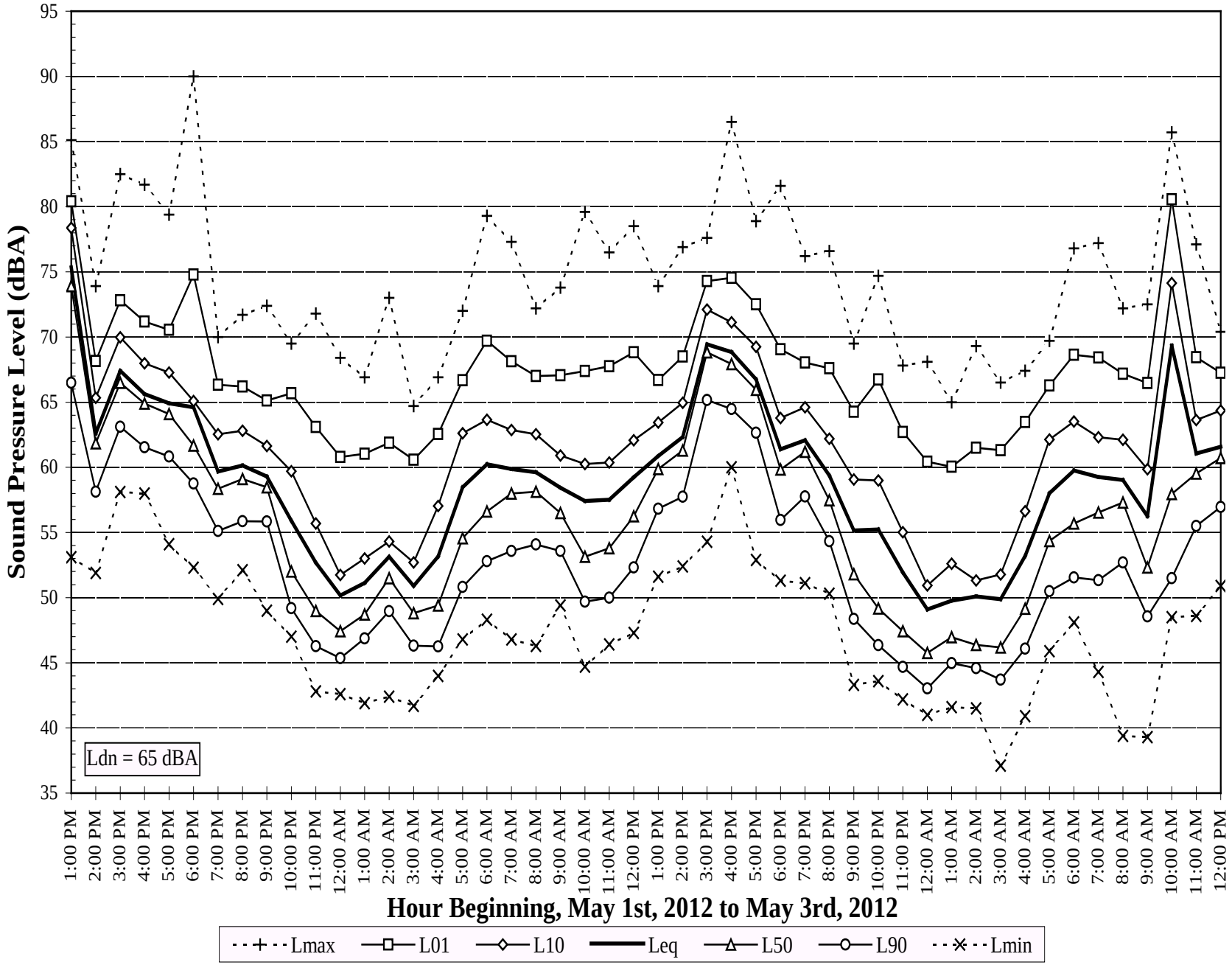
These data charts show 24-hour time-histories at LT-1, LT-2, and LT-3. The data were acquired by Illingworth and Rodkin, Inc. between May 1 and May 2, 2012. The charts show the L_{max}, L_1, L_{10}, L_{eq}, L_{50}, L_{90}, and L_{min} sound level metrics. These are further explained as follows:

- **Equivalent Continuous Noise Level (L_{eq})** The mean of the noise level, energy averaged over the measurement period.
- **Statistical Sound Level (L_n)** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."
- **Maximum Sound Level (L_{max})** The slow-response maximum sound level that is recorded during a given sample period (in this case, per each hour).
- **Minimum Sound Level (L_{min})** The slow-response minimum sound level that is recorded during a given sample period (in this case, per each hour).

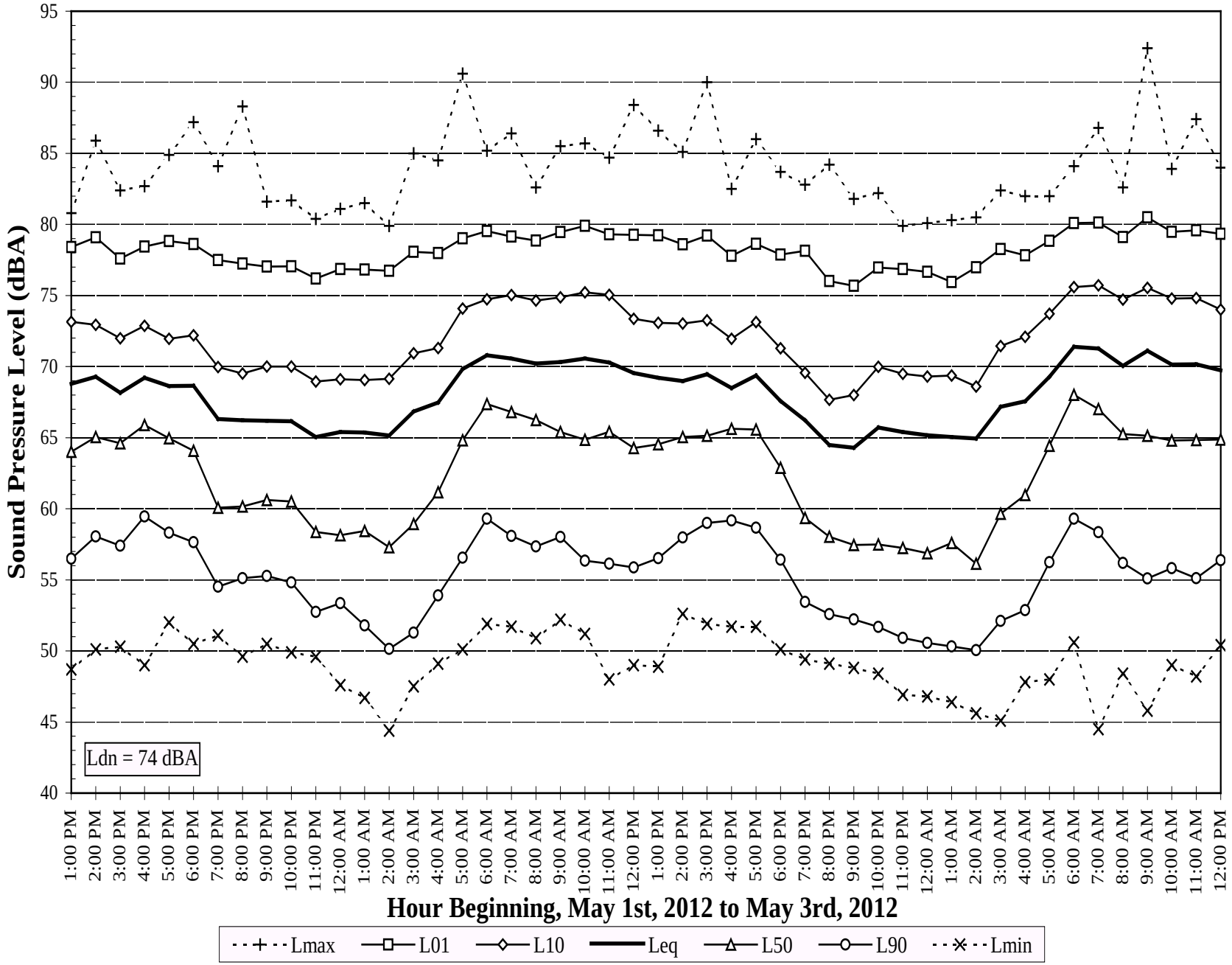
MEASURED NOISE LEVELS AT LT-1



MEASURED NOISE LEVELS AT LT-2



MEASURED NOISE LEVELS AT LT-3



Traffic Noise Modeling

- Existing conditions on Local Roadways (only)

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Mountain House Parkway
Segment: N/O I-205

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	9,400
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	441	15	34	192	6	15	288	10	22
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-4.9	-19.7	-16.0	-8.5	-23.3	-19.6	-6.7	-21.5	-17.8
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	57.9	52.1	60.6	54.3	48.4	57.0	56.0	50.2	58.7
VEHICULAR NOISE	DAY=	62.8	Leq	EVENING=	59.2	Leq	NIGHT=	61.0	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**67.6**
			CNEL=	**67.8**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**69**	**149**	**321**
	CNEL:	**71**	**153**	**329**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Mountain House Parkway
Segment: I-205 to Road A

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	6,400
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	300	10	23	131	4	10	196	7	15
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-6.5	-21.3	-17.6	-10.2	-24.9	-21.3	-8.4	-23.2	-19.5
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	56.2	50.4	58.9	52.6	46.8	55.3	54.3	48.5	57.1
VEHICULAR NOISE	DAY=	61.2	Leq	EVENING=	57.5	Leq	NIGHT=	59.3	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**65.9**
			CNEL=	**66.1**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**53**	**115**	**248**
	CNEL:	**55**	**118**	**255**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Mountain House Parkway
Segment: Road A to Capital Parks Drive
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	6,400
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	300	10	23	131	4	10	196	7	15
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-6.5	-21.3	-17.6	-10.2	-24.9	-21.3	-8.4	-23.2	-19.5
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	56.2	50.4	58.9	52.6	46.8	55.3	54.3	48.5	57.1
VEHICULAR NOISE	DAY=	61.2	Leq	EVENING=	57.5	Leq	NIGHT=	59.3	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**65.9**
			CNEL=	**66.1**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**53**	**115**	**248**
	CNEL:	**55**	**118**	**255**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Mountain House Parkway
Segment: Capital Parks Drive to New Schult

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	6,400
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	300	10	23	131	4	10	196	7	15
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-6.5	-21.3	-17.6	-10.2	-24.9	-21.3	-8.4	-23.2	-19.5
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	56.2	50.4	58.9	52.6	46.8	55.3	54.3	48.5	57.1
VEHICULAR NOISE	DAY=	61.2	Leq	EVENING=	57.5	Leq	NIGHT=	59.3	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**65.9**
			CNEL=	**66.1**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**53**	**115**	**248**
	CNEL:	**55**	**118**	**255**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Mountain House Parkway
Segment: New Schulte Road to Old Schulte
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	6,400
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	300	10	23	131	4	10	196	7	15
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-6.5	-21.3	-17.6	-10.2	-24.9	-21.3	-8.4	-23.2	-19.5
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	56.2	50.4	58.9	52.6	46.8	55.3	54.3	48.5	57.1
VEHICULAR NOISE	DAY=	61.2	Leq	EVENING=	57.5	Leq	NIGHT=	59.3	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**65.9**
			CNEL=	**66.1**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**53**	**115**	**248**
	CNEL:	**55**	**118**	**255**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Mountain House Parkway
Segment: Old Schulte Road to I-580

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	7,200
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	338	11	26	147	5	11	220	7	17
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-6.0	-20.8	-17.1	-9.6	-24.4	-20.7	-7.9	-22.7	-19.0
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	56.7	50.9	59.4	53.1	47.3	55.8	54.9	49.0	57.6
VEHICULAR NOISE	DAY=	61.7	Leq	EVENING=	58.1	Leq	NIGHT=	59.8	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**66.4**
			CNEL=	**66.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**58**	**125**	**269**
	CNEL:	**59**	**128**	**276**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Mountain House Parkway
Segment: S/O I-580

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	4,200
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	197	7	15	86	3	7	129	4	10
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-8.4	-23.1	-19.5	-12.0	-26.8	-23.1	-10.2	-25.0	-21.3
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	54.4	48.6	57.1	50.8	44.9	53.5	52.5	46.7	55.2
VEHICULAR NOISE	DAY=	59.3	Leq	EVENING=	55.7	Leq	NIGHT=	57.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**64.1**
			CNEL=	**64.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**40**	**87**	**187**
	CNEL:	**41**	**89**	**192**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Hansen Road
Segment: N/O Capital Parks Drive

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	900
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	42	1	3	18	1	1	28	1	2
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-15.1	-29.8	-26.2	-18.7	-33.4	-29.8	-16.9	-31.7	-28.0
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	47.7	41.9	50.4	44.1	38.3	46.8	45.8	40.0	48.5
VEHICULAR NOISE	DAY=	52.6	Leq	EVENING=	49.0	Leq	NIGHT=	50.8	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**57.4**
			CNEL=	**57.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**14**	**31**	**67**
	CNEL:	**15**	**32**	**69**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Hansen Road
Segment: Capital Parks Drive to New Schult

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	900
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	42	1	3	18	1	1	28	1	2
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-15.1	-29.8	-26.2	-18.7	-33.4	-29.8	-16.9	-31.7	-28.0
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	47.7	41.9	50.4	44.1	38.3	46.8	45.8	40.0	48.5
VEHICULAR NOISE	DAY=	52.6	Leq	EVENING=	49.0	Leq	NIGHT=	50.8	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**57.4**
			CNEL=	**57.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**14**	**31**	**67**
	CNEL:	**15**	**32**	**69**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Hansen Road
Segment: New Schulte Road to Old Schulte
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	900
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	42	1	3	18	1	1	28	1	2
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-15.1	-29.8	-26.2	-18.7	-33.4	-29.8	-16.9	-31.7	-28.0
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	47.7	41.9	50.4	44.1	38.3	46.8	45.8	40.0	48.5
VEHICULAR NOISE	DAY=	52.6	Leq	EVENING=	49.0	Leq	NIGHT=	50.8	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**57.4**
			CNEL=	**57.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**14**	**31**	**67**
	CNEL:	**15**	**32**	**69**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Hansen Road
Segment: S/O Old Schulte Road

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	1,900
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	89	3	7	39	1	3	58	2	5
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-11.8	-26.6	-22.9	-15.4	-30.2	-26.5	-13.7	-28.5	-24.8
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	50.9	45.1	53.6	47.3	41.5	50.0	49.1	43.3	51.8
VEHICULAR NOISE	DAY=	55.9	Leq	EVENING=	52.3	Leq	NIGHT=	54.0	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**60.6**
			CNEL=	**60.8**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**24**	**51**	**110**
	CNEL:	**24**	**53**	**113**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Lammers Road
Segment: N/O 11th Street

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	5,100
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	239	8	19	104	3	8	156	5	12
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-8.5	-23.3	-19.6	-12.1	-26.9	-23.2	-10.4	-25.1	-21.5
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	58.0	50.9	58.8	54.4	47.3	55.2	56.1	49.1	57.0
VEHICULAR NOISE	DAY=	61.8	Leq	EVENING=	58.2	Leq	NIGHT=	60.0	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**66.6**
			CNEL=	**66.7**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**59**	**127**	**275**
	CNEL:	**61**	**131**	**282**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Lammers Road
Segment: 11th Street to Capital Parks Drive
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	6,600
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	310	10	24	135	4	10	202	7	16
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-7.4	-22.2	-18.5	-11.0	-25.8	-22.1	-9.2	-24.0	-20.3
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	59.1	52.0	59.9	55.5	48.4	56.3	57.3	50.2	58.1
VEHICULAR NOISE	DAY=	62.9	Leq	EVENING=	59.3	Leq	NIGHT=	61.1	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**67.7**
			CNEL=	**67.9**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**70**	**151**	**326**
	CNEL:	**72**	**155**	**334**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Lammers Road
Segment: Capital Parks Drive to New Schult

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	6,600
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	310	10	24	135	4	10	202	7	16
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-7.4	-22.2	-18.5	-11.0	-25.8	-22.1	-9.2	-24.0	-20.3
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	59.1	52.0	59.9	55.5	48.4	56.3	57.3	50.2	58.1
VEHICULAR NOISE	DAY=	62.9	Leq	EVENING=	59.3	Leq	NIGHT=	61.1	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**67.7**
			CNEL=	**67.9**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**70**	**151**	**326**
	CNEL:	**72**	**155**	**334**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Lammers Road
Segment: New Schulte Road to Old Schulte
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	4,300
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	202	7	16	88	3	7	132	4	10
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-9.2	-24.0	-20.3	-12.9	-27.6	-23.9	-11.1	-25.9	-22.2
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	57.3	50.2	58.1	53.7	46.6	54.5	55.4	48.3	56.2
VEHICULAR NOISE	DAY=	61.1	Leq	EVENING=	57.5	Leq	NIGHT=	59.2	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**65.8**
			CNEL=	**66.0**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**53**	**114**	**245**
	CNEL:	**54**	**117**	**251**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Lammers Road
Segment: Old Schulte Road to Valpico Road
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	7,000
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	329	11	26	143	5	11	214	7	17
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-7.1	-21.9	-18.2	-10.7	-25.5	-21.8	-9.0	-23.8	-20.1
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	59.4	52.3	60.2	55.8	48.7	56.6	57.5	50.4	58.3
VEHICULAR NOISE	DAY=	63.2	Leq	EVENING=	59.6	Leq	NIGHT=	61.3	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**68.0**
			CNEL=	**68.1**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**73**	**157**	**339**
	CNEL:	**75**	**161**	**348**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Lammers Road
Segment: S/O Valpico Road

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	300
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	14	0	1	6	0	0	9	0	1
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-20.8	-35.6	-31.9	-24.4	-39.2	-35.5	-22.7	-37.4	-33.8
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	45.7	38.6	46.5	42.1	35.0	42.9	43.8	36.7	44.7
VEHICULAR NOISE	DAY=	49.5	Leq	EVENING=	45.9	Leq	NIGHT=	47.6	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**54.3**
			CNEL=	**54.4**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**9**	**19**	**42**
	CNEL:	**9**	**20**	**43**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Old Schulte Road
Segment: W/O MHP

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	3,000
SPEED (mph)	55
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	141	5	11	61	2	5	92	3	7
Speed in MPH	55	55	55	55	55	55	55	55	55
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	72.7	79.9	83.8	72.7	79.9	83.8	72.7	79.9	83.8
ADJUSTMENTS									
Flow	-11.2	-26.0	-22.3	-14.8	-29.6	-25.9	-13.1	-27.9	-24.2
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	56.9	49.3	56.9	53.3	45.6	53.3	55.0	47.4	55.0
VEHICULAR NOISE	DAY=	60.3	Leq	EVENING=	56.7	Leq	NIGHT=	58.4	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**65.0**
			CNEL=	**65.2**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**47**	**100**	**216**
	CNEL:	**48**	**103**	**222**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Old Schulte Road
Segment: MHP to Hansen Road

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	7,000
SPEED (mph)	55
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	329	11	26	143	5	11	214	7	17
Speed in MPH	55	55	55	55	55	55	55	55	55
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	72.7	79.9	83.8	72.7	79.9	83.8	72.7	79.9	83.8
ADJUSTMENTS									
Flow	-7.5	-22.3	-18.6	-11.2	-25.9	-22.2	-9.4	-24.2	-20.5
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	60.6	52.9	60.6	57.0	49.3	57.0	58.7	51.1	58.7
VEHICULAR NOISE	DAY=	63.9	Leq	EVENING=	60.3	Leq	NIGHT=	62.1	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**68.7**
			CNEL=	**68.9**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**82**	**177**	**381**
	CNEL:	**84**	**181**	**391**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Old Schulte Road
Segment: Hansen Road to Lammers Road
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	4,900
SPEED (mph)	55
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	230	8	18	100	3	8	150	5	12
Speed in MPH	55	55	55	55	55	55	55	55	55
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	72.7	79.9	83.8	72.7	79.9	83.8	72.7	79.9	83.8
ADJUSTMENTS									
Flow	-9.1	-23.9	-20.2	-12.7	-27.5	-23.8	-11.0	-25.7	-22.0
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	59.0	51.4	59.0	55.4	47.8	55.4	57.2	49.5	57.2
VEHICULAR NOISE	DAY=	62.4	Leq	EVENING=	58.8	Leq	NIGHT=	60.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**67.2**
			CNEL=	**67.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**65**	**139**	**300**
	CNEL:	**66**	**143**	**308**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: Valpico Road
Segment: E/O Lammers Road

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	5,100
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	12
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	239	8	19	104	3	8	156	5	12
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-7.5	-22.3	-18.6	-11.1	-25.9	-22.2	-9.4	-24.2	-20.5
Distance	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6	-4.6
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	55.2	49.4	57.9	51.6	45.8	54.3	53.4	47.5	56.1
VEHICULAR NOISE	DAY=	60.2	Leq	EVENING=	56.6	Leq	NIGHT=	58.3	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**64.9**
			CNEL=	**65.1**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**46**	**99**	**213**
	CNEL:	**47**	**102**	**219**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: 11th Street
Segment: W/O Lammers Road

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	18,000
SPEED (mph)	45
ROAD NEAR-FAR LN. DIST.	70
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	845	28	66	368	12	29	551	18	43
Speed in MPH	45	45	45	45	45	45	45	45	45
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	69.3	77.6	82.1	69.3	77.6	82.1	69.3	77.6	82.1
ADJUSTMENTS									
Flow	-2.6	-17.3	-13.7	-6.2	-21.0	-17.3	-4.4	-19.2	-15.5
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	62.6	56.1	64.3	59.0	52.5	60.7	60.7	54.2	62.4
VEHICULAR NOISE	DAY=	66.9	Leq	EVENING=	63.3	Leq	NIGHT=	65.0	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**71.7**
			CNEL=	**71.8**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**129**	**278**	**600**
	CNEL:	**133**	**286**	**616**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING
Roadway: 11th Street
Segment: E/O Lammers Road

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	19,800
SPEED (mph)	45
ROAD NEAR-FAR LN. DIST.	70
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	929	31	72	405	13	31	606	20	47
Speed in MPH	45	45	45	45	45	45	45	45	45
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	69.3	77.6	82.1	69.3	77.6	82.1	69.3	77.6	82.1
ADJUSTMENTS									
Flow	-2.2	-16.9	-13.2	-5.8	-20.5	-16.9	-4.0	-18.8	-15.1
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	63.0	56.5	64.7	59.4	52.9	61.1	61.1	54.6	62.8
VEHICULAR NOISE	DAY=	67.3	Leq	EVENING=	63.7	Leq	NIGHT=	65.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**72.1**
			CNEL=	**72.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**138**	**297**	**639**
	CNEL:	**141**	**304**	**656**

Traffic Noise Modeling

- Existing conditions on Pertinent Freeways (only)

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING - FREEWAYS Project: CORDES RANCH SP EIR
Roadway: I-205 Analyst FJS
Segment: West of Mountain House Parkway Date: 06-Mar-13

ROADWAY INPUTS	
ADT	87,600
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	70
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	4057	155	356	1767	68	155	2645	101	232
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	2.3	-11.8	-8.2	-1.3	-15.5	-11.8	0.5	-13.7	-10.1
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	74.9	66.5	73.4	71.3	62.9	69.8	73.1	64.6	71.5
VEHICULAR NOISE	DAY=	77.6	Leq	EVENING=	74.0	Leq	NIGHT=	75.7	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**82.4**
			CNEL=	**82.5**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**666**	**1436**	**3093**
	CNEL:	**684**	**1473**	**3173**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING - FREEWAYS
Roadway: I-205
Segment: Mountain House Parkway to Tracy
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	92,040
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	70
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	4263	163	374	1856	71	163	2779	106	244
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	2.5	-11.6	-8.0	-1.1	-15.2	-11.6	0.7	-13.5	-9.9
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	75.1	66.7	73.6	71.5	63.1	70.0	73.3	64.9	71.7
VEHICULAR NOISE	DAY=	77.8	Leq	EVENING=	74.2	Leq	NIGHT=	75.9	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**82.6**
			CNEL=	**82.7**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**689**	**1484**	**3196**
	CNEL:	**707**	**1522**	**3280**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING - FREEWAYS
Roadway: I-205
Segment: East of Tracy Boulevard
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	83,280
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	70
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	3857	148	339	1680	64	148	2514	96	221
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	2.1	-12.1	-8.5	-1.5	-15.7	-12.1	0.2	-13.9	-10.3
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	74.7	66.3	73.2	71.1	62.7	69.6	72.8	64.4	71.3
VEHICULAR NOISE	DAY=	77.4	Leq	EVENING=	73.8	Leq	NIGHT=	75.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**82.1**
			CNEL=	**82.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**644**	**1388**	**2990**
	CNEL:	**661**	**1424**	**3068**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING - FREEWAYS
Roadway: I-580
Segment: West of I-205 Interchange
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	#######
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	130
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	5613	215	493	2445	94	215	3659	140	321
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	3.7	-10.4	-6.8	0.1	-14.0	-10.4	1.9	-12.3	-8.7
Distance	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	77.7	69.3	76.2	74.1	65.7	72.6	75.8	67.4	74.3
VEHICULAR NOISE	DAY=	80.4	Leq	EVENING=	76.7	Leq	NIGHT=	78.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**85.1**
			CNEL=	**85.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**1020**	**2197**	**4734**
	CNEL:	**1046**	**2254**	**4857**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING - FREEWAYS
Roadway: I-580
Segment: I-205 Interchange to Patterson Pa
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	33,600
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	120
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1556	60	137	678	26	60	1014	39	89
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	-1.8	-16.0	-12.4	-5.4	-19.6	-16.0	-3.7	-17.9	-14.3
Distance	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	71.8	63.4	70.3	68.2	59.8	66.6	69.9	61.5	68.4
VEHICULAR NOISE	DAY=	74.5	Leq	EVENING=	70.8	Leq	NIGHT=	72.6	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**79.2**
			CNEL=	**79.4**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**412**	**887**	**1912**
	CNEL:	**423**	**910**	**1962**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING - FREEWAYS
Roadway: I-580
Segment: Patterson Pass Road to Corral Ho
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	33,120
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	120
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1534	59	135	668	26	59	1000	38	88
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	-1.9	-16.1	-12.5	-5.5	-19.7	-16.1	-3.8	-17.9	-14.3
Distance	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	71.7	63.3	70.2	68.1	59.7	66.6	69.9	61.4	68.3
VEHICULAR NOISE	DAY=	74.4	Leq	EVENING=	70.8	Leq	NIGHT=	72.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**79.2**
			CNEL=	**79.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**408**	**879**	**1894**
	CNEL:	**419**	**902**	**1943**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING - FREEWAYS
Roadway: I-580
Segment: East of Corral Hollow Road
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	28,920
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	120
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1339	51	118	583	22	51	873	33	77
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	-2.5	-16.7	-13.1	-6.1	-20.3	-16.7	-4.3	-18.5	-14.9
Distance	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	71.1	62.7	69.6	67.5	59.1	66.0	69.3	60.9	67.7
VEHICULAR NOISE	DAY=	73.8	Leq	EVENING=	70.2	Leq	NIGHT=	71.9	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**78.6**
			CNEL=	**78.7**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**373**	**803**	**1730**
	CNEL:	**382**	**824**	**1775**

Traffic Noise Modeling

- Existing conditions plus Full Project Build-out on Local Roadways (only)

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Mountain House Parkway
Segment: N/O I-205
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	26,000
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	93
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	975	33	76	156	5	12	1248	42	97
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-1.4	-16.2	-12.5	-9.4	-24.2	-20.5	-0.4	-15.1	-11.5
Distance	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	62.1	56.3	64.8	54.1	48.3	56.8	63.2	57.4	65.9
VEHICULAR NOISE	DAY=	67.0	Leq	EVENING=	59.1	Leq	NIGHT=	68.1	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**74.3**
			CNEL=	**74.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**194**	**417**	**899**
	CNEL:	**195**	**420**	**904**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Mountain House Parkway
Segment: I-205 to Road A

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	88,500
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	93
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	3319	111	258	531	18	41	4248	142	330
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	3.9	-10.9	-7.2	-4.1	-18.8	-15.2	5.0	-9.8	-6.1
Distance	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.4	61.6	70.1	59.5	53.6	62.2	68.5	62.7	71.2
VEHICULAR NOISE	DAY=	72.4	Leq	EVENING=	64.4	Leq	NIGHT=	73.4	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**79.6**
			CNEL=	**79.7**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**438**	**944**	**2035**
	CNEL:	**441**	**950**	**2046**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Mountain House Parkway
Segment: Road A to Capital Parks Drive
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	81,000
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	93
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	3038	101	236	486	16	38	3888	130	302
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	3.5	-11.3	-7.6	-4.5	-19.2	-15.6	4.6	-10.2	-6.5
Distance	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.0	61.2	69.7	59.1	53.3	61.8	68.1	62.3	70.8
VEHICULAR NOISE	DAY=	72.0	Leq	EVENING=	64.0	Leq	NIGHT=	73.1	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**79.2**
			CNEL=	**79.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**413**	**890**	**1918**
	CNEL:	**415**	**895**	**1928**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Mountain House Parkway
Segment: Capital Parks Drive to New Schult

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	48,000
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	71
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1800	60	140	288	10	22	2304	77	179
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	1.2	-13.5	-9.9	-6.7	-21.5	-17.8	2.3	-12.5	-8.8
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	64.4	58.6	67.1	56.4	50.6	59.2	65.5	59.7	68.2
VEHICULAR NOISE	DAY=	69.4	Leq	EVENING=	61.4	Leq	NIGHT=	70.4	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**76.6**
			CNEL=	**76.7**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**276**	**595**	**1281**
	CNEL:	**278**	**598**	**1288**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Mountain House Parkway
Segment: New Schulte Road to Old Schulte
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	45,100
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1691	56	132	271	9	21	2165	72	168
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	1.0	-13.8	-10.1	-7.0	-21.8	-18.1	2.0	-12.7	-9.1
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	63.9	58.1	66.6	55.9	50.1	58.6	65.0	59.2	67.7
VEHICULAR NOISE	DAY=	68.8	Leq	EVENING=	60.9	Leq	NIGHT=	69.9	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**76.1**
			CNEL=	**76.1**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**255**	**550**	**1185**
	CNEL:	**257**	**553**	**1192**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Mountain House Parkway
Segment: Old Schulte Road to I-580
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	31,400
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1178	39	92	188	6	15	1507	50	117
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-0.6	-15.4	-11.7	-8.6	-23.3	-19.7	0.5	-14.3	-10.6
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	62.3	56.5	65.0	54.4	48.5	57.1	63.4	57.6	66.1
VEHICULAR NOISE	DAY=	67.3	Leq	EVENING=	59.3	Leq	NIGHT=	68.3	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**74.5**
			CNEL=	**74.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**201**	**432**	**931**
	CNEL:	**202**	**435**	**936**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Mountain House Parkway
Segment: S/O I-580

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	4,200
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	158	5	12	25	1	2	202	7	16
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-9.4	-24.1	-20.4	-17.3	-32.1	-28.4	-8.3	-23.1	-19.4
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	53.6	47.8	56.3	45.6	39.8	48.3	54.7	48.8	57.4
VEHICULAR NOISE	DAY=	58.5	Leq	EVENING=	50.6	Leq	NIGHT=	59.6	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**65.8**
			CNEL=	**65.8**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**52**	**113**	**244**
	CNEL:	**53**	**114**	**245**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Hansen Road
Segment: N/O Capital Parks Drive

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	15,600
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	585	20	46	94	3	7	749	25	58
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-3.7	-18.4	-14.7	-11.6	-26.4	-22.7	-2.6	-17.4	-13.7
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	59.3	53.5	62.0	51.3	45.5	54.0	60.4	54.5	63.1
VEHICULAR NOISE	DAY=	64.2	Leq	EVENING=	56.3	Leq	NIGHT=	65.3	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**71.5**
			CNEL=	**71.5**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**126**	**271**	**584**
	CNEL:	**127**	**273**	**587**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Hansen Road
Segment: Capital Parks Drive to New Schult
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	37,600
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1410	47	110	226	8	18	1805	60	140
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	0.2	-14.6	-10.9	-7.8	-22.6	-18.9	1.2	-13.5	-9.9
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	63.1	57.3	65.8	55.1	49.3	57.9	64.2	58.4	66.9
VEHICULAR NOISE	DAY=	68.1	Leq	EVENING=	60.1	Leq	NIGHT=	69.1	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**75.3**
			CNEL=	**75.4**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**226**	**487**	**1050**
	CNEL:	**227**	**490**	**1056**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Hansen Road
Segment: New Schulte Road to Old Schulte
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	47,600
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1785	60	139	286	10	22	2285	76	178
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	1.2	-13.6	-9.9	-6.8	-21.5	-17.9	2.3	-12.5	-8.8
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	64.1	58.3	66.8	56.2	50.4	58.9	65.2	59.4	67.9
VEHICULAR NOISE	DAY=	69.1	Leq	EVENING=	61.1	Leq	NIGHT=	70.2	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**76.3**
			CNEL=	**76.4**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**265**	**570**	**1229**
	CNEL:	**266**	**573**	**1235**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Hansen Road
Segment: S/O Old Schulte Road

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	3,000
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	113	4	9	18	1	1	144	5	11
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-10.8	-25.6	-21.9	-18.8	-33.5	-29.9	-9.7	-24.5	-20.8
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	52.1	46.3	54.8	44.2	38.3	46.9	53.2	47.4	55.9
VEHICULAR NOISE	DAY=	57.1	Leq	EVENING=	49.1	Leq	NIGHT=	58.2	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**64.3**
			CNEL=	**64.4**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**42**	**90**	**195**
	CNEL:	**42**	**91**	**196**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Lammers Road
Segment: N/O 11th Street

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	5,100
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	191	6	15	31	1	2	245	8	19
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-9.5	-24.3	-20.6	-17.4	-32.2	-28.5	-8.4	-23.2	-19.5
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	57.5	50.4	58.3	49.5	42.4	50.3	58.6	51.5	59.4
VEHICULAR NOISE	DAY=	61.3	Leq	EVENING=	53.3	Leq	NIGHT=	62.4	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**68.5**
			CNEL=	**68.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**80**	**172**	**371**
	CNEL:	**80**	**173**	**373**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Lammers Road
Segment: 11th Street to Capital Parks Drive
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	27,100
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1016	34	79	163	5	13	1301	43	101
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-2.2	-17.0	-13.3	-10.2	-25.0	-21.3	-1.2	-15.9	-12.2
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	64.7	57.6	65.5	56.8	49.7	57.6	65.8	58.7	66.6
VEHICULAR NOISE	DAY=	68.5	Leq	EVENING=	60.6	Leq	NIGHT=	69.6	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**75.8**
			CNEL=	**75.8**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**244**	**525**	**1131**
	CNEL:	**245**	**528**	**1137**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Lammers Road
Segment: Capital Parks Drive to New Schult
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	29,200
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1095	37	85	175	6	14	1402	47	109
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-1.9	-16.7	-13.0	-9.9	-24.6	-21.0	-0.8	-15.6	-11.9
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	65.1	58.0	65.9	57.1	50.0	57.9	66.1	59.0	66.9
VEHICULAR NOISE	DAY=	68.9	Leq	EVENING=	60.9	Leq	NIGHT=	69.9	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**76.1**
			CNEL=	**76.2**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**256**	**552**	**1188**
	CNEL:	**257**	**555**	**1195**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Lammers Road
Segment: New Schulte Road to Old Schulte
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	23,800
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	893	30	69	143	5	11	1142	38	89
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-2.8	-17.6	-13.9	-10.7	-25.5	-21.8	-1.7	-16.5	-12.8
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	64.2	57.1	65.0	56.2	49.1	57.0	65.2	58.2	66.1
VEHICULAR NOISE	DAY=	68.0	Leq	EVENING=	60.0	Leq	NIGHT=	69.0	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**75.2**
			CNEL=	**75.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**223**	**481**	**1037**
	CNEL:	**225**	**484**	**1043**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Lammers Road
Segment: Old Schulte Road to Valpico Road
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	42,200
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1583	53	123	253	8	20	2026	68	158
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-0.3	-15.1	-11.4	-8.3	-23.0	-19.4	0.8	-14.0	-10.3
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	66.7	59.6	67.5	58.7	51.6	59.5	67.7	60.6	68.5
VEHICULAR NOISE	DAY=	70.5	Leq	EVENING=	62.5	Leq	NIGHT=	71.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**77.7**
			CNEL=	**77.8**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**327**	**705**	**1519**
	CNEL:	**329**	**709**	**1527**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Lammers Road
Segment: S/O Valpico Road
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	4,200
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	158	5	12	25	1	2	202	7	16
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-10.3	-25.1	-21.4	-18.3	-33.1	-29.4	-9.3	-24.0	-20.3
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	56.6	49.5	57.5	48.7	41.6	49.5	57.7	50.6	58.5
VEHICULAR NOISE	DAY=	60.4	Leq	EVENING=	52.5	Leq	NIGHT=	61.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**67.7**
			CNEL=	**67.7**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**70**	**151**	**326**
	CNEL:	**71**	**152**	**328**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Old Schulte Road
Segment: W/O MHP

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	3,000
SPEED (mph)	55
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	113	4	9	18	1	1	144	5	11
Speed in MPH	55	55	55	55	55	55	55	55	55
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	72.7	79.9	83.8	72.7	79.9	83.8	72.7	79.9	83.8
ADJUSTMENTS									
Flow	-12.2	-27.0	-23.3	-20.2	-34.9	-31.2	-11.1	-25.9	-22.2
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	56.1	48.5	56.1	48.2	40.5	48.1	57.2	49.5	57.2
VEHICULAR NOISE	DAY=	59.5	Leq	EVENING=	51.5	Leq	NIGHT=	60.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**66.7**
			CNEL=	**66.8**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**61**	**131**	**281**
	CNEL:	**61**	**131**	**283**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Old Schulte Road
Segment: MHP to Hansen Road

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	54,400
SPEED (mph)	55
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2040	68	159	326	11	25	2611	87	203
Speed in MPH	55	55	55	55	55	55	55	55	55
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	72.7	79.9	83.8	72.7	79.9	83.8	72.7	79.9	83.8
ADJUSTMENTS									
Flow	0.4	-14.4	-10.7	-7.6	-22.3	-18.7	1.5	-13.3	-9.6
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.7	61.1	68.7	60.7	53.1	60.7	69.8	62.1	69.8
VEHICULAR NOISE	DAY=	72.1	Leq	EVENING=	64.1	Leq	NIGHT=	73.1	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**79.3**
			CNEL=	**79.4**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**418**	**901**	**1941**
	CNEL:	**420**	**906**	**1952**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Old Schulte Road
Segment: Hansen Road to Lammers Road
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	63,500
SPEED (mph)	55
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2381	79	185	381	13	30	3048	102	237
Speed in MPH	55	55	55	55	55	55	55	55	55
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	72.7	79.9	83.8	72.7	79.9	83.8	72.7	79.9	83.8
ADJUSTMENTS									
Flow	1.1	-13.7	-10.0	-6.9	-21.7	-18.0	2.1	-12.6	-9.0
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	69.4	61.7	69.4	61.4	53.8	61.4	70.4	62.8	70.4
VEHICULAR NOISE	DAY=	72.7	Leq	EVENING=	64.8	Leq	NIGHT=	73.8	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**80.0**
			CNEL=	**80.0**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**464**	**999**	**2152**
	CNEL:	**466**	**1004**	**2164**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: Valpico Road
Segment: E/O Lammers Road
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	29,900
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1121	37	87	179	6	14	1435	48	112
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-0.8	-15.6	-11.9	-8.8	-23.6	-19.9	0.2	-14.5	-10.8
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	62.1	56.3	64.8	54.2	48.3	56.9	63.2	57.4	65.9
VEHICULAR NOISE	DAY=	67.1	Leq	EVENING=	59.1	Leq	NIGHT=	68.1	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**74.3**
			CNEL=	**74.4**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**194**	**418**	**901**
	CNEL:	**195**	**421**	**906**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: 11th Street
Segment: W/O Lammers Road
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	39,100
SPEED (mph)	45
ROAD NEAR-FAR LN. DIST.	70
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1466	49	114	235	8	18	1877	63	146
Speed in MPH	45	45	45	45	45	45	45	45	45
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	69.3	77.6	82.1	69.3	77.6	82.1	69.3	77.6	82.1
ADJUSTMENTS									
Flow	-0.2	-14.9	-11.3	-8.1	-22.9	-19.2	0.9	-13.9	-10.2
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	65.0	58.5	66.7	57.0	50.5	58.7	66.0	59.6	67.8
VEHICULAR NOISE	DAY=	69.3	Leq	EVENING=	61.3	Leq	NIGHT=	70.4	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**76.6**
			CNEL=	**76.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**274**	**589**	**1270**
	CNEL:	**275**	**592**	**1276**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING+PROJECT BO
Roadway: 11th Street
Segment: E/O Lammers Road
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	61,500
SPEED (mph)	45
ROAD NEAR-FAR LN. DIST.	70
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	50.0%
% MT	3.0%	EVENING	2.0%
% HT	7.0%	NIGHT	48.0%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2306	77	179	369	12	29	2952	98	230
Speed in MPH	45	45	45	45	45	45	45	45	45
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	69.3	77.6	82.1	69.3	77.6	82.1	69.3	77.6	82.1
ADJUSTMENTS									
Flow	1.8	-13.0	-9.3	-6.2	-20.9	-17.3	2.9	-11.9	-8.2
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	66.9	60.4	68.6	59.0	52.5	60.7	68.0	61.5	69.7
VEHICULAR NOISE	DAY=	71.3	Leq	EVENING=	63.3	Leq	NIGHT=	72.3	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**78.5**
			CNEL=	**78.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**370**	**797**	**1717**
	CNEL:	**372**	**801**	**1726**

Traffic Noise Modeling

- Existing conditions plus Full Project Build-out on Pertinent Freeways (only)

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING +PROJECT BO - FREE Project: CORDES RANCH SP EIR
Roadway: I-205 Analyst FJS
Segment: West of Mountain House Parkway Date: 06-Mar-13

ROADWAY INPUTS	
ADT	######
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	70
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	4685	179	412	2040	78	179	3054	117	268
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	3.0	-11.2	-7.6	-0.7	-14.8	-11.2	1.1	-13.1	-9.5
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	75.5	67.1	74.0	71.9	63.5	70.4	73.7	65.3	72.2
VEHICULAR NOISE	DAY=	78.2	Leq	EVENING=	74.6	Leq	NIGHT=	76.4	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**83.0**
			CNEL=	**83.1**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**733**	**1580**	**3404**
	CNEL:	**752**	**1621**	**3493**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING +PROJECT BO - FREE Project: CORDES RANCH SP EIR
Roadway: I-205 Analyst FJS
Segment: Mountain House Parkway to Tracy Date: 06-Mar-13

ROADWAY INPUTS	
ADT	#######
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	70
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	5830	223	512	2539	97	223	3800	146	334
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	3.9	-10.3	-6.7	0.3	-13.9	-10.3	2.0	-12.1	-8.5
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	76.5	68.1	75.0	72.9	64.5	71.4	74.6	66.2	73.1
VEHICULAR NOISE	DAY=	79.2	Leq	EVENING=	75.5	Leq	NIGHT=	77.3	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**83.9**
			CNEL=	**84.1**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**849**	**1828**	**3938**
	CNEL:	**871**	**1876**	**4041**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING +PROJECT BO - FREE
Roadway: I-205
Segment: East of Tracy Boulevard
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	#######
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	70
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	5774	221	507	2515	96	221	3764	144	331
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	3.9	-10.3	-6.7	0.2	-13.9	-10.3	2.0	-12.2	-8.6
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	76.5	68.0	74.9	72.8	64.4	71.3	74.6	66.2	73.1
VEHICULAR NOISE	DAY=	79.1	Leq	EVENING=	75.5	Leq	NIGHT=	77.3	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**83.9**
			CNEL=	**84.1**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**843**	**1816**	**3913**
	CNEL:	**865**	**1864**	**4015**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING +PROJECT BO - FREE
Roadway: I-580
Segment: West of I-205 Interchange
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	#######
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	130
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA

	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	6525	250	573	2842	109	250	4253	163	374
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	4.4	-9.8	-6.2	0.8	-13.4	-9.8	2.5	-11.6	-8.0
Distance	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	78.3	69.9	76.8	74.7	66.3	73.2	76.5	68.1	75.0
VEHICULAR NOISE	DAY=	81.0	Leq	EVENING=	77.4	Leq	NIGHT=	79.2	Leq

RESULTS

NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA): **Ldn= 85.8** **CNEL= 85.9**

NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**1127**	**2429**	**5233**
	CNEL:	**1157**	**2492**	**5369**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING +PROJECT BO - FREE Project: CORDES RANCH SP EIR
Roadway: I-580 Analyst FJS
Segment: I-205 Interchange to Patterson Pas Date: 06-Mar-13

ROADWAY INPUTS	
ADT	39,720
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	120
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1840	70	162	801	31	70	1199	46	105
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	-1.1	-15.3	-11.7	-4.7	-18.9	-15.3	-3.0	-17.1	-13.5
Distance	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	72.5	64.1	71.0	68.9	60.5	67.4	70.7	62.2	69.1
VEHICULAR NOISE	DAY=	75.2	Leq	EVENING=	71.6	Leq	NIGHT=	73.3	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**79.9**
			CNEL=	**80.1**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**460**	**992**	**2137**
	CNEL:	**472**	**1018**	**2193**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING +PROJECT BO - FREE Project: CORDES RANCH SP EIR
Roadway: I-580 Analyst FJS
Segment: Patterson Pass Road to Corral Ho Date: 06-Mar-13

ROADWAY INPUTS	
ADT	47,280
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	120
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2190	84	192	954	37	84	1427	55	125
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	-0.4	-14.5	-10.9	-4.0	-18.1	-14.5	-2.2	-16.4	-12.8
Distance	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	73.3	64.8	71.7	69.7	61.2	68.1	71.4	63.0	69.9
VEHICULAR NOISE	DAY=	75.9	Leq	EVENING=	72.3	Leq	NIGHT=	74.1	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**80.7**
			CNEL=	**80.9**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**517**	**1114**	**2401**
	CNEL:	**531**	**1143**	**2463**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: EXISTING +PROJECT BO - FREE Project: CORDES RANCH SP EIR
Roadway: I-580 Analyst FJS
Segment: East of Corral Hollow Road Date: 06-Mar-13

ROADWAY INPUTS	
ADT	48,600
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	120
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2251	86	198	980	38	86	1467	56	129
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	-0.2	-14.4	-10.8	-3.8	-18.0	-14.4	-2.1	-16.3	-12.7
Distance	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	73.4	65.0	71.9	69.8	61.4	68.3	71.5	63.1	70.0
VEHICULAR NOISE	DAY=	76.1	Leq	EVENING=	72.4	Leq	NIGHT=	74.2	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**80.8**
			CNEL=	**81.0**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**527**	**1135**	**2445**
	CNEL:	**540**	**1164**	**2509**

Traffic Noise Modeling

- Regional Conditions in 2035 WITHOUT Project on Local Roads (only)

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Mountain House Parkway
Segment: N/O I-205

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	49,100
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	93
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2305	77	179	1002	33	78	1502	50	117
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	2.3	-12.5	-8.8	-1.3	-16.1	-12.4	0.4	-14.3	-10.6
Distance	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	65.8	60.0	68.5	62.2	56.4	64.9	64.0	58.2	66.7
VEHICULAR NOISE	DAY=	70.8	Leq	EVENING=	67.2	Leq	NIGHT=	68.9	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**75.6**
			CNEL=	**75.7**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**235**	**505**	**1089**
	CNEL:	**241**	**519**	**1117**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Mountain House Parkway
Segment: I-205 to Road A

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	10,500
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	93
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	493	16	38	214	7	17	321	11	25
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-4.4	-19.2	-15.5	-8.0	-22.8	-19.1	-6.3	-21.0	-17.3
Distance	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	59.1	53.3	61.8	55.5	49.7	58.2	57.3	51.5	60.0
VEHICULAR NOISE	DAY=	64.1	Leq	EVENING=	60.5	Leq	NIGHT=	62.2	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**68.9**
			CNEL=	**69.0**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**84**	**181**	**389**
	CNEL:	**86**	**185**	**399**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Mountain House Parkway
Segment: Road A to Capital Parks Drive
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	12,300
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	93
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	577	19	45	251	8	20	376	13	29
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-3.7	-18.5	-14.8	-7.3	-22.1	-18.4	-5.6	-20.3	-16.7
Distance	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	59.8	54.0	62.5	56.2	50.4	58.9	58.0	52.1	60.7
VEHICULAR NOISE	DAY=	64.8	Leq	EVENING=	61.2	Leq	NIGHT=	62.9	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**69.5**
			CNEL=	**69.7**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**93**	**201**	**433**
	CNEL:	**96**	**206**	**444**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Mountain House Parkway
Segment: Capital Parks Drive to New Schult

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	11,800
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	71
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	554	18	43	241	8	19	361	12	28
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-3.9	-18.7	-15.0	-7.5	-22.3	-18.6	-5.8	-20.5	-16.8
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	59.3	53.5	62.0	55.7	49.8	58.4	57.4	51.6	60.1
VEHICULAR NOISE	DAY=	64.2	Leq	EVENING=	60.6	Leq	NIGHT=	62.4	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**69.0**
			CNEL=	**69.2**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**86**	**185**	**399**
	CNEL:	**88**	**190**	**409**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Mountain House Parkway
Segment: New Schulte Road to Old Schulte
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	11,200
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	526	18	41	228	8	18	343	11	27
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-4.1	-18.9	-15.2	-7.7	-22.5	-18.8	-6.0	-20.7	-17.1
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	58.8	53.0	61.5	55.2	49.4	57.9	57.0	51.1	59.7
VEHICULAR NOISE	DAY=	63.8	Leq	EVENING=	60.2	Leq	NIGHT=	61.9	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**68.5**
			CNEL=	**68.7**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**80**	**172**	**371**
	CNEL:	**82**	**177**	**381**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Mountain House Parkway
Segment: Old Schulte Road to I-580

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	10,800
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	507	17	39	220	7	17	330	11	26
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-4.3	-19.0	-15.4	-7.9	-22.7	-19.0	-6.1	-20.9	-17.2
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	58.7	52.8	61.4	55.0	49.2	57.8	56.8	51.0	59.5
VEHICULAR NOISE	DAY=	63.6	Leq	EVENING=	60.0	Leq	NIGHT=	61.8	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**68.4**
			CNEL=	**68.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**78**	**168**	**362**
	CNEL:	**80**	**173**	**372**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Mountain House Parkway
Segment: S/O I-580

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	5,100
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	239	8	19	104	3	8	156	5	12
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-7.5	-22.3	-18.6	-11.2	-25.9	-22.2	-9.4	-24.2	-20.5
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	55.4	49.6	58.1	51.8	46.0	54.5	53.5	47.7	56.3
VEHICULAR NOISE	DAY=	60.4	Leq	EVENING=	56.7	Leq	NIGHT=	58.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**65.1**
			CNEL=	**65.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**47**	**102**	**220**
	CNEL:	**49**	**105**	**225**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Hansen Road
Segment: N/O Capital Parks Drive

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	1,500
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	70	2	5	31	1	2	46	2	4
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-12.8	-27.6	-23.9	-16.5	-31.2	-27.6	-14.7	-29.5	-25.8
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	50.1	44.3	52.8	46.5	40.7	49.2	48.2	42.4	50.9
VEHICULAR NOISE	DAY=	55.0	Leq	EVENING=	51.4	Leq	NIGHT=	53.2	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**59.8**
			CNEL=	**60.0**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**21**	**45**	**97**
	CNEL:	**21**	**46**	**100**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Hansen Road
Segment: Capital Parks Drive to New Schult

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	10,400
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	488	16	38	212	7	17	318	11	25
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-4.4	-19.2	-15.5	-8.1	-22.8	-19.2	-6.3	-21.1	-17.4
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	58.5	52.7	61.2	54.9	49.1	57.6	56.6	50.8	59.4
VEHICULAR NOISE	DAY=	63.5	Leq	EVENING=	59.8	Leq	NIGHT=	61.6	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**68.2**
			CNEL=	**68.4**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**76**	**164**	**353**
	CNEL:	**78**	**168**	**362**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Hansen Road
Segment: New Schulte Road to Old Schulte
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	13,100
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	615	21	48	267	9	21	401	13	31
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-3.4	-18.2	-14.5	-7.1	-21.8	-18.1	-5.3	-20.1	-16.4
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	59.5	53.7	62.2	55.9	50.1	58.6	57.6	51.8	60.4
VEHICULAR NOISE	DAY=	64.5	Leq	EVENING=	60.8	Leq	NIGHT=	62.6	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**69.2**
			CNEL=	**69.4**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**89**	**191**	**412**
	CNEL:	**91**	**196**	**423**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Hansen Road
Segment: S/O Old Schulte Road

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	14,700
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	690	23	54	300	10	23	450	15	35
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-2.9	-17.7	-14.0	-6.6	-21.3	-17.6	-4.8	-19.6	-15.9
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	60.0	54.2	62.7	56.4	50.6	59.1	58.1	52.3	60.9
VEHICULAR NOISE	DAY=	65.0	Leq	EVENING=	61.3	Leq	NIGHT=	63.1	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**69.7**
			CNEL=	**69.9**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**96**	**207**	**445**
	CNEL:	**98**	**212**	**457**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Lammers Road
Segment: N/O 11th Street

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	18,700
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	878	29	68	381	13	30	572	19	45
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-2.9	-17.6	-14.0	-6.5	-21.3	-17.6	-4.7	-19.5	-15.8
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	64.1	57.0	64.9	60.5	53.4	61.3	62.2	55.1	63.1
VEHICULAR NOISE	DAY=	67.9	Leq	EVENING=	64.3	Leq	NIGHT=	66.0	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**72.7**
			CNEL=	**72.8**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**151**	**325**	**700**
	CNEL:	**155**	**333**	**718**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Lammers Road
Segment: 11th Street to Capital Parks Drive
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	44,200
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2075	69	161	902	30	70	1353	45	105
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	0.9	-13.9	-10.2	-2.7	-17.5	-13.8	-1.0	-15.8	-12.1
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.8	60.7	68.6	64.2	57.1	65.0	66.0	58.9	66.8
VEHICULAR NOISE	DAY=	71.6	Leq	EVENING=	68.0	Leq	NIGHT=	69.8	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**76.4**
			CNEL=	**76.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**268**	**576**	**1242**
	CNEL:	**274**	**591**	**1274**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Lammers Road
Segment: Capital Parks Drive to New Schult

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	53,800
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2526	84	196	1098	37	85	1646	55	128
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	1.7	-13.0	-9.4	-1.9	-16.7	-13.0	-0.1	-14.9	-11.2
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.7	61.6	69.5	65.1	58.0	65.9	66.8	59.7	67.6
VEHICULAR NOISE	DAY=	72.5	Leq	EVENING=	68.9	Leq	NIGHT=	70.6	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**77.3**
			CNEL=	**77.4**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**305**	**657**	**1416**
	CNEL:	**313**	**674**	**1452**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Lammers Road
Segment: New Schulte Road to Old Schulte
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	52,300
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2455	82	191	1067	36	83	1600	53	124
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	1.6	-13.2	-9.5	-2.0	-16.8	-13.1	-0.3	-15.0	-11.3
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.6	61.5	69.4	65.0	57.9	65.8	66.7	59.6	67.5
VEHICULAR NOISE	DAY=	72.4	Leq	EVENING=	68.8	Leq	NIGHT=	70.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**77.1**
			CNEL=	**77.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**299**	**645**	**1389**
	CNEL:	**307**	**662**	**1425**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Lammers Road
Segment: Old Schulte Road to Valpico Road
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	59,600
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2798	93	218	1216	41	95	1824	61	142
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	2.2	-12.6	-8.9	-1.4	-16.2	-12.5	0.3	-14.5	-10.8
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	69.1	62.0	69.9	65.5	58.4	66.3	67.3	60.2	68.1
VEHICULAR NOISE	DAY=	72.9	Leq	EVENING=	69.3	Leq	NIGHT=	71.1	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**77.7**
			CNEL=	**77.9**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**327**	**704**	**1516**
	CNEL:	**335**	**722**	**1555**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Lammers Road
Segment: Valpico Road to Linnie Road
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	52,800
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2479	83	193	1077	36	84	1616	54	126
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	1.6	-13.1	-9.4	-2.0	-16.7	-13.1	-0.2	-15.0	-11.3
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.6	61.5	69.4	65.0	57.9	65.8	66.8	59.7	67.6
VEHICULAR NOISE	DAY=	72.4	Leq	EVENING=	68.8	Leq	NIGHT=	70.6	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**77.2**
			CNEL=	**77.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**301**	**649**	**1398**
	CNEL:	**309**	**666**	**1434**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Lammers Road
Segment: Linne Road to I-580

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	49,900
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2343	78	182	1018	34	79	1527	51	119
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	1.4	-13.4	-9.7	-2.2	-17.0	-13.3	-0.5	-15.2	-11.5
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.4	61.3	69.2	64.7	57.6	65.6	66.5	59.4	67.3
VEHICULAR NOISE	DAY=	72.2	Leq	EVENING=	68.5	Leq	NIGHT=	70.3	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**76.9**
			CNEL=	**77.1**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**290**	**625**	**1346**
	CNEL:	**298**	**641**	**1381**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Lammers Road
Segment: S/O I-580

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	18,600
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	873	29	68	379	13	30	569	19	44
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-2.9	-17.7	-14.0	-6.5	-21.3	-17.6	-4.7	-19.5	-15.8
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	64.1	57.0	64.9	60.5	53.4	61.3	62.2	55.1	63.0
VEHICULAR NOISE	DAY=	67.9	Leq	EVENING=	64.3	Leq	NIGHT=	66.0	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**72.7**
			CNEL=	**72.8**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**150**	**324**	**697**
	CNEL:	**154**	**332**	**715**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Lammers Road extension
Segment: N/O I-205

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	33,700
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1582	53	123	687	23	53	1031	34	80
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-0.3	-15.1	-11.4	-3.9	-18.7	-15.0	-2.2	-16.9	-13.3
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	66.7	59.6	67.5	63.0	55.9	63.9	64.8	57.7	65.6
VEHICULAR NOISE	DAY=	70.5	Leq	EVENING=	66.8	Leq	NIGHT=	68.6	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**75.2**
			CNEL=	**75.4**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**223**	**481**	**1036**
	CNEL:	**229**	**494**	**1063**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Lammers Road extension
Segment: I-205 to Commerce Way

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	82,100
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	3855	128	300	1675	56	130	2512	84	195
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	3.6	-11.2	-7.5	-0.1	-14.8	-11.1	1.7	-13.1	-9.4
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	70.5	63.4	71.3	66.9	59.8	67.7	68.7	61.6	69.5
VEHICULAR NOISE	DAY=	74.3	Leq	EVENING=	70.7	Leq	NIGHT=	72.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**79.1**
			CNEL=	**79.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**404**	**871**	**1876**
	CNEL:	**415**	**894**	**1925**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Lammers Road extension
Segment: Commerce Way to Lammers Roac
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	45,900
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2155	72	168	936	31	73	1405	47	109
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	1.0	-13.7	-10.1	-2.6	-17.4	-13.7	-0.8	-15.6	-11.9
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.0	60.9	68.8	64.4	57.3	65.2	66.1	59.0	67.0
VEHICULAR NOISE	DAY=	71.8	Leq	EVENING=	68.2	Leq	NIGHT=	69.9	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**76.6**
			CNEL=	**76.7**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**274**	**591**	**1273**
	CNEL:	**281**	**606**	**1306**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Lammers Road extension
Segment: E/O Lammers Road

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	43,000
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2019	67	157	877	29	68	1316	44	102
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	0.8	-14.0	-10.3	-2.9	-17.6	-14.0	-1.1	-15.9	-12.2
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.7	60.6	68.5	64.1	57.0	64.9	65.9	58.8	66.7
VEHICULAR NOISE	DAY=	71.5	Leq	EVENING=	67.9	Leq	NIGHT=	69.7	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**76.3**
			CNEL=	**76.5**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**263**	**566**	**1219**
	CNEL:	**269**	**581**	**1251**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NP
Roadway: Capital Parks Drive
Segment: MHP to Hansen Road

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	1,000
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	47	2	4	20	1	2	31	1	2
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-15.6	-30.4	-26.7	-19.2	-34.0	-30.3	-17.4	-32.2	-28.5
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	51.1	44.0	51.9	47.5	40.4	48.3	49.3	42.2	50.1
VEHICULAR NOISE	DAY=	54.9	Leq	EVENING=	51.3	Leq	NIGHT=	53.1	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**59.7**
			CNEL=	**59.9**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**21**	**44**	**95**
	CNEL:	**21**	**45**	**98**

Traffic Noise Modeling

- Regional Conditions in 2035 WITHOUT Project on Pertinent Freeways (only)

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NO PROJECT BUILDOUT- I Project: CORDES RANCH SP EIR
Roadway: I-205 Analyst FJS
Segment: West of Mountain House Parkway Date: 06-Mar-13

ROADWAY INPUTS	
ADT	######
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	70
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	5847	224	514	2546	97	224	3811	146	335
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	3.9	-10.3	-6.7	0.3	-13.9	-10.3	2.1	-12.1	-8.5
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	76.5	68.1	75.0	72.9	64.5	71.4	74.6	66.2	73.1
VEHICULAR NOISE	DAY=	79.2	Leq	EVENING=	75.6	Leq	NIGHT=	77.3	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**83.9**
			CNEL=	**84.1**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**850**	**1832**	**3946**
	CNEL:	**872**	**1879**	**4049**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NO PROJECT BUILDOUT- I Project: CORDES RANCH SP EIR
Roadway: I-205 Analyst FJS
Segment: Mountain House Parkway to Tracy Date: 06-Mar-13

ROADWAY INPUTS	
ADT	#######
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	70
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	7647	293	672	3330	128	293	4985	191	438
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	5.1	-9.1	-5.5	1.5	-12.7	-9.1	3.2	-10.9	-7.3
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	77.7	69.2	76.1	74.1	65.6	72.5	75.8	67.4	74.3
VEHICULAR NOISE	DAY=	80.3	Leq	EVENING=	76.7	Leq	NIGHT=	78.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**85.1**
			CNEL=	**85.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**1017**	**2191**	**4719**
	CNEL:	**1043**	**2247**	**4842**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NO PROJECT BUILDOUT- I Project: CORDES RANCH SP EIR
Roadway: I-205 Analyst FJS
Segment: East of Tracy Boulevard Date: 06-Mar-13

ROADWAY INPUTS	
ADT	#######
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	70
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	10304	395	905	4487	172	394	6717	257	590
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	6.4	-7.8	-4.2	2.8	-11.4	-7.8	4.5	-9.7	-6.0
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	79.0	70.5	77.4	75.4	66.9	73.8	77.1	68.7	75.6
VEHICULAR NOISE	DAY=	81.6	Leq	EVENING=	78.0	Leq	NIGHT=	79.8	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**86.4**
			CNEL=	**86.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**1240**	**2672**	**5757**
	CNEL:	**1273**	**2742**	**5907**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NO PROJECT BUILDOUT- I Project: CORDES RANCH SP EIR
Roadway: I-580 Analyst FJS
Segment: West of I-205 Interchange Date: 06-Mar-13

ROADWAY INPUTS	
ADT	#######
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	130
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	7753	297	681	3376	129	297	5054	194	444
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	5.1	-9.0	-5.4	1.5	-12.6	-9.0	3.3	-10.9	-7.3
Distance	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	79.1	70.7	77.6	75.5	67.1	74.0	77.2	68.8	75.7
VEHICULAR NOISE	DAY=	81.8	Leq	EVENING=	78.2	Leq	NIGHT=	79.9	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**86.5**
			CNEL=	**86.7**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**1265**	**2725**	**5871**
	CNEL:	**1298**	**2796**	**6024**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NO PROJECT BUILDOUT- F Project: CORDES RANCH SP EIR
Roadway: I-580 Analyst FJS
Segment: I-205 Interchange to Patterson Pas Date: 06-Mar-13

ROADWAY INPUTS	
ADT	41,160
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	120
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1906	73	167	830	32	73	1243	48	109
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	-1.0	-15.1	-11.5	-4.6	-18.7	-15.1	-2.8	-17.0	-13.4
Distance	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	72.7	64.2	71.1	69.1	60.6	67.5	70.8	62.4	69.3
VEHICULAR NOISE	DAY=	75.3	Leq	EVENING=	71.7	Leq	NIGHT=	73.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**80.1**
			CNEL=	**80.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**472**	**1016**	**2189**
	CNEL:	**484**	**1042**	**2246**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NO PROJECT BUILDOUT- F Project: CORDES RANCH SP EIR
Roadway: I-580 Analyst FJS
Segment: Patterson Pass Road to Corral Ho Date: 06-Mar-13

ROADWAY INPUTS	
ADT	47,520
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	120
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2201	84	193	958	37	84	1435	55	126
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	-0.3	-14.5	-10.9	-3.9	-18.1	-14.5	-2.2	-16.4	-12.8
Distance	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	73.3	64.9	71.8	69.7	61.3	68.2	71.4	63.0	69.9
VEHICULAR NOISE	DAY=	76.0	Leq	EVENING=	72.3	Leq	NIGHT=	74.1	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**80.7**
			CNEL=	**80.9**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**519**	**1118**	**2409**
	CNEL:	**532**	**1147**	**2471**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 NO PROJECT BUILDOUT- I Project: CORDES RANCH SP EIR
Roadway: I-580 Analyst FJS
Segment: East of Corral Hollow Road Date: 06-Mar-13

ROADWAY INPUTS	
ADT	41,520
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	120
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1923	74	169	837	32	74	1254	48	110
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	-0.9	-15.1	-11.5	-4.5	-18.7	-15.1	-2.8	-16.9	-13.3
Distance	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	72.7	64.3	71.2	69.1	60.7	67.6	70.8	62.4	69.3
VEHICULAR NOISE	DAY=	75.4	Leq	EVENING=	71.8	Leq	NIGHT=	73.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**80.1**
			CNEL=	**80.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**474**	**1022**	**2202**
	CNEL:	**487**	**1048**	**2259**

Traffic Noise Modeling

- Regional Conditions in 2035 WITH Full Project Build-out on Local Roads (only)

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Mountain House Parkway
Segment: N/O I-205

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	54,900
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	93
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2578	86	200	1120	37	87	1680	56	131
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	2.8	-12.0	-8.3	-0.8	-15.6	-11.9	0.9	-13.8	-10.2
Distance	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	66.3	60.5	69.0	62.7	56.9	65.4	64.5	58.6	67.2
VEHICULAR NOISE	DAY=	71.3	Leq	EVENING=	67.7	Leq	NIGHT=	69.4	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**76.0**
			CNEL=	**76.2**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**253**	**544**	**1173**
	CNEL:	**259**	**559**	**1203**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Mountain House Parkway
Segment: I-205 to Road A

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	50,000
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	93
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2348	78	183	1020	34	79	1530	51	119
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	2.4	-12.4	-8.7	-1.2	-16.0	-12.3	0.5	-14.3	-10.6
Distance	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	65.9	60.1	68.6	62.3	56.5	65.0	64.1	58.2	66.8
VEHICULAR NOISE	DAY=	70.9	Leq	EVENING=	67.2	Leq	NIGHT=	69.0	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**75.6**
			CNEL=	**75.8**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**237**	**512**	**1102**
	CNEL:	**244**	**525**	**1131**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Mountain House Parkway
Segment: Road A to Capital Parks Drive
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	47,500
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	93
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2230	74	173	969	32	75	1454	48	113
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	2.2	-12.6	-8.9	-1.5	-16.2	-12.6	0.3	-14.5	-10.8
Distance	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8	-3.8
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	65.7	59.9	68.4	62.1	56.3	64.8	63.8	58.0	66.5
VEHICULAR NOISE	DAY=	70.6	Leq	EVENING=	67.0	Leq	NIGHT=	68.8	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**75.4**
			CNEL=	**75.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**229**	**494**	**1065**
	CNEL:	**235**	**507**	**1093**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Mountain House Parkway
Segment: Capital Parks Drive to New Schult

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	42,800
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	71
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2009	67	156	873	29	68	1310	44	102
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	1.7	-13.1	-9.4	-1.9	-16.7	-13.0	-0.2	-14.9	-11.2
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	64.9	59.1	67.6	61.3	55.4	64.0	63.0	57.2	65.7
VEHICULAR NOISE	DAY=	69.8	Leq	EVENING=	66.2	Leq	NIGHT=	68.0	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**74.6**
			CNEL=	**74.8**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**203**	**437**	**941**
	CNEL:	**208**	**448**	**965**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Mountain House Parkway
Segment: New Schulte Road to Old Schulte
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	26,800
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1258	42	98	547	18	43	820	27	64
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-0.3	-15.1	-11.4	-3.9	-18.7	-15.0	-2.2	-17.0	-13.3
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	62.6	56.8	65.3	59.0	53.2	61.7	60.8	54.9	63.5
VEHICULAR NOISE	DAY=	67.6	Leq	EVENING=	63.9	Leq	NIGHT=	65.7	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**72.3**
			CNEL=	**72.5**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**143**	**308**	**664**
	CNEL:	**147**	**316**	**681**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Mountain House Parkway
Segment: Old Schulte Road to I-580
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	28,600
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1343	45	104	583	19	45	875	29	68
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	0.0	-14.8	-11.1	-3.7	-18.4	-14.8	-1.9	-16.7	-13.0
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	62.9	57.1	65.6	59.3	53.5	62.0	61.0	55.2	63.7
VEHICULAR NOISE	DAY=	67.8	Leq	EVENING=	64.2	Leq	NIGHT=	66.0	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**72.6**
			CNEL=	**72.8**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**149**	**322**	**693**
	CNEL:	**153**	**330**	**711**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Mountain House Parkway
Segment: S/O I-580

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	7,900
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	371	12	29	161	5	13	242	8	19
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-5.6	-20.4	-16.7	-9.3	-24.0	-20.3	-7.5	-22.3	-18.6
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	57.3	51.5	60.0	53.7	47.9	56.4	55.4	49.6	58.2
VEHICULAR NOISE	DAY=	62.3	Leq	EVENING=	58.6	Leq	NIGHT=	60.4	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**67.0**
			CNEL=	**67.2**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**63**	**137**	**294**
	CNEL:	**65**	**140**	**302**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Hansen Road
Segment: N/O Capital Parks Drive
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	15,300
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	718	24	56	312	10	24	468	16	36
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-2.8	-17.5	-13.9	-6.4	-21.2	-17.5	-4.6	-19.4	-15.7
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	60.2	54.4	62.9	56.6	50.7	59.3	58.3	52.5	61.0
VEHICULAR NOISE	DAY=	65.1	Leq	EVENING=	61.5	Leq	NIGHT=	63.3	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**69.9**
			CNEL=	**70.1**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**98**	**212**	**457**
	CNEL:	**101**	**218**	**469**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Hansen Road
Segment: Capital Parks Drive to New Schult

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	21,300
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1000	33	78	435	14	34	652	22	51
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-1.3	-16.1	-12.4	-4.9	-19.7	-16.0	-3.2	-18.0	-14.3
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	61.6	55.8	64.3	58.0	52.2	60.7	59.8	53.9	62.5
VEHICULAR NOISE	DAY=	66.6	Leq	EVENING=	62.9	Leq	NIGHT=	64.7	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**71.3**
			CNEL=	**71.5**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**123**	**264**	**570**
	CNEL:	**126**	**271**	**585**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Hansen Road
Segment: New Schulte Road to Old Schulte
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	33,200
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1559	52	121	677	23	53	1016	34	79
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	0.6	-14.2	-10.5	-3.0	-17.8	-14.1	-1.3	-16.0	-12.3
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	63.5	57.7	66.3	59.9	54.1	62.6	61.7	55.9	64.4
VEHICULAR NOISE	DAY=	68.5	Leq	EVENING=	64.9	Leq	NIGHT=	66.6	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**73.3**
			CNEL=	**73.4**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**165**	**356**	**766**
	CNEL:	**169**	**365**	**786**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Hansen Road
Segment: S/O Old Schulte Road

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	22,200
SPEED (mph)	40
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1042	35	81	453	15	35	679	23	53
Speed in MPH	40	40	40	40	40	40	40	40	40
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	67.4	76.3	81.2	67.4	76.3	81.2	67.4	76.3	81.2
ADJUSTMENTS									
Flow	-1.1	-15.9	-12.2	-4.8	-19.5	-15.9	-3.0	-17.8	-14.1
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	61.8	56.0	64.5	58.2	52.4	60.9	59.9	54.1	62.6
VEHICULAR NOISE	DAY=	66.7	Leq	EVENING=	63.1	Leq	NIGHT=	64.9	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**71.5**
			CNEL=	**71.7**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**126**	**272**	**586**
	CNEL:	**129**	**279**	**601**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Lammers Road
Segment: N/O 11th Street

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	18,700
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	878	29	68	381	13	30	572	19	45
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-2.9	-17.6	-14.0	-6.5	-21.3	-17.6	-4.7	-19.5	-15.8
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	64.1	57.0	64.9	60.5	53.4	61.3	62.2	55.1	63.1
VEHICULAR NOISE	DAY=	67.9	Leq	EVENING=	64.3	Leq	NIGHT=	66.0	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**72.7**
			CNEL=	**72.8**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**151**	**325**	**700**
	CNEL:	**155**	**333**	**718**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Lammers Road
Segment: 11th Street to Capital Parks Drive
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	55,600
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2610	87	203	1134	38	88	1701	57	132
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	1.9	-12.9	-9.2	-1.7	-16.5	-12.8	0.0	-14.8	-11.1
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.8	61.7	69.6	65.2	58.1	66.0	67.0	59.9	67.8
VEHICULAR NOISE	DAY=	72.6	Leq	EVENING=	69.0	Leq	NIGHT=	70.8	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**77.4**
			CNEL=	**77.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**312**	**672**	**1447**
	CNEL:	**320**	**689**	**1485**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario:	2035+PROJECT BO	Project:	CORDES RANCH SP EIR
Roadway:	Lammers Road	Analyst	FJS
Segment:	Capital Parks Drive to New Schult	Date:	06-Mar-13

ROADWAY INPUTS	
ADT	55,800
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2620	87	204	1138	38	89	1707	57	133
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	1.9	-12.9	-9.2	-1.7	-16.5	-12.8	0.0	-14.7	-11.1
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.9	61.8	69.7	65.2	58.1	66.0	67.0	59.9	67.8
VEHICULAR NOISE	DAY=	72.7	Leq	EVENING=	69.0	Leq	NIGHT=	70.8	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**77.4**
			CNEL=	**77.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**313**	**673**	**1451**
	CNEL:	**321**	**691**	**1488**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Lammers Road
Segment: New Schulte Road to Old Schulte
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	56,500
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2653	88	206	1153	38	90	1729	58	134
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	1.9	-12.8	-9.2	-1.7	-16.4	-12.8	0.1	-14.7	-11.0
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.9	61.8	69.7	65.3	58.2	66.1	67.0	59.9	67.9
VEHICULAR NOISE	DAY=	72.7	Leq	EVENING=	69.1	Leq	NIGHT=	70.8	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**77.5**
			CNEL=	**77.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**315**	**679**	**1463**
	CNEL:	**323**	**697**	**1501**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Lammers Road
Segment: Old Schulte Road to Valpico Road
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	73,900
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	3470	116	270	1508	50	117	2261	75	176
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	3.1	-11.7	-8.0	-0.5	-15.3	-11.6	1.2	-13.5	-9.8
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	70.1	63.0	70.9	66.5	59.4	67.3	68.2	61.1	69.0
VEHICULAR NOISE	DAY=	73.9	Leq	EVENING=	70.3	Leq	NIGHT=	72.0	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**78.6**
			CNEL=	**78.8**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**377**	**812**	**1749**
	CNEL:	**387**	**833**	**1795**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Lammers Road
Segment: Valpico Road to Linnie Road
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	65,600
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	3080	103	240	1338	45	104	2007	67	156
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	2.6	-12.2	-8.5	-1.0	-15.8	-12.1	0.7	-14.0	-10.4
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	69.6	62.5	70.4	65.9	58.8	66.7	67.7	60.6	68.5
VEHICULAR NOISE	DAY=	73.4	Leq	EVENING=	69.7	Leq	NIGHT=	71.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**78.1**
			CNEL=	**78.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**348**	**750**	**1616**
	CNEL:	**357**	**769**	**1658**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Lammers Road
Segment: Linne Road to I-580

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	56,200
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2639	88	205	1146	38	89	1720	57	134
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	1.9	-12.9	-9.2	-1.7	-16.5	-12.8	0.1	-14.7	-11.0
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.9	61.8	69.7	65.3	58.2	66.1	67.0	59.9	67.8
VEHICULAR NOISE	DAY=	72.7	Leq	EVENING=	69.1	Leq	NIGHT=	70.8	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**77.5**
			CNEL=	**77.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**314**	**676**	**1457**
	CNEL:	**322**	**694**	**1495**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Lammers Road
Segment: S/O I-580

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	23,600
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1108	37	86	481	16	37	722	24	56
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-1.9	-16.6	-12.9	-5.5	-20.2	-16.6	-3.7	-18.5	-14.8
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	65.1	58.0	65.9	61.5	54.4	62.3	63.3	56.2	64.1
VEHICULAR NOISE	DAY=	68.9	Leq	EVENING=	65.3	Leq	NIGHT=	67.1	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**73.7**
			CNEL=	**73.9**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**176**	**379**	**817**
	CNEL:	**181**	**389**	**839**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Lammers Road extension
Segment: N/O I-205
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	41,100
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1930	64	150	838	28	65	1258	42	98
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	0.6	-14.2	-10.5	-3.1	-17.8	-14.2	-1.3	-16.1	-12.4
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	67.5	60.4	68.3	63.9	56.8	64.7	65.7	58.6	66.5
VEHICULAR NOISE	DAY=	71.3	Leq	EVENING=	67.7	Leq	NIGHT=	69.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**76.1**
			CNEL=	**76.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**255**	**549**	**1183**
	CNEL:	**261**	**563**	**1214**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Lammers Road extension
Segment: I-205 to Commerce Way
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	82,100
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	3855	128	300	1675	56	130	2512	84	195
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	3.6	-11.2	-7.5	-0.1	-14.8	-11.1	1.7	-13.1	-9.4
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	70.5	63.4	71.3	66.9	59.8	67.7	68.7	61.6	69.5
VEHICULAR NOISE	DAY=	74.3	Leq	EVENING=	70.7	Leq	NIGHT=	72.5	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**79.1**
			CNEL=	**79.3**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**404**	**871**	**1876**
	CNEL:	**415**	**894**	**1925**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Lammers Road extension
Segment: Commerce Way to Lammers Roac
Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	48,000
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2254	75	175	979	33	76	1469	49	114
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	1.2	-13.5	-9.9	-2.4	-17.2	-13.5	-0.6	-15.4	-11.7
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	68.2	61.1	69.0	64.6	57.5	65.4	66.3	59.2	67.1
VEHICULAR NOISE	DAY=	72.0	Leq	EVENING=	68.4	Leq	NIGHT=	70.1	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**76.8**
			CNEL=	**76.9**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**283**	**609**	**1312**
	CNEL:	**290**	**625**	**1346**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Lammers Road extension
Segment: E/O Lammers Road

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	61,600
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	73
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2892	96	225	1257	42	98	1885	63	147
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	2.3	-12.5	-8.8	-1.3	-16.1	-12.4	0.5	-14.3	-10.6
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	69.3	62.2	70.1	65.7	58.6	66.5	67.4	60.3	68.2
VEHICULAR NOISE	DAY=	73.1	Leq	EVENING=	69.5	Leq	NIGHT=	71.2	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**77.9**
			CNEL=	**78.0**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**334**	**719**	**1549**
	CNEL:	**342**	**738**	**1590**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035+PROJECT BO
Roadway: Capital Parks Drive
Segment: MHP to Hansen Road

Project: CORDES RANCH SP EIR
Analyst FJS
Date: 06-Mar-13

ROADWAY INPUTS	
ADT	29,800
SPEED (mph)	50
ROAD NEAR-FAR LN. DIST.	49
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	90.0%	DAY	62.6%
% MT	3.0%	EVENING	6.8%
% HT	7.0%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	1399	47	109	608	20	47	912	30	71
Speed in MPH	50	50	50	50	50	50	50	50	50
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	71.1	78.8	83.0	71.1	78.8	83.0	71.1	78.8	83.0
ADJUSTMENTS									
Flow	-0.8	-15.6	-11.9	-4.5	-19.2	-15.5	-2.7	-17.5	-13.8
Distance	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4	-4.4
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	65.9	58.8	66.7	62.2	55.1	63.1	64.0	56.9	64.8
VEHICULAR NOISE	DAY=	69.7	Leq	EVENING=	66.0	Leq	NIGHT=	67.8	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**74.4**
			CNEL=	**74.6**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**198**	**426**	**917**
	CNEL:	**203**	**437**	**941**

Traffic Noise Modeling

- Regional Conditions in 2035 WITH Full Project Build-out on Pertinent Freeways (only)

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 PLUS PROJECT BUILDOUT Project: CORDES RANCH SP EIR
Roadway: I-205 Analyst FJS
Segment: West of Mountain House Parkway Date: 06-Mar-13

ROADWAY INPUTS	
ADT	######
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	70
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	6458	247	567	2812	108	247	4210	161	370
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	4.3	-9.8	-6.2	0.7	-13.4	-9.8	2.5	-11.7	-8.1
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	76.9	68.5	75.4	73.3	64.9	71.8	75.1	66.7	73.6
VEHICULAR NOISE	DAY=	79.6	Leq	EVENING=	76.0	Leq	NIGHT=	77.7	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**84.4**
			CNEL=	**84.5**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**908**	**1957**	**4216**
	CNEL:	**932**	**2008**	**4326**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 PLUS PROJECT BUILDOUT Project: CORDES RANCH SP EIR
Roadway: I-205 Analyst FJS
Segment: Mountain House Parkway to Tracy Date: 06-Mar-13

ROADWAY INPUTS	
ADT	#######
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	70
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	8903	341	782	3877	148	341	5804	222	510
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	5.7	-8.4	-4.8	2.1	-12.0	-8.4	3.9	-10.3	-6.7
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	78.3	69.9	76.8	74.7	66.3	73.2	76.5	68.1	74.9
VEHICULAR NOISE	DAY=	81.0	Leq	EVENING=	77.4	Leq	NIGHT=	79.1	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**85.8**
			CNEL=	**85.9**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**1125**	**2424**	**5223**
	CNEL:	**1154**	**2487**	**5359**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 PLUS PROJECT BUILDOUT Project: CORDES RANCH SP EIR
Roadway: I-205 Analyst FJS
Segment: East of Tracy Boulevard Date: 06-Mar-13

ROADWAY INPUTS	
ADT	#######
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	70
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	11927	457	1048	5194	199	456	7775	298	683
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	7.0	-7.2	-3.6	3.4	-10.8	-7.2	5.2	-9.0	-5.4
Distance	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2	-4.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	79.6	71.2	78.1	76.0	67.6	74.5	77.7	69.3	76.2
VEHICULAR NOISE	DAY=	82.3	Leq	EVENING=	78.7	Leq	NIGHT=	80.4	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**87.0**
			CNEL=	**87.2**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**1367**	**2946**	**6347**
	CNEL:	**1403**	**3023**	**6512**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 PLUS PROJECT BUILDOUT Project: CORDES RANCH SP EIR
Roadway: I-580 Analyst FJS
Segment: West of I-205 Interchange Date: 06-Mar-13

ROADWAY INPUTS	
ADT	#######
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	130
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	8614	330	757	3752	144	330	5616	215	493
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	5.6	-8.6	-5.0	2.0	-12.2	-8.6	3.7	-10.4	-6.8
Distance	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8	-2.8
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	79.6	71.1	78.0	75.9	67.5	74.4	77.7	69.3	76.2
VEHICULAR NOISE	DAY=	82.2	Leq	EVENING=	78.6	Leq	NIGHT=	80.4	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**87.0**
			CNEL=	**87.2**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**1357**	**2923**	**6298**
	CNEL:	**1392**	**2999**	**6462**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 PLUS PROJECT BUILDOUT Project: CORDES RANCH SP EIR
Roadway: I-580 Analyst FJS
Segment: I-205 Interchange to Patterson Pas Date: 06-Mar-13

ROADWAY INPUTS	
ADT	46,560
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	120
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2156	83	189	939	36	82	1406	54	123
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	-0.4	-14.6	-11.0	-4.0	-18.2	-14.6	-2.3	-16.4	-12.8
Distance	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	73.2	64.8	71.7	69.6	61.2	68.1	71.3	62.9	69.8
VEHICULAR NOISE	DAY=	75.9	Leq	EVENING=	72.3	Leq	NIGHT=	74.0	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**80.6**
			CNEL=	**80.8**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**512**	**1103**	**2376**
	CNEL:	**525**	**1132**	**2438**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 PLUS PROJECT BUILDOUT Project: CORDES RANCH SP EIR
Roadway: I-580 Analyst FJS
Segment: Patterson Pass Road to Corral Ho Date: 06-Mar-13

ROADWAY INPUTS	
ADT	60,960
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	120
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2823	108	248	1230	47	108	1840	70	162
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	0.8	-13.4	-9.8	-2.9	-17.0	-13.4	-1.1	-15.3	-11.7
Distance	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	74.4	65.9	72.8	70.8	62.3	69.2	72.5	64.1	71.0
VEHICULAR NOISE	DAY=	77.0	Leq	EVENING=	73.4	Leq	NIGHT=	75.2	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**81.8**
			CNEL=	**82.0**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**613**	**1320**	**2844**
	CNEL:	**629**	**1354**	**2918**

FHWA RD-77-108 NOISE PREDICTION MODEL

Scenario: 2035 PLUS PROJECT BUILDOUT Project: CORDES RANCH SP EIR
Roadway: I-580 Analyst FJS
Segment: East of Corral Hollow Road Date: 06-Mar-13

ROADWAY INPUTS	
ADT	61,680
SPEED (mph)	70
ROAD NEAR-FAR LN. DIST.	120
DISTANCE ROAD CL (ft)	100
SOFT/HARD CONDITIONS	Soft
GRADE (%)	0%
LEFT VIEW	-90
RIGHT VIEW	90

VEHICLE MIX INPUTS			
DAILY		HOURLY	
% A	88.8%	DAY	62.6%
% MT	3.4%	EVENING	6.8%
% HT	7.8%	NIGHT	30.6%

CALCULATION AREA	DAYTIME			EVENING			NIGHT		
	AUTOS	MT	HT	AUTOS	MT	HT	AUTOS	MT	HT
Vehicles per hour	2857	109	251	1244	48	109	1862	71	164
Speed in MPH	70	70	70	70	70	70	70	70	70
Left angle	-90	-90	-90	-90	-90	-90	-90	-90	-90
Right angle	90	90	90	90	90	90	90	90	90
Reference levels (dBA)	76.8	82.5	85.8	76.8	82.5	85.8	76.8	82.5	85.8
ADJUSTMENTS									
Flow	0.8	-13.4	-9.8	-2.8	-17.0	-13.4	-1.1	-15.2	-11.6
Distance	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2	-3.2
Finite Roadway	0	0	0	0	0	0	0	0	0
Barrier	0	0	0	0	0	0	0	0	0
Grade	0	0	0	0	0	0	0	0	0
LEQ	74.4	66.0	72.9	70.8	62.4	69.3	72.6	64.1	71.0
VEHICULAR NOISE	DAY=	77.1	Leq	EVENING=	73.5	Leq	NIGHT=	75.2	Leq

RESULTS				
NOISE LEVELS AT 100 FEET FROM CENTERLINE (dBA):			**Ldn=**	**81.9**
			CNEL=	**82.0**
NOISE CONTOUR:		*70 dBA*	*65 dBA*	*60 dBA*
ROAD CENTERLINE DISTANCE TO NOISE CONTOUR (FEET):	**Ldn:**	**618**	**1330**	**2866**
	CNEL:	**634**	**1365**	**2941**

Additional Details on Vibration Criteria

Excerpts from the United States Department of Transportation, Federal Transit Administration (FTA), “Transit Noise and Vibration Impact Assessment” manual, May 2006.

little rail traffic (sometimes only one train per week) or have short trains, in which case the criteria may be disregarded altogether.

Finally, it should be pointed out that the vibration control measures developed for rail transit systems are not effective for freight trains. Consequently, any decision to relocate freight tracks closer to sensitive sites should be made with the understanding that the increased vibration impact due to freight rail will be very difficult, if not impossible, to mitigate.

8.2 VIBRATION IMPACT CRITERIA FOR DETAILED ANALYSIS

8.2.1 Ground-Borne Vibration

Specification of mitigation measures requires more detailed information and more refined impact criteria than what were used in the General Assessment. A frequency distribution, or spectrum, of the vibration energy determines whether the vibrations are likely to generate a significant response in a receiving building or structure. The Detailed Analysis method in this manual provides an estimate of building response in terms of a one-third octave band frequency spectrum. This section provides criteria for assessing the potential for interference or annoyance from building response and for determining the performance of vibration reduction methods.

International standards have been developed for the effects of vibration on people in buildings with ratings related to annoyance and interference with activities based on frequency distribution of acceptable vibrations.[2] These criteria have been supplemented by industry standards for vibration-sensitive equipment.[3] Both sets of criteria are expressed in terms of one-third octave band velocity spectra, with transient events like train passbys described in terms of the maximum rms vibration velocity level with a one-second averaging time. The measurement point is specified as the floor of the receiving building at the location of the prescribed activity.

The vibration impact criteria are shown in Figure 8-1 where the international standard curves and the industry standards are plotted on the same figure. Interpretations of the various levels are presented in Table 8-3. Detailed Analysis results in one-third octave band spectra levels that are plotted over the curves shown in Figure 8-1. Band levels that exceed a particular criterion curve indicate the need for mitigation and the frequency range within which the treatment needs to be effective.

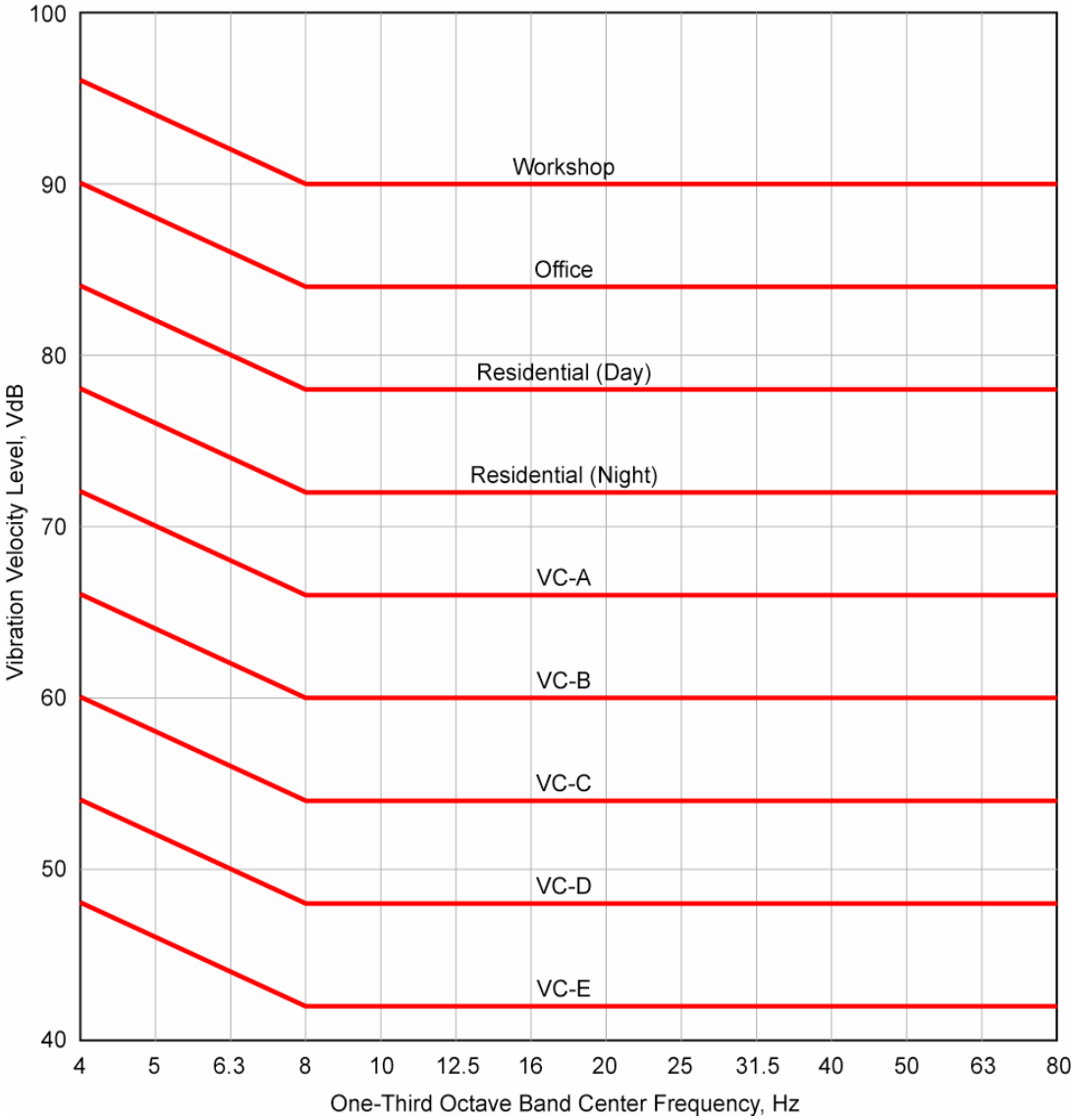


Figure 8-1. Criteria for Detailed Vibration Analysis

Table 8-3. Interpretation of Vibration Criteria for Detailed Analysis		
Criterion Curve[1] (See Figure 8-1)	**Max L_v (VdB)[2]**	**Description of Use**
Workshop	90	Distinctly feelable vibration. Appropriate to workshops and non-sensitive areas.
Office	84	Feelable vibration. Appropriate to offices and non-sensitive areas.
Residential Day	78	Barely feelable vibration. Adequate for computer equipment and low-power optical microscopes (up to 20X).
Residential Night, Operating Rooms	72	Vibration not feelable, but ground-borne noise may be audible inside quiet rooms. Suitable for medium-power optical microscopes (100X) and other equipment of low sensitivity.
VC-A	66	Adequate for medium- to high-power optical microscopes (400X), microbalances, optical balances, and similar specialized equipment.
VC-B	60	Adequate for high-power optical microscopes (1000X), inspection and lithography equipment to 3 micron line widths.
VC-C	54	Appropriate for most lithography and inspection equipment to 1 micron detail size.
VC-D	48	Suitable in most instances for the most demanding equipment, including electron microscopes operating to the limits of their capability.
VC-E	42	The most demanding criterion for extremely vibration-sensitive equipment.

[1]Descriptors on curves are those provided by References 2 and 3.
[2]As measured in 1/3-octave bands of frequency over the frequency range 8 to 80 Hz.

These criteria use a frequency spectrum because vibration-related problems generally occur due to resonances of the structural components of a building or vibration-sensitive equipment. Resonant response is frequency-dependent. A Detailed Analysis can provide an assessment that identifies potential problems resulting from resonances.

The detailed vibration criteria are based on generic cases when people are standing or equipment is mounted on the floor in a conventional manner. Consequently, the criteria are less stringent at very low frequencies below 8 Hz. Where special vibration isolation has been provided in the form of pneumatic isolators, the resonant frequency of the isolation system is very low. Consequently, in this special case, the curves may be extended flat at lower frequencies.

8.2.2 Ground-Borne Noise

Ground-borne noise impacts are assessed based on criteria for human annoyance and activity interference. The results of the Detailed Analysis provide vibration spectra inside a building. These vibration spectra can be converted to sound pressure level spectra in the occupied spaces using the method described in Section 11.2.2. For residential buildings, the criteria for acceptability are given in terms of the A-weighted sound pressure level in Table 8-1. For special buildings listed in Table 8-2, a single-valued level may not be sufficient to assess activity interference at the Detailed Analysis stage. Each special building may have a unique specification for acceptable noise levels. For example, a recording studio may have stringent requirements for allowable noise in each frequency band. Therefore, the ground-borne noise criteria for each sensitive building in this category will have to be determined on a case-by-case basis.

REFERENCES

1. Acoustical Society of America, "American National Standard: Guide to Evaluation of Human Exposure to Vibration in Buildings," ANSI S3.29-1983 (ASA 48-1983).

2. International Organization for Standardization, "Evaluation of Human Exposure to Whole-Body Vibration, Part 2: Continuous and Shock-Induced Vibrations in Buildings (1-80Hz)," ISO-2361-2, 1989.

3. Institute of Environmental Sciences and Technology, “Considerations in Clean Room Design,” RR-CC012.1, 1993.