APPENDIX U

Noise: Ambient Noise Monitoring Output

Project-Generated Construction Source Noise Prediction Model

Humboldt Wind Energy Project ADEIR - Road Construction

AECOM

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	337	65
R-1	2,500	41
R-2	3,200	38
R-3	6,000	31
R-4	7,500	28
R-5	750	55
R-6 (Hoockton Ramp)	240	68
R-7 (12th St Ramp)	350	63

Assumptions:	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Grader	85	0.4
Compactor (ground)	80	0.2
Dump Truck	84	0.4
Scraper	85	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor	0.63

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Grader	81
Compactor (ground)	73
Dump Truck	80
Scraper	81

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
86

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006.

[2] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

*Project specific threshold

Project-Generated Construction Source Noise Prediction Model

Humboldt Wind Energy Project ADEIR - Turbine Foundations

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	373	65
R-1	2,750	41
R-2	3,450	38
R-3	6,250	32
R-4	7,750	29
R-5	800	55

Assumptions:	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Dozer	85	0.4
Excavator	85	0.4
Drill Rig Truck	84	0.2
Crane	85	0.16
Blasting	94	0.05

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor	0.63

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Dozer	81
Excavator	81
Drill Rig Truck	77
Crane	77
Blasting	81.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
87

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006.

[2] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

*Project specific threshold

Project-Generated Construction Source Noise Prediction Model

AECOM

Humboldt Wind Energy Project ADEIR - Tower Erection

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	318	65
R-1	2,750	39
R-2	3,450	37
R-3	6,250	30
R-4	7,750	27
R-5	850	53

Assumptions:	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Crane	85	0.16
Pneumatic Tools	85	0.5
Crane	85	0.16
Man Lift	85	0.2

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor	0.63

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Crane	77
Pneumatic Tools	82
Crane	77
Man Lift	78

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
85

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006.

[2] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

*Project specific threshold

Project-Generated Construction Source Noise Prediction Model

AECOM

Humboldt Wind Energy Project ADEIR - Underground Cabling

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	244	65
R-1	2,650	37
R-2	3,350	34
R-3	6,150	27
R-4	7,650	25
R-5	900	49

Assumptions:	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Excavator	85	0.4
Backhoe	80	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor	0.63

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Excavator	81
Backhoe	76

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
82

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006.

[2] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

*Project specific threshold

Project-Generated Construction Source Noise Prediction Model

Humboldt Wind Energy Project ADEIR - Transmission Lines

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	349	65
R-8	200	70
R-9	300	66
R-10	500	60
R-11	850	54

Assumptions:	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Crane	85	0.16
Grader	85	0.4
Auger Drill Rig	85	0.2
Backhoe	80	0.4
Excavator	85	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor	0.63

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Crane	77
Grader	81
Auger Drill Rig	78
Backhoe	76
Excavator	81.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
86

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006.

[2] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

*Project specific threshold

Project-Generated Construction Source Noise Prediction Model

Humboldt Wind Energy Project ADEIR - Turbine Pads

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	317	65
R-10	750	54

Assumptions:	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Auger Drill Rig	85	0.2
Front End Loader	80	0.4
Crane	85	0.16
Backhoe	80	0.4
Concrete Mixer Truck	85	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor	0.63

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Auger Drill Rig	78
Front End Loader	76
Crane	77
Backhoe	76
Concrete Mixer Truck	81.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
85

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006.

[2] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

*Project specific threshold

Project-Generated Construction Source Noise Prediction Model

Humboldt Wind Energy Project ADEIR- Concrete Batch Plant

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	522	60
	100	78
	200	70
	350	63
	500	59
	800	54
	1000	51
	1250	49
	1500	47

Assumptions:	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Concrete Batch Plant	83	0.5
Dozer	85	0.4
Concrete Mixer Truck	85	0.4

Ground Type	Soft
Source Height	8
Receiver Height	5
Ground Factor	0.63

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Concrete Batch Plant	80
Dozer	81
Concrete Mixer Truck	81

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
85

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006.

[2] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.

$L_{eq}(equip) = E.L.+10*\log (U.F.) - 20*\log (D/50) - 10*G*\log (D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

*Project specific threshold

Traffic Noise Prediction Model, (FHWA RD-77-108)

Model Input Sheet

Project Name : Humboldt Wind Energy Project ADEIR
Project Number : 60580932
Modeling Condition : Existing
Ground Type : Soft
K Factor :
Metric (L_{eq}, L_{dn}, CNEL) : CNEL
Traffic Desc. (Peak or ADT) : ADT

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	Offset (dB)
1	U.S. Hwy 101	S.R. 254	South Fork Road	7,600	65	100	89	3	8	80	7	13	
2	U.S. Hwy 101	South Fork Road	South Scotia Road	9,900	65	100	92.5	4.4	3.1	80	7	13	
3	U.S. Hwy 101	South Scotia Road	S.R. 36	17,800	65	100	92.5	4.4	3.1	80	7	13	
4	U.S. Hwy 101	S.R. 36	Singely Road	20,500	65	100	92.5	4.4	3.1	80	7	13	
5	U.S. Hwy 101	Singely Road	Loleta Drive	22,800	65	100	92.5	4.4	3.1	80	7	13	
6	U.S. Hwy 101	Loleta Drive	Eureka City Limits	22,900	65	100	92.5	4.4	3.1	80	7	13	

Traffic Noise Prediction Model, (FHWA RD-77-108)

Predicted Noise Levels

Project Name : Humboldt Wind Energy Project ADEIR
Project Number : 60580932
Modeling Condition : Existing
Metric (Leq, Ldn, CNEL) : Leq

		Segment		Noise Levels, dB Leq				Distance to Traffic Noise Contours, Feet				
Segment	Roadway	From	To	Auto	MT	HT	Total	70 dB	65 dB	60 dB	55 dB	50 dB
1	Detour Road	U.S. Hwy 101 Off I	U.S. Hwy 101 On I	43.5	0.0	60.1	60.2	11	24	51	111	239