

# 1729  
CAHA

**Sundar, Danielle**

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**From:** Fox, Lori  
**Sent:** Wednesday, September 02, 2009 11:49 AM  
**To:** Sundar, Danielle  
**Cc:** Wetmore, Doug  
**Subject:** FW: call tomorrow

**Follow Up Flag:** Follow up  
**Flag Status:** Blue

**Attachments:** RoughNoiseCalcs-with ATV-OHV and ocean sound CAHA 2009-09-02.xls



RoughNoiseCalcs-w  
ith ATV-OHV a...

Another one where email and attachment are both needed.

Lori Fox  
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-----Original Message-----

From: Frank\_Turina@nps.gov [mailto:Frank\_Turina@nps.gov]  
Sent: Wednesday, September 02, 2009 10:13 AM  
To: Sandra\_Hamilton@nps.gov  
Cc: Sherwood, Dayna; Wetmore, Doug; Kurt\_Fristrup@nps.gov; Fox, Lori; Randy\_St Stanley@nps.gov  
Subject: Re: call tomorrow

For today's call, attached is a spreadsheet that takes into account the sound of surf under a range of conditions.

(See attached file: RoughNoiseCalcs-with ATV-OHV and ocean sound CAHA 2009-09-02.xls)

Frank Turina, Ph.D.  
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Natural Sounds Program Center  
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frank\_turina@nps.gov

When quiet is all around, with no sounds but natural ones - bird songs, wind, washing of waters against shores - the stage is always set for meditation and reflection.  
-- Sigurd Olsen

Sandra  
Hamilton/DENVER/N  
PS  
09/01/2009 03:52  
PM  
To  
Frank Turina/FTCOLLINS/NPS@NPS,  
Kurt Fristrup/FTCOLLINS/NPS@NPS,  
Randy Stanley/FTCOLLINS/NPS@NPS,  
lfox@louisberger.com,  
dwetmore@louisberger.com,  
dsherwood@louisberger.com  
cc  
Subject  
call tomorrow

Hello All,

Since Shayna is in New Jersey and the Denver folks are pressed for time, as I'm sure you are also in FOCO, I've scheduled our conference line for a call tomorrow afternoon (instead of an in-person meeting) on the CAHA soundscapes analysis, 12:30 - 2:30 MT (2:30-4:30 ET).

Phone number 866-623-0649  
passcode 7024992

The objective of this call is for the NPS Soundscapes staff to walk the rest of us through the additional analysis since the last call and provide for discussion, questions, etc. so that the Louis Berger staff have a clear enough understanding of the analysis to write up the needed explanation for the DEIS.

Please confirm that this time still works for everyone. Thanks.

Sandy

Sandy Hamilton  
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CO 80225  
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reference measures	Src LpA @ distance	other distances in meters from OHV track											
		4	15	50	150	250	500	750	1000	1500	3000	6000	
Auto at 15 mph (FHWA)	52	15.24	64.0	52.5	41.7	31.5	26.4	19.0	14.2	10.6	4.9	-6.5	-20.1
Ocean surf ambient	20	15	18.0	16.3	13.3	9.5	7.4	4.6	2.9	1.7	-0.1	-3.0	-6.0
Sum of ocean surf and 15mph auto			64.0	52.5	41.7	31.5	26.5	19.2	14.5	11.1	6.1	-1.4	-5.9
Auto at 25 mph (FHWA)	59	15.24	71.0	59.4	48.7	38.5	33.4	26.0	21.2	17.5	11.7	0.1	-13.9
Ocean surf ambient	20	15	18.0	16.3	13.3	9.5	7.4	4.6	2.9	1.7	-0.1	-3.0	-6.0
Sum of ocean surf and 25mph auto			71.0	59.4	48.7	38.5	33.4	26.0	21.2	17.6	12.0	1.8	-5.4

Increase in ambient sound level in dBA

Percent Residual Listening Area 20 1.0% 99.0% 10.0% 90.0%

Ocean surf varies 20-55 dBA @15m

ENTER SURF SOURCE LEVEL HERE 20 dBA

ENTER DIST SURF TO OHV TRACK 20 (in meters)

The above calculation assumes spherical spreading loss, and it incorporates atmospheric absorption for each 3rd octave frequency.

Ground attenuation is not yet calculated, but the formula conservatively assumes hard ground (no AtmAbsorp is frequency dependent. It should be calculated according to average atmospheric conditions at site.

Source Height (m) 1.5

Receiver Height (m) 1.5

Mean Propagation Height 1.5

Ground Type G 0

AtmPressure in atm 1

Temperature in deg C 16.7

Rel humidity in % 74.5

T/Tr = 0.988743

Pa/Pt = 1

T01/T = 0.942418

FrO = 44749.71

h = 1.396939

FrN = 396.2613

Mixed ground: G=fraction of ground that is soft

1/3 Octave freq	12.5	16	20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	A-wt LpA
AtmAbsorp in dB/m	0.000004	0.000006	0.000010	0.000015	0.000024	0.000038	0.000059	0.000094	0.000149	0.000228	0.000345	0.000536	0.000780	0.001103	0.001518	0.002018	0.002527	0.003083	0.003706	0.004388	0.005270	0.006670	0.008587	0.011513	0.016231	0.023974	0.035349	0.053714	0.083597	0.126744	0.191663	0.299939	0.442737	
Auto at 15 mph (FHWA)	0	0	0	0	0	0	23	30	34	36	36	36	37	38	39	40	42	43	44	44	44	43	42	40	38	36	34	32	29	25	0	0	0	52
Auto at 25 mph (FHWA)	0	0	0	0	0	0	27	35	39	41	41	42	43	43	45	46	48	49	50	51	51	50	49	47	45	42	40	37	34	31	0	0	0	59

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