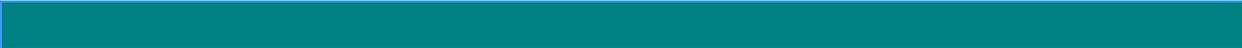


**Supplemental Ambient Noise Survey
Belleayre Mountain Ski Center**

July 2008

Prepared for:
New York State Department of Environmental Conservation
Bureau of Design & Construction
625 Broadway, 3rd Floor
Albany, NY 12233-5252

Prepared by:
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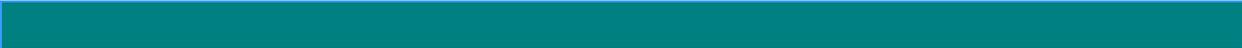
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List of Abbreviations and Acronyms

dB(A)	decibel(s) A-scale
DEC	New York State Department of Environmental Conservation
E & E	Ecology and Environment, Inc.
L _{dn}	day-night average sound level
L _{eq}	equivalent continuous noise level

1

Introduction

In July of 2008, Ecology and Environment, Inc. (E & E) collected supplemental noise measurements to address the requirements contained in the *Final Scoping Document, Belleayre Mountain Ski Center Unit Management Plan–DEIS* (February 28, 2008). This report includes a description of the site and monitoring locations, methods used to obtain the sound measurements, and the survey results. An accompanying figure displays the site layout and measurement locations.

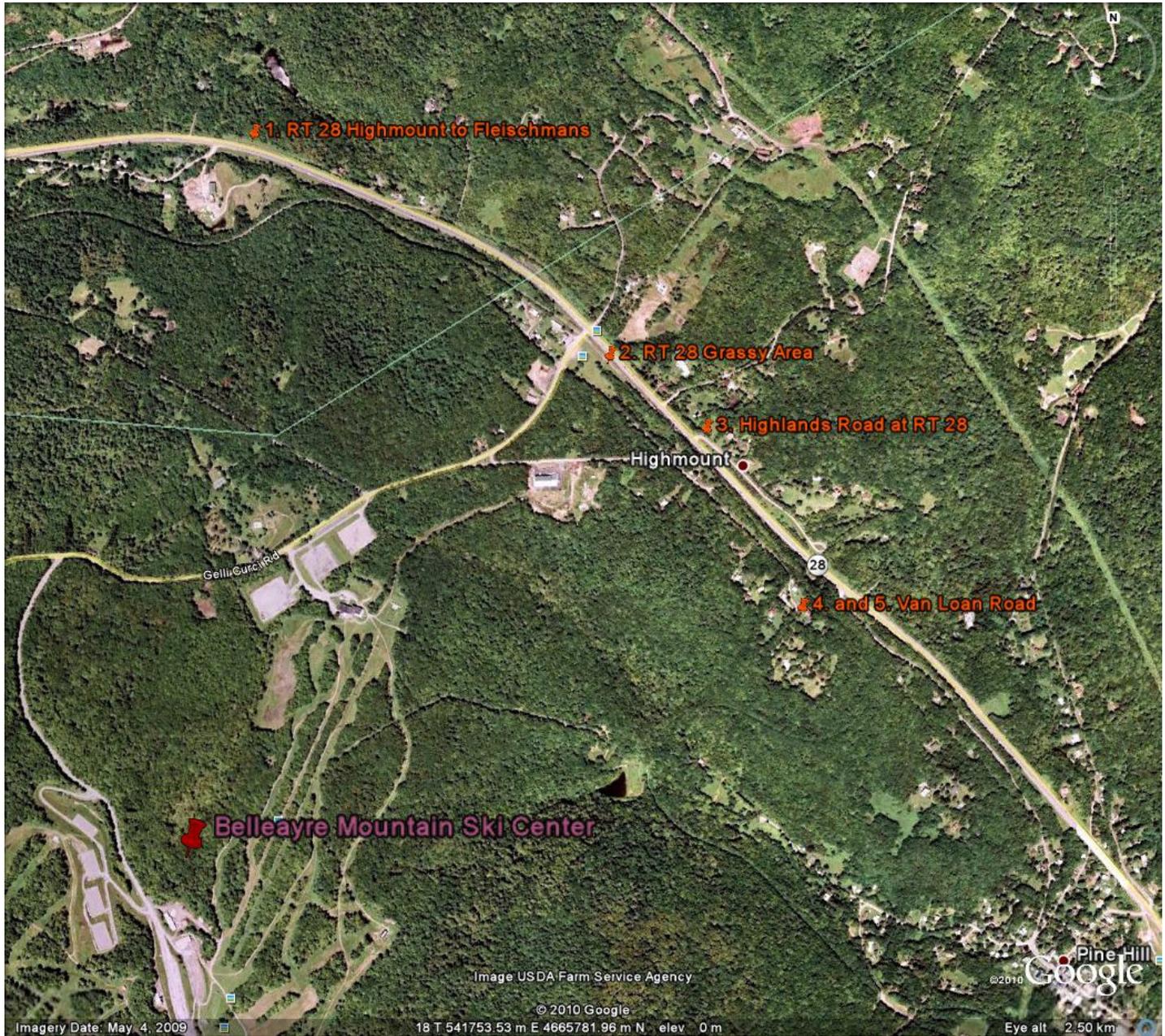


Figure 1-1 Belleayre Mountain Ski Center Project and Noise Measurement Location Map

2

Site Description and Measurement Locations

2.1 General Site Description

Belleayre Mountain Ski Center located in the Town of Shandaken, Ulster County, NY, is a state owned recreation facility located on NYS Forest Preserve land which has been classified as an Intensive Use Area in the Catskill Park State Land Master Plan is located on 2,178 acres of state lands acquired as Forest Preserve (2,120 acres), special use (15 acres), and approximately 43 acres of Non-Forest Preserve. Operated by the New York State Department of Environmental Conservation (DEC), it provides a year-round recreation opportunity for the public.

2.2 Measurement Locations

Sound measurements were collected at the three locations to be used for the traffic noise impact analysis and at one location during daytime and nighttime for the project operating noise impact analysis as follows (see Figure 1-1):

1. Route 28 Highmont to Fleischmans
2. Route 28 Grassy Area Opposite Post Office
3. Highlands Road at Route 28
4. Van Loan Road Daytime
5. Van Loan Road Nighttime

3

Methodology

3.1 Data Gathering

On July 1st and 2nd of 2008, noise measurements were taken at the four locations. Noise levels were measured on the A-weighted decibel scale and recorded as L_{eq} for equivalent continuous noise level. Measurements were collected for approximately 20-minute durations at each location. Sound level information was immediately recorded on field data sheets (attached in Appendix B). Traffic counts were taken on major routes in the vicinity of the project at noise measurement locations while noise measurements were being conducted. Traffic counts will be used in the Traffic Noise Model to compare predicted noise levels with measured noise levels to confirm that the model is properly set up.

3.2 Measurement Equipment

Sound data were measured and recorded using a Brüel and Kjaer 2260 sound level meter. The noise meter was factory calibrated in April 2010 (see Appendix A for the Certificates of Calibration) and field calibrated with a Brüel and Kjaer Model 4231 calibrator prior to conducting the survey. The sound level meter was mounted on a tripod at approximately five feet above the ground and protected from self-induced wind noise by a high-density foam windscreen.

3.3 Survey Conditions

Weather conditions on July 1st and 2nd included partly sunny skies, temperatures in the 60 to 70 °F range, and light winds.

4

Results

4.1 Measured Sound Data

Table 4-1 presents the sound measurement results for each location. In general, the measured L_{eq} ranged between 60.4 and 62.1 dBA near Route 28 and between 47.6 and 56.2 on Van Loan Road. Traffic counts were collected during the noise measurements along Route 28 and are included in Appendix B.

Table 4-1 Ambient Sound Pressure Levels

Location Number	Location Description	Distance to Route 28 (feet)	Measured Results L_{eq} (dBA)
1	Route 28 Highmont to Fleischmans	57	60.7
2	Route 28 Grassy Area Opposite Post Office	73	60.4
3	Highlands Road at Route 28	60	62.1
4	Van Loan Road Daytime	375	56.2
5	Van Loan Road Nighttime	375	47.6

Key:
 L_{eq} = equivalent sound level
dBA= decibels A-scale

4.2 Survey Observations

Various background noise sources contributed to the ambient sound levels recorded as part of the survey. These sources included vehicle traffic along US Route 28, wind, insects, and songbirds.

A

Certificates of Calibration

Scantek, Inc.
CALIBRATION LABORATORY

ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1 and
relevant requirements of ISO 9002:1994 ACCREDITED
by NVLAP (an ILAC and APLAC signatory)

NVLAP[®]

NVLAP Lab Code: 200625-0

Calibration Certificate No.17842

Instrument:	Sound Level Meter	Date Calibrated:	5/7/2008				
Model:	2260	Status	<table border="1"><tr><td>Received</td><td>Sent</td></tr><tr><td>X</td><td>X</td></tr></table>	Received	Sent	X	X
Received	Sent						
X	X						
Manufacturer:	Brüel and Kjær	In tolerance	X				
Serial number:	2391318	Out of tolerance					
Tested with:	Microphone 4189 s/n 2386339 Preamplifier ZC0026	See comments					
Type (class):	1	Contains non-accredited tests:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Customer:	Ecology and Environment, Inc.	Calibration service:	Basic <input type="checkbox"/> Standard <input checked="" type="checkbox"/>				
Tel/Fax:	716-684-8060/ tsiener@ene.com	Address:	368 Pleasant View Lancaster, NY 14086				

Tested in accordance with the following procedures and standards:
Calibration of Sound Level Meters, Scantek Inc., 06/07/2005
SLM & Dosimeters – Acoustical Tests, Scantek Inc., 06/15/2005

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal date	Traceability evidence Cal. Lab / Accreditation
483B-Norsonic	SME Cal Unit	25747	Jan 15, 2008	Scantek, Inc./NVLAP
DS-360-SRS	Function Generator	61646	Nov 19, 2007	Davis Inotek / AClass
34401A-Agilent Technologies	Digital Voltmeter	MY41022043	Nov 13, 2007	Transcat / NVLAP
DPI 141-Druck	Pressure Indicator	790/00	Nov 9, 2006	Transcat / A2LA
HM30-Thommen	Meteo Station	1040170/39633	Dec 21, 2007	Transcat / A2LA
PC Program 1019 Norsonic	Calibration software	v.46	Validated Dec 2006	-
1253-Norsonic	Calibrator	25726	Jan 29, 2008	Scantek, Inc./NVLAP

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
23.7 °C	99.789 kPa	37.9 %RH

Calibrated by	Valentin Buzduga	Checked by	Mariana Buzduga
Signature	<i>VB</i>	Signature	<i>MB</i>
Date	5/08/2008	Date	5/8/2008

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory.
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ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1
and relevant requirements of ISO 9002:1994
ACCREDITED by NVLAP (an ILAC and APLAC
signatory)



NVLAP Lab Code: 200625-0

Calibration Certificate No.17843

Instrument: Microphone
Model: 4189
Manufacturer: Brüel & Kjær
Serial number: 2386339

Date Calibrated: 5/7/2008
Status:

Received	Sent
X	X

In tolerance:

X	X
---	---

Out of tolerance:

--	--

See comments:

--	--

Contains non-accredited tests: Yes No

Customer: Ecology and Environment, Inc.
Tel/Fax: 716-684-8060/ tsiener@ene.com

Address: 368 Pleasant View
Lancaster, NY 14086

Tested in accordance with the following procedures and standards:
Procedure for Calibration of Measurement Microphones, Scantek Inc., 06/15/2005

Instrumentation used for calibration: N-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence	Cal. Due
				Cal. Lab / Accreditation	
483B-Norsonic	SME Cal Unit	25747	Jan 15, 2008	Scantek, Inc./NVLAP	Jan 15, 2009
DS-360-SRS	Function Generator	61646	Nov 19, 2007	Davis Inotek / AClass	Nov 19, 2008
34401A-Agilent	Digital Voltmeter	MY41022043	Nov 13, 2007	Transcat / NVLAP	Nov 13, 2008
DPI 141-Druck	Pressure Indicator	790/00	Nov 9, 2006	Transcat / A2LA	Nov 9, 2008
HM30-Thommen	Meteo Station	1040170/39633	Dec 21, 2007	Transcat / A2LA	Jun 21, 2009
PC Program 1017 Norsonic	Calibration software	v.46	Validated Feb 2006	-	-
1253-Norsonic	Calibrator	28326	Mar 3, 2008	NPL (UK) / UKAS	Mar 3, 2010
1203-Norsonic	Preamplifier	14059	Jan 4, 2008	Scantek, Inc./ NVLAP	Jan 4, 2009
4180-Bruel&Kjaer	Microphone	2246115	Mar 3, 2008	NPL (UK) / UKAS	Mar 3, 2010

Instrumentation and test results are traceable to SI - BIPM through standards maintained by NPL (UK) and NIST (USA)

Calibrated by	Valentin Buzduga	Checked by	Mariana Buzduga
Signature	<i>VB</i>	Signature	<i>Maria</i>
Date	5/07/2008	Date	5/8/08

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Scantek, Inc.

CALIBRATION LABORATORY

ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1 and relevant requirements of ISO 9002:1994 ACCREDITED by NVLAP (an ILAC and APLAC signatory)



NVLAP Lab Code: 200625-0

Calibration Certificate No.17844

<i>Instrument:</i>	Acoustical Calibrator	<i>Date Calibrated:</i>	5/7/2008				
<i>Model:</i>	4231	<i>Status:</i>	<table border="1"><tr><td>Received</td><td>Sent</td></tr><tr><td>X</td><td>X</td></tr></table>	Received	Sent	X	X
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X	X						
<i>Manufacturer:</i>	Brüel and Kjær	<i>In tolerance:</i>					
<i>Serial number:</i>	2394049	<i>Out of tolerance:</i>					
<i>Class (IEC 60942):</i>	1	<i>See comments:</i>					
<i>Barometer type:</i>		<i>Contains non-accredited tests:</i>	___ Yes <u>X</u> No				
<i>Barometer s/n:</i>							

<i>Customer:</i>	Ecology and Environment, Inc.	<i>Address:</i>	368 Pleasant View
<i>Tel/Fax:</i>	716-684-8060/ tsiener@ene.com		Lancaster, NY 14086

Tested in accordance with the following procedures and standards:
Calibration of Acoustical Calibrators, Scantek Inc., 06/06/2005

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal date	Traceability evidence
				Cal. Lab / Accreditation
483B-Norsonic	SME Cal Unit	25747	Jan 15, 2008	Scantek, Inc./NVLAP
DS-360-SRS	Function	61646	Nov 19, 2007	Davis Inotek / AClass
34401A-Agilent Technologies	Digital Voltmeter	MY41022043	Nov 13, 2007	Transcat / NVLAP
DPI 141-Druck	Pressure Indicator	790/00	Nov 9, 2006	Transcat / A2LA
8903A-HP	Audio Analyzer	2514A05691	Jan 2, 2008	Transcat / NVLAP
HM30-Thommen	Meteo Station	1040170/39633	Dec 21, 2007	Transcat / A2LA
PC Program 1018 Norsonic	Calibration software	v.44	Validated May 2006	-
1253-Norsonic	Calibrator	28326	Mar 3, 2008	NPL (UK) / UKAS
1203-Norsonic	Preamplifier	14059	Jan 4, 2008	Scantek, Inc./ NVLAP
4180-Brüel&Kjaer	Microphone	2246115	Mar 3, 2008	NPL (UK) / UKAS

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK)

Calibrated by	Valentin Buzduga	Checked by	Mariana Buzduga
Signature	<i>[Signature]</i>	Signature	<i>[Signature]</i>
Date	5/07/2008	Date	6/8/08

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