



December 19, 2016

Ms. Elizabeth Lord, Land Use Attorney  
Agency of Natural Resources  
ANR Legal Division  
One National Life Drive, Davis Building  
Montpelier, VT 05620-3522

RE: South Face Village at Okemo Development Company, LLC – Ludlow, Vermont  
Non-Native and Invasive Plant Species 2016 Monitoring-Year 1 (Baseline)  
State of Vermont Land Use Permit #2S1198-5  
US Army Corps of Engineers 404 Permit (#NAE-2010-1452)

Dear Elizabeth:

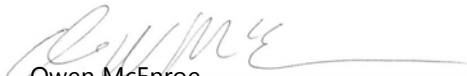
This letter is to inform you that VHB performed the first annual survey for invasive plant species, as required by Condition #33 of the State of Vermont Land Use Permit ("LUP") #2S1198-5, and by Special Conditions #4 and #10 of the United States Army Corps of Engineers ("USACE") 404 Permit (#NAE-2010-1452), on August 10, 2016. The invasive species monitoring for 2016 represents the baseline survey for this project.

On behalf of South Face Village at Okemo Development Company, environmental scientists from VHB conducted the invasive species survey within the permitted forest management Patch Cut areas. VHB monitored for the target invasive species that are specified in the USACE 404 Permit and the LUP. No occurrences of non-native or invasive species were found within or adjacent to the study area. A summary memorandum, which includes a Non-Native and Invasive Plant Species Monitoring Map and representative photographs, is enclosed to provide documentation of the monitoring.

Follow-up monitoring should occur in approximately ten years, at the time of the next patch cutting maintenance cycle, as specified by the permits, and the results of the future monitoring would be reported to your office and the Army Corps of Engineers approximately ten years from now. Additionally, the USACE 404 Permit requires annual monitoring for five years once Project construction is completed (construction completion is expected in approximately ten years).

Please feel free to call if you have any comments or questions.

Sincerely,

  
Owen McEnroe  
Environmental Scientist

cc Andy Becker, South Face Village at Okemo  
Michael Adams, US Army Corps of Engineers

OWM/jkw  
Enclosure

\\VTSDATA\projects\57174.33 South Face EV Comp 2016\docs\memos\NNIS\_2016\South\_Face\_NNIS Mon\_Cover Letter\_2016.doc



To: South Face Village at Okemo  
Project File

Date: December 19, 2016

Memorandum

Project #: 57174.33

From: Owen McEnroe,  
Environmental Scientist

Re: South Face Village at Okemo – 2016 Non-Native and  
Invasive Species Survey (Baseline Year Monitoring)

---

## INTRODUCTION

On behalf of South Face Village at Okemo Development Company, LLC ("Client"), and in support of the South Face Village at Okemo project located in Ludlow, Vermont ("Project"), VHB has prepared this memorandum to summarize the results of the non-native and invasive plant species ("NNIS") identification survey conducted by VHB on August 10, 2016. Specifically, this memorandum presents baseline NNIS data collected by VHB as required by Condition #33 of the State of Vermont Land Use Permit ("LUP") #2S1198-5<sup>1</sup>, by Special Conditions #4 and #10 of the United States Army Corps of Engineers ("USACE") 404 Permit (#NAE-2010-1452)<sup>2</sup>, and as outlined in the Timber Creek at Okemo Number II Forest and Wildlife Habitat Management Plan Narrative ("Plan")<sup>3</sup>. The following sections describe the NNIS investigation methods and present the NNIS investigation results.

## METHODS

Qualified VHB environmental scientists conducted the baseline NNIS monitoring in accordance with the methods described in the Plan, within and immediately adjacent to four Wildlife Enhancement Patch Cut areas ("Study Area") to be disturbed during the Project's required forest management activities. Management cutting in the four Patch Cut areas is planned to occur during the 2016-2017 winter, in accordance with the Plan and the Permits. The Study Areas and the overall Project Area are shown on the NNIS Monitoring Map in Attachment 1. The four Study Areas total approximately 8.1 acres and include mainly forested lands, with smaller portions of revegetating former logging/access roads. Representative photographic documentation of the NNIS survey is located in Attachment 2.

As specified in the Plan, the target NNIS plant species are those listed in the Vermont Agency of Agriculture, Food & Markets ("AAFM") Quarantine #3<sup>4</sup>, which include Class A or B noxious weeds in Vermont, species listed on the Invasive Species Watch List for Vermont ("WL")<sup>5</sup>, species listed in Appendix D of the USACE New England District Compensatory Mitigation Guidance, and species required by Special Condition #10 of the USACE Permit, which include Common reed (*Phragmites australis*), Purple loosestrife (*Lythrum salicaria*), Glossy Buckthorn (*Frangula alnus*), Common buckthorn (*Rhamnus cathartica*), Russian olive (*Elaeagnus angustifolia*), Autumn olive (*Elaeagnus umbellata*), and Multiflora rose (*Rosa multiflora*).

---

<sup>1</sup> State of Vermont Land Use Permit #2S1198-5. Signed date: September 13, 2013

<sup>2</sup> United States Army Corps of Engineers 404 Permit #NAE-2010-1452. Signed date: December 13, 2013

<sup>3</sup> Holleran, Robbo, Forester. Revised May 21, 2013. *Timber Creek at Okemo Number II Forest and Wildlife Habitat Management Plan Narrative*.

<sup>4</sup> Vermont Agency of Agriculture. *Quarantine #3 – Noxious Weeds*. 2012. Available online at: <http://www.vermontagriculture.com/ARMES/plantindustry/plantPathology/weeds/documents/NoxiousWeedsQuarantine.pdf>

<sup>5</sup> Invasive Species Watch List for Vermont. 2005. Available online at: <http://www.vtfishandwildlife.com/common/pages/DisplayFile.aspx?itemId=111481>



## **RESULTS**

Based on the baseline assessment, there are no occurrences of any of the aforementioned NNIS identified within the Study Areas. Additionally, VHB identified no NNIS occurrences adjacent to the Study Areas.

## **SUMMARY AND RECOMMENDATIONS**

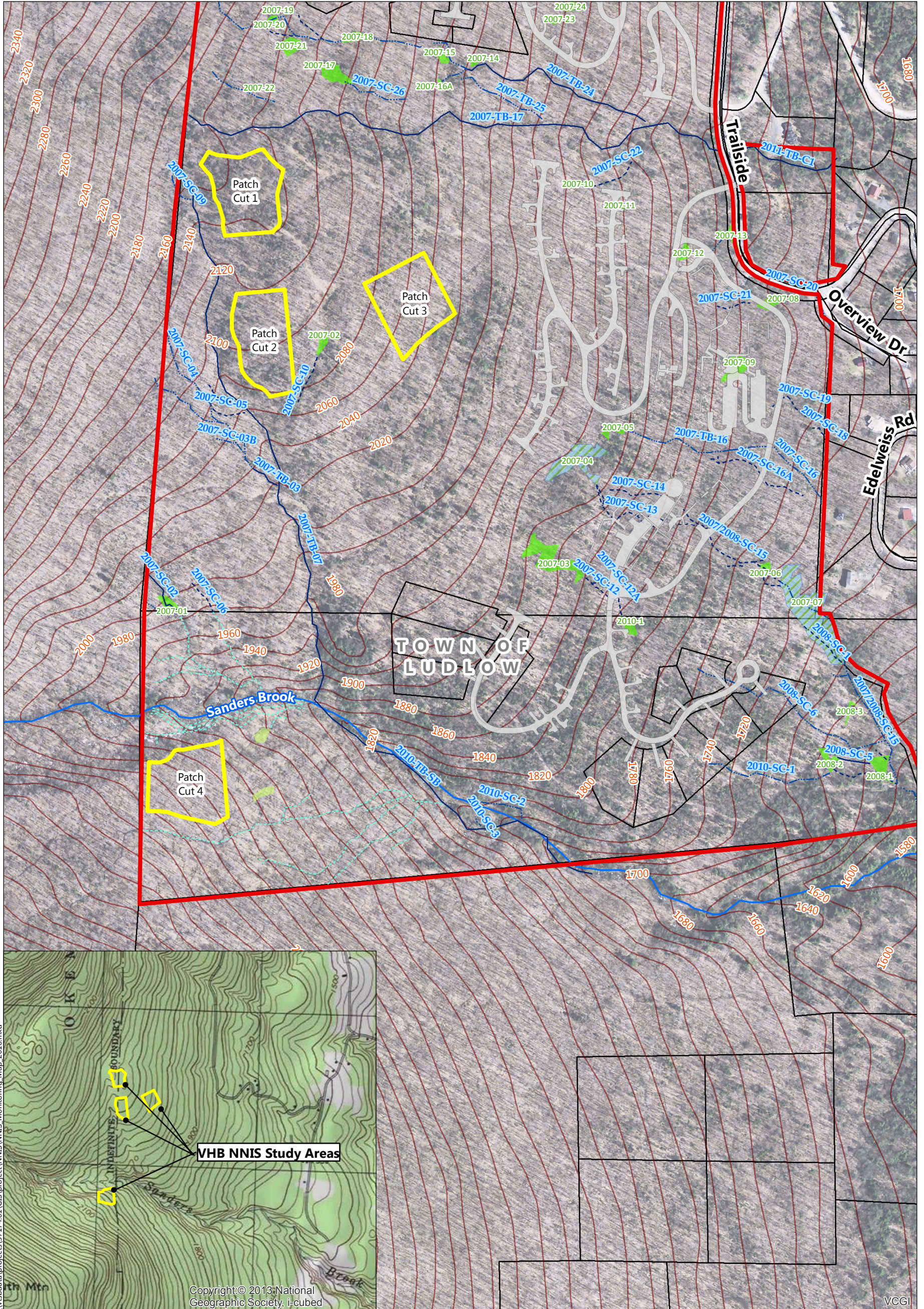
On behalf of the Client, VHB conducted the NNIS baseline survey as required by the permits on August 10, 2016, prior to the initial cutting of the four required wildlife Patch Cut Areas. No occurrences of NNIS were found within or adjacent to any portion of the Study Areas.

2016 represents the baseline monitoring year. The first round of follow-up monitoring is scheduled to occur in approximately ten years, when the next maintenance patch cutting is performed as specified in the Plan. Additionally, Special Condition #10 of the USACE Permit requires annual monitoring for five years once Project construction is completed (construction completion is expected in approximately ten years). In the forthcoming years of NNIS monitoring, VHB recommends carefully assessing the Study Areas to determine the presence or absence of target NNIS, and to remove each occurrence, if any are found, as described in Special Condition #10 of the USACE Permit. As described in Special Condition #10, hand pulling is preferred, however, in the event that hand-pulling is not effective, alternate methods (i.e., herbicide) will need to be coordinated with both the Vermont Agency of Natural Resources ("ANR") and the USACE.

## **ATTACHMENTS**

1. Non-Native Invasive Species Monitoring Map
2. Representative NNIS Baseline Assessment Photographs

# **ATTACHMENT 1**



\\vsbdata\projects\57174\01\GIS\project\NNIS\NNIS\_Monitoring\_Map\_2016.mxd

Copyright © 2013 National Geographic Society, i-cubed

VCGI



**Legend**

- |  |  |  |
|--|--|--|
| <span style="border: 2px solid yellow; display: inline-block; width: 15px; height: 10px;"></span> Study Area (VHB) | <span style="border-bottom: 1px dashed cyan; width: 20px; display: inline-block;"></span> Recon Stream (VHB)   | <span style="background-color: lightblue; width: 15px; height: 10px; display: inline-block;"></span> Waterbody (VHD) |
| <span style="border: 2px solid red; display: inline-block; width: 15px; height: 10px;"></span> Project Area (VHB)  | <b>Delineated Wetland (VHB)</b>  | <span style="border-bottom: 1px solid brown; width: 20px; display: inline-block;"></span> 20 ft. Contour (VCGI)      |
| <span style="border: 1px solid gray; display: inline-block; width: 15px; height: 10px;"></span> Resort Road        | <span style="background-color: lightgreen; width: 15px; height: 10px; display: inline-block;"></span> Class II Wetland                               | <span style="border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span> Parcel Boundary     |
| <b>Delineated Stream (VHB)</b>   | <span style="background-color: limegreen; width: 15px; height: 10px; display: inline-block;"></span> Class III Wetland                               | <span style="border: 1px dashed gray; display: inline-block; width: 15px; height: 10px;"></span> County Boundary     |
| <span style="border-bottom: 1px solid blue; width: 20px; display: inline-block;"></span> Perennial Stream          | <span style="background-color: yellowgreen; width: 15px; height: 10px; display: inline-block;"></span> Recon Wetland                                 | <span style="border: 1px dashed black; display: inline-block; width: 15px; height: 10px;"></span> Town Boundary      |
| <span style="border-bottom: 1px dashed blue; width: 20px; display: inline-block;"></span> Intermittent             | <span style="border-bottom: 1px solid blue; width: 20px; display: inline-block;"></span> Stream (VHD)  | <span style="border-bottom: 1px solid black; width: 20px; display: inline-block;"></span> Roads (VCGI)               |
| <span style="border-bottom: 1px dotted blue; width: 20px; display: inline-block;"></span> Ephemeral                | <span style="background-color: lightgreen; border: 1px solid green; width: 15px; height: 10px; display: inline-block;"></span> VSWI Wetland (VT ANR) |  |

**South Face Village at Okemo Development Company, LLC | Ludlow, VT**

**Non-Native Invasive Species Monitoring Map**

Sources:  
 VCGI (Vermont Center for Geographic Information - Various Dates)  
 VHD (Vermont Hydrology Dataset maintained by VCGI - 2015)  
 VT ANR (Vermont Agency of Natural Resources - Various Dates)  
 VTrans (Vermont Department of Transportation - 2015)  
 Study Areas, Project Area, and Resort Roads Digitized by VHB (2016);  
 Background Imagery by VCGI (2016)

# **ATTACHMENT 2**

South Face Village at Okemo Development Company, LLC  
Non-Native and Invasive Species - Baseline Survey - Representative Photographs  
Ludlow, Vermont



Photograph 1. Representative view of forested area within Patch Cut-1



Photograph 2. Representative view of a former access road within Patch Cut-2



Photograph 3. Representative view of a former access road and forested area within Patch Cut-2,



Photograph 4. Representative view of a forested portion of Patch Cut-3



Photograph 5. Representative view of a former access road within Patch Cut-3



Photograph 6. Representative view of forested area within Patch Cut-4

Photographs taken by VHB Environmental Scientist O. McEnroe on August 10, 2016