
Appendix D
Noise Worksheets



Westfield North County Theater Project

Noise Calculations Worksheets

Provided by Acoustical Engineering Services

Ambient Noise Measurements

Property of AES

**Quest Technologies
2900 Integrating/Logging Sound Level Meter**

Unit Version Number: 02.4
Name:

Serial Number:

Work Area:

Comments:

Meter Calibration: 113.9dB, 4/28/2015 @ 9:11:38 AM

Calibrator Serial Number:

Calibration Date:

Study 2

Measuring Parameters

Range: 50 - 110 dB
Threshold: Off

Weighting: A
Exchange Rate: 3dB

Time Constant: Slow
Peak Weighting: C

Study Started: 5/22/2015 @ 12:06:44 PM
Study Stopped: 5/22/2015 @ 12:21:44 PM
Run Time: 0:15:00
Peak Level: 100.6dB, 5/22/2015 @ 12:18:11 PM
Max Level: 74.8dB, 5/22/2015 @ 12:18:10 PM
Min Level: 55.0dB, 5/22/2015 @ 12:07:47 PM
Overload: 0.00%

LEQ: 63.4dB
LDN: 63.4dB
L1: 71.5dB

SEL(3):93.0dB
CNEL: 63.4dB
L10: 67.0dB

TWA: 48.4dB
Pa2Sec: 0.8
L50: 60.6dB

TAKM3: 65.1dB
L90: 57.3dB

Study 2

Logging (1 Minute)

12:07:44 PM
12:08:44 PM
12:09:44 PM
12:10:44 PM
12:11:44 PM
12:12:44 PM
12:13:44 PM
12:14:44 PM
12:15:44 PM
12:16:44 PM
12:17:44 PM
12:18:44 PM
12:19:44 PM
12:20:44 PM
12:21:44 PM

LEQ

63.3dB
58.9dB
62.2dB
62.9dB
61.0dB
61.6dB
64.3dB
61.1dB
64.7dB
64.0dB
62.7dB
66.0dB
62.6dB
65.4dB
64.9dB

LMAX

71.4dB
64.4dB
68.9dB
70.2dB
68.1dB
67.0dB
72.6dB
68.3dB
70.9dB
70.9dB
70.4dB
74.8dB
69.8dB
72.9dB
72.3dB

LN10

66.3dB
63.3dB
66.8dB
67.9dB
64.3dB
65.5dB
67.2dB
64.8dB
66.8dB
67.4dB
67.7dB
71.0dB
66.1dB
69.5dB
68.1dB

LN90

57.4dB
55.6dB
57.6dB
56.2dB
57.3dB
56.9dB
59.5dB
57.0dB
60.3dB
59.0dB
55.8dB
58.3dB
58.3dB
58.3dB
59.4dB

Ovl

Study 3

Measuring Parameters

Range: 50 - 110 dB
Threshold: Off

Weighting: A
Exchange Rate: 3dB

Time Constant: Slow
Peak Weighting: C

Study Started: 5/22/2015 @ 12:35:29 PM
Study Stopped: 5/22/2015 @ 12:50:30 PM
Run Time: 0:15:00
Peak Level: 104.7dB, 5/22/2015 @ 12:38:49 PM
Max Level: 83.7dB, 5/22/2015 @ 12:38:49 PM
Min Level: 56.5dB, 5/22/2015 @ 12:47:05 PM
Overload: 0.00%

LEQ: 64.7dB
LDN: 64.7dB
L1: 77.0dB

SEL(3):94.2dB
CNEL: 64.7dB
L10: 62.8dB

TWA: 49.6dB
Pa2Sec: 1.1
L50: 60.5dB

TAKM3: 67.8dB
L90: 58.5dB

Study 3

Logging (1 Minute)

	LEQ	LMAX	LN10	LN90	Ovi
12:36:29 PM	60.1dB	61.3dB	60.7dB	59.0dB	
12:37:29 PM	60.2dB	61.7dB	60.7dB	59.5dB	
12:38:29 PM	70.1dB	79.0dB	75.8dB	58.9dB	
12:39:29 PM	72.8dB	83.7dB	77.6dB	61.2dB	
12:40:29 PM	60.6dB	66.0dB	61.1dB	59.9dB	
12:41:29 PM	61.1dB	63.1dB	62.0dB	60.2dB	
12:42:29 PM	61.2dB	62.2dB	61.8dB	60.5dB	
12:43:29 PM	61.8dB	69.7dB	63.9dB	59.9dB	
12:44:29 PM	61.9dB	63.3dB	62.5dB	61.0dB	
12:45:29 PM	62.0dB	64.4dB	62.9dB	60.8dB	
12:46:29 PM	59.1dB	62.1dB	61.4dB	57.3dB	
12:47:29 PM	58.2dB	60.5dB	59.2dB	57.1dB	
12:48:29 PM	59.6dB	61.4dB	60.4dB	57.9dB	
12:49:29 PM	59.8dB	61.3dB	60.8dB	58.6dB	
12:50:29 PM	60.5dB	67.6dB	61.7dB	58.9dB	

Study 4

Measuring Parameters

Range: 50 - 110 dB
Threshold: Off

Weighting: A
Exchange Rate: 3dB

Time Constant: Slow
Peak Weighting: C

Study Started: 5/22/2015 @ 12:59:34 PM
Study Stopped: 5/22/2015 @ 1:14:34 PM
Run Time: 0:15:00
Peak Level: 99.5dB, 5/22/2015 @ 1:09:36 PM
Max Level: 77.0dB, 5/22/2015 @ 1:09:36 PM
Min Level: 51.7dB, 5/22/2015 @ 1:03:05 PM
Overload: 0.00%

LEQ: 62.2dB
LDN: 62.2dB
L1: 70.9dB

SEL(3):91.8dB
CNEL: 62.2dB
L10: 66.3dB

TWA: 47.2dB
Pa2Sec: 0.6
L50: 58.4dB

TAKM3: 64.2dB
L90: 54.2dB

Study 4

Logging (1 Minute)

	LEQ	LMAX	LN10	LN90	Ovi
1:00:34 PM	62.5dB	72.7dB	65.7dB	54.8dB	
1:01:34 PM	61.7dB	72.4dB	64.2dB	54.0dB	
1:02:34 PM	57.8dB	68.2dB	58.7dB	53.9dB	
1:03:34 PM	53.8dB	59.1dB	56.0dB	52.0dB	
1:04:34 PM	60.7dB	70.4dB	64.1dB	53.9dB	
1:05:34 PM	63.7dB	69.2dB	68.0dB	55.9dB	
1:06:34 PM	63.6dB	70.7dB	68.4dB	57.0dB	
1:07:34 PM	60.5dB	69.1dB	63.7dB	55.0dB	
1:08:34 PM	61.7dB	67.5dB	66.1dB	56.5dB	
1:09:34 PM	61.7dB	70.5dB	64.9dB	56.2dB	
1:10:34 PM	65.8dB	77.0dB	68.9dB	56.5dB	
1:11:34 PM	60.8dB	69.4dB	63.7dB	55.9dB	
1:12:34 PM	61.4dB	68.6dB	66.3dB	56.1dB	
1:13:34 PM	63.3dB	70.1dB	67.3dB	58.3dB	
1:14:34 PM	64.0dB	72.4dB	67.9dB	55.9dB	

Study 5

Measuring Parameters

Range: 50 - 110 dB
Threshold: Off

Weighting: A
Exchange Rate: 3dB

Time Constant: Slow
Peak Weighting: C

Study Started: 5/22/2015 @ 10:07:35 PM
Study Stopped: 5/22/2015 @ 10:22:36 PM
Run Time: 0:15:00
Peak Level: 92.5dB, 5/22/2015 @ 10:12:07 PM
Max Level: 71.2dB, 5/22/2015 @ 10:12:07 PM
Min Level: 52.1dB, 5/22/2015 @ 10:13:37 PM
Overload: 0.00%

LEQ: 59.7dB
LDN: 69.7dB
L1: 68.6dB

SEL(3):89.2dB
CNEL: 69.7dB
L10: 63.0dB

TWA: 44.6dB
Pa2Sec: 0.3
L50: 56.8dB

TAKM3: 61.3dB
L90: 54.5dB

Study 5

Logging (1 Minute)

	LEQ	LMAX	LN10	LN90	Ovi
10:08:35 PM	56.7dB	63.3dB	59.7dB	53.5dB	
10:09:35 PM	58.8dB	67.1dB	63.2dB	54.0dB	
10:10:35 PM	59.9dB	69.4dB	63.9dB	54.7dB	
10:11:35 PM	59.4dB	68.1dB	63.5dB	55.1dB	
10:12:35 PM	61.4dB	71.2dB	65.3dB	54.6dB	
10:13:35 PM	57.1dB	62.5dB	58.6dB	54.4dB	
10:14:35 PM	61.7dB	69.1dB	66.3dB	54.3dB	
10:15:35 PM	61.2dB	67.5dB	64.9dB	57.5dB	
10:16:35 PM	59.8dB	66.8dB	63.2dB	55.9dB	
10:17:35 PM	55.7dB	58.2dB	56.9dB	54.6dB	
10:18:35 PM	56.1dB	62.5dB	57.8dB	54.2dB	
10:19:35 PM	55.8dB	60.5dB	57.3dB	53.4dB	
10:20:35 PM	60.1dB	68.9dB	60.9dB	56.7dB	
10:21:35 PM	62.0dB	70.5dB	63.8dB	58.3dB	
10:22:35 PM	61.5dB	66.7dB	65.0dB	58.3dB	

Study 6

Measuring Parameters

Range: 50 - 110 dB
Threshold: Off

Weighting: A
Exchange Rate: 3dB

Time Constant: Slow
Peak Weighting: C

Study Started: 5/22/2015 @ 10:30:45 PM
Study Stopped: 5/22/2015 @ 10:45:45 PM
Run Time: 0:15:00
Peak Level: 81.4dB, 5/22/2015 @ 10:41:40 PM
Max Level: 60.4dB, 5/22/2015 @ 10:31:53 PM
Min Level: 41.6dB, 5/22/2015 @ 10:35:13 PM
Overload: 0.00%

LEQ: 47.5dB
LDN: 57.5dB
L1: 57.4dB

SEL(3):77.0dB
CNEL: 57.5dB
L10: 50.5dB

TWA: 32.4dB
Pa2Sec: 0.0
L50: 44.1dB

TAKM3: 48.8dB
L90: 42.1dB

Study 6

Logging (1 Minute)

	LEQ	LMAX	LN10	LN90	Ovl
10:31:45 PM	47.5dB	51.9dB	50.4dB	43.9dB	
10:32:45 PM	52.4dB	60.4dB	57.9dB	43.6dB	
10:33:45 PM	46.0dB	51.5dB	48.3dB	43.0dB	
10:34:45 PM	50.9dB	59.2dB	53.9dB	42.8dB	
10:35:45 PM	42.3dB	43.8dB	42.8dB	41.9dB	
10:36:45 PM	43.3dB	45.3dB	44.2dB	42.4dB	
10:37:45 PM	48.5dB	55.9dB	53.3dB	42.5dB	
10:38:45 PM	42.9dB	46.1dB	44.4dB	41.8dB	
10:39:45 PM	48.2dB	55.9dB	52.4dB	43.9dB	
10:40:45 PM	42.1dB	43.3dB	42.7dB	41.6dB	
10:41:45 PM	48.1dB	57.3dB	53.8dB	41.6dB	
10:42:45 PM	44.8dB	54.3dB	45.2dB	42.7dB	
10:43:45 PM	44.5dB	45.5dB	45.0dB	44.0dB	
10:44:45 PM	45.6dB	49.1dB	47.2dB	43.7dB	
10:45:45 PM	48.8dB	55.9dB	53.5dB	45.1dB	

Study 7

Measuring Parameters

Range: 50 - 110 dB
Threshold: Off

Weighting: A
Exchange Rate: 3dB

Time Constant: Slow
Peak Weighting: C

Study Started: 5/22/2015 @ 10:56:34 PM
Study Stopped: 5/22/2015 @ 11:11:35 PM
Run Time: 0:15:00
Peak Level: 86.7dB, 5/22/2015 @ 10:56:40 PM
Max Level: 59.2dB, 5/22/2015 @ 10:57:57 PM
Min Level: 49.9dB, 5/22/2015 @ 11:03:52 PM
Overload: 0.00%

LEQ: 54.9dB
LDN: 64.9dB
L1: 58.0dB

SEL(3):84.4dB
CNEL: 64.9dB
L10: 56.5dB

TWA: 39.8dB
Pa2Sec: 0.1
L50: 54.6dB

TAKM3: 55.6dB
L90: 52.9dB

Study 7

Logging (1 Minute)

	LEQ	LMAX	LN10	LN90	Ovi
10:57:34 PM	55.3dB	57.3dB	56.5dB	53.7dB	
10:58:34 PM	56.2dB	59.2dB	58.3dB	53.7dB	
10:59:34 PM	55.1dB	58.1dB	56.3dB	53.6dB	
11:00:34 PM	55.7dB	58.4dB	56.6dB	54.2dB	
11:01:34 PM	54.8dB	57.5dB	56.3dB	53.5dB	
11:02:34 PM	56.2dB	58.2dB	57.3dB	54.7dB	
11:03:34 PM	55.3dB	57.9dB	56.9dB	53.5dB	
11:04:34 PM	53.7dB	56.1dB	55.1dB	51.8dB	
11:05:34 PM	55.0dB	58.0dB	56.9dB	53.2dB	
11:06:34 PM	53.6dB	56.1dB	54.8dB	52.6dB	
11:07:34 PM	54.8dB	57.6dB	56.2dB	53.4dB	
11:08:34 PM	54.7dB	57.9dB	56.9dB	52.8dB	
11:09:34 PM	53.8dB	56.5dB	55.6dB	52.2dB	
11:10:34 PM	53.6dB	56.0dB	55.0dB	52.5dB	
11:11:34 PM	54.2dB	56.4dB	55.5dB	52.3dB	

Construction Noise Calculations

Project: Westfield North County Theater Project

Construction Phase: *Demolition*

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Concrete Saw	1	90	20%	1500	0
Crushing Equipment	2	76	100%	1500	0
Rubber Tired Loaders	2	79	40%	1500	0
Backhoe	2	79	40%	1500	0

Receptor: *R1*

Results:
1-hour Leq: 56.6

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: Westfield North County Theater Project

Construction Phase: Grading

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Grader	1	85	40%	1500	0
Rubber Tired Dozer	1	79	40%	1500	0
Rubber Tired Loader	1	79	40%	1500	0
Scraper	1	84	40%	1500	0
Tractor/Loader/Backhoe	1	79	40%	1500	0

Receptor: R1

Results:
1-hour Leq: 55.5

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: Westfield North County Theater Project

Construction Phase: *Foundation*

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Bore/Drill Rig	1	84	20%	1500	0
Crane	1	81	16%	1500	0
Forklift	3	75	20%	1500	0
Tractor/Loader/Backhoe	1	79	40%	1500	0

Receptor: *R1*

Results:
1-hour Leq: 51.3

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: Westfield North County Theater Project

Construction Phase: Building Construction

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Crane	1	81	16%	1500	0
Forklift	1	75	20%	1500	0
Generator	1	81	50%	1500	0
Tractor/Loader/Backhoe	1	79	40%	1500	0
Welder	3	74	40%	1500	0

Receptor: *R1*

Results:
1-hour Leq: 52.3

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: Westfield North County Theater Project

Construction Phase: Paving/Concrete/Landscape

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Roller	1	80	20%	1500	0
Cement and Mortar Mixer	1	80	20%	1500	0
Paver	1	77	50%	1500	0
Roller	1	80	20%	1500	0
Tractor/Loader/Backhoe	1	79	40%	1500	0
Skid Steer Loader	1	79	40%	1500	0

Receptor: *R1*

Results:
1-hour Leq: 52.2

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: Westfield North County Theater Project

Construction Phase: *Demolition*

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Concrete Saw	1	90	20%	1900	10
Crushing Equipment	2	76	100%	1900	10
Rubber Tired Loaders	2	79	40%	1900	10
Backhoe	2	79	40%	1900	10

Receptor: *R2*

Results:
1-hour Leq: 44.5

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: Westfield North County Theater Project

Construction Phase: *Grading*

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Grader	1	85	40%	1900	10
Rubber Tired Dozer	1	79	40%	1900	10
Rubber Tired Loader	1	79	40%	1900	10
Scraper	1	84	40%	1900	10
Tractor/Loader/Backhoe	1	79	40%	1900	10

Receptor: *R2*

Results:
1-hour Leq: 43.5

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: Westfield North County Theater Project

Construction Phase: *Foundation*

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Bore/Drill Rig	1	84	20%	1900	10
Crane	1	81	16%	1900	10
Forklift	3	75	20%	1900	10
Tractor/Loader/Backhoe	1	79	40%	1900	10

Receptor: *R2*

Results:
1-hour Leq: 39.2

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: Westfield North County Theater Project

Construction Phase: Building Construction

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Crane	1	81	16%	1900	10
Forklift	1	75	20%	1900	10
Generator	1	81	50%	1900	10
Tractor/Loader/Backhoe	1	79	40%	1900	10
Welder	3	74	40%	1900	10

Receptor: R2

Results:
1-hour Leq: 40.2

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: Westfield North County Theater Project

Construction Phase: Paving/Concrete/Landscape

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Roller	1	80	20%	1900	10
Cement and Mortar Mixer	1	80	20%	1900	10
Paver	1	77	50%	1900	10
Roller	1	80	20%	1900	10
Tractor/Loader/Backhoe	1	79	40%	1900	10
Skid Steer Loader	1	79	40%	1900	10

Receptor: *R2*

Results:
1-hour Leq: 40.1

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: Westfield North County Theater Project

Construction Phase: *Demolition*

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Concrete Saw	1	90	20%	2600	0
Crushing Equipment	2	76	100%	2500	0
Rubber Tired Loaders	2	79	40%	2500	0
Backhoe	2	79	40%	2500	0

Receptor: *R3*

Results:
1-hour Leq: 51.9

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: Westfield North County Theater Project

Construction Phase: *Grading*

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Grader	1	85	40%	2600	0
Rubber Tired Dozer	1	79	40%	2500	0
Rubber Tired Loader	1	79	40%	2500	0
Scraper	1	84	40%	2500	0
Tractor/Loader/Backhoe	1	79	40%	2500	0

Receptor: *R3*

Results:
1-hour Leq: 51.0

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: Westfield North County Theater Project

Construction Phase: *Foundation*

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Bore/Drill Rig	1	84	20%	2600	0
Crane	1	81	16%	2500	0
Forklift	3	75	20%	2500	0
Tractor/Loader/Backhoe	1	79	40%	2500	0

Receptor: *R3*

Results:
1-hour Leq: 46.7

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: Westfield North County Theater Project

Construction Phase: Building Construction

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Crane	1	81	16%	2600	0
Forklift	1	75	20%	2500	0
Generator	1	81	50%	2500	0
Tractor/Loader/Backhoe	1	79	40%	2500	0
Welder	3	74	40%	2500	0

Receptor: R3

Results: 1-hour Leq: 47.8

Source for Ref. Noise Levels: FHWA RCNM, 2006

Project: Westfield North County Theater Project

Construction Phase: Paving/Concrete/Landscape

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Roller	1	80	20%	2600	0
Cement and Mortar Mixer	1	80	20%	2500	0
Paver	1	77	50%	2500	0
Roller	1	80	20%	2500	0
Tractor/Loader/Backhoe	1	79	40%	2500	0
Skid Steer Loader	1	79	40%	2500	0

Receptor: R3

Results:
1-hour Leq: 47.7

Source for Ref. Noise Levels: FHWA RCNM, 2006

INPUT: TRAFFIC FOR LAeq1h Volumes

Westfield North County Theater Project

Eyestone Environmental SKB		9 August 2015 TNM 2.5											
INPUT: TRAFFIC FOR LAeq1h Volumes PROJECT/CONTRACT: RUN:		Westfield North County Theater Project TNM - Haul Trucks											
Roadway	Points												
Name	Name	No.	Segment		MTrucks		HTrucks		Buses		Motorcycles		
			Autos		V	S	V	S	V	S	V	S	
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	
Haul Route	point1	1	0	0	0	0	16	35	0	0	0	0	
	point2	2											

INPUT: RECEIVERS

Westfield North County Theater Project

Eyestone Environmental SKB							9 August 2015 TNM 2.5				
INPUT: RECEIVERS											
PROJECT/CONTRACT:		Westfield North County Theater Project									
RUN:		TNM - Haul Trucks									
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active
			X	Y	Z	above	Existing	Impact Criteria		NR	in
						Ground	LAeq1h	LAeq1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Rec. at 75 feet	3	1	500.0	75.0	0.00	4.92	0.00	73	5.0	0.0	

RESULTS: SOUND LEVELS

Westfield North County Theater Project

Eyestone Environmental SKB							9 August 2015 TNM 2.5 Calculated with TNM 2.5						
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT:							Westfield North County Theater Project						
RUN:							TNM - Haul Trucks						
BARRIER DESIGN:							INPUT HEIGHTS						
ATMOSPHERICS:							68 deg F, 50% RH						
Receiver													
Name		No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing		With Barrier				
							Calculated	Crit'n	Type Impact	Calculated LAeq1h	Noise Reduction		Calculated minus Goal
								Sub'l Inc			Calculated	Goal	Calculated minus Goal
				dB	dB	dB	dB	dB		dB	dB	dB	dB
Rec. at 75 feet		3	1	0.0	60.1	75	60.1	5	----	60.1	0.0	0	0.0
Dwelling Units			# DUs	Noise Reduction									
				Min	Avg	Max							
				dB	dB	dB							
All Selected			1	0.0	0.0	0.0							
All Impacted			0	0.0	0.0	0.0							
All that meet NR Goal			1	0.0	0.0	0.0							

Operation Noise Calculations

Off-Site Traffic Noise Calculations

Project: Westfield North County Theater Project

Traffic Distribution as % of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

PHV to
ADT factor
12.5

EXISTING CONDITIONS (2015)

Roadway Segment	Roadway Width*, ft	Distance to Edge of Roadway, ft	Distance to Centerline, feet	Speed mph	Traffic Volume		Barrier Atten.	Site Adjust., dBA	24-Hour CNEL
					PHV	ADT			
Bear Valley Parkway									
- Between Sunset Dr. and Las Palmas Ave.	50	50	75	45	2,132	24,046	0	0	69.4
- Between Las Palmas Ave. and Canyon Rd.	80	40	80	45	2,087	26,810	0	0	69.6
- Between Canyon Rd. and Mary Ln.	80	35	75	45	2,070	24,272	0	0	69.4
- Between Mary Ln. and San Pasqual Rd.	80	60	100	45	2,201	28,756	0	0	68.9
- Between San Pasqual Rd. and Beethoven Dr.	80	60	100	45	3,044	39,437	0	0	70.3
Via Rancho Parkway									
- Between Beethoven Dr. and I-15 Fwy	120	40	100	40	2,644	33,341	0	0	68.1
- Between Del Lago Blvd. and Quiet Hills Dr.	90	25	70	40	918	12,749	0	0	65.5
- Between Quiet Hills Dr. and Felicita Rd.	90	25	70	40	851	10,996	0	0	64.9
- West of Felicita Rd.	40	25	45	35	800	9,391	0	0	64.5
Beethoven Drive									
- East of I-15 Fwy	40	25	45	35	887	8,707	0	0	64.2
- West of Via Rancho Pkwy	40	25	45	35	973	10,881	0	0	65.1
- East of Via Rancho Pkwy	40	25	45	35	246	3,075	0	0	59.6
San Pasqual Road									
- East of Bear Valley Parkway	80	25	65	35	1,109	12,566	0	0	64.1
Del Lago Boulevard									
- Between I-5 Fwy and Via Ranch Pkwy.	70	25	60	35	604	7,544	0	0	62.3

* Estimated based on Google Earth map.

** Calculated using FHWA's TNM Version 2.5 Computer Noise Model.

Off-Site Traffic Noise Calculations

Project: Westfield North County Theater Project

Traffic Distribution as % of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

PHV to
ADT factor
12.5

EXISTING PLUS PROJECT CONDITIONS (2015)

Roadway Segment	Roadway Width*, ft	Distance to Edge of Roadway, ft	Distance to Centerline, feet	Speed mph	Traffic Volume		Barrier Atten.	Site Adjust., dBA	24-Hour CNEL
					PHV	ADT			
Bear Valley Parkway									
- Between Sunset Dr. and Las Palmas Ave.	50	50	75	45	2,152	24,298	0	0	69.4
- Between Las Palmas Ave. and Canyon Rd.	80	40	80	45	2,107	27,062	0	0	69.7
- Between Canyon Rd. and Mary Ln.	80	35	75	45	2,097	24,608	0	0	69.5
- Between Mary Ln. and San Pasqual Rd.	80	60	100	45	2,232	29,143	0	0	69.0
- Between San Pasqual Rd. and Beethoven Dr.	80	60	100	45	3,088	39,992	0	0	70.4
Via Rancho Parkway									
- Between Beethoven Dr. and I-15 Fwy	120	40	100	40	2,658	33,509	0	0	68.1
- Between Del Lago Blvd. and Quiet Hills Dr.	90	25	70	40	948	13,102	0	0	65.6
- Between Quiet Hills Dr. and Felicita Rd.	90	25	70	40	876	11,299	0	0	65.0
- West of Felicita Rd.	40	25	45	35	818	9,610	0	0	64.6
Beethoven Drive									
- East of I-15 Fwy	40	25	45	35	921	9,043	0	0	64.3
- West of Via Rancho Pkwy	40	25	45	35	1,007	11,302	0	0	65.3
- East of Via Ranch Pkwy	40	25	45	35	249	3,113	0	0	59.7
San Pasqual Road									
- East of Bear Valley Parkway	80	25	65	35	1,122	12,734	0	0	64.2
Del Lago Boulevard									
- Between I-5 Fwy and Via Ranch Pkwy.	70	25	60	35	632	7,894	0	0	62.5

* Estimated based on Google Earth map.

** Calculated using FHWA's TNM Version 2.5 Computer Noise Model.

Off-Site Traffic Noise Calculations

Project: Westfield North County Theater Project

Traffic Distribution as % of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

PHV to
ADT factor
12.5

FUTURE CUMULATIVE NO PROJECT CONDITIONS (2035)

Roadway Segment	Roadway Width*, ft	Distance to Edge of Roadway, ft	Distance to Centerline, feet	Speed mph	Traffic Volume		Barrier Atten.	Site Adjust., dBA	24-Hour CNEL
					PHV	ADT			
Bear Valley Parkway									
- Between Sunset Dr. and Las Palmas Ave.	50	50	75	45	1,668	25,448	0	0	69.6
- Between Las Palmas Ave. and Canyon Rd.	80	40	80	45	1,524	25,448	0	0	69.4
- Between Canyon Rd. and Mary Ln.	80	35	75	45	1,488	25,564	0	0	69.6
- Between Mary Ln. and San Pasqual Rd.	80	60	100	45	1,627	28,613	0	0	68.9
- Between San Pasqual Rd. and Beethoven Dr.	80	60	100	45	2,272	40,745	0	0	70.5
Via Rancho Parkway									
- Between Beethoven Dr. and I-15 Fwy	120	40	100	40	1,579	29,132	0	0	67.5
- Between Del Lago Blvd. and Quiet Hills Dr.	90	25	70	40	1,097	14,147	0	0	66.0
- Between Quiet Hills Dr. and Felicita Rd.	90	25	70	40	1,076	14,197	0	0	66.0
- West of Felicita Rd.	40	25	45	35	929	9,681	0	0	64.6
Beethoven Drive									
- East of I-15 Fwy	40	25	45	35	883	9,064	0	0	64.3
- West of Via Rancho Pkwy	40	25	45	35	1,234	15,479	0	0	66.7
- East of Via Ranch Pkwy	40	25	45	35	243	3,038	0	0	59.6
San Pasqual Road									
- East of Bear Valley Parkway	80	25	65	35	812	14,832	0	0	64.9
Del Lago Boulevard									
- Between I-5 Fwy and Via Ranch Pkwy.	70	25	60	35	788	9,850	0	0	63.5

* Estimated based on Google Earth map.

** Calculated using FHWA's TNM Version 2.5 Computer Noise Model.

Off-Site Traffic Noise Calculations

Project: Westfield North County Theater Project

Traffic Distribution as % of ADT				
Vehicle Type	Day	Eve	Night	Sub total
Auto	77.6%	9.7%	9.7%	97.0%
Medium Truck	1.6%	0.2%	0.2%	2.0%
Heavy Truck	0.8%	0.1%	0.1%	1.0%
	80.0%	10.0%	10.0%	100.0%

PHV to
ADT factor
12.5

FUTURE CUMULATIVE PLUS PROJECT CONDITIONS (2035)

Roadway Segment	Roadway Width*, ft	Distance to Edge of Roadway, ft	Distance to Centerline, feet	Speed mph	Traffic Volume		Barrier Atten.	Site Adjust., dBA	24-Hour CNEL
					PHV	ADT			
Bear Valley Parkway									
- Between Sunset Dr. and Las Palmas Ave.	50	50	75	45	1,688	25,700	0	0	69.7
- Between Las Palmas Ave. and Canyon Rd.	80	40	80	45	1,544	25,700	0	0	69.5
- Between Canyon Rd. and Mary Ln.	80	35	75	45	1,515	25,900	0	0	69.7
- Between Mary Ln. and San Pasqual Rd.	80	60	100	45	1,658	29,000	0	0	69.0
- Between San Pasqual Rd. and Beethoven Dr.	80	60	100	45	2,316	41,300	0	0	70.5
Via Rancho Parkway									
- Between Beethoven Dr. and I-15 Fwy	120	40	100	40	1,593	29,300	0	0	67.5
- Between Del Lago Blvd. and Quiet Hills Dr.	90	25	70	40	1,127	14,500	0	0	66.1
- Between Quiet Hills Dr. and Felicita Rd.	90	25	70	40	1,101	14,500	0	0	66.1
- West of Felicita Rd.	40	25	45	35	947	9,900	0	0	64.7
Beethoven Drive									
- East of I-15 Fwy	40	25	45	35	917	9,400	0	0	64.5
- West of Via Rancho Pkwy	40	25	45	35	1,268	15,900	0	0	66.8
- East of Via Ranch Pkwy	40	25	45	35	246	3,075	0	0	59.6
San Pasqual Road									
- East of Bear Valley Parkway	80	25	65	35	825	15,000	0	0	64.9
Del Lago Boulevard									
- Between I-5 Fwy and Via Ranch Pkwy.	70	25	60	35	816	10,200	0	0	63.6

* Estimated based on Google Earth map.

** Calculated using FHWA's TNM Version 2.5 Computer Noise Model.