Appendix D

Noise Modeling Data

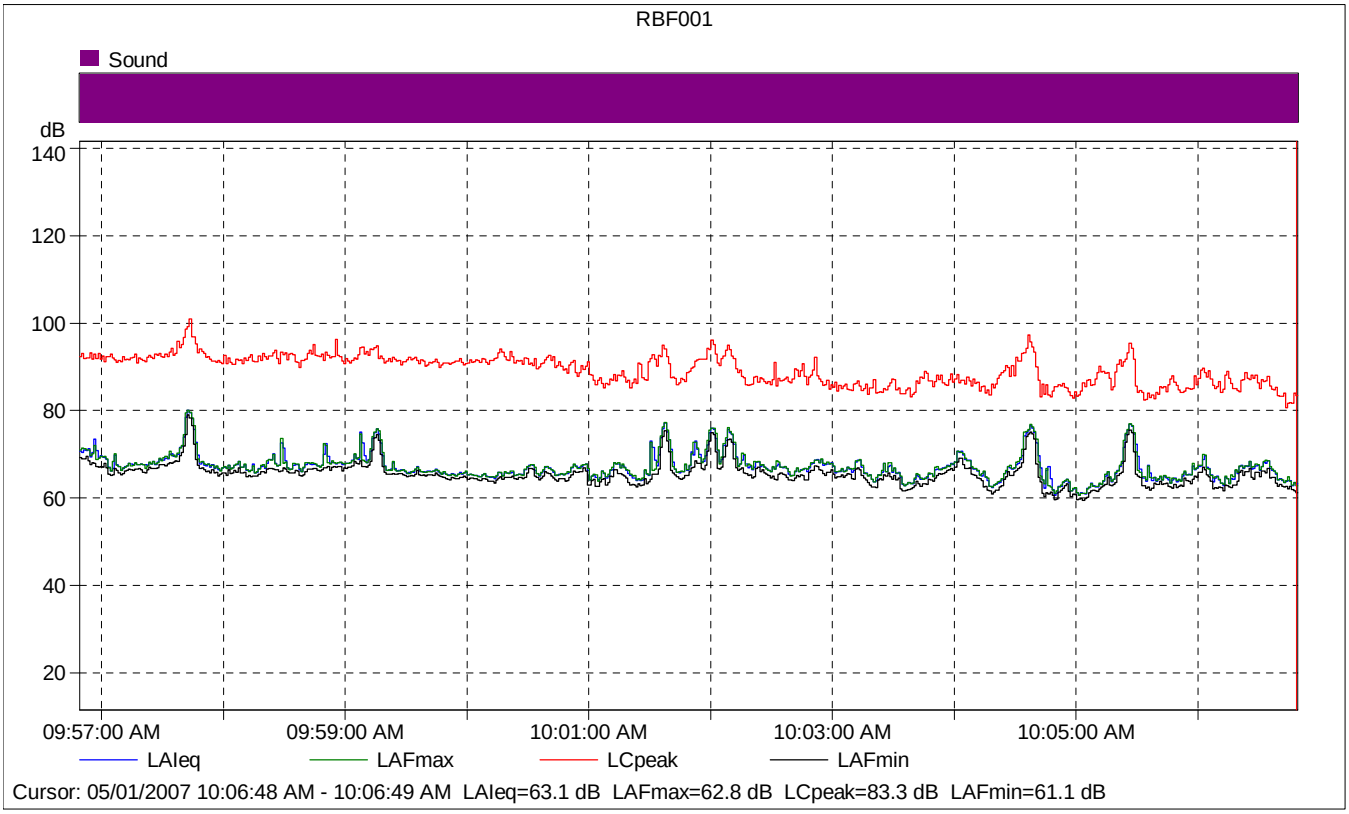
RBF001

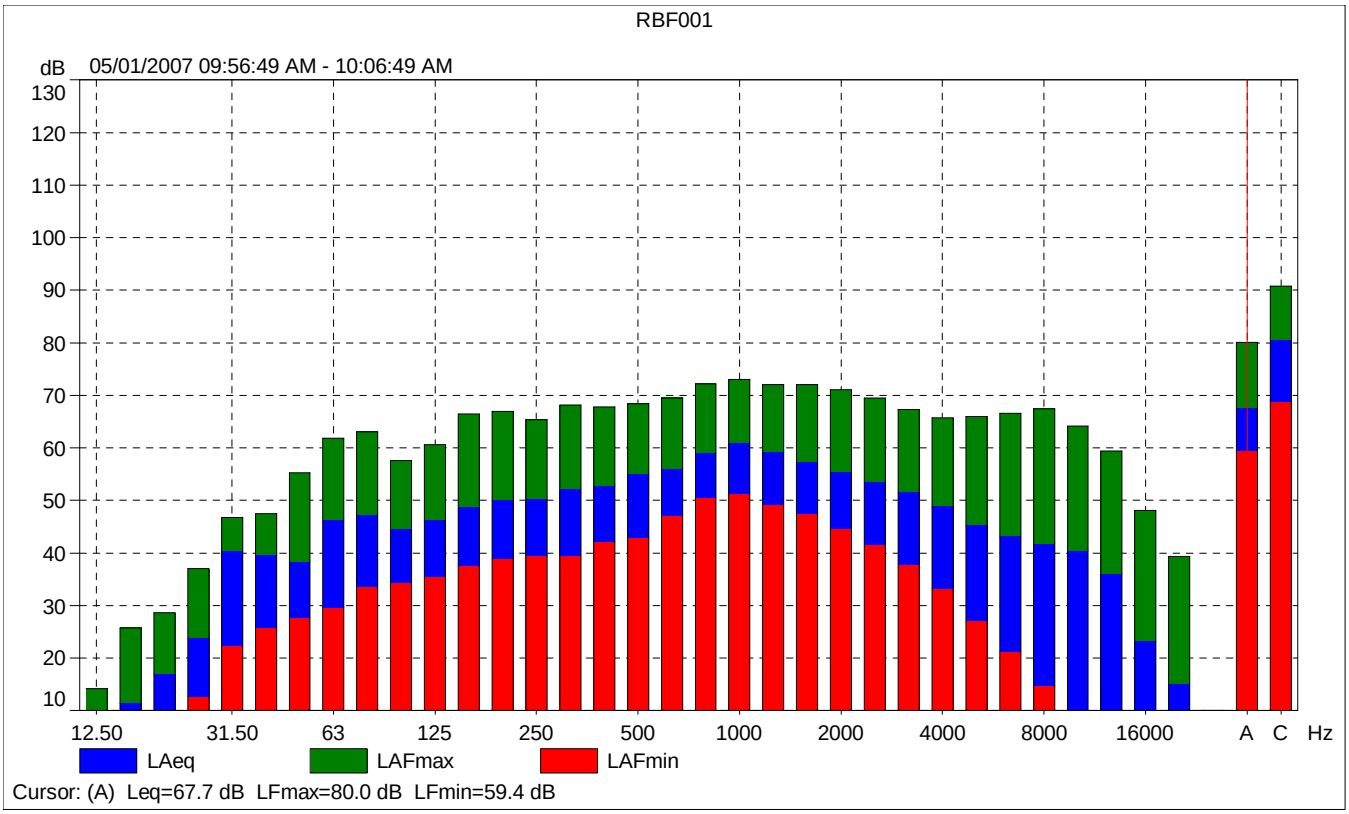
Instrument:		2250
Application:		BZ7225 Version 1.0.2
Start Time:		05/01/2007 09:56:49
End Time:		05/01/2007 10:06:49
Elapsed Time:		00:10:00
Bandwidth:		Broadband
Max Input Level:		140.23

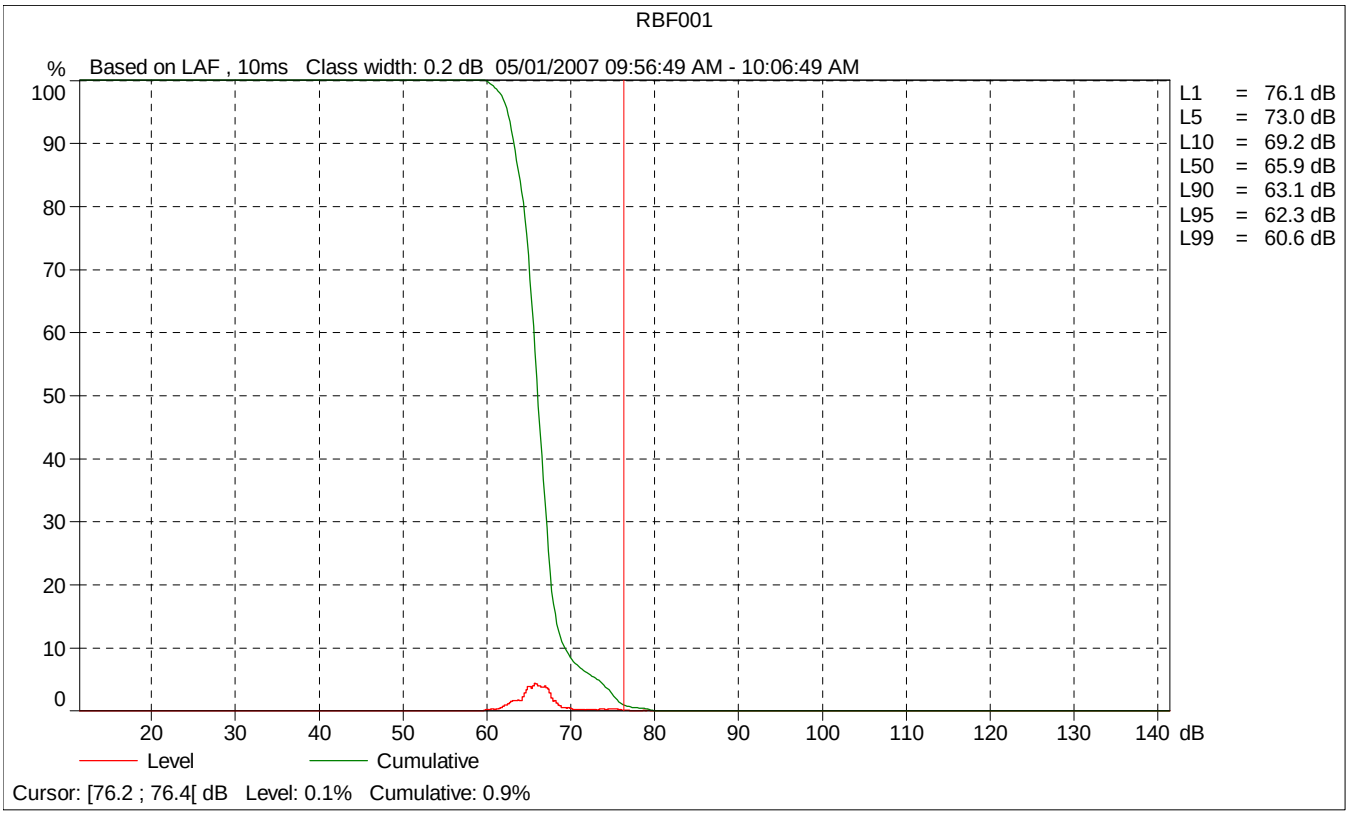
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	A

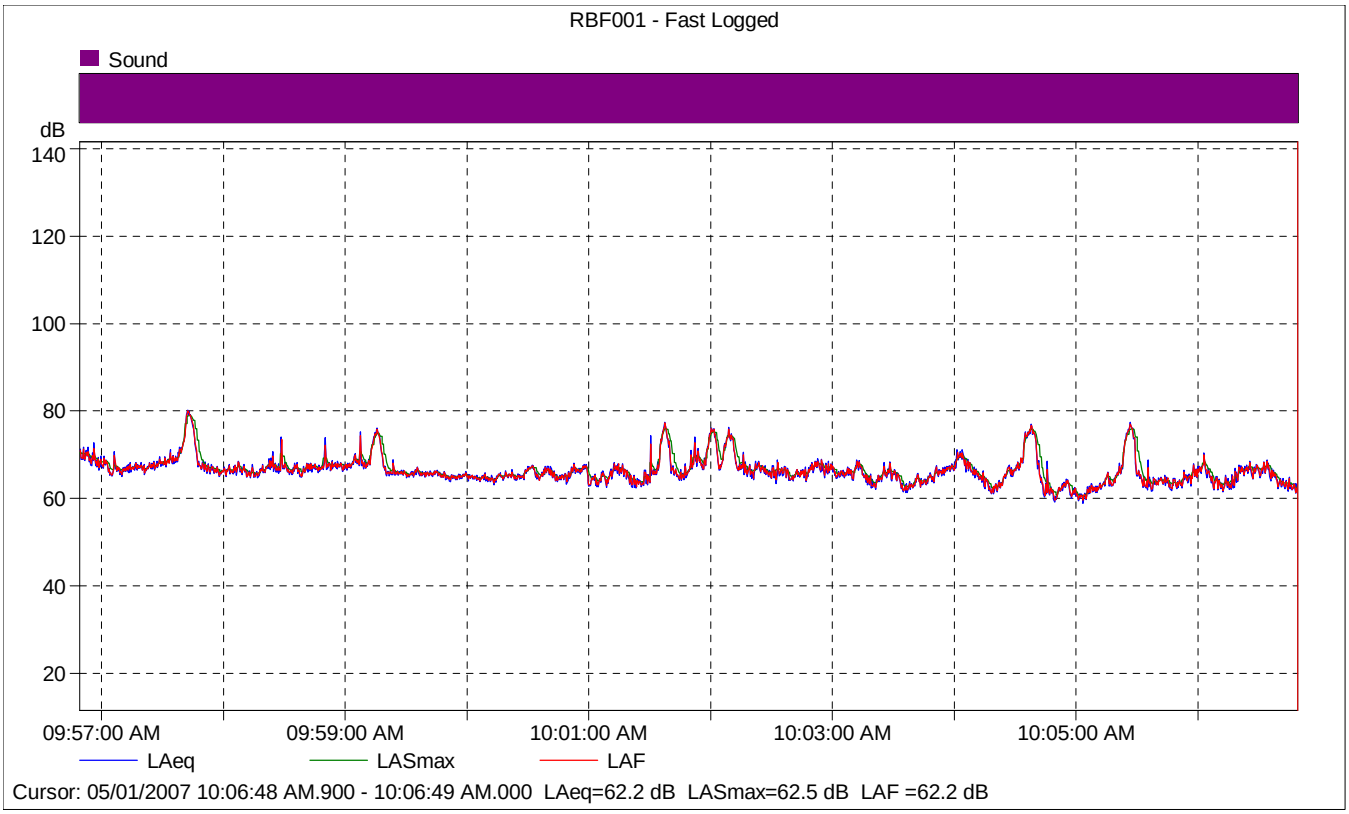
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		UA 1650
Sound Field Correction:		Free-field

Calibration Time:		04/25/2007 14:58:52
Calibration Type:		External reference
Sensitivity:		54.30 mV/Pa




RBF001
dB
05/01/2007 09:56:49 AM - 10:06:49 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LAeq
LAFmax
LAFmin
Cursor: (A) Leq=67.7 dB LFmax=80.0 dB LFmin=59.4 dB


RBF001
%
Based on LAF , 10ms Class width: 0.2 dB 05/01/2007 09:56:49 AM - 10:06:49 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 76.1 dB
L5 = 73.0 dB
L10 = 69.2 dB
L50 = 65.9 dB
L90 = 63.1 dB
L95 = 62.3 dB
L99 = 60.6 dB
Level
Cumulative
Cursor: [76.2 ; 76.4[dB Level: 0.1% Cumulative: 0.9%


RBF001 - Fast Logged
Sound
dB
140
120
100
80
60
40
20
09:57:00 AM
09:59:00 AM
10:01:00 AM
10:03:00 AM
10:05:00 AM
LAeq
LASmax
LAF
Cursor: 05/01/2007 10:06:48 AM.900 - 10:06:49 AM.000 LAeq=62.2 dB LASmax=62.5 dB LAF =62.2 dB

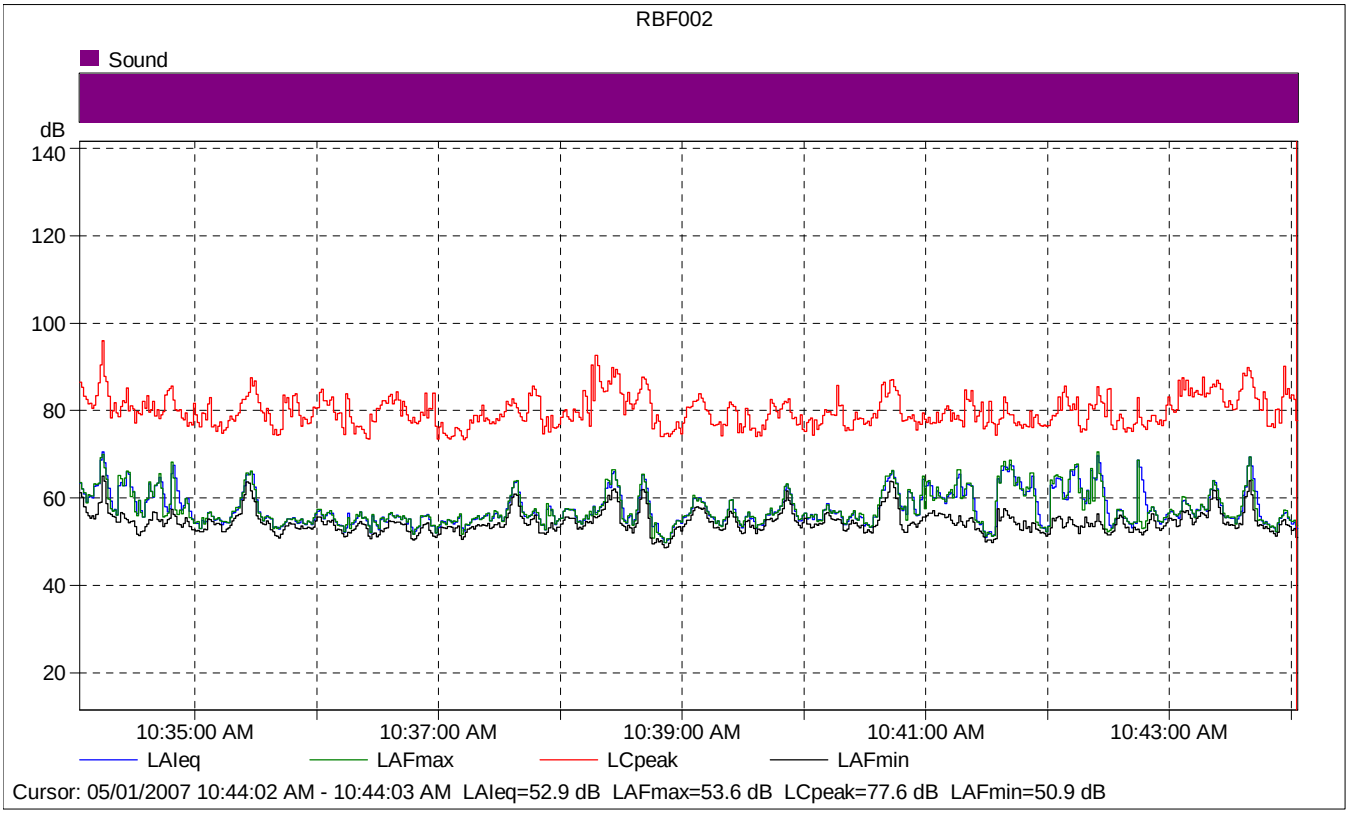
RBF002

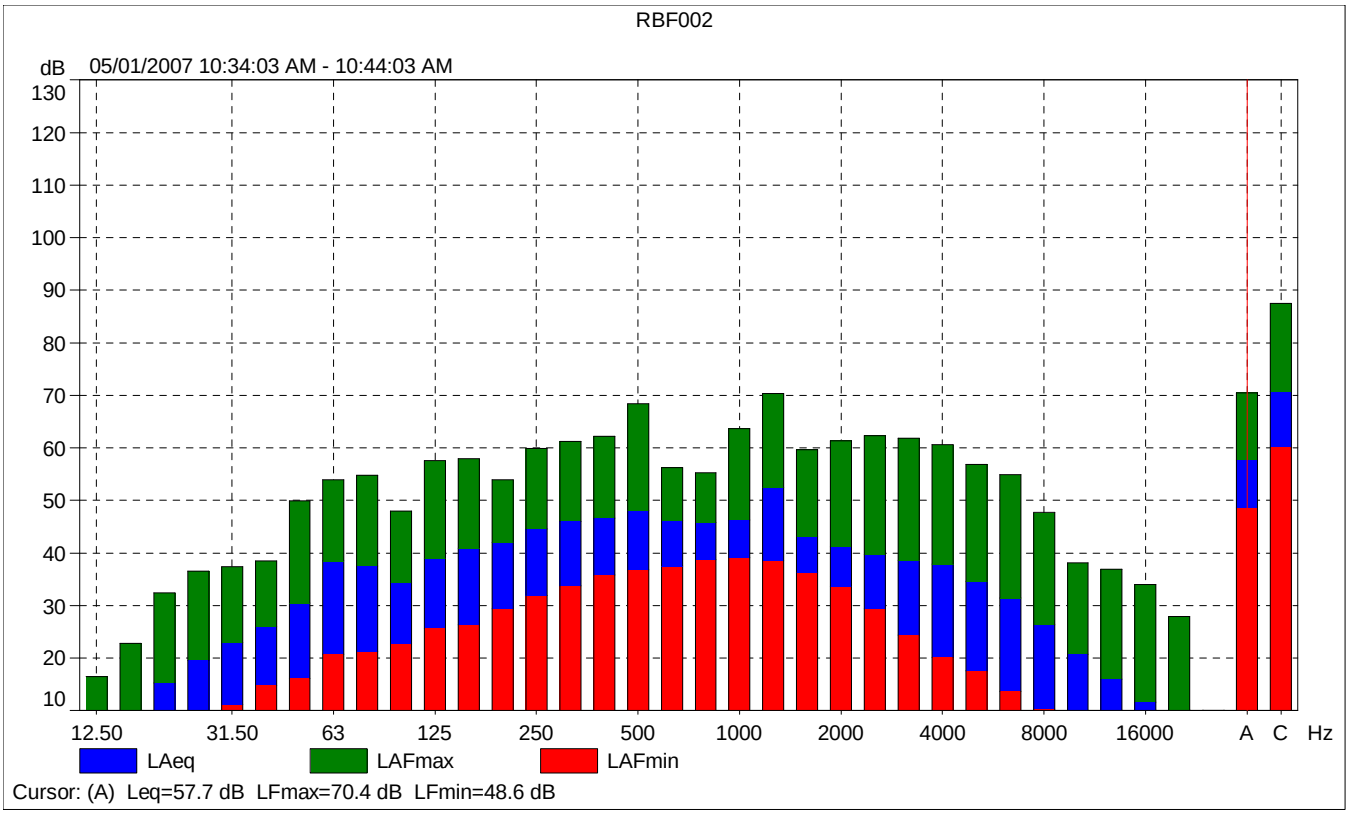
Instrument:		2250
Application:		BZ7225 Version 1.0.2
Start Time:		05/01/2007 10:34:03
End Time:		05/01/2007 10:44:03
Elapsed Time:		00:10:00
Bandwidth:		Broadband
Max Input Level:		140.23

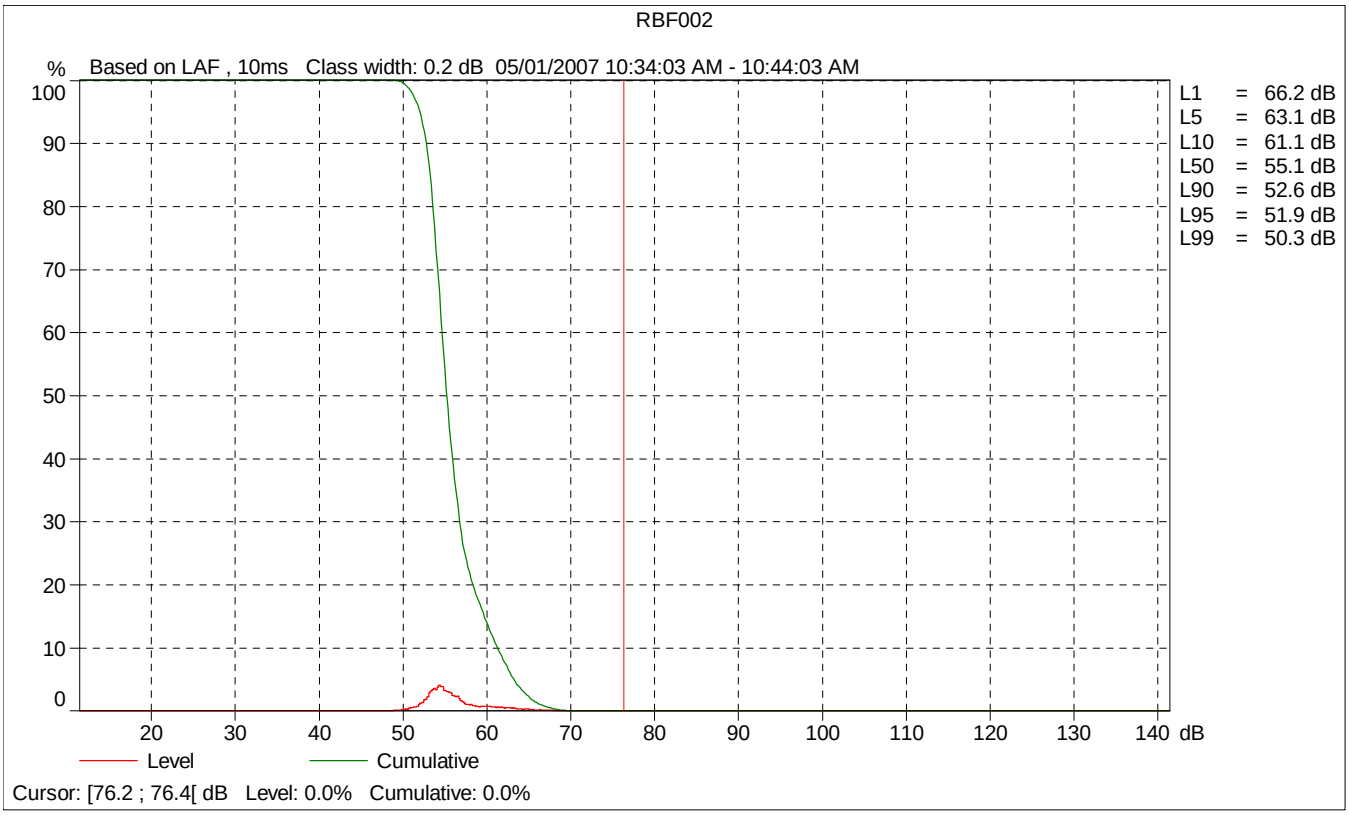
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	A

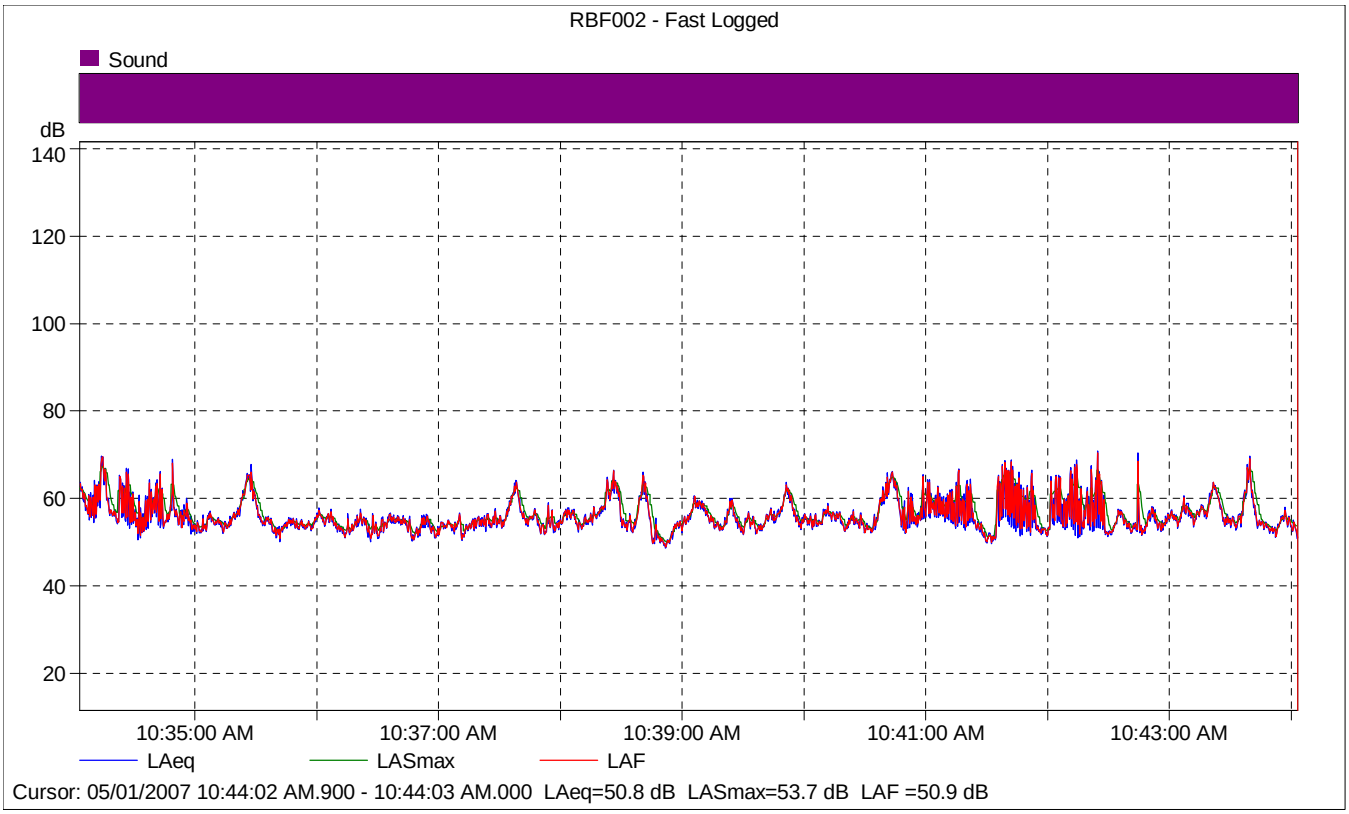
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		UA 1650
Sound Field Correction:		Free-field

Calibration Time:		04/25/2007 14:58:52
Calibration Type:		External reference
Sensitivity:		54.30 mV/Pa




RBF002
dB
05/01/2007 10:34:03 AM - 10:44:03 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LAeq
LAFmax
LAFmin
Cursor: (A) Leq=57.7 dB LFmax=70.4 dB LFmin=48.6 dB


RBF002
%
Based on LAF , 10ms Class width: 0.2 dB 05/01/2007 10:34:03 AM - 10:44:03 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 66.2 dB
L5 = 63.1 dB
L10 = 61.1 dB
L50 = 55.1 dB
L90 = 52.6 dB
L95 = 51.9 dB
L99 = 50.3 dB
Level
Cumulative
Cursor: [76.2 ; 76.4[dB Level: 0.0% Cumulative: 0.0%


RBF002 - Fast Logged
Sound
dB
140
120
100
80
60
40
20
10:35:00 AM
10:37:00 AM
10:39:00 AM
10:41:00 AM
10:43:00 AM
LAeq
LASmax
LAF
Cursor: 05/01/2007 10:44:02 AM.900 - 10:44:03 AM.000 LAeq=50.8 dB LASmax=53.7 dB LAF =50.9 dB

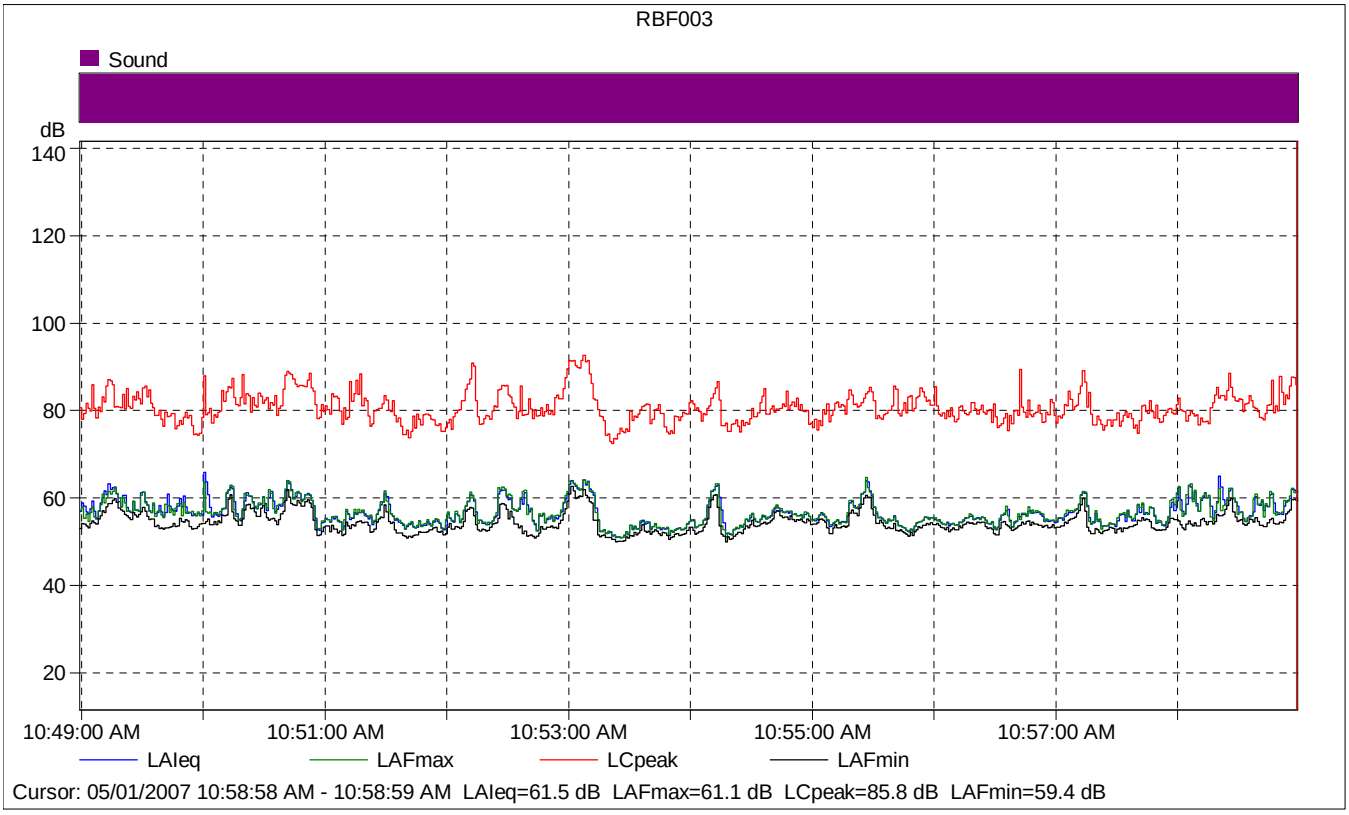
RBF003

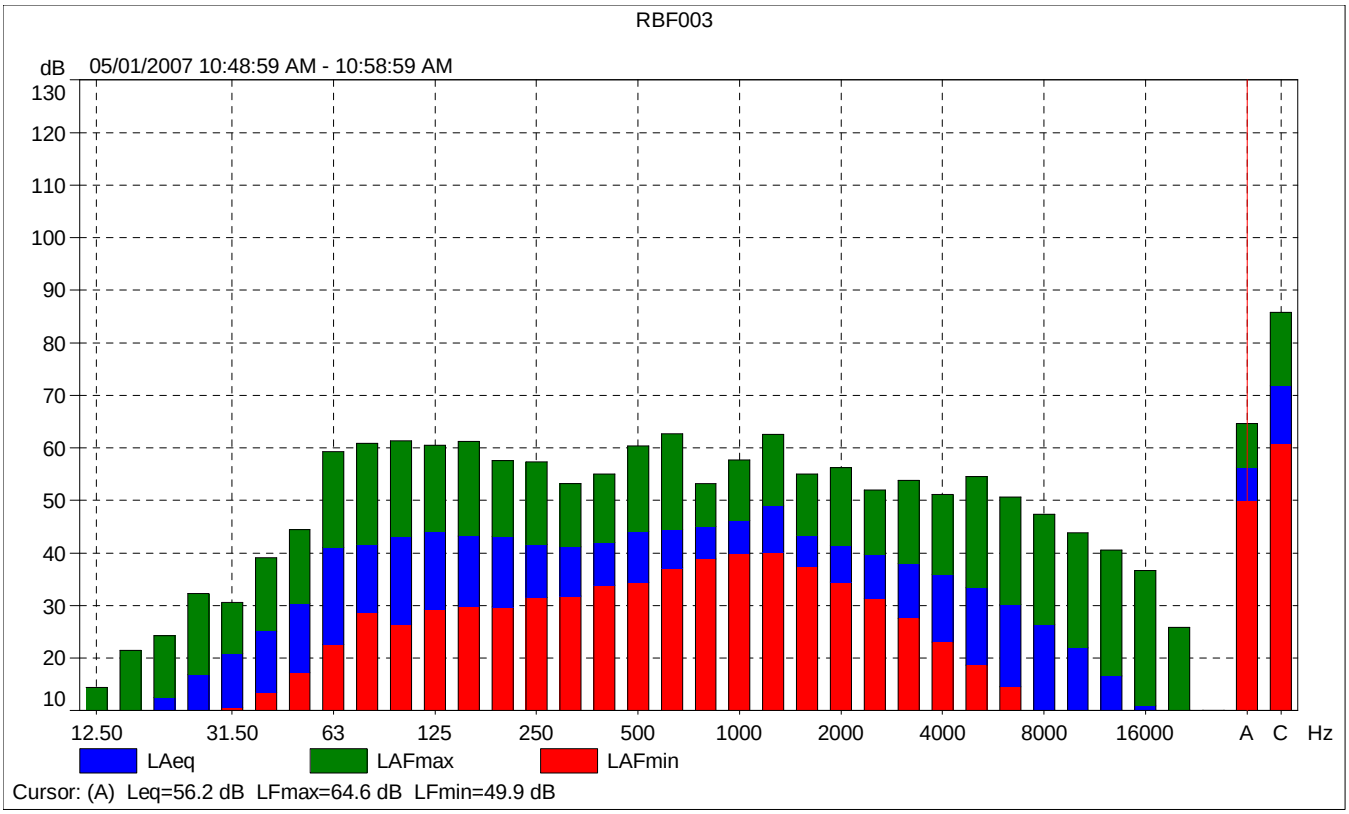
Instrument:		2250
Application:		BZ7225 Version 1.0.2
Start Time:		05/01/2007 10:48:59
End Time:		05/01/2007 10:58:59
Elapsed Time:		00:10:00
Bandwidth:		Broadband
Max Input Level:		140.23

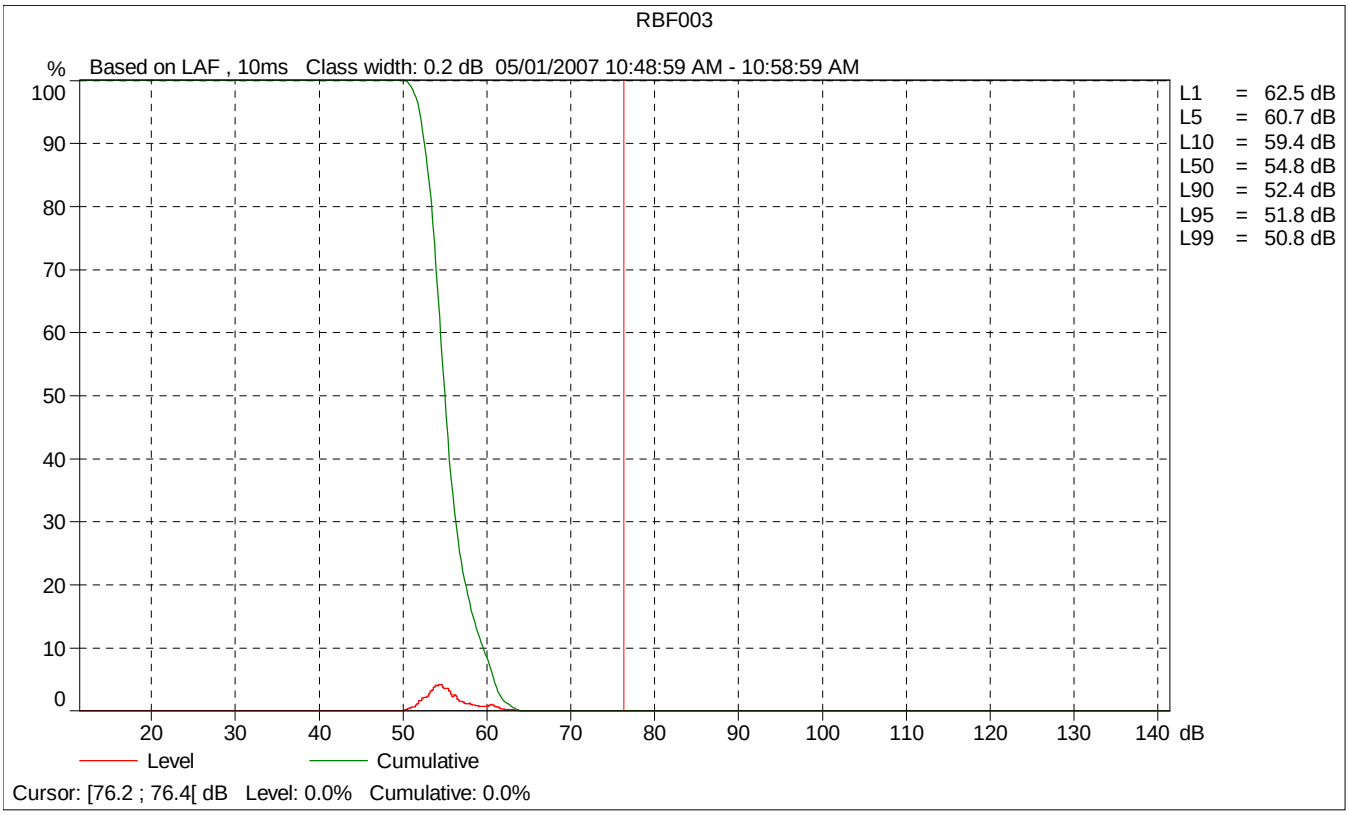
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	A

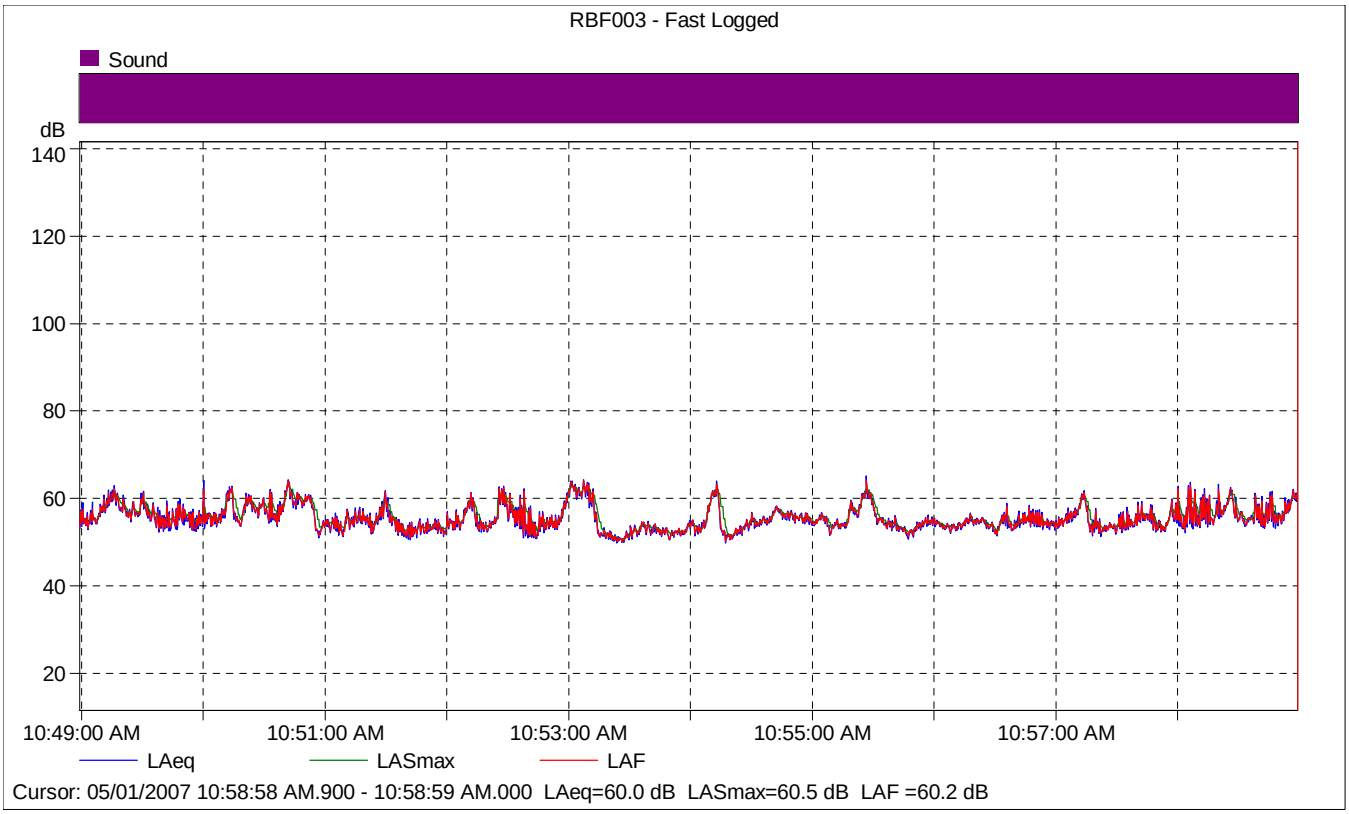
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		UA 1650
Sound Field Correction:		Free-field

Calibration Time:		04/25/2007 14:58:52
Calibration Type:		External reference
Sensitivity:		54.30 mV/Pa




RBF003
dB
05/01/2007 10:48:59 AM - 10:58:59 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LAeq
LAFmax
LAFmin
Cursor: (A) Leq=56.2 dB LFmax=64.6 dB LFmin=49.9 dB


RBF003
%
Based on LAF , 10ms Class width: 0.2 dB 05/01/2007 10:48:59 AM - 10:58:59 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 62.5 dB
L5 = 60.7 dB
L10 = 59.4 dB
L50 = 54.8 dB
L90 = 52.4 dB
L95 = 51.8 dB
L99 = 50.8 dB
Level
Cumulative
Cursor: [76.2 ; 76.4[dB Level: 0.0% Cumulative: 0.0%


RBF003 - Fast Logged
Sound
dB
140
120
100
80
60
40
20
10:49:00 AM
10:51:00 AM
10:53:00 AM
10:55:00 AM
10:57:00 AM
LAeq
LASmax
LAF
Cursor: 05/01/2007 10:58:58 AM.900 - 10:58:59 AM.000 LAeq=60.0 dB LASmax=60.5 dB LAF =60.2 dB

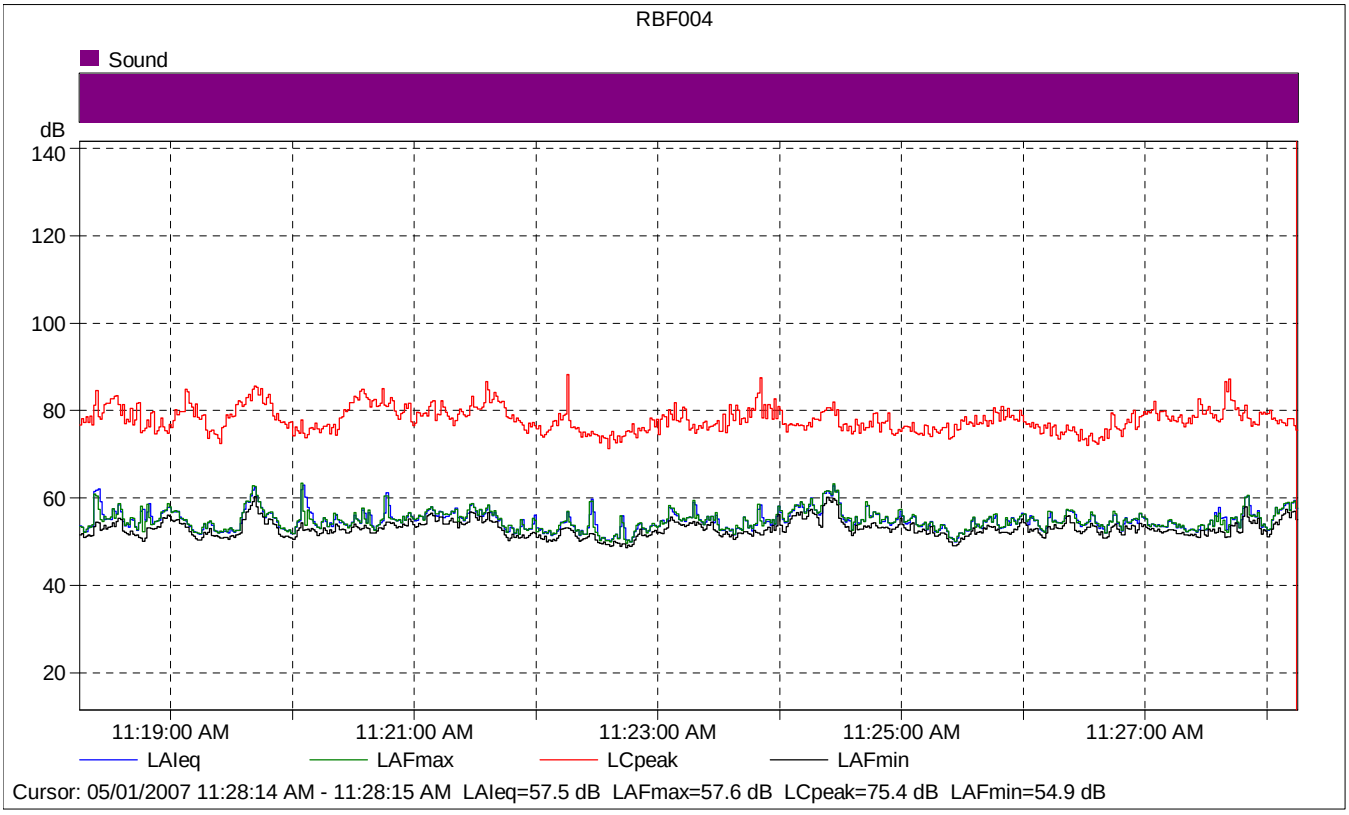
RBF004

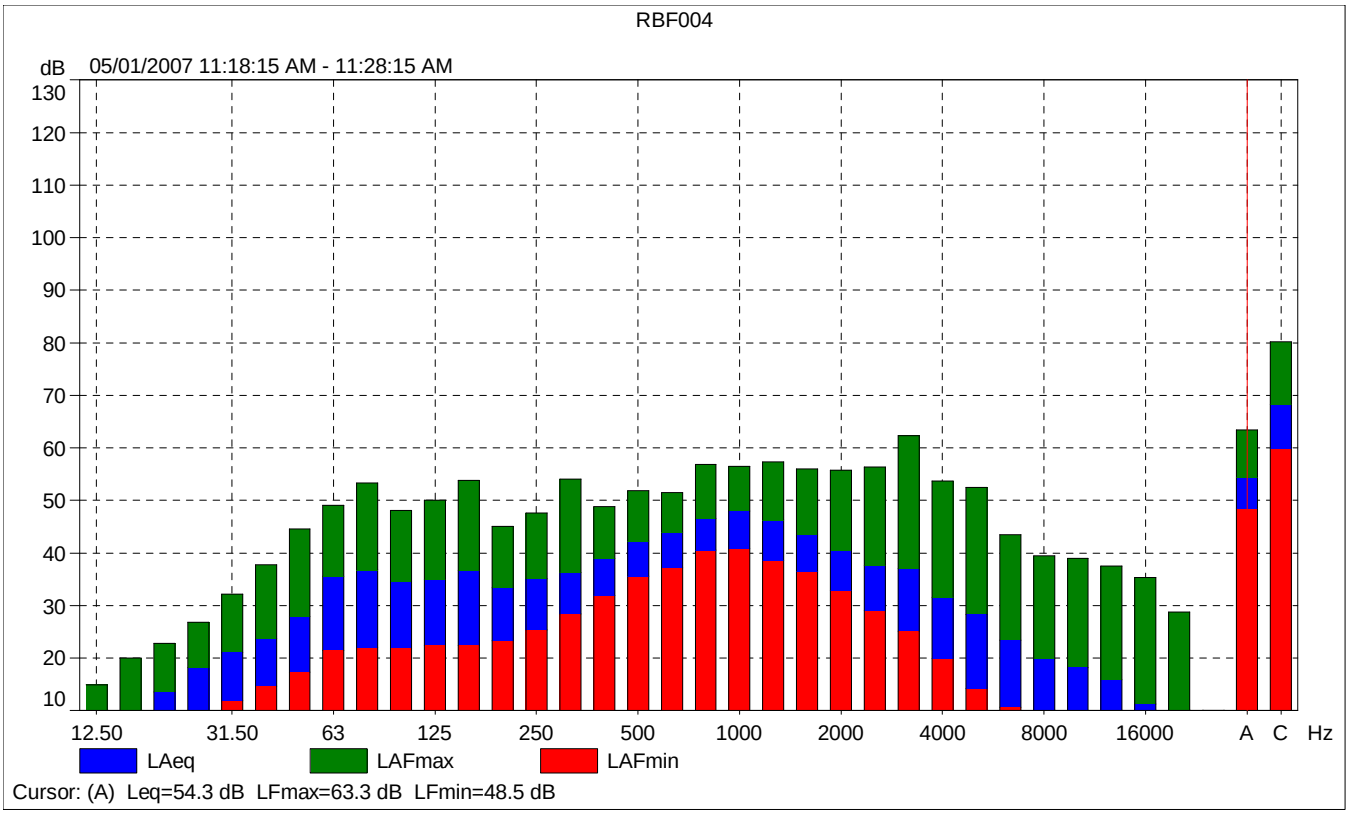
Instrument:		2250
Application:		BZ7225 Version 1.0.2
Start Time:		05/01/2007 11:18:15
End Time:		05/01/2007 11:28:15
Elapsed Time:		00:10:00
Bandwidth:		Broadband
Max Input Level:		140.23

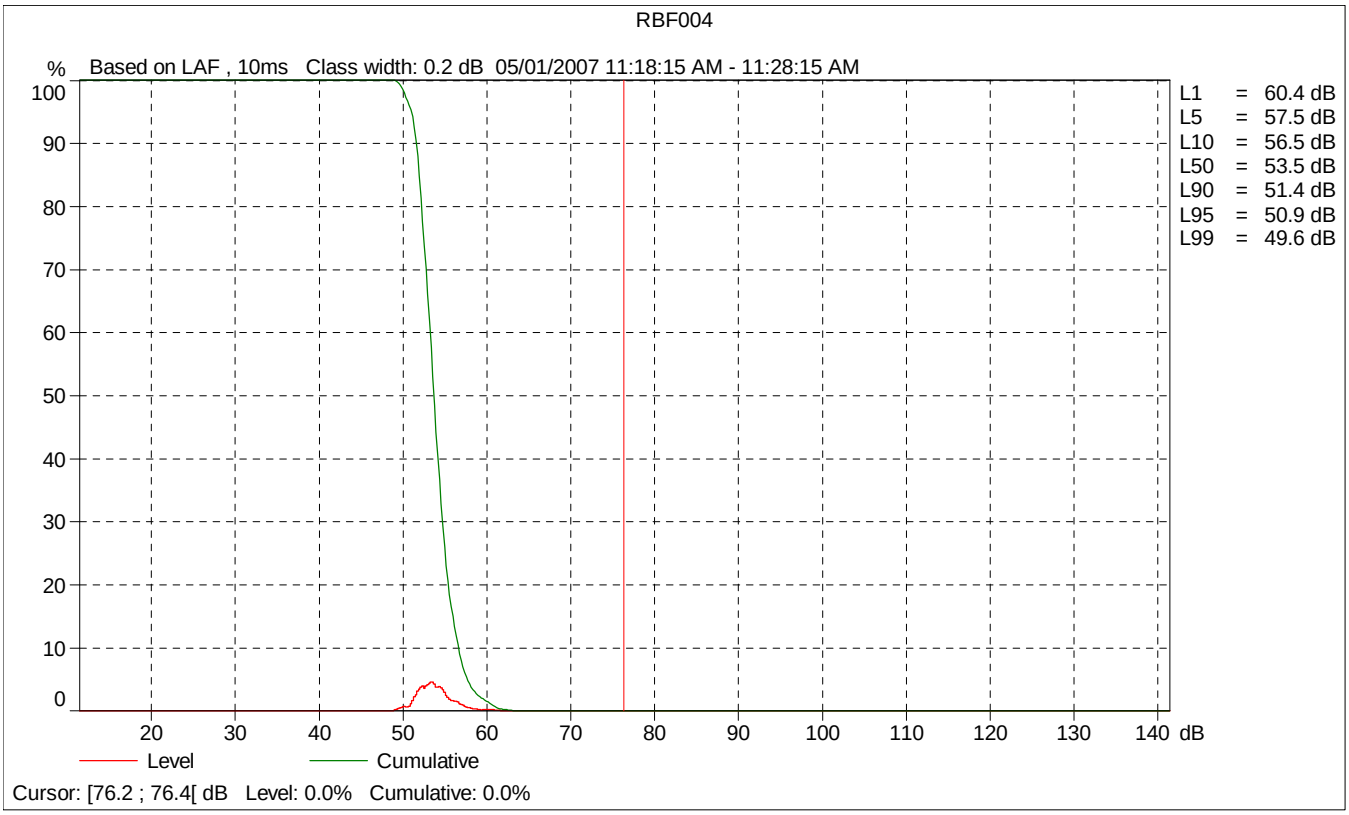
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	A

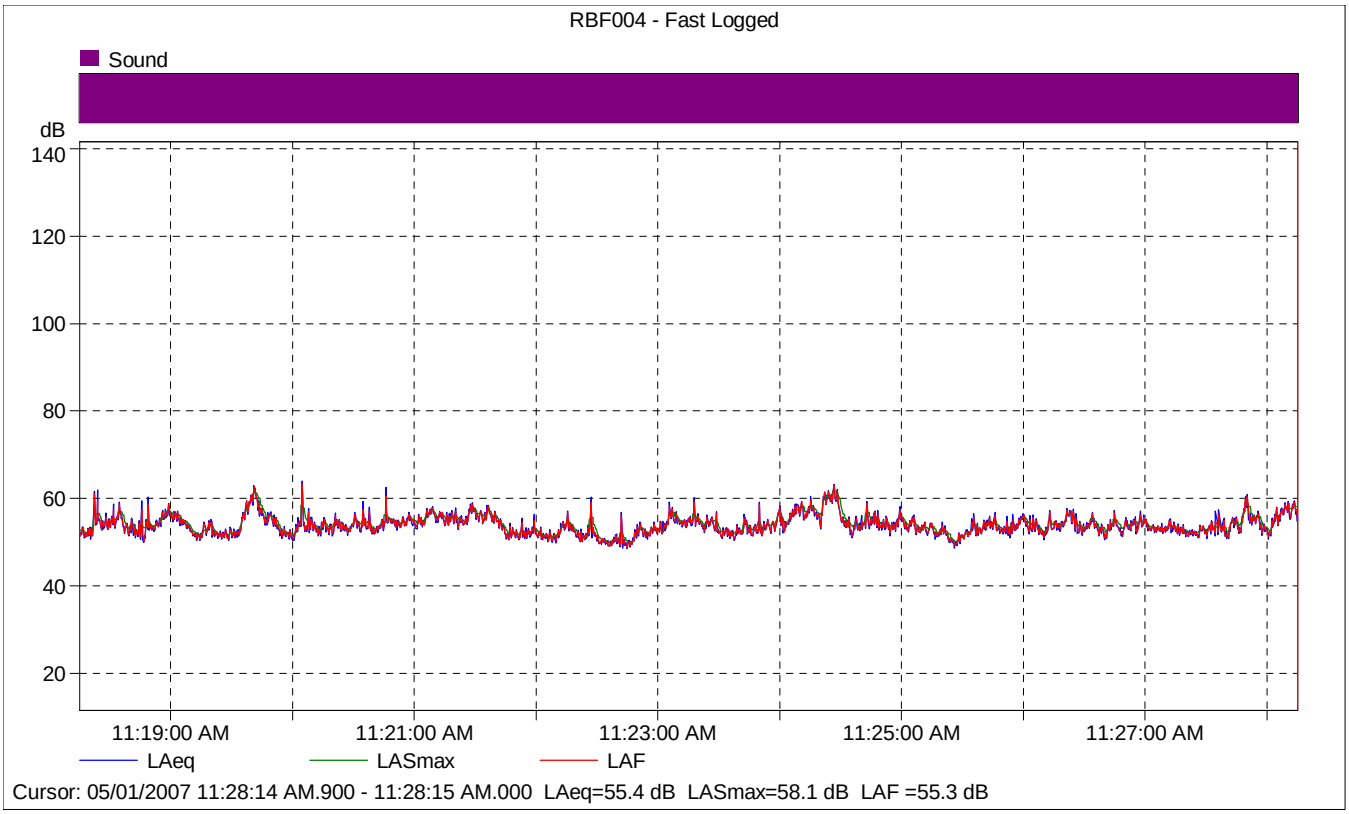
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		UA 1650
Sound Field Correction:		Free-field

Calibration Time:		04/25/2007 14:58:52
Calibration Type:		External reference
Sensitivity:		54.30 mV/Pa




RBF004
dB
05/01/2007 11:18:15 AM - 11:28:15 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LAeq
LAFmax
LAFmin
Cursor: (A) Leq=54.3 dB LFmax=63.3 dB LFmin=48.5 dB


RBF004
%
Based on LAF , 10ms Class width: 0.2 dB 05/01/2007 11:18:15 AM - 11:28:15 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 60.4 dB
L5 = 57.5 dB
L10 = 56.5 dB
L50 = 53.5 dB
L90 = 51.4 dB
L95 = 50.9 dB
L99 = 49.6 dB
Level
Cumulative
Cursor: [76.2 ; 76.4[dB Level: 0.0% Cumulative: 0.0%


RBF004 - Fast Logged
Sound
dB
140
120
100
80
60
40
20
11:19:00 AM
11:21:00 AM
11:23:00 AM
11:25:00 AM
11:27:00 AM
LAeq
LASmax
LAF
Cursor: 05/01/2007 11:28:14 AM.900 - 11:28:15 AM.000 LAeq=55.4 dB LASmax=58.1 dB LAF =55.3 dB

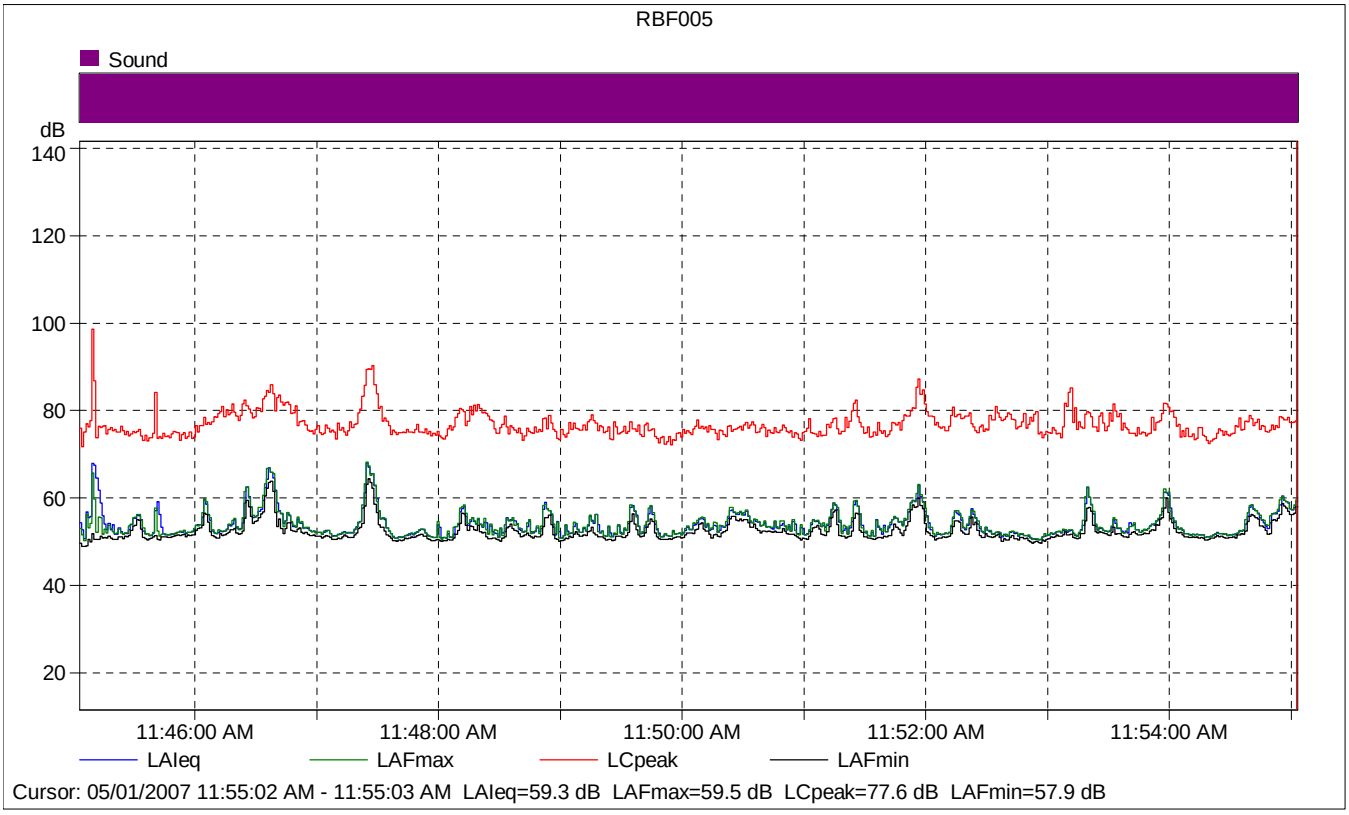
RBF005

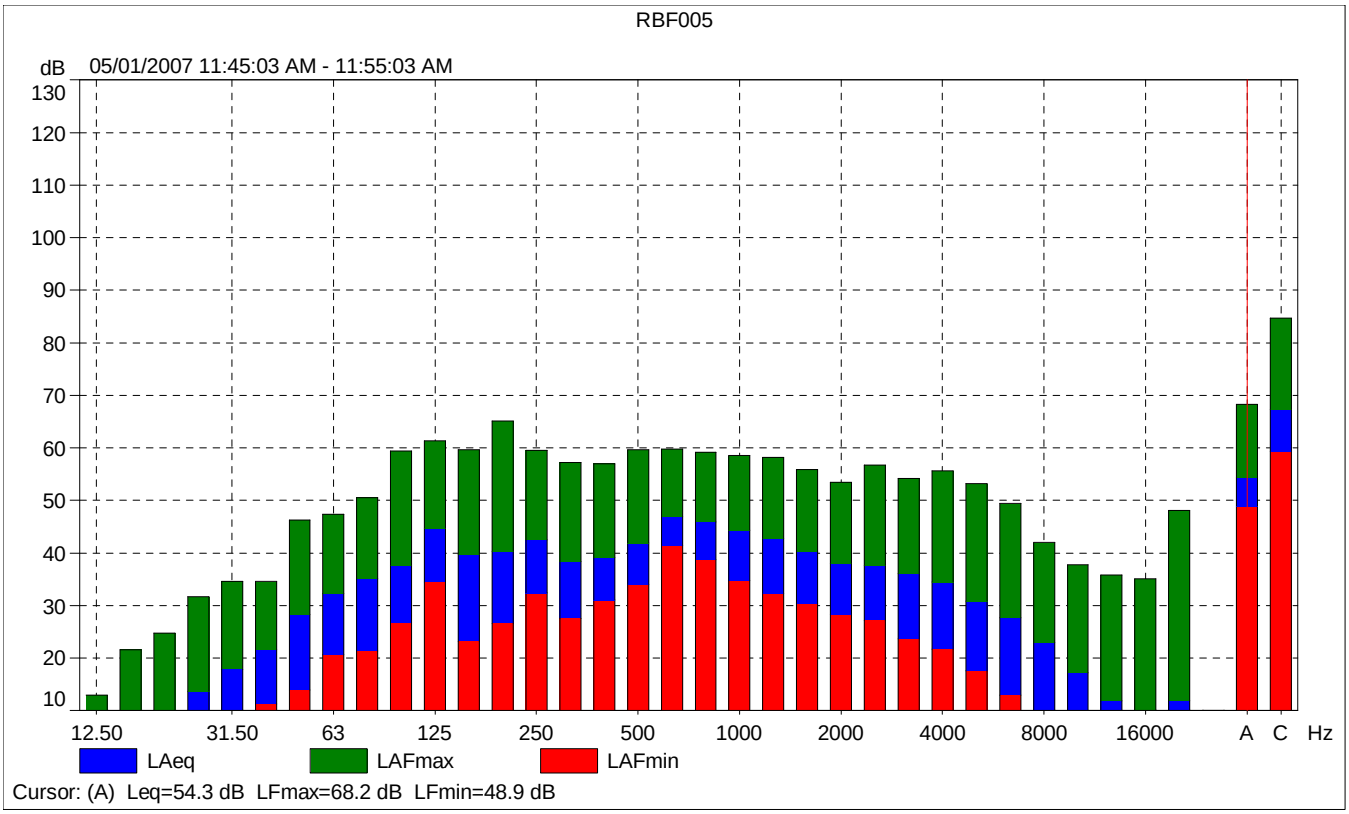
Instrument:		2250
Application:		BZ7225 Version 1.0.2
Start Time:		05/01/2007 11:45:03
End Time:		05/01/2007 11:55:03
Elapsed Time:		00:10:00
Bandwidth:		Broadband
Max Input Level:		140.23

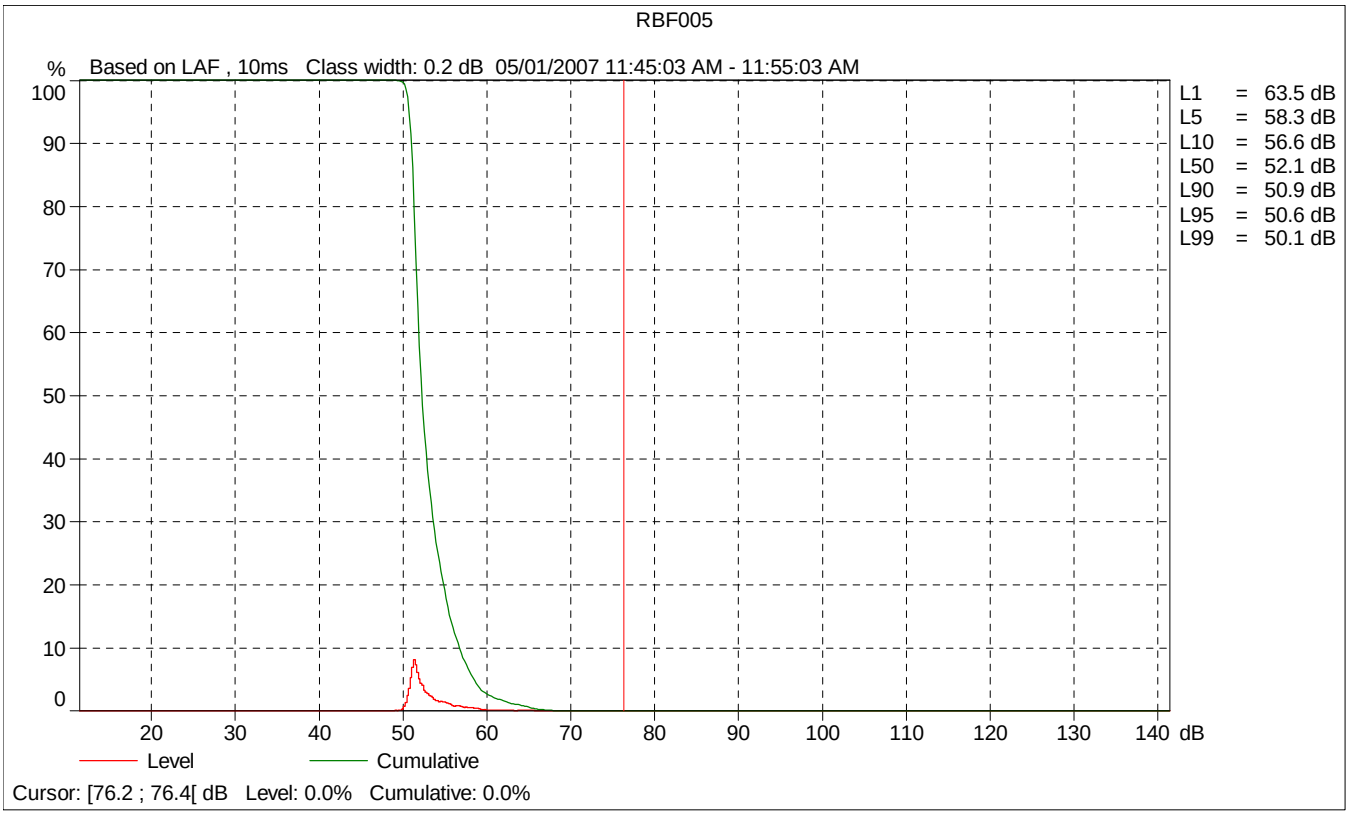
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	A

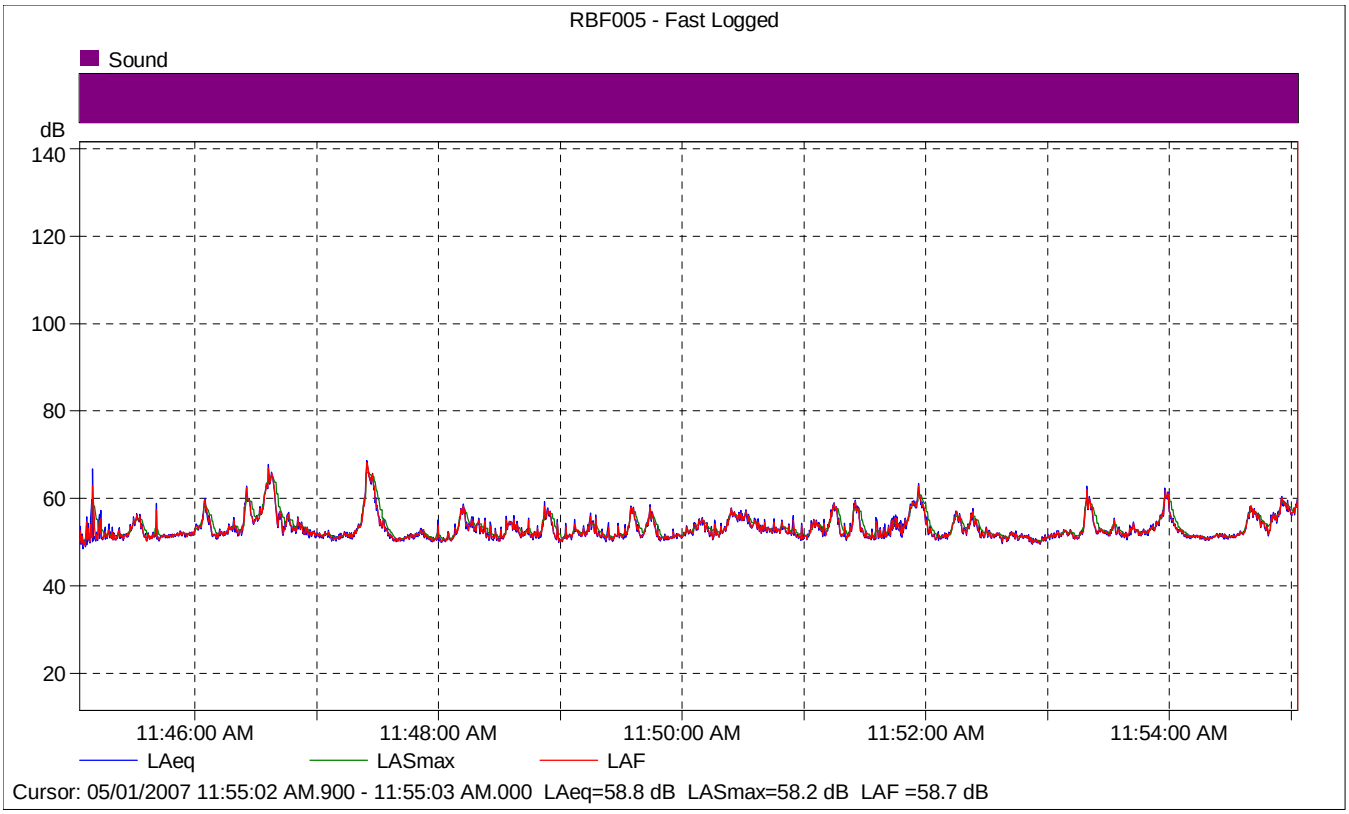
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		UA 1650
Sound Field Correction:		Free-field

Calibration Time:		04/25/2007 14:58:52
Calibration Type:		External reference
Sensitivity:		54.30 mV/Pa




RBF005
dB
05/01/2007 11:45:03 AM - 11:55:03 AM
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
C
Hz
LAeq
LAFmax
LAFmin
Cursor: (A) Leq=54.3 dB LFmax=68.2 dB LFmin=48.9 dB


RBF005
%
Based on LAF , 10ms Class width: 0.2 dB 05/01/2007 11:45:03 AM - 11:55:03 AM
100
90
80
70
60
50
40
30
20
10
0
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 63.5 dB
L5 = 58.3 dB
L10 = 56.6 dB
L50 = 52.1 dB
L90 = 50.9 dB
L95 = 50.6 dB
L99 = 50.1 dB
Level
Cumulative
Cursor: [76.2 ; 76.4[dB Level: 0.0% Cumulative: 0.0%


RBF005 - Fast Logged
Sound
dB
140
120
100
80
60
40
20
11:46:00 AM
11:48:00 AM
11:50:00 AM
11:52:00 AM
11:54:00 AM
LAeq
LASmax
LAF
Cursor: 05/01/2007 11:55:02 AM.900 - 11:55:03 AM.000 LAeq=58.8 dB LASmax=58.2 dB LAF =58.7 dB

Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	South of Sycamore		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	23150
Peak Hour Traffic:	2315
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

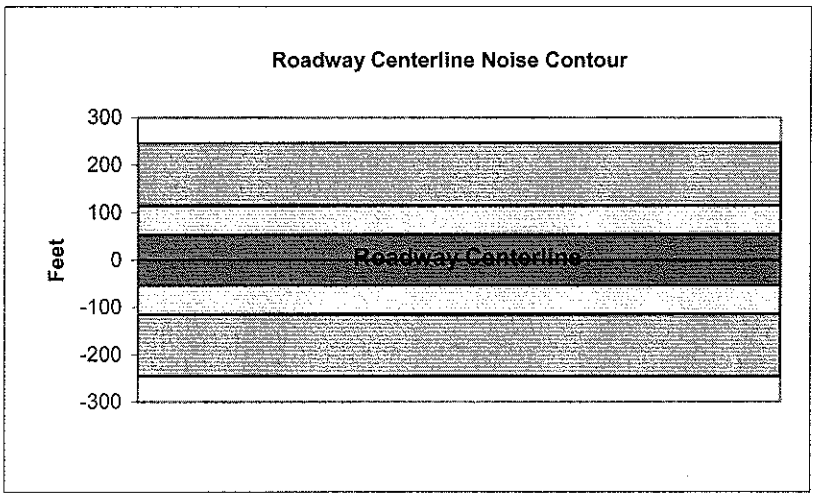
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.8	62.6	60.8	54.7	63.4	64.0
Medium Trucks:	62.1	54.0	47.6	46.0	54.5	54.8
Heavy Trucks:	66.6	54.7	45.6	46.8	56.4	56.5
Vehicle Noise:	**68.9**	**63.9**	**61.2**	**56.0**	**64.6**	**65.1**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	246
65 dBA	114
70 dBA	53
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	Between John Muir Parkway and Linus Pauling Drive		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	12000
Peak Hour Traffic:	**1200**
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

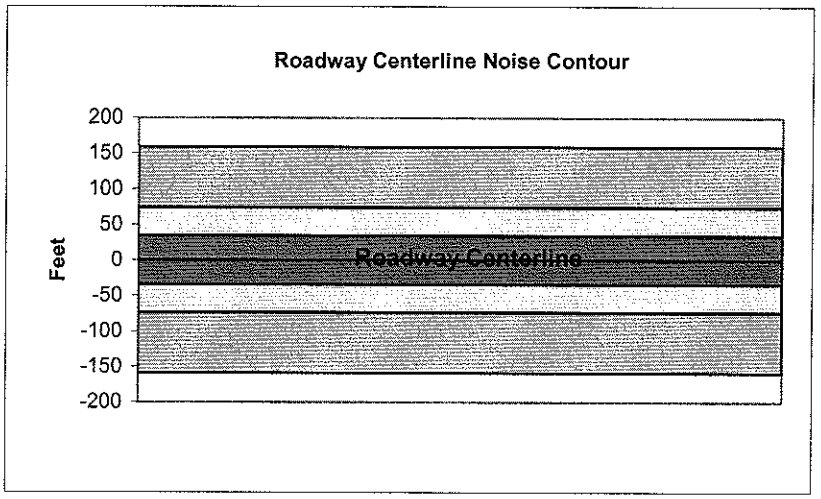
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.9	59.7	57.9	51.9	60.5	61.1
Medium Trucks:	59.2	51.2	44.8	43.2	51.7	51.9
Heavy Trucks:	63.7	51.8	42.7	44.0	53.5	53.6
Vehicle Noise:	**66.1**	**61.0**	**58.3**	**53.2**	**61.7**	**62.2**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	159
65 dBA	74
70 dBA	34
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	I-80		
Road Segment:	South of John Muir Parkway		

PROJECT DATA

Centerline Dist to Barrier:	0
Barrier (0=wall, 1= berm):	0
Receiver Barrier Dist:	0
Centerline Dist. To Observer:	100
Barrier Near Lane CL Dist:	0
Barrier Far lane CL Dist:	0
Pad Elevation:	0.5
Road Elevation:	0
Observer Height (above grade):	5.5
Barrier Height:	0
Rt View: 90	Lft View: -90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	200000
Peak Hour Traffic:	20000
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

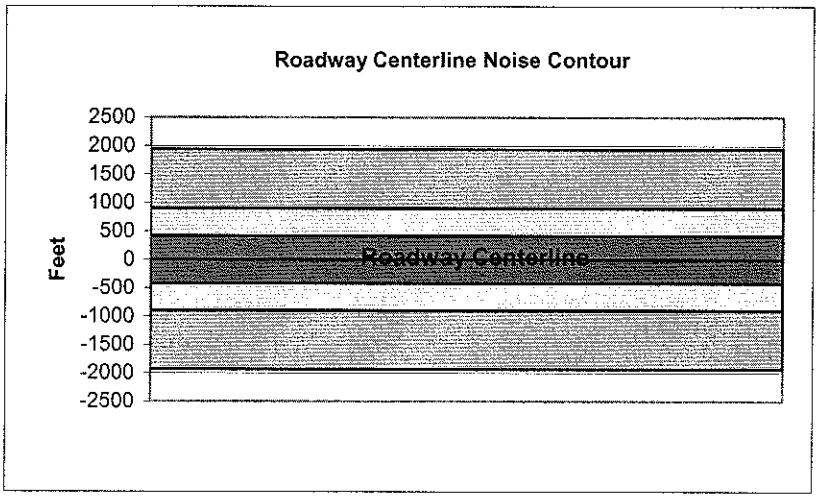
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	76.3	74.5	68.4	77.0	77.7
Medium Trucks:	73.7	65.6	59.2	57.6	66.1	66.4
Heavy Trucks:	77.2	65.2	56.2	57.4	66.4	66.5
Vehicle Noise:	**79.5**	**77.0**	**74.7**	**69.1**	**77.7**	**78.3**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	1938
65 dBA	899
70 dBA	417
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	South of Sycamore		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	23150
Peak Hour Traffic:	**2315**
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

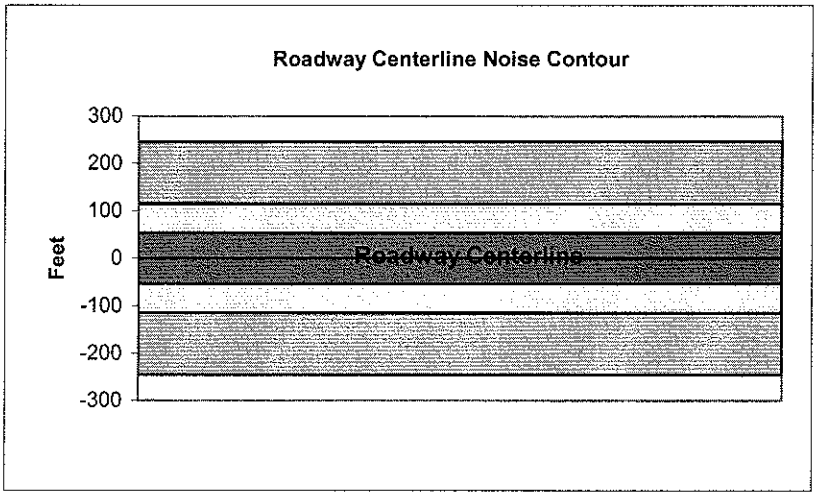
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.8	62.6	60.8	54.7	63.4	64.0
Medium Trucks:	62.1	54.0	47.6	46.0	54.5	54.8
Heavy Trucks:	66.6	54.7	45.6	46.8	56.4	56.5
Vehicle Noise:	**68.9**	**63.9**	**61.2**	**56.0**	**64.6**	**65.1**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	246
65 dBA	114
70 dBA	53
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	I-80		
Road Segment:	North of John Muir Parkway		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	133000
Peak Hour Traffic:	13300
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

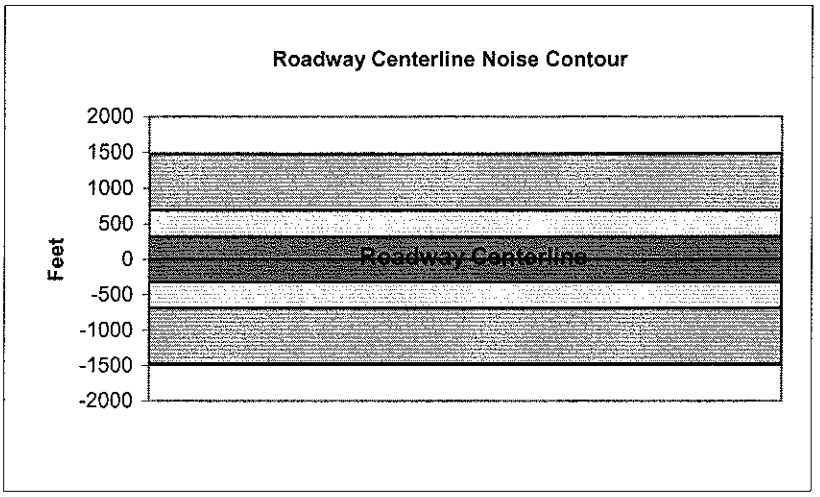
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	74.5	72.7	66.6	75.3	75.9
Medium Trucks:	71.9	63.8	57.4	55.9	64.4	64.6
Heavy Trucks:	75.4	63.4	54.4	55.6	64.6	64.8
Vehicle Noise:	**77.7**	**75.2**	**72.9**	**67.3**	**75.9**	**76.5**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	1477
65 dBA	685
70 dBA	318
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	John Muir Parkway		
Road Segment:	Between San Pablo Ave and I-80		

PROJECT DATA

Centerline Dist to Barrier:	0
Barrier (0=wall, 1= berm):	0
Receiver Barrier Dist:	0
Centerline Dist. To Observer:	100
Barrier Near Lane CL Dist:	0
Barrier Far lane CL Dist:	0
Pad Elevation:	0.5
Road Elevation:	0
Observer Height (above grade):	5.5
Barrier Height:	0
Rt View: 90	Lft View: -90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	23640
Peak Hour Traffic:	2364
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

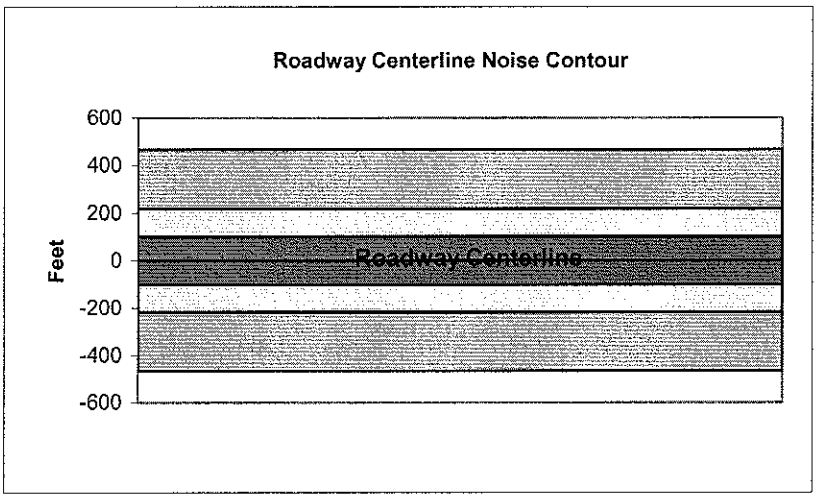
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.2	67.0	65.2	59.1	67.8	68.4
Medium Trucks:	64.4	56.3	49.9	48.4	56.8	57.1
Heavy Trucks:	67.9	55.9	46.9	48.1	57.1	57.3
Vehicle Noise:	**70.2**	**67.7**	**65.4**	**59.8**	**68.4**	**69.0**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	467
65 dBA	217
70 dBA	101
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	John Muir Parkway		
Road Segment:	Between I-80 and Willow Avenue		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	38,000
Peak Hour Traffic:	3800
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

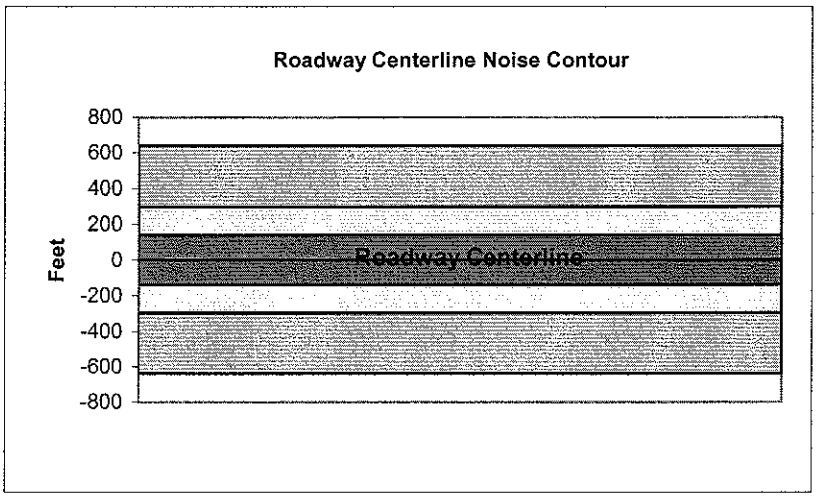
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	69.1	67.3	61.2	69.8	70.4
Medium Trucks:	66.4	58.4	52.0	50.4	58.9	59.1
Heavy Trucks:	69.9	58.0	48.9	50.2	59.2	59.3
Vehicle Noise:	**72.3**	**69.8**	**67.5**	**61.9**	**70.5**	**71.1**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	641
65 dBA	297
70 dBA	138
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Willow Avenue		
Road Segment:	Between I-80 and SB Ramp		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	10,700
Peak Hour Traffic:	1070
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

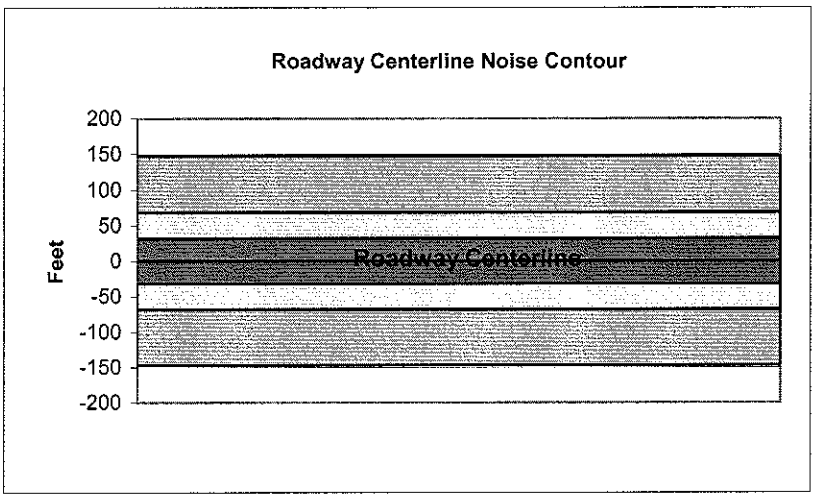
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.5	59.3	57.5	51.4	60.1	60.7
Medium Trucks:	58.8	50.7	44.3	42.8	51.3	51.5
Heavy Trucks:	63.3	51.4	42.3	43.5	53.1	53.2
Vehicle Noise:	**65.7**	**60.6**	**57.9**	**52.7**	**61.3**	**61.8**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	147
65 dBA	68
70 dBA	32
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Bayberry Avenue		
Road Segment:	Between I-80 SB Ramp and SR-4 EB Ramp		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	5,130
Peak Hour Traffic:	513
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

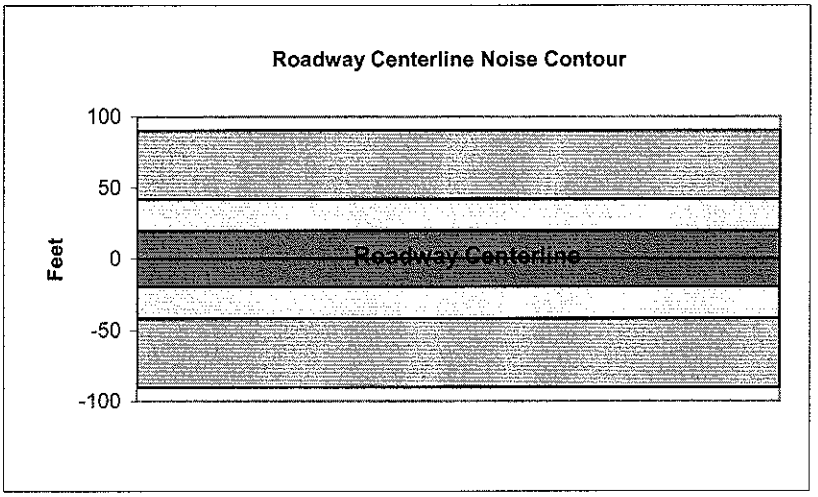
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	47.3	56.1	54.3	48.2	56.9	57.5
Medium Trucks:	55.6	47.5	41.2	39.6	48.1	48.3
Heavy Trucks:	60.1	48.2	39.1	40.4	49.9	50.0
Vehicle Noise:	**62.5**	**57.4**	**54.7**	**49.5**	**58.1**	**58.6**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	90
65 dBA	42
70 dBA	19
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Bayberry Avenue		
Road Segment:	Between Palm and SR-4		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	8,640
Peak Hour Traffic:	**864**
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

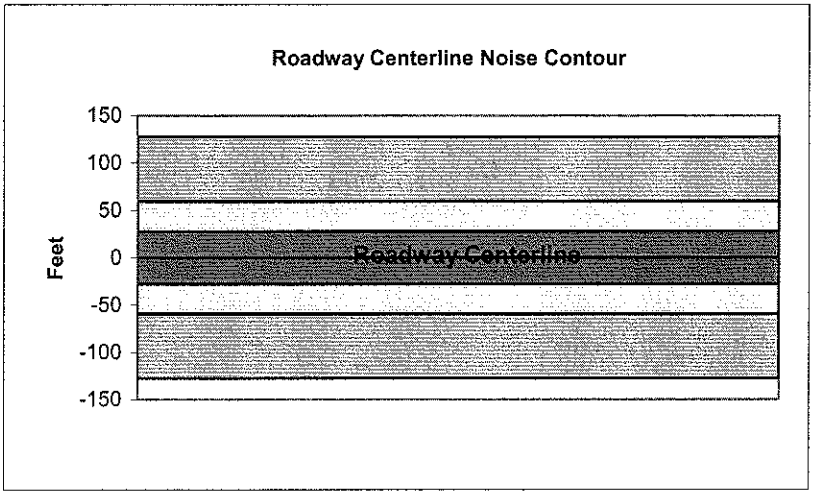
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	49.6	58.4	56.6	50.5	59.2	59.8
Medium Trucks:	57.9	49.8	43.4	41.8	50.3	50.6
Heavy Trucks:	62.4	50.5	41.4	42.6	52.2	52.3
Vehicle Noise:	**64.7**	**59.7**	**57.0**	**51.8**	**60.4**	**60.9**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	128
65 dBA	59
70 dBA	27
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Existing
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Sycamore Avenue		
Road Segment:	West of San Pablo Ave		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	2,690
Peak Hour Traffic:	269
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

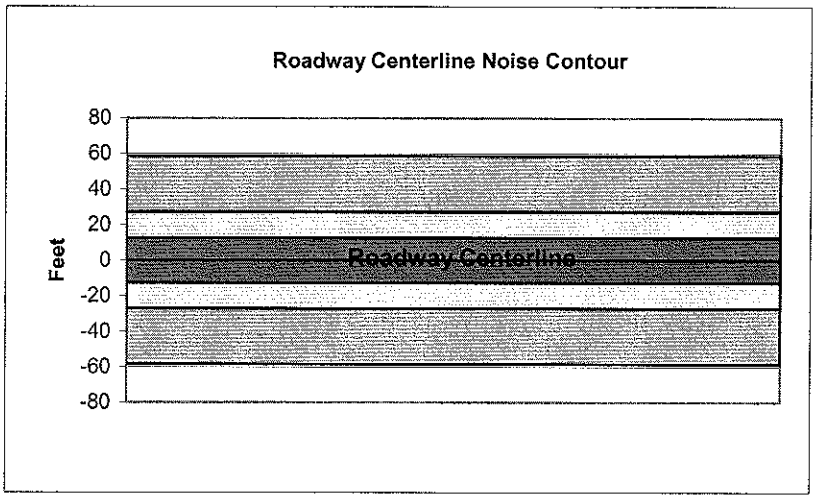
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	44.5	53.3	51.5	45.4	54.1	54.7
Medium Trucks:	52.8	44.7	38.4	36.8	45.3	45.5
Heavy Trucks:	57.3	45.4	36.3	37.5	47.1	47.2
Vehicle Noise:	**59.7**	**54.6**	**51.9**	**46.7**	**55.3**	**55.8**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	59
65 dBA	27
70 dBA	13
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Other
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	I-80		
Road Segment:	South of John Muir Parkway		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	200000
Peak Hour Traffic:	**20000**
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

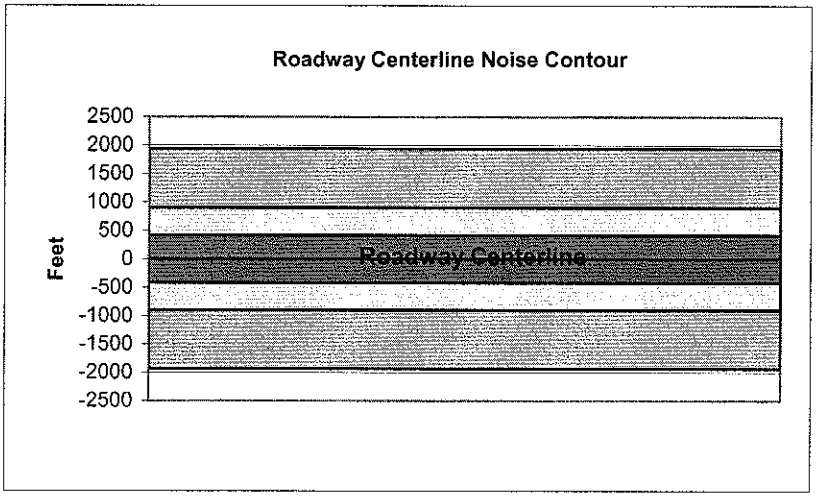
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.5	76.3	74.5	68.4	77.0	77.7
Medium Trucks:	73.7	65.6	59.2	57.6	66.1	66.4
Heavy Trucks:	77.2	65.2	56.2	57.4	66.4	66.5
Vehicle Noise:	**79.5**	**77.0**	**74.7**	**69.1**	**77.7**	**78.3**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	1938
65 dBA	899
70 dBA	417
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Other
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	I-80		
Road Segment:	North of John Muir Parkway		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	133000
Peak Hour Traffic:	13300
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

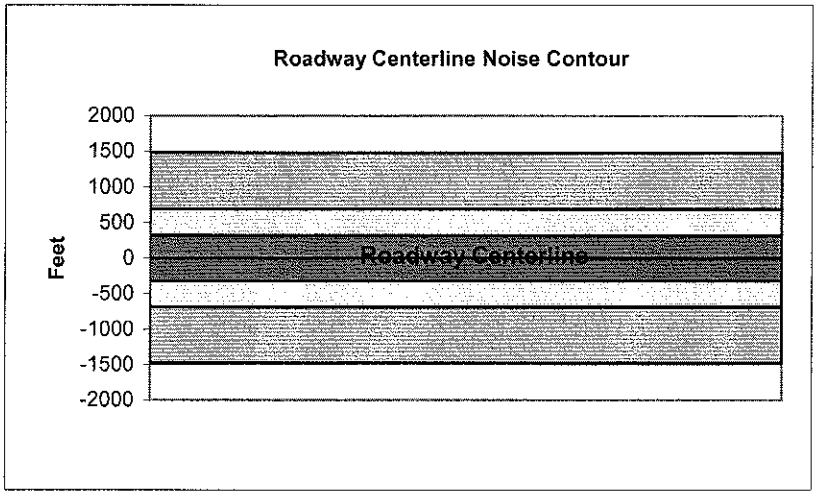
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	65.7	74.5	72.7	66.6	75.3	75.9
Medium Trucks:	71.9	63.8	57.4	55.9	64.4	64.6
Heavy Trucks:	75.4	63.4	54.4	55.6	64.6	64.8
Vehicle Noise:	**77.7**	**75.2**	**72.9**	**67.3**	**75.9**	**76.5**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	1477
65 dBA	685
70 dBA	318
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Other
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	South of Sycamore		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	23470
Peak Hour Traffic:	2347
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

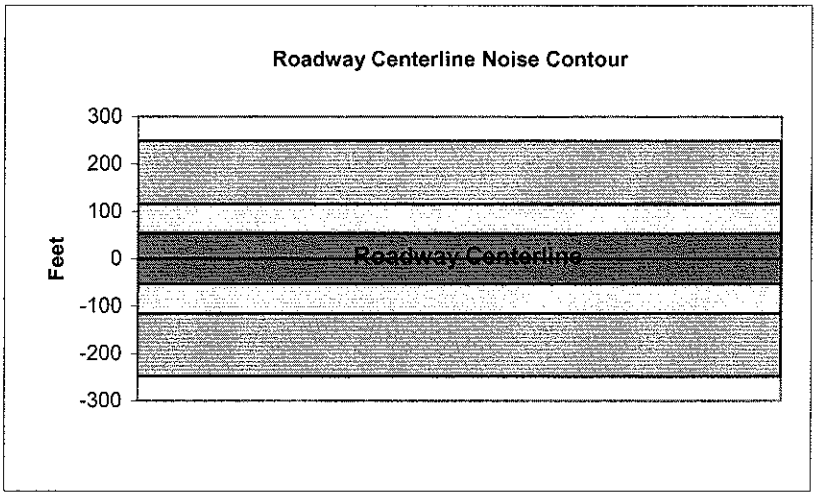
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.9	62.6	60.8	54.8	63.4	64.0
Medium Trucks:	62.1	54.1	47.7	46.1	54.6	54.8
Heavy Trucks:	66.7	54.7	45.7	46.9	56.4	56.5
Vehicle Noise:	**69.0**	**63.9**	**61.2**	**56.1**	**64.7**	**65.2**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	248
65 dBA	115
70 dBA	54
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Other
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	South of Sycamore		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	27850
Peak Hour Traffic:	2785
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

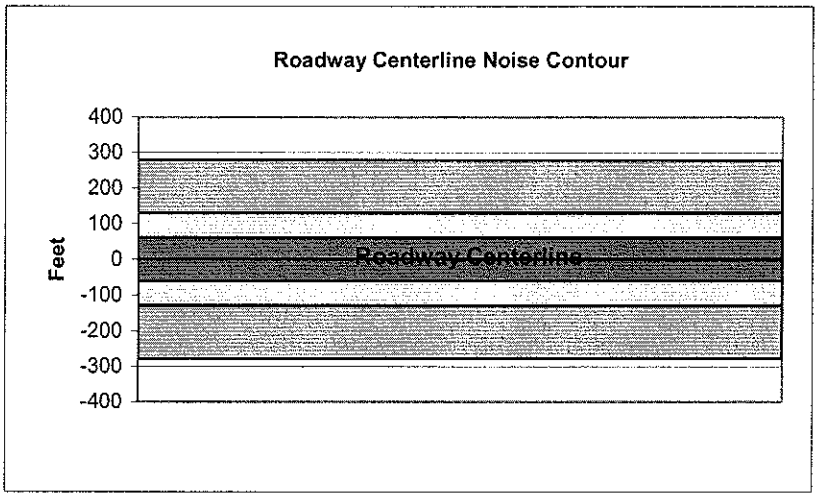
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.6	63.4	61.6	55.5	64.2	64.8
Medium Trucks:	62.9	54.8	48.4	46.9	55.3	55.6
Heavy Trucks:	67.4	55.5	46.4	47.6	57.2	57.3
Vehicle Noise:	**69.7**	**64.7**	**62.0**	**56.8**	**65.4**	**65.9**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	279
65 dBA	129
70 dBA	60
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Other
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	Between John Muir Parkway and Linus Pauling Drive		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	12410
Peak Hour Traffic:	**1241**
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

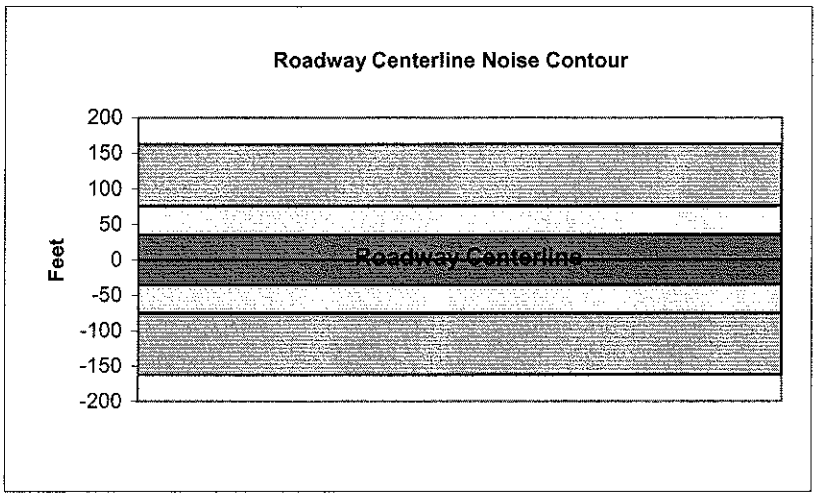
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.1	59.9	58.1	52.0	60.6	61.3
Medium Trucks:	59.4	51.3	44.9	43.3	51.8	52.1
Heavy Trucks:	63.9	51.9	42.9	44.1	53.7	53.8
Vehicle Noise:	**66.2**	**61.2**	**58.4**	**53.3**	**61.9**	**62.4**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	163
65 dBA	75
70 dBA	35
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Other
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	John Muir Parkway		
Road Segment:	Between San Pablo Ave and I-80		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	22770
Peak Hour Traffic:	2277
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

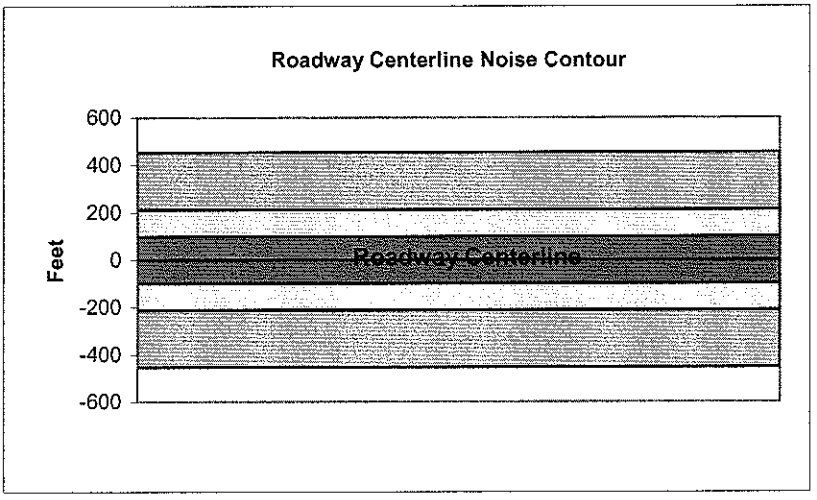
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.1	66.8	65.0	59.0	67.6	68.2
Medium Trucks:	64.2	56.2	49.8	48.2	56.7	56.9
Heavy Trucks:	67.7	55.8	46.7	47.9	57.0	57.1
Vehicle Noise:	**70.1**	**67.5**	**65.2**	**59.7**	**68.3**	**68.8**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	455
65 dBA	211
70 dBA	98
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Other
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	John Muir Parkway		
Road Segment:	Between I-80 and Willow Avenue		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	38,000
Peak Hour Traffic:	**3800**
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

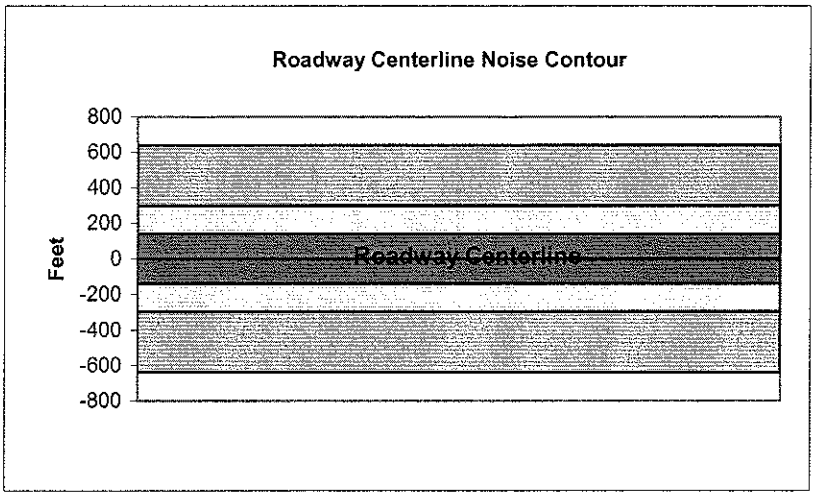
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.3	69.1	67.3	61.2	69.8	70.4
Medium Trucks:	66.4	58.4	52.0	50.4	58.9	59.1
Heavy Trucks:	69.9	58.0	48.9	50.2	59.2	59.3
Vehicle Noise:	**72.3**	**69.8**	**67.5**	**61.9**	**70.5**	**71.1**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	641
65 dBA	297
70 dBA	138
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Other
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Willow Avenue		
Road Segment:	Between I-80 and SB Ramp		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	14,720
Peak Hour Traffic:	**1472**
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

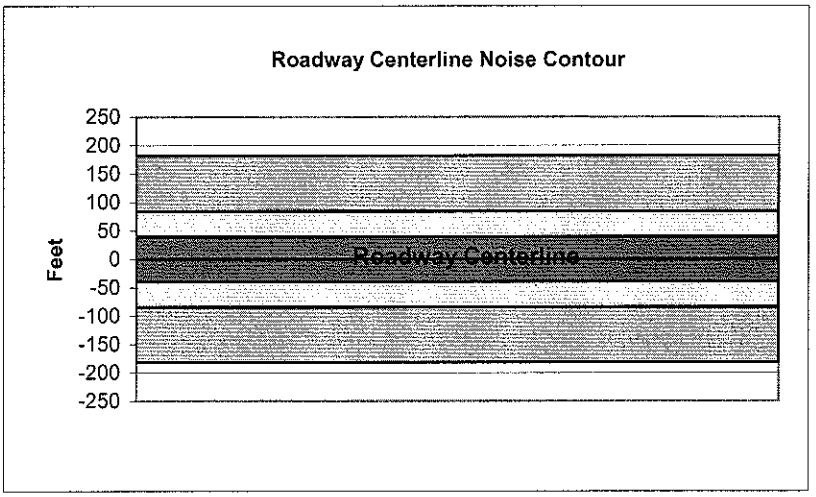
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.9	60.7	58.9	52.8	61.5	62.1
Medium Trucks:	60.2	52.1	45.7	44.2	52.6	52.9
Heavy Trucks:	64.7	52.8	43.7	44.9	54.5	54.6
Vehicle Noise:	**67.0**	**62.0**	**59.3**	**54.1**	**62.7**	**63.2**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	182
65 dBA	84
70 dBA	39
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Other
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Bayberry Avenue		
Road Segment:	Between I-80 SB Ramp and SR-4 EB Ramp		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	6,170
Peak Hour Traffic:	617
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

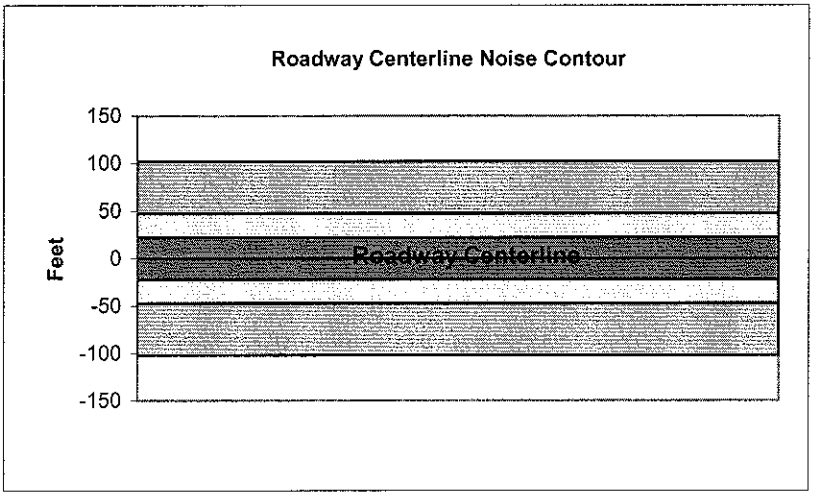
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	48.1	56.9	55.1	49.0	57.7	58.3
Medium Trucks:	56.4	48.3	42.0	40.4	48.9	49.1
Heavy Trucks:	60.9	49.0	39.9	41.2	50.7	50.8
Vehicle Noise:	**63.3**	**58.2**	**55.5**	**50.3**	**58.9**	**59.4**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	102
65 dBA	47
70 dBA	22
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Other
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Bayberry Avenue		
Road Segment:	Between Palm and SR-4		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	9,820
Peak Hour Traffic:	982
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

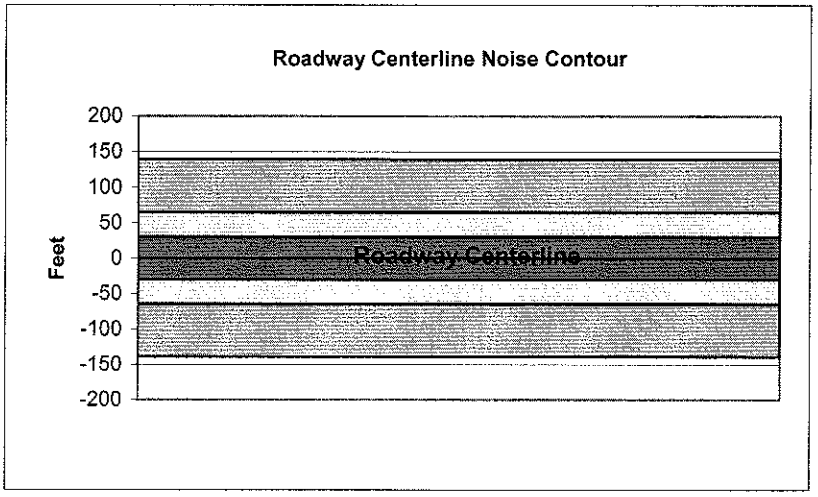
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.1	58.9	57.1	51.1	59.7	60.3
Medium Trucks:	58.4	50.4	44.0	42.4	50.9	51.1
Heavy Trucks:	62.9	51.0	42.0	43.2	52.7	52.8
Vehicle Noise:	**65.3**	**60.2**	**57.5**	**52.4**	**61.0**	**61.5**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	139
65 dBA	65
70 dBA	30
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Other
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Sycamore Avenue		
Road Segment:	West of San Pablo Ave		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	3,020
Peak Hour Traffic:	302
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

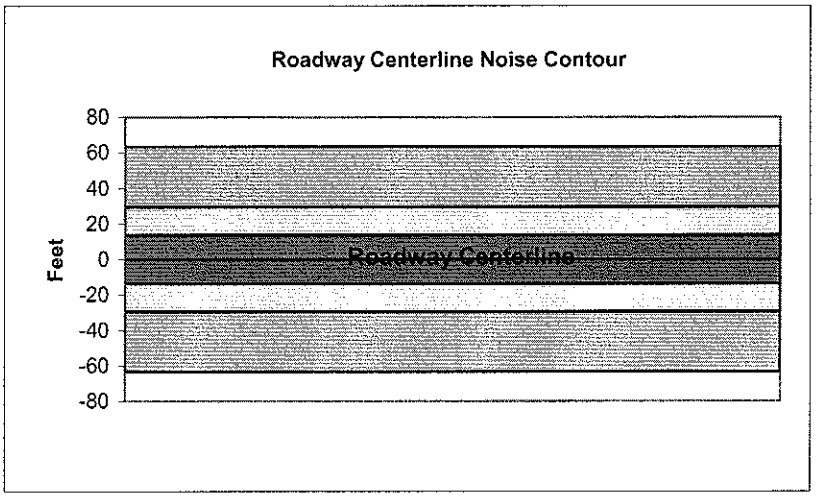
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	45.0	53.8	52.0	45.9	54.6	55.2
Medium Trucks:	53.3	45.2	38.9	37.3	45.8	46.0
Heavy Trucks:	57.8	45.9	36.8	38.1	47.6	47.7
Vehicle Noise:	**60.2**	**55.1**	**52.4**	**47.2**	**55.8**	**56.3**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	63
65 dBA	29
70 dBA	14
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	South of Sycamore		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	24640
Peak Hour Traffic:	**2464**
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

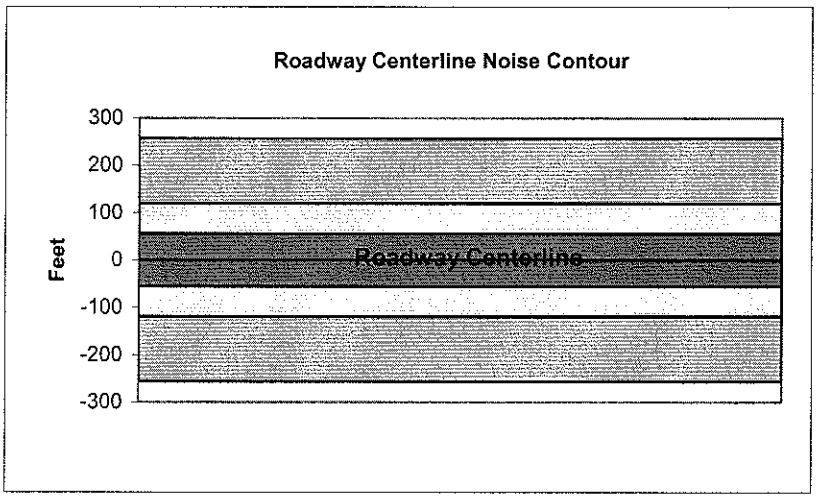
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.1	62.8	61.1	55.0	63.6	64.2
Medium Trucks:	62.3	54.3	47.9	46.3	54.8	55.0
Heavy Trucks:	66.9	54.9	45.9	47.1	56.6	56.8
Vehicle Noise:	**69.2**	**64.1**	**61.4**	**56.3**	**64.9**	**65.4**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	257
65 dBA	119
70 dBA	55
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	South of Sycamore		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	29240
Peak Hour Traffic:	**2924**
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

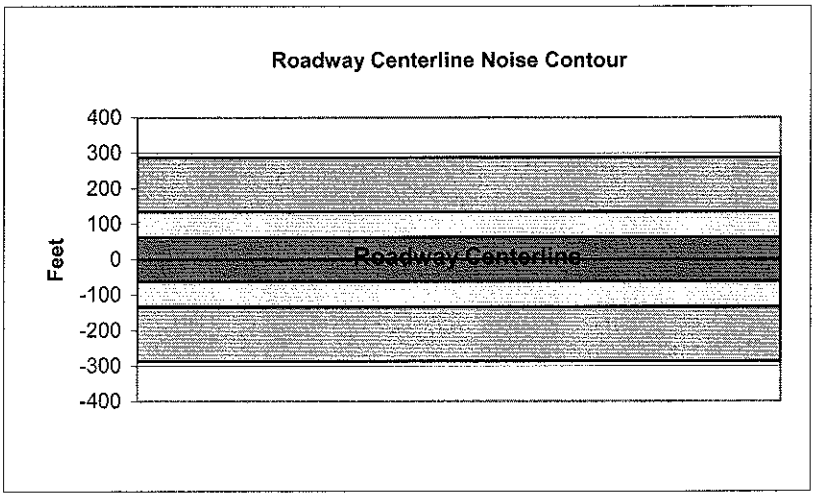
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.8	63.6	61.8	55.7	64.4	65.0
Medium Trucks:	63.1	55.0	48.6	47.1	55.6	55.8
Heavy Trucks:	67.6	55.7	46.6	47.8	57.4	57.5
Vehicle Noise:	**69.9**	**64.9**	**62.2**	**57.0**	**65.6**	**66.1**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	288
65 dBA	134
70 dBA	62
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	Between John Muir Parkway and Linus Pauling Drive		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	13030
Peak Hour Traffic:	1303
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

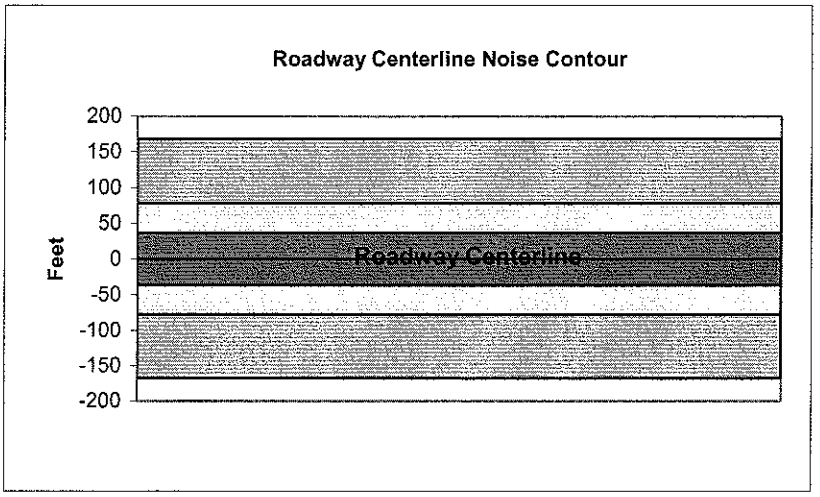
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.3	60.1	58.3	52.2	60.9	61.5
Medium Trucks:	59.6	51.5	45.1	43.6	52.0	52.3
Heavy Trucks:	64.1	52.2	43.1	44.3	53.9	54.0
Vehicle Noise:	**66.4**	**61.4**	**58.7**	**53.5**	**62.1**	**62.6**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	168
65 dBA	78
70 dBA	36
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	I-80		
Road Segment:	South of John Muir Parkway		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	216000
Peak Hour Traffic:	**21600**
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

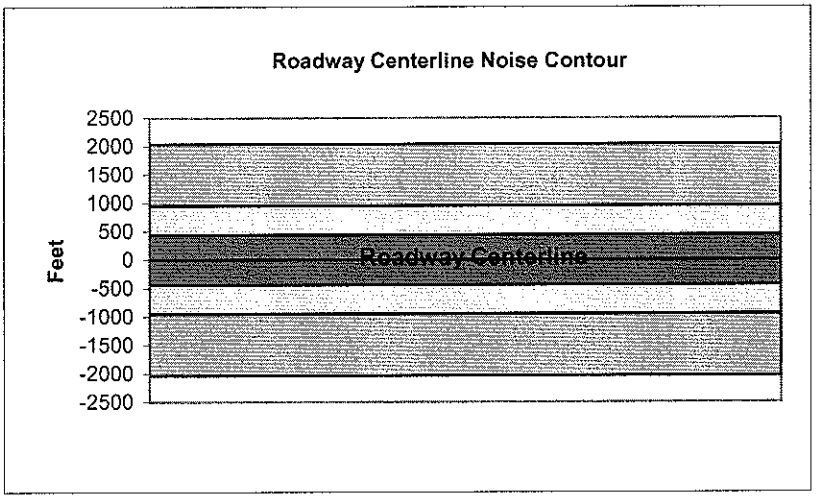
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	76.6	74.8	68.7	77.4	78.0
Medium Trucks:	74.0	65.9	59.5	58.0	66.5	66.7
Heavy Trucks:	77.5	65.6	56.5	57.7	66.7	66.9
Vehicle Noise:	**79.8**	**77.3**	**75.0**	**69.4**	**78.1**	**78.6**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	2042
65 dBA	948
70 dBA	440
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	I-80		
Road Segment:	North of John Muir Parkway		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	144000
Peak Hour Traffic:	14400
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

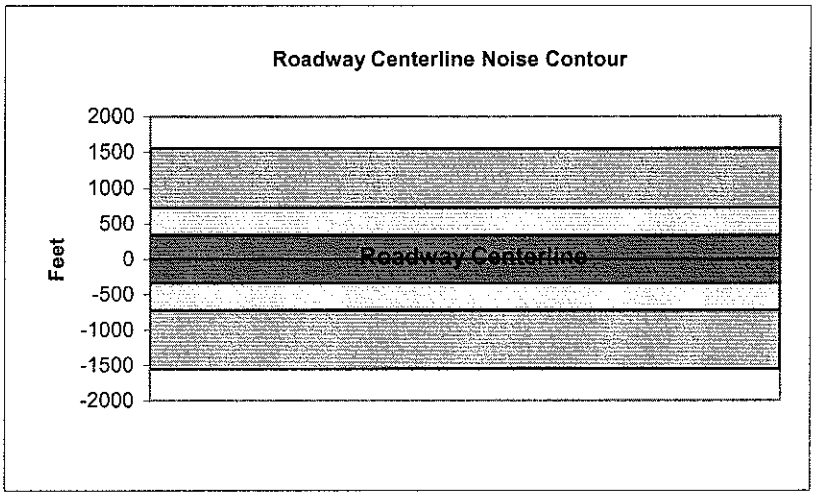
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	74.8	73.1	67.0	75.6	76.2
Medium Trucks:	72.2	64.2	57.8	56.2	64.7	64.9
Heavy Trucks:	75.7	63.8	54.7	56.0	65.0	65.1
Vehicle Noise:	**78.1**	**75.5**	**73.3**	**67.7**	**76.3**	**76.8**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	1556
65 dBA	722
70 dBA	335
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	John Muir Parkway		
Road Segment:	Between San Pablo Ave and I-80		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	23910
Peak Hour Traffic:	2391
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

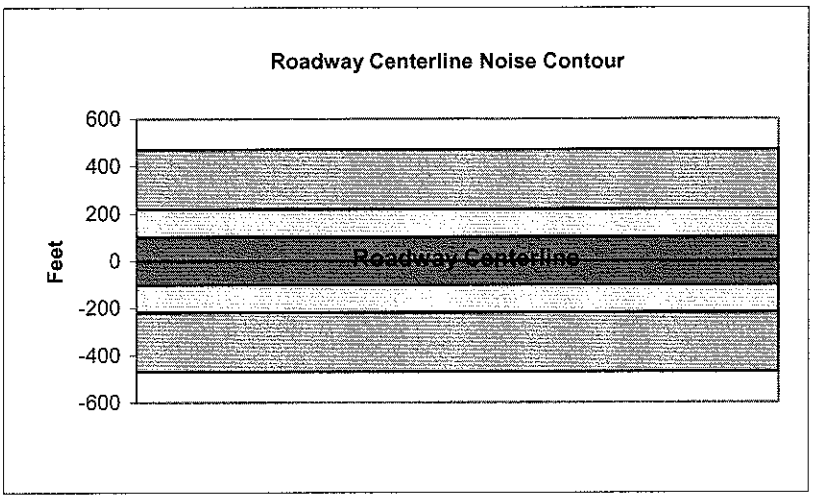
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.3	67.0	65.3	59.2	67.8	68.4
Medium Trucks:	64.4	56.4	50.0	48.4	56.9	57.1
Heavy Trucks:	67.9	56.0	46.9	48.2	57.2	57.3
Vehicle Noise:	**70.3**	**67.7**	**65.5**	**59.9**	**68.5**	**69.0**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	471
65 dBA	218
70 dBA	101
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	John Muir Parkway		
Road Segment:	Between I-80 and Willow Avenue		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	42,500
Peak Hour Traffic:	**4250**
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

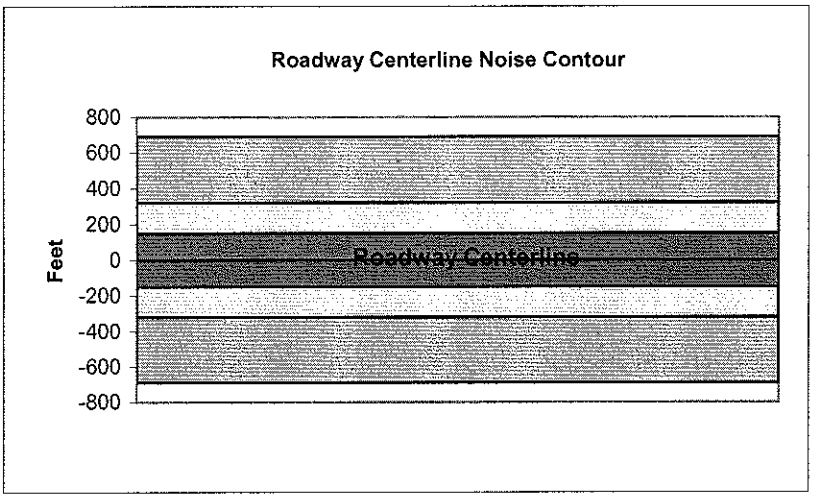
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.8	69.5	67.8	61.7	70.3	70.9
Medium Trucks:	66.9	58.9	52.5	50.9	59.4	59.6
Heavy Trucks:	70.4	58.5	49.4	50.7	59.7	59.8
Vehicle Noise:	**72.8**	**70.2**	**68.0**	**62.4**	**71.0**	**71.5**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	690
65 dBA	320
70 dBA	149
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Willow Avenue		
Road Segment:	Between I-80 and SB Ramp		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	15,450
Peak Hour Traffic:	1545
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

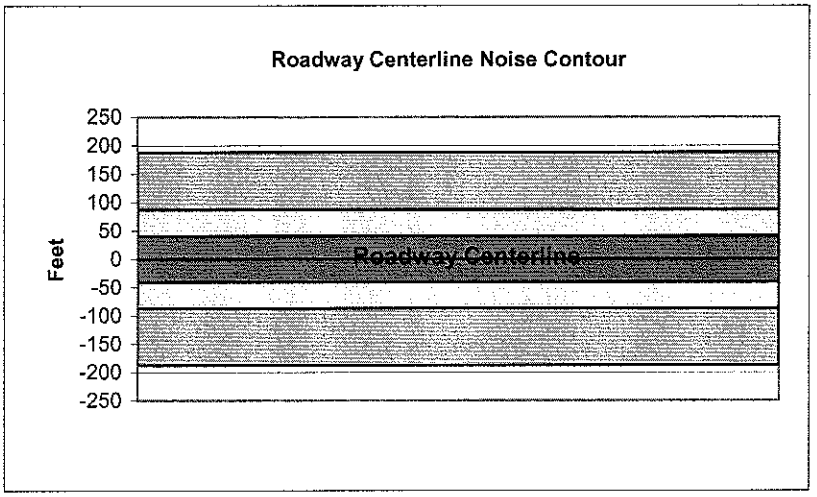
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.1	60.9	59.1	53.0	61.7	62.3
Medium Trucks:	60.4	52.3	45.9	44.4	52.9	53.1
Heavy Trucks:	64.9	53.0	43.9	45.1	54.7	54.8
Vehicle Noise:	**67.3**	**62.2**	**59.5**	**54.3**	**62.9**	**63.4**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	188
65 dBA	87
70 dBA	40
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Bayberry Avenue		
Road Segment:	Between I-80 SB Ramp and SR-4 EB Ramp		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	7,050
Peak Hour Traffic:	705
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

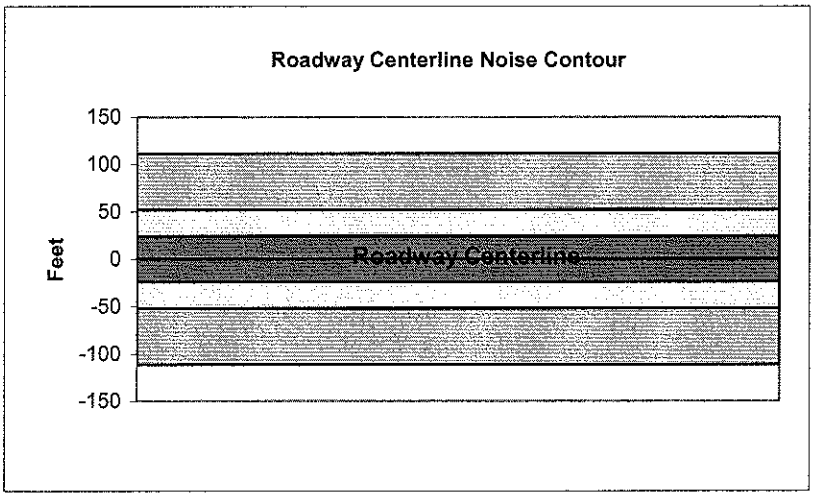
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	48.7	57.5	55.7	49.6	58.3	58.9
Medium Trucks:	57.0	48.9	42.5	41.0	49.5	49.7
Heavy Trucks:	61.5	49.6	40.5	41.7	51.3	51.4
Vehicle Noise:	**63.8**	**58.8**	**56.1**	**50.9**	**59.5**	**60.0**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	112
65 dBA	52
70 dBA	24
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Bayberry Avenue		
Road Segment:	Between Palm and SR-4		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	10,310
Peak Hour Traffic:	1031
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

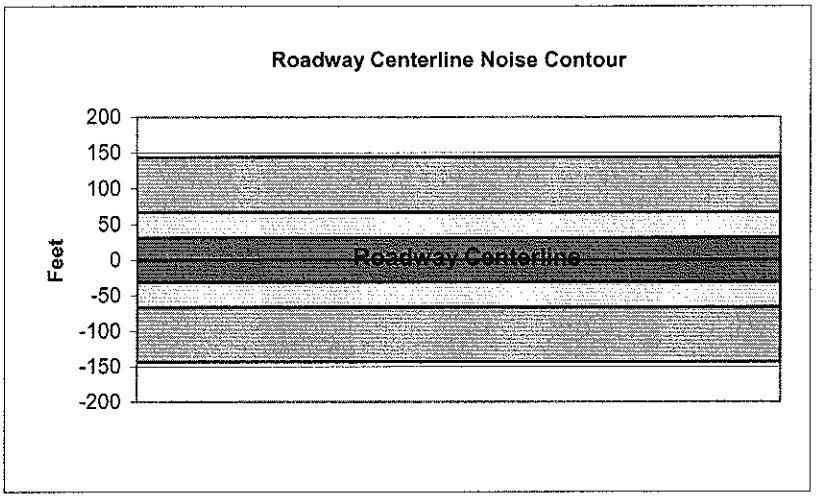
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.4	59.1	57.4	51.3	59.9	60.5
Medium Trucks:	58.6	50.6	44.2	42.6	51.1	51.3
Heavy Trucks:	63.2	51.2	42.2	43.4	52.9	53.1
Vehicle Noise:	**65.5**	**60.4**	**57.7**	**52.6**	**61.2**	**61.7**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	144
65 dBA	67
70 dBA	31
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Sycamore Avenue		
Road Segment:	West of San Pablo Ave		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	3,170
Peak Hour Traffic:	317
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

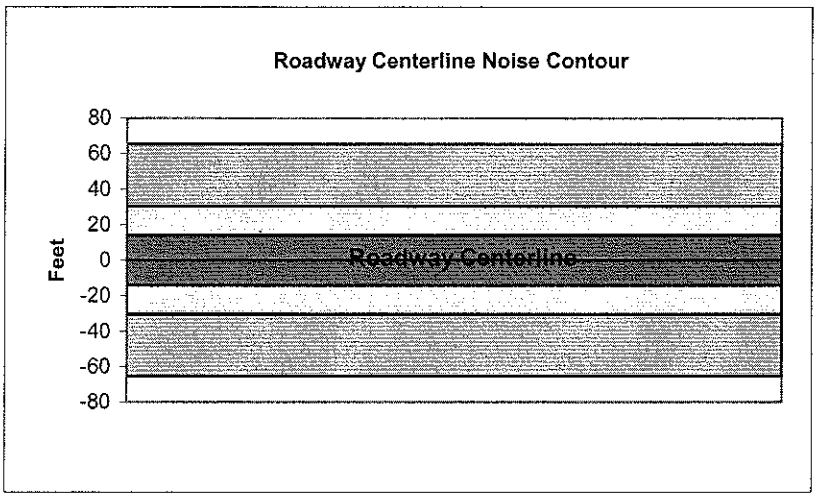
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	45.2	54.0	52.2	46.1	54.8	55.4
Medium Trucks:	53.5	45.4	39.1	37.5	46.0	46.2
Heavy Trucks:	58.0	46.1	37.0	38.3	47.8	47.9
Vehicle Noise:	**60.4**	**55.3**	**52.6**	**47.4**	**56.0**	**56.5**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	65
65 dBA	30
70 dBA	14
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	South of Sycamore		

PROJECT DATA			
Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)	
Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA	
Road Grade:	0
Average Daily Traffic:	25100
Peak Hour Traffic:	2510
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

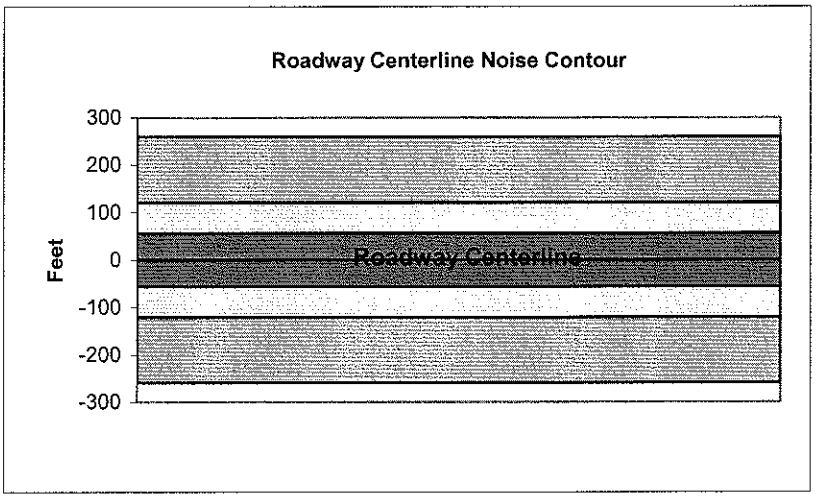
UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.1	62.9	61.1	55.1	63.7	64.3
Medium Trucks:	62.4	54.4	48.0	46.4	54.9	55.1
Heavy Trucks:	66.9	55.0	45.9	47.2	56.7	56.8
Vehicle Noise:	**69.3**	**64.2**	**61.5**	**56.4**	**64.9**	**65.4**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	260
65 dBA	121
70 dBA	56
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	South of Sycamore		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	31090
Peak Hour Traffic:	3109
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

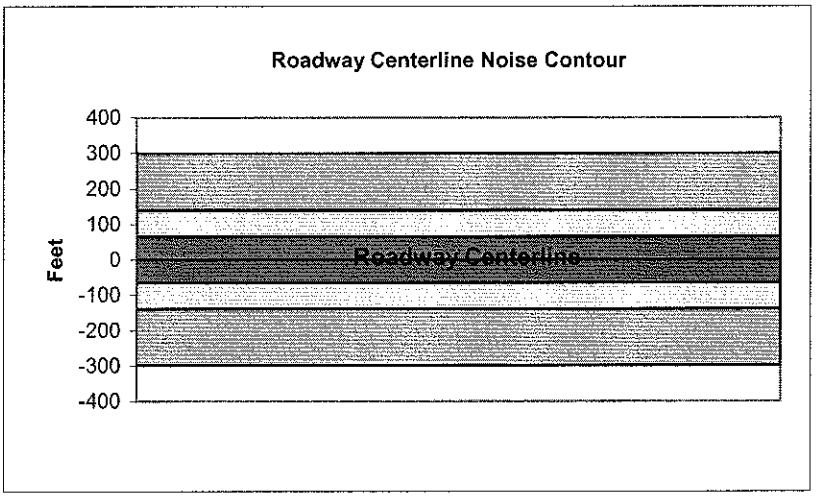
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.1	63.9	62.1	56.0	64.6	65.2
Medium Trucks:	63.4	55.3	48.9	47.3	55.8	56.1
Heavy Trucks:	67.9	55.9	46.9	48.1	57.6	57.8
Vehicle Noise:	**70.2**	**65.2**	**62.4**	**57.3**	**65.9**	**66.4**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	300
65 dBA	139
70 dBA	65
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	Between John Muir Parkway and Linus Pauling Drive		

PROJECT DATA

Centerline Dist to Barrier:	0
Barrier (0=wall, 1= berm):	0
Receiver Barrier Dist:	0
Centerline Dist. To Observer:	100
Barrier Near Lane CL Dist:	0
Barrier Far lane CL Dist:	0
Pad Elevation:	0.5
Road Elevation:	0
Observer Height (above grade):	5.5
Barrier Height:	0
Rt View: 90	Lft View: -90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	13720
Peak Hour Traffic:	1372
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

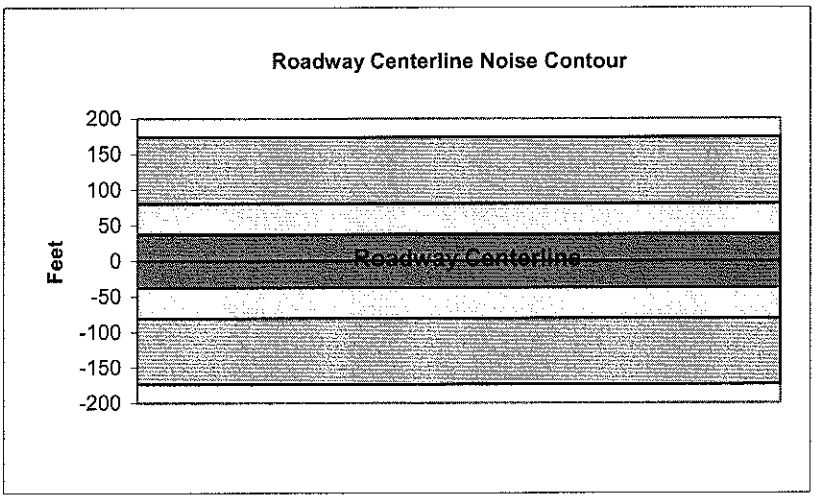
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.5	60.3	58.5	52.4	61.1	61.7
Medium Trucks:	59.8	51.7	45.4	43.8	52.3	52.5
Heavy Trucks:	64.3	52.4	43.3	44.5	54.1	54.2
Vehicle Noise:	**66.7**	**61.6**	**58.9**	**53.7**	**62.3**	**62.8**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	174
65 dBA	81
70 dBA	37
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	I-80		
Road Segment:	South of John Muir Parkway		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	217000
Peak Hour Traffic:	21700
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

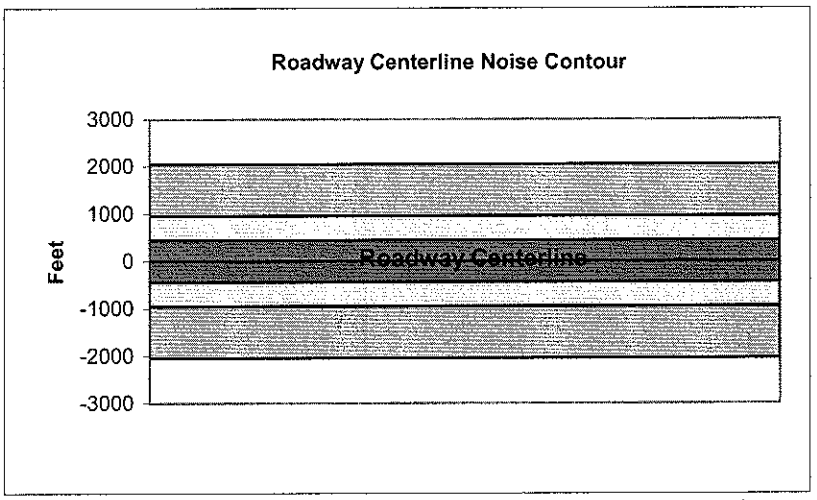
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	76.6	74.8	68.8	77.4	78.0
Medium Trucks:	74.0	65.9	59.6	58.0	66.5	66.7
Heavy Trucks:	77.5	65.6	56.5	57.7	66.8	66.9
Vehicle Noise:	**79.8**	**77.3**	**75.0**	**69.5**	**78.1**	**78.6**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	2048
65 dBA	951
70 dBA	441
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	I-80		
Road Segment:	North of John Muir Parkway		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	145000
Peak Hour Traffic:	14500
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

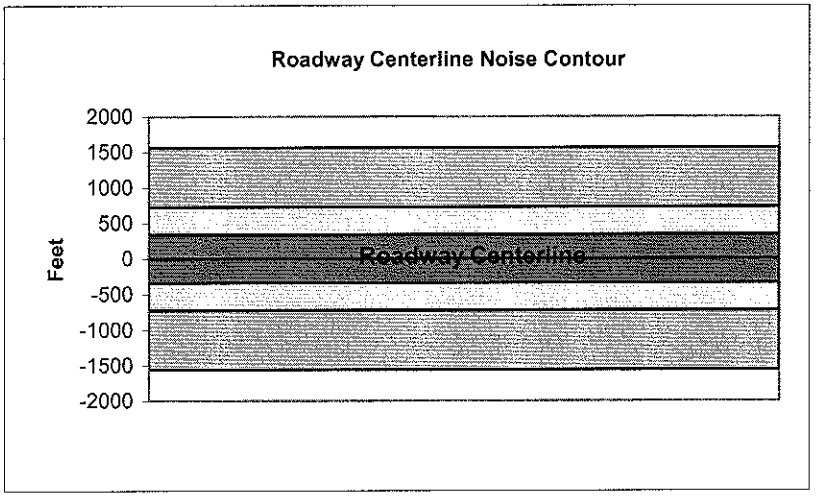
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	74.9	73.1	67.0	75.7	76.3
Medium Trucks:	72.3	64.2	57.8	56.2	64.7	65.0
Heavy Trucks:	75.8	63.8	54.8	56.0	65.0	65.1
Vehicle Noise:	**78.1**	**75.6**	**73.3**	**67.7**	**76.3**	**76.9**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	1563
65 dBA	725
70 dBA	337
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	John Muir Parkway		
Road Segment:	Between San Pablo Ave and I-80		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	25020
Peak Hour Traffic:	**2502**
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

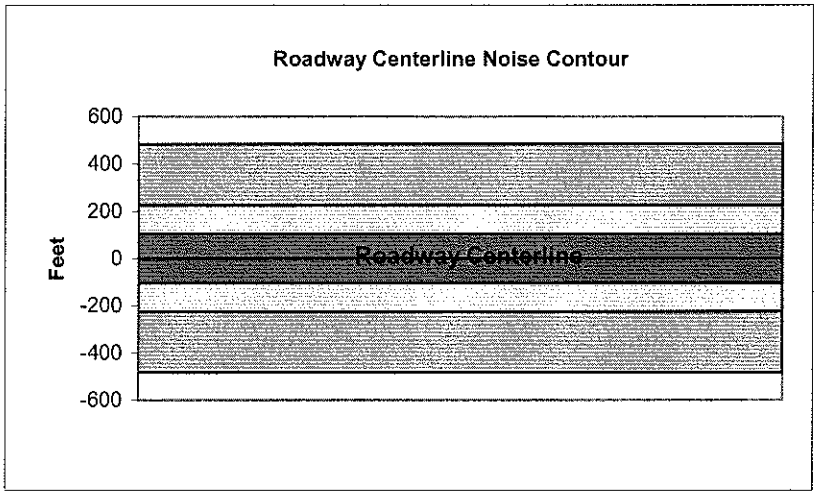
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.5	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	64.6	56.6	50.2	48.6	57.1	57.3
Heavy Trucks:	68.1	56.2	47.1	48.4	57.4	57.5
Vehicle Noise:	**70.5**	**67.9**	**65.7**	**60.1**	**68.7**	**69.2**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	485
65 dBA	225
70 dBA	104
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	John Muir Parkway		
Road Segment:	Between I-80 and Willow Avenue		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	43,000
Peak Hour Traffic:	**4300**
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

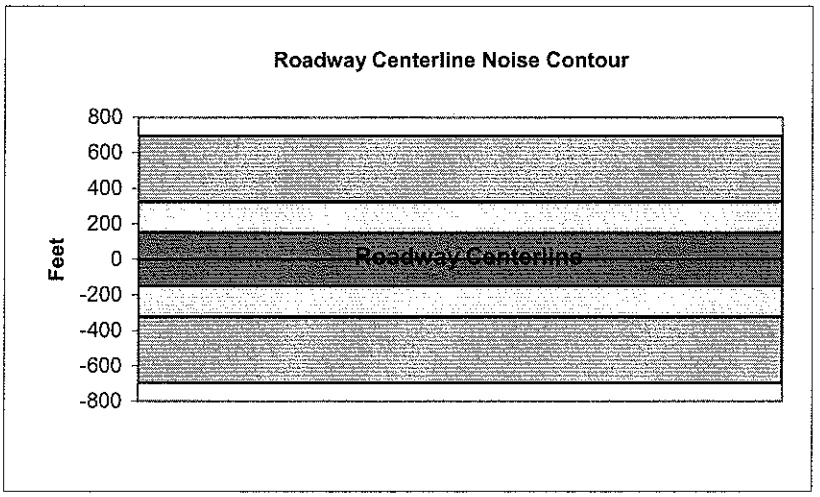
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.8	69.6	67.8	61.7	70.4	71.0
Medium Trucks:	67.0	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	70.5	58.5	49.5	50.7	59.7	59.9
Vehicle Noise:	**72.8**	**70.3**	**68.0**	**62.4**	**71.0**	**71.6**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	696
65 dBA	323
70 dBA	150
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Willow Avenue		
Road Segment:	Between I-80 and SB Ramp		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	16,210
Peak Hour Traffic:	1621
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

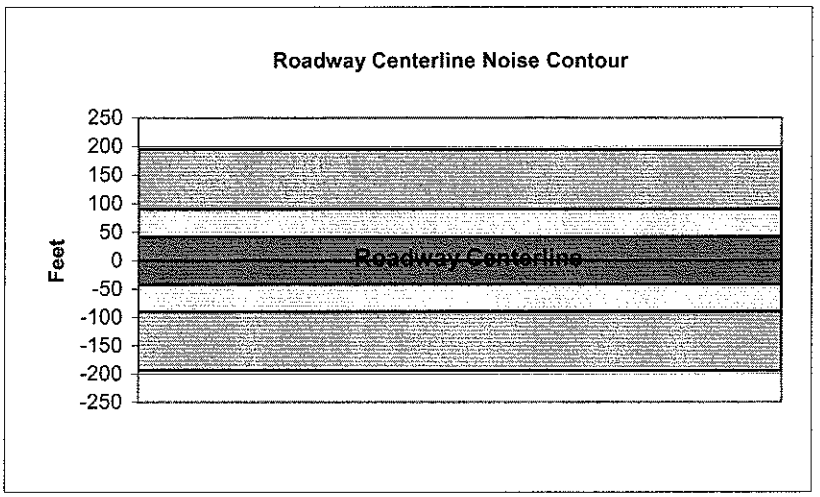
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.3	61.1	59.3	53.2	61.9	62.5
Medium Trucks:	60.6	52.5	46.2	44.6	53.1	53.3
Heavy Trucks:	65.1	53.2	44.1	45.3	54.9	55.0
Vehicle Noise:	**67.5**	**62.4**	**59.7**	**54.5**	**63.1**	**63.6**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	194
65 dBA	90
70 dBA	42
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Bayberry Avenue		
Road Segment:	Between I-80 SB Ramp and SR-4 EB Ramp		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	7,180
Peak Hour Traffic:	718
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

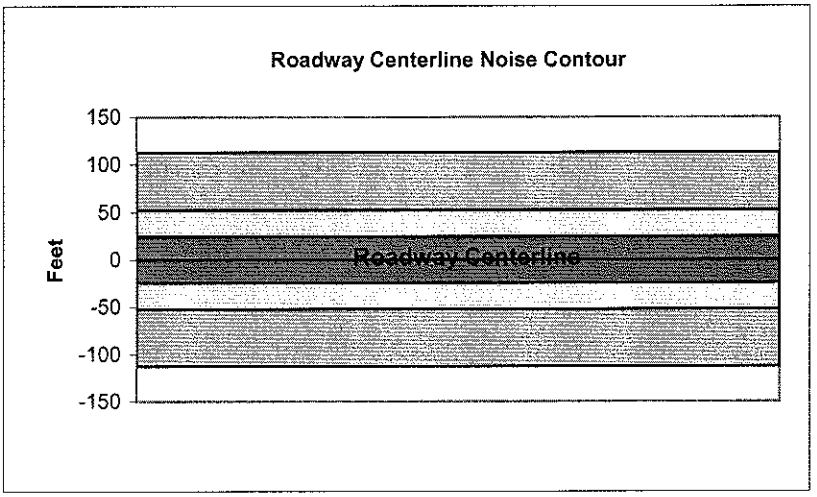
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	48.8	57.6	55.8	49.7	58.3	59.0
Medium Trucks:	57.1	49.0	42.6	41.0	49.5	49.8
Heavy Trucks:	61.6	49.6	40.6	41.8	51.4	51.5
Vehicle Noise:	**63.9**	**58.9**	**56.1**	**51.0**	**59.6**	**60.1**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	113
65 dBA	52
70 dBA	24
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Bayberry Avenue		
Road Segment:	Between Palm and SR-4		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	10,310
Peak Hour Traffic:	1031
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

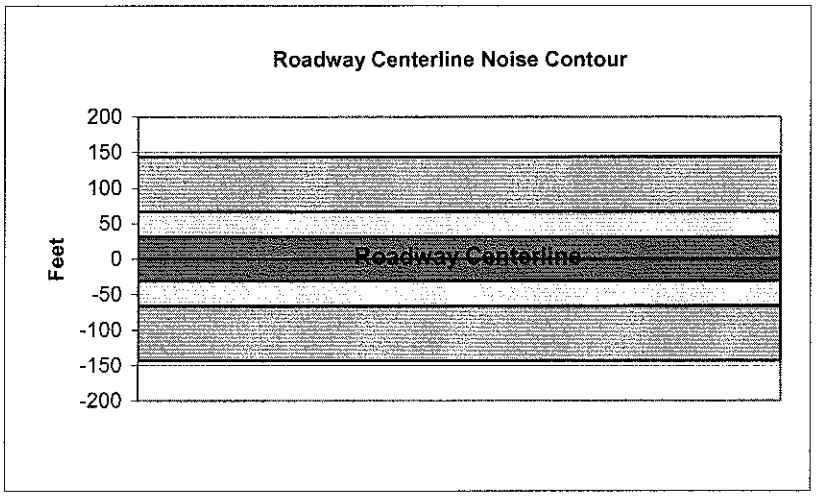
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.4	59.1	57.4	51.3	59.9	60.5
Medium Trucks:	58.6	50.6	44.2	42.6	51.1	51.3
Heavy Trucks:	63.2	51.2	42.2	43.4	52.9	53.1
Vehicle Noise:	**65.5**	**60.4**	**57.7**	**52.6**	**61.2**	**61.7**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	144
65 dBA	67
70 dBA	31
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Sycamore Avenue		
Road Segment:	West of San Pablo Ave		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	3,860
Peak Hour Traffic:	386
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

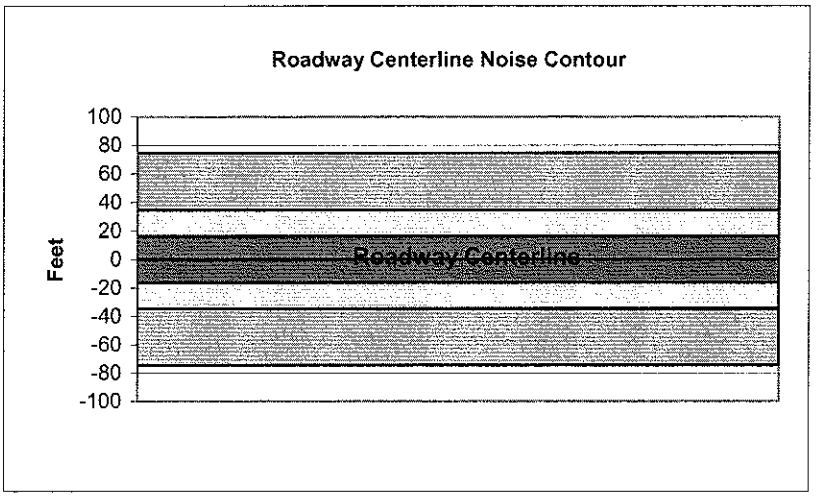
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	46.1	54.9	53.1	47.0	55.7	56.3
Medium Trucks:	54.4	46.3	39.9	38.3	46.8	47.1
Heavy Trucks:	58.9	47.0	37.9	39.1	48.7	48.8
Vehicle Noise:	**61.2**	**56.2**	**53.5**	**48.3**	**56.9**	**57.4**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	75
65 dBA	35
70 dBA	16
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	Between John Muir Parkway and Linus Pauling Drive		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	12900
Peak Hour Traffic:	1290
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

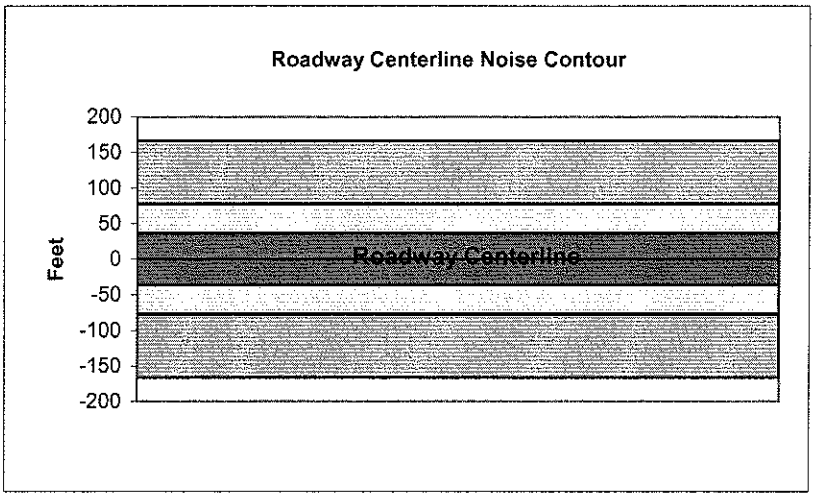
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.3	60.0	58.2	52.2	60.8	61.4
Medium Trucks:	59.5	51.5	45.1	43.5	52.0	52.2
Heavy Trucks:	64.1	52.1	43.1	44.3	53.8	54.0
Vehicle Noise:	**66.4**	**61.3**	**58.6**	**53.5**	**62.1**	**62.6**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	167
65 dBA	77
70 dBA	36
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	I-80		
Road Segment:	South of John Muir Parkway		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	217000
Peak Hour Traffic:	**21700**
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

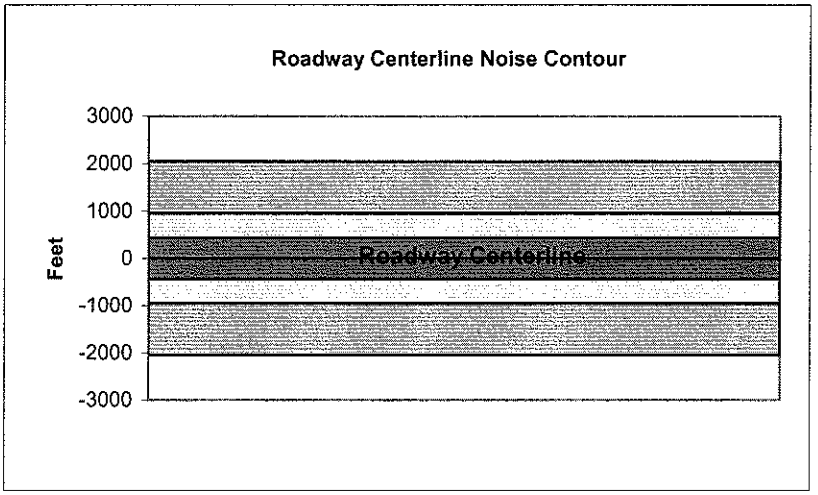
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.8	76.6	74.8	68.8	77.4	78.0
Medium Trucks:	74.0	65.9	59.6	58.0	66.5	66.7
Heavy Trucks:	77.5	65.6	56.5	57.7	66.8	66.9
Vehicle Noise:	**79.8**	**77.3**	**75.0**	**69.5**	**78.1**	**78.6**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	2048
65 dBA	951
70 dBA	441
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	I-80		
Road Segment:	North of John Muir Parkway		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	145000
Peak Hour Traffic:	**14500**
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

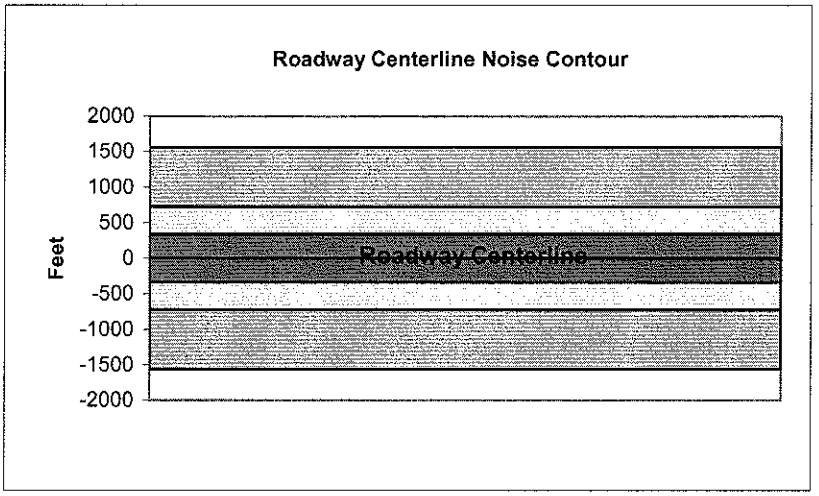
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	66.1	74.9	73.1	67.0	75.7	76.3
Medium Trucks:	72.3	64.2	57.8	56.2	64.7	65.0
Heavy Trucks:	75.8	63.8	54.8	56.0	65.0	65.1
Vehicle Noise:	**78.1**	**75.6**	**73.3**	**67.7**	**76.3**	**76.9**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	1563
65 dBA	725
70 dBA	337
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	John Muir Parkway		
Road Segment:	Between San Pablo Ave and I-80		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	25020
Peak Hour Traffic:	**2502**
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

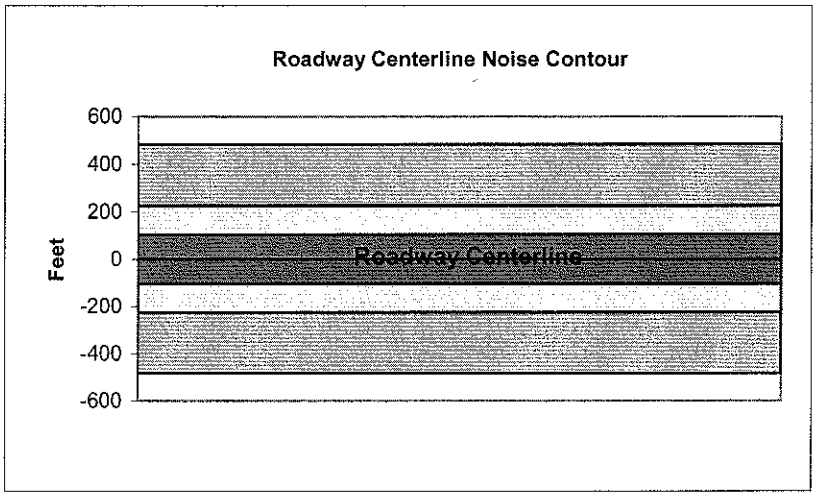
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.5	67.2	65.5	59.4	68.0	68.6
Medium Trucks:	64.6	56.6	50.2	48.6	57.1	57.3
Heavy Trucks:	68.1	56.2	47.1	48.4	57.4	57.5
Vehicle Noise:	**70.5**	**67.9**	**65.7**	**60.1**	**68.7**	**69.2**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	485
65 dBA	225
70 dBA	104
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	John Muir Parkway		
Road Segment:	Between I-80 and Willow Avenue		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	43,000
Peak Hour Traffic:	**4300**
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

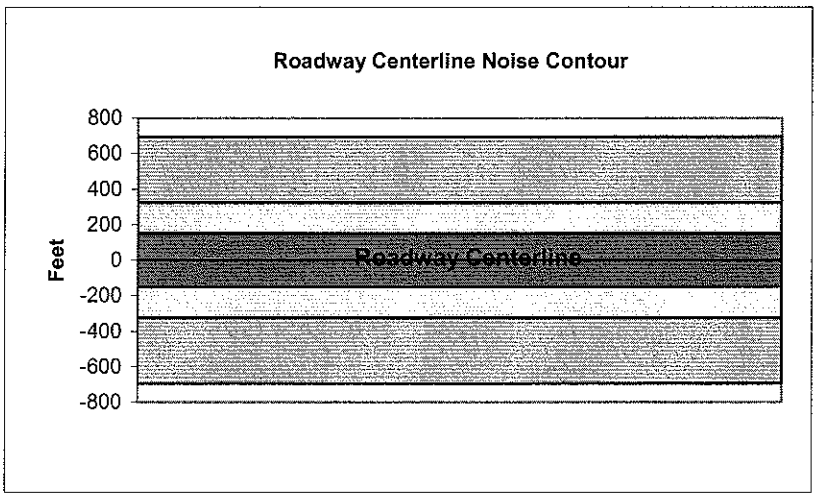
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.8	69.6	67.8	61.7	70.4	71.0
Medium Trucks:	67.0	58.9	52.5	51.0	59.4	59.7
Heavy Trucks:	70.5	58.5	49.5	50.7	59.7	59.9
Vehicle Noise:	**72.8**	**70.3**	**68.0**	**62.4**	**71.0**	**71.6**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	696
65 dBA	323
70 dBA	150
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Willow Avenue		
Road Segment:	Between I-80 and SB Ramp		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver-Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	11,580
Peak Hour Traffic:	1158
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

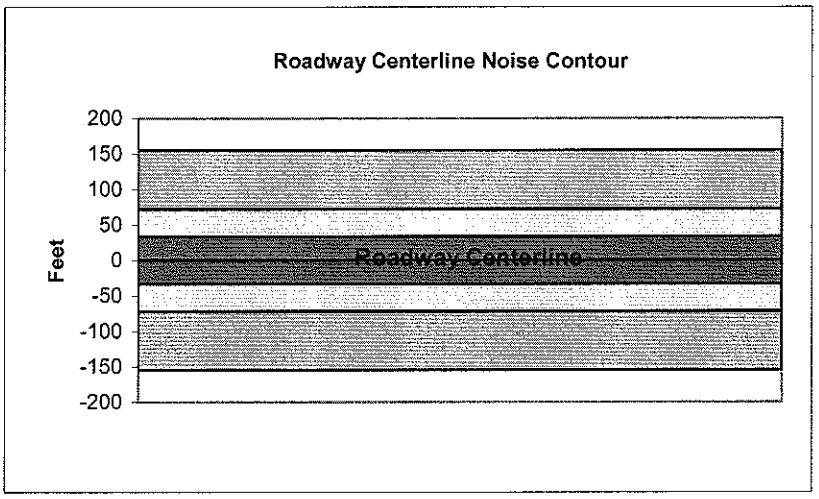
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.9	59.6	57.9	51.8	60.4	61.0
Medium Trucks:	59.1	51.1	44.7	43.1	51.6	51.8
Heavy Trucks:	63.7	51.7	42.7	43.9	53.4	53.6
Vehicle Noise:	**66.0**	**60.9**	**58.2**	**53.1**	**61.7**	**62.2**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	155
65 dBA	72
70 dBA	33
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Bayberry Avenue		
Road Segment:	Between I-80 SB Ramp and SR-4 EB Ramp		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	8,950
Peak Hour Traffic:	895
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

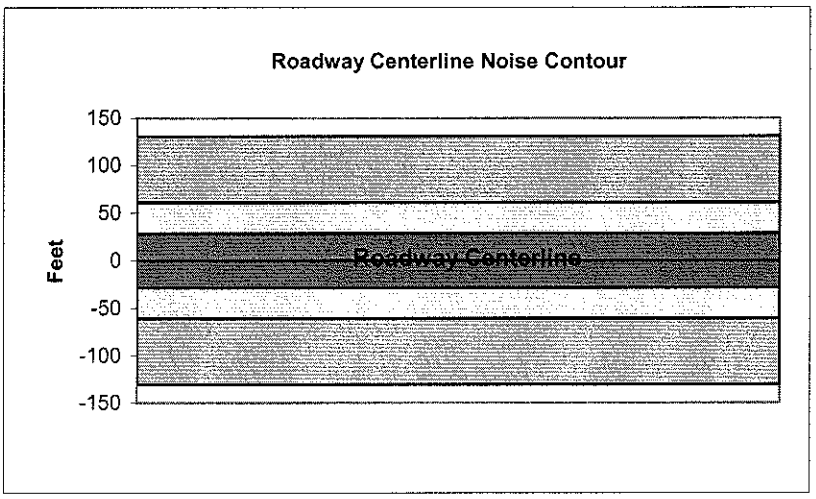
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	49.7	58.5	56.7	50.7	59.3	59.9
Medium Trucks:	58.0	50.0	43.6	42.0	50.5	50.7
Heavy Trucks:	62.5	50.6	41.5	42.8	52.3	52.4
Vehicle Noise:	**64.9**	**59.8**	**57.1**	**52.0**	**60.5**	**61.0**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	131
65 dBA	61
70 dBA	28
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Bayberry Avenue		
Road Segment:	Between Palm and SR-4		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	17,680
Peak Hour Traffic:	1768
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

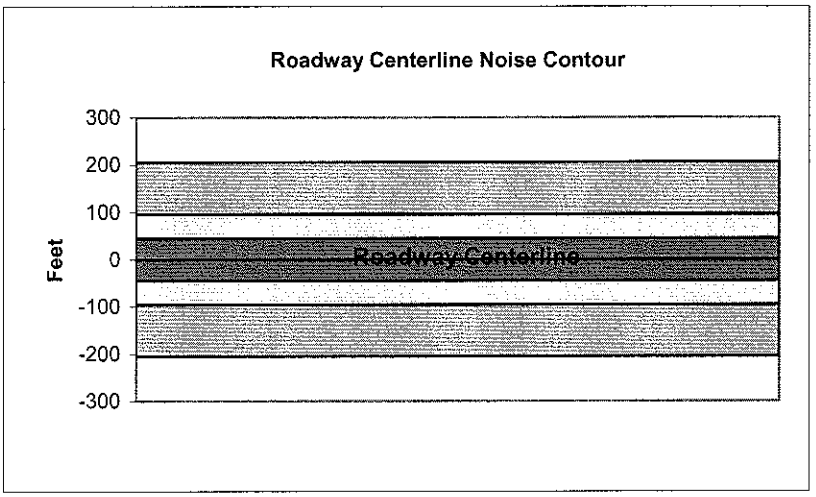
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.7	61.5	59.7	53.6	62.3	62.9
Medium Trucks:	61.0	52.9	46.5	45.0	53.4	53.7
Heavy Trucks:	65.5	53.6	44.5	45.7	55.3	55.4
Vehicle Noise:	**67.8**	**62.8**	**60.1**	**54.9**	**63.5**	**64.0**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	206
65 dBA	96
70 dBA	44
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Sycamore Avenue		
Road Segment:	West of San Pablo Ave		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	3,860
Peak Hour Traffic:	386
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

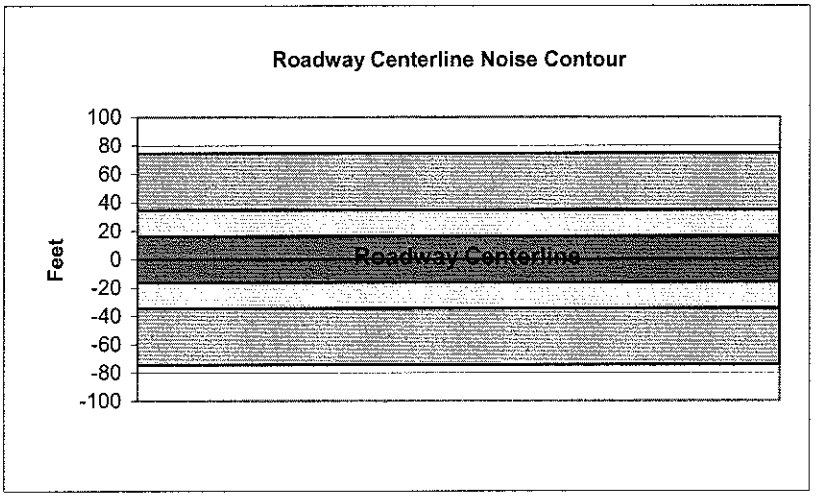
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	46.1	54.9	53.1	47.0	55.7	56.3
Medium Trucks:	54.4	46.3	39.9	38.3	46.8	47.1
Heavy Trucks:	58.9	47.0	37.9	39.1	48.7	48.8
Vehicle Noise:	**61.2**	**56.2**	**53.5**	**48.3**	**56.9**	**57.4**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	75
65 dBA	35
70 dBA	16
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	South of Sycamore		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	25090
Peak Hour Traffic:	**2509**
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

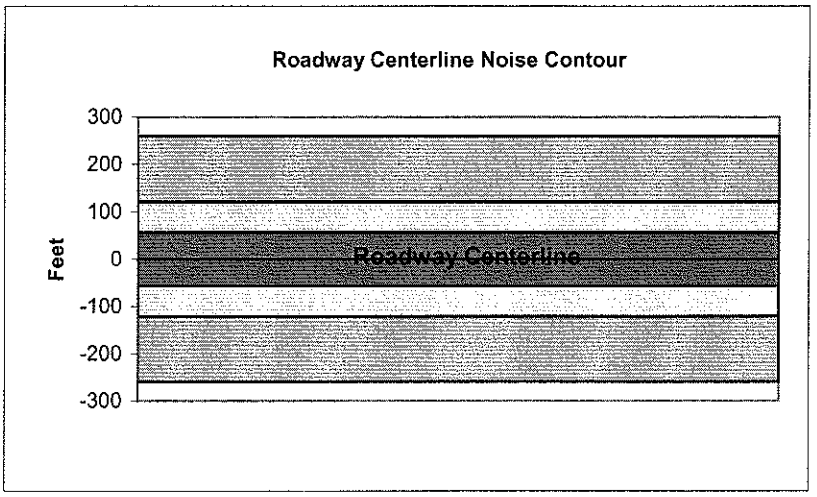
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.1	62.9	61.1	55.1	63.7	64.3
Medium Trucks:	62.4	54.4	48.0	46.4	54.9	55.1
Heavy Trucks:	66.9	55.0	45.9	47.2	56.7	56.8
Vehicle Noise:	**69.3**	**64.2**	**61.5**	**56.4**	**64.9**	**65.4**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	260
65 dBA	121
70 dBA	56
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	South of Sycamore		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	30260
Peak Hour Traffic:	**3026**
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

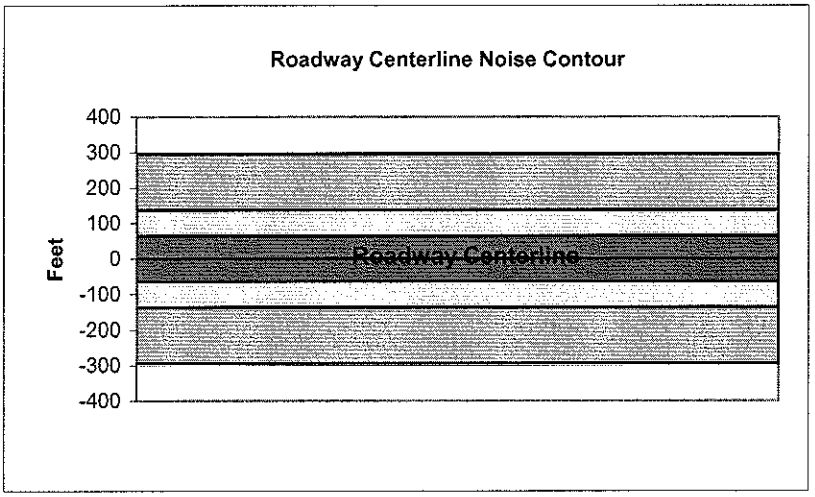
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.0	63.7	62.0	55.9	64.5	65.1
Medium Trucks:	63.2	55.2	48.8	47.2	55.7	55.9
Heavy Trucks:	67.8	55.8	46.8	48.0	57.5	57.7
Vehicle Noise:	**70.1**	**65.0**	**62.3**	**57.2**	**65.8**	**66.3**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	295
65 dBA	137
70 dBA	63
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	I-80		
Road Segment:	South of John Muir Parkway		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	288000
Peak Hour Traffic:	**28800**
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

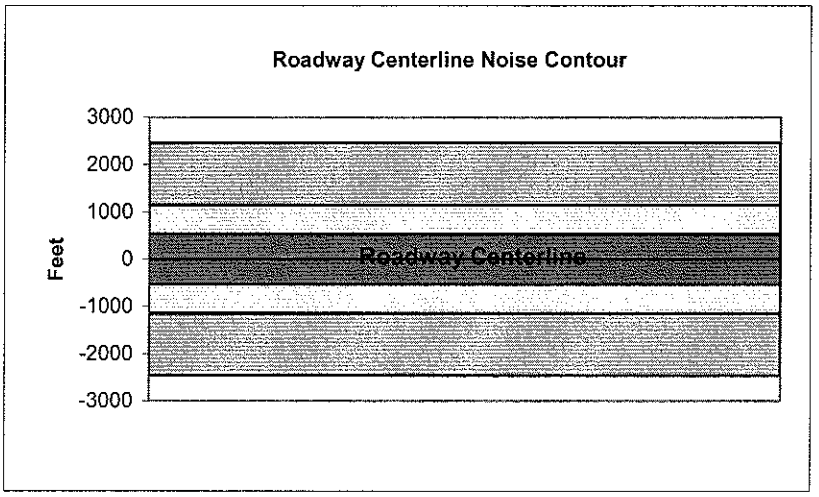
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	77.9	76.1	70.0	78.6	79.2
Medium Trucks:	75.2	67.2	60.8	59.2	67.7	67.9
Heavy Trucks:	78.7	66.8	57.7	59.0	68.0	68.1
Vehicle Noise:	**81.1**	**78.6**	**76.3**	**70.7**	**79.3**	**79.8**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	2470
65 dBA	1146
70 dBA	532
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	I-80		
Road Segment:	North of John Muir Parkway		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	193000
Peak Hour Traffic:	19300
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

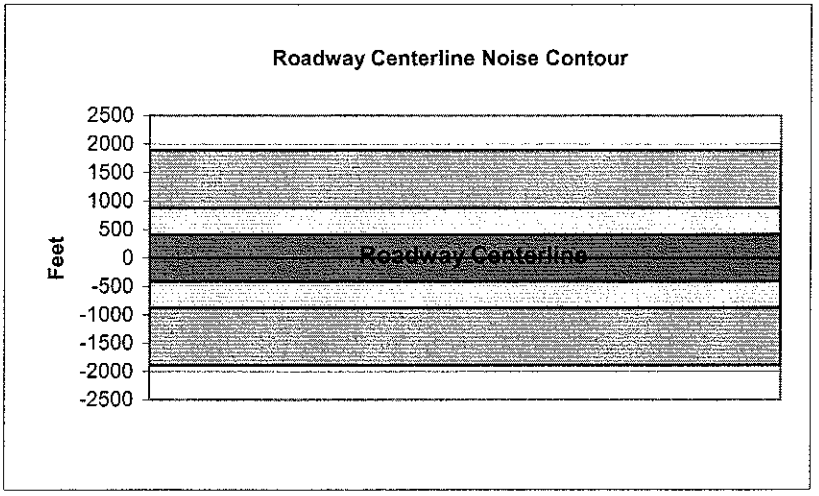
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.3	76.1	74.3	68.2	76.9	77.5
Medium Trucks:	73.5	65.4	59.1	57.5	66.0	66.2
Heavy Trucks:	77.0	65.1	56.0	57.2	66.2	66.4
Vehicle Noise:	**79.3**	**76.8**	**74.5**	**68.9**	**77.6**	**78.1**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	1894
65 dBA	879
70 dBA	408
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	John Muir Parkway		
Road Segment:	Between San Pablo Ave and I-80		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	36500
Peak Hour Traffic:	3650
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

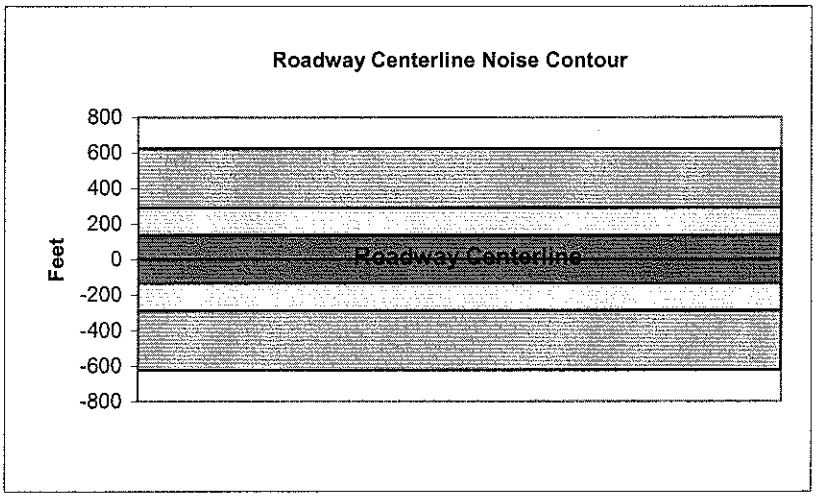
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.1	68.9	67.1	61.0	69.7	70.3
Medium Trucks:	66.3	58.2	51.8	50.2	58.7	59.0
Heavy Trucks:	69.8	57.8	48.8	50.0	59.0	59.1
Vehicle Noise:	**72.1**	**69.6**	**67.3**	**61.7**	**70.3**	**70.9**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	623
65 dBA	289
70 dBA	134
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	John Muir Parkway		
Road Segment:	Between I-80 and Willow Avenue		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	65,000
Peak Hour Traffic:	6500
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

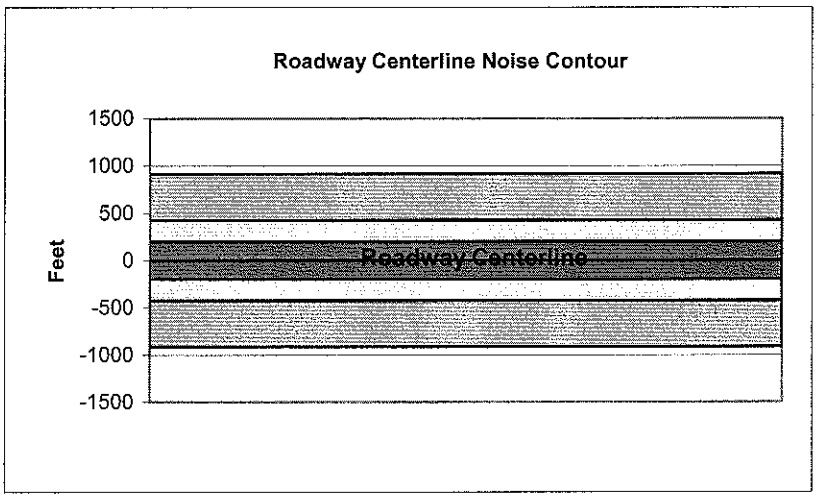
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.6	71.4	69.6	63.5	72.2	72.8
Medium Trucks:	68.8	60.7	54.3	52.8	61.2	61.5
Heavy Trucks:	72.3	60.3	51.3	52.5	61.5	61.6
Vehicle Noise:	**74.6**	**72.1**	**69.8**	**64.2**	**72.8**	**73.4**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	916
65 dBA	425
70 dBA	197
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Willow Avenue		
Road Segment:	Between I-80 and SB Ramp		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	17,300
Peak Hour Traffic:	1730
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

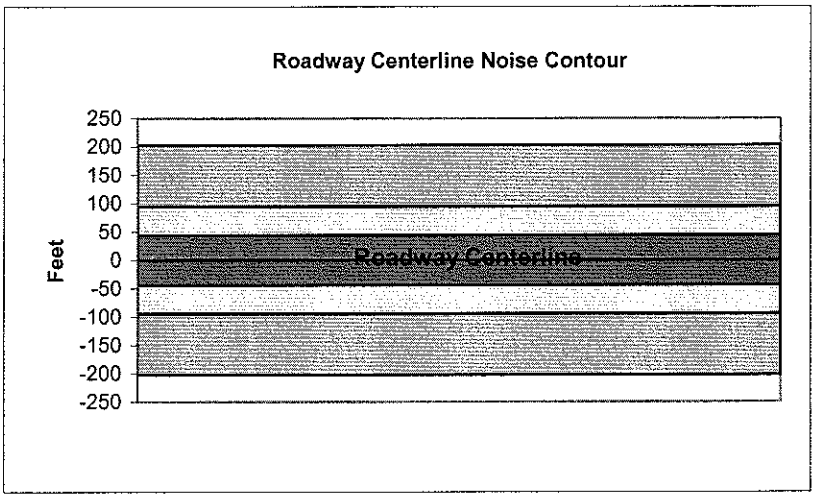
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.6	61.4	59.6	53.5	62.2	62.8
Medium Trucks:	60.9	52.8	46.4	44.9	53.4	53.6
Heavy Trucks:	65.4	53.5	44.4	45.6	55.2	55.3
Vehicle Noise:	**67.7**	**62.7**	**60.0**	**54.8**	**63.4**	**63.9**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	203
65 dBA	94
70 dBA	44
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Bayberry Avenue		
Road Segment:	Between I-80 SB Ramp and SR-4 EB Ramp		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	16,000
Peak Hour Traffic:	1600
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

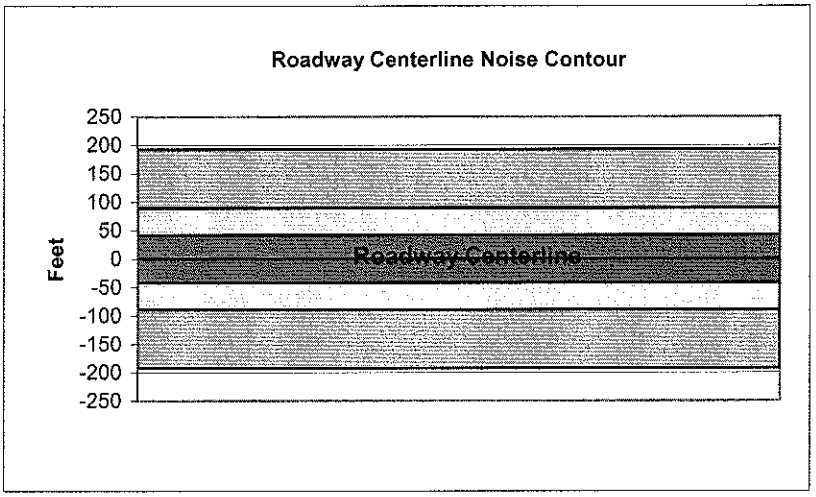
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.3	61.0	59.3	53.2	61.8	62.4
Medium Trucks:	60.5	52.5	46.1	44.5	53.0	53.2
Heavy Trucks:	65.1	53.1	44.1	45.3	54.8	55.0
Vehicle Noise:	**67.4**	**62.4**	**59.6**	**54.5**	**63.1**	**63.6**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	193
65 dBA	89
70 dBA	42
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Bayberry Avenue		
Road Segment:	Between Palm and SR-4		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	25,900
Peak Hour Traffic:	**2590**
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

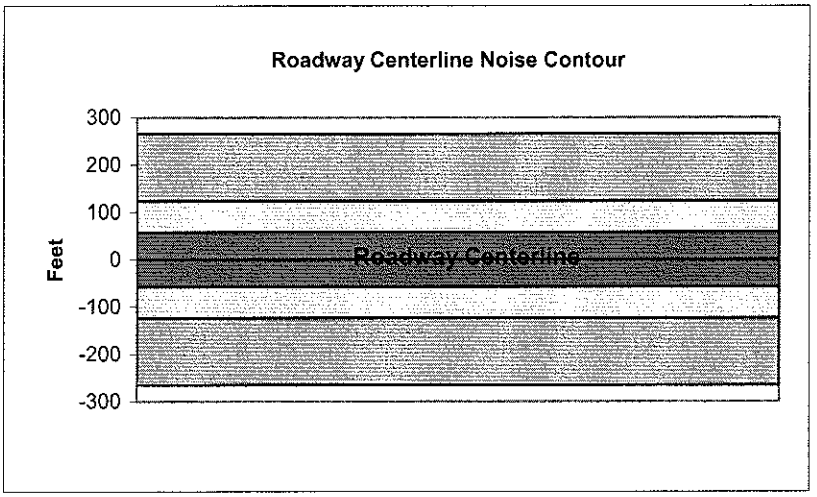
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.4	63.1	61.4	55.3	63.9	64.5
Medium Trucks:	62.6	54.6	48.2	46.6	55.1	55.3
Heavy Trucks:	67.2	55.2	46.2	47.4	56.9	57.1
Vehicle Noise:	**69.5**	**64.4**	**61.7**	**56.6**	**65.2**	**65.7**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	265
65 dBA	123
70 dBA	57
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Sycamore Avenue		
Road Segment:	West of San Pablo Ave		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	4,292
Peak Hour Traffic:	**429.2**
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

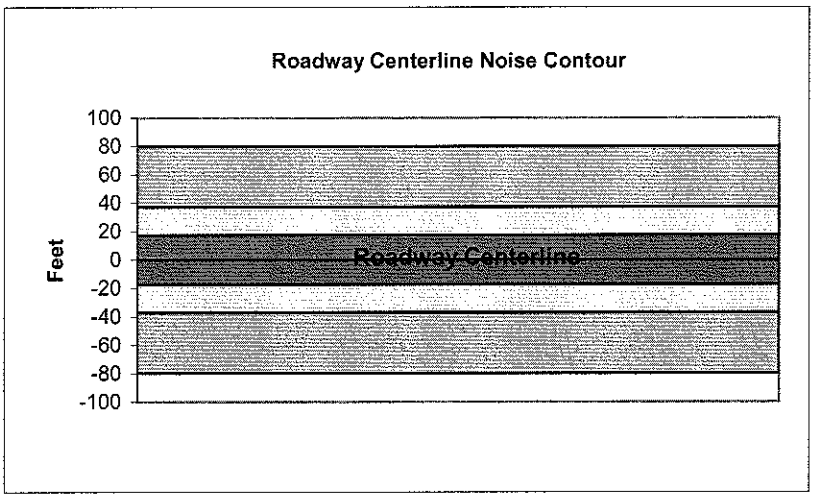
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	46.6	55.3	53.5	47.5	56.1	56.7
Medium Trucks:	54.8	46.8	40.4	38.8	47.3	47.5
Heavy Trucks:	59.4	47.4	38.4	39.6	49.1	49.2
Vehicle Noise:	**61.7**	**56.6**	**53.9**	**48.8**	**57.4**	**57.9**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	80
65 dBA	37
70 dBA	17
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	South of Sycamore		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	34600
Peak Hour Traffic:	3460
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

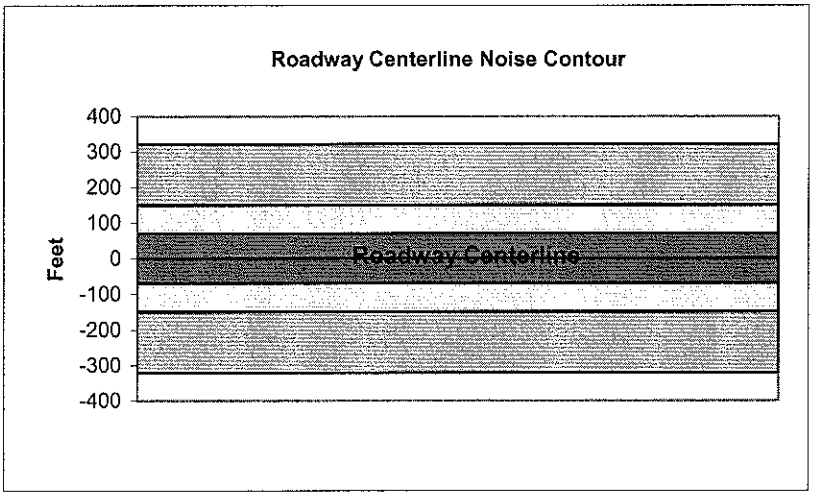
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.5	64.3	62.5	56.4	65.1	65.7
Medium Trucks:	63.8	55.8	49.4	47.8	56.3	56.5
Heavy Trucks:	68.3	56.4	47.3	48.6	58.1	58.2
Vehicle Noise:	**70.7**	**65.6**	**62.9**	**57.7**	**66.3**	**66.8**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	322
65 dBA	149
70 dBA	69
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	South of Sycamore		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	39900
Peak Hour Traffic:	3990
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

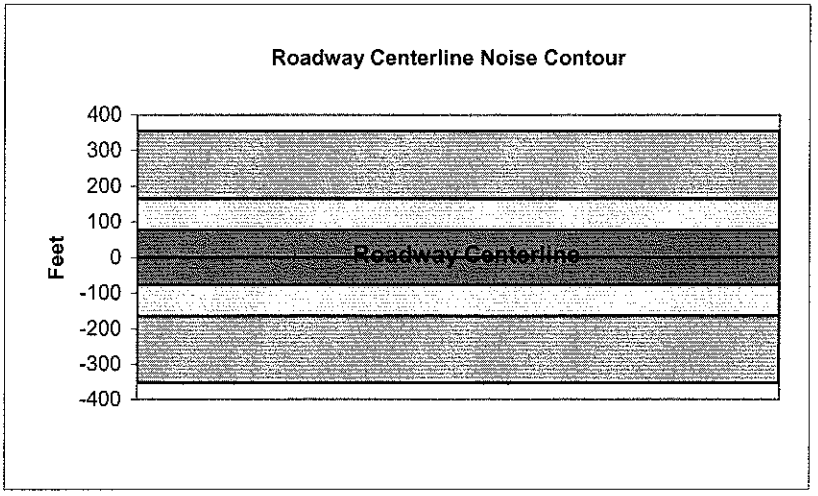
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.2	64.9	63.2	57.1	65.7	66.3
Medium Trucks:	64.4	56.4	50.0	48.4	56.9	57.1
Heavy Trucks:	69.0	57.0	48.0	49.2	58.7	58.9
Vehicle Noise:	**71.3**	**66.2**	**63.5**	**58.4**	**67.0**	**67.5**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	354
65 dBA	164
70 dBA	76
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	Between John Muir Parkway and Linus Pauling Drive		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	20300
Peak Hour Traffic:	2030
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

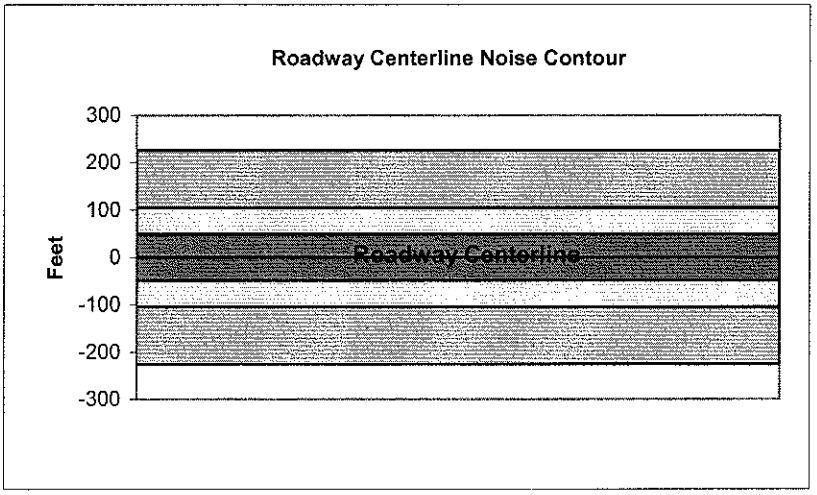
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.2	62.0	60.2	54.1	62.8	63.4
Medium Trucks:	61.5	53.4	47.1	45.5	54.0	54.2
Heavy Trucks:	66.0	54.1	45.0	46.2	55.8	55.9
Vehicle Noise:	**68.4**	**63.3**	**60.6**	**55.4**	**64.0**	**64.5**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	226
65 dBA	105
70 dBA	49
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	Between John Muir Parkway and Linus Pauling Drive		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	20400
Peak Hour Traffic:	**2040**
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

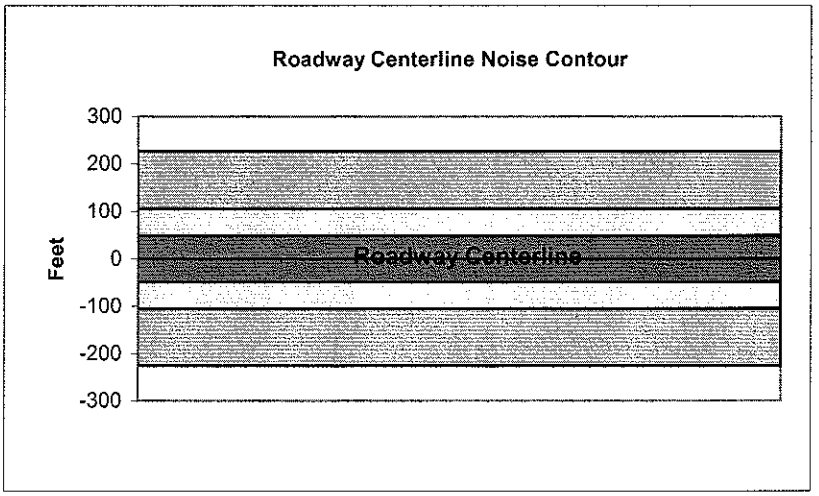
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.2	62.0	60.2	54.2	62.8	63.4
Medium Trucks:	61.5	53.5	47.1	45.5	54.0	54.2
Heavy Trucks:	66.0	54.1	45.0	46.3	55.8	55.9
Vehicle Noise:	**68.4**	**63.3**	**60.6**	**55.5**	**64.0**	**64.5**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	226
65 dBA	105
70 dBA	49
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	I-80		
Road Segment:	South of John Muir Parkway		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	290000
Peak Hour Traffic:	**29000**
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

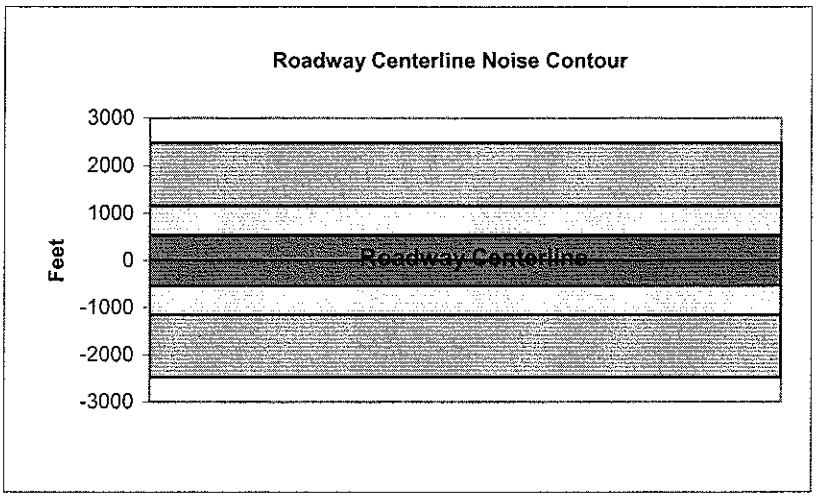
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	69.1	77.9	76.1	70.0	78.7	79.3
Medium Trucks:	75.3	67.2	60.8	59.2	67.7	68.0
Heavy Trucks:	78.8	66.8	57.8	59.0	68.0	68.1
Vehicle Noise:	**81.1**	**78.6**	**76.3**	**70.7**	**79.3**	**79.9**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	2481
65 dBA	1152
70 dBA	535
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	I-80		
Road Segment:	North of John Muir Parkway		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	194000
Peak Hour Traffic:	19400
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

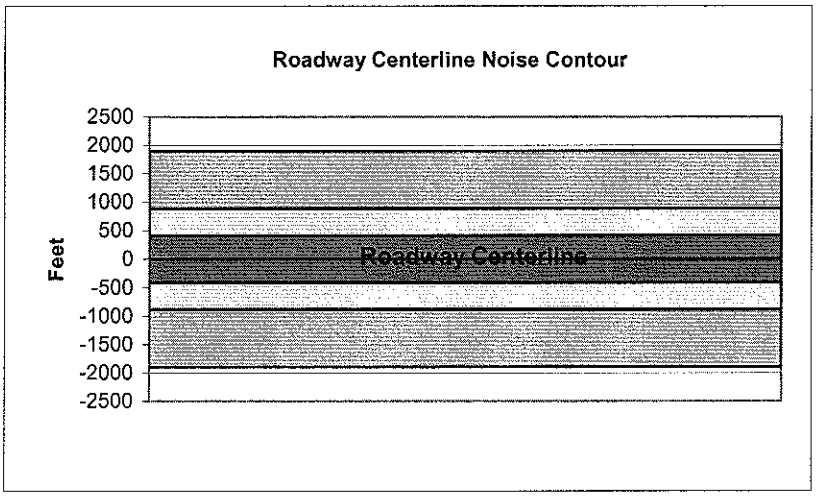
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	67.4	76.1	74.3	68.3	76.9	77.5
Medium Trucks:	73.5	65.5	59.1	57.5	66.0	66.2
Heavy Trucks:	77.0	65.1	56.0	57.2	66.3	66.4
Vehicle Noise:	**79.4**	**76.8**	**74.5**	**69.0**	**77.6**	**78.1**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	1899
65 dBA	882
70 dBA	409
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	John Muir Parkway		
Road Segment:	Between San Pablo Ave and I-80		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	37300
Peak Hour Traffic:	3730
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

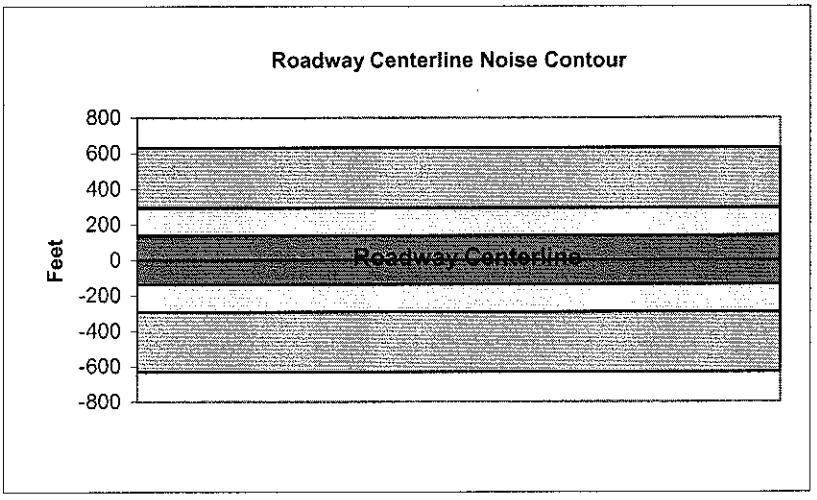
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	69.0	67.2	61.1	69.8	70.4
Medium Trucks:	66.4	58.3	51.9	50.3	58.8	59.1
Heavy Trucks:	69.9	57.9	48.9	50.1	59.1	59.2
Vehicle Noise:	**72.2**	**69.7**	**67.4**	**61.8**	**70.4**	**71.0**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	633
65 dBA	294
70 dBA	136
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	John Muir Parkway		
Road Segment:	Between I-80 and Willow Avenue		

PROJECT DATA

Centerline Dist to Barrier:	0
Barrier (0=wall, 1= berm):	0
Receiver Barrier Dist:	0
Centerline Dist. To Observer:	100
Barrier Near Lane CL Dist:	0
Barrier Far lane CL Dist:	0
Pad Elevation:	0.5
Road Elevation:	0
Observer Height (above grade):	5.5
Barrier Height:	0
Rt View: 90	Lft View: -90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	66,000
Peak Hour Traffic:	6600
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

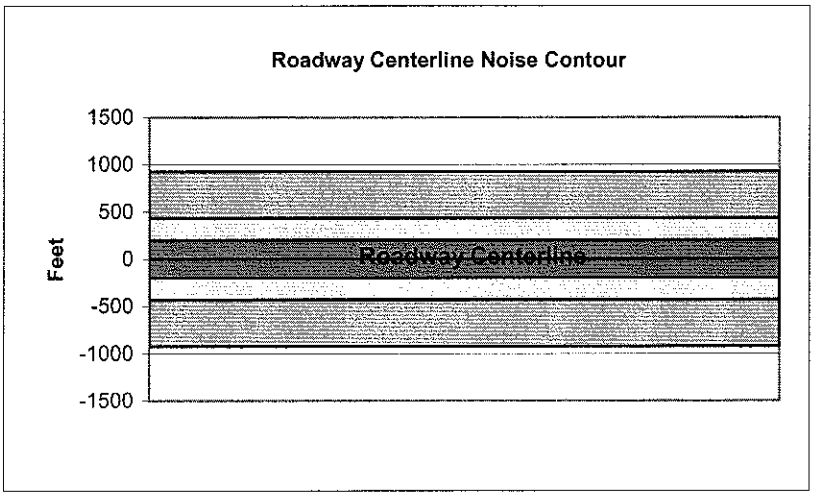
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	62.7	71.5	69.7	63.6	72.2	72.8
Medium Trucks:	68.8	60.8	54.4	52.8	61.3	61.5
Heavy Trucks:	72.3	60.4	51.3	52.6	61.6	61.7
Vehicle Noise:	**74.7**	**72.2**	**69.9**	**64.3**	**72.9**	**73.5**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	926
65 dBA	430
70 dBA	200
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Willow Avenue		
Road Segment:	Between I-80 and SB Ramp		

PROJECT DATA			
Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)	
Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA	
Road Grade:	0
Average Daily Traffic:	19,700
Peak Hour Traffic:	1970
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

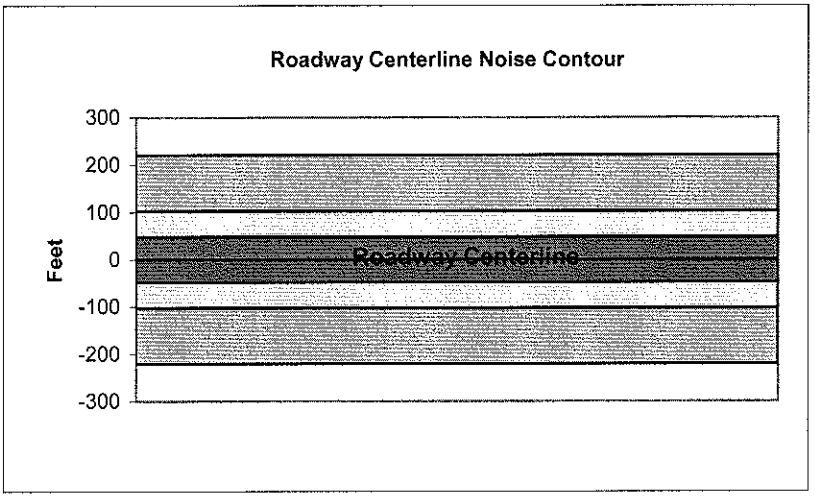
UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.2	62.0	60.2	54.1	62.7	63.3
Medium Trucks:	61.4	53.4	47.0	45.4	53.9	54.1
Heavy Trucks:	66.0	54.0	45.0	46.2	55.7	55.9
Vehicle Noise:	**68.3**	**63.3**	**60.5**	**55.4**	**64.0**	**64.5**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	221
65 dBA	103
70 dBA	48
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Bayberry Avenue		
Road Segment:	Between I-80 SB Ramp and SR-4 EB Ramp		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	17,100
Peak Hour Traffic:	1710
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

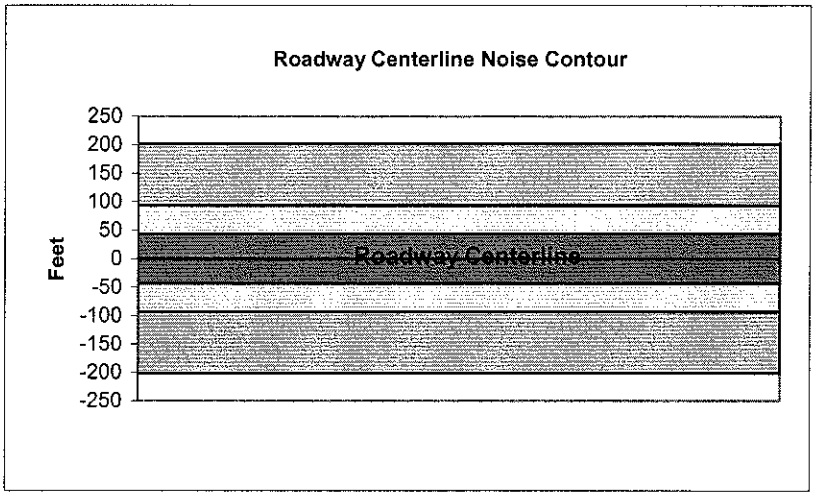
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.6	61.3	59.5	53.5	62.1	62.7
Medium Trucks:	60.8	52.8	46.4	44.8	53.3	53.5
Heavy Trucks:	65.4	53.4	44.4	45.6	55.1	55.3
Vehicle Noise:	**67.7**	**62.6**	**59.9**	**54.8**	**63.4**	**63.9**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	201
65 dBA	93
70 dBA	43
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Bayberry Avenue		
Road Segment:	Between Palm and SR-4		

PROJECT DATA			
Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)	
Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA	
Road Grade:	0
Average Daily Traffic:	27,000
Peak Hour Traffic:	2700
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

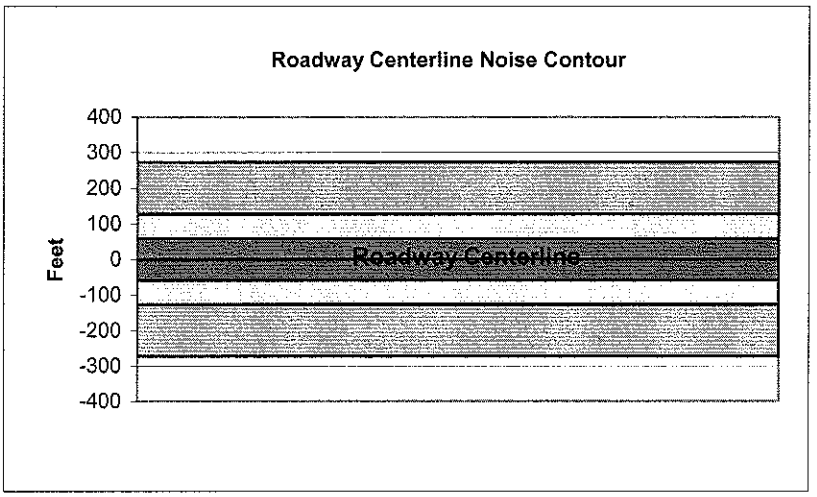
UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.5	63.3	61.5	55.5	64.1	64.7
Medium Trucks:	62.8	54.8	48.4	46.8	55.3	55.5
Heavy Trucks:	67.3	55.4	46.3	47.6	57.1	57.2
Vehicle Noise:	**69.7**	**64.6**	**61.9**	**56.8**	**65.3**	**65.8**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	273
65 dBA	127
70 dBA	59
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Sycamore Avenue		
Road Segment:	West of San Pablo Ave		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	5,243
Peak Hour Traffic:	**524.3**
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

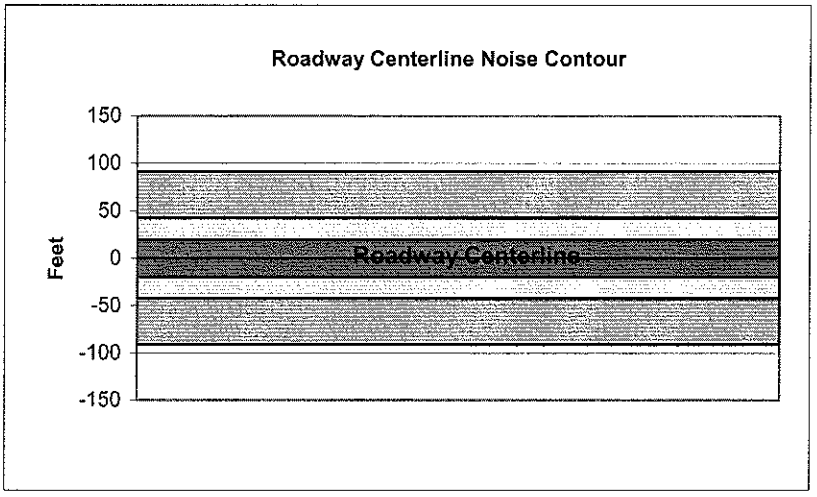
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	47.4	56.2	54.4	48.3	57.0	57.6
Medium Trucks:	55.7	47.6	41.3	39.7	48.2	48.4
Heavy Trucks:	60.2	48.3	39.2	40.4	50.0	50.1
Vehicle Noise:	**62.6**	**57.5**	**54.8**	**49.6**	**58.2**	**58.7**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	92
65 dBA	42
70 dBA	20
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	South of Sycamore		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	35800
Peak Hour Traffic:	3580
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

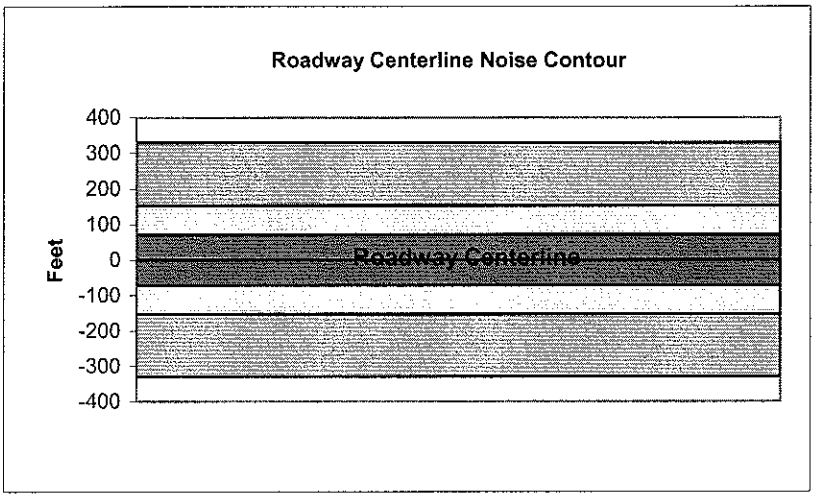
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.7	64.5	62.7	56.6	65.2	65.9
Medium Trucks:	64.0	55.9	49.5	47.9	56.4	56.7
Heavy Trucks:	68.5	56.5	47.5	48.7	58.3	58.4
Vehicle Noise:	**70.8**	**65.8**	**63.0**	**57.9**	**66.5**	**67.0**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	330
65 dBA	153
70 dBA	71
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	South of Sycamore		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	100		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	41100
Peak Hour Traffic:	4110
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

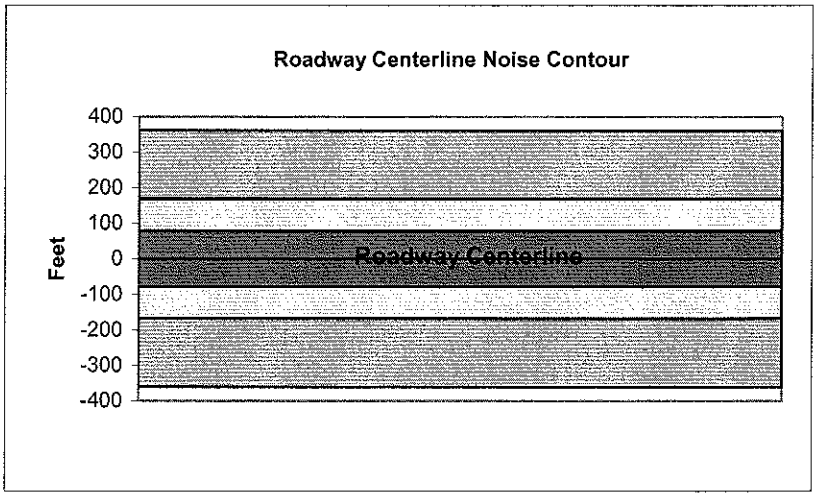
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.3	65.1	63.3	57.2	65.8	66.5
Medium Trucks:	64.6	56.5	50.1	48.5	57.0	57.3
Heavy Trucks:	69.1	57.1	48.1	49.3	58.9	59.0
Vehicle Noise:	**71.4**	**66.4**	**63.6**	**58.5**	**67.1**	**67.6**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	361
65 dBA	168
70 dBA	78
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	John Muir Parkway		
Road Segment:	Between San Pablo Ave and I-80		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	150		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	25020
Peak Hour Traffic:	2502
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

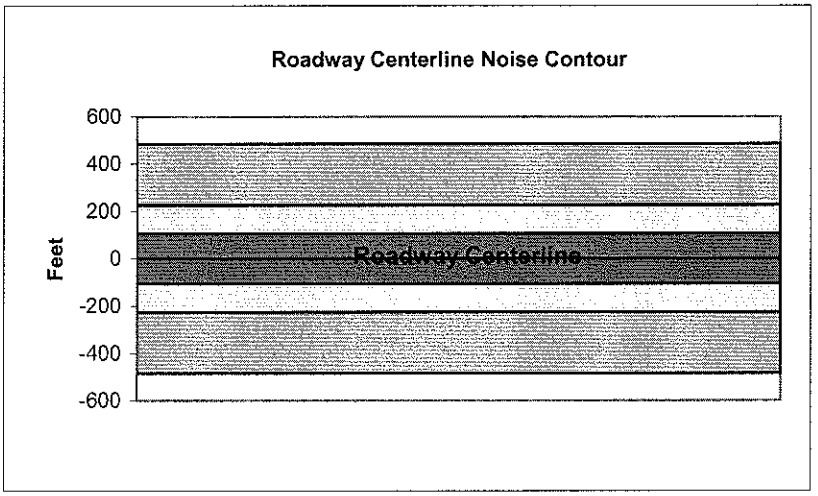
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.1	64.9	63.1	57.0	65.7	66.3
Medium Trucks:	62.3	54.2	47.9	46.3	54.8	55.0
Heavy Trucks:	65.8	53.9	44.8	46.0	55.0	55.2
Vehicle Noise:	**68.1**	**65.6**	**63.3**	**57.7**	**66.4**	**66.9**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	485
65 dBA	225
70 dBA	104
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Sycamore Avenue		
Road Segment:	West of San Pablo Ave		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	80		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	3,860
Peak Hour Traffic:	386
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

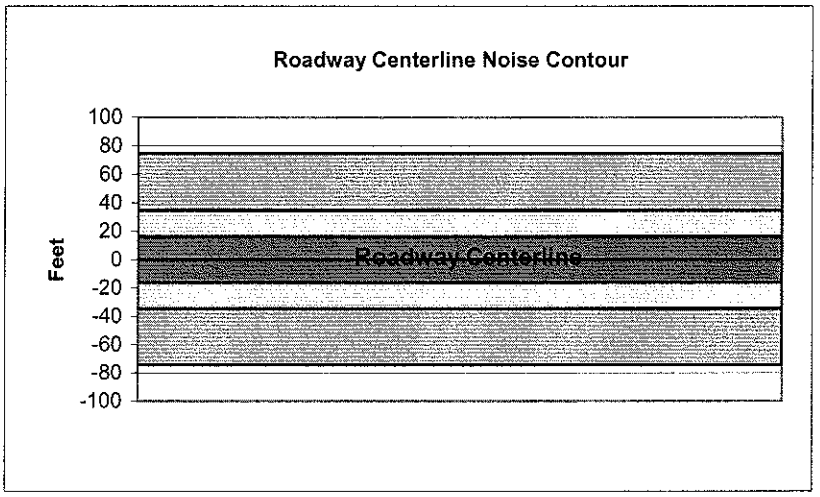
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	47.4	56.2	54.4	48.3	57.0	57.6
Medium Trucks:	55.7	47.6	41.2	39.6	48.1	48.4
Heavy Trucks:	60.2	48.3	39.2	40.4	50.0	50.1
Vehicle Noise:	**62.5**	**57.5**	**54.8**	**49.6**	**58.2**	**58.7**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	75
65 dBA	35
70 dBA	16
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	South of Sycamore		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	80		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	30260
Peak Hour Traffic:	**3026**
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

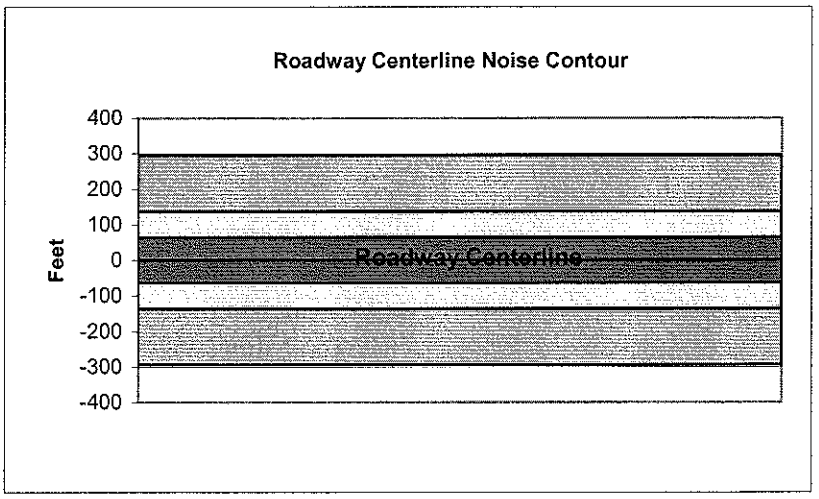
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.2	65.0	63.2	57.2	65.8	66.4
Medium Trucks:	64.5	56.5	50.1	48.5	57.0	57.2
Heavy Trucks:	69.0	57.1	48.0	49.3	58.8	58.9
Vehicle Noise:	**71.4**	**66.3**	**63.6**	**58.5**	**67.0**	**67.5**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	294
65 dBA	137
70 dBA	63
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	I-80		
Road Segment:	South of John Muir Parkway		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	350		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	217000
Peak Hour Traffic:	**21700**
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

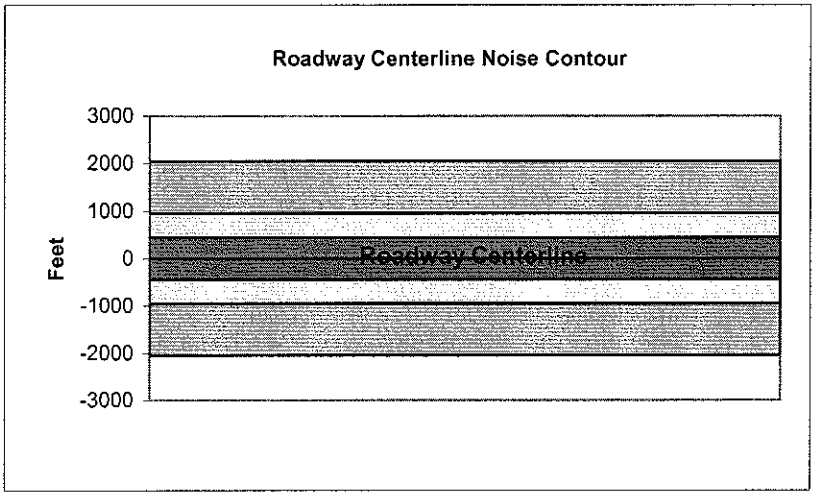
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.4	69.2	67.4	61.3	70.0	70.6
Medium Trucks:	66.6	58.5	52.1	50.5	59.0	59.3
Heavy Trucks:	70.1	58.1	49.1	50.3	59.3	59.4
Vehicle Noise:	**72.4**	**69.9**	**67.6**	**62.0**	**70.6**	**71.2**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	2047
65 dBA	950
70 dBA	441
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Near Term Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	I-80		
Road Segment:	South of John Muir Parkway		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	350		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	290000
Peak Hour Traffic:	29000
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

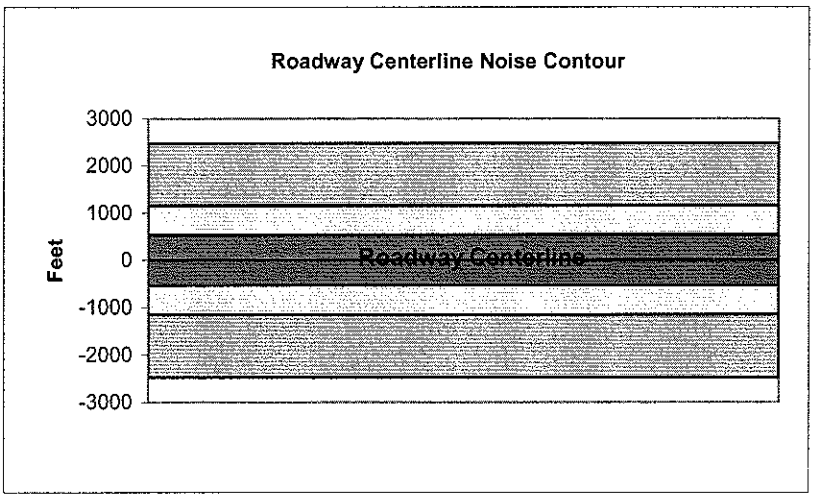
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.7	70.4	68.6	62.6	71.2	71.8
Medium Trucks:	67.8	59.8	53.4	51.8	60.3	60.5
Heavy Trucks:	71.3	59.4	50.3	51.5	60.6	60.7
Vehicle Noise:	**73.7**	**71.1**	**68.8**	**63.3**	**71.9**	**72.4**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	2484
65 dBA	1153
70 dBA	535
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	John Muir Parkway		
Road Segment:	Between San Pablo Ave and I-80		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	150		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	37300
Peak Hour Traffic:	3730
Vehicle Speed:	65
Centerline Separation:	38

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

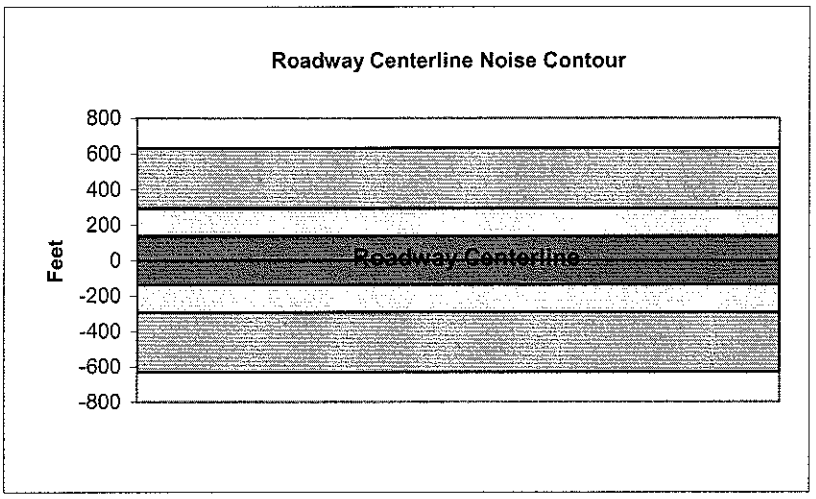
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.9	66.6	64.9	58.8	67.4	68.0
Medium Trucks:	64.0	56.0	49.6	48.0	56.5	56.7
Heavy Trucks:	67.5	55.6	46.5	47.8	56.8	56.9
Vehicle Noise:	**69.9**	**67.4**	**65.1**	**59.5**	**68.1**	**68.6**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	633
65 dBA	294
70 dBA	136
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	Sycamore Avenue		
Road Segment:	West of San Pablo Ave		

PROJECT DATA			
Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	80		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)	
Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA	
Road Grade:	0
Average Daily Traffic:	5,243
Peak Hour Traffic:	**524.3**
Vehicle Speed:	45
Centerline Separation:	24

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

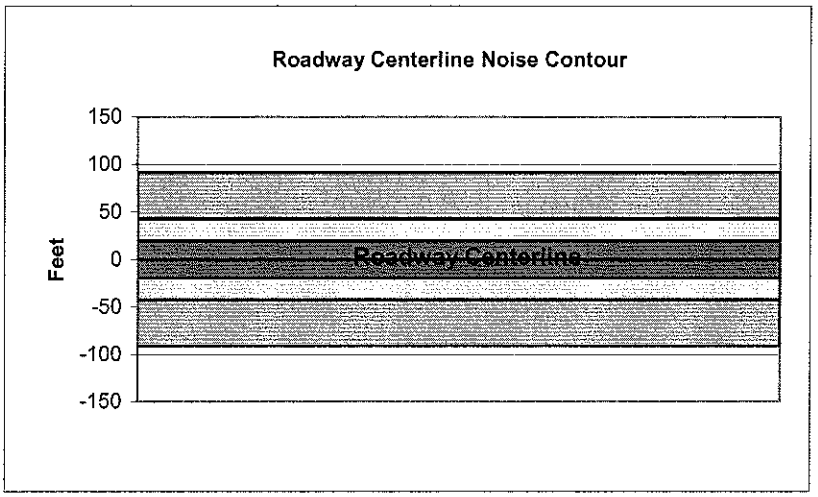
UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	48.7	57.5	55.7	49.6	58.3	58.9
Medium Trucks:	57.0	48.9	42.6	41.0	49.5	49.7
Heavy Trucks:	61.5	49.6	40.5	41.7	51.3	51.4
Vehicle Noise:	**63.9**	**58.8**	**56.1**	**50.9**	**59.5**	**60.0**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	92
65 dBA	42
70 dBA	20
Mitigated	
60 dBA	
65 dBA	
70 dBA	



Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)

Project Name:	Hercules NTC	Scenario:	Future Plus Project
Analyst:	Achilles Malisos	Job #:	35-100742
Roadway:	San Pablo		
Road Segment:	South of Sycamore		

PROJECT DATA

Centerline Dist to Barrier:	0		
Barrier (0=wall, 1= berm):	0		
Receiver Barrier Dist:	0		
Centerline Dist. To Observer:	80		
Barrier Near Lane CL Dist:	0		
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5		
Road Elevation:	0		
Observer Height (above grade):	5.5		
Barrier Height:	0		
Rt View:	90	Lft View:	-90

NOISE SOURCE ELEVATIONS (Feet)

Autos:	0
Medium Trucks:	2.3
Heavy Trucks:	8

SITE DATA

Road Grade:	0
Average Daily Traffic:	41100
Peak Hour Traffic:	4110
Vehicle Speed:	45
Centerline Separation:	27

NOISE INPUTS

Site conditions: **SOFT SITE**

FLEET MIX

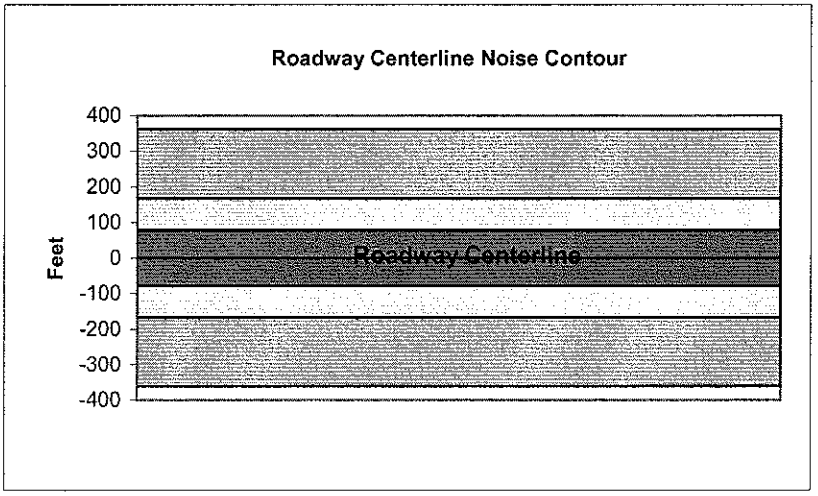
Type	Day	Evening	Night	Daily
Auto	0.775	0.129	0.096	0.9742
Med. Truck	0.848	0.049	0.103	0.0184
Heavy Truck	0.865	0.027	0.108	0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.6	66.4	64.6	58.5	67.1	67.7
Medium Trucks:	65.9	57.8	51.4	49.8	58.3	58.5
Heavy Trucks:	70.4	58.4	49.4	50.6	60.1	60.3
Vehicle Noise:	**72.7**	**67.7**	**64.9**	**59.8**	**68.4**	**68.9**

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	361
65 dBA	168
70 dBA	78
Mitigated	
60 dBA	
65 dBA	
70 dBA